



KAATSU®

C3

USER  
MANUAL



# KAATSU C3 USER MANUAL

KAATSU Equipment and Protocols for  
Recovery, Rehabilitation, Sports, Fitness

**Rev. 03 | December, 2021**

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# What is KAATSU?

KAATSU is a unique, patented modality that uses automated air pressure bands to gently modify blood flow to and from the limbs. It is clinically proven to trigger beneficial physiological effects in the body.

These effects include:

- Increased production of Human Growth Hormone (HGH), Nitric Oxide (NO), Insulin Growth Factor (IGF-1), Vascular Endothelial Growth Factor (VEGF), ceramides, plasmalogens, beta endorphins, testosterone, and other biologically active metabolites.
- Increased elasticity of vascular tissue throughout the body



*Dr. Sato, KAATSU inventor*

These physiological effects in turn enable KAATSU users to tone muscles, increase strength, improve blood circulation, improve metabolic syndrome, strengthen bones, improve sleep, burn additional calories, reduce pain, improve agility and endurance, and facilitate recovery from injuries and surgeries.

KAATSU was invented in Japan by Dr. Yoshiaki Sato. KAATSU brand products are engineered and designed in Southern California by KAATSU Global.



## Why Do KAATSU?

Since KAATSU's inception in 1966, multiple protocols have been developed to provide a safe method of improving physical health.

### **Improve Athletic Performance**

- Greater speed
- Greater speed
- More strength
- Increased stamina
- Wider range of motion
- Enhanced agility
- Better technique

### **Facilitate Rehabilitation**

- Faster recovery of injured muscles, bones, ligaments, and tendons

### **Enhance Recovery**

- Vigorous / sustained physical activities
- High-performance athletics
- Surgeries
- Insomnia & jet lag

### **Reduce & Better Manage Pain**

- Including lower back, joint discomfort, and general muscle pain

### **Maintain Wellness**

- Easy to use for people leading sedentary lifestyles
- Especially beneficial for deconditioned, bedridden, or obese individuals, wounded warriors, paraplegics and quadriplegics

## Who Uses KAATSU?

KAATSU is used by individuals of all ages and from all walks of life. The oldest known KAATSU user in Japan was 104 years old and there are men and women in their 90's who use KAATSU regularly.

Many professional golfers and dozens of professional sports teams in the NFL, NBA, NHL, MLB and MLS use KAATSU for training and recovery, along with Olympic athletes and medalists in wrestling, ski jumping, swimming, water polo, volleyball, rugby, track and field, marathon running, marathon swimming, and boxing.



KAATSU is popular with high level athletic trainers at the NCAA Division I, II and III levels including the Air Force Academy, West Point, MIT, and University of California San Diego.



High school students and teams from football to swimming and water polo use KAATSU for athletic performance improvement, rehabilitation, and recovery.

KAATSU users are numerous throughout all branches of the U.S. military, and especially in elite divisions (i.e., Navy SEALs, Army Rangers, Green Berets, and Air Force Special Operators).



Individuals with multiple sclerosis, cerebral palsy, paraplegia or quadriplegia also use KAATSU to maintain and improve their health.

The largest demographic of KAATSU users to date are adults over the age of 50. Women between the ages of 40-70 are the largest single demographic of KAATSU users both in Japan and the United States.



## Where Can KAATSU Be Used?

KAATSU can be done or applied anywhere including at hospitals or physical therapy clinics, at home or school, in work cubicles and offices, while traveling in hotels or on airplanes, and in pools or the ocean.

Because KAATSU Air Bands are made from neoprene, they are widely used by swimmers, water polo players, surfers, kayakers, SUP paddlers, rowers, and people doing aquarobics and aqua therapy.

KAATSU is also used on ships and aircraft carriers and by submariners. It is used during activities as varied as mountaineering and dog walking, or while brushing your teeth or watching TV.



## When Can You Use KAATSU?

KAATSU can be done anytime from the time you wake up until shortly before going to bed. KAATSU can be done while:

- doing physical therapy
- standing still or running
- sitting while typing emails or watching TV
- rowing or paddling
- throwing footballs, baseballs, or Frisbees
- hitting balls (golf or baseball)
- kicking (balls or during kickboxing)
- walking (the dog) or hiking
- while exercising or doing physical therapy
- cooking or cleaning inside or outside the house
- packing or folding clothes
- recovering from a vigorous workout or jet lag
- putting on makeup or blow drying your hair
- before, between and after athletic performances or vigorous/lengthy training sessions including weight training workouts

10-20 minutes a session is sufficient to gain benefits and see results whether you're looking to improve muscle tone or increase mobility. KAATSU can – and should be – used **daily**, even up to **2-3 times per day** if time permits. This is especially useful when KAATSU is being used for rehabilitation and as an augmentation to traditional physical therapy.



## KAATSU and Major Health Conditions

You should always consult your physician before beginning any exercise program.

Get your physician's approval before starting KAATSU if you have:

- Cancer
- A pacemaker
- Any form of heart disease
- Atrial fibrillation
- A recent acute myocardial infarction
- Unstable angina, ventricular tachycardia, or severe arrhythmia
- A serious case of cardiac insufficiency (NYHA class IV)
- Serious aortic stenosis
- An acute pulmonary embolism or lung infarction
- Acute myocarditis or pericarditis
- Acute vena cava dissociation
- Macular degeneration
- Hypertension
- A ruptured muscle
- A fractured bone
- Any acute disease

Also get your physician's approval to start KAATSU if you are:

- Undergoing cardiac rehabilitation
- Under medical treatment for any ailment

It is our recommendation to anyone who has health concerns to **ONLY** use the KAATSU Cycle Mode (see page 22). KAATSU has been used safely with over 7,000 individuals with serious documented cardiac issues (i.e. heart attacks or bypass surgeries) and those who have survived strokes.

These protocols have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease and its use should be evaluated by your own physician before use.

## Additional Considerations

- If you are pregnant, have a conversation with your physician about whether using KAATSU is right for you.
- If you are under the age of 18, do not use KAATSU without adult supervision.
- If you are under the age of 14, we recommend you do not use KAATSU.





# Key Points When Doing KAATSU

KAATSU can be effectively, efficiently, and safely incorporated into your training, rehabilitation, and recovery programs - without performing at maximal pressure levels. You should discuss KAATSU with your physician or physical therapist. There are several key points to remember and follow when you do KAATSU.

- Consult with your physician before starting a KAATSU regimen.
- Start slowly and conservatively with KAATSU.
- Ensure you are well hydrated before and during the entire KAATSU session.
- Begin each KAATSU session using the KAATSU Cycle mode.
- Use KAATSU on your arms first before doing KAATSU on your legs.
- Check the exercising limb often to confirm the Capillary Refill Time is under 3 seconds.
- Limbs with Air Bands applied should remain either pink or beefy red in color.
- Immediately stop KAATSU and remove the Air Bands if there is any occlusion, numbness, or paleness (i.e., whiteness, grayness, or blueness) in your limbs.
- Immediately stop KAATSU and remove the Air Bands if you experience any light headedness. Lie down with your legs elevated if necessary.
- KAATSU should not hurt. If you feel pain during use, immediately stop KAATSU, especially if using KAATSU as part of your rehabilitation from an injury or surgery.
- Never wear the KAATSU Air Bands on your arms and legs at the same time.
- Wait at least 72 hours after a surgery to start KAATSU with the approval of your physician.

# Safety Precautions

When used properly, the KAATSU modality is very safe and is not a risk to your health. As with any device, there are basic safety precautions you should observe.

- Use only when you are well hydrated, sober, and not under the influences of medications or illegal drugs, including any performance enhancing drugs.
- Avoid driving a vehicle or operating machinery while using KAATSU.
- Continue breathing normally when using KAATSU. Do not use underwater.
- Use KAATSU on a stable surface.
  - Avoid using vibration plates or equipment (e.g., treadmills, Bosu Balls, Power Plate machines) that could cause you to lose your balance. Please note that if you are accustomed to KAATSU and are fit with good strength and balance, then doing KAATSU Walking at a comfortable pace on a treadmill is acceptable.
- Always remove the KAATSU Air Bands before falling asleep. Never take a nap or sleep with any KAATSU equipment on.
- If you plan to use the KAATSU Constant mode, always use KAATSU Cycle Mode first for at least 10 minutes.
- Train in the KAATSU Constant mode for no more than 10 minutes on either your arms or your legs.
- Always use a conservative (i.e., low) pressure in KAATSU Constant mode.
- Choose very light weights when using KAATSU Constant mode.
- Use only the KAATSU Cycle mode if you are older than 50, deconditioned, overweight, tend to faint, or have White Coat Syndrome.
- Limit your use to 6 consecutive KAATSU Cycle sets on your arms and 6 consecutive KAATSU Cycle sets on your legs. Build up to this number of sets over time and do not exceed this number.
- If you are training at altitude, only use KAATSU Cycle mode and always remain well hydrated and limit the intensity and duration of your exercise.
- Only wear KAATSU Air Bands on your upper arms or upper legs.

# Start KAATSU Conservatively

Always start slowly and conservatively with KAATSU, especially if you have any adverse medical or physiological conditions, are older than 50 years old, or start a KAATSU regimen when you are sedentary or de-conditioned.

In order to build up to 5-6 KAATSU Sets in one session per day, adhere to the following protocols:

- Do only 1 KAATSU Cycle set during your KAATSU session in the first week.
- You can do 2 KAATSU Cycle sets in your KAATSU sessions in the second week.
- You can do 3 KAATSU Cycle sets in your KAATSU sessions in the third week.
- You can do 4 KAATSU Cycle sets in your KAATSU sessions in the fourth week.
- You can do 5 KAATSU Cycle sets in your KAATSU sessions in the fifth week.
- You can do 6 KAATSU Cycle sets in your KAATSU sessions in the sixth week
- Then you can start doing multiple KAATSU sessions per day, up to 3 separate KAATSU sessions per day.

# What is the KAATSU C3?

The KAATSU C3 device is the third generation of KAATSU equipment featuring the patented KAATSU Cycle function (see **Key Patent** section). Used with KAATSU Arm Bands, the KAATSU C3 and its proprietary protocols can help improve blood circulation, hormonal production, muscle tone, functional strength, mobility, balance, speed rehabilitation and recovery.

"Ruggedized" and water-resistant, KAATSU equipment is versatile and can be safely and effectively used almost anywhere, anytime, including in the rain, snow, mud, dust, and sand, by people of all ages and walks of life.

Simple to operate, the KAATSU C3 is used by individuals, coaches, trainers, chiropractors, physicians, physical therapists, and caretakers to enhance physical health and performance.



*Michael Andrew, Olympic swimming gold medalist*



## What Is Included

- KAATSU C3 device
- 4 KAATSU Air Bands: 2 narrow and shorter arm bands + 2 thicker and longer leg bands
- 2 gray-colored Connector Tubes
- USB Type C Charger
- Black Carrying Case
- Single-limb KAATSU Plug
- Online KAATSU Education Program

## Features

- Light, compact, portable, easy-to-use handheld device.
- "Ruggedized" per military specifications.
- Water resistant for use in the rain, fog, and snow.
- 6 preset progressive KAATSU Cycle pressures for a wide range of utilization.
- Consecutive KAATSU Cycle function can be used up to 40 minutes.
- User-customizable Cycle and Constant mode pressures.
- Includes 4 handcrafted elastic and stretchable pneumatic bands with specialty air bladders: 2 arm bands and 2 leg bands in Small, Medium, Large and Extra Large sizes that can be untethered from the unit.
- Neoprene bands are waterproof for use in the water, pools, rain, fog and snow.
- Bands can be universally used with any KAATSU equipment models including the KAATSU Nano, KAATSU Master 2.0, KAATSU M3, and KAATSU B1.
- Facilitates single-limb use (i.e., KAATSU performed only on one limb for rehabilitation or to improve balance or strength on one side).
- Models are available in black or white.
- Medically prescribed use is reimbursable with CPT codes in the United States including:
  - 97110: therapeutic in 1 or more areas, 15 min. each; exercises to develop strength and endurance and ROM
  - 97530: therapeutic activities, direct (1-to-1) patient contact (use of dynamic activities to improve functional performance) 15 min. each
  - 97016: under supervised physical medicine and rehab modalities, is the application of modality, vasopneumatic
  - 91760: for unspecified edema (swelling caused by excess fluid in body tissues)

## Buttons

- **POWER:** Press and hold for at least 3 seconds to turn the device on or off. Quickly press once to move back a screen while navigating the menu.
- **LEFT SELECT:** Touch to scroll screen to the left while navigating or to decrease the custom SKU pressure settings.
- **RIGHT SELECT:** Touch to scroll screen to the right while navigating or to increase the custom SKU pressure settings.
- **CONFIRMATION (CENTER):** Touch to confirm screen selection, begin a KAATSU session, or pause or resume a session.

## Settings

- **CYCLE MODE:** Automated, progressive sequence of 8 steps per set. Each step includes 30 seconds of compression, followed by 5 seconds of decompression.
- **CONSTANT MODE:** Customizable level of sustained pressure held for a maximum of 10 minutes.
- **ARMS POSITION:** Correlates to the use of KAATSU Air Bands on your arms.
- **LEGS POSITION:** Correlates to the use of KAATSU Air Bands on your legs.
- **CUSTOM SKU:** Customizable range of pressure up to 400 SKU (Standard KAATSU Unit).
- **LOW SKU:** A present pressure level of 80-150 SKU for your arms and 150-220 SKU for your legs.
- **MEDIUM SKU:** A present pressure level of 130-200 SKU for your arms and 230-300 SKU for your legs.
- **HIGH SKU:** A present pressure level of 180-250 SKU for your arms and 330-400 SKU for your legs.
- **STEPS:** Indicates which Step you are currently on during a Set (i.e., there are 8 Steps in a Set).
- **SETS:** Indicates which Set you are currently on. You can select up to 6 Sets per session.

## Set Up

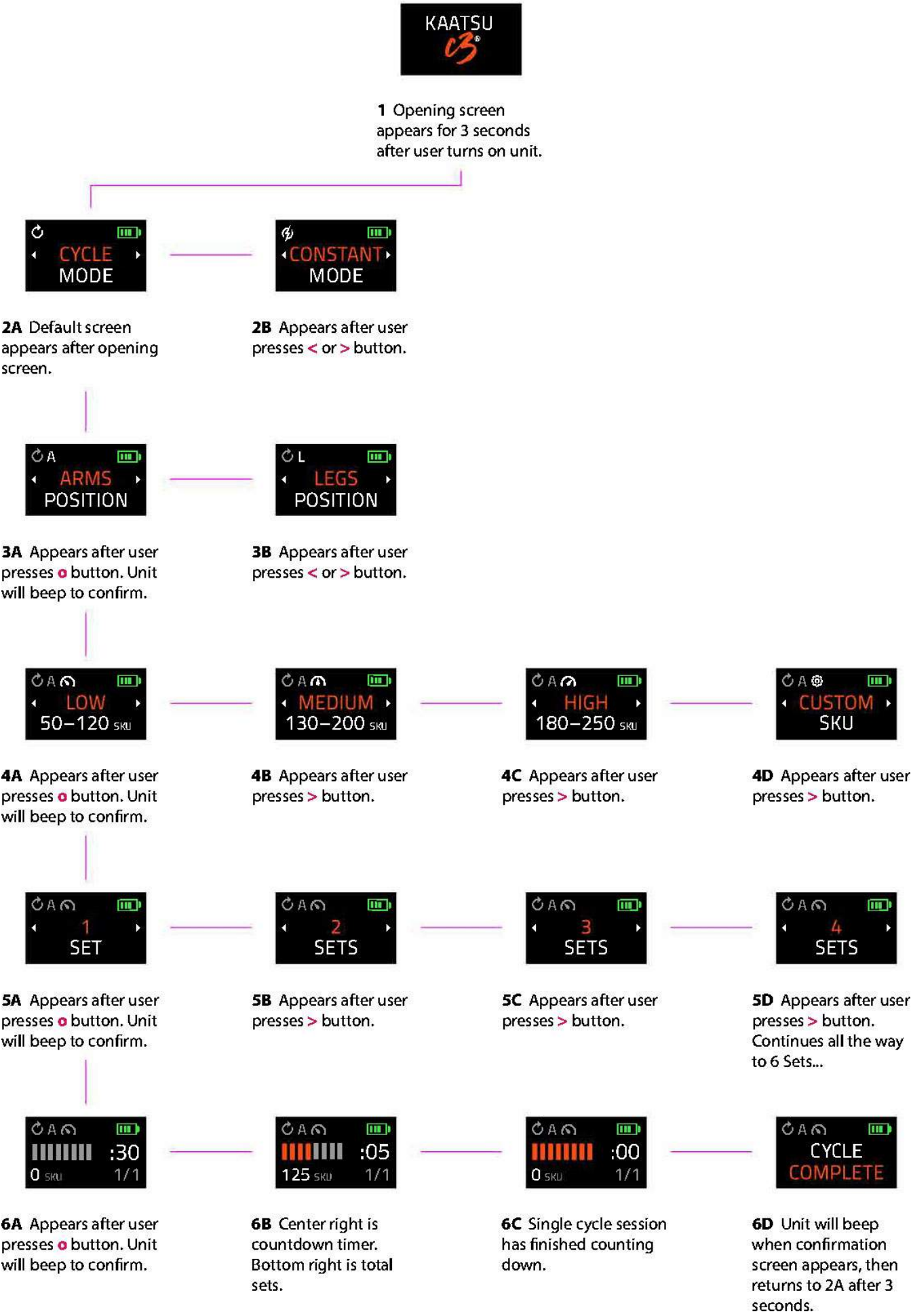
1. Insert the gray tubes into the top of the KAATSU C3 device and attach the other end to the white connector on the KAATSU Air Bands. You should hear a small click that confirms the connection are airtight.
2. Place the KAATSU Air Bands on either of your arms or legs. The KAATSU Air Bands should be placed on your upper arms, near your armpit and below your deltoid in the area where your biceps muscle attaches to your upper arm. The KAATSU Air Bands should be placed on your upper legs, near your groin and above your quadriceps muscles and hamstrings, slightly higher on the lateral aspect of your hips, higher than your inner groin.
3. The KAATSU Air Bands should be snug, but not tight. You should only be able to fit one finger between the KAATSU Air Bands and your skin. You can see a slight pinker color in your skin as a result, meaning the arterial flow continues unimpeded, but the venous flow is slightly modified.
4. Press and hold the Power Button to turn on the device and begin your KAATSU session.

KAATSU C3 Cycle/Legs/Preset User Flow

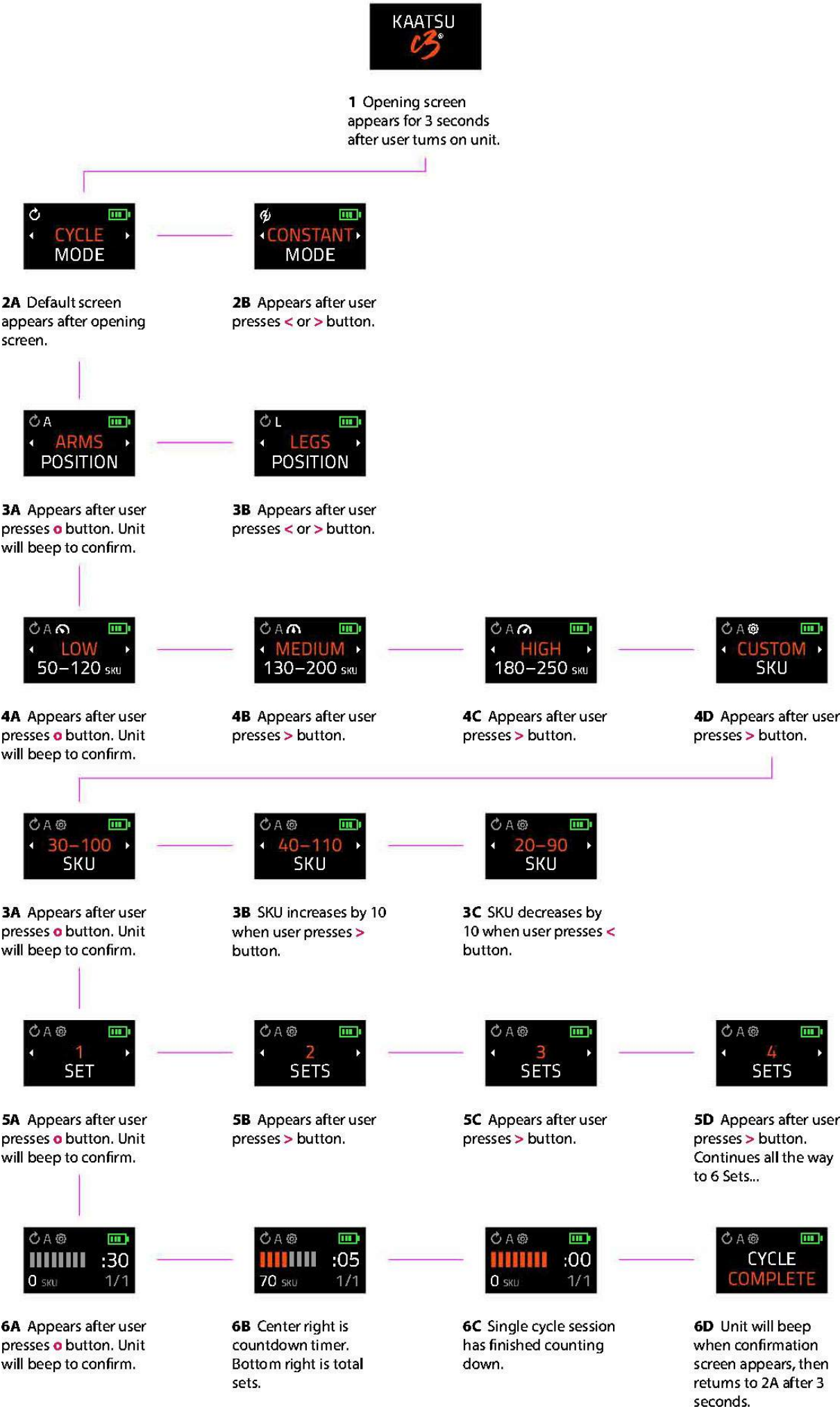




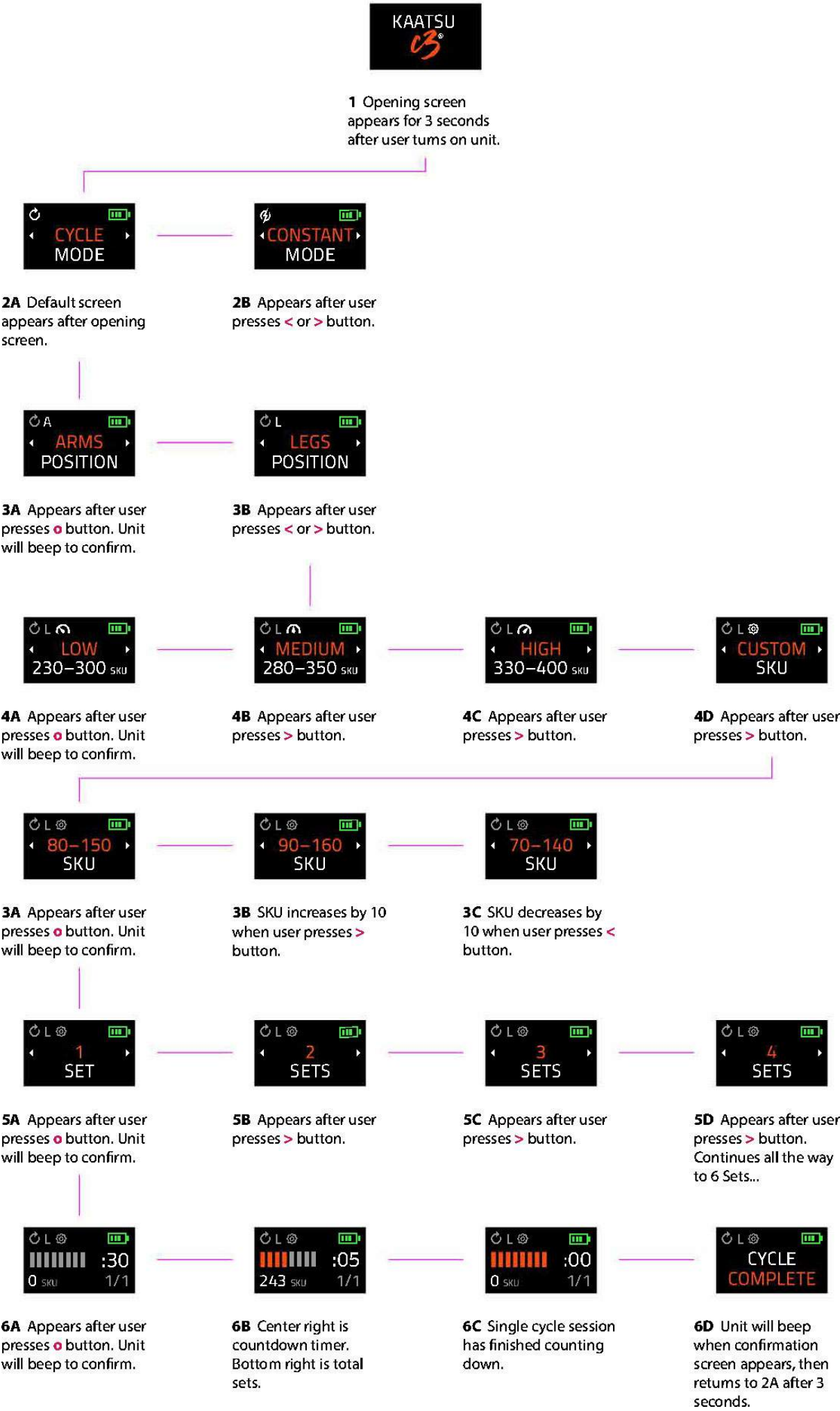
KAATSU C3 Cycle/Arms/Preset User Flow



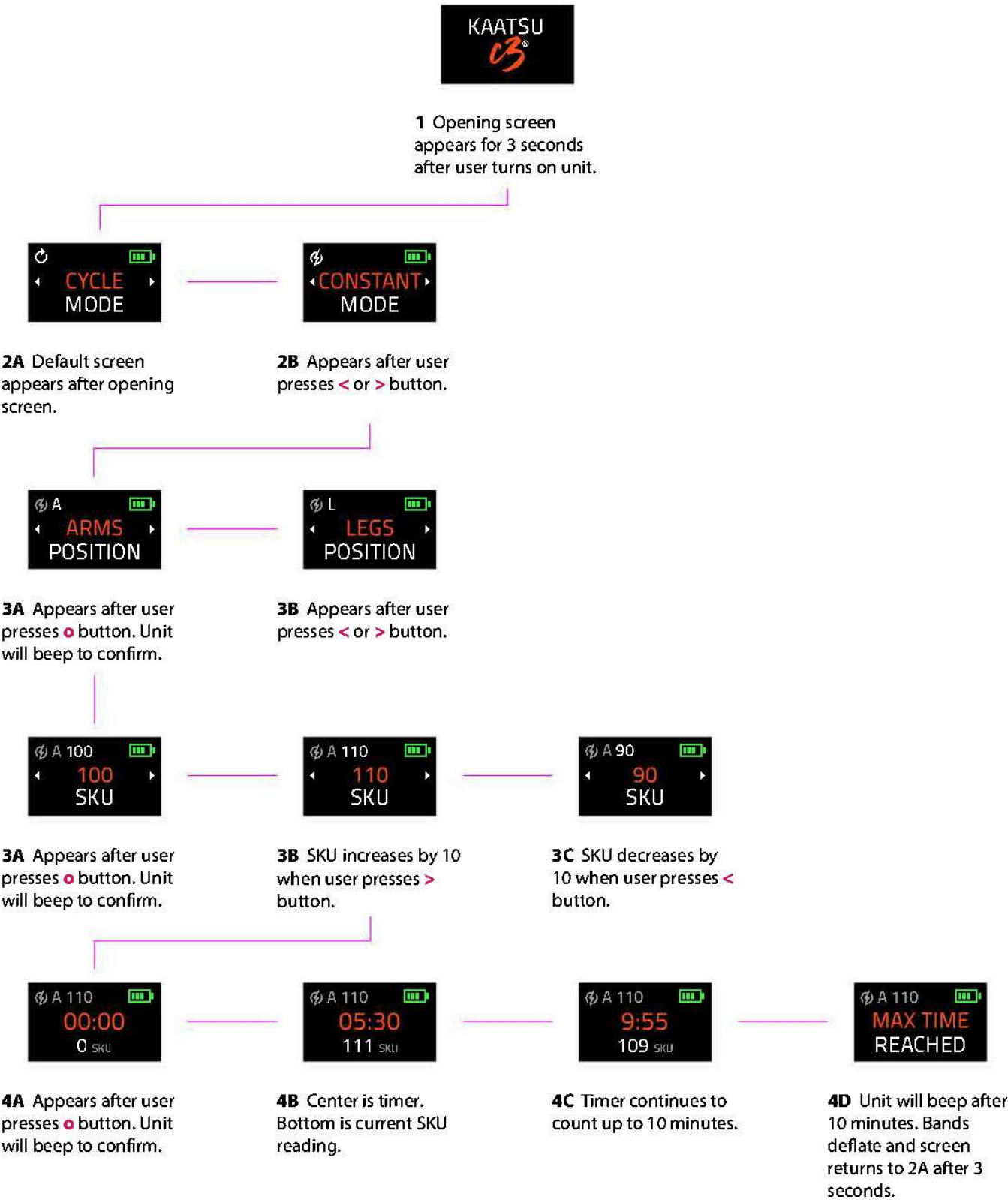
KAATSU C3 Cycle/Arms/Custom User Flow



KAATSU C3 Cycle/Legs/Custom User Flow

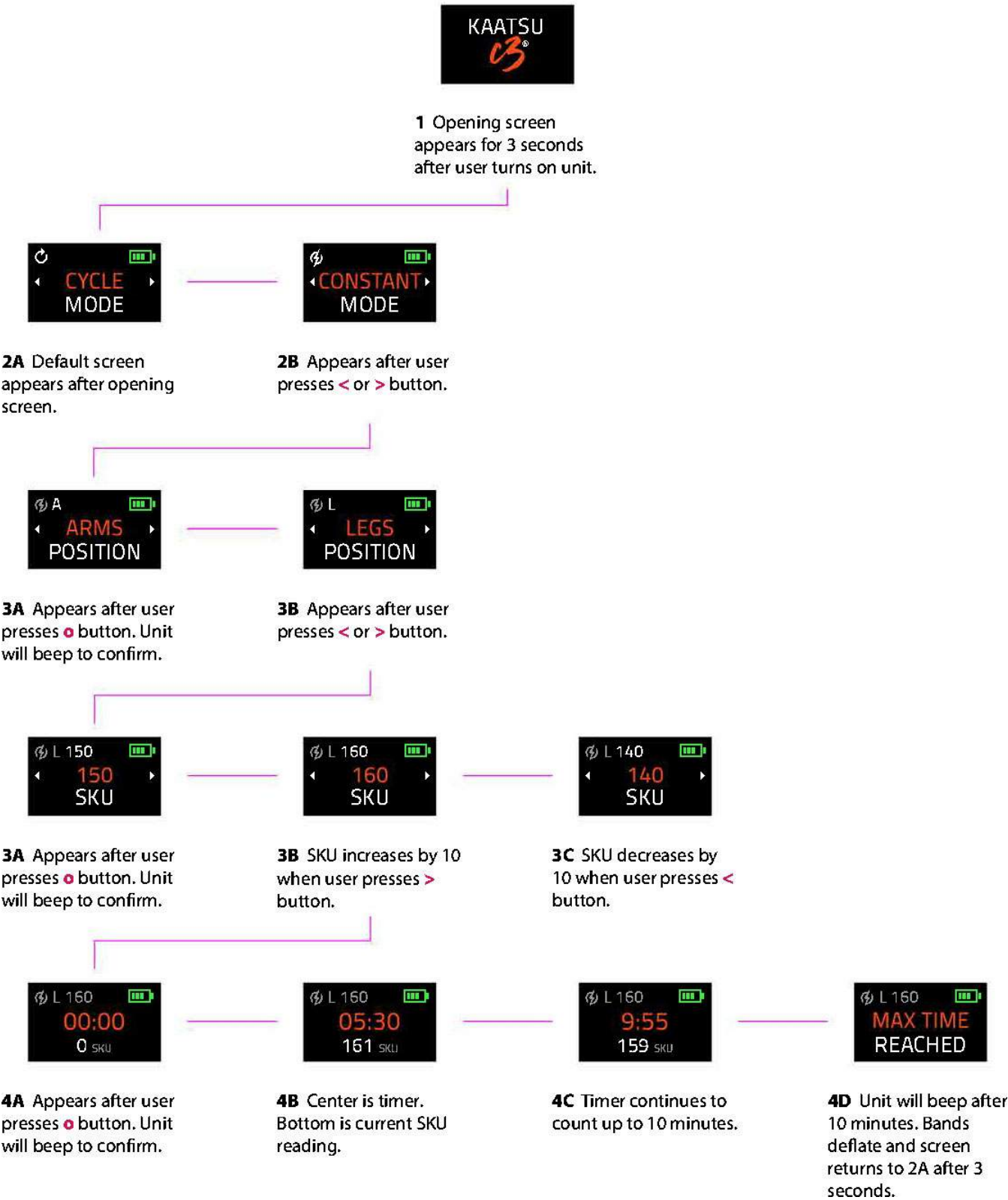


KAATSU C3 Constant/Arms User Flow







KAATSU C3 Constant/Legs User Flow




KAATSU C3 Icons, Additional Screens, and Buttons




Battery 100%




Battery 75%




Battery 50%




Battery 25%




Battery 0%




Battery Charging




Cycle Mode




Constant Mode




Arms Position




Legs Position




Low SKU




Medium SKU




High SKU




Custom SKU





Appears if user presses and holds the Power Button (3 seconds) to turn off device.




Appears if user presses Power button during a session. Bands deflate and screen returns to 2A.




Appears if user presses  button during a session. Bands deflate and screen returns to 2A.




**Power Button:** Press and hold (3 seconds) to turn on/off device. Once device is on, pressing the Power Button one time goes back to the previous screen or cancels session.



**Left Select Button:** Press to scroll screens to the left or to decrease custom SKU setting or sets.



**Right Select Button:** Press to scroll screens to the right or to increase custom SKU setting or sets.

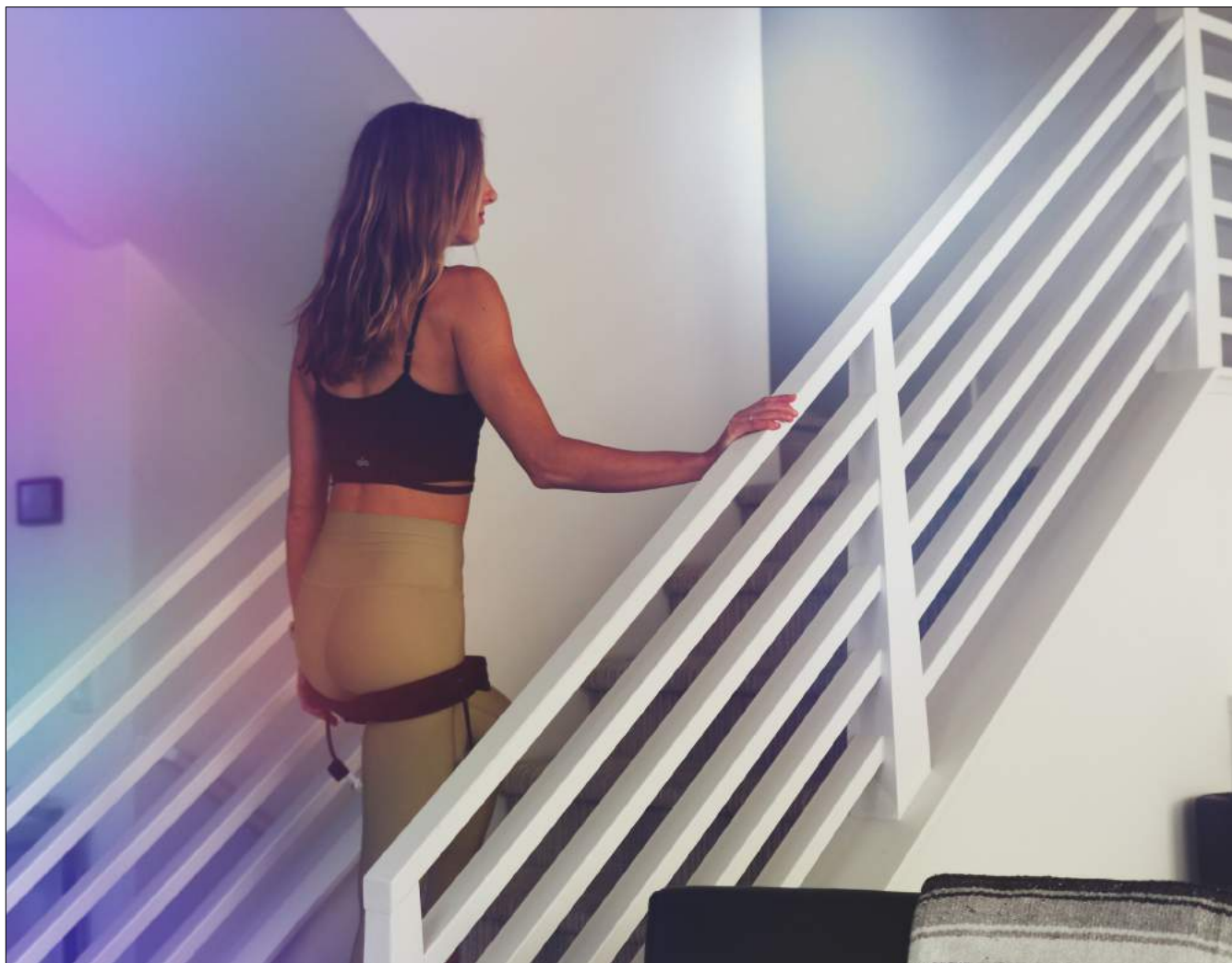


**Confirmation Button:** Press to confirm screen selection and to begin KAATSU session. Pressing during a KAATSU session will pause the current session.

# C3 Button Layout



# KAATSU Modes



There are two modes of KAATSU:

- KAATSU Cycle is the automated and repeated inflation and deflation of the KAATSU Air Bands
- KAATSU Constant mode keeps the KAATSU Air Bands inflated at a set pressure.

Both modes allow you to choose pressures that are most appropriate for your fitness level and the type of exercise or movement being performed.

## KAATSU Cycle Mode

The patented KAATSU Cycle mode was developed to help with rehabilitation, recovery, athletic performance, and overall health and wellness for people of all ages and walks of life. Using the KAATSU Cycle mode triggers physiological processes that can help improve blood circulation, hormone production, muscle tone, functional strength, mobility, and balance.

KAATSU Cycle mode is beneficial for all aspects of athletic performance. It can be used during warm-ups, training sessions, and for recovery from vigorous exercise. Beyond athletics, KAATSU Cycle mode can also be used to help with the rehabilitation of injuries. It will even provide benefits if used while doing household activities or being used while at rest.

In KAATSU Cycle mode, the KAATSU C3 controls the pressure in the KAATSU Air Bands to apply repeated steps of compression and decompression on your arms or legs. Each step consists of a 30-second period of compression and a 5-second period of decompression. The pressure increases incrementally with each step. This distinct, patented feature of KAATSU maximizes safety and effectiveness for all users and purposes, even during passive use.

## KAATSU Constant Mode

KAATSU Constant mode keeps the KAATSU Air Bands inflated at a set pressure. After the Air Bands are inflated, you can untether (disconnect) the bands from the KAATSU C3 so you can work on activity-specific exercises. If you keep the bands connected to the KAATSU C3, it will maintain the specified pressure for a maximum of 10 minutes.

If you choose to use KAATSU Constant mode, choose conservative (i.e., low) pressures and **limit your use to a short period of time (i.e., 10 minutes or less) or as advised by your certified KAATSU Specialist.**

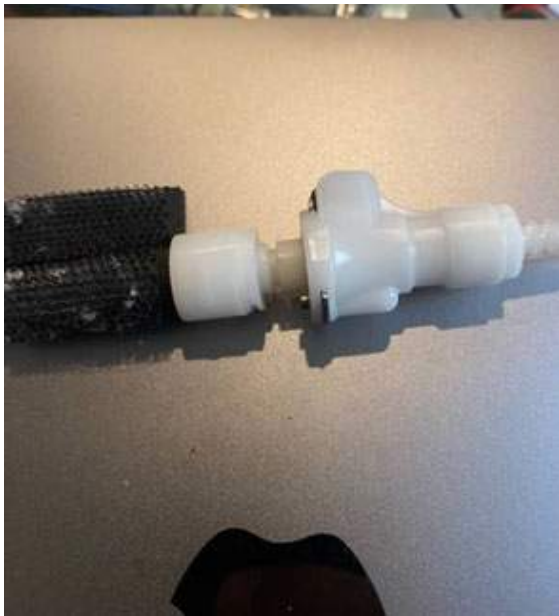
You can detach the Connector Tubes from the KAATSU Air Bands during the KAATSU CONSTANT MODE and the bands will remain filled with air. **If you detach the Air Bands from the Connector Tubes, wear them for a maximum of 10 minutes, or as advised by your certified KAATSU Specialist.**

## Choosing the Right Mode

We recommend KAATSU C3 users choose the KAATSU Cycle mode as it effectively, efficiently, gently, and safely generates a hormonal response for most individuals.



# How to Operate the KAATSU C3



**Step 1:** Connect the Connector Tubes to both KAATSU Air Bands.

Connect the White Connector at the end of the gray Connector Tubes to the White Connector on the end of the Black Tubes coming out of the KAATSU Air Bands.



**Step 2:** Place the KAATSU Air Bands on either of your arms or legs. The KAATSU Air Bands should be placed on your upper arms, near your armpit and below your deltoid in the area where your biceps muscle attaches to your upper arm.

The KAATSU Air Bands should be placed on your upper legs, near your groin and above your quadriceps muscles and hamstrings, slightly higher on the lateral aspect of your hips, higher than your inner groin.

See more detailed placement instructions and diagrams on page 40.



**Step 3:** Then connect the free end of the Connector Tubes to the KAATSU C3 unit. Snugly insert the gray Connector into the top side of the KAATSU C3 unit. If you are doing normal (Dual-Limb) KAATSU, insert both ends



**Step 3a:** If you are doing Single-Limb KAATSU, insert the small Plug into the remaining Air Hole.



**Step 4:** Turn on the KAATSU C3 unit. Hold the ON/OFF/CANCEL button on the side of the KAATSU C3 unit for 3 seconds. The unit will turn on.



**Step 5:** The KAATSU C3 screen will light up



**Step 6:** The CYCLE MODE screen will automatically appear. You can now select how you wish to use your KAATSU C3 unit.



**Step 7:** The buttons on the front of the KAATSU C3 unit are touch sensitive, requiring only a light touch to activate them. The Center Button with the Red Circle serves as the enter button.



**Step 8:** If you wish to use the KAATSU CONSTANT mode, touch either the Left Arrow (<) or the Right Arrow (>). Touching either arrow will toggle between the KAATSU CYCLE MODE with the KAATSU CONSTANT MODE. After you have selected your desired mode, touch the Center Button to confirm your choice.



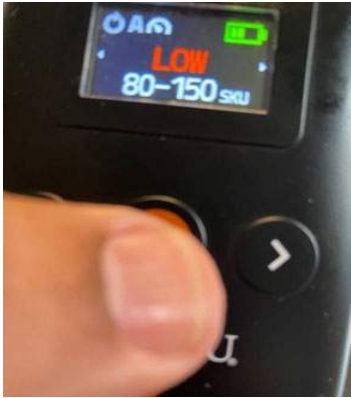
**Step 9:** After choosing KAATSU CYCLE MODE, you can select either the ARMS or LEGS POSITION. The unit defaults to the ARMS POSITION.

See Steps 18~20 (page 35) for KAATSU CONSTANT MODE instructions. Continue for KAATSU CYCLE MODE instructions.





**Step 10:** To choose between ARMS or LEGS POSITION touch either the Left or Right Arrow. After you have selected the ARMS or LEGS, touch the Center Button to confirm your choice.



**Step 11:** After choosing the ARMS or LEGS POSITION you can select the SKU (Standard KAATSU Unit) pressure range in the KAATSU CYCLE MODE. You can choose between LOW (80-150 SKU), MEDIUM (130-200 SKU), HIGH (180-250 SKU), or CUSTOM for the ARMS. It is recommended to always start with LOW. After you have selected your desired pressure range, touch the Center Button to begin.



**Step 12:** Note that the pressure ranges are different on the ARMS versus the LEGS. Due to their size, LEGS require higher SKU pressures: LOW (150-220 SKU), MEDIUM (230-300 SKU), HIGH (330-400 SKU). After you have selected your desired pressure range, touch the Center Button to begin.



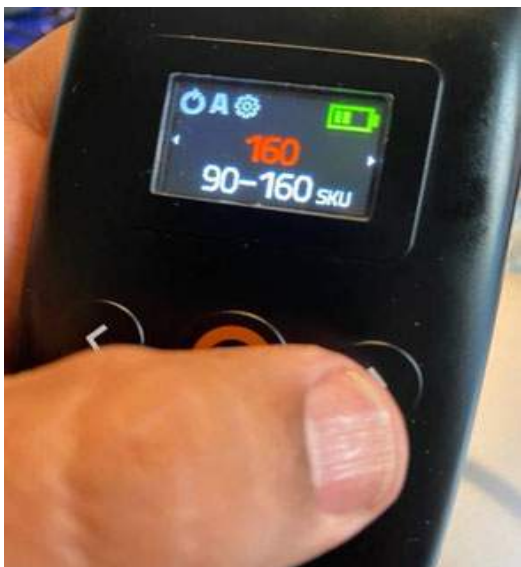
**Step 13:** If you would like to use lower or higher pressures, select the CUSTOM SKU level. After you have selected the CUSTOM SKU level, touch the Center Button to confirm.



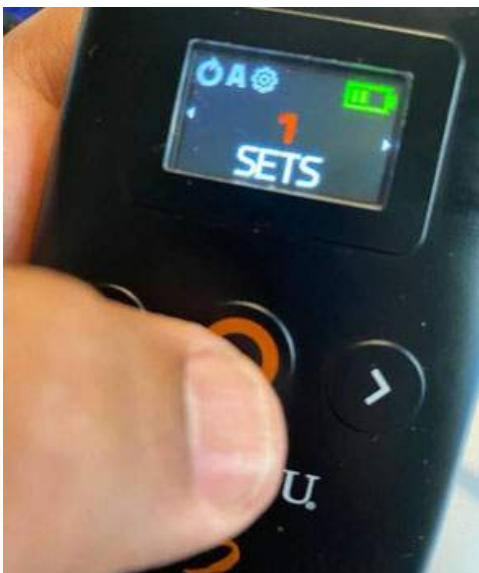
**Step 14:** After the CUSTOM SKU screen appears, you can adjust the SKU levels by touching the Left Arrow (<) or Right Arrow (>). The ARMS default to the 30-100 SKU level. The LEGS default to the 80-150 SKU level. Touch the Left Arrow to decrease the SKU by 10 units; touch the Right Arrow to increase the SKU by 10 units.



**Step 15:** After you have selected your desired SKU levels, touch the Center Button to confirm. You can now select the number of SETS you wish to do.



**Step 16:** The default number of SETS on both the ARMS and LEGS is one, but you can choose to do up to 6 SETS. To increase the number of SETS, touch the Right Arrow. To decrease the number of SETS, touch the Left Arrow.



**Step 17:** After you have selected the number of desired SETS (e.g., 3), touch the Center Button to confirm. The session will start and the KAATSU C3 will begin cycling the pressures in the Air Bands.



If you would like to quit or go back, press the ON/OFF/CANCEL button and the session will be canceled. You can also use this ON/OFF/CANCEL button to go back to a previous screen.

The following steps are for KAATSU CONSTANT MODE only.



**Step 18:** When you select the KAATSU CONSTANT MODE, the most recent SKU level will appear. The SKU level ranges from 50 SKU to 400 SKU.



**Step 19:** To decrease your SKU level, touch the Left Arrow. To increase your SKU Level, touch the Right Arrow. Each touch decreases or increases the SKU pressure by 10 units.



**Step 20:** After you have identified your SKU Level, touch the Center Button. Confirm. The session will start and the KAATSU C3 will inflate the Air Bands to the desired pressure. The KAATSU C3 features a built-in timer in CONSTANT MODE that will run for 10:00



**Step 21:** After you have selected the MODE (i.e., KAATSU CYCLE or KAATSU CONSTANT), the POSITION (i.e., ARMS or LEGS), the SKU PRESSURE (i.e., LOW or MEDIUM or HIGH or CUSTOM), and the number of SETS (i.e., 1-6), then touch the Center Button to begin

minutes. After 10 minutes, the pressure will be released

If the battery is running low, the Battery Indicator Light will appear red.



**Step 22:** During any session, if you would like to quit or go back, press the ON/OFF/CANCEL button and the session will be canceled. You can also use this ON/OFF/CANCEL button to go back to a previous screen.



**Step 24:** When you select the KAATSU CONSTANT MODE, the most recent SKU level will appear. The SKU level ranges from 50 SKU to 400 SKU.

your KAATSU Cycle session.

If the battery is running low, the Battery Indicator Light will appear red.



**Step 23:** If you would like to do the KAATSU CONSTANT MODE, select and touch the Center Button.



**Step 25:** To decrease your SKU level, touch the Left Arrow. To increase your SKU Level, touch the Right Arrow. Each touch decreases or increases the number of units by 10.



**Step 26:** After you have identified your SKU Level, touch the Center Button to start. The timer will begin and will stop at 10:00 minutes. At 10 minutes, the pressure will be released. You can detach the Connector Tubes from the KAATSU Air Bands during the KAATSU CONSTANT MODE and the bands will remain filled with air.



**Step 27:** The KAATSU C3 unit comes with a very thin protective plastic sheet that overlays the screen so scratches on the screen can be avoided. If you want, you can remove the plastic sheet with your fingernails and pull it off.



**Step 28:** If the KAATSU C3 unit occasionally stops, it may be that the center START/STOP button is inadvertently touched. You can place the unit with the belt clip on your pants or short or a shirt pocket. This is a convenient way to use the unit without holding it in your hands and avoid the unit inadvertently turning off.

You can detach the Connector Tubes from the KAATSU Air Bands during the KAATSU CONSTANT MODE and the bands will remain filled with air. **If you detach the KAATSU Air Bands from the Connector Tubes, wear them for a maximum of 10 minutes or less, or as advised by your certified KAATSU Specialist.**

If you would like to quit or go back, press the ON/OFF/CANCEL button and the session will be canceled. You can also use this ON/OFF/CANCEL button to go back to a previous screen.

## Duration of SETS

Each SET takes approximately 5-6 minutes depending on the size of the Air Band. The compressor takes longer to pressurize Large and XL Air Bands compared to Small or Medium Air Bands.

## Sounds

The compressors make a purring/buzzing/ vibrating sound while the Air Bands are being inflated. There is often a small amount of air that finds its way out of the bands and connectors. When attached via the Connector Tubes, the KAATSU C3 compressor will automatically refill the Air Bands to the appropriate pressure, so intermittent bursts of compressor sound will be heard during normal operation.

## Check and Recharge the Battery

When the Battery Indicator Icon is displayed in green and is showing four bars, the battery is fully charged. Fewer than four bars showing means the battery life is reduced. To recharge the battery, attach the provided charging cable (USB Type-C connector) to the KAATSU C3, then plug the other end into the USB port on a laptop or standalone power brick. You can also use the provided AC adapter to recharge the KAATSU C3 via a standard electric outlet. If the battery is running very low, the Battery Indicator Icon will appear red.



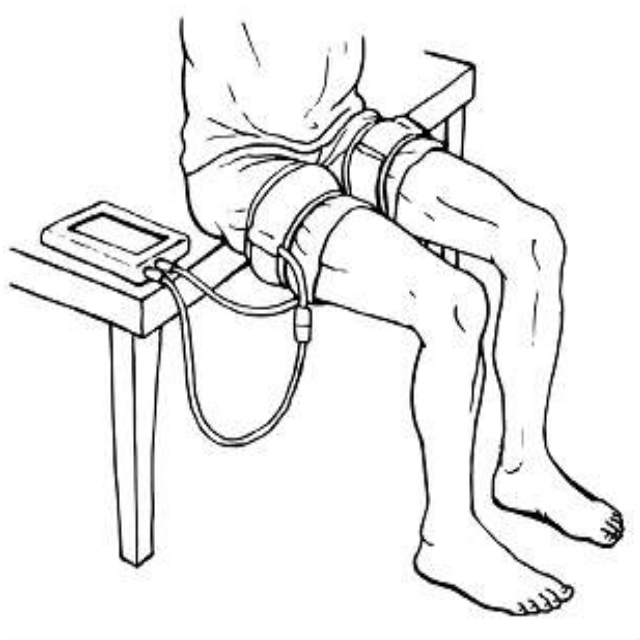
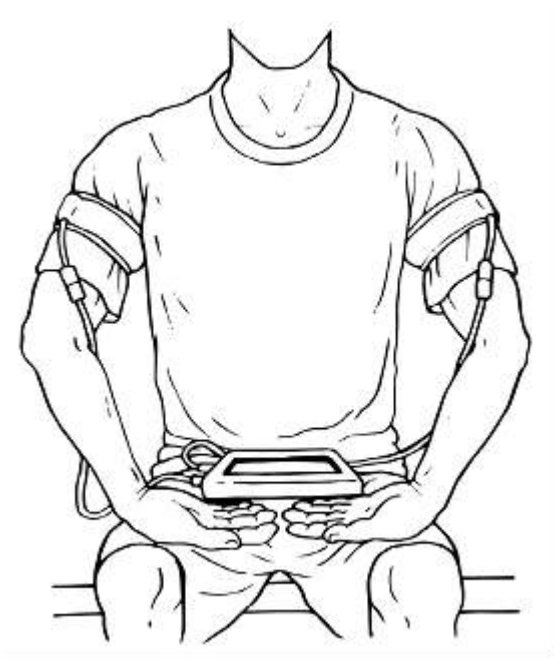
# Placement of the KAATSU Air Bands

KAATSU Air Bands should only be worn on your upper arms or your upper legs. These locations never change, no matter what your injury is, or what you are trying to improve or work on. Do not wear KAATSU Air Bands on your arms and legs at the same time.

On your arms, the KAATSU Air Bands are placed near your armpits, below your deltoid muscles, and above your biceps and triceps muscles.



On your legs, the KAATSU Air Bands should be placed high up in your groin, angled upwards toward the outer part of your thighs, above your quadriceps and hamstring muscles. The KAATSU Air Bands can be placed under the bottom line of a pair of underwear briefs or bikini bottoms. These are the optimal positions for the KAATSU Air Bands – and the only acceptable and safe positions for the bands. These locations are optimal because the largest veins and arteries can be slightly compressed to most efficiently modify the venous flow in the human body.



# Appropriate Pressure for KAATSU Air Bands

The KAATSU Air Bands should be placed snugly on your limbs. You should be able to place one finger between your skin and the KAATSU Air Bands (known as “one-finger tightness”). If you can place two or more fingers between your skin and the KAATSU Air Bands, you may want to slightly tighten the KAATSU Air Bands.

## [Setting and Resetting KAATSU Air Bands on Your Legs](#)

You can also gauge whether the pressure is appropriate by checking the color of your limbs while using the KAATSU C3.

This picture is an example of the color difference between an arm with the KAATSU Air Band applied (i.e., the arm on the right) and the user’s natural skin tone and color (i.e., the arm on the left). The capillaries and veins of the user’s arm are engorged with blood on the arm using KAATSU and have turned to a solid, beefy red color.



When the KAATSU Air Bands are set at a safe and appropriate safe pressure, your skin tone will become pinker, rosier, and/or various shades of red. People with different colored skin tone may experience a slightly darker or lighter/less color differential.

**White, blue, or gray skin color is never good when doing KAATSU. Immediately remove the KAATSU Air Bands if your arms or legs appear to be more white, blue or gray than normal.**

Your veins may become distended while doing KAATSU Cycle or KAATSU Constant sets. Distended means to pop out. This phenomena is normal and should not create any physical discomfort. Over weeks or months of KAATSU use (depending on your age), you will gradually see your skin tone become pinker, rosier, and/or redder when using KAATSU. This is an indication that your vascular tissue is becoming more elastic and that you are growing more capillaries.

## Air Band Sizes

The KAATSU Air Bands should be fit properly to get the best results from your KAATSU C3. Use the sizing chart below to help you choose the optimal KAATSU Air Band size for you.

### Arms

To accurately measure your arms, measure the girth above your biceps and just below the deltoid:

**Small:** circumference of upper arm is less than 11.5 inches (29 cm)

**Medium:** circumference of upper arm is between 11-13 inches (28-33 cm)

**Large:** circumference of upper arm is between 12 - 16 inches (31-41 cm)

**Extra Large:** circumference of upper arm is between 16 - 21 inches (41-54cm)

### Legs

To accurately measure your legs, sit on the edge of a chair and measure the girth of your leg as high in your groin as possible.

**Small:** circumference of upper leg less than 16 inches (40 cm)

**Medium:** circumference of upper leg is between 16 - 20 inches (40-51 cm)

**Large:** circumference of upper leg is between 19-26 inches (49-66 cm)

**Extra Large:** circumference of upper leg is between 26-32 inches (66-81 cm)

### Additional Information

You can learn more about KAATSU and the KAATSU C3 here:

<https://KAATSU.com>

<https://www.facebook.com/KAATSU>

<https://twitter.com/KAATSUGlobal>

<https://twitter.com/originalbfr>

<https://www.KAATSUblog.com>

<https://www.instagram.com/KAATSUglobal>

[https://www.instagram.com/KAATSU\\_DoD](https://www.instagram.com/KAATSU_DoD)

<https://www.linkedin.com/company/kaatsu-global-inc./mycompany/>



The Science of KAATSU - How KAATSU Works

# Using KAATSU Equipment

## Introduction by Dr. Cory



[Dr. Cory On KAATSU, The Future of Exercise](#)



[Dr. Cory Introduces KAATSU—The Original BFR—For Improved Blood Circulation and Muscle Tone](#)



[Dr. Cory On How Does KAATSU Work?](#)



[Dr. Cory On Unboxing the KAATSU Cycle 2.0](#)



[Dr. Cory On KAATSU Full-Body Warm-up, Part 1](#)



[Dr. Cory On KAATSU Full-Body Warm-up, Part 2](#)

# Unboxing the KAATSU C3



[KAATSU C3 Unboxing](#)



# How KAATSU Can Be Used



KAATSU units have three preset pressure ranges in KAATSU Cycle mode. It is always recommended to start at the lowest pressure setting on your KAATSU device and then either repeat that setting or increase the pressure in each subsequent set.

Note: If you want to see specific improvement on an injured limb, only put the KAATSU Air Bands on that injured limb (e.g., do Single-limb KAATSU on your injured limb) and do 3-6 KAATSU Cycle sets on that limb only. Then you can do additional KAATSU Cycle sets on both legs, if you wish.

## KAATSU Cycle 3-Point Exercises

» Three Ways to Use the KAATSU C3

Sprinters, middle-distance athletes, and distance specialists train differently in the running community. They have different body types, training strategies, and mindsets. This also is true in rowing, swimming, cycling, speed skating, and many other sports.

Despite their different goals and focus, all competitive athletes – and people from various walks of life with different goals - can effectively and efficiently use the 3 basic levels of KAATSU:

- Level 1: KAATSU Cycle
- Level 2: KAATSU Performance
- Level 3: KAATSU Recovery

## Level 1: KAATSU Cycle

KAATSU Cycle mode is a convenient, easy-to-use, automatic mode. It requires no physical movement, although movement is often part of the equation. It can be done anywhere (e.g., office cubicles, airplane seats, sofas at home, desks at school), anytime (e.g., before or after workouts), on the arms and separately on the legs. Before a workout, stretching, an easy jog, or calisthenics with the KAATSU Cycle sets can be used.

During KAATSU Cycle mode, the KAATSU Air Bands remain connected to the KAATSU C3 device. The KAATSU Air Bands automatically inflate and deflate to pressures between 0 - 400 SKU. It is always recommended that you start with lower pressures on your first KAATSU Cycle set. The second and subsequent sets can be increasingly set to higher pressures. The KAATSU Cycle mode helps increase the vascular tissue elasticity and prepare the athlete for movement and a vigorous workout.

## Level 2: KAATSU Performance

The KAATSU Constant mode is ideal to help improve any kind of athletic performance. After inflating the KAATSU Air Bands to your optimal SKU pressure, untether (disconnect) your bands from the KAATSU equipment and work on your specific movements (e.g., running starts, swings of a golf club, boxing move, or flip turns in a pool).

Work yourself to muscular or technical failure. And then release your bands and repeat the movements without the KAATSU Air Bands. KAATSU Performance is the most intense form of vigorous exercise. You should always remain well hydrated before and during bouts of KAATSU Constant -and should always monitor your CRT (Capillary Refill Time). Immediately takeoff your bands if you feel lightheaded or uncomfortable.

## KAATSU DPIP

DPIP = Distance (or Duration) + Pace + Interval + Pressure

KAATSU Air Bands are inflated to an optimal SKU pressure so athletes can achieve a certain pace in a specific interval over a set distance or duration.

For example, a runner can run 8 x 400m at 2-minute intervals at a 1-minute pace with the KAATSU Air Band set at 100 SKU pressure. Swimmers can swim 8 x 100m at 1:45 intervals at a 1:20 pace with the KAATSU Air Band set at 100SKU pressure.

Once this initial KAATSU DPIP set can be repeatedly achieved at 100 SKU (keeping the distance, pace and interval constant), the runners and swimmers can then increase their SKU pressure to 110 SKU. After the second set at 110 SKU can be repeatedly achieved (keeping everything constant), the runners and swimmers can then increase their SKU pressure to 120 SKU. They can continue to increase the pressure - or alternatively, increase their distance (or duration) or pace, or decrease their interval. The SKU pressures used during the KAATSU 3-Point Exercises are dependent upon the appropriate SKU pressures.

## Level 3: KAATSU Recovery

The KAATSU Cycle mode is convenient and easy-to-use for both a pre-workout warm-up and a post-workout recovery. You can just sit and apply the KAATSU Air Bands to your arms and then your legs.

Some athletes prefer to do repeated KAATSU Cycle sets with the same SKU pressure. Other athletes prefer to start with a higher pressure and then decrease their pressure on subsequent sets. Other athletes prefer to do the opposite; they start with lower pressures and then increase their pressure on subsequent sets.

But in most cases, it is recommended that athletes start with lower pressures on their first KAATSU Cycle set. The second and subsequent sets can be increasingly set to higher pressures.

## Duration and Frequency

KAATSU can be effectively and efficiently used by patients of all ages and abilities. While many athletes and former athletes, prefer pushing themselves with the KAATSU Constant mode (sustained pressure in the KAATSU Air Bands), it is always recommended to use the KAATSU Cycle mode (repeated and gradually increasing pressure) in all cases and especially to start a KAATSU session.

KAATSU can be done as prehab before and rehab after surgery to help improve blood circulation, prevent muscle atrophy, and serve as a catalyst for production of HGH, IGF-1, NO, VEGF, t-PA, plasmalogens, ceramides, betaendorphins, adrenalin, testosterone, etc.

For optimal recovery, KAATSU sessions can be done up to 3 times per day (i.e., morning, afternoon, evening). If KAATSU is only performed once, it is often recommended to do it in the evening hours, closer to bedtime. But KAATSU can be done anytime anywhere at your convenience. The most important point is consistency of usage.

### KAATSU Sessions

Each KAATSU session can include up to 6 full sets on your arms and 6 full sets on your legs in KAATSU Cycle mode. It is not necessary to do this with every session, but 2-3 sets per day in KAATSU Cycle mode, three days per week is the minimum amount of KAATSU in order to see results, especially if you are under going rehabilitation.

Each set in KAATSU Cycle mode is approximately 5-6 minutes in duration. The KAATSU Air Bands inflate for 30 seconds and then deflate for 5 seconds, repeatedly and automatically a total of 8 times. This 30-seconds-on and 5-seconds-off is one step. There are 8 steps in one set. Each step provides incrementally higher pressure than the previous.



# KAATSU:

## Higher Pressures Over Heavy Weights

The highest pressures that can be obtained are generally among athletes between ages 18-30 and decrease for both younger and older individuals. Dr. Jim Stray-Gundersen explains, *"There is an overlay of 'physiologic' age that modifies the chronological age. That is, older athletes who may have stiff, damaged arteries, should use relatively low pressures. Keep in mind what one is trying to do with KAATSU is find your optimal amount of venous outflow impediment so that otherwise easy exercises become unsustainable."*

### Lifting weights

You can also feel sore for a while after every weight training session. Figuratively speaking, a strength and conditioning coach wants their athletes to lift more weights over more repetitions.

Let's imagine that those weights are rocks. Let's place those rocks in a bucket and ask the athlete to lift those imaginary buckets. If the coach wants to increase their weight of that bucket, he will add another rock. But at some point, the bucket will become full, and no more rocks can be added.

But what if those rocks were replaced by sand? Rocks are clearly heavier than sand. But if we filled the bucket with sand - tiny particles of little rocks - the overall weight of the sand-filled bucket will be even greater than a bucket filled with larger, heavier rocks.

### Rocks vs. Sand

Now imagine the coach wants to increase the weight of the bucket for his athlete. He cannot add another rock, but he can add some additional sand. The sand enables micro increases of weight in a way that rocks cannot. This can enable the coach to help his athlete very gradually and very minutely increase the weight and performance gains.

Now figuratively imagine, a clever coach used powder instead of sand in his imaginary weight training bucket. Powder is obviously lighter than sand and significantly lighter than rocks. But powder enables the coach to very precisely and gradually increase the weight and strength of his/her athlete.

Essentially, the sand and the powder provide a more precise means to very incrementally increase the strength and performance of an athlete. Using KAATSU is analogous to using rocks versus sand versus powder.

## Strength and Conditioning Coaching

KAATSU equipment enables strength and conditioning coaches to very precisely and MUCH more frequently increase the strength and size of their athletes in addition to their speed and stamina.

The preciseness and specificity that is enabled by KAATSU equipment is unparalleled. With KAATSU equipment, one pressure point increase is the figurative and literal amount that is equivalent to a single grain of sand or tiny bits of powder. For elite athletes who seek victory by being only incrementally faster, better, and stronger than their opponents, KAATSU – or the equivalent of adding sand or powder to your bucket - can be the incremental difference.

Likewise, for a stroke victim or a paraplegic who is striving to make only slight incremental improvements in their movements or strength, KAATSU enables the tiny increases in their Quality of Life. Performed regularly and ideally daily for less than 20 minutes per day, these incremental increases in performance and in the Quality of Life makes significant changes in the lives of healthy athletes and injured individuals.

Some younger and some male athletes frequently want to lift heavy weights with their KAATSU Air Bands on.<sup>1</sup> But it is not necessary to get bigger and stronger. The real key is two-fold:

- Do KAATSU Cycle sets before and during the strength-training session.
- Finish off with some KAATSU Constant performance movements.
- Increase the SKU pressure of the KAATSU Air Bands in the KAATSU Cycle and KAATSU Constant mode instead of adding resistance (weights) to your lifts<sup>2</sup>

1 As shown with New York Mets' Yoenis Céspedes in the ESPN report [here](#).

2 If you want to feel some resistance, you can use very light resistance (e.g., water bottles or light dumbbells in each hand) and/or contract your muscles in the both the positive and negative directions.

# KAATSU 3-Point Exercises For The Arms

KAATSU 3-Point Exercises for the Arms are a fundamental, convenient, easy-to-do KAATSU protocol for your arms, and is useful for people of all ages, athletic capabilities, and backgrounds.

These exercises were invented in the 1970s by Dr Sato and can be done almost anywhere, anytime. Simple, safe, and effective, these exercises have been performed during millions of individual KAATSU sessions among people of all ages and abilities with myriad physical conditions and ailments.

The KAATSU 3-Point Exercises can be performed using KAATSU Cycle mode (connected to the KAATSU C3) or KAATSU Constant mode (untethered or disconnected from the KAATSU C3).

## Arm Movements

The KAATSU 3-Point Exercises for the Arms involves

- Hand Clenches
- Biceps Curls
- Triceps Extensions [illustrations below].

Each set of exercises can be done 3-4 times each with a maximum of 20seconds rest between sets. Ideally, the number of repetitions for each exercise decreases before you reach muscular or technical failure\* (or fatigue).

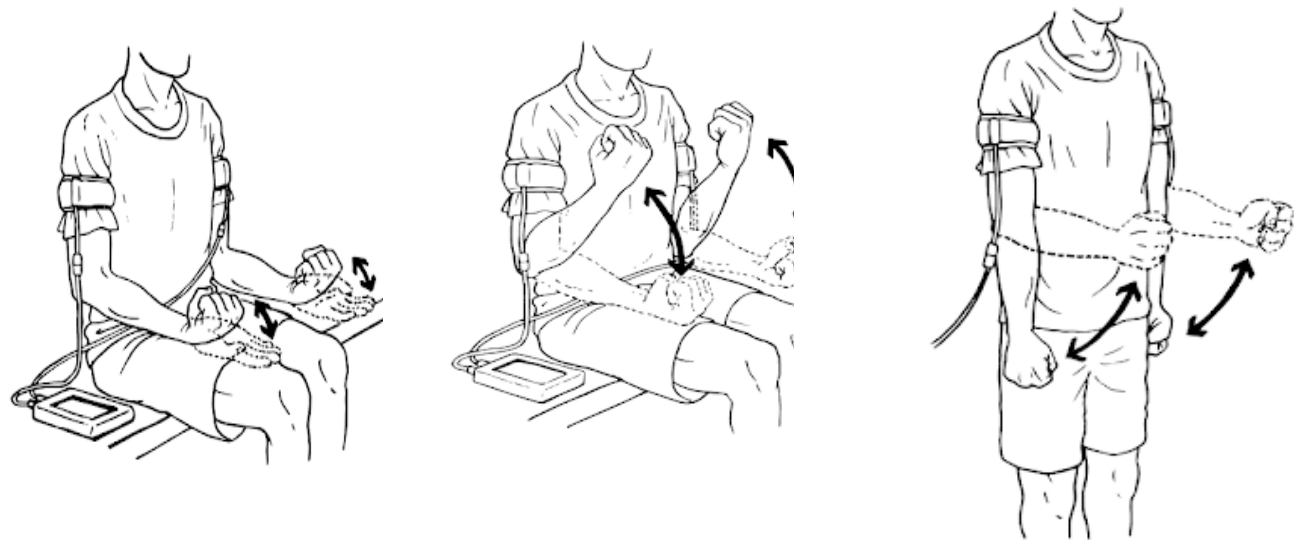
An ideal 3-Point Exercise workout would look like this:

- 25-30 repetitions on set #1
- 10-15 repetitions on set #2
- 5-10 repetitions on set #3.

Even if only 1-2 repetitions are completed on the last set, this failure signal sent to the central nervous system is one of the desired outcomes of KAATSU.

\* Technical failure is defined when you start to do improper technique (movement) due to an increasing sense of fatigue. At this point, the set should be stopped.

The KAATSU 3-Point Exercises for the Arms consist of the previously specified movements, but any movement can be beneficial while using the KAATSU C3 in Cycle mode (e.g., washing windows, squeezing tennis balls, playing the piano, typing on a laptop, writing letters, stretching).





# KAATSU 3-Point Exercises For The Legs

KAATSU 3-Point Exercises for the Legs are a fundamental, convenient, easy-to-do KAATSU protocol for your legs, for all ages, athletic capabilities, and backgrounds.

These exercises were invented in the 1970s by Dr Sato and can be done almost anywhere, anytime. Simple, safe, and effective, these exercises have been performed during millions of individual KAATSU sessions among people of all ages and abilities with myriad physical conditions and ailments.

The KAATSU 3-Point Exercises can be performed using KAATSU Cycle mode (connected to the KAATSU C3) or KAATSU Constant mode (untethered or disconnected from the KAATSU C3).

## Leg Movements

The KAATSU 3-point Exercises for the legs are either defined as Standard or Advanced.

### Standard 3-Point Exercises for Legs

The Standard KAATSU 3-point Exercises for the Legs includes:

- Toe Curls while sitting
- Toe Raises while sitting
- Heel Raises while sitting

These exercises are all performed while you are seated comfortably with good posture on a chair. In general, these exercises are preferred for older or less fit individuals or those just starting an exercise program or KAATSU.

The Toe Curls and Toe Raises can be done without shoes on. The Heel Raises can be performed while sitting.

Especially for Baby Boomers and adults who are being reconditioned back to a state of wellness through a simple exercise program, the KAATSU 3-Point Exercises for the Legs can consist of their entire KAATSU training program.

Each set of exercises can be done 3-4 times each with a maximum of 20 seconds rest between sets. Ideally, the number of repetitions for each exercise decreases before you reach muscular or technical failure\* (or fatigue).

An ideal 3-Point Exercise workout would look like this:

- 25-30 repetitions on set #1
- 10-15 repetitions on set #2
- 5-10 repetitions on set #3.

Even if only 1-2 repetitions are completed on the last set, this failure signal sent to the central nervous system is one of the desired outcomes of KAATSU.

\* Technical failure is defined when you start to do improper technique (movement) due to an increasing sense of fatigue. At this point, the set should stop.

### **Advanced 3-Point Exercises for Legs**

The Advanced KAATSU 3-point Exercises for the legs are performed by more fit or active individuals or for those individuals with more experience in KAATSU. The three Advanced Exercises includes:

- Standing Heel Raises
- Standing Leg Curls
- Non-lock Quarter Squats.

The Standing Heel Raises can be performed while standing and holding on to a chair or balancing against a wall. The Non-lock Quarter Squats (or chair touches) can be performed while bending the knees to touch a chair and then popping back up.

Ideally, the squats are non-lock (partial extension) so that your muscles are constantly engaged without rest while your knees are not locked straight (i.e., in a full extension). This will help build up fatigue more quickly.

Especially for Baby Boomers and adults who are being reconditioned back to a state of wellness through a simple exercise program, the KAATSU 3-point Exercises for the Legs can consist of the entire KAATSU training program.

Each set of exercises can be done 3-4 times each with a maximum of 20 seconds rest between sets. Ideally, the number of repetitions for each exercise decreases before you reach muscular or technical failure\* (or fatigue).

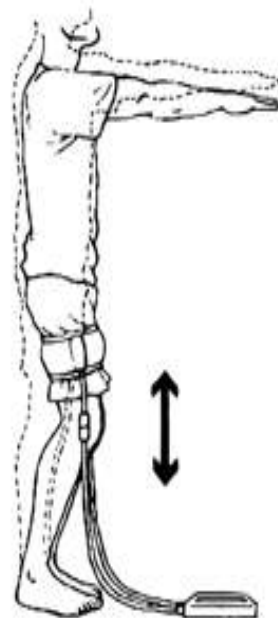
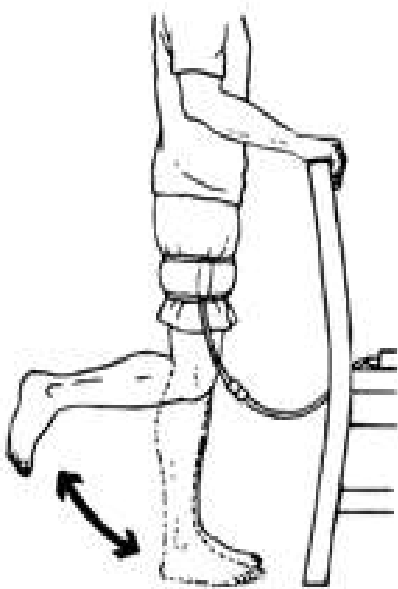
An ideal 3-Point Exercise workout would look like this:

- 25-30 repetitions on set #1
- 10-15 repetitions on set #2
- 5-10 repetitions on set #3.

Even if only 1-2 repetitions are completed on the last set, this failure signal sent to the central nervous system is one of the desired outcomes of KAATSU.

\* Technical failure is defined when you start to do improper technique (movement) due to an increasing sense of fatigue. At this point, the set should be stopped.

The KAATSU 3-Point Exercises for your Legs include the previously specified movements, but any movement is beneficial while using the KAATSU C3 in Cycle mode (e.g., walking, stretching, spinning on a stationary bike, balancing on one foot).





**Dual-limb KAATSU**

Dual-limb KAATSU is when two KAATSU Air Bands are simultaneously placed on both limbs with the same pressure. This is the standard application of KAATSU.

If one limb is stronger or weaker than the other limb or is injured, and you want to do Dual-limb KAATSU, you can place less pressure on one side compared to the other.



**Single-limb KAATSU**

Single-limb KAATSU is the use of the KAATSU Air Bands on only one limb at a time. Single-limb KAATSU enables users to focus on rehabilitation, balance,athletic performance, strength, or recovery on one limb at a time.

Since 1973, KAATSU inventor Dr. Yoshiaki Sato has performed and taught Single-limb KAATSU for a variety of purposes. Single-limb KAATSU is most often used during physical therapy, rehabilitation, or post-surgery recovery. However, Single-limb KAATSU is also used for limited KAATSU athletic performance drills under low pressures when one limb is notably weaker than the other limb.



This photo on left shows Dr. Sato teaching Single-limb KAATSU to coaches and trainers for use by elite athletes for specific athletic performance drills, correcting imbalances in limb strength and functional movement, and for Single-limb recovery (e.g., when a baseball pitcher uses KAATSU Cycle mode for recovery after intensely pitching in a game).





This photo shows Dr. Sato doing Single-limb KAATSU on Harvard Medical School Professor of Neurology Peter Lansbury. Similar to Dual-limb KAATSU, Single-limb KAATSU always starts with low-pressure sets in the KAATSU Cycle mode before incrementally increasing the pressure.

In the above photo, Dr. Sato is doing Single-limb KAATSU Cycle sets with an older Japanese woman who is recovering from knee surgery.

The KAATSU Plug enables the Single-limb option on the KAATSU C3. Simply place the Plug in one of the Connector Tube outlet holes while the other KAATSU Air Band and Connector Tube are used normally. Editor's Note: use the photo from the earlier section of the manual on how to operate the KAATSU C3.

2010 Olympic silver medalist Todd Lodwick suffered a shoulder injury from a ski jump crash in January 2014. He used Single-limb KAATSU to rehabilitate from a ski jump accident and recovered quickly enough to heal in time for the games. Not only did he serve as the USA Olympic Team flag bearer, but he also competed in the Nordic combined event a mere 40 days after his injury.

# KAATSU Yoga and Stretching



Search online or Google “KAATSU” - most links will direct you to muscle building and strength training videos and websites. But KAATSU can produce many more results than developing muscle hypertrophy. KAATSU is much, much more than feeling pumped and building your biceps and triceps, pecs, and deltoids.

Greater mobility, improved agility, greater flexibility, and better balance are also valuable benefits of doing KAATSU.

Do KAATSU slowly and gently using the KAATSU C3 in Cycle mode and simply stretch,do yoga or Pilates, and move your body purposefully.



# KAATSU Intense Aerobic Training



KAATSU can be very intense if you run, cycle, row, swim or do any kind of high intense interval training, especially if you use the KAATSU Constant mode that keeps constant pressure in the KAATSU Air Bands.

Jumping rope, burpees, Zumba, dancing, agility work, and repeated sprints are examples of exercises with KAATSU that can be intense and difficult.

If you want to do such workouts with the KAATSU C3 using KAATSU Constant mode, these are the proper protocols to follow:

- Warm-up using the KAATSU Cycle mode for at least 5-10 minutes
- Be very well hydrated
- Use a conservative (i.e., low) pressure
- Become very experienced with KAATSU use
- Only use the arm bands or the leg bands at one time; do not simultaneously use all four KAATSU Air Bands on your limbs
- If you start to feel lightheaded, immediately stop and remove the KAATSU Air Bands
- Use KAATSU Constant mode for 10 minutes or less, or as advised by your certified KAATSU Specialist
- Limit your use of the KAATSU Constant mode to 10 minutes





# Skill Acquisition with KAATSU

People think KAATSU is mostly focused on building muscle. But experienced KAATSU users know that speed and stamina can also be improved with KAATSU, using a completely different set of protocols.

The most experienced users of KAATSU know that technique and skill can also be enhanced with KAATSU. This can range from a baseball pitcher throwing a ball or a young musician practicing on their instrument.



Purposeful, mindful movements with KAATSU can lead to a radical and new kind of skill acquisition that is explained in the following video by Olympic coach and former world record holder Jonty Skinner, an International Swimming Hall of Fame coach and an influential leader in the competitive swimming community.



Skinner is a scientifically minded, analytically oriented coach whose career included 8 years as USA Swimming's Director of National Team Technical Support covering the 2000 Sydney, 2004 Athens, and 2008 Beijing Olympic Games. In this position, Skinner was charged with organizing the testing, monitoring, and analyses of national and Olympic team swimmers.

He also coached three separate times at the University of Alabama (1978-1981; 1988-1994, 2012-2019) in one of the swimming world's most prestigious swimming programs.

Skinner is described by Flo swimming, *"He continues to apply his analytical mind towards using cutting-edge scientific methods on his swimmers. In a sport where races are won and lost by hundredths of seconds, Skinner is always searching for new and creative ways to get his swimmers to move faster through the water."*

[Jonty Skinner Talks About Skill Acquisition With KAATSU](#)



## KAATSU Isometrics

One of the most surprising places to realize the benefits of KAATSU is an economy-class seat in an airplane. Similarly, the benefits of KAATSU can be realized while you are sitting down to watch a movie.

In both cases, you can do isometric exercises by repeatedly pushing your arms against an immobile armrest or placing the palms of your hands and pushing against one other. These isometric exercises engage your muscles without movement and nearly eliminate any wear and tear on your joints.

There are many kinds of isometric exercises that you can do with KAATSU Air Bands on either your arms or your legs:



- sit down and extend your legs out and hold while contracting your muscle
- wall squats
- Heel raise and hold
- Stand up and lift one leg and hold
- Bicep curls and hold while contracting your muscle
- Triceps extension and hold while contracting your muscle
- Grasping your hands together and pulling apart
- Hold yoga poses
- Planks
- Chest presses against a wall
- Holding a push-up position
- Lying down with your legs straight and your arms at your side while holding your head off the ground

Isometrics engages more muscle fibers than the movements with normal movement - and like KAATSU, can be done anywhere anytime while pushing or pulling against an immobile object or another body part. KAATSU augments the benefits while presenting fewer risks than traditional exercises with movement.

You can also work on a muscle from different angles and with different pressures or different degrees of tension. During isotonic and isokinetic movements, peak tension is only reached during a very small portion of the movement. But by holding a specific position under maximum tension, especially with KAATSU Air Bands on, the tension - and benefits - increase.

Additionally, and contrary to common thinking, isometrics can recruit the most fast-twitch muscle fibers during training. That is, you can get faster by not moving if your time under tension is maximized.

Additionally, isometric exercises can be effective at improving your cardiovascular fitness. During isometric exercises, the capillaries, and veins (which hold 70% of your total blood volume in your body) are squeezed by the muscle fibers. This temporary and moderate stress forces your body to adapt. It responds by building more blood vessels and improving the elasticity in your blood vessels.

If you are waiting in a car and have your KAATSU equipment with you, place your KAATSU Air Bands on your arms or legs, and do some creative isometric exercises while just sitting. You can spend your time efficiently while building strength, speed, and stamina with KAATSU isometrics.



*Dr. Cory On Using KAATSU the Original BFR Anywhere Anytime*

# KAATSU for Upper Body Strength

Whether you have little or plenty of time for a workout, KAATSU is ideal for tactical athletes (soldiers) and first responders (law enforcement officers, healthcare workers, and emergency department personnel) to gain upper body strength over the short or long term.

KAATSU can be done either as a stand-alone modality without weights or resistance equipment, or to augment your traditional weight training program.

Key protocols to quickly gain the benefits of KAATSU and gain strength in any of these cases (i.e., little time, plenty of time, with or without equipment) are the following:

## Workout Design:

1. Warm-up or stretch for several sets in KAATSU Cycle mode
2. KAATSU 3-Point Arm Exercises in the KAATSU Cycle mode
3. Strength training with body weight or isometric exercises in the KAATSU Constant mode
4. Strength training with light weights in the KAATSU Constant mode (optional)
5. Traditional weightlifting (optional)
6. Warm-down with several sets in KAATSU Cycle mode

## Key Points:

- Be well hydrated – drink an entire water bottle before your workout begins and remain well hydrated throughout your workout.
- Stretch and do your normal warm-up while in the KAATSU Cycle mode (i.e., when the bands are inflated for 30 seconds followed by 5 seconds of deflation).
- Start with a low pressure on your first set in the KAATSU Cycle mode; you can gradually increase the pressure as you progress through your workout.
- Work first on your small muscle groups and then move to your larger muscle groups with KAATSU.

## KAATSU 3-Point Arm Exercises

### Exercise #1:

- Do sets of very slow Hand Clenches, opening and closing your hands to work on the forearms.
- Continue the Hand Clenches while the pressure is on for 30 seconds.
- Rest while the pressure is off for 5 seconds.
- You can continue the Hand Clenches for the entire 5-6 minute set in the KAATSU Cycle mode or you can switch to other exercises as you wish.
- Alternative: you can stretch your upper body during the first full set in KAATSU Cycle mode if you prefer.

### Exercise #2:

- Do sets of very slow Biceps Curls while you contract your biceps in both the positive (up) and negative (down) directions.
- Continue the Biceps Curls while the pressure is on for 30 seconds.
- Rest while the pressure is off for 5 seconds.
- You can continue the Biceps Curls for the entire KAATSU Cycle set or you can switch to other exercises as you wish.

### Exercise #3:

- Do sets of very slow Triceps Extensions or Triceps Dips (using a chair or bench).
- Continue the Triceps Extensions while the pressure is on for 30 seconds.
- Rest while the pressure is off for 5 seconds.
- You can continue the Triceps for the entire 5-6 minute set in the KAATSU Cycle mode or you can switch to other exercises as you wish.





### Body weight or Isometric Exercises:

- After the series of Hand Clenches, Biceps Curls, and Triceps Extensions, if you have some additional time, switch to the KAATSU Constant mode and untether (disconnect) the bands from the KAATSU equipment.
- Do body weight exercises (e.g., push-ups or dips or with TRX Straps) or do a series of isometric pushing and pulling exercises. Failure should come within 5 – 10 minutes.
- Go to muscular failure (full fatigue) with each set of exercises.
- For example, you can inflate the KAATSU Air Bands to 200 SKU (or a higher or lower pressure whatever is comfortable for you).
- Do 4 sets of push-ups in the following manner:
  - o Set #1: Do slow push-ups (3-second count going down and 3-second count going up) until failure. Rest no more than 20 seconds.
  - o Set #2: Do slow push-ups until failure. Rest no more than 20 seconds.
  - o Set #3: Do slow push-ups until failure. Rest no more than 20 seconds.
  - o Set #4: Do fast or normal push-ups until failure.

### KAATSU Strength Training (optional):

- If you have time after the body weight and isometric exercises, grab some light weights (i.e., 5 lbs. or 3 kg or less) or resistance bands and do any kind of weightlifting sets.
- Do 4 sets using the KAATSU Constant mode in following manner:
  - Set #1 (*priming the pump*). Do repetitions to near exhaustion. Rest no more than 20 seconds.
  - Set #2 (*going to failure*): Do repetitions to muscle failure. The number of repetitions to failure should be fewer than the number of repetitions in set #1. Rest no more than 20 seconds.
  - Set #3 (*going to the max*): Do repetitions to complete muscle failure. The number of repetitions to failure should be fewer than the number of repetitions in set #2. Rest no more than 20 seconds.
  - Set #4 (*reaching full potential*): Do 1-3 repetitions until failure.





### **Traditional Weight Training (optional):**

- If you have time, grab light weights (i.e., 5 lbs. or 3 kg or less) or resistance bands and do any kind of weightlifting sets.
- Do 4 sets in the KAATSU Constant mode in following manner:
  - Set #1: Do repetitions to near exhaustion. Rest no more than 20 seconds.
  - Set #2: Do repetitions to muscle failure. The number of repetitions to failure should be fewer than the number of repetitions in set #1. Rest no more than 20 seconds.
  - Set #3: Do repetitions to complete muscle failure. Rest no more than 20 seconds.
  - Set #4: Do 1-3 repetitions until failure.

### **Warm-down:**

- Reconnect the KAATSU Air Bands to the KAATSU C3.
- Do 2-3 sets in the KAATSU Cycle mode at low-pressure levels.

# KAATSU Upper Body Exercises

## Upper Body Exercises for Muscle Hypertrophy (arms, chest, back)

1. KAATSU Arm Bands with hand clenches and biceps curls
2. KAATSU Arm Bands with resistance bands (forwards + sideways)
3. KAATSU Arm Bands with push-ups
4. KAATSU Arm Bands with TRX body weight exercises
5. KAATSU Arm Bands with bench press

## Young Female for Summer Bikini Body (arms, chest, back)

1. KAATSU Arm Bands with standing push-ups
2. KAATSU Arm Bands with isometric pushes #1 (chest)
3. KAATSU Arm Bands with isometric pushes #2 (triceps)
4. KAATSU Arm Bands with side bends with lightweights
5. KAATSU Arm Bands with upright rows

## Active Baby Boomer (50+ years old) for Muscle Tone and Improved BMI

1. KAATSU Arm Bands with kneeling push-ups
2. KAATSU Arm Bands with isometric pushes #1 (chest)
3. KAATSU Arm Bands with resistance band stretch #2 (triceps)
4. KAATSU Arm Bands while walking and biceps curls with lightweights
5. KAATSU Arm Bands with upright rows with water bottles

## De-Conditioned Sedentary Office Worker for Muscle Tone and Improved BMI

1. KAATSU Arm Bands while writing emails
2. KAATSU Arm Bands while talking on the telephone
3. KAATSU Arm Bands with isometric flexing of arms
4. KAATSU Arm Bands with hand clenches
5. KAATSU Arm Bands with upright rows with water bottles

## Inactive Older Individual for Balance and Range of Motion

1. KAATSU Arm Bands with shoulder press
2. KAATSU Arm Bands with shoulder stretches (deltoids)
3. KAATSU Arm Bands with shoulder stretches (pecs + triceps)
4. KAATSU Arm Bands while widening fingers and closing/opening hand
5. KAATSU Arm Bands while rolling ball on palm of hands

## Skin Elasticity Exercises or Stress Relief Movements

1. KAATSU Arm Bands while doing forward and backward shoulder rolls
2. KAATSU Arm Bands while stretching shoulders by reaching one arm across the front of the chest and pulling it with the other arm
3. KAATSU Arm Bands while repeatedly saying the vowels (“...A-E-I-O-U...”)
4. KAATSU Arm Bands while moving head forwards, backwards, and sideways as neck is flexed
5. KAATSU Arm Bands while keeping head straight and moving eyes left and right, upwards, and downwards.



# KAATSU for Lower Body Strength

Whether you have little or plenty of time for a workout, KAATSU is ideal for tactical athletes (soldiers) and first responders (law enforcement officers, healthcare workers, emergency department personnel) to gain lower body strength over the short or long term.

KAATSU can be done either as a stand-alone modality without weights or resistance equipment, or to augment your traditional weight training program.

Key protocols to quickly gain the benefits of KAATSU and gain strength in any of these cases (i.e., little time, plenty of time, with or without equipment) are the following:

## **Workout Design:**

1. Warm-up or stretch for several sets in the KAATSU Cycle mode
2. KAATSU 3-Point Leg Exercises in the KAATSU Cycle mode
3. Strength training with body weight or isometric exercises in the KAATSU Constant mode
4. Strength training with light weights in the KAATSU Constant mode (optional)
5. Traditional weightlifting (optional)
6. Warm-down with several sets in the KAATSU Cycle mode

## **Key Points:**

- Be well hydrated – drink an entire water bottle before your workout begins and remain well hydrated throughout your workout.
- Stretch and do your normal warm-up while in the KAATSU Cycle mode (i.e., when the bands are inflated for 30 seconds followed by 5 seconds of deflation).
- Start with a low pressure on your first set in the KAATSU Cycle mode; you can gradually increase the pressure as you progress through your workout.
- Work first on your small muscle groups and then move to your larger muscle groups with KAATSU.

## KAATSU 3-Point Leg Exercises

### Exercise #1: Standing Heel Raises

- Do sets of very slow Standing Heel Raises.
- Continue the Standing Heel Raises while the pressure is on for 30 seconds.
- Rest while the pressure is off for 5 seconds.
- You can continue the Standing Heel Raises for the entire 5-6 minute set in the KAATSU Cycle mode or you can switch to other exercises as you wish.
- Alternative: you can stretch your lower body during the first full KAATSU Cycle mode set if you prefer.

### Exercise #2: Standing Leg Curls

- Do sets of very slow Standing Leg Curls while you contract your hamstrings in both the positive (up) and negative (down) directions.
- Continue the Standing Leg Curls while the pressure is on for 30 seconds.
- Rest while the pressure is off for 5 seconds.
- You can continue the Standing Leg Curls for the entire set in the KAATSU Cycle mode or you can switch to other exercises as you wish.

### Exercise #3: Quarter Squats

- Do sets of very slow non-lock (partial) Quarter Squats.
- Continue the Quarter Squats while the pressure is on for 30 seconds.
- Rest while the pressure is off for 5 seconds.
- You can continue the Quarter Squats for the entire 5-minute set in the KAATSU Cycle mode or you can switch to other exercises as you wish.



### Bodyweight, Aerobic or Isometric Exercises:

- After the series of Standing Heel Raises, Standing Leg Curls, and Quarter Squats, if you have some additional time, switch to the KAATSU Constant mode and untether (disconnect) the bands from the KAATSU equipment.
- Do additional types of squats or Mountain Climbers or Burpees or Wall Sits. Failure should come within 5 – 10 minutes.
- For example, you can inflate the KAATSU Air Bands to 250 SKU (or a higher or lower pressure whatever is comfortable for you).
- Do 4 sets of burpees, resting no more than 20 seconds between each set.
- Go to muscular failure (full fatigue) within each set.

### KAATSU Strength Training (optional):

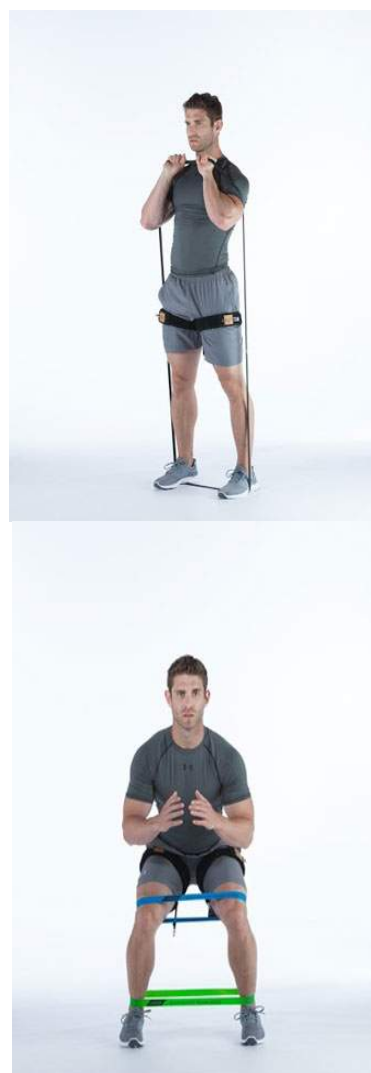
- If you have time after the bodyweight, aerobic and isometric exercises, do any kind of weightlifting sets.
- Do 4 sets in the KAATSU Constant mode in following manner:
  - Set #1 (*priming the pump*). Do repetitions to near exhaustion. Rest no more than 20 seconds.
  - Set #2 (*going to failure*): Do repetitions to muscle failure. The number of repetitions to failure should be fewer than the number of repetitions in set #1. Rest no more than 20 seconds.
  - Set #3 (*going to the max*): Do repetitions to complete muscle failure. The number of repetitions to failure should be fewer than the number of repetitions in set #2. Rest no more than 20 seconds.
  - Set #4 (*reaching full potential*): Do 1-3 repetitions until failure.

**Traditional Weight Training (optional):**

- If you have time, do any kind of weightlifting sets with light weights or low resistance:
- Do 4 sets in the KAATSU Constant mode in following manner:
  - Set #1: Do repetitions to near exhaustion. Rest no more than 20 seconds.
  - Set #2: Do repetitions to muscle failure. The number of repetitions to failure should be fewer than the number of repetitions in set #1. Rest no more than 20 seconds.
  - Set #3: Do repetitions to complete muscle failure. Rest no more than 20 seconds.
  - Set #4: Do 1-3 repetitions until failure.

**Warm-down:**

- Reconnect the KAATSU Air Bands to the KAATSU C3.
- Do 2-3 sets in KAATSU Cycle mode at low-pressure levels.



# KAATSU Lower Body and Core Exercises

## Lower Body Exercises for Muscle Hypertrophy (quadriceps, hamstrings, calves)

1. KAATSU Leg Bands with non-lock quarter squats
2. KAATSU Leg Bands with pistol squats
3. KAATSU Leg Bands with leg press
4. KAATSU Leg Bands with inverted heel raises
5. KAATSU Leg Bands on rowing machine

## Young Female for Summer Bikini Body (quadriceps, glutes, hamstrings)

1. KAATSU Leg Bands with non-lock quarter squats
2. KAATSU Leg Bands with standing leg curls
3. KAATSU Leg Bands with jump rope
4. KAATSU Leg Bands while jogging on treadmill
5. KAATSU Leg Bands on stationary bicycle

## Young Female for Summer Bikini Body (core)

1. KAATSU Arm Bands with planks
2. KAATSU Leg Bands with planks
3. KAATSU Leg Bands with water bottles, moving both arms in asymmetric manner, and standing on one leg
4. KAATSU Leg Bands while walking with a book on head
5. KAATSU Leg Bands while squatting on a half Bosu ball

## **Active Baby Boomer (50+) for Muscle Tone, Improved BMI and Stronger Core**

1. KAATSU Leg Bands while walking with book on head
2. KAATSU Leg Bands with standing leg curls (without holding wall or chair)
3. KAATSU Leg Bands with leg lifts
4. KAATSU Leg Bands while walking on treadmill
5. KAATSU Leg Bands on horizontal leg curls (while laying down)
6. KAATSU Leg Bands while walking in sand without shoes
7. KAATSU Leg Bands while doing standing leg curls
8. KAATSU Leg Bands with water bottles, moving both arms in asymmetric manner, and standing on one leg
9. KAATSU Leg Bands while standing on a half Bosu ball

## **De-Conditioned Sedentary Office Worker for Muscle Tone and Improved BMI**

1. KAATSU Leg Bands while walking with water bottles
2. KAATSU Leg Bands with standing leg curls (while holding onto wall or chair)
3. KAATSU Leg Bands with sitting leg extensions
4. KAATSU Leg Bands while stretching heels on inverted board
5. KAATSU Leg Bands on horizontal leg curls (while laying down)
6. KAATSU Leg Bands while walking in office
7. KAATSU Leg Bands with water bottles in each hand, standing on one leg
8. KAATSU Leg Bands while walking with a book on head
9. KAATSU Leg Bands while bending to the right and left side

## **Inactive Older Individual for Balance and Range of Motion**

1. KAATSU Leg Bands while standing up and sitting down
2. KAATSU Leg Bands while moving body from horizontal to vertical
3. KAATSU Leg Bands with leg contractions
4. KAATSU Leg Bands with toe raises
5. KAATSU Leg Bands with sitting heel raises
6. KAATSU Leg Bands while walking
7. KAATSU Leg Bands while sitting up and extending both arms up in air
8. KAATSU Leg Bands while standing on one leg (holding a chair for balance)
9. KAATSU Leg Bands while standing straight and then bending forward
10. KAATSU Leg Bands while bending to the right and left side

## Core Exercises for Muscle Hypertrophy

1. KAATSU Arm Bands with planks
2. KAATSU Leg Bands with planks
3. KAATSU Leg Bands with very light kettle bells, moving both arms in asymmetric manner, and standing on one leg
4. KAATSU Leg Bands, 3 sets of upward leg extensions (each leg) on side
5. KAATSU Leg Bands, 3 sets of straight leg lifts (both legs) while on back





# KAATSU for Core Strength

Whether you have little or plenty of time for a workout, KAATSU is ideal for tactical athletes (soldiers) and first responders (law enforcement officers, healthcare workers, emergency department personnel) to gain core strength over the short and long term.

KAATSU can be used as a stand-alone modality without weights or resistance equipment, or to augment your traditional weight training program.

Key protocols to quickly gain the benefits of KAATSU and gain core strength in any of these cases (i.e., little time, plenty of time, with or without equipment) are the following:

## Workout Design:

1. Warm-up or stretch with KAATSU Cycle sets
2. KAATSU 3-Point Arm Exercises in the KAATSU Cycle mode
3. KAATSU 3-Point Leg Exercises in the KAATSU Cycle mode
4. Core work in the KAATSU Constant mode

## Key Points:

- Be well hydrated – drink an entire water bottle before your workout begins and remain well hydrated throughout your workout.
- You can gradually increase the pressure as you progress through your workout.

## KAATSU 3-Point Core Exercises

### Exercise #1: Balancing

- Do 3 sets of balancing on one foot.
- After balancing on one foot 3 times, balance on the other foot 3 times.
- If balancing is too easy, grab 2 water bottles and move your arms in a rhythmic asymmetric manner.

## Exercise #2: Walking with a Book

- Balance a book on your head and pace for 3 minutes walking with good posture.
- If balancing is too easy, do walking lunges while balancing with the book on your head.

## Exercise #3: Planks

- Hold planks in the KAATSU Cycle mode.
- Hold the plank position for 30 seconds while the pressure is on.
- Rest while the pressure is off for 5 seconds.

## Core Exercises:

- Untether (disconnect) the leg bands from the KAATSU C3 unit and switch to the KAATSU Constant mode.
- Set your optimal SKU pressure.
- Do additional planks, crunches, sit-ups or use various abdominal machines. Failure should come within 10 minutes.



# KAATSU for Stamina

Whether you have little or plenty of time for a workout, KAATSU is ideal for tactical athletes (soldiers) and first responders (law enforcement officers, healthcare workers, emergency department personnel) to gain stamina over the short and long term.

KAATSU can be used as a stand-alone modality or to augment your traditional running, cycling, spinning, rowing, or HIIT (High Intensity Interval Training) program.

Key protocols to quickly gain the benefits of KAATSU and gain stamina in any of these cases (i.e., little time, plenty of time, with or without equipment) are the following:

## Workout Design:

1. Stretch, warm-up, or do KAATSU 3-Point Leg Exercises in the KAATSU Cycle mode
2. Cardio work in the KAATSU Constant mode
3. Traditional cardio work (optional)
4. Warm-down with several sets in KAATSU Cycle mode

## Key Points:

- Be well hydrated – drink an entire water bottle before your workout begins and remain well hydrated throughout your workout.
- Stretch and do your normal warm-up while in the KAATSU Cycle mode (i.e., when the bands are inflated for 30 seconds followed by 5 seconds of deflation).
- Start with a low pressure on your first set.
- You can gradually increase the pressure as you progress through your workout.

## KAATSU 3-Point Leg Exercises:

- Warm-up, stretch, or do a set of Standing Heel Raises, a set of Standing Leg Curls, and a set of Non-lock Squats in the KAATSU Cycle mode.

**KAATSU Cardiovascular:**

- Untether from your KAATSU device and set your optimal SKU pressure.
- Walk, jog, run, spin, cycle, row in the KAATSU Constant mode at a solid pace for 10 – 15 minutes.
- As you get in better shape, you can maintain the same pace, but increase your SKU pressure level.
- Over time, you will be able to increase your pace at the same SKU pressure level.
- Alternatively, you can increase your distance with the same or increased SKU pressure level.

**Traditional Cardio Work (Optional):**

- Remove your leg bands, stretch, and hydrate a bit, and then do some faster pace or longer running without your leg bands on.
- As you continue KAATSU, test yourself and time yourself over certain distances to monitor your improvement.

**Warm-down:**

- Reconnect the KAATSU Air Bands to the KAATSU C3.
- Do 2-3 sets in the KAATSU Cycle mode at low-pressure levels.



# KAATSU for Speed

Whether you have little or plenty of time for a workout, KAATSU is ideal for tactical athletes (soldiers) and first responders (law enforcement officers, healthcare workers, emergency department personnel) to improve speed and fast-twitch movements over the short or long term.

KAATSU can be used as a stand-alone modality or to augment your traditional speed work.

Key protocols to quickly gain the benefits of KAATSU and gain speed in any of these cases (i.e., little time or plenty of time) are the following:

## Workout Design:

1. Stretch, warm-up, or do KAATSU 3-Point Leg Exercises in the KAATSU Cycle mode
2. Speed work in the KAATSU Constant mode
3. Traditional speed work
4. Warm-down with several sets in the KAATSU Cycle mode

## Key Points:

- Be well hydrated – drink an entire water bottle before your workout begins and remain well hydrated throughout your workout.
- Stretch and do your normal warm-up while in the KAATSU Cycle mode (i.e., when the bands are inflated for 30 seconds followed by 5 seconds of deflation).
- Start with a low pressure on your first set.
- You can gradually increase the pressure as you progress through your workout.



**KAATSU 3-Point Leg Exercises:**

- Stretch, warm-up or do a set of Standing Heel Raises, a set of Standing Leg Curls, and a set of Non-lock Squats in the KAATSU Cycle mode.

**KAATSU Cardiovascular:**

- Untether from your KAATSU device and set your optimal SKU pressure.
- Warm-up with jogging and gradually faster runs in the KAATSU Constant mode.
- Do a series of high-pace sprints or high-intensity interval training as your body can tolerate.
- Over time, you will be able to increase your pace with the same SKU pressure level.
- Alternatively, you can increase the number of sprints with the same or increased SKU pressure level.

**Traditional Speed Work**

- Remove your leg bands, stretch, and hydrate a bit. Then do some additional sprints without your leg bands on.
- As you continue KAATSU, test yourself and time yourself over certain distances to monitor your improvement.

**Warm-down:**

- Reconnect the KAATSU Air Bands to the KAATSU C3.
- Do 2-3 sets in the KAATSU Cycle mode at low-pressure levels.

# KAATSU for Technique

Whether you have little or plenty of time for a workout, KAATSU is ideal for tactical athletes (soldiers) and first responders (law enforcement officers, healthcare workers, emergency department personnel) to improve techniques, agility, and mobility.

Key protocols to quickly gain the benefits of KAATSU are the following:

## Workout Design:

1. Stretch, warm-up, or do KAATSU 3-Point Arm or Leg Exercises in the KAATSU Cycle mode
2. Technique work in the KAATSU Constant mode
3. Traditional technique work without KAATSU
4. Warm-down with several sets in the KAATSU Cycle mode

## Key Points:

- Be well hydrated – drink an entire water bottle before your workout begins and remain well hydrated throughout your workout.
- Do your normal warm-up while in the KAATSU Cycle mode (i.e., when the bands are inflated for 30 seconds followed by 5 seconds of deflation).
- Start with a low pressure on your first set.

## KAATSU 3-Point Exercises:

- Stretch, warm-up or do a set of KAATSU 3-Point Arm or Leg Exercises (depending on the focus of your workout) in the KAATSU Cycle mode.

## KAATSU Technique Work:

- Untether from your KAATSU device and set your optimal SKU pressure.
- Practice drills, movements, or scenarios in the KAATSU Constant mode.
- Do a series at increasingly higher SKU pressure levels as your body can tolerate without a degradation of proper form and technique.
- If your form or technique is not proper, reduce your SKU pressure level.

## Traditional Technique Work

- Remove your KAATSU Air bands, stretch and hydrate a bit, and then do additional technique work without your bands on.
- It is during this traditional work where improvement will be seen and appreciated.

### Warm-down:

- Reconnect the KAATSU Air Bands to the KAATSU C3.
- Do 2-3 sets in the KAATSU Cycle mode at low-pressure levels.



# KAATSU At Home – Cardio, Mobility, and Functional Movement Workouts

Laurel Kuzins is a KAATSU Functional Mobility Specialist from Santa Monica, California who created a series of 45 to 50-minute workouts called KAATSU At Home.

These workouts are aimed at competitive athletes and active adults. You can modify her workouts and the specific exercises as necessary.

You can use the KAATSU C3 in Cycle mode for these workouts. We suggest starting at low pressures.

You can find Laurel's KAATSU At Home videos on our blog [here](#).



# KAATSU for Distance Runners



KAATSU is used by marathon, distance, and trail runners for recovery, rehabilitation, and improvement in strength, speed, and stamina.

## Top 5 Benefits

1. KAATSU recovery protocols help to effectively remove lactate after a strenuous workout or competition.
2. KAATSU performance protocols can be used for a quick warm-up before vigorous training or competition.
3. KAATSU strength training protocols enables muscles to achieve maximum effort without the use of heavy weights or additional workout equipment.
4. The KAATSU Cycle mode and the KAATSU Constant mode stimulate the secretion of a significant amount of human growth hormone within a short amount of time.
5. KAATSU performance protocols enable race-pace discomfort to be effectively and safely replicated in training.

## Runners using KAATSU

American and Japanese Olympic gold, silver, and bronze medalists, weekend warriors, triathletes, multi-sport athletes, and ultra marathon runners use KAATSU for post-workout and post-competition recovery.



# KAATSU For Explosive Strength and Vertical Leap Increase

Athletes in basketball, football, soccer, rugby, volleyball, and many other sports focus on explosiveness, acceleration, agility, and their vertical leap abilities. This is where use of the KAATSU Cycle and KAATSU Constant modalities can make incremental differences and help athletes reach their true potential.

## Vertical Leap KAATSU Protocols

1. Do 1-3 sets in the KAATSU Cycle mode on the arms at progressively higher pressures to warm-up or work on the arms (optional if time is limited). Remove KAATSU Air Bands from the arms and place KAATSU Air Bands on the legs.
2. Do 6 sets in the KAATSU Cycle mode on the legs at progressively higher pressures to warm up the legs.
3. During the first 3 KAATSU sets, simply stretch or walk around. During the last 3 KAATSU sets, begin some easy and light jumping.
4. Remove KAATSU Air Bands from your legs.
5. Do some aggressive jumping or vertical leap drills.
6. Place KAATSU Air Bands on your legs at an appropriate pressure in KAATSU Constant mode. Do vertical leap drills until legs are burned out.
7. Remove your bands, rehydrate, and stretch a bit.
8. After fully recovering, do a few more vertical leap drills to complete working on explosiveness and vertical leap.



# Slimming Your Legs With KAATSU

Some individuals are initially attracted to KAATSU for cosmetic reasons and weight loss goals. They simply want to lose weight or tone their bodies in some way.

Thigh muscles can be strengthened, and legs can be slimmed (toned) for overweight people or those who want to tighten up loose skin in their lower body. To strengthen your inner thighs and tone your quadriceps and hamstrings, you can spin easily on a stationary bicycle or casually do KAATSU Walking for 10-20 minutes using the KAATSU Cycle mode on a low pressure.

Alternatively, you can do these following exercises 10 - 20 times each.

## Exercise #1

Lie flat on your back on the floor with your hands clasped behind your head. Lift your legs together straight up from the floor.

Concentrate on the muscles of your inner thigh and open your legs as widely as possible and then slowly close them 10-20 times.

It will not be easy in the beginning, but your legs will gradually get stronger and more toned over time.

When the veins and capillaries are engorged in blood, it takes incrementally more energy for our vascular system to expand and contract. When more energy is used, more calories are burned which is why daily KAATSU usage can lead to effective body toning.

## Exercise #2

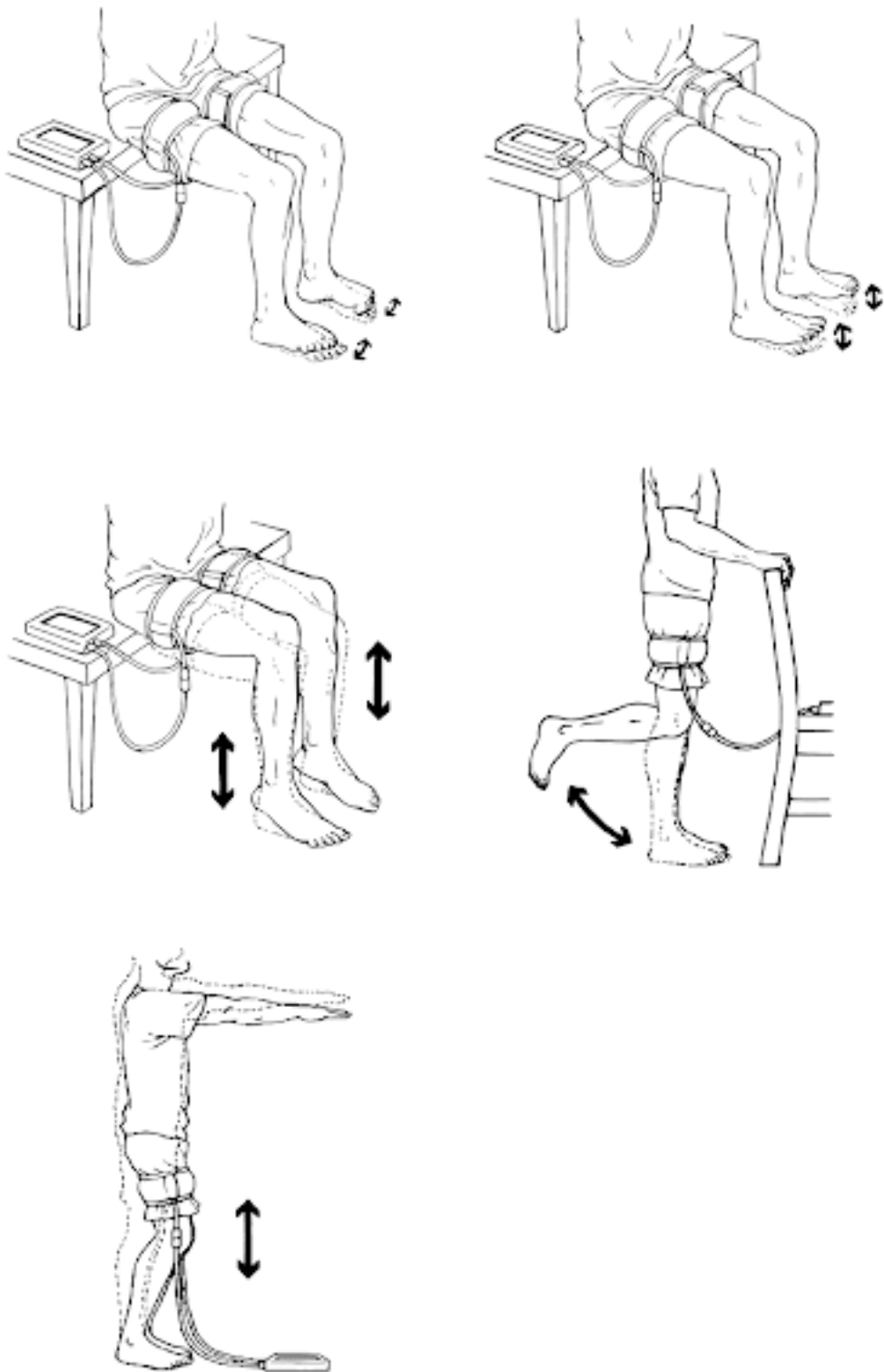
Do simple KAATSU Walking (i.e., walking comfortably with the KAATSU Leg Bands on) for up to 20 minutes - or do the KAATSU 3-Point Exercises for your Legs in the comfort of your home, in the KAATSU Cycle mode.

## Exercise #3

Stand straight with your arms placed on your hips. Spread your legs wider than your shoulders and stand with your toes pointed outward. While exhaling, lower your hips slowly as low as you can safely go. Then return to your standing position to strengthen the muscles of your inner thighs.

**Exercise #4**

Stand straight with your arms placed on your hips. Spread your legs wider than your shoulders and turn your toes inward. Lower your hips as much as safely possible to the level where your knees touch each other. Then slowly return to the standing position in order to strengthen the muscles of your outer thighs.



KAATSU 3-Point Exercises for Legs

## **Exercise #5: KAATSU Leg 3-point Exercises [illustrations posted above]**

*(The KAATSU 3-point Exercises for the Legs were discussed in detail on page 53. Please refer to those pages for instructions.)*

You can use the Standard or Advanced KAATSU 3-Point Exercises for the Legs depending on your experience and fitness level.

### **Pace of Exercises**

The movements can all be done slowly and deliberately - there is no need to move quickly or vigorously as you may do with a set of burpees or high intensity exercises.

Even if only 1-2 repetitions are completed on your last set, a failure signal is sent through your central nervous system to your brain - and this is part of the biochemical reaction in our bodies that is the goal of KAATSU.

### **Exercises #6**

In the KAATSU Cycle mode, you can do regular housework (e.g., washing dishes, folding clothes, cleaning up the house, vacuuming) or yard work (e.g., sweeping, cleaning the car, washing windows, watering the lawn) with your leg bands on. This is a casual form of exercise is sufficient to serve as a catalyst for the biochemical reactions of KAATSU.







# Working On Your Glutes & Posture with KAATSU Sitting and KAATSU Standing

Sitting is called the Silent Addiction of the 21st century.

Most humans sit more than ever before in human history. Sitting for long periods of time - as we do in our offices and homes - leads to all kinds of health issues.

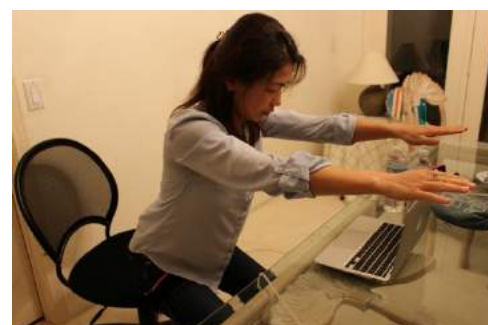
The problems with sitting too much include obesity, increased blood pressure, high blood sugar, excess body fat around the waist, and abnormal cholesterol levels.

So what can KAATSU Sitting do? What can KAATSU Standing accomplish?

KAATSU Sitting and KAATSU Standing can lead to strong glutes, good posture, improved energy throughout the day, and a confident walking gait - like 56-year-old aesthetician Tina Newman in the photo.

KAATSU Sitting and KAATSU Standing can very effectively replicate the effects of movement and exercise. We can do KAATSU Sitting throughout our day without impacting our work or responsibilities.

By tightening the KAATSU Air Bands around your legs, whether you are in the office or at home, whether you are typing emails or watching television, you can literally workout and tone your muscles.

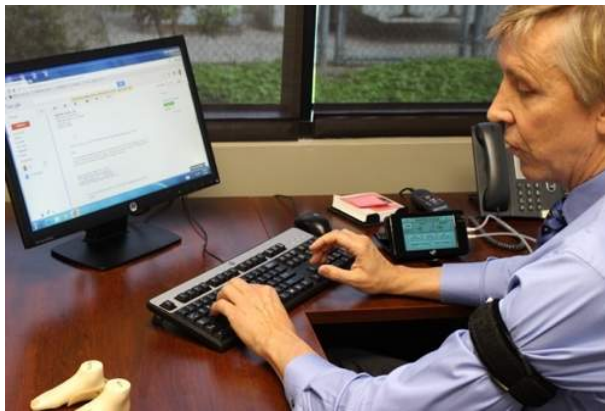


## KAATSU Sitting 101

- Always be well hydrated before and during your KAATSU sessions.
- Use KAATSU Cycle mode starting at low pressures.
- Do no more than 6 consecutive sets in KAATSU Cycle mode, but you can do this twice per day as your body becomes acclimated to KAATSU.

## KAATSU Sitting at A Desk

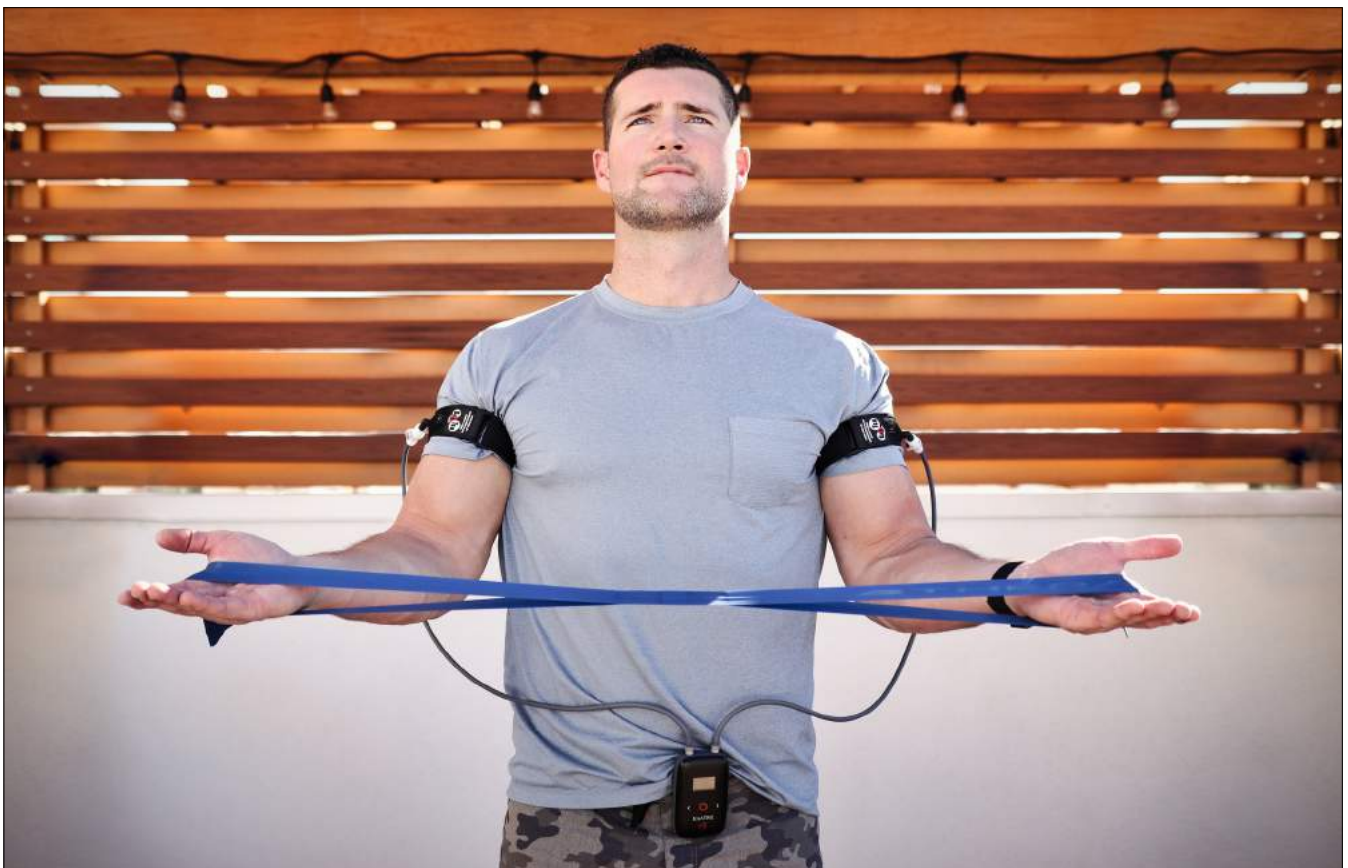
- Keep your feet on the floor or on a footrest.
- Do not cross your legs. Your ankles should be directly in front of your knees.
- Maintain a small gap between the back of your knees and the front of your seat.
- Keep your knees at or below the level of your hips.
- If necessary, adjust the backrest of your chair in order to support your low and mid-back or, alternatively, use a back support.
- Keep your shoulders relaxed and keep your forearms parallel to the ground (if you are typing, using your smartphone, reading, or listening to music).
- Occasionally stretch your upper body.
- If you are in your office or at home relaxing, you can also add some KAATSU Standing sessions.



## KAATSU Standing

- While standing, keep your weight primarily on the balls of your feet.
- Stand with your knees slightly bent, feet about shoulder-width apart.
- Let your arms hang naturally down the sides of the body.
- Stand straight and tall with your shoulders pulled down and backward.
- Tuck your stomach in.
- Keep your head level. Your earlobes should be in line with your shoulders. Do not push your head forward, backward, or to the side.
- Occasionally shift your weight from your toes to your heels, or one foot to the other.
- Repeatedly squeeze your glutes if you like.

KAATSU Sitting and KAATSU Standing are two very effective modalities that not only offset the ravages of too much sitting and help develop the lower body musculature, but also are time-effective, convenient means to accomplish lower body and core toning while working or relaxing.





# Waist Workouts With KAATSU

As we age, fat especially around the waistline seems to be more easily and quickly accumulated. It also becomes increasingly difficult to lose this fat.

But KAATSU can be effectively and efficiently used to tone your waist in your 40's, 50's, 60's, and beyond.

Some typical waist-slimming and waist-toning exercises are ideally performed after a KAATSU warm-up. A warm-up consists of the KAATSU 3-Point Exercises performed in the KAATSU Cycle mode.

The KAATSU 3-Point Exercises with the KAATSU Air Bands on your legs includes Toe Curls + Toe Raises + Heel Raises while sitting for weaker users or Toe Curls + Toe Raises + Standing Leg Curls + Quarter Squats for stronger users.

Waist-slimming exercises should be done with the KAATSU Air Bands on your legs, starting at low pressures in KAATSU Cycle mode. Exercises include the following:

## 1. Sit-ups

- Lie on your back on the floor with your knees bent and your toes flat on the ground.
- Concentrate on your abdominal muscle and slowly raise your body while exhaling.
- Lift your body as high as possible 5 - 20 times using only your abdominal muscle while your arms are relaxed.

## 2. Side Bends

- Stand with your legs slightly wider than your shoulders.
- Hold a plastic water bottle or light dumbbell in one hand.
- Relax your shoulders and place your other hand on your hip.
- Slowly lean toward the side with your hand on your hip and then return to the standing position.
- Repeat 5 - 20 times on one side.
- Then repeat the same exercise on the other side after you switch the water bottle to your other hand.

- Repeat this exercise daily or, optimally, twice per day (both in the morning and afternoon / evening).

### 3. Trunk Twists

- Stand with your legs slightly wider than your shoulders.
- Relax your shoulders and place both hands on your hips.
- Slowly twist your body to one side, return to the original position, and then slowly twist to the other side. Repeat 5 - 20 times on both sides.
- Then repeat the same exercise on the other side after you switch the water bottle to your other hand.

Repeat this exercise daily or, optimally, twice per day (both in the morning and afternoon or evening).

### Key Point





# KAATSU Aqua



KAATSU Aqua is a patented, unique blood flow moderation movement, therapy and exercise performed in the water (e.g., in swimming pools or aqua-therapy pools) that is based on the standard KAATSU protocols.

KAATSU Air Bands are made from neoprene and are waterproof, enabling the KAATSU Air Bands to be used in the water. **However, the KAATSU C3 device itself is NOT WATERPROOF**, so all KAATSU Aqua exercises are done using KAATSU Constant mode with the KAATSU C3 untethered (disconnected) from the Air Bands.

## Why Do KAATSU Aqua?

KAATSU Aqua is used to (1) improve physical movement or athletic performance, (2) recover from vigorous training, competition, or travel, (3) enhance and augment physical rehabilitation, and (4) maintain physical strength, stamina, speed, and range of motion.

## Who Uses KAATSU Aqua?

KAATSU Aqua is used by the following individuals:

- Competitive age-group, collegiate, masters and Olympic swimmers
- Fitness swimmers

- Triathletes, multi-sport athletes, stand up paddlers, kayakers, and surfers
- Water polo players, synchronized swimmers and divers
- Individuals who do aquarobics, aqua-jogging, or aqua-walking
- Individuals who do adventure sports that involve some form of aquatics
- Individuals, including military personnel and car accident victims and recreational athletes, who are recovering or rehabilitating from injury or surgery
- Individuals who prefer to exercise in a pool

### **Where Can You Do KAATSU Aqua?**

- KAATSU Aqua can be used in swimming and therapy pools.
- KAATSU Air Bands should not be used while holding your breath underwater or while free diving or when diving from a diving board.
- KAATSU Air Bands can be used in open bodies of water like lakes, rivers, seas or the ocean or while surfing, diving, kayaking or stand-up paddling for experienced KAATSU users.
- KAATSU Air Bands should be used under the supervision or advice of a certified KAATSU Aqua Specialist.

### **When Can You Do KAATSU Aqua?**

- KAATSU Aqua can be done every time you train or exercise or do aqua therapy in a pool.
- Competitive athletes can use the KAATSU Air Bands during every training period, limiting the use of KAATSU Arm and Leg Bands per session, or as advised by their certified KAATSU Aqua Specialist.
- Athletes can use the KAATSU Cycle mode (on land) before and after workouts or competitions for recovery.

### **KAATSU Aqua Precautions**

- KAATSU Aqua should only be used by those who at least 14 years of age.
- KAATSU Aqua must only be used by individuals who are pool safe and who can swim.
- KAATSU Aqua should be approved for use by your physician if you are not young or healthy or have some sort of injury or illness or are out of shape due to inactivity or other medical issues.



## KAATSU Aqua Videos

- [Dr. Cory On Doing KAATSU Aqua](#)
- [Dr. Cory On Shallow Water KAATSU Aqua](#)
- [Dr. Cory On KAATSU Aqua Arms](#)
- [Dr. Cory on KAATSU Aqua Arms in Deep Water](#)
- [Dr. Cory on KAATSU Aqua Legs in Deep Water](#)
- [Dr. Cory On KAATSU Aqua With A Noodle](#)

# KAATSU for Sprained or Jammed Fingers and Toes

If you experience the small, non-medical emergency accidents and injuries of recreational or competitive athletes like sprained or jammed fingers and toes or small skin lacerations, you can use the KAATSU Cycle mode to help you speedily recover.

Gymnasts, surfers, basketball players, volleyball players and athletes of all abilities and ages can do up to 6 Progressive KAATSU Cycle sets on both their arms and their legs (up to 12 total sets per session) at increasingly and incrementally higher pressures in order to help relieve their discomfort.

## Key Points:

- Be well hydrated – drink an entire water bottle before your recovery begins and remain well hydrated throughout the KAATSU sessions.
- If you have hurt or cut your arms, put the bands on your arms. If your leg is injured or has a small cut, put the bands on your legs. You can put only one band on – on the injured limb. This is occasionally more effective than putting the bands on both limbs.
- You want the injured limb to turn slightly pink. The blood engorgement will be helpful.
- Start with a low pressure on your first Cycle set. Repeat this level if this is appropriate for you. But gradually increase to higher and higher levels if a higher pressure is comfortable for you.
- Stop immediately if you feel any increased pain or discomfort.
- Continue repeated KAATSU Cycle sets up to 3 times per day until the discomfort has subsided.

KAATSU inventor Dr. Sato explained the mechanism behind the pain relief that many KAATSU users feel.

*"We found that the KAATSU Cycle sets leads to a decrease in CRP or C-reactive protein which is a blood test marker for inflammation in the body. CRP levels increase in response to inflammation. People who experience different kinds of pain report feeling relief after KAATSU sessions. While there is also an increase in HGH (Human Growth Hormone), nitric oxide,*



*IGF-1 (insulin growth factor) and VEGF (vascular endothelial growth factor), KAATSU also has shown to decrease CRP. Typically, with pain comes inflammation and the CRP increases. But with KAATSU, the decrease in CRP and production of EPC (endothelial progenitor cell) help. EPC are cells that help regenerate the endothelial lining of your blood vessels."*





# KAATSU for Broken Bones including Fingers, Toes, Ribs

For optimal results from broken bones including fingers, toes, or ribs, especially with hairline fractures, KAATSU can be used as part of your rehabilitation and recovery.

## Frequency

- Do KAATSU sessions at least once per day; ideally 2 – 3 times per day.
- Optimally, do your KAATSU sessions once in the morning and once again within an hour of going to bed. If there is time, do another KAATSU session in the middle of the day. Each session can range up to 40 minutes if you separately do your arms followed by your legs.

## Pressure Progression

- Use the KAATSU C3 in Cycle mode for 3 - 6 sets.
- During each KAATSU session, start with conservative (i.e., low) pressures. Each subsequent set in the KAATSU Cycle mode will automatically progress to an increased pressure. This gradual progression is essential.

## Order

- During each session, first do sets in the KAATSU Cycle mode on your arms (whether you have broken bones in your upper or lower body or core). Then proceed with sets on your legs for optimal systemic results.
- You can use KAATSU only on the injured limb as you wish.
- Alternatively, you can place the KAATSU Air Bands on either your arms or legs. NEVER use the KAATSU Air Bands on both your arms and legs together; simultaneous use on all your four limbs is strictly prohibited.

## Key Points

- Always be very well-hydrated before and during KAATSU. Well-hydrated means your urine is clear or nearly clear.
- Consult with your physician before starting KAATSU, especially if there is a compound fracture.

- You can do the KAATSU Cycle sets during your physical therapy – or you can do KAATSU Cycle sets as an independent therapy before or after your physical therapy.

## Arm Protocols

1. Properly place and tighten the KAATSU Air Bands on your arms. Start with a conservative (i.e., low) SKU on the first set in the KAATSU Cycle mode. Each subsequent set in the KAATSU Cycle mode will automatically progress to an increased pressure.
  - a. Note: Even if the first or second KAATSU Cycle sets do not feel tight enough, it is acceptable and recommended to start at a low SKU pressure. This will help warm-up your capillaries and prepare them for higher and more effective SKU levels.
2. Do 3 - 6 sets using the KAATSU Cycle mode on your arms. This will take a total of 12 - 24 minutes.
3. During these KAATSU Cycle sets, you can do standard physical therapy movements.
  - a. Note 1: You can also do isometric exercises or simply contract your arm muscles in the positive and negative direction during exercise.
  - b. Note 2: You can also do the KAATSU 3-Point Arm Exercises (i.e., Hand Clenches if possible, followed by Biceps Curls and Triceps Extensions).
4. Constantly confirm your CRT (Capillary Refill Time) on the palms of your hands. Make sure your CRT is faster than 3 seconds. Your palms should be pink or even a beefy red color. There should be significant blood pooling in your arms with your veins distended.
5. If you feel lightheaded, feel numbness while doing KAATSU, or your hands or arms turn white, gray or blue or get clammy, immediately release the pressure and take off the KAATSU Air Bands.
6. Remove the KAATSU Air Bands from your arms and rehydrate. Then place the KAATSU Air Bands on your legs.

## Leg Protocols

1. Properly place and tighten the KAATSU Air Bands on your legs. Start with a conservative (i.e., low) SKU on the first set in the KAATSU Cycle mode. Each subsequent set in the KAATSU Cycle mode will automatically progress to an increased pressure.
  - a. Note: Even if the first or second KAATSU Cycle sets do not feel tight enough, it is acceptable to start at a low SKU pressure. This will help warm-up your capillaries and prepare them for higher and more effective SKU levels.
2. Do 3 - 6 sets in the KAATSU Cycle mode on your legs. This will take a total of 12 – 25 minutes.
3. During these KAATSU Cycle sets, you can do standard physical therapy movements or simply sit and relax while the bands are automatically inflating and deflating.
  - a. You can also do isometric exercises or simply contract your leg muscles in the positive and negative direction during exercise.
  - b. You can also do the Standard KAATSU 3-Point Leg Exercises (i.e., Toe Curls if possible, followed by Toe Raises if possible, and then Standing Leg Curls).
  - c. You can alternatively do the Advanced KAATSU 3-Point Leg Exercises (i.e., Heel Raises if possible, followed by Standing Leg Curls and then Non-Lock Quarter Squats).
  - d. You can walk comfortably inside or outside, or slowly and steadily on a treadmill.
4. Constantly confirm your CRT (Capillary Refill Time) on the quadriceps above your knees or near your ankles on your calves. Make sure your CRT remains faster than 3 seconds. Your feet and legs should be pink or even a beefy red color. There should be significant blood pooling in your legs with your veins distended, particularly visible in your feet.
5. If you feel lightheaded, feel numbness while doing KAATSU, or your legs or feet turn white, gray or blue or get clammy, immediately release the pressure and take off the KAATSU Air Bands.
6. Remove the KAATSU Air Bands from your legs and rehydrate.

## Before Bed – Arm Protocols

1. Properly place and tighten the KAATSU Air Bands on your arms. Start with a conservative (i.e., low) SKU on the first set in the KAATSU Cycle mode. Each subsequent set in the KAATSU Cycle mode will automatically progress to an increased pressure.
  - a. Note: Even if the first or second KAATSU Cycle sets do not feel tight enough, it is acceptable to start at a low SKU pressure. This will help warm-up your capillaries and prepare them for higher and more effective SKU levels.
2. During these evening KAATSU Cycle sets, you can do standard physical therapy movements or the KAATSU Insomnia Protocols that include:
  - a. Forward shoulder rolls
  - b. Backward shoulder rolls
  - c. Head rotations
  - d. Stretching of your deltoids and triceps muscles
  - e. Note: Movements before bedtime should be casual and light. Do not do anything vigorous or difficult.

If you wish to maintain your stamina and strength during your rehabilitation period, you can do KAATSU Walking or use a treadmill for up to 20 minutes using the KAATSU Cycle mode with the Air Bands on your legs.

# KAATSU for Relieving Back Pain, Strengthening the Back

Back pain is one of the most common ailments that people experience, especially as they age, gain weight or become increasingly sedentary.

Back pain comes in myriad forms: muscle ache, shooting or stabbing pain, pain, numbness or tingling radiating down the legs, increasing pain with bending, lifting, standing or walking, and pain that improves with reclining.

Whether the back pain is caused by muscle or ligament strain, bulging or ruptured disks, arthritis, scoliosis, or osteoporosis, KAATSU can provide relief by doing the following movements and protocols using KAATSU equipment:

## KAATSU Arm Warm-up

- Properly place and tighten the KAATSU Air Bands on your arms and do 3 - 6 sets in the KAATSU Cycle mode at either a uniform or progressively higher pressure.
- Start with a conservative (i.e., low) SKU on the first set in the KAATSU Cycle mode. Each subsequent set in the KAATSU Cycle mode will automatically progress to an increased pressure.
- You can do simple movements of your arms that can include writing emails and squeezing your hands to non-weighted biceps curls and triceps extensions.
- Even if your pain is in your back, it is optimal to begin your KAATSU session on your arms.



## KAATSU Cycle Leg Warm-up

- Properly place and tighten the KAATSU Air Bands on your legs and do 3 - 6 sets in the KAATSU Cycle mode at either a uniform or progressively higher pressure.
- Start with a conservative (i.e., low) SKU on the first set in the KAATSU Cycle mode. Each subsequent set in the KAATSU Cycle mode will automatically progress to an increased pressure.
- You can do some or all these simple movements:
  - o Sit up straight (as possible) in a chair with good posture your feet flat on the floor, shoulders back and torso engaged, looking forward while breathing comfortably.
  - o Stand up straight (as possible) and pace comfortably back and forth in your room. If you do this in a fitness room or gym, take off your shoes and walk on yoga mats or any other kind of soft, spongy surface.
  - o Stretch your lower back and legs in any number of ways. One particularly effective stretch is to slightly elevate your toes off the ground and bend forward at your waist, letting your arms hang to your feet. There is no need to strain yourself, just bend over comfortably.
  - o Do the KAATSU 3-Point Leg Exercises (Toe Curls, Toe Raises, Heel Raises) while sitting up straight.
  - o With your feet shoulder width apart, stand comfortably while slightly bending your knees and holding water bottles in both your hands down at your sides. Lean slightly forward at an angle while maintaining a straight back. Do not move your hips while you lift your arms forward as high as possible.

## Key Points

- Be very well hydrated before and during the KAATSU Cycle sets.
- The color of your skin on your arms and legs should be a pinker or redder tone than normal while doing KAATSU. This indicates that your blood circulation is improved with the KAATSU Air Bands on.
- If you feel lightheaded, feel numbness while doing KAATSU, or your extremities turn white, gray or blue or get clammy, immediately release the pressure and take off the KAATSU Air Bands.
- You will quickly feel fatigue, much more quickly than if you did the same exercise without KAATSU Air Bands on your arms.
- Repeat this exercise daily or, if so motivated, up to 3 times per day in the morning, afternoon, and/or evening).

Your back should gradually feel looser and more flexible. As this feeling improves, you can increase your pressure levels and range of motion - but it should all be done gradually and comfortably.



# KAATSU for Groin Pulls, Tears and Strains

The standard protocol for muscle injuries, including groin pulls and strains, is RICE (Rest + Ice + Compression + Elevation) and M.E.T.H. (Movement, Elevation, Traction, Heat). Depending on the severity of the injury, you may need additional treatments to speed healing that can include physical therapy, massage, heat and stretching, and electro therapy.

But in the KAATSU community, KAATSU can play a significant role in healing and speeding up recovery from groin injuries (i.e., an injury or tear to the adductor or inner side muscles of the thigh).

Whether a groin strain is experienced by athletes or older adults, KAATSU is an effective modality for significantly reducing the pain factor during recovery. For optimal results, KAATSU can be used as follows:

## Key Points

- Always be very well hydrated when using KAATSU.
- Start with sets in the KAATSU Cycle mode on your arms first, and then proceed to your legs for optimal systemic results.
- Do a session of repeated KAATSU Cycle sets at least once per day, but ideally up to 3 times per day if you have the time. Optimally, do KAATSU Cycle sets once in the morning and once again within an hour of going to bed, with a session in the middle of the day if you have time. All KAATSU sessions can be done at your home, office, or during travel.
- Do KAATSU only on the injured limb for the first several KAATSU Cycle sets for the first days. Later, you can place the KAATSU Air Bands on both limbs (i.e., both the healthy and injured limbs).
- Consult with a physician before starting KAATSU, especially if you think you may have a Grade 3 strain that may need surgery to repair the torn muscle or tendon.

## Step 1: Arm Protocols

1. Properly place and tighten the KAATSU Air Bands on your arms and do 3 - 6 sets in the KAATSU Cycle mode at either a uniform or progressively higher pressure.
2. Start with a conservative (i.e., low) SKU on the first set in the KAATSU Cycle mode. Each subsequent set in the KAATSU Cycle mode will automatically progress to an increased pressure.
  - a) Note: Even if the first or second KAATSU Cycle sets do not feel tight enough, it is acceptable to start at a low SKU pressure. This will help warm-up your capillaries and prepare them for higher and more effective SKU levels.
3. Each set in the KAATSU Cycle mode includes 8 repetitions of 30 seconds of pressure followed by 5 seconds of no pressure in sequentially increasing pressures. Do 3 - 6 sets on your arms. This will take 15-30 minutes total.
4. During these sets, you can do standard physical therapy movements or simply sit still.
  - a) Note: You can also do isometric exercises or simply contract your arm muscles in the positive and negative direction during exercise.
  - b) Note: You can also do the KAATSU 3-Point Arm Exercises (i.e., Hand Clenches if possible, followed by Biceps Curls, and then Triceps Extensions).
5. Constantly confirm your CRT (Capillary Refill Time) on the palms of your hands and make sure your CRT is faster than 3 seconds. Your palms should be pink or may even have a beefy red color. There should be significant blood pooling in your arms with your veins distended.
6. If you feel lightheaded, feel numbness while doing KAATSU, or your arms or hands turn white, gray or blue or get clammy, immediately release the pressure and take off the KAATSU Air Bands.
7. Remove the KAATSU Air Bands on your arms and rehydrate. Then apply the KAATSU Air Bands on your legs.

## Step 2: Leg Protocols

1. Properly place and tighten the KAATSU Air Bands on your legs and do 3-6 sets in the KAATSU Cycle mode at either a uniform or progressively higher pressure.
2. Start with a conservative (i.e., low) SKU on the first set in the KAATSU Cycle mode. Each subsequent set in the KAATSU Cycle mode will automatically progress to an increased pressure.
  - a) Note: Even if the first or second KAATSU Cycle sets do not feel tight enough, it is acceptable to start at a low SKU pressure. This will help warm-up your capillaries and prepare them for higher and more effective SKU levels. Do up to 6 KAATSU Cycle sets on your leg(s). This will take up to 36 minutes total.
3. During these sets, you can do standard physical therapy movements.
  - a) Note: You can also do isometric exercises or contract your leg muscles in the positive and negative direction during exercise.
  - b) Note: You can also do the Standard KAATSU 3-Point Leg Exercises (i.e., Toe Curls if possible, followed by Toe Raises if possible, and then Standing Leg Curls).
  - c) Note: You can alternatively do the Advanced KAATSU 3-Point Leg Exercises (i.e., Heel Raises if possible, followed by Standing Leg Curls, and then Non- Lock Quarter Squats), if you feel comfortable doing so.
  - d) Note: You can walk comfortably inside or outside or on a treadmill.
4. Constantly confirm your CRT (Capillary Refill Time) on the quadriceps above your knees or near your ankles on your calves. Make sure your CRT remains faster than 3 seconds. Your feet and legs should be pink or even a beefy red color. There should be significant blood pooling in your legs with your veins distended, particularly visible in your feet.
5. If you feel lightheaded, feel numbness while doing KAATSU, or your legs or feet turn white, gray or blue or get clammy, immediately release the pressure and take off the KAATSU Air Bands.
6. Remove the KAATSU Air Bands on your legs and rehydrate.



### Step 3: Before Bed – Arm Protocols

1. Properly place and tighten the KAATSU Air Bands on your arms. Start with a conservative (i.e., low) SKU on the first set in the KAATSU Cycle mode. Each subsequent set in the KAATSU Cycle mode will automatically progress to an increased pressure.
  - a) Note: Even if the first or second KAATSU Cycle sets do not feel tight enough, it is acceptable to start at a low SKU pressure. This will help warm-up your capillaries and prepare them for higher and more effective SKU levels.
2. During these evening KAATSU Cycle sets, you can do standard physical therapy movements or the KAATSU Insomnia Protocols that include:
  - a) Forward shoulder rolls
  - b) Backward shoulder rolls
  - c) Head rotations
  - d) Stretching of your deltoids and triceps muscles
  - e) Note: Movements before bedtime should be casual and light. Do not do anything vigorous or difficult.

If you wish to maintain your stamina and strength during your rehabilitation period, you can do KAATSU Walking or use a treadmill for up to 30 minutes using the KAATSU Cycle mode with the KAATSU Air Bands on your legs. Alternatively, you can also do KAATSU Aqua in a pool.

# KAATSU Skin Care for Cuts, Scars, Surgeries

Some surgeries are minimally invasive, and others are more so. Repeated KAATSU Cycles can significantly help the skin and underlying tissue quickly repair and recover. Patients who do repeated post-surgery KAATSU Cycle sets will have to get their stitches removed more quickly than those patients who do not do KAATSU.

The skin recovers and grows back more quickly than normal. The skin can grow over the stitches if the patient and doctor are not careful. In these cases, the surgeon will have to remove the overgrown stitches that can cause infection.

## The Benefits of KAATSU Cycle Mode

Repeated sets using the KAATSU Cycle mode has repeatedly shown to enhance the body's natural healing process, especially when the skin is cut, torn, broken or tattooed.

**The five periodically taken photographs** show the rapid recovery of the sutures and skin on a 49-year-old patient who had total knee replacement surgery at a Veterans Administration hospital in Florida.



The patient used repeated sets in the KAATSU Cycle mode on his KAATSU equipment. He did his series of KAATSU Cycle sets in the morning and again in the evenings as he comprehensively integrated KAATSU to his regularly scheduled physical therapy.

## Key Points

- Always be very well hydrated when using KAATSU.
- Start with sets in the KAATSU Cycle mode on your arms first, and then proceed to your legs for optimal systemic results.
- Do a session of repeated KAATSU Cycle sets at least once per day, but ideally up to 3 times per day if you have the time. Optimally, do KAATSU Cycle sets once in the morning and once again within an hour of going to bed. If there is time, doing Progressive KAATSU Cycle sets in the middle of the day can also be added. All KAATSU sessions can be done at your home, office or during travel.
- During each KAATSU session, first use on your arms (whether or not you have lacerations in your upper or lower body). Then proceed with KAATSU on your legs.
- Never use the KAATSU Air Bands on both the arms and legs together; simultaneous use on all four limbs is prohibited.
- Consult with your physician before starting KAATSU, especially if there is a compound fracture or surgery on organs.



## Step 1: Arm Protocols

1. Properly place and tighten the KAATSU Air Bands on your arms and do 3 - 6 sets in the KAATSU Cycle mode at either a uniform or progressively higher pressure.
2. Start with a conservative (i.e., low) SKU on the first set in the KAATSU Cycle mode. Each subsequent set in the KAATSU Cycle mode will automatically progress to an increased pressure.
  - a) Note: Even if the first or second KAATSU Cycle sets do not feel tight enough, it is acceptable to start at a low SKU pressure. This will help warm-up your capillaries and prepare them for higher and more effective SKU levels.
3. Each set in the KAATSU Cycle mode includes 8 repetitions of 30 seconds of pressure followed by 5 seconds of no pressure in sequentially increasing pressures. Do 3 - 6 sets on your arms. This will take up to 36 minutes total.
4. During these sets, you can do standard physical therapy movements or simply sit still.
  - a) Note: You can also do isometric exercises or simply contract your arm muscles in the positive and negative direction during exercise.
  - b) Note: You can also do the KAATSU 3-Point Arm Exercises (i.e., Hand Clenches if possible, followed by Biceps Curls, and then Triceps Extensions).
5. Constantly confirm your CRT (Capillary Refill Time) on the palms of your hands and make sure your CRT is faster than 3 seconds. Your palms should be pink or may even have a beefy red color. There should be significant blood pooling in your arms with your veins distended.
6. If you feel lightheaded, feel numbness while doing KAATSU, or your arms or hands turn white, gray or blue or get clammy, immediately release the pressure and take off the KAATSU Air Bands.
7. Remove the KAATSU Air Bands on your arms and rehydrate. Then apply the KAATSU Air Bands on your legs.

## Step 2: Leg Protocols

1. Properly place and tighten the KAATSU Air Bands on your legs and do 3 - 6 sets in the KAATSU Cycle mode at either a uniform or progressively higher pressure.
2. Start with a conservative (i.e., low) SKU on the first set in the KAATSU Cycle mode. Each subsequent set in the KAATSU Cycle mode will automatically progress to an increased pressure.
  - a) Note: Even if the first or second KAATSU Cycle sets do not feel tight enough, it is acceptable to start at a low SKU pressure. This will help warm-up your capillaries and prepare them for higher and more effective SKU levels.
4. Do 3 - 6 KAATSU Cycle sets on your leg(s). This will take up to 36 minutes total.
3. During these sets, you can do standard physical therapy movements.
  - a) Note: You can also do isometric exercises or contract your leg muscles in the positive and negative direction during exercise.
  - b) Note: You can also do the Standard KAATSU 3-Point Leg Exercises (i.e., Toe Curls if possible, followed by Toe Raises if possible, and then Leg Curls).
  - c) Note: You can alternatively do the Advanced KAATSU 3-Point Leg Exercises (i.e., Heel Raises if possible, followed by Standing Leg Curls, and then Non- Lock Quarter Squats), if you feel comfortable doing so.
  - d) Note: You can walk comfortably inside or outside or on a treadmill.
4. Constantly confirm your CRT (Capillary Refill Time) on the quadriceps above your knees or near your ankles on your calves. Make sure your CRT remains faster than 3 seconds. Your feet and legs should be pink or even a beefy red color. There should be significant blood pooling in your legs with your veins distended, particularly visible in your feet.
5. If you feel lightheaded, feel numbness while doing KAATSU, or your legs or feet turn white, gray or blue or get clammy, immediately release the pressure and take off the KAATSU Air Bands.
6. Remove the KAATSU Air Bands on your legs and rehydrate.



### Step 3: Before Bed – Arm Protocols

1. Properly place and tighten the KAATSU Air Bands on your arms. Start with a conservative (i.e., low) SKU on the first set in the KAATSU Cycle mode. Each subsequent set in the KAATSU Cycle mode will automatically progress to an increased pressure.
  - a) Note: Even if the first or second KAATSU Cycle sets do not feel tight enough, it is acceptable to start at a low SKU pressure. This will help warm-up your capillaries and prepare them for higher and more effective SKU levels.
2. During the evening Progressive KAATSU Cycle sets, you can do standard physical therapy movements or the KAATSU Insomnia Protocols that include:
  - a) Forward shoulder rolls
  - b) Backward shoulder rolls
  - c) Head rotations
  - d) Stretching of your deltoids and triceps muscles
  - e) Note: Movements before bedtime should be casual and light. Do not do anything vigorous or difficult.

If you wish to maintain your stamina and strength during your rehabilitation period, you can do KAATSU Walking or use a treadmill for up to 30 minutes using the KAATSU Cycle mode with the KAATSU Air Bands on your legs. Alternatively, you can also do KAATSU Aqua in a pool.

# KAATSU for Cramping

There are many athletes who get cramps during games whether they play football, basketball, soccer, or any other type of sport.

Muscle cramps are sudden, involuntary, and painful contraction of muscles, particularly in the calf. Though cramps are not a medical emergency, cramps can make it temporarily extremely difficult or impossible to use the affected muscle.

Cramps can be caused by long or intense periods of exercise, particularly in warm weather, overuse of a particular muscle, dehydration, or muscle strain.

## Use KAATSU Cycle Mode for Progressive Pressure Increases

In addition to avoiding dehydration and stretching, athletes can - and should – do several Progressive KAATSU Cycle sets mode before their warm-up and games. Even with adequate hydration by an experienced and well-trained athlete, they may still occasionally experience cramps.

In these cases, Single-limb sets in the KAATSU Cycle mode on the affected limb can effectively and efficiently resolve the problem.

In games like football, basketball, and soccer, the athletes do not have to miss much of their game if they have KAATSU equipment on the sidelines or bench and are helped by an experienced trainer.

Essentially, the repeated, gradual, increasingly progressive engorgement of blood in the vascular system helps increase the elasticity of the vascular tissue.

Dr. Cory Keirn explains, "*There are a few reasons why KAATSU Cycle sets helps. The easiest is that KAATSU Cycling helps push out lactate and brings in new blood with fresh ATP and energy. Of course, some scientists are now thinking that muscle cramping could be due to over neurological stimulation instead of metabolic waste build-up. Basically, the muscle is working so hard that the nerves can't stop firing. KAATSU Cycle sets helps lower muscle tension with the external pressure cycles. Simply put, it is like foam rolling, but on a much bigger level.*"

## Cramp Management Protocol

- Hydrate.
- Place the KAATSU Air Band on the affected limb to begin Single-limb sets using the KAATSU Cycle mode.
- Start the sets in the KAATSU Cycle mode on a low-pressure setting. You can do 2 - 4 sets as they wish.
- As you start to feel less pain and be more comfortable, they can do further sets using medium (or high) pressures if it can be tolerated.
- Ideally, you can use KAATSU in the Cycle mode before the warm up or the game itself if weather conditions or game situations exist that may lead to cramps.



# KAATSU for Plantar Fasciitis

Plantar fasciitis is a common cause of heel pain that is caused by inflammation of a thick band of tissue that runs across the bottom of the foot and connects your heel bone to your toes.

Most people who have plantar fasciitis recover in several months with treatment that includes resting, icing the painful area, and stretching along with taking pain relievers such as ibuprofen (Advil, Motrin IB, others) and naproxen sodium (Aleve) that can ease the pain and inflammation caused by plantar fasciitis. Stretching and strengthening exercises or using special devices may relieve symptoms.

KAATSU users have an additional modality and tool to use if they do a series of exercises to stretch their plantar fascia and their Achilles tendon, and to strengthen their lower leg muscles.

## Protocols:

1. Always be well-hydrated before and while using KAATSU.
2. Start with a conservative (i.e., low) SKU on the first set in the KAATSU Cycle mode. Each subsequent set in the KAATSU Cycle mode will automatically progress to an increased pressure.
3. Always start KAATSU Cycle sets on your arms, then do KAATSU Cycle sets on your legs.
4. Always have good KAATSU color while doing KAATSU Cycle sets (i.e., have a pinker or redder skin color).
5. Always feel comfortable doing KAATSU; never feel uncomfortable or lightheaded. If you feel uncomfortable or lightheaded at any time, immediately remove the bands.
6. Always feel free to do simple movements during KAATSU; you do not have to do intense or vigorous exercises.
7. You can incorporate KAATSU into your standard physical therapy exercises and movements.
8. You can do up to 6 sets on your arms and legs during each session and up to 3 KAATSU sessions per day as your time permits.
9. You can use KAATSU on one or both legs, focusing on only one leg if your plantar fasciitis is painful only on one side.

10. You can do Standard KAATSU 3-Point Exercises on your arms (e.g., Hand Clenches, Biceps Curls, Triceps Extensions) or other movements (e.g., Foot Rotations, Balancing on One Foot, Stretching, Walking, Standing Up and Sitting Down) with your KAATSU equipment.
11. Be patient and do KAATSU Cycle sets regularly and consistently.

### For Pain Relief:

- Do 3 - 6 KAATSU sets with the KAATSU Air Bands on one or both legs while you are sitting.
- You can also do 3 - 6 KAATSU sets while doing KAATSU Aqua exercise or stretching gently.
- Some people very gently roll the bottom of their foot with a golf ball while they are using KAATSU for additional relief.





# KAATSU for Bedridden Users

Brain injury survivors, wounded warriors, and diving, climbing, biking and car accident victims use KAATSU on all four limbs to aid their recovery and rehabilitation.

They follow all the standard protocols and Do's and Don'ts of KAATSU but are also encouraged to focus on Progressive KAATSU Cycles. That is, they should start off very conservatively (i.e., low SKU pressure) while they get comfortable in position. This may require them to add pillows to different places on their bed or chair, or to change their body or limb positions. There is no rush and the more comfortable they are, the more benefit they will feel.

## Use KAATSU Cycle Mode for Progressive Pressure Increases

The KAATSU Cycle mode is essential for success. The vascular tissue needs to be very, very, very gradually worked on. Starting with very low SKU pressures and then slowly increasing incrementally is the most effective and efficient way to increase the elasticity of your vascular tissue.

For example, on the KAATSU equipment, you can start with the KAATSU Cycle mode using the low pressure range several times and then gradually move to the medium pressure range. You can even go lower than the low SKU settings when you use the CUSTOM mode.

## KAATSU Session

The KAATSU session can include, in order:

1. Be well hydrated with water.
2. Get into a comfortable position.
3. Start with low pressures in the KAATSU Cycle mode on your arms (either Single-Limb KAATSU sets on only one arm or Standard KAATSU sets on both arms). This can be up to 6 KAATSU sets that can take up to 36 minutes.
4. Continue with low pressures in the KAATSU Cycle mode on your legs (either Single-Limb KAATSU sets on only one leg or Standard KAATSU sets on both legs). This can be up to 6 KAATSU sets that will take up to 36 minutes.

Of course, always start conservatively with KAATSU. You may not be able to do 6 KAATSU Cycle sets on both your arms and then another 6 sets on your legs in the beginning. Perhaps you can start with 1-2 KAATSU Cycle sets on your upper body and another 1-2 sets on your lower body - and then gradually increase the number of KAATSU Cycles over the course of several weeks. This is perfectly acceptable.

After several weeks of KAATSU Cycle sets performed daily on your arms and legs, you most likely will see several changes and benefits as you learn the best pressure and duration that fits your recovery and lifestyle.

## **KAATSU Movements**

Various movements - or no movement at all - are up to your discretion. It could be as simple of Standard KAATSU 3-Point Exercises (e.g., Hand Clenches, Biceps Curls, Triceps Extensions, Toe Curls) or other movements (e.g., Head or Foot Rotations, Balancing on One Foot, Stretching, Walking, Standing Up and Sitting Down, Writing by Hand).

But it is very important avoid any painful movements or any sudden movements. KAATSU is best done with slow, easy, gentle movements. You can think of KAATSU as slow stretching of the muscular and connective tissue.

## **Other Modalities**

You can also use other modalities and therapy in conjunction with or before or after KAATSU including acupressure, electric muscle stim therapy, aqua therapy, etc.

## **Phenomena**

1. When people have been bedridden for prolonged periods and try KAATSU, they often say they have a feeling of warmth which is an indication of improved blood circulation.
2. When people have been bedridden for extended periods and try KAATSU, they often sleep much better, especially if KAATSU Cycle sets are gently performed closer to bedtime.
3. Caregivers are also under stress, both physically and mentally. They can use the KAATSU equipment and follow the standard KAATSU protocols if they have a sore back or fatigued muscles.

4. After regular daily use of KAATSU, the color of your skin should turn from light or rosy pink to light red to a beefy red over time while using KAATSU. This is an indication of healthier, most elastic vascular tissue of your surface capillaries.

Occasionally, bedridden users may have cuts or lacerations that stubbornly do not heal. The length, width and depth of the cuts will gradually improve with regular daily use of repeated KAATSU Cycle sets.

## Other Resources

[Day 3: Tina Doing KAATSU the Original BFR](#)

[Day 7: Tina Doing KAATSU the Original BFR](#)

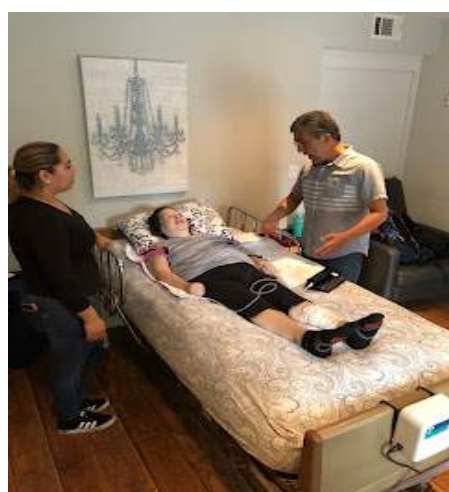
[Day 9: Tina Doing KAATSU the Original BFR](#)

[Day 9: Tina Doing KAATSU the Original BFR](#)

[Day 12: Tina Doing KAATSU Calves](#)

[Day 12: Tina Doing KAATSU Pandiculation](#)

[Day 16: KAATSU Quadriceps Exercises for Tina](#)



# KAATSU for Tendinitis

To understand how KAATSU works for tendinitis, it is good to recall the anatomy of the body.

## ANATOMY

Our body has a very extensive vascular system including arteries, veins, and capillaries. If these arteries, veins, and capillaries were stretched from end to end, one human's vascular system would wrap around the earth two times. Our capillaries are ubiquitous and incredibly small. Some are so small that only one blood cell can pass through at a time.

Our body parts range from capillary-rich (abundant vascular tissue) to capillary-poor (less abundant vascular tissue). Our organs (e.g., kidneys, brain), muscles, bones, ligaments, and tendons have abundant vascular tissue. Ligaments and tendons are capillary poor, but there is still blood supply.

Poor blood supply normally leads to slow healing time. KAATSU triggers the body to grow new capillaries. These new blood vessels can also grow into injured areas to allow the healing process to speed up and bring vital nutrients to the area, including into ligaments and tendons.

## PHYSIOLOGY

Progressive KAATSU Cycle sets enable extremely efficient blood pooling in the limbs. Progressive KAATSU Cycle sets mean you start off with low pressures and gradually build up to higher pressures. This allows your vascular tissue to slowly become more elastic. This increased elasticity enables the desired maximum blood pooling, not only while the bands are on, but also for hours afterwards. This is what you want.

Dr. Cory Keirn says "*it is...is just angry tissue from being used too much. It is inflamed and if continued use, it will turn into tendinosis, which complicates things. KAATSU can do many things, but there are two specific benefits that can help this type of injury: 1. KAATSU can help flush out the inflammation and speed up the inflammatory process. It is kind of like heat/ice or contrast baths, KAATSU can remove the pooling of cytokines and keep the process going quickly.*

*2. We develop epicondylitis in our elbows and knees because we use too much of our distal extremities to initiate power movements. As we fatigue, we rely heavily on just 'muscling through it' and we don't properly engage our trunk prior to moving. In essence, we are firing a cannon out of a canoe. You need a solid base to create explosions.*

*With KAATSU, you can improve your trunk muscle (glutes, abs, chest) control and response by engaging the fast twitch fibers. While swimming, once you initiate the stroke and pull with a properly engaged core, less strain will be applied to the elbows."*

Like the protocols used by individuals with carpal tunnel syndrome, individuals with tendinitis can follow standard KAATSU protocols that can be done at home with any KAATSU equipment.

## **Frequency**

KAATSU Cycle sets can be done up to 3 sessions per day. An ideal schedule would be to do in the morning before going to work and while you prepare for work as you get ready, drink coffee, eat breakfast, or catch up on the daily news. Then, later in the afternoon, and most importantly, in the evening before you go to bed.

## **Use KAATSU Cycle Mode for Progressive Pressure Increases**

Start with the lowest possible SKU pressure in the KAATSU Cycle mode (the only mode that you should use). Do a full KAATSU set using low pressure. You can continue with that pressure range or you can slightly increase the pressure to the medium pressure range. Continue with the medium setting unless you want to go higher to the high pressure setting or the Custom pressure setting.



## KAATSU Color

As you continue with the Progressive KAATSU Cycle sets, the color of your skin on your palm and hands should go from your normal skin color to light or rosy pink to red while using the KAATSU C3. As the highest levels while the maximum amount of blood engorges in your arms, the color of your skin can even go to a slight purplish color. Your veins will become more visible at the blood pools in your arms.

## Duration

During each of your KAATSU sessions, you can do up to 6 KAATSU Cycle sets on your arms - and a similar number of KAATSU Cycle sets on your legs as you wish.

## Intensity

There is no need to do vigorous exercises or work intensely while wearing KAATSU Air Bands to help alleviate the discomfort. Simple or minimal movements are preferred.

## Movement

Movements or specific exercises are optional. However, moving gently while using KAATSU is optimal. This includes going for a simple walk or doing stretches. Using movements recommended by your physical therapist are best while using the KAATSU Air Bands.

## Recommendations

- Be well hydrated before and during KAATSU.
- Start off with very low (conservative) SKU pressures and, very gradually, increase pressures (SKU) to higher levels.
- There is no need to push yourself too hard or use too high pressure in the beginning. Take it easy and take it slowly.
- Always have a pinker or redder tone to your skin than normal – this indicates blood pooling in your limbs during KAATSU which is one of the key goals.



## Additional Resources

[KAATSU Simple At Home Exercises for Carpal Tunnel Syndrome](#)

[Firefighter on the Mend with KAATSU the Original BFR](#)

[KAATSU Cycle Movements](#)

# KAATSU for Shin Splints

Young military recruits, new triathletes, distance runners, and others who begin a new fitness program occasionally experience shin splints (medial tibial stress syndrome).

The pain runs along the inner edge of the shinbone (tibia) due to inflammation of the muscles, tendons, and bone tissue around the tibia. While resting, icing, stretching, and over-the-counter pain relievers are the most common treatments, doing sets in the KAATSU Cycle mode are also a faster way to return to a pain-free state and can help prevent shin splints in the first place.

The constant (or increased) pounding on pavement or wherever you are running overworks the muscles, tendons, and bone tissue. Tenderness, soreness, swelling, and pain occurs. If the intensity or distance continues, the shin splints can progress to a stress reaction or stress fracture.

## Prevention

Because shin splints are caused by repetitive stress on the shinbone and the connective tissues that attach the muscles to the bone, it is critical to strengthen these muscles, tendons, and bone tissue.

Athletes can start doing repeated sets in the KAATSU Cycle mode using the KAATSU C3 while walking (i.e., KAATSU Walking). It is always recommended to start by using the KAATSU Cycle mode at the lowest pressure range.

When the first sets are completed gradually increase the pressure while walking comfortably. If you are comfortable, you can begin KAATSU Power Walking. Continue to increase the pressure to your desired setting, as long as it is still comfortable to do so.

## Recovery



If you are already experiencing shin splints, you should do up to 6 sets in the KAATSU Cycle mode both before and after running. This can be in combination with icing, stretching, and taking over-the-counter pain relievers. It is important to begin at the lowest pressure and then proceed to higher pressures in the latter KAATSU Cycle sets.

You may find great relief in doing KAATSU Cycle sets less than an hour before going to bed at night.

Others also find additional relief in doing up to 6 KAATSU Cycle sets on their arms while doing repeated Hand Clenches, Biceps Curls and Triceps Extensions (i.e., KAATSU 3-Point Arm Exercises).



# KAATSU for Traveling, Jet Lag, and Insomnia

KAATSU is ideal to use and take with you on your vacations or business trips because it can be used anywhere anytime, from using at the airport and on the airplane to using in a hotel room and taking on a walk.

Using KAATSU while traveling can significantly help reduce the effects of jet lag and reduce insomnia, or to relieve stress before bedtime, especially when traveling internationally or crossing several time zones.

Before bedtime or after checking into your hotel during travel, you can properly utilize your KAATSU C3 as follows:

- Be very well-hydrated.
- Do sets in the KAATSU Cycle mode in your hotel room before going to bed on your first few evenings in your new location.
- Be conservative with your pressure. The effects will occur despite using a lower-than-normal pressure.
- Rest at least 20 seconds between each set and each set of movements.
- Do not go to muscular failure or do anything vigorous with these protocols; the goal is to become relaxed.

## Use in a Hotel Room

KAATSU equipment can be used in a hotel room in multiple ways – see video below for some ideas.

[KAATSU On The Go: David Tawil Demonstrates KAATSU—The Original BFR](#)

## Use in an Airplane

KAATSU can be used on an airplane, whether it is a short one-hour flight or a long intercontinental flight. Occasionally, there is a stare or question from the person sitting next to us, but most people are busy sleeping, reading, or watching movies and we are left to do KAATSU without interruption.



KAATSU Cycles can be performed in economy class or business class in the aisle, window, or middle seat - or in the gate area or lounge while waiting for your flight.



### Key Points when doing KAATSU in an Airplane:

- Hydrate well before starting.
- Only use the KAATSU Cycle mode.
- Stay awake while wearing your KAATSU Air Bands.
- Start off conservatively with a low pressure.
- Follow all standard KAATSU protocols.

### Upper Body Jet Lag Exercises (for use on the plane):

1. Properly place and tighten the KAATSU Air Bands on your arms.
2. Do up to 6 sets in the KAATSU Cycle mode, ideally prior to boarding the airplane.
3. You can do all or any the following KAATSU exercises while sitting in your seat during flight:
  - a) Forward Shoulder Rolls: Do 20 - 30 repetitions in a steady motion while your KAATSU Air Bands are inflated. Breathe deeply. Relax while your KAATSU Air Bands deflate. Repeat as desired.
  - b) Backward Shoulder Rolls: Do 20 - 30 repetitions in a steady motion while your KAATSU Air Bands are inflated. Breathe deeply. Relax while your KAATSU Air Bands deflate. Repeat as desired.
  - c) Head Rotations: Slowly roll the head forwards and backwards. Then slowly roll your head to the left and then to the right. Then slowly roll your head in a clockwise direction and then in a counterclockwise direction while your KAATSU Air Bands are inflated in the KAATSU Cycle mode. Breathe deeply. Relax while the KAATSU Air Bands are deflated in the KAATSU Cycle

mode. Warning: Skip this exercise if any of these movements cause dizziness.

- d) Triceps Muscle Stretches: Stretch your triceps muscles on your left and right arms while your KAATSU Air Bands are inflated in the KAATSU Cycle mode. Breathe deeply. Relax while the KAATSU Air Bands are deflated in the KAATSU Cycle mode.
- e) Deltoid Muscle Stretches: Stretch your deltoid muscles on left and right shoulders while your KAATSU Air Bands are inflated in the KAATSU Cycle mode. Breathe deeply. Relax while the KAATSU Air Bands are deflated in the KAATSU Cycle mode.
- f) Arm Rest Press Downs: Place both hands on your arm rests and press down for a few seconds while contracting your muscles. Rest and relax, then repeat.
- g) Isometric Contractions: Place the palms of your hands together and push your hands together for a few seconds. Then, rest, relax and repeat. Grasp the fingers of your hands and pull your hands apart for a few seconds. Then rest, relax and repeat.
- h) Stretch your upper body or torso as you desire and are able.

### **Lower Body Jet Lag Exercises (for use on the plane):**

Note: Doing KAATSU Cycle sets on your legs is much easier in a business or first class seat. It is most difficult - or frankly impossible – to do while sitting in the middle seat in economy class.

1. Properly place and tighten the KAATSU Air Bands on your upper legs.
2. Do up to 6 sets in the KAATSU Cycle mode, ideally prior to boarding your airplane.
3. You can do all or any the following KAATSU exercises while sitting in your seat during flight:
  - a) Heel Raises: Slowly do 10 - 20 in a steady motion while your KAATSU Air Bands are inflated in the KAATSU Cycle mode. Breathe deeply. Relax while your KAATSU Air Bands are deflated.  
*Repeat as desired.*
  - b) Leg Extensions: Slowly do 10 - 15 in a steady motion while your KAATSU Air Bands are inflated in the KAATSU Cycle mode. Breathe deeply. Relax while your KAATSU Air Bands are deflated.  
*Repeat as desired.*

- c) Inward Leg Squeezes: Place your hands on your inner thighs and slowly push outwards as you push your legs inwards against the force of your hands while the KAATSU Air Bands are inflated in the KAATSU Cycle mode. Breathe deeply. Relax while the KAATSU Air Bands are deflated.  
*Repeat the Inward Leg Squeezes as desired.*
- d) Outward Leg Squeezes: Place your hands on your outer thighs and slowly push inwards as you push your legs outwards against the force of your hands while the KAATSU Air Bands are inflated in the KAATSU Cycle mode. Breathe deeply. Relax while the KAATSU Air Bands are deflated.  
*Repeat the Outward Leg Squeezes as desired.*
- e) Isometric Contractions: Repeatedly contract and then relax your upper leg muscles (quadriceps and hamstrings) while the KAATSU Air Bands are inflated in the KAATSU Cycle mode.

As soon as you take off the KAATSU Air Bands, you will feel relief and a feeling like you just worked out. During early morning flights, it is a great way to wake up. During red-eye or intercontinental flights, it is a good way to prepare for a meal or take a nap.

## KAATSU with Immobility and Paraplegics



When you are immobile due to accident or injury, very simple KAATSU Cycle sets at conservative (i.e., low) pressures can be done repeatedly and up to three times per day.

### Key Points

- Start with sets in the KAATSU Cycle mode on your arms, then follow with sets on your legs. Arms should always go first.
- Always start with low pressure. To use even lower pressures, use the Custom mode.
- Always follow the standard KAATSU protocols.
- The skin on the banded limbs should be slightly pinker than normal.

### Passive KAATSU

While the KAATSU Cycle sets are running, a family member, caretaker or physical therapist can take their immobile limb and gently move it to enhance the KAATSU effects.



## Expected Outcomes

After repeatedly doing up to 6 sets in the KAATSU Cycle mode during once or twice daily KAATSU sessions, paraplegics have noted they enjoy improved sleep patterns, improved muscle tone, more relaxation, and quicker wound recovery.



For additional information, learn how Purple Heart recipient and paraplegic Green Beret Joe Lowrey uses KAATSU [here](#).



## How to Use KAATSU for Cold Hands or Cold Feet

People of all ages can find relieve from cold hands and cold feet by gently and repeatedly using the KAATSU Cycle mode with the KAATSU Air Bands.



This condition can be caused by a variety of reasons from poor circulation and neuropathy to anemia to diabetes, stress and inflammation, surgical side effects and fractures. But it can also be caused by peripheral vascular disease, Raynaud's disease, heart disease or low blood pressure. Because there are many different causes, it is important to seek advice from your physician before starting KAATSU.

These are the standard KAATSU protocols for individuals with cold hands or cold feet:

- Only use the KAATSU Cycle mode.
- Only use conservative (i.e., low) pressure in the beginning and at the start of each KAATSU session.
- Be well hydrated before and during each KAATSU session.
- Use KAATSU consistently for optimal and quick improvement.

- You can do up to 6 sets in the KAATSU Cycle mode per session, starting with your arms then moving onto your legs.
- Do simple arm movements (e.g., stretching, any gentle movement, Hand Clenches, Biceps Curls, Triceps Extensions, Ball Squeezes, Holding and Writing with a Pen).
- Keep your arms and hands below your shoulder level.
- Do simple leg movements (e.g., stretching, Toe Curls, Toe Raises, Sitting Heel
- Raises, Standing Leg Curls, Quadriceps Contractions, Easy Walking).
- You can use the KAATSU C3 in Single-limb mode. For example, if your right arm is more affected than your left arm, then try using the KAATSU Air Bands only on the right arm.

# How Stroke Survivors Use KAATSU

Rehabilitation and a positive mindset are critical to recovering from a stroke. Strokes can vary in type and severity, and recovery from a stroke is difficult and often seems overwhelming. There are stroke patients who incorporate KAATSU in their rehabilitation. [see here](#).

Al [shown above] is one example. The Southern Californian experienced a stroke in 1999 and he began KAATSU in June 2020 - and saw immediate improvement in his pain management and mobility.

These are the standard KAATSU protocols that he and other stroke survivors follow:

- Only use the KAATSU Cycle mode.
- Only use conservative (i.e., low) pressure in the beginning and at the start of each KAATSU session.
- Be well hydrated before and during each KAATSU session.
- Use KAATSU consistently for optimal and quick improvement.
- You can do up to 6 sets per session in the KAATSU Cycle mode, starting with your arms, then moving onto your legs.
- First do (or try) simple arm movements (e.g., stretching, any gentle movement, Hand Clenches, Biceps Curls, Triceps Extensions, Ball Squeezes, Holding and Writing with a Pen). Keep your arms and hands below your shoulder level.
- Then, do (or try) simple leg movements (e.g., stretching, Toe Curls, Toe Raises, Sitting Heel Raises, Standing Leg Curls, Quadriceps Contractions, Easy Walking).
- You can use the KAATSU C3 in Single-limb mode. For example, if your right arm is more affected by the stroke than your left arm, then try using the KAATSU Air Bands only on the right arm.

These protocols have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease and its use should be evaluated by your own physician before use.

# Tightening Your Skin With KAATSU

KAATSU has been used by skin care professionals and make-up artists for decades in Japan.

Beauty care experts and aestheticians who cater to both young women and older women understand how increased blood flow in their clients' skin and face helps them on a number of wellness and cosmetic perspectives.

In 2006, researchers from the University of Tokyo and the Tokyo Metropolitan University studied what was anecdotally known by the KAATSU Beauty specialists. They published a formal study project titled, [Effect of knee extension exercise with KAATSU on forehead cutaneous blood flow in healthy young and middle-aged women.](#)

In this study of women (average age 34.5 years), they concluded that the cutaneous blood circulation (circulation and blood supply of the skin) in the foreheads of test subjects were improved with unloaded unilateral knee extension exercises (i.e., 3 sets of 15 repetitions taking less than 75 seconds per set with a single KAATSU Air Band on their left upper leg without weights or resistance).

The women performed the three-set series of exercises twice - for the first time, they did it without KAATSU, and for the second time with KAATSU with the KAATSU Air Band inflated initially to 140 SKU and ending eventually at 200 SKU.

The blood flow in the foreheads of women was calculated from the blood velocity and red blood cell mass that was determined by laser blood flow retry.

This conclusion of how blood circulation in a KAATSU user's forehead is improved with relatively easy leg exercises that focus on the quadriceps and hamstrings seems either impossible or illogical.



# KAATSU Beauty

Optimal movements to help improve and tighten loose folds of skin due to surgery and significant weight loss include the exercises described below. Tightening the skin by improving the elasticity of the capillaries and blood circulation in the dermis and underlying muscle takes some time, but the effort is well worth it.

Improvement in the skin, vascular tissue and muscle is best achieved by doing 2 KAATSU sessions per day with up to 6 KAATSU Cycle sets on both your arms and legs. Although this sounds time-consuming, the KAATSU Cycles can be done while you are doing other things (from work to household chores to sitting around and watching movies and television).





## Upper Body with KAATSU Air Bands on your Arms

- Use the KAATSU Cycle mode
- Extend your arm outwards from your body and rotate your arms clockwise and counterclockwise. Keep your arms in the same position around shoulder height, but twist your wrists as far as possible in the clockwise direction and then in the opposite (counterclockwise) direction. Move your arms slowly rather than quickly.
- Let your arms hang naturally downwards from your body while you walk and alternately rotate your arms in the clockwise and counterclockwise directions.
- Do the Standard KAATSU 3-Point Arm Exercises (see page 58), optimally performed slowly.

## Lower Body - KAATSU Air Bands on your Legs

- Use the KAATSU Cycle mode.
- Walk comfortably. Optimally and ideally, you can walk barefoot on the sand or, alternatively, on grass or uphill.
- Do Standard KAATSU 3-Point Leg Exercises (see page 64). Perform the first set with toes pointed inwards, the next with the toes pointed outwards, and the last with the feet pointed straight.

## Core - KAATSU Air Bands on your Legs

- Use the KAATSU Cycle mode.
- Balance on one foot. Then balance on the other foot. Repeat 3 times. If this is too easy for you, grab two water bottles and move your arms while balancing on your one foot.
- Walk comfortably with a small book on your head.
- Play with a Hula Hoop.
- Stretch your legs and lower back normally.

## Chin and Jaw - KAATSU Air Bands on your Arms

- Use the KAATSU Cycle mode.
- Repeatedly pronounce vowels ("...a-e-i-o-u...") with exaggerated movement of jaw and mouth.
- Move your head upwards and downwards slowly.
- Turn your head left and right.
- Rotate your head left and right.



# Using KAATSU Before and After Getting Tattoos

KAATSU Cycle sets when properly applied is excellent for pre-surgery preparations and post-surgery recovery, especially with sutures on the skin and lacerations.

The tattoo protocol helps people easily deal with the inflammation and discomfort that comes with getting a tattoo.

## Pre-Tattoo:

- Be well hydrated – drink an entire water bottle before your KAATSU Cycle session begins and remain well hydrated throughout the session.
- Properly place and tighten the KAATSU Air Bands on your arms. Start with low pressures. Repeat this level if this is appropriate for you. But gradually increase to higher and higher levels if a higher pressure is comfortable for you.
- Continue repeated sets in the KAATSU Cycle mode up to 6 times before you go to the tattoo parlor.
- For best results, use KAATSU on both your arms and legs.

## Post Tattoo:

- Even with bandages still on, start doing sets in the KAATSU Cycle mode after you have received your tattoo at low-pressure levels.
- After taking off the bandages, wash the area, and do a few more KAATSU sets before going to bed that evening.

## Expected Results after 6 Hours:

- Normal swelling and inflammation are significantly or completely reduced.
- Skin around the tattoo is not as sensitive to the touch as may be expected.
- The usual amount of pain associated with tattoos is significantly reduced.





*After 3.5 hours*



*After 5 hours*

# KAATSU for Varicose Veins

Time and time again, male and female users of KAATSU have seen their varicose veins either go away or be minimized.

While eliminating or reducing their varicose veins was not their original goal, the cosmetic effect of this outcome has been greatly appreciated by many - including women who have just given birth and older retirees of both ages.

To understand why this improvement occurs, it is important to understand how and why varicose veins appear in the first place.

## Varicose Vein Causes

Blood flows into your legs through arteries and returns to the heart in your veins. Veins have valves inside them to stop the blood from flowing the wrong direction. These valves can lose their elasticity, stop working properly or otherwise become weak or damaged.

Weak or damaged valves in your legs can lead to varicose veins. While your heart is strong enough to efficiently pump blood through your torso, it needs help to enable blood to flow to and from your lower body. To return blood to your heart, the veins in your legs must work against gravity.

Muscle contractions in your lower legs function as pumps and the elastic vein walls help blood return to your heart. Tiny valves in your veins open as blood flows toward your heart. The valves then close to stop blood from flowing backward. If these valves are weak or damaged, blood can flow backward and pool in the vein, causing the veins to stretch or twist.

Aging causes the valves in your veins to become weaker and eventually that leads to the valves allowing some blood to flow back into your veins where it collects instead of flowing up to your heart.

Varicose veins are twisted, enlarged veins. The veins in your legs are the most affected because standing and walking upright increases the pressure in the veins of your lower body.



For many people, varicose veins and spider veins — the smaller, thinner, more mild variation of varicose veins that can also be found on your face — are more of a cosmetic worry. For some people, varicose veins cause pain and discomfort and sometimes lead to more serious problems that should be addressed by your personal physician.

So, if you have veins in your legs that are dark purple or blue in color, look like they are twisted and bulging, you may be advised to exercise, elevate your legs or wear compression stockings that can help you ease the pain of varicose veins and may prevent them from getting worse.

## Recommendations

Medical professionals understand that individuals cannot completely prevent varicose veins, but it is widely known that improving blood circulation and muscle tone can reduce the risk of developing varicose veins and getting additional ones.

This self-treatment can include exercise, proper nutrition, avoiding obesity, frequently changing your sitting and standing position if you have a tendency to not move much at work or home.

## KAATSU Benefits

This is how KAATSU can be useful and effective. There are two primary outcomes and mechanism:

- Improved blood flow
- Increased vascular elasticity

Using KAATSU can help the valves in your legs function normally and eliminate or reduce the backed-up blood near these areas.

## Improved Blood Flow

Research at the University of Tokyo Hospital showed that regular intermittent modification of venous flow (from your limbs back to your torso) by using KAATSU equipment on the legs leads to blood shifting to the lower part of the body while blood flow is temporarily decreased in the parts of the body above your heart. Your brain perceives this minor shift and directs your heart to increase blood flow. The increased blood flow improves blood circulation

throughout the entire body and the blood in the peripheral arteries flows more smoothly.

### **Increased Vascular Elasticity**

As we age, the natural elasticity of our capillaries, veins and arteries is reduced. When blood vessel walls lose its elasticity, the smooth circulation of blood is reduced. When the venous flow is intermittently modified with KAATSU equipment on your legs, the blood flow is temporarily reduced in your upper body and the blood vessels throughout your body attempts to supply an increased amount of blood.

This is a natural phenomenon and is what the human body and brain have evolved to do.

When the pressure in KAATSU Air Bands is released (every 30 seconds in the KAATSU Cycle mode), this mechanical modification (alternately creating constriction and dilation) stimulates the blood vessels and enhances blood vessel elasticity - even if you are sitting down and relaxing. When venous flow is modified, blood must be pushed harder to bring sufficient blood to each cell in your body.

In addition, there are two other natural physical phenomena that occur:

1. Vascular endothelial cells generate nitric oxide that helps to restore your natural vascular elasticity, and
2. New blood vessels are formed to efficiently supply a limited amount of blood.

These effects lead to the improved valve function and elimination or significant reduction of varicose veins.

## How to Use KAATSU with Varicose Veins

There are 3 different ways to improve your varicose veins. All the protocols should be performed with relatively low SKU pressure and not done with vigorous exercises. Slow and gentle movements are best, but people who are deconditioned due to a sedentary lifestyle or injuries can also simply sit while using the KAATSU C3 in Cycle mode.

1. The easiest and most convenient exercise is to simply sit and do up to 6 sets in the KAATSU Cycle mode with the KAATSU leg bands on. You can do this anytime you are working in your office, watching TV, or relaxing anywhere. Start with conservative (i.e., low) pressure and then gradually increase with each subsequent KAATSU set.
2. The next best and more effective exercise is to do the standard KAATSU 3-Point Exercises with the KAATSU leg bands on while using the KAATSU Cycle mode.

[KAATSU-The Original BFR-For Corporate Wellness: Lower Body Exercise Routine](#)

[Stress Relief | KAATSU Corporate Wellness](#)

[Upper Body | KAATSU Corporate Wellness](#)

**See videos above** for ideas and suggested exercises that can be done in your home or office. You can also do a variety of other exercises.

3. The best and most optimal exercise is KAATSU Walking. With the KAATSU C3 or the next-generation KAATSU Wearable units, you can walk with the KAATSU leg bands on while using the KAATSU Cycle mode.
4. The KAATSU Walking can be on a treadmill or outside anywhere or indoors in your home or office.

## Precautions

If you have cardiac issues or serious vascular issues, consult your physician before beginning any exercise program.

However, the KAATSU Cycle mode has been used safely and without contraindications with over 7,000 individuals with documented cardiac issues (e.g., heart bypass and heart attack) or who have survived strokes before being admitted to the University of Tokyo Hospital.

It is important and strictly recommended to only use the KAATSU Cycle mode with anyone with health concerns. All the standard KAATSU protocols are essential to follow: Use conservative pressure, be well hydrated before and during KAATSU sessions, always start with the KAATSU Cycle mode to help warm-up the body and vascular system, and move slowly and conservatively (i.e., not vigorously).

## KAATSU Core and Lower Back Exercises for Varicose Veins

The standard KAATSU core and lower back exercises with the KAATSU Cycle mode can also be useful for individuals with varicose veins.

### Core & Lower Back #1 Exercise

- Properly place and tighten the KAATSU Air Bands on your legs, then start the KAATSU C3 in the Cycle mode at low pressure.
- Sit straight up in a chair or couch with your hips near the edge.
- Slowly exhale and slowly lean forward, tightening your abdominal muscles as strongly as possible until your stomach is close to your legs.
- Hold and then slowly inhale air on your return to a sitting position with good posture.
- Repeat as desired.

## Core & Lower Back #2 Exercise

- Properly place and tighten the KAATSU Air Bands on your legs, then start the KAATSU C3 in the Cycle mode at low pressure.
- Stand on one foot, balancing only on one leg for as long as possible.
- When your balance is lost, rest for 10 - 20 seconds and repeat twice.
- Repeat on your other foot and leg.
- This act of balancing will create instability in your core and will help strengthen your stomach and lower back.

## Core & Lower Back #3 Exercise

- Properly place and tighten the KAATSU Air Bands on your legs, then start the KAATSU C3 in the Cycle mode at low pressure.
- Place a book on your head and walk slowly until the book falls off.
- Rest 10 - 20 seconds and repeat the walk again two more times with the book on your head.
- Walking straight slowly, especially on an uneven surface like a sandy beach, will create instability in your core and will help strengthen your stomach and lower back.

## Core & Lower Back #4 Exercise

- Properly place and tighten the KAATSU Air Bands on your legs, then start the KAATSU C3 in the Cycle mode at low pressure.
- Stand on one foot while holding a water bottle in each hand.
- Hold the water bottle in your outstretched arms and stand as long as possible on one leg.
- When your balance is lost, rest up to 20 seconds and repeat two more times.
- After 3 times, balance on your other foot.
- To make this exercise more difficult, move your outstretched arms left and right, and up and down in an asymmetric manner while balancing on one foot.



### Core & Lower Back #5 Exercise

- Properly place and tighten the KAATSU Air Bands on your legs, then start the KAATSU C3 in the Cycle mode at low pressure.
- Do planks as usual.
- Alternatively, tighten the KAATSU Air Bands on your arms and do planks as normal.

### Core & Lower Back #6 Exercise

- Properly place and tighten the KAATSU Air Bands on your legs, then start the KAATSU C3 in the Cycle mode at low pressure.
- Lie on your back and slowly bring one leg one up to your stomach and hold.
- Grab your knee with your arms to stretch your back.
- Repeat as desired.
- Continue to lie on your back and slowly pull both your legs up to your stomach and hold. Grab your knees with your arms to stretch your back. Repeat as desired.

### Core & Lower Back #7 Exercise

- Properly place and tighten the KAATSU Air Bands on your legs, then start the KAATSU C3 in the Cycle mode at low pressure.
- Lie on your back and slowly lift your hips off the floor and hold. Bring your hips to the ground and repeat as desired.

### Core & Lower Back #8 Exercise

- Properly place and tighten the KAATSU Air Bands on your legs, then start the KAATSU C3 in the Cycle mode at low pressure.
- Lie on your back and slowly lift both your feet off the ground and hold.
- Repeat as desired.
- Lie on your back, lift both your feet off the ground, and kick your feet slightly off the ground. Repeat as desired.

## Core & Lower Back #9 Exercise

- Properly place and tighten the KAATSU Air Bands on your legs, then start the KAATSU C3 in the Cycle mode at low pressure.
- Lie on your back and slowly pandiculate (i.e., stretch and stiffen your trunk and limbs, extending your toes, feet, arms, and hands as you do upon waking).
- Repeat as desired.



# If Sitting Is the New Smoking, Then KAATSU Sitting Is the New Exercise

Research suggests that excessive sitting (defined as more than eight hours a day) increases the risk of premature death and cardiovascular disease, some cancers, and chronic diseases by 10 - 20%. The media has compared the health risks of excessive sitting to the risks associated with smoking.

Of course, unlike smoking, sitting is not an addiction – but you can reduce the risks of sitting by using KAATSU on both your arms and legs while at work, at school, at home or while traveling.

By using KAATSU on your legs or arms, suddenly sitting becomes the new exercise.

With KAATSU equipment at your desk or in your cubicle or in an airplane or train, this new exercise can be done anywhere anytime, dramatically reducing the health risks of excessive sitting. Simple leg, arm, and easy-to-do core exercises with KAATSU are a great way to stay fit while sitting and help maintaining your weight.

You can do the Standard or Advanced KAATSU 3-Point Exercises for your arms and legs – or simply stretch. If you want to focus on your core, you can do several simple KAATSU exercises to strengthen your lower back and tighten your core.

## Core & Lower Back #2 Exercise

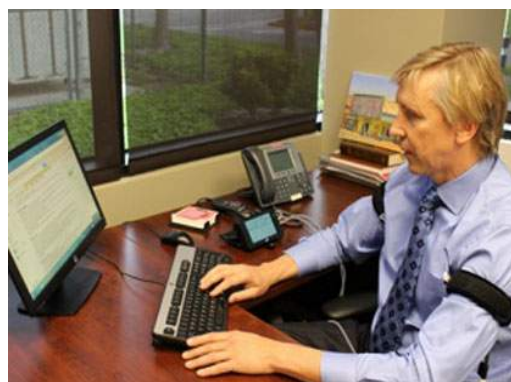
- Properly place and tighten the KAATSU Air Bands on your legs, then start the KAATSU C3 in the Cycle mode at low pressure.
- Stand on one foot, balancing only on one leg for as long as possible.
- When your balance is lost, rest for 10 - 20 seconds and repeat twice.
- Repeat on your other foot and leg.
- This act of balancing will create instability in your core and will help strengthen your stomach and lower back.

### Core & Lower Back #3 Exercise

- Properly place and tighten the KAATSU Air Bands on your legs, then start the KAATSU C3 in the Cycle mode at low pressure.
- Place a book on your head and walk slowly until the book falls off.
- Rest 10 - 20 seconds and repeat the walk again two more times with the book on your head.
- Walking straight slowly, especially on an uneven surface like a sandy beach, will create instability in your core and will help strengthen your stomach and lower back.

### Core & Lower Back #4 Exercise

- Properly place and tighten the KAATSU Air Bands on your legs, then start the KAATSU C3 in the Cycle mode at low pressure.
- Stand on one foot while holding a water bottle in each hand.
- Hold the water bottle in your outstretched arms and stand as long as possible on one leg.
- When your balance is lost, rest 10 - 20 seconds and repeat two more times.
- After 3 times, balance on your other foot.
- To make this exercise more difficult, move your outstretched arms left and right, and up and down in an asymmetric manner while balancing on one foot.









# Bedtime KAATSU

To reduce the effects of jet lag and battle insomnia, or to relieve your stress before bedtime, especially when traveling internationally or having a bad day at the office, KAATSU can work wonders.

Before bedtime or after checking into your hotel during travel, you can properly utilize your KAATSU C3 as follows:

- Be very well-hydrated.
- Do sets in the Progressive KAATSU Cycle mode in your hotel room before going to bed on your first few evenings in your new location.
- Be conservative with your pressure. The effects will occur despite using a lower-than-normal pressure.
- Rest at least 20 seconds between each set and each set of movements.
- Do not go to muscular failure or do anything vigorous with these protocols; the goal is to become relaxed.

## Upper Body Exercises:

1. Properly place and tighten the KAATSU Air Bands on your arms.
2. Do up to 6 sets in KAATSU Cycle mode while doing any of the following exercises:
  - a) Forward Shoulder Rolls: Do 20 - 30 in a steady motion while your KAATSU Air Bands are inflated. Breathe deeply. Relax while your KAATSU Air Bands deflate. Repeat as desired.
  - b) Backward Shoulder Rolls: Do 20 - 30 in a steady motion while your KAATSU Air Bands are inflated. Breathe deeply. Relax while your KAATSU Air Bands deflate. Repeat as desired.
  - c) Head Rotations: Slowly roll the head forwards and backwards. Then slowly roll your head to the left and then to the right. Then slowly roll your head in a clockwise direction and then in a counterclockwise direction while your KAATSU Air Bands are inflated in the KAATSU Cycle mode. Breathe deeply. Relax while the KAATSU Air Bands are deflated in the KAATSU Cycle mode. Warning: Skip this exercise if any of these movements cause dizziness.

- d) Triceps Muscle Stretches: Stretch your triceps muscles on your left and right arms while your KAATSU Air Bands are inflated in the KAATSU Cycle mode. Breathe deeply. Relax while the KAATSU Air Bands are deflated in the KAATSU Cycle mode.
- e) Deltoid Muscle Stretches: Stretch your deltoid muscles on left and right shoulders while your KAATSU Air Bands are inflated in the KAATSU Cycle mode. Breathe deeply. Relax while the KAATSU Air Bands are deflated in the KAATSU Cycle mode.
- f) Stretch your upper body or torso as you desire and are able.

### **Lower Body Exercises:**

1. Properly place and tighten the KAATSU Air Bands on your upper legs.
2. Do up to 6 sets in the KAATSU Cycle mode while simply sitting or stretching, meditating, reading or watching entertainment.

Several of these exercises are demonstrated in the video below. These same exercises can be done in your office while at work to relieve stress and get some exercise during the day when you are sitting and being sedentary all day long.



# History of KAATSU

All Nippon Airways (ANA) produced a documentary on Dr. Yoshiaki Sato, the inventor of KAATSU. This video [here](#) summarizes the history of KAATSU until 2010. The documentary explains how KAATSU can improve blood circulation, stimulate a significant hormonal response, and improve muscle tone.

KAATSU products have been engineered and designed in Southern California since 2014 while the initial testing and research were conducted by Dr. Sato and cardiologists Dr. Toshiaki Nakajima and Dr. Toshihiro Morita at the University of Tokyo Hospital (with over 7,000 cardiac rehab patients between 2004 and 2014). The physicians studied, tested, researched and set the protocols at the 22nd Century Medical Center in the Department of Ischemic Circulatory Physiology, KAATSU Training, University of Tokyo. NHK-TV produced the NHK Medical Frontiers documentary on KAATSU.

## The Moment of Discovery

In the fall of 1966, Yoshiaki Sato was 18 years old. He was attending a Buddhist memorial service and was listening to the monk chanting sutras when, not unexpectedly, his legs went numb while sitting on the floor in the traditional Japanese position (*seiza*). With a straight back while kneeling on the floor, he started to massage his calves in order to relieve the pain as his legs were bent underneath him.

While the discomfort continued during the long ceremony, he had a revelation. Sato realized that his blood circulation was blocked in his calves as the weight of his body was directly upon his ankles. He reasoned that his legs must have gone to sleep because of the reduced blood flow to the periphery of his legs. Because his calves had the ‘pumped up’ feeling after he experienced while strength training, this was the initial moment of inspiration where the original idea of blood flow moderation training began.

The swelling and hardness in his calves led to Sato asking himself the key question that began KAATSU, *“I wonder if purposefully constricting blood flow could artificially replicate the physiological conditions of hard strength training? If this were true, could benefits be realized by only lifting no loads or only light loads instead of heavy weights?”*

The answer would be eventually answered in the positive.

## Years of Quiet Experimentation

Over the next seven years between 1966 and 1973 in the quiet of his own home, the young man from Tokyo diligently experimented on himself by applying different bicycle tubes, ropes and bands at different pressures and different sizes on different parts of his body. He methodically kept track of what type of bands and pressures worked and what experiments did not work.

Sato began to see results that could not be explained given the physiological knowledge of the day. But the resulting effects of KAATSU were clear, although the medical explanations did not come for another few decades.

After detailed trial and error that he carefully documented over the years, Sato gradually developed effective protocols to safely restrict blood flow and enable muscle growth. His self-research on his own body led him to determine what length and width of bands are ideal and the optimal degree and locations to apply KAATSU pressure in various activities.

## Moment of Proof

By 1973 on his own body, Sato gradually developed the details and fine-tuned the protocols of KAATSU as it continues to be practiced today. At the age of 25 he went on a ski trip when he badly fractured his ankle and tore the ligaments around his knee. The injuries were diagnosed and his own father, a local physician told Sato that it would take six months to heal.

But Sato chose to rehabilitate himself with his KAATSU Air Bands applied to his upper leg. Because he could not withstand the discomfort of keeping the bands on for the usual duration, he repeatedly tightened and released the bands while doing isometric exercises for 30 seconds on and a few seconds off three times per day.

The results of his regimen – now known as the KAATSU Cycle – surprised him to a certain extent, but really shocked his doctors because not only did his muscles not atrophy, but he fully recovered within six weeks.

## Years of Confirmation

Word spread locally of Sato's unheard-of recovery. Demand for his new approach built rapidly around Tokyo, so Sato opened the Sato Sports Plaza in the outskirts of Tokyo where the KAATSU Japan headquarters still exists to this day.

Sato conducted KAATSU on local people of all ages and abilities over the next decade including comatose patients and individuals with paraplegia, cerebral palsy, carpal tunnel syndrome, multiple sclerosis, skin burns, broken bones, torn muscles and ligaments, and traumatic brain injuries. Injured patients, healthy athletes, older people, and young adults flocked to his office.

While applying KAATSU to tens of thousands of clients, Sato learned what worked best for people with various afflictions and injuries and from all walks of life between 1973 and 1982.

## Mind – Body – Spirit Connection

Sato, who comes from a family of physicians, observed that KAATSU enabled the human body to improve and heal itself most effectively and efficiently. He also encouraged people to focus mentally on their injured body part while doing KAATSU and observed how the intake of food and water before and after KAATSU also led to positive results. The mind-body-spirit connection gradually became evident.

## Patenting KAATSU

During the 1980's and 1990's, his local practice had grown to include professional golfers, sumo wrestlers, and Japanese Olympians as his reputation grew and KAATSU users increased significantly.

In 1994, Sato applied for his first patents in Japan (Patent No. 2670421), U.S.A. (Patent No. 6149618), and Europe (UK, Germany, France, Italy with 94206403.0) as he produced and commercialized the first KAATSU Training bands.



## Introduction of the KAATSU Instructor Certification Program

In 1997, Sato introduced the KAATSU Instructor educational program in Japan where his well-defined protocols were shared with coaches, trainers, physical therapists, skin care practitioners, and physicians throughout Japan. Over 3,000 KAATSU Specialists were certified and hundreds of highly specialized KAATSU health care professionals were licensed. These individuals conducted hundreds of thousands of KAATSU sessions annually and safely without complications.

Media attention and public acceptance grew in Japan after KAATSU was named one of the collaborative projects of the University of Tokyo Hospital's 22nd Century Medical and Research Center in 2000.

Sato also began to offer an ischemic circulatory physiology course at the University of Tokyo Hospital together with cardiologists Doctors Nakajima and Morita. He also conducted joint development work with the Japan Manned Space Systems Corporation for use in zero-gravity conditions (i.e., space).

## KAATSU Research

Beginning in the mid-1990's, Sato began joint research with Professor Naokata Ishii of the Department of Life Sciences, Graduate School of Arts and Sciences, at the University of Tokyo.

Other researchers in Japan, including cardiologists Doctors Nakajima and Morita at the University of Tokyo Hospital, started to explore the benefits of KAATSU and various research results were submitted to peer-review publications.



*Dr. Sato, KAATSU inventor*

## KAATSU Internationalization

In 2014, KAATSU Global was established in Huntington Beach, California and the Center for KAATSU Research at the Harvard Medical School was started in Boston, Massachusetts by Dr. Sato and Peter Lansbury, Jr., PhD. Thereafter, Olympic coach Chris Morgan, David Tawil, retired Navy SEAL Captain John Doolittle, Ralph Polendo, Dr. Lyle Nalli DPM, Dr. Cory Keirn DPT, German scientist Robert Heiduk, Péter Lakatos in Hungary, and others joined the team.

Collectively, they began global expansion of KAATSU throughout North America, South America, Oceania, Europe, the Middle East, and Asia. Eventually, KAATSU Global developed the next-generation products that were also sold to and distributed by Dr. Sato in Japan including the latest KAATSU M3, KAATSU B1, and KAATSU C3.

## KAATSU's Future

Future applications and the future generation of KAATSU products are always being explored in the military, medical, sports performance, and corporate wellness markets. KAATSU's impact on jet lag mitigation, sleep quality, diabetes, sarcopenia, brain wave activity, stamina and strength improvements, and use with various ailments and diseases are areas of current interest and research.

While KAATSU has expanded to 49 countries as of 2021, there are also an increasing number of knockoffs and imitators that attempt to design products around KAATSU patents as the global BFR (Blood Flow Restriction) market continues to grow exponentially.

### KAATSU Timelines

**1966:** Sato develops the concept of KAATSU while he was sitting on his heels during a Buddhist ceremony.

**1966 - 1972:** Sato experiments on himself and develops the basic KAATSU methodology through years of trial and error.

**1973:** Sato breaks his ankle during skiing and uses KAATSU Cycle to rehabilitate himself quickly.

**1973 - 1982:** Sato begins to offer KAATSU to individuals from all walks of life.

**1983 - 1994:** Dr. Sato continues to improve know-how to apply KAATSU through increasingly wider application to people and basic research.

**November 1993:** Dr. Sato applies for first patent of KAATSU in Japan (Patent No. 2670421).

**June 1994:** Dr. Sato applies for first patent of KAATSU in the United States (Patent No. 6149618).

**August 1994:** Dr. Sato applies for first patent of KAATSU in the United Kingdom, Germany, France and Italy (94306403.0).

**1995:** KAATSU receives recognition after being used on the Japanese bodybuilding champion Toshio Konuma.

**1996 - 1999:** Dr. Sato begins joint research with Professor Naokata Ishii, Department of Life Sciences, The University of Tokyo.

**1997:** Various research results are released at academic conferences in Japan.

**2000:** Research results are published in various scientific journals.

**2001:** Research results are announced by the Japanese Society of Clinical Sports Medicine.

**September 2001:** KAATSU and KAATSU Aqua are tested at Golden West College in California, first time outside of Japan.

**2004:** Japan KAATSU Training Society is established.

**June 2004:** The study of KAATSU is initiated in the University of Tokyo Hospital's 22nd Century Medical and Research Center.

**June 2004:** Research results are published by the Japanese Association of Rehabilitation Medicine.

**October 2004:** KAATSU Training and ischemic circulatory physiology course is established at the University of Tokyo Hospital.

**April 2005:** Joint development agreement is signed with the Japan Manned Space Systems Corporation.

**August 2005:** Advanced medical research & development cluster is launched at the University of Tokyo Hospital.

**October 2005:** KAATSU Master Mini is developed and launched in Japan.

**April 2006:** The University of Tokyo offers a course in Sport and Exercise Biometrics at its Graduate School of Frontier Science.

**August 2006:** Joint research begins with JAXA and the University of Tokyo into KAATSU implementation into space.

**December 2006:** KAATSU Training Research Institute Co., Ltd. is launched.

**July 2007:** Research on KAATSU begins at Rutgers University, University of Oklahoma, West Point, University of Texas and Indiana University Purdue University.

**May 2008:** KAATSU Master is launched.

**August 2008:** American College of Sports Medicine signs co-research project with Dr. Sato.

**April 2009:** Dr. Sato is appointed as Knight Commander of the Order of St. John of Jerusalem.

**September 2009:** Joint development agreement is signed with Jilin University and the State General Administration of Sports in China.

**April 2010:** Genetic research starts at the Research Institute of Sports Science of the State General Administration of Sports in China.

**December 2013:** Dr. Sato starts to work with United States Ski & Snowboard Association in Park City, Utah.

**February 2014:** KAATSU Global, Inc. is established in Southern California by Steven Munatones, Richard Herstone, and Dr. Sato.

**February 2014:** KAATSU is used by American Olympic Nordic combined skiers at the 2014 Winter Olympic Games in Sochi, Russia.

**September 2014:** New KAATSU Master and KAATSU Nano are launched in the United States.

**2016:** Drs. Sato, Ishii, Nakajima and Abe publishes the book, KAATSU Training: Theoretical and Practical Perspectives, in English.

**2016:** KAATSU is widely used by Team USA Olympic athletes at the 2016 Summer Olympic Games in Rio de Janeiro, Brazil.

**2017:** KAATSU is used by personnel in the Department of Defense and Special Operations Command in the United States military.

**2018:** KAATSU is used by athletes in the NFL (National Football League), NBA (National Basketball Association), MLB (Major League Baseball), NHL (National Hockey League), MLS (Major League Soccer) and NCAA Division I, II and III institutions in the United States.

**2018:** KAATSU is used by personnel in the Israeli Defense Forces.

**2018:** KAATSU is used by paraplegics and quadriplegics for the first time outside of Japan.

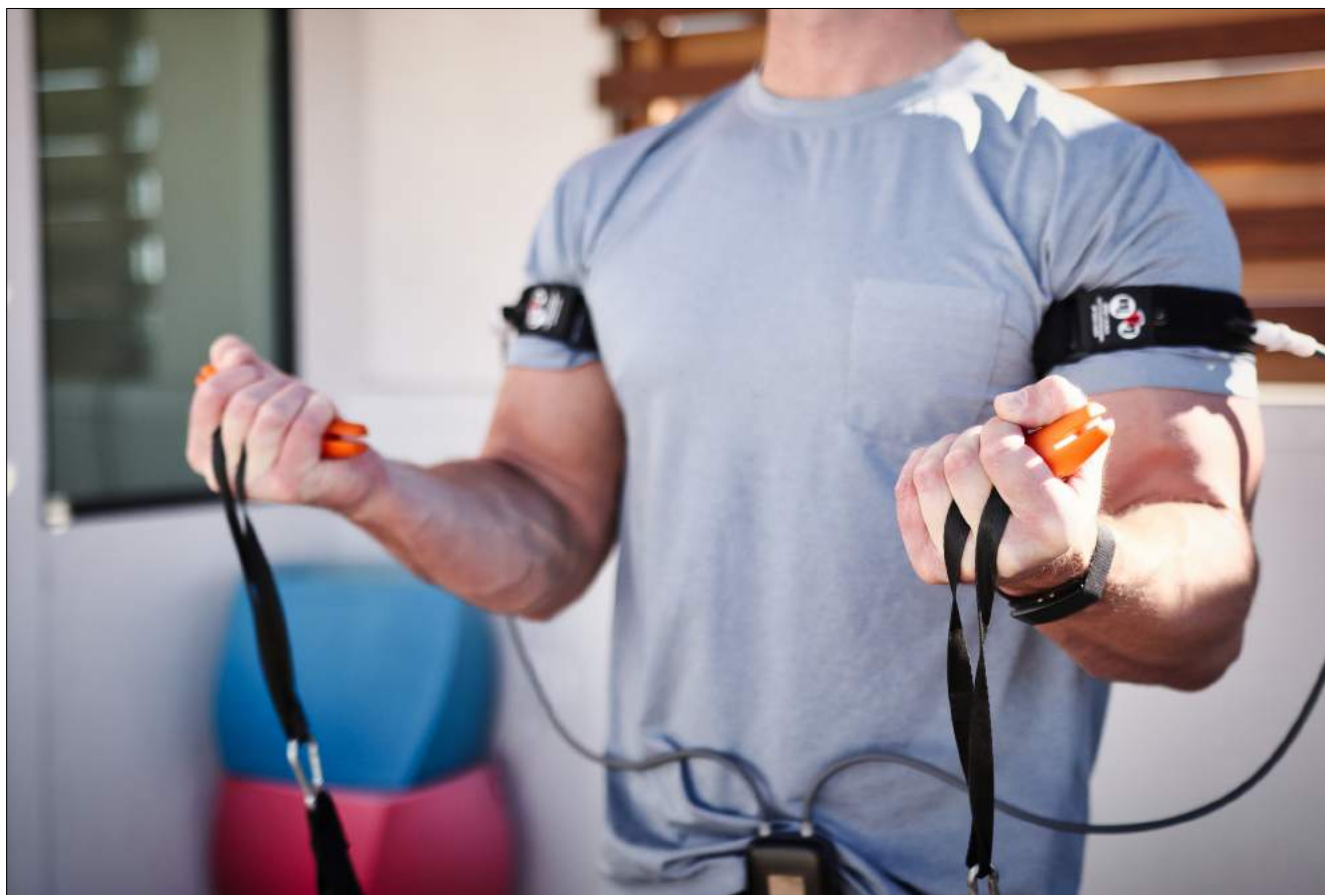
**2019:** KAATSU is distributed in all 50 American states including at the Department of Veterans Affairs (VA) Hospital (James A. Haley Veterans Hospital in Tampa, Florida).

**June 2019:** Robert Heiduk publishes the book, KAATSU – The Pressure Training From Japan – New perspectives in sport, therapy and health promotion, in English and German.

**June 2019:** Dr. Nakajima and Dr. Sato publishes the book, University of Tokyo Hospital 22nd Century Medical and Research Center KAATSU Training & Ischemic Circulatory Physiology Course Summary from 2004 - 2014, in English.

**July 2019:** Next-generation KAATSU Master 2.0 is launched in the United States, Europe, and Middle East. Product is later renamed KAATSU M3.





**October 2020:** Next-generation KAATSU Cycle 2.0 and KAATSU C3 are launched in the United States, Europe, and Middle East.

**July 2021:** Over 100 Chinese and American Olympic medalists used KAATSU during the Tokyo Olympic Games.

**August 2021:** American Paralympic medalists used KAATSU during the Tokyo Paralympic Games.

**September 2021:** KAATSU C3 was scheduled to be showcased at the Department of Defense Warrior Games in Orlando, Florida before it was canceled due to the COVID pandemic.

**October 2021:** KAATSU is presented at the 36th World Congress of Sports Medicine in Athens, Greece. Presenter wins silver medal

**December 2021:** Next-generation KAATSU B1 Bluetooth-enabled product is launched in the United States.

**January 2022:** Next-generation KAATSU M3 product is launched in the United States and Japan

## About KAATSU Global

The mission of KAATSU Global is to empower anyone to achieve their performance, recovery, and rehabilitation goals anywhere, anytime through its patented equipment and proprietary protocols developed in Japan since 1966.

### KAATSU - BFR market's global leader

From its inception in 1966 until today, KAATSU remains the BFR market's global leader with an unparalleled safety record and widespread adoption in the athletic performance, rehabilitation, and recovery markets. The KAATSU protocols and pressures were standardized with easy-to-follow protocols that were developed with safety for all in mind.

### What Does KAATSU Mean in English?

The word KAATSU itself is a Japanese word that means 'additional pressure' in English and is written 加圧 in the Japanese language.

## Differences between KAATSU and BFR Bands

- KAATSU utilizes the patented automated Cycle function.
- Different pressures can be simultaneously used on different limbs.
- KAATSU equipment and protocols were proven safe and effective after a decade of clinical use and research on over 7,000 cardiac rehab patients at the University of Tokyo Hospital (between 2004 and 2014).
- KAATSU is used by cardiologists, orthopedic surgeons, podiatrists, and physicians in various specialties.
- KAATSU Air Bands do not occlude arterial flow and only put mild pressure on the veins, slightly modifying venous flow.
- KAATSU is meant to be gentle and convenient in order to do anywhere, anytime.
- More research has been conducted in more countries on KAATSU than any other BFR device.
- Seminal, groundbreaking research on KAATSU, the original BFR, was conducted and published by KAATSU inventor Dr. Yoshiaki Sato and his colleagues at the University of Tokyo during the mid-1990's.

## KAATSU versus BFR, SKU versus mmHg

A cursory Internet search of KAATSU will lead you to reading information on BFR, occlusion training, Blood Flow Restriction training, Limb Occlusion Pressure and many other terms that have little or no relationship with KAATSU.

First, let's review the vernacular used for both BFR (meaning Blood Flow Restriction) and KAATSU:

**Restriction (noun):** *something that restricts, an act of restricting, the condition of being restricted* from the Merriam-Webster dictionary.

**Occlusion (noun):** *the act of occluding (or close up, block off, or obstruct)* from the Merriam-Webster dictionary.

**Patent:** *open, unobstructed, affording free passage* from MedicineNet.

**KAATSU (or 加圧 in Japanese):** *translated as 'additional pressure' in English.*

**Blood Flow Restriction (or BFR):** *a training strategy that involves the use of blood pressure cuffs, tourniquets or occlusion wraps placed proximally around a limb that maintains some arterial inflow while occluding venous return during exercise or rehabilitation.*

Note: While the tightness of BFR (Blood Flow Restriction) equipment is based on a certain percentage of one's systolic pressure, KAATSU has nothing to do with one's blood pressure.

## SKU versus mmHg

BFR equipment currently uses mmHg as its unit of measurement. KAATSU equipment originally used mmHg as its unit of measurement. But this led to confusion because the mmHg used with BFR equipment, and the mmHg used with the KAATSU equipment are two very different terms.

mmHg or millimeter of mercury is a manometric unit of pressure commonly used to define your blood pressure. When KAATSU's inventor first used pneumatic bands on the upper arms and upper legs of KAATSU users, he needed to conduct testing and research, and measure the degree of compression of the bands. He visited an auto supply store and found a device that could measure the pressure of the band against the skin. That handy convenient device used mmHg. But are significant differences between mmHg, the unit of measurement used in blood pressure cuffs, and mmHg, the unit of measurement first used on pneumatic KAATSU bands.

## Ideal blood pressure

Ideal blood pressure is 120/80 mmHg. The top number, or systolic pressure, refers to the pressure inside the artery when the heart contracts and pumps blood through the body.

The bottom number, or diastolic pressure, refers to the pressure inside the artery when the heart is at rest and is filling with blood.

This mmHg pressure inside the artery of your arms and legs and its defined unit of measurement is MUCH different than the mmHg originally used to define the level of compression of the pneumatic KAATSU bands that are wrapped around your arms or legs.

The problem is that many people – including physicians and researchers – confused mmHg that is used to define the systolic and diastolic blood pressure inside your arteries and the mmHg that is used with KAATSU pneumatic bands.

200 mmHg with a blood pressure cuff and 200 mmHg with a tourniquet and 200 mmHg with the KAATSU bands produces a significantly different type of pressure on your limbs. 200 mmHg on a blood pressure cuff is not equivalent 200 mmHg on KAATSU equipment.

In other words, 200 mmHg (or any pressure up to 500 mmHg on KAATSU equipment) is NOT equal to the pressure with the same numerical value on a blood pressure cuff. That is, the same mmHg number using two different devices affect arterial and venous flow much differently.

Because of the level of misunderstanding among consumers, physicians and researchers, KAATSU Global decided to change its unit of measurement from mmHg to SKU (Standard KAATSU Unit).

## KAATSU versus BFR

When Dr. Sato first submitted his research to peer-reviewed scientific journals, he originally described KAATSU as *KAATSU* (a Japanese word meaning ‘additional pressure’). But the editors of the journals required a change from KAATSU to BFR in order to get published.

BFR was a term that Dr. Sato and his collaborators did NOT want to use because the KAATSU equipment and protocols were not restricting any blood flow. But the editors of the journals required a vernacular change from KAATSU to BFR in order to get published.

As a result, KAATSU became widely known as BFR in the English-language journals and among the English-speaking researchers and practitioners. But in Japan and among Japanese users, KAATSU was not BFR and BFR was not KAATSU.



Oximeters

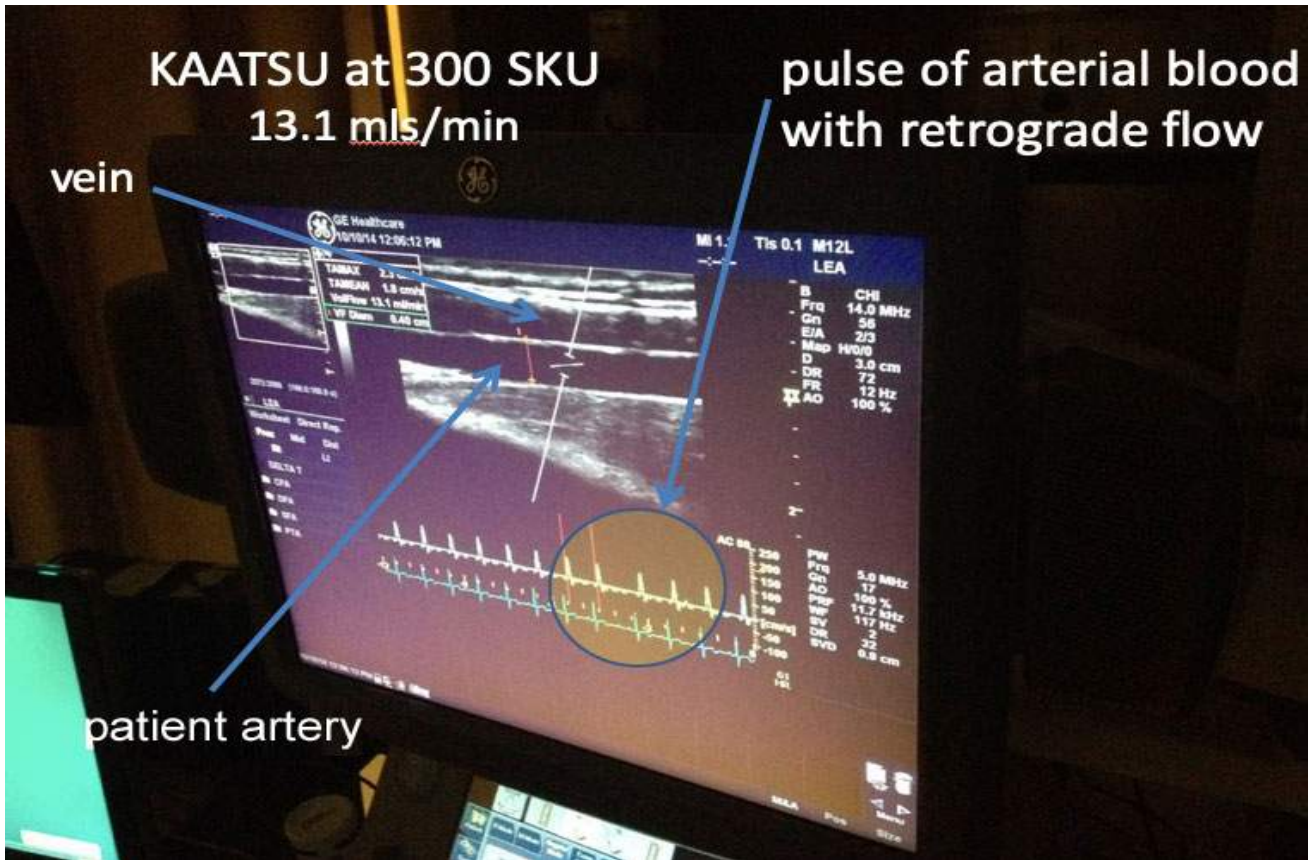
To this day, some KAATSU Master Specialists still use finger pulse oximeters to prove to people that KAATSU is not occluding blood flow. When the KAATSU Air Bands are placed on the arm, a pulse oximeter on one’s finger can show a healthy pulse and increasing SpO2 (oxygen saturation) – which would be impossible if the KAATSU equipment were occluding or restricting arterial blood flow.

While BFR is all about occlusion and restriction and is based on the percentage of one’s systolic blood pressure (LOP or Limb Occlusion Pressure), KAATSU only slightly compresses the upper limbs with flexible, stretchable pneumatic bands. So, while BFR starts with full occlusion, KAATSU starts from homeostasis – when the body is naturally at rest and equilibrium.

The BFR bands and KAATSU bands also differ in terms of width. The wider the bands, the easier and quicker it is to occlude arterial flow. This is one important reason why the KAATSU bands are narrow, elastic and stretchable.

Doppler machine

The effect of the structure of the bands and the protocols used are both profound and easy to see using a Doppler machine.



The Doppler ultrasound image above shows the arm's artery and vein of a male using KAATSU Air Bands at a pressure of 300 SKU. The ultrasound shows that the blood flow from the torso to the arm (arterial flow in the artery) and the blood flow back from the arm to the torso (venous flow in the vein) remain open and not occluded or restricted.

In fact, even at 300 SKU, the compression is relatively minor. But even a minor degree of compression produces profound effects on one's hormonal secretion and metabolic production.

**Add in Doppler picture here, plus three pictures of KAATSU Air bands on one limb and not the other from pages 22 and 23.**

BFR is commonly started by occluding the brachial systolic blood pressure in the arms or the femoral systolic blood pressure in the legs. Once this pressure, measured in mmHg, is determined, then the BFR bands are set at a certain percentage of that pressure measured in mmHG. In other words, BFR starts by cutting off (occluding) the arterial flow from the torso to the limbs - and then proceeding with exercise or rehabilitation at a lower pressure.

Some BFR advocates, with inexpensive equipment, recommend using the Borg Scale; a simple self-determination of the perceived exertion on a scale of 1 to 10. The ideal tightness for these BFR (or Occlusion) bands is reportedly 7 on the Borg Scale; but, if there is numbness, the BFR advocates recommend loosening the pressure.

## **Stable state of equilibrium**

In contrast, KAATSU starts at homeostasis - or your stable state of equilibrium in your body - with complete patent (i.e., open) arteries and veins. From this point, the KAATSU Cycle is used to very gradually and precisely increase the pressure until an 'optimal pressure' for each person and each limb is reached (note: the pressure on each limb can be different if there is an injury or significant difference in limb strength, range of motion, or girth).

*That is, BFR starts at the point of occlusion where there is no arterial blood flow to the limbs - but KAATSU starts at the point of homeostasis where there is complete and open arterial blood flow to the limbs.*

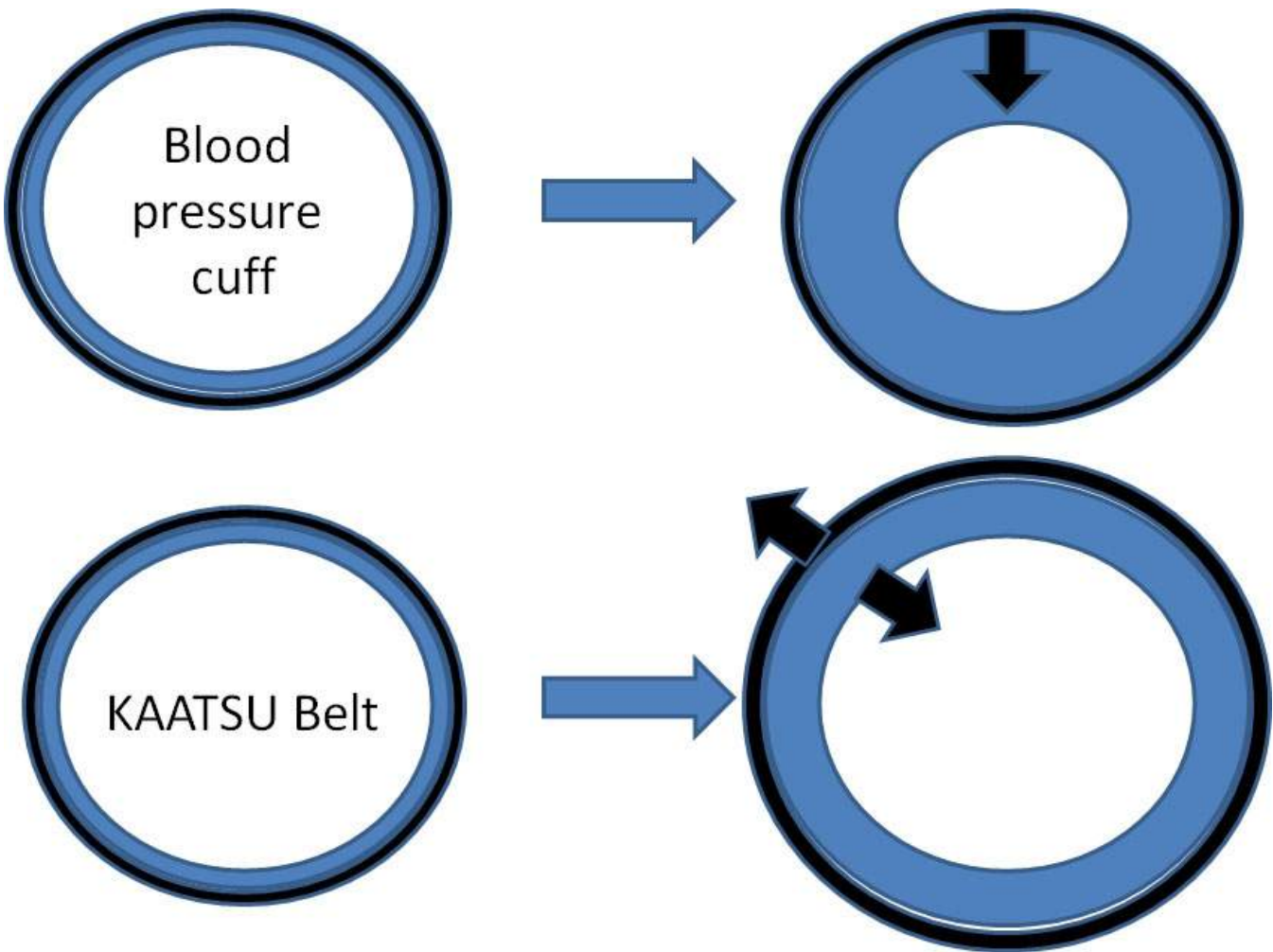
Even when the KAATSU Air Bands have significant air pressure inside them, there is no occlusion of arterial or venous flow [read here]. The KAATSU Air Bands are specifically designed to avoid occlusion even at the highest KAATSU pressure possible.

Decades of trials and testing with different material types, material elasticities, and widths enabled Dr. Sato to come up with this innovative design. KAATSU protocols were tested and studied at the University of Tokyo Hospital under the supervision of experienced cardiologists Doctors Nakajima and Dr. Morita.

BFR or Occlusion bands are specifically engineered to cut off or restrict blood flow – they are modified blood pressure cuffs. Their structure and materials are purposefully designed to achieve this objective. The width of the bands applies a pressure that is effective in reducing or restricting arterial flow.

In contrast, the KAATSU Air Bands are specifically engineered to maintain arterial flow, and only modify the venous flow. The width and the center axis of the inflated KAATSU Air Bands are significantly different than BFR / Occlusion Bands or modified tourniquets / cuffs. This means that the pressure transmission region of the KAATSU Air Bands - especially within the limb on the arteries and veins, is significantly less than the larger / wider BFR bands.

The wider the pressure transmission area on the arms (see below), the easier it is to occlude arterial flow. The narrower the pressure transmission area on the arms (with KAATSU), the more difficult it is to occlude arterial flow.



You can see the illustrations above that show a smaller, narrower pressure transmission region of the KAATSU Air Bands.

When the optimal pressure is reached with the KAATSU Air Bands, you can see a pinkness or a beefy redness in your limbs as your blood fills the capillary vascular space. When you move your limbs in this state, there is alternating distension (widening) and emptying of the venous/capillary vascular space.

**Venous Pressure**

Using the KAATSU Cycle mode, the KAATSU Air Bands gradually apply pressure to your veins. This modifies the venous outflow in your limbs. As the pressure increases during the KAATSU Cycle mode, this modification of the venous outflow eventually modifies your arterial inflow. As exercise or movement continues with the KAATSU Air Bands on, the blood flow into the limbs must soon match the (venous) blood flow out of the limbs. Given that, about 80% of the body's blood is in the venous system, there is some



capacitance for holding extra blood in the limb, and when that capacity is reached, the blood flow in must match the blood flow out of the limb.

Physiologically, exercise becomes unsustainable when light and easy exercises or movement (e.g., KAATSU Walking or unweighted KAATSU limb movements) are conducted with this impeded circulation. The pO2 and pH gradually (or quickly, depending on the KAATSU intensity) drop to critical levels with even mild exercise. Additionally, higher levels of lactate are generated during KAATSU (compared to non-KAATSU exercise). ATP levels drop as the ADP and Pi levels rise, and ATP dependent electrolyte pumps (e.g. Ca++) cannot maintain proper electrolyte gradients. In this state, there are a significant amount of metabolite and hormonal changes and increases that are subsequently realized.





## KAATSU Study

The fact that KAATSU Air Bands do not approach occlusion pressure, nor result in Blood Flow Restriction, was identified by Professor Alyssa Weatherholt of the University of Southern Indiana, Professor William VanWye of Western Kentucky University, and Johnny Owens of Owens Recovery Science (the exclusive distributor of the Delfi Portable Tourniquet System for Blood Flow Restriction equipment) in the United States. They presented a study called *Pressure Needed to Achieve Complete Arterial Occlusion: A Comparison of Two Devices Used for Blood Flow Restriction Training*.

The researchers concluded the wider cuff of the Delfi Portable Tourniquet System for Blood Flow Restriction can restrict arterial blood flow at significantly lower pressures compared to the narrow cuffs [KAATSU Air Bands] using the KAATSU Master.

The key finding of this study was as follows: “*We were unable to achieve complete arterial occlusion in any participant with the KAATSU cuff.*”

## KAATSU design

The KAATSU equipment is designed and is specifically manufactured to avoid arterial occlusion in the limbs. This fact is precisely why KAATSU was originally defined by Dr. Sato and leading Japanese cardiologists at the University of Tokyo Hospital as a Blood Flow Moderation (BFM) modality.

KAATSU equipment is specifically not a Blood Flow Restriction (BFR) device. While the vernacular nuance between BFM and BFR may be overlooked (venous flow modification versus arterial flow restriction), the modification of venous flow is critical to understanding the safety and goal of KAATSU.

There is no part of the KAATSU protocols which achieves arterial occlusion. This is why KAATSU is not BFR, occlusion training, tourniquet training, otraining, or any kind of blood flow restriction modality. KAATSU equipment does not use blood pressure cuffs or surgical tourniquets that are specifically designed to occlude or restrict arterial flow. Rather, the stretchable KAATSU Air Bands are designed with flexible, elastic air bladders that inflate inwards, towards the limb, at very moderate pressures to minimally modify venous flow.

This pressure is gentle on the body and uniform, because the limb is evenly and safely compressed by a bed of air. This principle and practical engineered solution leads to blood pooling in the limb - not arterial occlusion.

Furthermore, the patented KAATSU Cycle allows normal arterial and venous flow every 30 seconds which means it is safe, effective, and gentle for people of all ages.

### **In summary:**

1. The purpose of KAATSU equipment and its protocols is a reduction in venous flow via blood flow moderation, a term first coined in the 1990s by Dr. Sato and Doctors Nakajima and Morita, cardiologists at the University of Tokyo Hospital.
2. The pneumatically controlled KAATSU Air Bands are designed to achieve a reduction in venous flow and is a very different approach from BFR and widely promoted use of blood pressure cuffs that are specifically designed to achieve limb occlusion. KAATSU is not BFR.
3. When the KAATSU equipment is used, its users agree to follow the specific protocols as defined by its inventor, Dr. Sato. Specifically, KAATSU protocols and equipment are designed not to occlude.
4. The stretchable, pneumatically controlled KAATSU Air Bands are not (blood pressure) cuffs. A cuff is a term that refers to devices specifically engineered for limb occlusion.
5. KAATSU Specialists understand the importance of users to know both their Base SKU pressure and their Optimal SKU pressure while using the KAATSU Cycle and KAATSU Training modes. To refer to KAATSU pressure without reference to both Base SKU and Optimal SKU pressures is misleading.

Proper and safe KAATSU extensively (or exclusively in most cases) utilizes the patented KAATSU Cycle mode. In the KAATSU Cycle mode, there is only 30 seconds of pressure applied at a time. The pressure is regularly and intermittently released (turned off) - and, most importantly, the pressure starts off gently and only gradually increases to your optimal pressure levels.

# The Safety of KAATSU

In the published scientific literature on KAATSU safety, authors surveyed KAATSU instructors in Japan at 232 facilities. They did not report any major event such as cerebral hemorrhage, cerebral infarct, or thrombosis in 120,000 subjects with a large variability of demographic and clinical characteristics (e.g., older adults and people with obesity, diabetes, cerebrovascular and cardiovascular diseases). The reported side effects were generally minor, including transient numbness or dizziness, subcutaneous hemorrhage (petechiae), and itchiness.

In the case of transient numbness, the KAATSU Air Bands should be immediately removed. This numbness can be caused by various factors:

- Not being well hydrated before or during KAATSU
- Not starting in KAATSU Cycle mode
- Doing vigorously hard aerobic-based exercise in the KAATSU Constant mode
- Going beyond 15 minutes in the KAATSU Constant mode
- Using the same pressure levels at high altitude
- Doing KAATSU after drinking alcohol

Petechiae is when tiny red spots appear on the limb; this indicates a minor subcutaneous leaking of blood from capillaries. In this case, the KAATSU Air Bands should be removed from your limb. This petechiae can be caused by various factors:

- Not being well hydrated before or during KAATSU
- Not starting in KAATSU Cycle mode
- Doing exercises that you usually do not perform, especially in the KAATSU Constant mode
- Going beyond 10 minutes in the KAATSU Constant mode
- Using the same pressure levels at high altitude

Itchiness occurs when the small capillaries are engorged in blood. This can be stopped by removing the KAATSU Air Bands or using lower pressures.

## Safety Is Always First and Foremost

There is good reason why KAATSU has been around for decades and is currently distributed around the world: KAATSU is safe.

While other BFR companies stress muscle building and utilize all types and sizes of tourniquets and modified blood pressure cuffs on people with bulging muscles and youthful, fit bodies, KAATSU took a much different approach. As the pioneer of the blood flow moderation market, KAATSU has clearly demonstrated safety above all, on clients from 14 to 104 years old.

### Patients over 50 years old

KAATSU spent a decade testing and researching its equipment and protocols at the University of Tokyo Hospital on over 7,000 older cardiac rehab patients. These cardiac rehab patients were mostly over 50 years old - some as old as 104. They had cardiac problems that were addressed by the cardiologists at the University of Tokyo Hospital.

Between 2004 and 2014, KAATSU spent its time, energy, and budget on perfecting its protocols for older, more sedentary, weaker individuals - not the young and fit, not the muscular and active.

There was no overt marketing, ubiquitous social media campaigns, or slick websites. The KAATSU physicians conducted comprehensively detailed research and testing using ultrasound, MRI, and blood sampling and analyses on thousands of patients by medical doctors and PhD's. Led by KAATSU inventor Dr. Yoshiaki Sato, cardiologist Dr. Toshiaki Nakajima, cardiologist Dr. Toshihiro Morita, and their colleagues, KAATSU tested and fine-tuned their equipment and protocols. Ultimately, KAATSU modalities and pressures were proven safe and effective - and convenient - for cardiac rehab patients.

### Safety profile

The safety profile vastly increases with the KAATSU Cycle mode. At the same time, the positive effects and healthful outcomes of the KAATSU Constant mode are also realized with the KAATSU Cycle mode. The KAATSU Cycle is always recommended for everyone - and this can be performed safely, conveniently and repeatedly daily.

When a person is injured, has medical concerns, is in their golden years, or is physically weak, the repeated inflation and deflation of the KAATSU Air Bands applies a safe level of graded stress on the body. The KAATSU Cycle enables the body to strengthen and heal safely and effectively through the fundamental physiological mechanisms of KAATSU.

**Real-world Users**

A vast majority of KAATSU users in the United States are over the age of 50, although KAATSU is also used by professional, Olympic, Paralympic, and collegiate athletes. The U.S. military branches (Navy, Air Force, Army) use KAATSU everywhere from military bases to airplanes, from submarines to aircraft carriers.

But for the average person, KAATSU can be done as part of your normal lifestyle, at your home, and in your office. You can do KAATSU Cycles while you are:

- Reading a book or watching a movie
- Washing dishes or windows
- Folding clothes or vacuuming
- Writing a letter or typing emails
- Walking your dog
- Packing your luggage
- Gardening or watering your lawn
- Listening to podcasts or Zoom calls



Doing KAATSU Cycles  
in the airplane



Doing KAATSU Wall Push-ups  
in the office



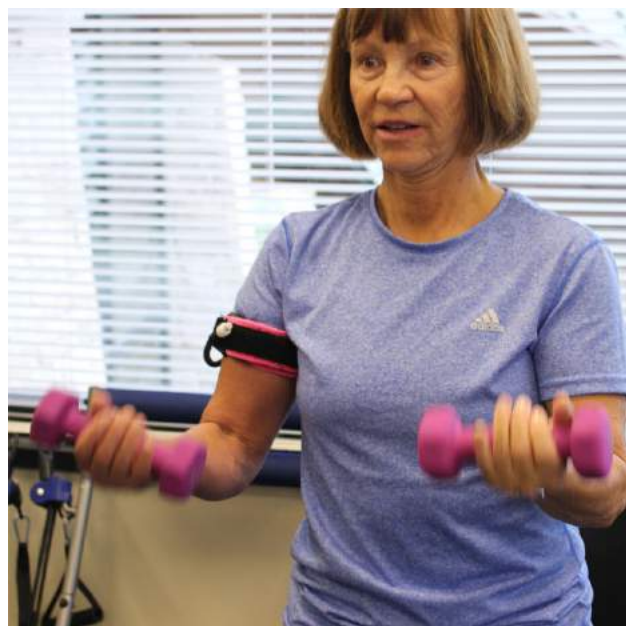


KAATSU Therapy on the lower extremities.



KAATSU Therapy on the upper extremities.





## Below are examples of older people using KAATSU:

- 80-year-old:  
[KAATSUblog.com/2019/05/KAATSU-for-groin-pulls-tears-strains.html](https://kaatsublog.com/2019/05/KAATSU-for-groin-pulls-tears-strains.html)
- 74-year-old:  
[KAATSUblog.com/2018/04/74-year-old-tap-dixon-on-KAATSU-day-1.html](https://kaatsublog.com/2018/04/74-year-old-tap-dixon-on-KAATSU-day-1.html)
- 63-year-old:  
[KAATSUblog.com/2020/06/mobility-and-movement-improvements-with.html](https://kaatsublog.com/2020/06/mobility-and-movement-improvements-with.html)
- 104-year-old:  
[KAATSUblog.com/2019/05/multiple-effects-of-growth-hormone-in.html](https://kaatsublog.com/2019/05/multiple-effects-of-growth-hormone-in.html)
- 71-year-old:  
[KAATSUblog.com/2018/12/KATSU-to-offset-sarcopenia.html](https://kaatsublog.com/2018/12/KATSU-to-offset-sarcopenia.html)
- 84-year-old:  
[KAATSUblog.com/2018/02/before-and-after-effects-of-KAATSU.html](https://kaatsublog.com/2018/02/before-and-after-effects-of-KAATSU.html)
- 61-year-old:  
[KAATSUblog.com/2019/01/61-year-old-military-veteran-stroke.html](https://kaatsublog.com/2019/01/61-year-old-military-veteran-stroke.html)
- 76-year-old:  
[KAATSUblog.com/2020/03/KATSU-implications-for-elderly-and.html](https://kaatsublog.com/2020/03/KATSU-implications-for-elderly-and.html)
- 62-year-old:  
[KAATSUblog.com/2020/05/KATSU-is-perfect-lockdown-project.html](https://kaatsublog.com/2020/05/KATSU-is-perfect-lockdown-project.html)

# The Benefits of KAATSU to the Body

KAATSU has systemic effects; that is, when the hormones and metabolites are secreted, these molecules travel through our vascular system. So even whether an injury is distal or proximal to the KAATSU Air Bands, the injured body part responds naturally and effectively to KAATSU.

## Basic Physiology of KAATSU

When we consider our total blood volume and how it is distributed in our body at any given time, it becomes clear why KAATSU, and the KAATSU Cycle in particular, is effective and safe.

There are 3 main components of the vascular system: arteries, veins, and capillaries. In the arteries, blood flows away from the heart. In the veins, blood flows back to the heart. The capillaries are the transition sites where the blood is used and removed.

At rest, all the veins combined contain at least two-thirds of our total blood volume. In contrast, because our heart acts as a pump in this 2-part closed-loop vascular system, our arterial flow is a lower percentage of our total blood volume.

In effect, our veins act as a blood reservoir. When blood flows through the veins, there are valves inside those veins that prevent backflow. Blood in our veins only flows in one direction due to the presence of these venous valves.

Veins are also highly distensible (elastic) and can expand easily to accommodate large volumes of blood. Arteries, in comparison are more rigid to help push blood flow to the target tissue.

The venous side of our circulation (diastolic pressure) is a low-pressure system compared with the arterial side (systolic pressure).

Capillaries are very tiny blood vessels, found in clusters called capillary beds. These capillaries are so small that a single red blood cell can barely fit through them. They connect our arteries and veins. Capillaries contain small gaps in between their small cells that allow for gases, water, glucose, and some hormones to pass through to our muscles and tissues.



Our body can form new capillary beds, but with the KAATSU Cycle and KAATSU Constant modes, this process is more efficient and deliberate.

## Venous flow

The stretchable, narrow KAATSU Air Bands modify our venous flow while enabling the normal arterial flow to continue. When we do KAATSU Constant (i.e., sustained pressure in the KAATSU Air Bands), the total blood volume in our arms or legs increases. When we are near our optimal pressure, our limbs become red (or even purple) as a visible example of blood pooling.

As the blood engorges the vascular tissue (arteries, veins and capillaries) in our arms or legs, a certain amount of blood enters our limbs with every heartbeat. When the blood volume is maximized within our arms or legs, the same amount of blood exits our limbs via the venous return.

The effects of KAATSU Training are visibly obvious. With sustained inflation in the KAATSU Air Bands, the arms or legs become pink, red or even purple in color as the blood pooling is maximized. This means that there is a maximum amount of blood in that arm or leg's vascular system, both the arterial side and the venous side. This also promotes changes in pressure in the tiny capillary beds.

When you are exercising with KAATSU, your muscles act as pumps to push lactate and other metabolic waste through the veins. While the KAATSU Air Bands are inflated and we are exercising, there is an increase in these metabolic wastes. Our body senses this increase of waste in our arms or legs.

When the KAATSU Air Bands are deflated, a large amount of venous flow return exits the limbs, taking all that metabolic waste and byproduct back to the heart. This novel addition of added pressure helps flush out lactate and other waste products. This clears the pipes and improves health.

With young, fit individuals, the body can safely handle this stress. Their bodies can easily manage this modification of venous blood flow. But with people who are not fit, have diabetes, cardiac or other health issues, this sustained modification can be very stressful, as if going for a long without being in the proper shape.

## Vasovagal response

When you do not get enough blood flow throughout the body, you may feel lightheaded and possibly faint. This is a natural outcome of the vasovagal response. Before people have a vasovagal response (and faint as a result), a small percentage of people may experience pale skin, light headedness, nausea, cold and clammy hands, or a reduced pulse rate with KAATSU. In this case that you see your skin become pale or feel lightheaded or have cold and clammy hands, immediately remove the bands. If your body is in poor health, the chance of a vasovagal response increases with added stress to the body.

Safety is first and foremost the primary aspect of KAATSU Cycle. No matter how significant the benefits of KAATSU Constant are in producing Human Growth Hormone, nitric oxide, VEGF (vascular endothelial growth factor), IGF-1 (insulin growth factor), beta endorphins, plasmalogens, ceramides, t-PA (tissue plasminogen activator) or its effects on C-reactive protein or PAI-1 (plasminogen-activator inhibitor type 1), if safety is not constantly maintained, there is no need for KAATSU.

But with the KAATSU Cycle, the sustained inflation in the KAATSU Air Bands is limited to 30 seconds. In contrast, the maximum inflation of the KAATSU Air Bands during KAATSU Constant is 10 minutes. There is a significant difference between 30 seconds and 10 minutes. 30 seconds is well within the range of safety for individuals who are less healthy and less fit, or who may have a vasovagal response.

## Biochemical Changes

KAATSU is often seen online as muscle training or a type of training to increase your muscle size or strength. In reality, KAATSU is a modality that leads to important biochemical reactions in your body that:

1. Increases the elasticity of vascular tissue (i.e., capillaries, veins, and arteries).
2. Increases the production of hormones and metabolites including HGH (Human Growth Hormone), NO (nitric oxide), IGF-1 (Insulin Growth Factor), VEGF (Vascular Endothelial Growth Factor), ceramides, plasmalogens, beta endorphins, testosterone, etc.



These reactions, in turn, enable you to tone your muscles, increase your strength, improve blood circulation, improve metabolic syndrome, reduce the probability of osteoporosis, improve sleep, burn additional calories, improve agility and endurance, and facilitate recovery from injuries and surgeries.

## Hormonal Secretion

The KAATSU Cycle sets also lead to increased hormonal secretion and an increased volume of oxygen being carried to the cells, improving metabolism. Both these phenomenon help strengthen muscle. Growth hormone (or HGH or Human Growth Hormone) plays a major role in improving metabolism. With KAATSU, lactate is increased in the muscles. This stimulates receptors and a signal is sent to your brain through the central nervous system. Your brain naturally secretes growth hormone to restore the receptor damaged and to deal with the increased lactate levels.

## Growth Hormone

KAATSU leads to significant secretion of growth hormone that has a wide variety of effects:

- Strengthening of our immune system
- Reduction of fat
- Increase in bone density
- Recovery from injuries and surgeries
- Increase in skin elasticity

## KAATSU's Systemic Effect

When the Growth Hormone or other hormones and metabolites are secreted by your brain, the molecules flow through your body through your vascular system – which is ubiquitous throughout your body. The molecules are present not only in your arms and legs, but also flow through the vascular system in your torso, upper shoulders, face, and head.

As early as 1995, Dr. Sato and Dr. Naokata Ishii at the University of Tokyo conducted a study of 20 middle-aged and elderly female subjects. The subjects performed arm curl exercises twice per week for two months with KAATSU Bands on their upper arms. An MRI of the exercising muscle showed an increase in size by 20% on average after the 2-month test. Muscle

strength also improved in proportion to the increase in muscle mass. But the extensor muscle - which was not directly trained - also gained in size by 13% on average.

## Effects of the KAATSU Cycle on the Vascular System

The repeated inflation and deflation of the KAATSU Air Bands is done automatically by the KAATSU equipment at regular intervals (i.e., 30 seconds of pressure followed by 5 seconds of no pressure). The level of pressure is very gently, very slightly and gradually increased with every Cycle step. That is, each time the KAATSU Cycle begins, the pressure is incrementally higher.

When the KAATSU Air Bands are inflated, blood is engorged (pooled) in the capillaries and veins of your arms or legs. When the KAATSU Air Bands are deflated, blood flows out of the limbs easily, thereby improving circulation. When this is repeated over and over with slightly higher pressures, blood flow is improved both locally and throughout your body.

When the KAATSU Air Bands are inflated, the capillaries and veins become dilated (made bigger) to pool the increased amount of blood in the limbs. Since there is more blood in the limbs, blood must be pushed harder to bring sufficient blood to each cell in the remaining parts of the body. Therefore, blood vessel elasticity increases throughout your body.

Additionally, in the limbs where blood is engorged, the increased amount of blood flows into blood vessels where minimal blood is being supplied. This process helps with the production of Vascular Endothelial Growth Factor (VEGF) and helps lead to new blood vessels being formed to efficiently supply blood – this all happens naturally and safely.

In effect, the repeated constriction and dilation of the blood vessels simulates vigorous exercise and improves the blood vessel elasticity. In addition, the repeated Cycle sets generate vascular endothelial cells that, in turn, generate carbon monoxide which also helps to restore the blood vessel elasticity.

# KAATSU Terminology

**3-point Exercises:** A set of 3 different exercises that help indicate the Optimal SKU and can form the basis of KAATSU Training or serve as a warm-up.

**3-point Exercises for Arms:** A set of 3 different exercises for the arms that include 3 sets of Hand Clenches, 3 sets of Biceps Curls, and 3 sets of Triceps Extensions. The Hand Clenches can be done with hand grips if desired. The Biceps Curls can be done with light weights if desired. The Triceps Extensions can be done with light resistance if desired.

**3-point Exercises for Legs:** A set of different exercises for the legs that include 3 sets of Toe Curls (performed without shoes), 3 sets of Toe Raises, and 3 sets of Heel Raises. These exercises can also alternatively include Leg Extensions, Leg Curls, and Non-lock Squats.

**All-out:** To exercise or do KAATSU Constant with maximum effort.

**ARP (Automatic Recovery Protocol):** A proprietary, patented modality when the KAATSU Air Bands automatically and repeatedly inflate and deflate to certain pressures that are based on decades of research and clinical tests with people of all ages and walks of life.

**Arterial flow:** The blood flow from the torso to the limbs. The arteries carry oxygen and nutrients away from the heart to the body's tissues.

**Base Pressure:** The compression of the non-inflated KAATSU Air Bands when the Air Bands are first manually affixed to the limbs. Also known as Base SKU and measured in SKU (Standard KAATSU Units). It is approximately “One-finger tightness” or tight enough to allow one finger between the bands and your skin – but not two fingers.

**Base SKU:** The compression of the non-inflated KAATSU Air Bands when the Air Bands are first manually affixed to the limbs. Also known as Base Pressure and measured in SKU (Standard KAATSU Units). It is approximately “One-finger tightness” or tight enough to allow one finger between the bands and your skin – but not two fingers.

**BFM or Blood Flow Moderation:** A reduction of arterial flow or venous flow caused by the tightening of pneumatic or non-pneumatic bands, wraps or blood pressure cuffs on the upper arms or upper legs.

**BFR Bands:** Bands that are either pneumatic or non-pneumatic that try to mimic the effects and outcomes of KAATSU Air Bands with a form of occlusion training or tourniquet training.

**BFR Training:** A modality where BFR (Blood Flow Restriction) Bands, either pneumatic or non-pneumatic, are placed on the upper arms or upper legs and used with non-weight bearing exercises or rehabilitation, or with light resistance or loads. The combination of blood flow occlusion with movement produces similar metabolic and hormonal results to high intensity training or exercising with high loads or high resistance. Its applications are used from fitness gyms to clinical settings and range from athletic performance and wellness to rehabilitation and recovery. The original BFR Training is KAATSU that was first created and later developed by Dr. Yoshiaki Sato starting in 1966.

**Biceps Curls:** Any type of weight training or resistance exercises or KAATSU Training that target the biceps brachii muscle where the hands are raised towards the shoulders until the forearms are vertical with the elbows and upper arm remaining close to the body.

**Capillary Refill Time or CRT:** The time in seconds taken for color to return to an external capillary bed (e.g., in the palm of the hands or above the knee on the quadriceps) after pressure is applied by a thumb on the skin to purposefully cause temporary blanching.

**Central Nervous System or CNS:** The complex of nerve tissues in the brain and spinal cord that controls the activities of the body.

**Constant Mode:** Custom level of sustained pressure for a maximum of 10 minutes.

**Custom SKU:** Customizable range of pressure up to 400 SKU (Standard KAATSU Unit) on a KAATSU device.

**Cycle:** A patented 8-step process of releasing and applying pressure in the KAATSU Air Bands. One Cycle includes the application of pressure for 30

seconds followed the subsequent release of pressure for 5 seconds. This is repeated 8 times in a KAATSU Cycle.

**Cycle Mode:** The automated, progressive sequence of 8 Steps per Set on any KAATSU device. Each Step includes 30 seconds of compression followed by 5 seconds of decompression.

**Distention of veins:** When veins become more visible and pop out of limbs.

**Disturbance of homeostasis:** The state when the body's natural internal environmental variables become disturbed, and feedback is initiated to the central nervous system due to the engorgement of blood caused by KAATSU.

**Go to failure:** To continue exercising or moving until maximum effort has been reached and no additional movement can be performed or repetitions can be repeated. In contrast to technical failure, this local failure occurs in isolated movements like biceps curls or leg extensions.

**Hand Clenches or Hand Grips:** A KAATSU 3-point Exercise where the hand is opened and closed to work the muscles of the hands and forearms.

**Heel Raises:** An exercise where the heels are raised from the floor while either sitting down or standing up. It is part of the 3-point Exercises for the Legs.

**Hypertrophy or Muscular Hypertrophy:** An increase in muscle mass that usually increases muscle size and strength. Traditionally, muscle hypertrophy is a result of strength training or weight training. Alternatively, muscle hypertrophy can be effectively achieved by KAATSU.

**KAATSU:** A Japanese trademark meaning “additional pressure” in English. KAATSU is the original form of blood flow moderation (BFR) training, and an innovative rehabilitation and recovery modality invented and developed by Professor Sir Yoshiaki Sato, M.D., Ph.D.

**KAATSU Air Bands:** Specialized narrow, elastic proprietary pneumatic proprietary bands that are affixed to the arms or legs with Velcro. The air bladders inside the Air Bands are inflated and deflated by the firmware of KAATSU equipment.



**KAATSU Aqua:** KAATSU exercises or therapeutic movements performed in the water or in an aqua-therapy pool that are performed with the KAATSU Air Bands.

**KAATSU Arm Bands:** Specialized narrow, elastic proprietary pneumatic bands that are used around the upper arms to perform KAATSU.

**KAATSU B1:** A fourth-generation wearable device built into KAATSU Air Bands that provides 6 preset Cycle pressures and consecutive Cycle function up to 30 minutes and fully customizable Cycle and Constant pressures. The B1 is operated by the KAATSU app on both iOS and Android. Each device enables each limb to be simultaneously inflated to customized pressures. It is Bluetooth-enabled with real-time monitoring and archiving of physiological data and automatic KAATSU cloud storage of usage data. It features easy-to-use pressures for users of all ages, backgrounds, and abilities.

**KAATSU C3:** A portable "ruggedized" water-resistant handheld third-generation touch-screen device that provides 6 preset Cycle pressures and consecutive Cycle function up to 30 minutes and fully customizable Cycle and Constant pressures with 4 pneumatic KAATSU Air Bands and the option to use Single-limb KAATSU. It is ideal for individuals, coaches, trainers, chiropractors, physical therapists, and caretakers that can be safely utilized anywhere, anytime including in the rain, snow, mud, dust, and sand for recovery, rehabilitation, and performance purposes for people of all ages, conditions, and walks of life.

**KAATSU Color:** The resultant pinkness, rosiness, or beefy redness in the skin in the limbs due to the engorgement of blood during KAATSU.

**KAATSU Constant:** A consistent inflation of the KAATSU Air Bands that leads to modification of the venous blood flow. The inflation of the KAATSU Air Bands can be customized and made appropriate for every KAATSU user. The greater the inflation, the greater the pressure on the limb.

**KAATSU Cycle:** A patented 8-step process of releasing and applying pressure in the KAATSU Air Bands. One Cycle includes the application of pressure for 30 seconds followed the subsequent release of pressure for 5 seconds. This is repeated 8 times in a KAATSU Cycle.

**KAATSU Dose:** The appropriate Base SKU and Optimal SKU that is customizable and specific for an individual based on their age, physical condition, and amount of KAATSU experience.

**KAATSU Instructor:** An individual certified by KAATSU Japan Co., Ltd. to have studied and passed the Japanese-language KAATSU Specialist certification examination.

**KAATSU – Joatsu:** Japanese words that mean ‘pressure on – pressure off’ during the KAATSU Cycle mode.

**KAATSU Leg Bands:** Specialized narrow, elastic proprietary pneumatic bands that are used around the upper legs to perform KAATSU.

**KAATSU Master 2.0 or KAATSU M3:** A portable touch-screen tablet-based device that is designed for military, commercial, institutional, medical, and therapeutic applications. It includes a Masimo MightySat™ Finger Pulse Oximeter. Dual air compressors enable each limb to be simultaneously inflated to customized pressures. It is Bluetooth-enabled with real-time monitoring and archiving of physiological data and automatic cloud storage of usage data. It features easy-to-use, pre-set pressures for users of all ages, abilities, and backgrounds. Customizable levels enable use of appropriately safe pressures for both elite athletes and injured individuals. Data can be inputted, automatically uploaded, and archived to the KAATSU Performance Database ([www.KAATSUperformance.com](http://www.KAATSUperformance.com)).

**KAATSU Master Instructor:** An individual certified by KAATSU Japan Co., Ltd. to have studied and passed the KAATSU Specialist certification examination and completed the highest level of KAATSU Training in Japan.

**KAATSU Nano:** A portable handheld 263g (9.7 oz.) touch-screen device that provides specific amounts of compressed air to the KAATSU Air Bands while recording and monitoring various data including Base SKU, Optimal SKU, time of KAATSU Training, and capillary refill time.

**KAATSU Performance:** The KAATSU database that captures and stores individual KAATSU usage data for any KAATSU device ([www.KAATSUperformance.com](http://www.KAATSUperformance.com)).

**KAATSU Pressure:** The compression of the KAATSU Air Bands around the limbs as measured in SKUs or Standard KAATSU Units.

**KAATSU Protocols:** The standard KAATSU procedures, applications, and know-how that enable safe and effective KAATSU Cycle and KAATSU Constant for athletic performance, rehabilitation, and recovery for individuals of all ages and conditions that were developed by Professor Sir Yoshiaki Sato, M.D., Ph.D. in 1960s and 1970s.

**KAATSU Specialist:** An individual certified by KAATSU Global to have studied and passed the KAATSU Specialist certification examination.

**KAATSU Specialist Certification Program:** An online program for interested individuals, coaches, trainers, physical therapists, chiropractors, and medical personnel to learn how to safely use KAATSU most effectively and efficiently for patients, clients and individuals of all ages and abilities for goals that range from athletic performance and rehabilitation to recovery and wellness.

**KAATSU Training:** The original form of blood flow restriction [moderation] training for athletic performance, rehabilitation and recovery invented and developed by Professor Sir Yoshiaki Sato, M.D., Ph.D. in Tokyo, Japan.

**Leg Curls:** An exercise to primarily work the hamstring by raising the foot backwards to the gluteus maximus. It is part of the 3-point Exercises for the Legs.

**Masimo MightySAT™ Pulse Oximeter:** A hospital-grade technology captures oxygen saturation, pulse rate, perfusion index and respiration rate. It generates real-time data that are displayed on the KAATSU Master 2.0 and captured in KAATSU database

**Muscle Failure:** The point in KAATSU where no continued movement or additional exercise can be performed due to a lactate build-up.

**Non-lock Exercises:** Exercises where there is only partial extension of the limbs so the muscles are always engaged during KAATSU.

**Occlusion:** A condition when something (e.g., blood flow) has been closed up or is blocked off. This can include arterial occlusion (blood circulation from

the torso to the limbs) or venous occlusion (i.e., blood circulation from the limbs back to the torso). KAATSU, properly performed, does not lead to occlusion, but is instead a form of venous flow moderation.

**Occlusion Bands:** Bands that are either pneumatic or non-pneumatic that try to mimic the effects and outcomes of KAATSU Air Bands with a form of occlusion training or tourniquet training.

**Occlusion Training:** Exercise with Occlusion Bands or BFR (Blood Flow Restriction) Bands, either pneumatic or non-pneumatic, that are placed on the upper arms or upper legs to mimic the effects and outcomes of KAATSU Air Bands. Also referred to as BFR Training or Tourniquet Training with knee wraps, straps, tubing, or blood pressure cuffs that are tightened around the limbs at various pressures. Occlusion Training is not KAATSU.

**Optimal Pressure or Optimal SKU:** The proper, safe, and effective amount of compression applied by the KAATSU Air Bands inflation according to the KAATSU protocols. It is measured in SKU (Standard KAATSU Units).

**Petechiae:** Bleeding under the skin that can occur from broken blood capillaries. It appears as tiny pinpoint red dots on the skin of the upper arm in a small percentage of KAATSU users as a result of KAATSU being applied too long, too tightly, or too vigorously.

**Piri piri:** A Japanese word meaning tingling, a physical sensation in the fingers that occurs when the capillaries are fully engorged with blood during KAATSU.

**Pulsation:** The rhythmical throbbing of an artery that is felt under the KAATSU Arm Bands or KAATSU Leg Bands during KAATSU.

**Race Pain:** The uncomfortable sensation felt due to the buildup of lactate in training (or competition). With KAATSU, race pain training can help athletes achieve and exceed their goals.

**Rep or Repetition:** A motion or exercise (such as a sit-up, bicep curl, or push-up) that is repeated during KAATSU.

**Set:** 8 repeated compressions of 30 seconds in duration and decompressions of 5 seconds in duration during the KAATSU Cycle mode.

**Single-limb KAATSU:** The use of the KAATSU Air Bands on only one limb at a time. The option to perform either the KAATSU Cycle or KAATSU Constant mode on only one limb at a time to optimize rehabilitation, improved balance, athletic performance, or recovery on one limb.

**SKU:** An acronym that refers to Standard KAATSU Units that is approximately equivalent to mmHg as measured by the original KAATSU Air Sensor for the KAATSU Air Bands. SKU ranges from 0 – 400 on most KAATSU devices, with the exception of the KAATSU M3 that goes up to a maximum of 500 SKU.

**Squat:** An exercise that trains primarily the muscles of the thighs, hips, gluteus maximus, quadriceps, and hamstrings by bending the knees and hips to lower the torso and returning to the standing position. It is part of the 3-point Exercise for the Legs.

**Steps:** A compression of 30 seconds where the KAATSU Air Bands inflates. There are 8 Steps in a Set.

**Technical Failure:** The point in KAATSU where muscular movement can be performed, but the proper technique is poor or lost or where the original form and/or speed are compromised. Indicators include loss of movement quality, loss of correct posture, asynchronous breathing, increased or unnecessary tension, and decrease in repetition frequency.

**Toe Curls:** An exercise that works the toes and feet when the toes are curled under the foot. It is part of the 3-point Exercises for the Legs.

**Tourniquet Training:** Exercise with Occlusion Bands or BFR (Blood Flow Restriction) Bands, either pneumatic or non-pneumatic, that are placed on the upper arms or upper legs to mimic the effects and outcomes of KAATSU Air Bands. Also referred to as BFR Training or Occlusion Training with knee wraps, straps, tubing, or blood pressure cuffs that are tightened around the limbs at various pressures. Tourniquet Training is not KAATSU.

**Triceps Extensions:** A strength-building exercise that works the triceps in the back of the upper arms. It is part of the 3-point Exercises for the Arms.

**Venous flow or venous return:** The blood flow from the limbs back to the torso. Peripheral veins, particularly in the legs and arms, have one-way valves that direct flow away from the limb and toward the heart.



## KAATSU Interview on Super Human Radio

with Carl Lanore and Dr. James Stray-Gundersen, M.D.

*Recorded Voice: Prepare to experience the strongest radio allowable by law. Secrets will be revealed, myths dispelled. From the studio gym where excuses never apply it's Super Human Radio with your host, Carl Lanore.*

**Carl Lanore:** *Hey, hey welcome back to another episode of Super Human Radio. We have a great show planned for you today. We're going to be covering quite a few really important subjects. We're going to be joined by Dr. Jim Stray-Gundersen to talk about KAATSU training. There's a lot of discussion about KAATSU, a lot of misinformation out there. There isn't a single person on the planet that knows more about it, even above and beyond the Japanese scientist that discovered it than Dr. Jim Stray-Gundersen, so we'll have some good questions and answers for him. We started talking about KAATSU training in early 2006 I did my first discussion with a Japanese scientist and ever since then it has really intrigued me and everybody else out there. We're going to get to the bottom of KAATSU training today with Dr. James Stray-Gundersen.*

*How you doing Dr. Gundersen?*

**Dr. Stray-Gundersen:** *Very good, thanks Carl.*

**Carl Lanore:** *Let me just give a brief highlight of your CV here because it's very impressive.*

**Dr. Stray-Gundersen:** *Sure.*

**Carl Lanore:** *Well, you're a general surgeon, which qualifies by the way to run for president now.*

**Dr. Stray-Gundersen:** *[Laughs]*

**Carl Lanore:** *University of Southwestern Medical School, Associate Professor in Exercise Science and Human Performance for the past 18 years; four Olympic games as physician or physiologist; twenty world championships at*

*various sports physician, physiologist; altitude expert. We were just talking about the role of hypoxia and remodeling of fat cells in leptin sensitivity. World renowned anti-doping expert and involved in many sports to advance performance legally and ethically, NFL, ABA, FIFA, I mean your list goes on and on. Why did you look at – what made you interested in KAATSU training first of all?*

**Dr. Stray-Gundersen:** *Well, it kind of goes back a ways. As you pointed out my initial education was as a general surgeon, but after I finished my general surgery residency, I ended up doing some post-doctorate fellowships in cardiovascular physiology and another one in human nutrition. I kind of or I did fall in love with the idea of using the medicines of exercise and nutrition to promote health and fitness. And that wasn't really aligned with taking out gallbladders. So I ended up having a career as you pointed out in academic medicine and doing various research projects. But the key thing to all of these things is looking forward to how to optimize human health and fitness. About four years ago I got introduced to KAATSU. It just struck me as one of those things that is a real paradigm shifter in terms of how we can safely and effectively improve health and fitness in humans.*

**Carl Lanore:** *So KAATSU was first written about in a paper from some Japanese scientists who were looking at KAATSU. Correct me if I'm wrong because it's been a while, but they were looking at KAATSU not necessarily for performance, but as a therapeutic aid to recovering from an injury and avoiding the muscle loss generally seen from an injured limb, right?*

**Dr. Stray-Gundersen:** *Right. Right here is the essence of KAATSU. So, basically what we do is with very light weights that can be done by anybody whether they have an injury or not, we end up being able to do maximal strength training exercise. So that exercise then mitigates any atrophy that might be happening, but it also sets up a kind of hormonal situation where you end up adapting to the exercises that you've done, but you've tricked the brain. Normally to get this kind of hormonal release you have to be lifting really heavy loads and exhausting yourself and with KAATSU you can do it with very light loads and in a short period of time. So it ends up being a very efficient way of doing this. Then there's applications for whether it's seniors who can't lift very heavy weights in the first place or someone who's injured, say someone who's torn their ACL and they're coming back from an ACL tear, but this is a way to exercise their quads to get that muscle mass back.*

**Carl Lanore:** *So and you know I've often thought what I'm about to say but I've never said it on the show, there's always this discussion about what builds bigger muscles?*

**Dr. Stray-Gundersen:** *Yeah.*

**Carl Lanore:** *And there's the group out there that says you know heavier loads and the group that says higher reps and the reality is that it can be either if you stimulate a phenomenon which I can only use the word "muscular congestion." Depending on when you were able – where in that dynamic of exercise that your performing whether it's heavy weight or higher reps, you know lower reps with heavy weights or higher reps with lighter weight, if the muscles getting congested that is where it appears that the intramuscular growth factors and switches that seem to be exploited by KAATSU really say, "Look this is what builds muscle. It doesn't matter if you're using heavy weight with low reps, it doesn't matter if you're using light weight with high reps, what matters is that this condition is occurring in the muscle." Am I off base on that?*

**Dr. Stray-Gundersen:** *No. I would just kind of phrase it a little differently. I would say that what KAATSU does is it impedes the blood flow out of the muscle such that the muscle when it's exercising it can't get its normal recovery that blood flow allows. And because it can't recover a profound disturbance of homeostasis is induced in this muscle.*

*This disturbance of homeostasis and I know that's a little bit of a mouthful, but this disturbance of homeostasis is when for example the oxygen levels in the muscles go down or the pH does down, which means that the environment is becoming more acidic or various electrolyte gradients are coming out of spec if you will and there is a variety of these things that happen when a muscle is exercising and it can't get recovered.*

*This contraction becomes unsustainable and then that unsustainable contraction sends a signal up into the brain saying, "Holy mackerel guys you got to help me out here." We're aware of that feeling cortically by a hard effort or feelings of fatigue or feelings of congestion and a variety of these things such that we end up sending the brain this signal.*

*It's usually only in both cases like you know 20miles out on a long run or by lifting 300pounds squats and doing that kind of thing where you'd get to these situations where the disturbance of the homeostasis in the muscle has*

*been so profound that these kind of messages to the brain are screaming out for help. Then the brain responds by an outpouring of a hormonal milieu that maybe milieu that may be best illustrated by increases in growth hormone or profound increases in growth hormone from this exercise. Then that healing anabolic hormonal response out of the brain is then responsible for all this rebuilding process and healing process and then we go from there.*

*Under normal circumstances whether it's with the marathon or whether it's Olympic weightlifting that muscle has been damaged by this stuff. But in the case of KAATSU we haven't damaged the muscle, we've just fooled the brain into thinking all hell was breaking loose.*

**Carl Lanore:** *Aaaaah, interesting.*

**Dr. Stray-Gundersen:** *Okay? And so then you adapt – instead of having to dig yourself out of this hole you just can start increasing strength and fitness right off the bat.*

**Carl Lanore:** *Oh man okay so two things that jump out of me big time here that I did not understand and this is really great stuff. You're right because we talk about the net synthetic response of exercise in building muscle and we know that if damage is negative 10 and growth is positive 12, you have a net influence of 2 on the growth of muscle. What you're saying is damage is zero, so whatever the growth impetus is that is a positive X whatever that is.*

**Dr. Stray-Gundersen:** *Right.*

**Carl Lanore:** *So you're really building on a foundation of already ready to grow muscle as opposed to previously damaged muscle.*

**Dr. Stray-Gundersen:** *Exactly. So we've altered the balance. We've really decreased those negative stimuli to a minimum and we've maximized because this is a maximal signal, we've maximized adaption healing response. And so you know you just tilted the teeter totter and all of a sudden you know off you go getting stronger and fitter right off the bat and you've done it with really low weights.*

**Carl Lanore:** *Okay.*

**Dr. Stray-Gundersen:** *So anybody can do it.*

**Carl Lanore:** *Okay now wait a minute because we're going to get into the weight loads in a second. Now the other misunderstanding I've been under is that the increase in growth factors, mechano growth factor which I think is IGF-E or 1-E or something like that, all these things happen in the muscle exclusively than systemically. Am I incorrect? Is it just being what's the word I'm looking for, trapped and concentrated in the muscle, but it's actually produced systemically?*

**Dr. Stray-Gundersen:** *Well, there's a couple of things, there's both local effects and systemic effects.*

**Carl Lanore:** *Okay.*

**Dr. Stray-Gundersen:** *So imagine we have a muscle exercising and it's blood flow is not a happy camper, it can't recover the muscle as well as it would like too. So then there are various sort of near term hormones that are in the tissue itself or in the surrounding tissue that end up sending signals that do a variety of things. Like they essentially try to repair this damage that's being done.*

*There's various cytokines that are locally released that do things like turn on protein metabolism, they prepare cell surface receptors such that they will be responsive to any systemic hormones that are coming along. Those sorts of things are all done at a local level. Then because this signal of this disturbance of homeostasis has been sent up into the brain it has caused among other things the pituitary to release a lot of growth hormone.*

*This growth hormone then goes among other places to the liver where it stimulates the production of IGF1. Then IGF1 then goes out throughout the whole the whole circulation. It then where there are cell receptors that have been upregulated or turned on such that they will be receptive to these anabolic stimuli, then those tissues that have been exercised end up further amplifying their production of proteins and trying to repair what damage was done. The nice little thing about this is that the damage wasn't done, we just fooled the brain into thinking it was.*

**Carl Lanore:** *This is brilliant. Then obviously the brain gets – the body gets to work in super compensating and preparing for the possibility of another one of these muscular onslaughts and it increases the muscle size and we're going to talk about obviously it influences hypertrophy, but we're going to talk about strength in a second. I want to take a break.*



**Dr. Stray-Gundersen:** *Okay.*

**Carl Lanore:** *You know everybody talked about work smarter not harder. Lee Haney used to say, "Stimulate, don't annihilate."*

**Dr. Stray-Gundersen:** *There you go.*

**Carl Lanore:** *It sounds to me like KAATSU is the gold standard for those who want to work smarter not harder. But let's talk about two things when we come out of the break. Let's talk about the load, because what I see people doing with KAATSU is instead of using a light weight they use heavier and heavier weights and try to bridge the strength and muscle hypertrophy gap.*

**Dr. Stray-Gundersen:** *Yeah, don't need too.*

**Carl Lanore:** *But also, I want to talk about what KAATSU is not good for, if there is anything and then we will talk more about training styles. In the meantime, if you're anxious to get information you can go to the website KAATSU.com. I'm going to spell it for you: KAATSU.com. They're giving away a free four megabyte report on lots of the things that we're talking about here. You need to go there and get that.*

*We talk about advanced training techniques like statics and negatives. There may not be anything more advanced than KAATSU, but you have to understand how to use it, because like all things that really work it can backfire on you too and we'll talk about that in the show too. We're talking about KAATSU training right now with Dr. James Stray=Gundersen. I have to thank a listener from Budapest, Hungary for putting this show together today and that's Peter Lakatos.*

*A lot of the things that we're talking about here today if you want to get a little deeper into it you can go to the website, KAATSU.com and download their report and obviously communicate with them there if you want to try to adapt this to your own training. So first things first the weights that people use must it be light weight or is there an advantage to doing some sort of progressive loading when you're doing KAATSU?*

**Dr. Stray-Gundersen:** *Yeah, Carl this is really an important point. We're paradigm shifting here. We're thinking about using impeded blood flow or modified blood flow plus low weights, light weights, easy weights to send this*

*signal to the brain. So we're using the muscles that are you know normally when we think about training we think about we're training the muscles that we're exercising.*

*This is we're using the muscles that are being exercised to send this signal that causes the whole body to adapt. So, one of the things about in terms of the loads we absolutely don't want to use heavy loads because that ends up becoming a combination of modifying the blood flow and using heavy weights can produce damage to the muscle fibers. So we always want to stay on the side where we're doing really light weights like you know two pounds arm curls or we can do things with partial body weight like pushups or –*

**Carl Lanore:** *Yeah, I was just going to say that. It sounds to me like if you want to do KAATSU look a lot of us going to the gym with our training buddy, his name is Ego and the last thing we want to do is grab a pair of two-pound dumbbells and have 19-inch arms and people go, "What's that about?" You know when I was a kid there were guys in the neighborhood that would buy a Camaro, put a Phase 3 hood on it, put Mickey Thompson 50 Series tires on the back, put you know traction bars on it and they had a four cylinder or a six cylinder and we used to call that a "pig."*

**Dr. Stray-Gundersen:** [Laughs]

**Carl Lanore:** *So you know a lot of us guys we have an ego, we're going to go in and lift heavy. It sounds to me that KAATSU would best suited for bodyweight training.*

**Dr. Stray-Gundersen:** *Yes it is. So you can do all the KAATSU exercises and you can get a really good KAATSU effect without any additional weights or devices or anything. Now that's not to say that we're going to have to throw out all the weight racks we have at home.*

*The idea is that particularly for strength-oriented sports, let's say alpine skiing or Olympic lifting or football or these sorts of things where strength is critical and let's say standard weight training has always been part and parcel of getting fit for those sports. What we do or what we recommend at the U.S. Ski Team where I'm working is that we have the athletes do 90 percent of their normal weight workout. So to induce a little fatigue but they save the riskier lifts to trying for KAATSU. So we don't want anybody doing maximal squats or these bench presses where they might drop the weight,*

*where they might hurt their back or that kind of thing, but we do all the other stuff.*

*Then after that workout then they come in and they do a KAATSU session. That really polishes it off, because now the muscles are already fatigued, it's already giving them a little bit of a signal and then we hammer it with this KAATSU program that really takes it over the edge, but does so safely. There's no heavy weights involved. We're able to get people where they just can't do one more pushups. So then what we're doing is we're getting the traditional training plus we're getting what I think of as frosting on the cake by doing that KAATSU session.*

**Carl Lanore:** *Okay so the traditional training is going to influence neuromuscular adaptation which gives us strength and instead of doing some you know other type of 20-rep scheme thing just do a KAATSU movement at the end to kind of influence hypertrophy.*

**Dr. Stray-Gundersen:** *Yeah. One of the things to think about is you know in various forms of training whether it's strength training or endurance training or all of these things you know there's not that many times in a week where you can really take it to max.*

**Carl Lanore:** *Right.*

**Dr. Stray-Gundersen:** *And what KAATSU does is again frosting on the cake of all of the other training that's been going on and you just back off that training just a little bit and you let the KAATSU session end up being those maximal workouts. And because you're not getting the damage that's normally associated with it then for one thing you recover a lot quicker and you're ready to go the next day.*

*You can actually add on more maximal sessions a week than you otherwise could. All this stuff going back to that initial thing you were talking about where we're shifting the balance between the negative effects of training and the positive effects of training. And so what we're doing is we're cutting down on the negative effects, adding onto the positive effects, getting a more robust adaptation and fitter and stronger and faster and everything.*

**Carl Lanore:** *Okay. So real quick we just got this in from KAATSU Global Headquarters.*

**Dr. Stray-Gundersen:** *Oh.*

**Carl Lanore:** *Those of you listening to the show if you want to take advantage of any of the offerings that KAATSUglobal.com, which is: KAATSU.com, you can take advantage of all of those things and get a ten percent discount by using, by mentioning "Super Human Radio" when you go there and order and/or checkout you'll save ten percent. This is only good for 30 days. So today is October 12th, so if you're listening to this and it's way longer than that the offer is probably gone but check that out.*

*I want to take a quick commercial break. When we come back I want to talk a little bit about, I just lost my train of thought I'm sorry about that. I want to talk a little bit about the way that you occlude and how critical this is. I know the original studies they were using blood pressure cuffs so they could actually measure in milligrams of mercury just how much pressure was being applied. Today guys go into gym and literally tie ropes around their upper arms that have no give whatsoever and are choking the muscle up. There's a big difference between doing this right and doing this wrong. Can we talk about that when we come back from the break?*

**Dr. Stray-Gundersen:** *Absolutely.*

**Carl Lanore:** *We're talking with Dr. James Stray-Gundersen. We're talking about KAATSU training. This is the definitive interview on KAATSU training because there's lot of misinformation out there.*

**Dr. Stray-Gundersen:** *Absolutely.*

**Carl Lanore:** *Yeah, there is and it's not one of those things that if you get bad information you just won't grow, you can actually hurt yourself. One of the things that people need to be careful about is the level of occlusion or restriction and there's differences in that terminology in the science. Then what they consider vascular occlusion and vascular restriction are vastly different.*

*One seems to still have some compensatory blood flow in and out of the muscle. The other seems to stop it completely. How do people determine how far to go or is that something that you offer at the website? Do you offer the actual cuffs and how to use them?*

**Dr. Stray-Gundersen:** *Yeah, Carl these are great questions. Let me take a moment and kind of describe some of the history here. Dr. Sato really*

*invented KAATSU training in 1966 or that was when he had a little epiphany about how to do this. He then took about 30 years of tying bicycle tires around his arms, judo belts, what have you and kind of learned the hard way and from experience how to do this stuff right.*

*At the same time kind of little bits of these secrets were leaking out of Japan and into primarily the bodybuilding world and a number of other things. While Dr. Sato really didn't explain himself well a lot of these other people saw what he was doing or at least at the time. Then they had big ideas about what they thought he was doing and went and tried a bunch of stuff for themselves. So if you think of this area of blood flow restriction as one big thing around the world and there's our whole variety of things that kind of come into that circle, KAATSU is a subset of that.*

*It's really only safe and only really effective when it's done the way Dr. Sato says. So there's a variety of protocols that are very important in terms of how you get these things done right and done safely. So for example that is the primary reason why we have basically these instruments that allow us to very carefully judge what the right amount of impediment of blood flow is or the right amount of modification.*

*There's another aspect to this. So the way that we use these bands or the stuff that goes around the arms and the legs is that there's an air bladder in there and this air bladder we can very finely change what the pressure is in there. And what we do then is we kind of go through a set of pressures where we then check to see whether we're seeing the right kind of physical signs that we have not occluded, but that we have impeded blood flow such that the exercises that will be done will produce problems or not problems but failure, fatigue, send a signal up into the brain.*

**Carl Lanore:** Okay.

**Dr. Stray-Gundersen:** *So it's very critical the two big things and this is one of the things that the KAATSU protocols are very good for is that we absolutely don't want to occlude. If we do occlude that's the thing that can lead to severe muscle damage or sometimes blood clots or a variety of other complications. Usually pretty much everywhere where we've seen these kinds of complications it's because people are either not even doing KAATSU at all or they're doing it incorrectly. So what is critical is getting the right equipment, getting the right education, and then doing this and applying it in the right way.*



**Carl Lanore:** *Now there are people out there who are going to try it obviously and they're not going to want to buy things to try it.*

**Dr. Stray-Gundersen:** *Right.*

**Carl Lanore:** *Is there kind of a rule of thumb that look if the muscle is occluded and you're going to feel this severe pump, you're going to feel this accumulation of lactate build up rather quickly, is it kind of like something that we say, "Look if you're starting to fail and feel these things in the first couple reps you're too tight. You're shooting for a 10 to 15 rep where you start to experience this." Is there anything that we can give some safe advice on that or is it something that they must follow exactly what you offer at the website?*

**Dr. Stray-Gundersen:** *Yeah, it's very difficult –*

**Carl Lanore:** *I know you're probably reluctant, I know you're reluctant to give that kind of broad scope statement being within the medical, but you know.*

**Dr. Stray-Gundersen:** *No, no I think I can address it to some extent. What I would say is that it's not easy to get to the right level of blood flow modification without using the devices.*

**Carl Lanore:** *Yeah.*

**Dr. Stray-Gundersen:** *So what happens and believe me Dr. Sato has tried over the years to do this in a way where it's just a matter of throwing on some belts and he's come to the conclusion that you need to have this education and you need to have the equipment to make it work right.*

**Carl Lanore:** *Right.*

**Dr. Stray-Gundersen:** *Now so and most of the time or I should say all of the time when we're figuring out where it is that somebody needs to have these pressures we're taking it a step at a time, we're undershooting in the first place and then we're checking things and then sometimes you have to do sets of exercises to see if you get this fatigue or failure in the proper number of reps.*

*So standard KAATSU exercises end up being usually three sets of the same exercise and usually we go about 25 to 30 reps in the first set, 20 to 30 second pause, then usually it ends up producing failure in 20 to 25 reps on the second set, again a 30-second pause and then usually failure comes pretty quickly in the 15 to 20 rep range. That's when you know you have it just right. It means that you put the bands on in such a way and the pressures are set in such a way that you get failure in the period of those sets with very light weights or something like pushups or just getting up and out of a chair.*

**Carl Lanore:** *Okay, okay. Now are there any muscles that are not good candidates because of where they are, because of kinesiology, because of where the blood flow comes from, that are not good candidates for KAATSU?*

**Dr. Stray-Gundersen:** *Well, this is one of the unique things about KAATSU. So one of the things it is a critical step so you know if there is one thing to say never occlude. The next thing to say is always put the bands in the correct places, which is kind of just below the deltoid and just above the bicep on the arms and pretty much high up on the legs as far as you can go.*

*That then produces this impediment of blood flow for all of the muscles that are distal to these bands. So when that happens then were using as many muscles as possible to get that signal up into the brain to produce that systemic effect. However, all muscles that are getting exercise those muscles their cell service receptors get turned on and everything else and so they're receptive to this systemic hormonal anabolic response that's coming down the line.*

*So what happens is we make a point of we want to exercise the muscles so that we get that fatigue signal that had their blood flow impeded, but we also want to exercise other muscles that are involved in any of these exercises. So for example like if we want to get glutes firing their blood flow is just perfectly fine, but the hamstrings and the quads they're blood flow is impeded. So we want to setup a situation where we're getting exercise in all these muscles and even though the glutes don't have their blood flow impeded they're still getting the benefit. Same with also*

**Carl Lanore:** *But wait a minute, but wait a minute, but technically they do and just stay with me because I'm obviously not up on this, but when I used to use some form of KAATSU for my upper arms what I also found was that*

*while the blood flow is being restricted in my biceps and triceps predominately and obviously the forearms because they're downstream.*

**Dr. Stray-Gundersen:** *Right.*

**Carl Lanore:** *But the muscles upstream are also experiencing some form of occlusion in the way that the blood that normally passes through them is kind of being trapped backed up. It's kind of like look when you clog a drain nothing on either side of the clog works very well, so my pecs used to get a really good pump and my shoulders used to get a really good pump when I was focusing on my biceps and triceps.*

**Dr. Stray-Gundersen:** *Yeah. You're absolutely right, your pecs and your deltoids and your shoulder muscles are all getting a really good influence, but their blood flow is just fine thank you very much.*

**Carl Lanore:** *Okay.*

**Dr. Stray-Gundersen:** *And so here's one of the things. So let's say that we're going to do a bench press or let's say we're going to try to do a pushup. Let's say it's a pushup, you're using your forearm muscles, you're using your biceps, mainly you're using your triceps, but you're also using your pecs.*

*So the pecs their blood flows happy camper, but the triceps they're the weak spot because they're blood flow impeded and they're starting to fail and they're sending a signal to the brain saying, "Hey guys I'm failing. I need to have a better percentage of my maximal ability to go forward." And the brain then says, "Okay well we got to really whip that horse and get those pushups going so we'll send out a signal to all of the muscles involved in the activity to work harder." And so those pecs are getting the same kind of whip if you will that the triceps are and even though they don't really need it.*

*So then you end up getting this exercise benefit for the pecs as well as the triceps and everything else.*

**Carl Lanore:** *So the reality is in order to achieve the proper what's the word I'm looking for, not occlusion but, ah, um, isn't this funny I just forgot my own – I got lost. But the bottom line is that in order to get the proper affects from this you really to just be able to get high up on the thighs where they attach into the groin area and between the tri and the upper arms below the shoulder muscles, that's it, that's everything. So you don't have to worry about occluding pectoral muscles or anything else.*

**Dr. Stray-Gundersen:** *Right. So point number one, get the bands in the right place. Point number two, modify the pressure and do little tests so that you have the proper amount of blood flow impediment and never occlude. Then point number three is use simple, easy weights, simple movements to get those muscles to fatigue and send that signal up into the brain that then releases the hormonal response.*

**Carl Lanore:** *Okay.*

**Dr. Stray-Gundersen:** *And it's really that safe and that simple if you do it that way and you know so you know there's tons of people that think that one's good, ten is better, well all that stuff is not the way to do KAATSU.*

**Carl Lanore:** *Okay. So now we're going to take a commercial break and I have some questions I've always wanted to ask about certain supplements and their influence on the results of KAATSU and hopefully you'll have some opinions and perspectives on this. We're talking right now with Dr. James, I'm sorry, Stray-Gundersen and the website is KAATSU.com.*

*If you go there and you place an order, well first of all you get a free report there, number one, so go and get that, but if you do want to buy some of the bands and items they offer if you mention this radio show, Super Human Radio, you'll get a ten percent discount. This is good through for 30 days, so it's October 12th today if you're listening to this show late, if it's 30 days after that that coupon code is no longer available.*

*We're talking with Dr. James Stray-Gundersen. We're talking about KAATSU training. If you are a personal trainer and you want to add the certification and the equipment to your repertoire of offerings you need to go to KAATSU.com: KAATSU.com. This is a very, very serious science here. This is not where you put some ropes or bands around your client's arm. The equipment gives readback, it gives feedback and it explains what you're doing right, what you're doing wrong. It allows you to guide – you know and this is something really not just for the average person, but for those professionals out there who are bodybuilders who want to try to take their body to a different level that they just can't get with the type of training they're doing now.*

*I have a feeling that KAATSU will open amazing opportunities for growth in those individuals. So real quick two topics I want to cover and then we can*

*wrap it up with whatever else you want to talk about. Certain supplements seem to influence this phenomenon either in a positive or negative aspect I'm thinking. I don't know if this is true that's why I'm asking you. Beta analine has been shown to quench hydrogen ions, allowing endurance athletes to train longer without the burn so to speak, the lactate buildup. Would that be a nonstarter, a not a good supplement to use if you're looking to use KAATSU?*

**Dr. Stray-Gundersen:** *No, I think beta analine would be great. You know let's take nutrition as a kind of general topic. I know there's lot more here. But I think the way that nutrition, whatever nutrition the person is applying that KAATSU just amplifies the effect of this. So if the nutrition is intended to build big muscle then that's what's going to happen with the combination of the nutrition that's going in and the other training that's going on, as well as that KAATSU frosting if you will.*

*If it's an endurance thing then that connotes a certain kind of diet and then also a certain kind of other training and then KAATSU can amplify those sorts of things. So for example it's been shown that muscle that gets built with kind of endurance type training ends up having the characteristics of that kind of muscle all the time. You know the athletes don't necessarily gain any weight. In sports where you don't want to gain weight you can use KAATSU in a way that combined with your nutrition and your exercise such that you don't, you don't gain weight.*

*Where on the other hand bodybuilders or other strength kind of athletes they want to gain weight, so then their nutrition dictates kind of the way that this goes. Now one of the things back to beta analine specifically just the idea that you have good intracellular buffers is still a good thing, it's just mean that the degree of impeding of blood flow needs to be a little bit greater than it otherwise would be. This is where we see these kinds of things.*

*So after you get done with your KAATSU session and you've done let's say three to five different exercises and you've gotten that failure signal at least in the third set of each one of those exercises, then in retrospect you know you did a good job. Whether you have beta analine onboard, whether you don't, whether you are using creatinine or all those sorts of things they just set the stage for the muscle to adapt in a better way to a stronger stimulus.*

**Carl Lanore:** *Okay good because then you answered the question about a nitric oxide donor as well like you know Larginine or something like that.*



**Dr. Stray-Gundersen:** *Yeah right.*

**Carl Lanore:** *Okay. What about strength? Is there any evidence that KAATSU training actually effects neuromuscular adaptation in the same way that handling heavy weight does?*

**Dr. Stray-Gundersen:** *Well, I'd kind of answer it this way, you know one of the things is you get increases in strength with KAATSU within two weeks. I would say that most people think that that's just because we've gotten better motor activation, better coordination and we really haven't done anything to the muscle itself. But that's not the case. We do get those enhancements of the motor coordination and all that kind of stuff, but we're still getting protein building going on in the muscle and as I was kind of alluding to earlier that because we haven't done the damage we don't have to dig ourselves out of this hole that takes you know four to six weeks.*

**Carl Lanore:** *Right.*

**Dr. Stray-Gundersen:** *We can just start going right from get go. So I would say that the degree of skill acquisition and all those sort of things is the same with KAATSU as it is with other sorts of sports or other sorts of weightlifting.*

*Now let me illustrate one thing is one of the things that I love doing with all my athletes is I ask them to put the KAATSU bands on and then they have to try to do some skill activity that they may have been doing. For example, juggling a soccer ball or throwing a baseball or hitting a baseball, all these things that are highly technically oriented and with the KAATSU bands on at the right pressures they're just horrible at it. That does a couple of things. One is these are already well accomplished people and they don't like not being good at what they're sport is and so it forces them to focus on the very specific motor tasks that are involved.*

*Then because they renewed their focus on these activities, plus their muscles are getting more fatigued than they otherwise would they get a really robust response. And very shortly they're on one hand juggling soccer balls really well again with the KAATSU bands on and then on the pitch they're even better than they were before.*

**Carl Lanore:** *And so then when they take the bands off since they've had to focus more and get more neuromuscular inroads and control with the bands*

*on when they take them off they're actually even better than they were before.*

**Dr. Stray-Gundersen:** *Exactly. So here's the thing, one of the things that is a critical component of all sports is when fatigue sets in you still have to do things and in exactly the right way whether that's catch that football or hit that jump shot or score that goal, all these things are very critical, technical things that are not done well when the individual is fatigued. KAATSU teaches you to operate under those conditions of fatigue so that you then do those things better when you don't have the KAATSU bands on.*

**Carl Lanore:** *We only have a few minutes. Are there any contraindications that someone should not get into KAATSU? Like let's say they've been diagnosed with peripheral artery disease and they don't want to put bands on their lower legs am I right about that or no?*

**Dr. Stray-Gundersen:** *The short answer is there's pretty much no contraindications to KAATSU. There's a couple of situations where we take extra care. One example for example is a woman who's had breast cancer and has had the lymph nodes in her armpit removed or the lymph nodes have been radiated, which produces a situation where generally they're advised not to put blood pressure cuffs on their arms or get blood drawn on that side. We similarly with an abundance of caution try not to put the bands on that arm. But the other three extremities they're still good to go for KAATSU.*

**Carl Lanore:** *Right.*

**Dr. Stray-Gundersen:** *That ends up being just fine.*

**Carl Lanore:** *Oh yeah because there's actually a cross education. We know that if you train one leg, the other leg gets something out of it anyway, so there's probably some real benefits to that.*

**Dr. Stray-Gundersen:** *Exactly.*

**Carl Lanore:** *Yeah, yeah.*

**Dr. Stray-Gundersen:** *Exactly. So you know there are things and this is part of the educational process, there are things where we have to modify exactly what we do and we don't do, but suffice it to say that there's a way to*

*KAATSU everybody in a safe manner. So for example you were talking about the peripheral artery disease in let's say a senior for example. There we're not going to use very high pressures, but we don't need too because we can end up getting that KAATSU effect with a combination of low pressures and easy exercises that work for them and doing so such that we don't damage any arteries that are already diseased.*

**Carl Lanore:** *I have to believe that the hemodynamic changes would actually be beneficial to arteries because we know that heavy load-bearing exercise over long periods of time actually makes arteries and veins more resilient, more elastic, and improves intima, thickness, and function. So I got to believe that allowing them to achieve that level of let's say almost what occurs in a Valsa type of a maneuver, achieve that kind of blood vascular pressure changes, but without doing a lot of strenuous work has to be beneficial to them.*

**Dr. Stray-Gundersen:** *Absolutely. Again this gets back to that key to KAATSU which is when it's done properly there's low loads involved. You don't have to go to the extremes that you normally have to go to get the effects to happen.*

**Carl Lanore:** *Yeah. Listen we've run out of time. This is a fantastic interview. We're happy to have Dr. Gundersen back on the air. If you have questions that we didn't cover please email them to [onair@superhumanradio.com](mailto:onair@superhumanradio.com) and I promise we'll have him back on and cover it at a later time. This is brilliant and the website is fantastic, [KAATSU.com](http://KAATSU.com). Whether you are an end user or you are a personal trainer you must go to that website. Download the free report, but more importantly checkout the equipment, get certified and offer KAATSU training to your clients, it's a great idea. Listen, thanks for being on the show today.*

**Dr. Stray-Gundersen:** *Oh, you're more than welcome.*

# Media, Podcasts, Lectures, Testimonials

KAATSU has been covered and explained in the media and on podcasts in the United States, Europe and Japan:

## Articles

- Wall Street Journal:

[Can You Work Out Less, Get More Results?](#)

- Wall Street Journal:

[Could the KAATSU Workout Be the Most Efficient Exercise?](#)

- Wall Street Journal Japan: [KAATSU Inventor Also Sees Healing Potential](#)

- Outside Magazine:

[You Should Probably Try This Japanese Blood-Flow Routine](#)

- Military Times: [KAATSU training is blowing fitness researchers' minds](#)

- Science Trends:

[Investigating Low-load Resistance Training With Blood Flow Restriction](#)

- Orange County Register: [Exercise company finds its flow](#)

- Orange County Register:

[Kept from the water and each other, Los Al High team still stays competitive](#)

- Ridge Path: [Muscle Magic At 104](#)

- Steemit:

[What's a KAATSU BFR device and why is it useful for your workout?](#)

## Television

- ESPN with Yoenis Cespedes (starts at 1:30):

[Inside Cespedes' workout routine - ESPN Video](#)

- NHK-TV: [Medical Frontiers on KAATSU](#)

- ANA Special: [The History, Mechanism And Relevance of KAATSU](#)

- Swimming World TV:

[Olympic Swim Coach Chris Morgan Explains the Use of KAATSU in Aquatics](#)

- Straight Talk with Art Levine:

[Steven Munatones On Straight Talk With Art Levine](#)

## Podcasts

- Ben Greenfield Fitness: [The Official KAATSU Episode: Everything You Need To Know About How To Use Blood Flow Restriction For Muscle Gain, Injury Recovery, Testosterone, Growth Hormone & Much More](#)

- Ben Greenfield Fitness: [Everything You Need To Know About “KAATSU Training”: An All-In-One Exercise, Rehabilitation, & Recovery Blood-Flow Restriction Modality From Japan](#)
- Dr. Mercola Take Control of Your Health: [Blood Flow Restriction Training Discussion Between John Doolittle, Steven Munatones and Dr. Mercola](#)
- Siim Land: [Slow Down Aging and Build Muscle With KAATSU Training – KAATSU Podcast with Steven Munatones and John Doolittle](#)
- Dr. Mercola Peak Fitness: [The History of Blood Flow Restriction Training](#)
- Dr. Mercola Peak Fitness: [What You Need to Know About Blood Flow Restriction Training](#)
- Total Human Optimization with Aubry Marcus: [Olympic Champion Bode Miller Talks About KAATSU](#)
- Josh Holland, Episode 119: [KAATSU and Blood Flow Restriction Training](#)
- David Weinstein: [The Primalosophy Podcast](#)
- Exclusivia: [KAATSU with Steven Munatones](#)
- Exclusivia: [KAATSU with John Doolittle](#)
- KAATSU Global Podcast: [U.S. Marines Major Gamal Awad and 2-time Olympian Hawley Bennett Talk KAATSU](#)
- KAATSU Global Podcast: [Jonty Skinner, world record holder, USA Swimming National & Olympic Team Coach, American Swimming Coaches Association Hall of Famer](#)
- KAATSU Global Podcast: [Aesthetician Tina Newman Talks KAATSU Skin Care](#)
- KAATSU Global Podcast: [Water Polo Coach Dave Carlson Talks KAATSU-Part 1](#)
- KAATSU Global Podcast: [Water Polo Coach Dave Carlson Talks KAATSU-Part 2](#)
- KAATSU Global Podcast: [Wrestling Hall of Fame Honoree Andre Metzger On 9 Hands](#)
- KAATSU Global Podcast: [Navy SEAL Will Brnum Talks KAATSU](#)
- KAATSU Global Podcast: [Olympic Swim Coach Chris Morgan Explains Recovery, Rehabilitation, Athletic Performance with KAATSU](#)
- KAATSU Global Podcast: [15-year-old Ryan Doolittle with Juvenile Idiopathic Arthritis](#)
- KAATSU Global Podcast: [NFL Team Doctor David Chao, M.D. on KAATSU](#)
- KAATSU Global Podcast: [U.S. Navy SEAL Captain and Special Forces Operator John Doolittle on the use of KAATSU](#)
- KAATSU Global Podcast: [Green Beret, Purple Heart Recipient Joe Lowrey](#)

## Radio

- The National Defense: [Jerry Newberry, Randy Miller Inquire about KAATSU](#)
- Super Human Radio: [KAATSU Training with Dr. Jim Stray-Gundersen](#)



## Lecture Series

- KAATSU Lecture Series at the University of Tokyo:  
[Peter T. Lansbury, PhD, Professor of Neurology, Harvard Medical School](#)
- KAATSU Lecture Series at the University of Tokyo: [Jim Stray-Gundersen, MD](#)

## KAATSU Aqua

- Swimmer's Daily:  
[KAATSU Aqua Workouts Explained by Olympic Swim Coach Chris Morgan](#)
- North Shore Report: [KAATSU with North Shore \(Hawaii\) Lifeguards](#)
- KAATSU At Home Interview:  
[KAATSU At Home with Olympic Swim Coach Chris Morgan](#)
- FloSwimming: [KAATSU Training with Alabama's Jonty Skinner](#)

## Testimonials

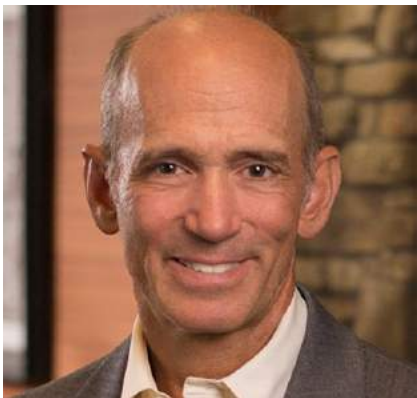
- 2014 Olympic Silver Medalist Todd Lodwick:  
[An Olympic Comeback In 28 Days](#)
- 5-time Olympic Medalist Justin Gatlin: [Preparations for a 100m Sprint](#)
- Harvard Medical School Professor of Neurology Peter Lansbury, PhD:  
[KAATSU with Rheumatoid arthritis](#)
- KAATSU Skin Care: [Aesthetician Tina Newman on KAATSU Beauty](#)
- KAATSU Aqua: [Swimming Coach on KAATSU Aqua](#)

## Video Sample Exercises

- KAATSU In The Office: [Lower Body Exercises](#)
- KAATSU In The Office: [Upper Body Exercises](#)
- KAATSU In The Office: [Corporate Wellness](#)
- KAATSU In The Office: [Working the Core](#)
- KAATSU In The Office: [Stress Relief](#)

# Appendix

## Testimonials



**JOSEPH MERCOLA**  
*Osteopathic Physician*

*"One of my top tools at home right now is KAATSU training with bodyweight, not only because I can maintain muscle and get a mitochondrial and satellite cell response with a little less inflammation, but also because I can't go to the gym where all the heavyweights are, but I can simulate that with this type of training."*



**BEN GREENFIELD**  
*Triathlete, Coach, Author*

*"After careful review, it is clear to me that the KAATSU equipment is the best BFR equipment on the market, as it is the only one that allows you to automatically cycle pressure on for 30 seconds and off for five seconds."*



**BODE MILLER**  
*Gold Medal Olympic Skier*

*"I've been getting a top-to-bottom workout with just KAATSU alone. That's a testament to its effectiveness in terms of not just building size, but building functional effectiveness. I think it's also going to be the most widely beneficial [training method] - good for people from 12 years old to 80 and from elite athletes and law enforcement and military to stay-at-home moms and dads. There's an application for every human on the planet with this."*



**MARY CHAVES**

**80-year-old retiree**

*"I was in real pain for a groin sprain. I couldn't lift anything or move around without pain. I was a little nervous to use the KAATSU bands, but afterwards, I was able to walk around without pain. I was surprised. I feel wonderful now."*



**CHRISTINA NEWMAN**

**56-year-old aesthetician**

*"I am in shock about how my forearms and wrists feel. I was experiencing such pain all the time. My skin, my muscles, my core, my calm sense of being have all been helped by doing the KAATSU Cycles daily. Everything that I do with my KAATSU bands is done slowly especially after a long day at work."*



**CHILTON HAWK**

**Assistant Laboratory Animal Technician**

*"The reason I brought the KAATSU was for neuropathy. My neuropathy is caused by reduced blood flow to the legs and feet that create mobility and balance issues. It surprised me that the therapy results were immediately noticeable. I felt greater mobility, speed, and balance, and also noticed much better sleep at night, which allows greater cognitive ability. An added benefit is that I am building muscle mass with very few exercises. At my last medical checkup, my Doctor said that I had a strong pulse in my ankles."*



**STEPHEN MCCAIN**

**Olympic Gymnast**

*"KAATSU is a game-changer for injured people...it cuts down the recovery time by half."*





## JOE LOWREY

### **34-year-old Green Beret & Purple Heart recipient**

*"KAATSU is a remarkable therapy that I was introduced to while recovering from my injury suffered in Afghanistan. My injuries are quite profound: I am hemiplegic on the left side of my body. With KAATSU, I made strides to where I am able to ambulate with a quad cane. I have also noticed decreases in spasticity and lower extremity tone with the help of my KAATSU leg bands. I am indebted for this huge blessing that has helped me regain some independence back into my highly affected life due to my combat injury."*



## MICHAEL ANDREW

### **USA Swimming national team member**

*"Leading up to swim meets, I trained with KAATSU Aqua Bands daily and recovered with KAATSU after each training session."*

*During the meets, I use KAATSU after each session to flush out and recover especially since we did not have access to massage therapist. With my event schedule and length of meet, I would not have been able to perform my best without KAATSU to help me recover quicker. Also, looking back, I feel that the race pain I experienced when training with KAATSU Aqua bands equipped me to better handle consecutive no-breath 50 sprints and the rigor of an insane schedule the night I set three junior world records."*



## HAWLEY BENETT

### **3-time Olympian**

*"KAATSU has really helped me recover from some serious injuries. My husband and I got hooked on KAATSU. I don't like using heavy weights. I am strong, but lean, and like variety in my training. It is easy, to do light and efficient when I am traveling. I only promote stuff that works for me. The results speak for themselves; it works for me. I am a big believer in KAATSU."*



**GAMAL AWAD**  
***U.S. Marines Major***

*"KAATSU is an intense workout. I didn't know that I could feel that way so soon. I was quite surprised. I started with hand clenches, curls with 5 lb weight. I had more mobility. The pain levels in my back from 7-8 to 2-3. That enabled me to get past issues and do other exercises. Now I can keep going. Within a week of my accident, I healed so quickly. The healing process is nuts. It was a huge game-changer. It is life changing."*



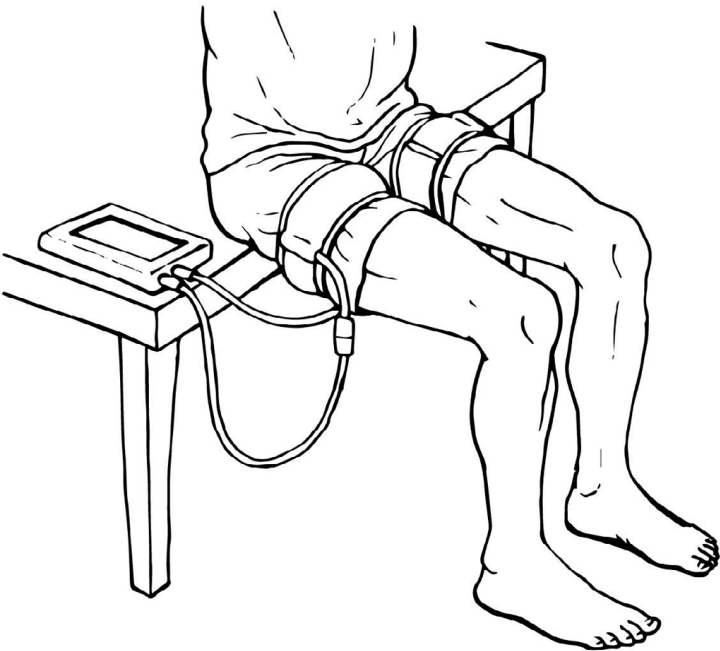
**SUSAN FRIEDMAN**  
***Retired teacher***

*"After my first intensive session of KAATSU, I was ecstatic that my right hand that had been plaguing me with intense nerve pain. It was almost all gone. I couldn't sleep. I called all my friends at 2 in the morning telling them about this fabulous thing called KAATSU, this amazing extraordinary modality. I recommend it to anyone who is having physical issues."*

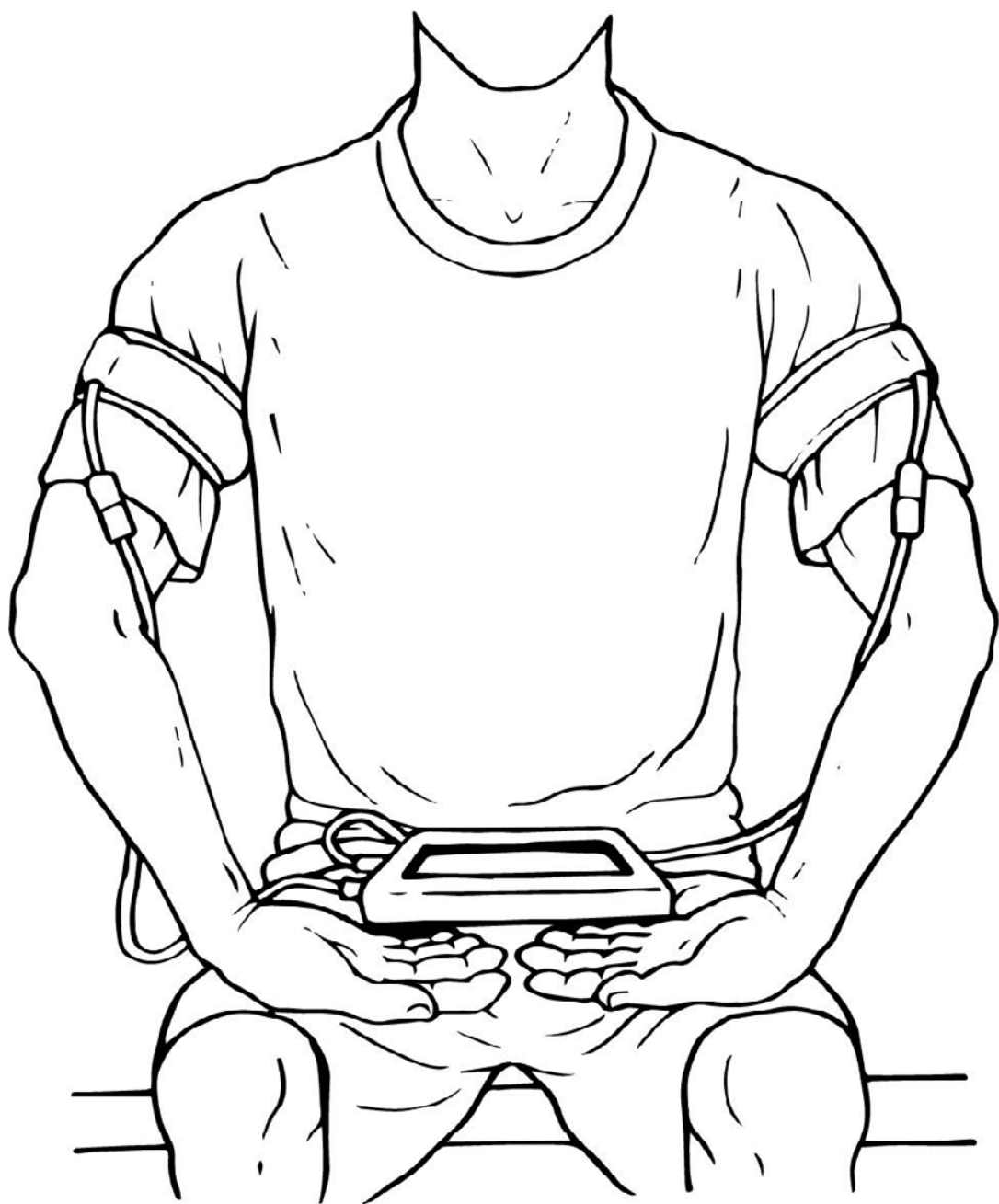


# Illustrations

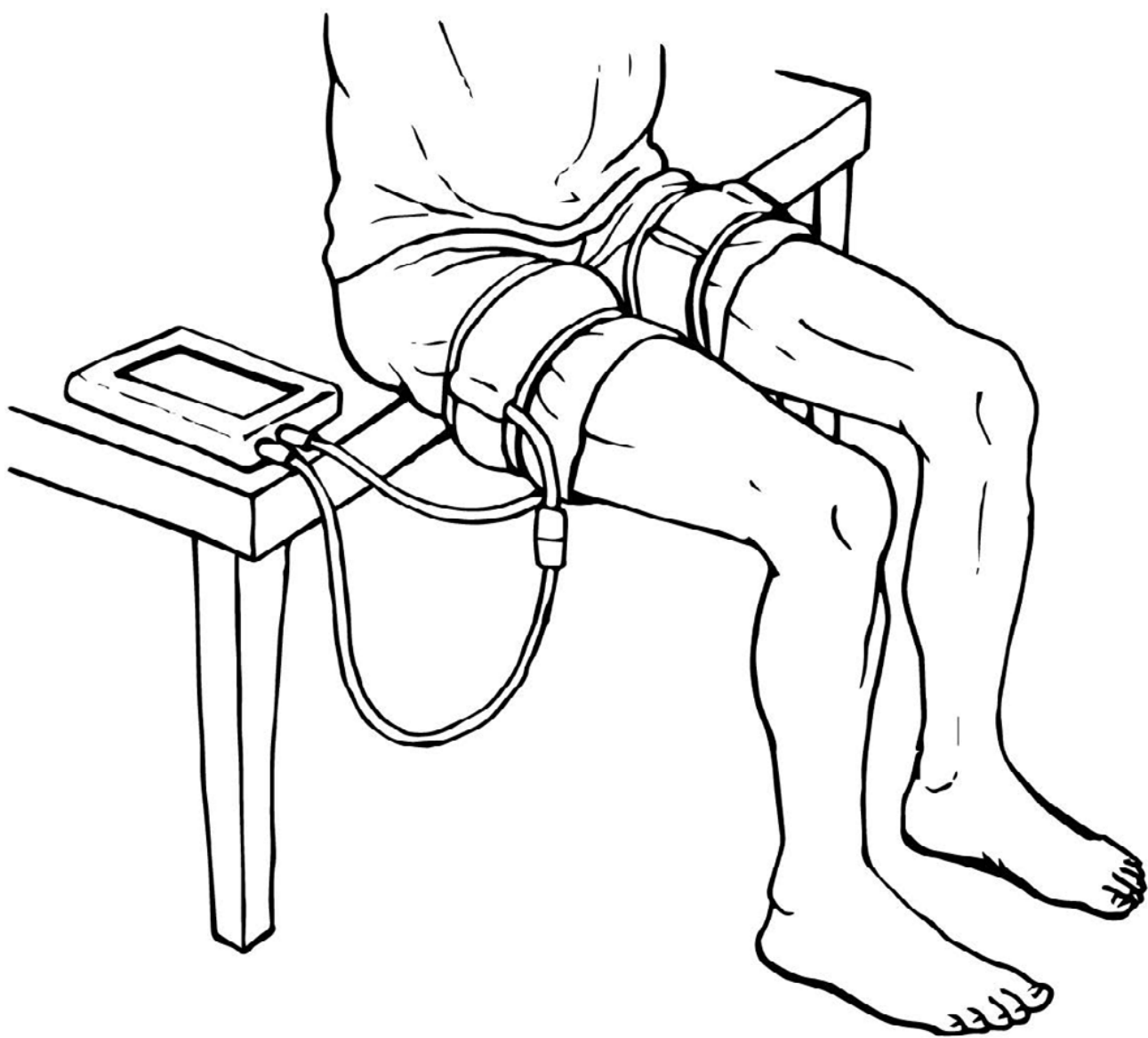
## for KAATSU Cycle Set-Up and Exercises



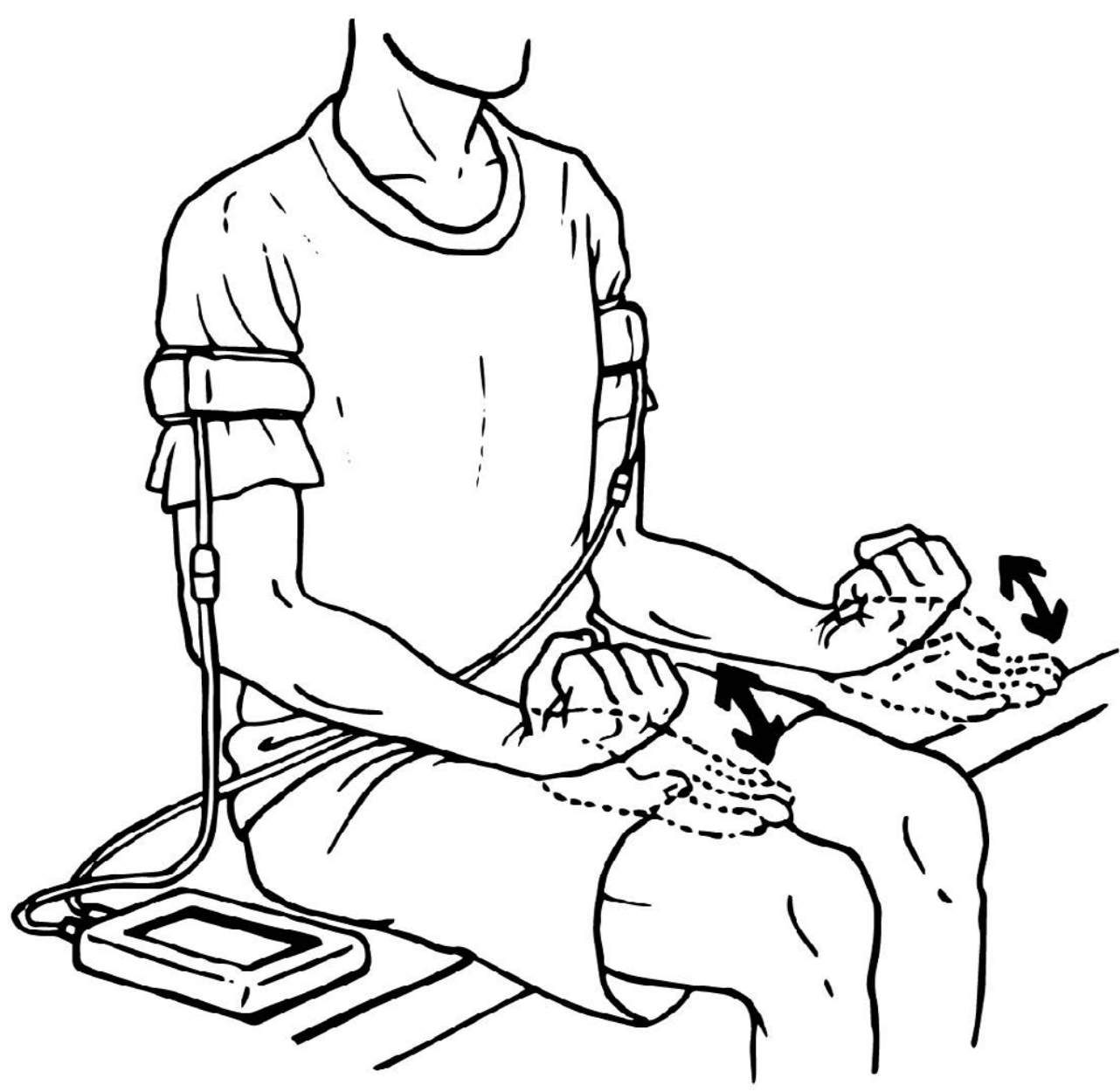
Arm  
Positions



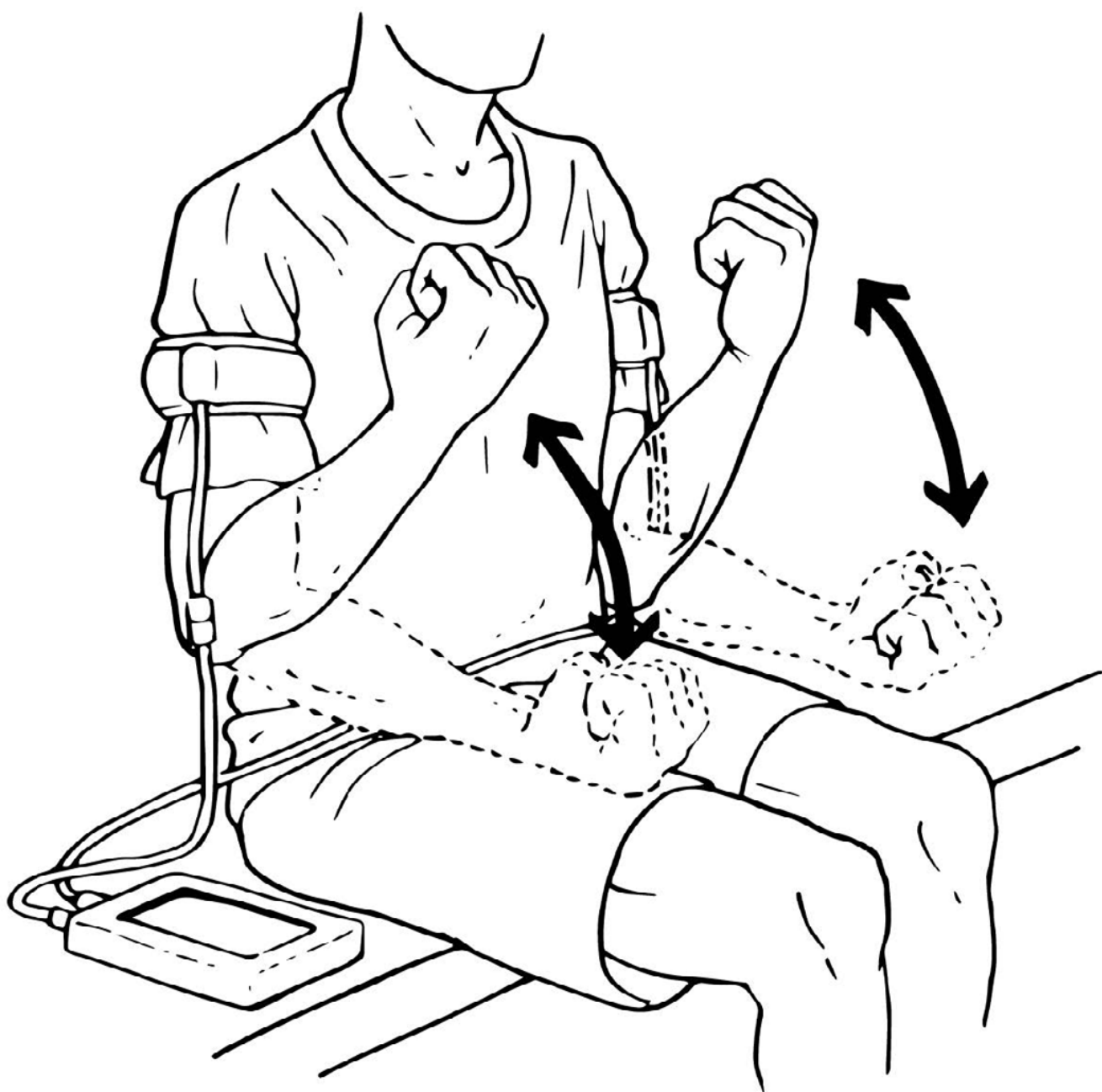
Leg  
Positions



Hand  
Clenches

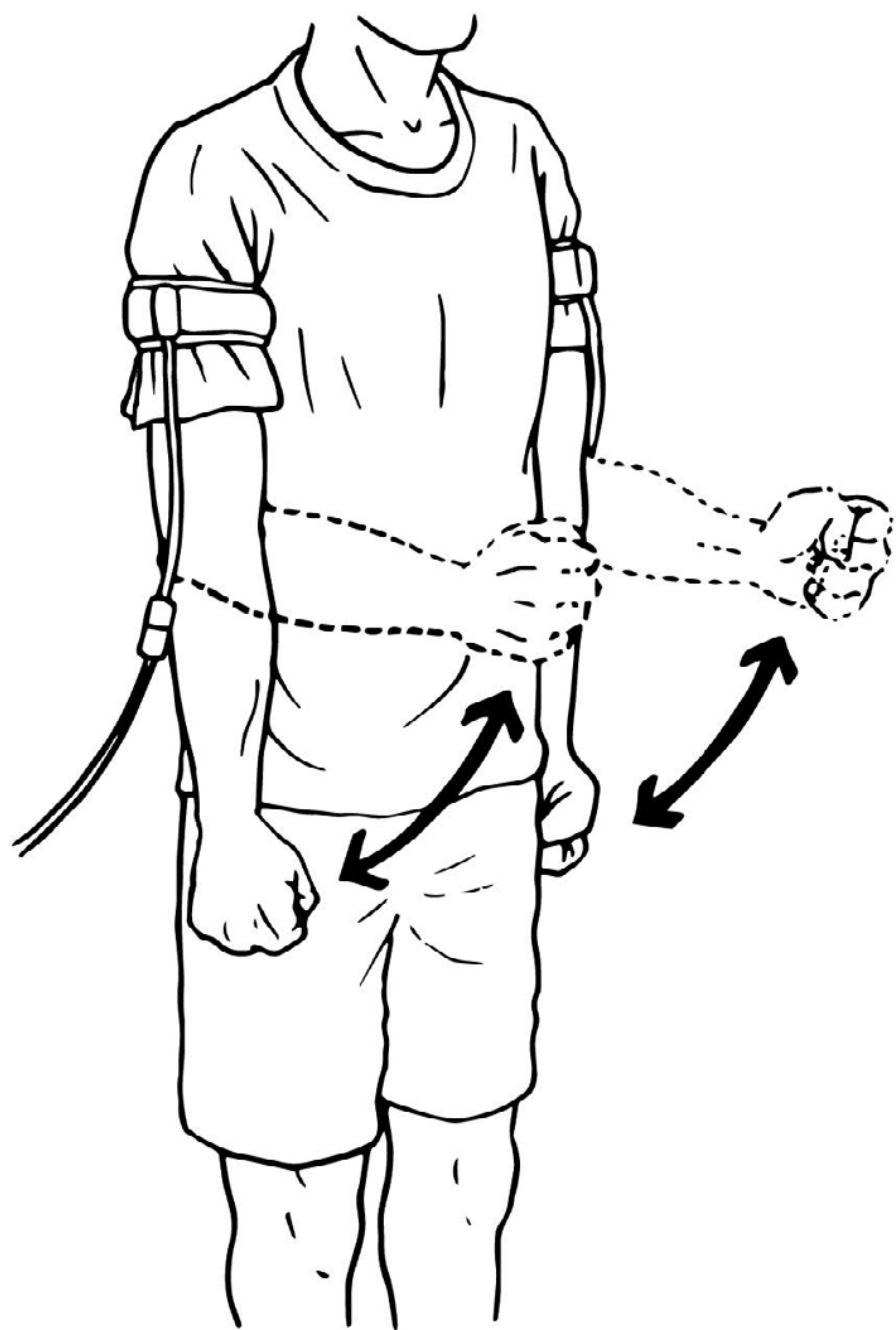


Bicep  
Curls

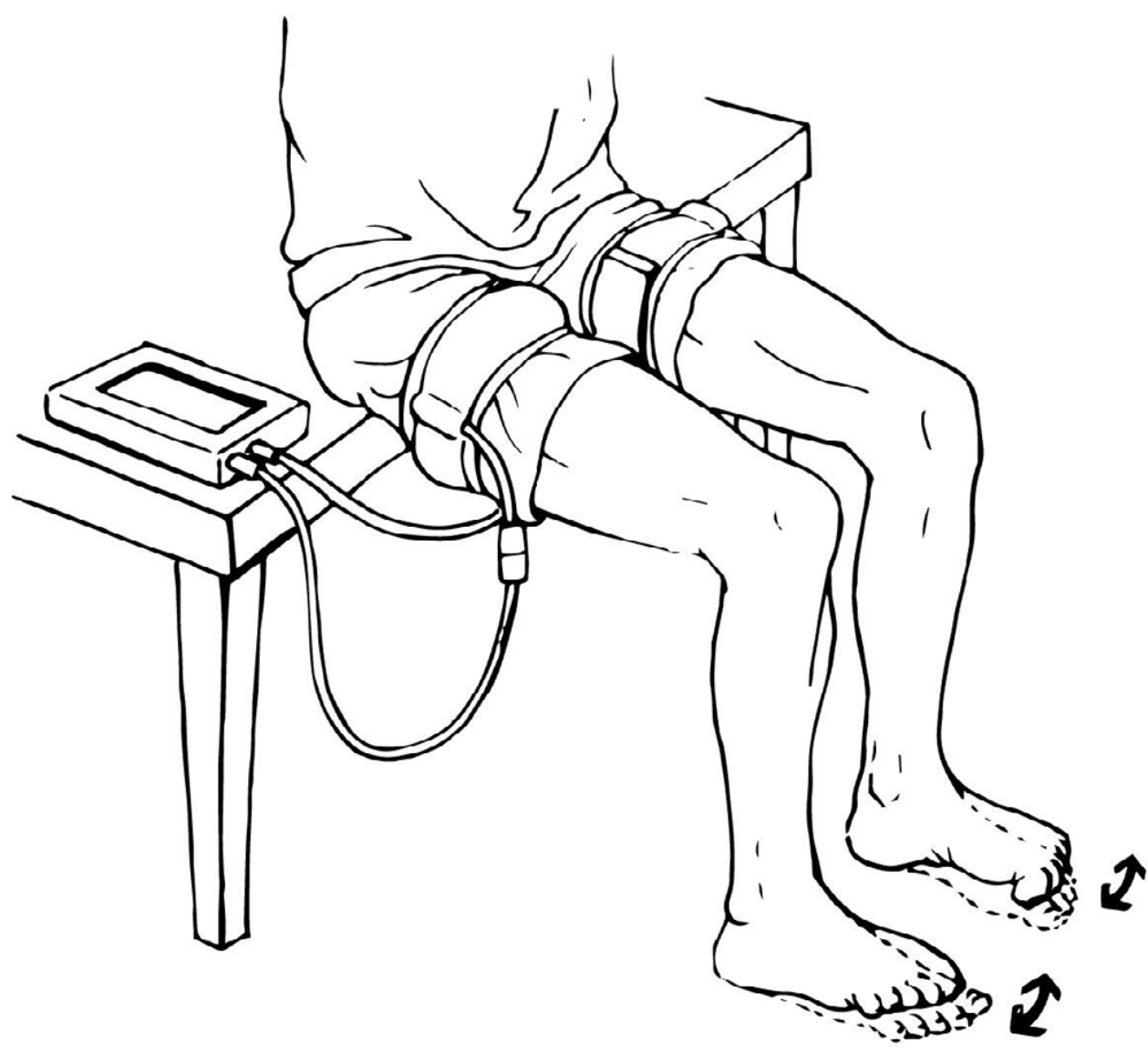




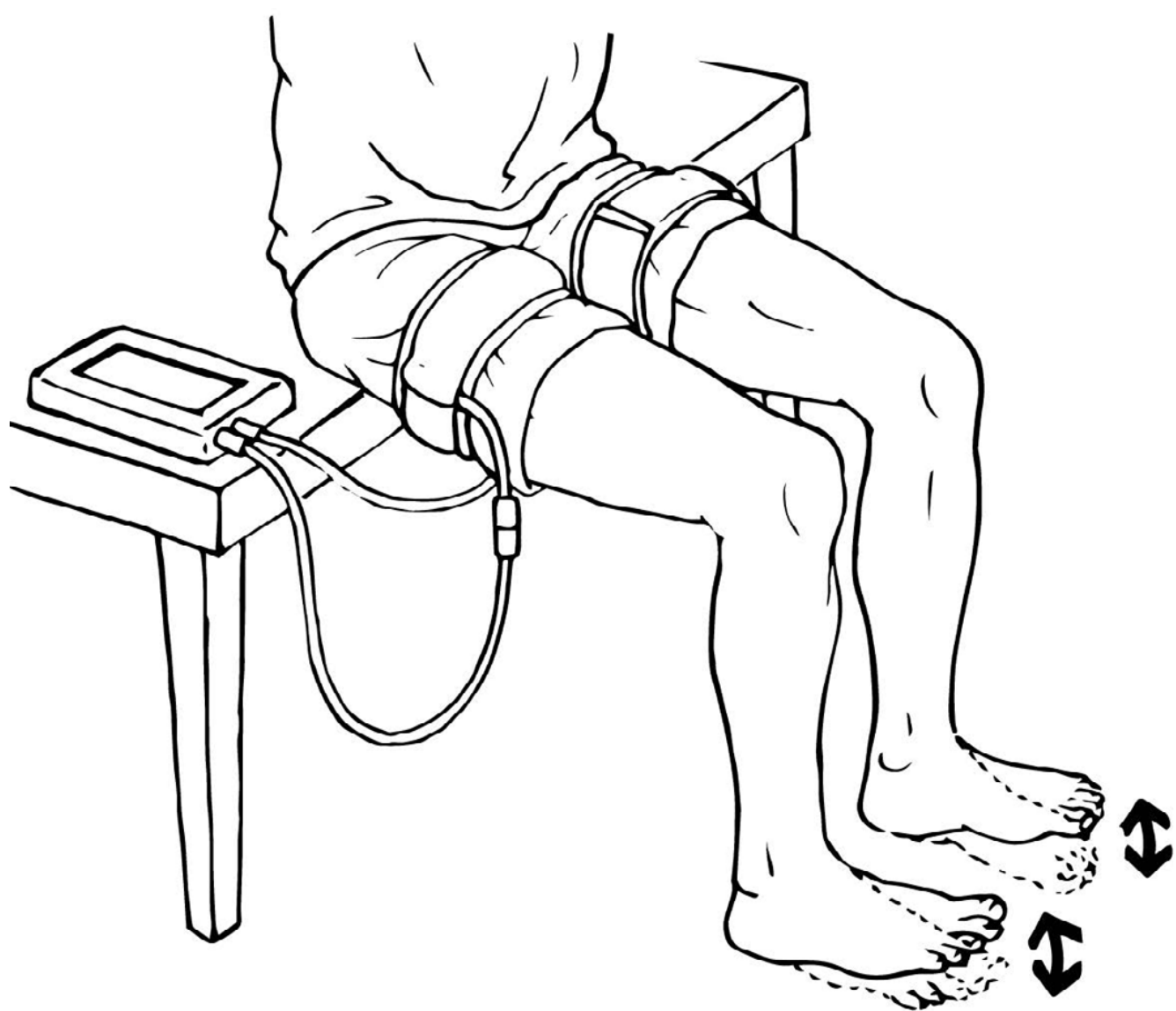
Tricep  
Extensions



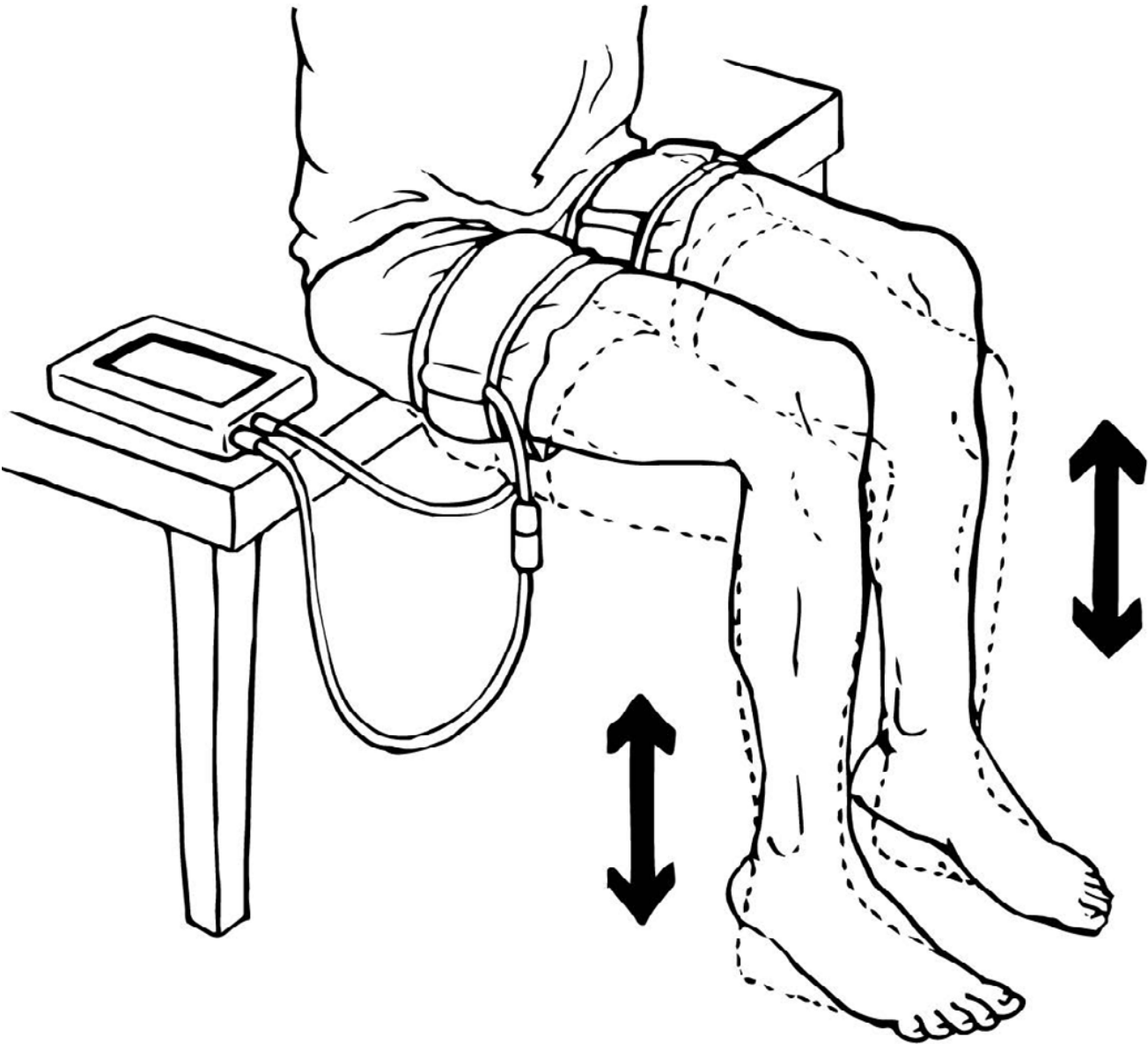
Toe Curls



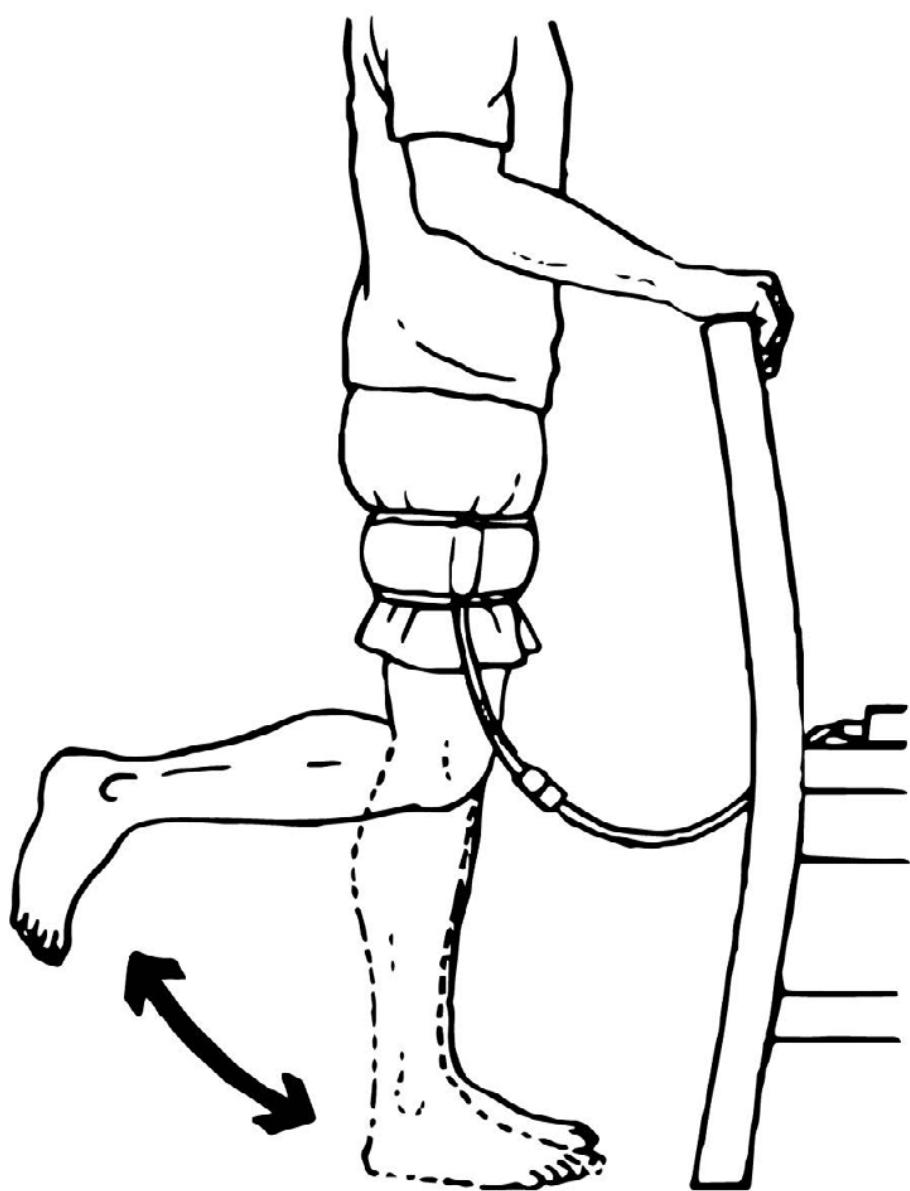
Toe  
Raises



Heel  
Raises

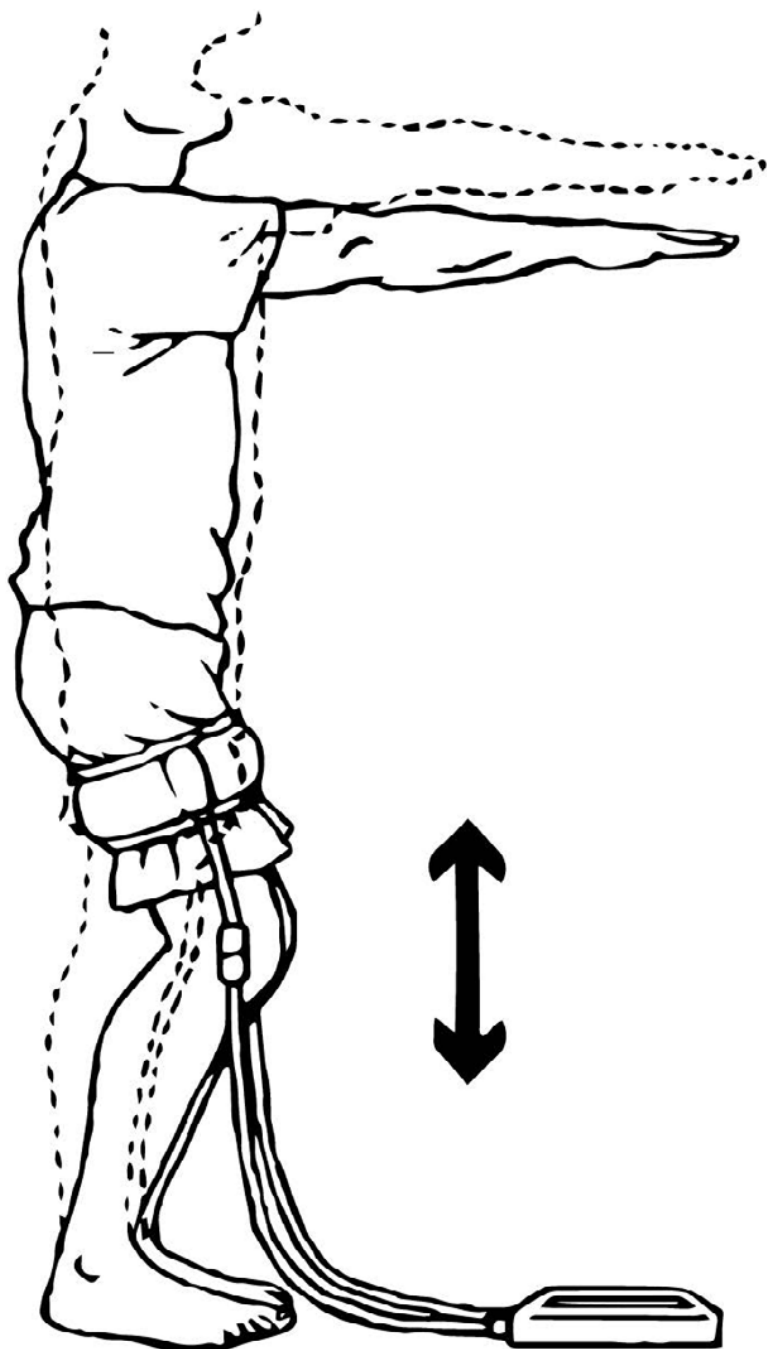


Leg Curls

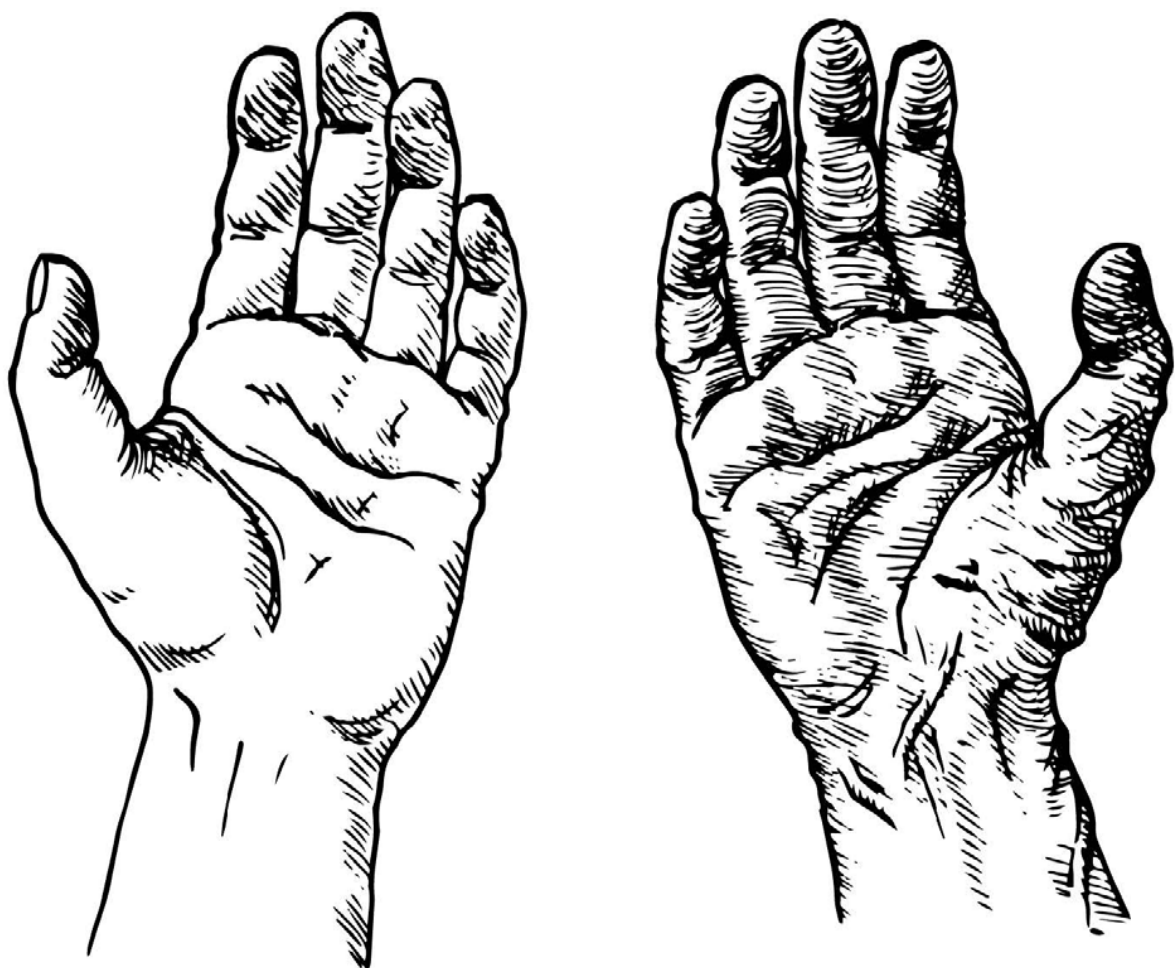




Quarter  
Squats



Vein  
Distension





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MANUAL**