

KAATSU®



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**GETTING STARTED EDITION**

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# THE LETTER FROM THE EDITOR



**KAATSU** was invented in 1966 and the KAATSU Cycle was conceived in 1973 by Dr. Yoshiaki Sato. I was very fortunate that Dr. Sato took me under his wing and spent 13 years patiently teaching me KAATSU. He shared with me every protocol on his patients in all kinds of settings and conditions. Dr. Sato took me step-by-step, spending thousands of hours over every possible iteration and application of KAATSU Training and KAATSU Cycle.

This education and experience was priceless.

This issue of the KAATSU Magazine covers the basics of KAATSU and is useful for KAATSU users who are just beginning their

KAATSU journey. KAATSU can be used for recovery, rehabilitation, and athletic improvement in speed, stamina, strength, size, agility and range of motion.

Any and all of these applications included in the articles can be performed with the next-generation KAATSU Master 2.0 or KAATSU Cycle 2.0 or the third generation KAATSU Wearables that will come out later in 2020.

Enjoy their journey. Send us an email to share your stories.

*Steven Munatones*  
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KAATSU Global, Inc.  
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U.S.A.

# WHO, WHAT, WHERE, WHEN, WHY OF KAATSU



## Who Uses KAATSU?

KAATSU has been used to date by individuals from all walks of life. The oldest KAATSU user in Japan was 104 years; the oldest KAATSU user in America is currently 89-year-old Kornelia Sprigg from Washington D.C. although there have been two men in their early 90's who previously used KAATSU.

KAATSU users have ranged from Peter Lansbury, PhD (Brigham Women's & Children Hospital) and Dr. Gary Strangman, PhD (Neural Systems Group and NASA) of

the Harvard Medical School and cardiologists Noriaki Naganuma, MD and Toshihiro Morita, MD at the University of Tokyo Hospital to medical professionals at the Hospital Israelita Albert Einstein in São Paulo in Brazil, China's Jilin University and Beijing University, Osaka University in Japan, and the University of Missouri

KAATSU users include many professional golfers and dozens of professional sports teams in the NFL, NBA, NHL, MLB and MLS as well as many Olympians and Olympic

medalists in wrestling, ski jumping, swimming, water polo, volleyball, rugby, track and field, marathon running, marathon swimming, and boxing. Users in the United States include athletic departments 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 the U.S. military in the Army, Navy and Air Force, especially among special operators (i.e., Navy SEALs, Army Rangers, Green Berets, and Air Force Special Operators).

But the largest demographic of KAATSU users, by far, are aging Baby Boomers. Women over the age of 50 are the largest single demographic of KAATSU users both in Japan and the United States.



### What is KAATSU?

KAATSU is often mislabeled and inaccurately defined as BFR Or Blood Flow Restriction training. It was more properly described as Blood Flow Modification because the arterial flow (from the torso to the limbs) is not occluded and the venous flow (back from the limbs to the torso) is only slightly modified.

KAATSU is a safe form of venous modification that is induced by the tightening of elastic pneumatic bands around either the upper arms or upper legs for brief and repeated periods of time.

The inflation and deflation of the bands are controlled by either consumer-oriented handheld devices (e.g., KAATSU Cycle 2.0 or KAATSU Wearables or KAATSU AI) or larger clinical-use devices (e.g., KAATSU Master 2.0). The inflation and deflation sequence is based on protocols and algorithms developed by KAATSU inventor Dr. Yoshiaki Sato and tested among thousands of cardiac rehabilitation patients at the University of Tokyo Hospital.

### Where Can KAATSU Be Used?

KAATSU can be performed 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.

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

### When Can KAATSU Be Performed?

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 throwing
  - \* hitting balls (golf or baseball)
  - \* kicking (balls or during kickboxing)
  - \* walking (the dog) or hiking
  - \* while exercising or doing physical therapy



“

The inflated bands lead to a temporary and repeated engorgement of blood in either the arms or legs.

- \* cooking or cleaning
- \* packing or folding clothes
- \* recovering from a vigorous workout or jet lag
- \* before, between and after athletic performances or vigorous/lengthy training sessions including weight training workouts

5-20 minutes a session is sufficient to gain benefits and see results. KAATSU can be (and should be) done daily - even 2-3 times per day if time permits. This is especially useful when KAATSU is used for rehabilitation and as an

augmentation to traditional physical therapy.

### Why Do KAATSU?

The vast array of KAATSU protocols are used for:

1. athletic performance (e.g., improved speed, strength, stamina, range of motion, agility, technique)
2. rehabilitation of injured muscles, bones, ligaments and tendons
3. recovery from surgeries, jet lag, insomnia, vigorous and sustained physical activities, and athletic performances
4. wellness maintenance or improvement especially for deconditioned, bedridden or obese individuals, people leading primarily sedentary lifestyles, wounded warriors, paraplegics and quadriplegics
5. pain management and reduction, including lower back and joint discomfort

The inflated bands lead to a temporary and repeated engorgement of blood in either the arms or legs. This engorgement is a natural catalyst for myriad safe and healthful biochemical reactions in both your vascular system and brain.

In particular, NO (nitric oxide), IGF-1 (insulin growth factor), endothelial cells (VEGF or vascular endothelial growth factor), HGH (human growth hormone), testosterone, adrenaline, plasmalogens and ceramides are produced as a result of the different KAATSU protocols.

# QUESTIONS & ANSWERS



Questions from KAATSU users around the world from all walks of life and various ages come in frequently. Below are KAATSU Global's answers and advice to 20 questions:



**Q1. KAATSU temporarily traps interstitial fluid in the legs and arms. Could this make an already swollen knee or elbow worse?**

**A1.** No, the movement of the limbs during exercise actually makes swelling less.

**Q2. What type of fatigue factor (adrenaline release) is associated with KAATSU? Is there a recovery period required?**

**A2.** We know adrenalin, Human Growth Hormone, IGF-1 (Insulin Growth Factor), and VEGF (Vascular Endothelial Growth Factor) are released during a proper KAATSU session. These are marker hormones and what has been

studied. There are likely others. Recovery from KAATSU is quicker than other maximal work for a variety of reasons. For example, intense weight lifting causes microscopic tears to form in the fiber and connective tissue of muscles. With proper rest and nutrients, the muscles slowly rebuild over the following days, but full repair can take a week. With KAATSU, there is not microscopic tears due to lifting weights against gravity.



**Q3. Does the law of diminishing returns apply? Will we expect to hit plateaus? Can KAATSU be used twice per day or even more?**

**A3.** KAATSU Cycle can be used twice and even three times per day, especially if you are rehabilitating from injury or surgery. But

even if you are training twice per day, KAATSU can be briefly incorporated into each workout if you follow proper KAATSU protocols. We think there are relatively few plateaus.

**Q4. Are there studies analyzing the amounts of Growth Hormone or other chemical responses as a result of KAATSU?**

**A4.** Yes, consult the research section on the [www.kaatsu-global.com](http://www.kaatsu-global.com) website [here](#) (e.g., [Rapid increase in plasma growth hormone after low-intensity resistance exercise with vascular occlusion](#)).

**Q5. Is there research or documented cases which demonstrate KAATSU effectiveness on rehab, including muscle tears?**

**A5.** Yes, consult the research section on the [www.kaatsu-global.com](http://www.kaatsu-global.com) website [here](#) (e.g., (e.g., [Three cases of disuse syndrome patients who improved by KAATSU training](#))).

**Q6. What are the effects of KAATSU on contusions or bruises?**

**A6.** If you have a large contusion on your body, it is best to do conservative KAATSU Cycle on the other limbs (e.g., if you have a bruise on your left leg, you can do KAATSU on your right leg and both arms).

**Q7. What sort of data is available which supports the claims that KAATSU can increase muscle strength?**

**A7.** Yes, consult the research section on the [www.kaatsu-global.com](http://www.kaatsu-global.com) website [here](#) (e.g., [Muscle fiber cross-sectional area is increased after two weeks of twice daily KAATSU-resistance training](#)).

**Q8. Is the cascading release of Growth Hormone enough to strengthen muscle without the tearing down of muscle fibers? How do we know?**

**A8.** Yes, the Growth Hormone cascade is one critical part of strengthening muscle. Tearing down of muscle fibers is not necessary for improved strength. In other words, KAATSU enables you to avoid the microtrauma in muscle fibers and connective tissue, but with the naturally resultant biochemical reactions in the body, the muscle can grow in size and strength.

**Q9. Should exercises be alternated to prevent possible plateaus?**

**A9.** It is best to incorporate a wide variety

of exercises and movements for the arms, legs and core while doing KAATSU sessions. The exercises are vary during each KAATSU session.

**Q10. Does it matter if my leg exercises are more intense than the arm exercises?**

**A10.** Generally, you can get a 'failure' signal on both your arms and legs to an equal degree. Some people (including many males) feel this more intensely in their arms and others (including many females) feel this more intensely in their legs. But this phenomenon may occur because some males push themselves more intensely on their arms and some females push themselves more intensely on their legs.

**Q11. My capillary refill time (CRT) is a bit different in the center of my palm compared to the meaty area of my palm when I firmly push down with my thumb.**

**A11.** Standard KAATSU protocol calls for firmly pressing down on the meaty area of your palm and then releasing to see the capillary refill time. This is the best visual evidence of the extent of blood engorgement. After releasing your thumb, count the seconds before the area is refilled with blood. It is good for the CRT to be fast (under a second), but it should always be faster than 3 seconds (as in a count of "one-thousand-one, one-thousand-two, one-thousand-three). You can also use the Masimo MightySat™ Finger Pulse Oximeter. When you first put on the Masimo MightySat™ Finger Pulse Oximeter on your non-dominant ring finger, check your Perfusion Index. When this Perfusion Index decreases about 25-40%, you have reached your Optimal Pressure.



**Q12. What is suggested response when subject**



**complains of discomfort during treatment?**

**A12.** If the discomfort is within the exercising muscle, that is what is supposed to happen. That indicates the muscle is being adequately trained without the need for vigorous weight lifting. But if there is any unusual pain, stop the KAATSU session. For an individual with pain near their injuries or joints, the KAATSU session and movements should either be avoided or adjusted. If only one limb is causing the pain, you can still use KAATSU on the other limbs. It is also very important to focus on KAATSU Cycles as opposed to the KAATSU Training mode.

**Q13. Midway through treatment, a patient notified me of drugs in her system (i.e., painkillers for migraines). Could this make her less sensitive to treatment and is it acceptable to proceed?**

**A13.** It is likely OK to proceed. However, if a patient is highly medicated (or inebriated) that you would not normally do regular exercise, then they should avoid doing KAATSU in this state. The same logic holds true for illness. If a patient is so sick or feverish that they would not normally do regular exercise, then they should also avoid doing KAATSU in this state.

**Q14. Can the KAATSU leg bands be used on a stationary bike? What, if any, recommended protocols are suggested?**

**A14.** Yes, using with a stationary bicycle (or a rowing machine or treadmill or elliptical machine or step machine) can provide a great aerobic workout. You can incorporate either the KAATSU Cycle mode or the KAATSU Training mode with all of these types of equipment. For example, you can spin for 1 minute (cycling) at a pressure where it is difficult to complete the full 60 seconds, then rest for 30-60 seconds. Then repeat this 3-5 times. If you use the KAATSU Cycle mode, you can spin for 30 seconds (while the KAATSU Air Bands are inflated) and then rest when the bands are deflated. These kinds of high intensity and interval training provide excellent short KAATSU Cycle or KAATSU Training workouts.

**Q15. Are there contraindications post surgical? How soon after surgery can you begin?**

**A15.** No, KAATSU Cycles can be safely started 3 days post op. In fact, under medical supervision at Veterans Affairs Hospitals, post-op patients begin KAATSU Cycles the day of surgery.

The only recommended caution is not to put KAATSU Air Bands over a fresh wound and do not do exercises that cause pain in the operated area.

**Q16. Could my Optimal SKU Pressure differ from my left arm to my right arm? Some athletes have a dominant arm so that seems reasonable.**

**A16.** In most cases, yes the athlete's Optimal SKU Pressure differs between their left and right arms. For athletes with slight differences in their strength, agility or speed on/toward one side versus their other side, KAATSU can be most effective if you put a slightly higher Base SKU Pressure or Optimal SKU Pressure on the weaker limb. This will help strengthen the weaker limb and make the athlete's body more uniform/equal on both sides.



**Q17. Are there listed standard protocols for trying to achieve certain goals?**

**A17.** This is a more complicated question as every athlete or individual is different with different strengths and weaknesses. There are differences even between how KAATSU can be more effectively used during the off-season, pre-season, mid-season and championship season. For example, perhaps the athlete needs to focus more on stamina building in pre-season and more on speed in mid-season and technique in the championship season. These differences may dictate different pressures, durations, movements and interval in the training.

**Q18. Can you do the KAATSU Cycle on both of your arms and legs at the same time?**

**A18.** No one should simultaneously do KAATSU Training or KAATSU Cycles on their arms and legs together. Users may think they are being more efficient by doing arms and legs at the same time, but they are actually being much less efficient by doing so. Additionally, doing KAATSU on your arms and legs together introduces the risk of becoming lightheaded and fainting.

Signals from your muscle groups to your brain as a result of KAATSU are much more effective if they are coming from one location. This is why we only do KAATSU on the injured leg instead of

doing KAATSU on both legs if one leg is injured.

In the same way, if we have signals simultaneously coming from both arms and both legs, this is a reduction of impactful signals by one-fourth - it is not an increase in signals by four. This testing was performed many years ago at the University of Tokyo Hospital.

**Q19. Why should you do KAATSU on your arms first and then work on your legs?**

**A19.** One of the reasons you should do your arms first is because the nerves of your arms and the capillaries in the arms are much closer together compared to the anatomy of your legs. The engorgement of your capillaries in your arms “wakes up” or “warms up” (i.e., stimulates) your nervous system much faster and more effectively than the engorgement of your capillaries in your legs. Therefore, your leg workout will be better after your arms have gone through the KAATSU Cycles.

**Q20. Should we workout our small muscles first before our larger muscle groups - or vice versa?**

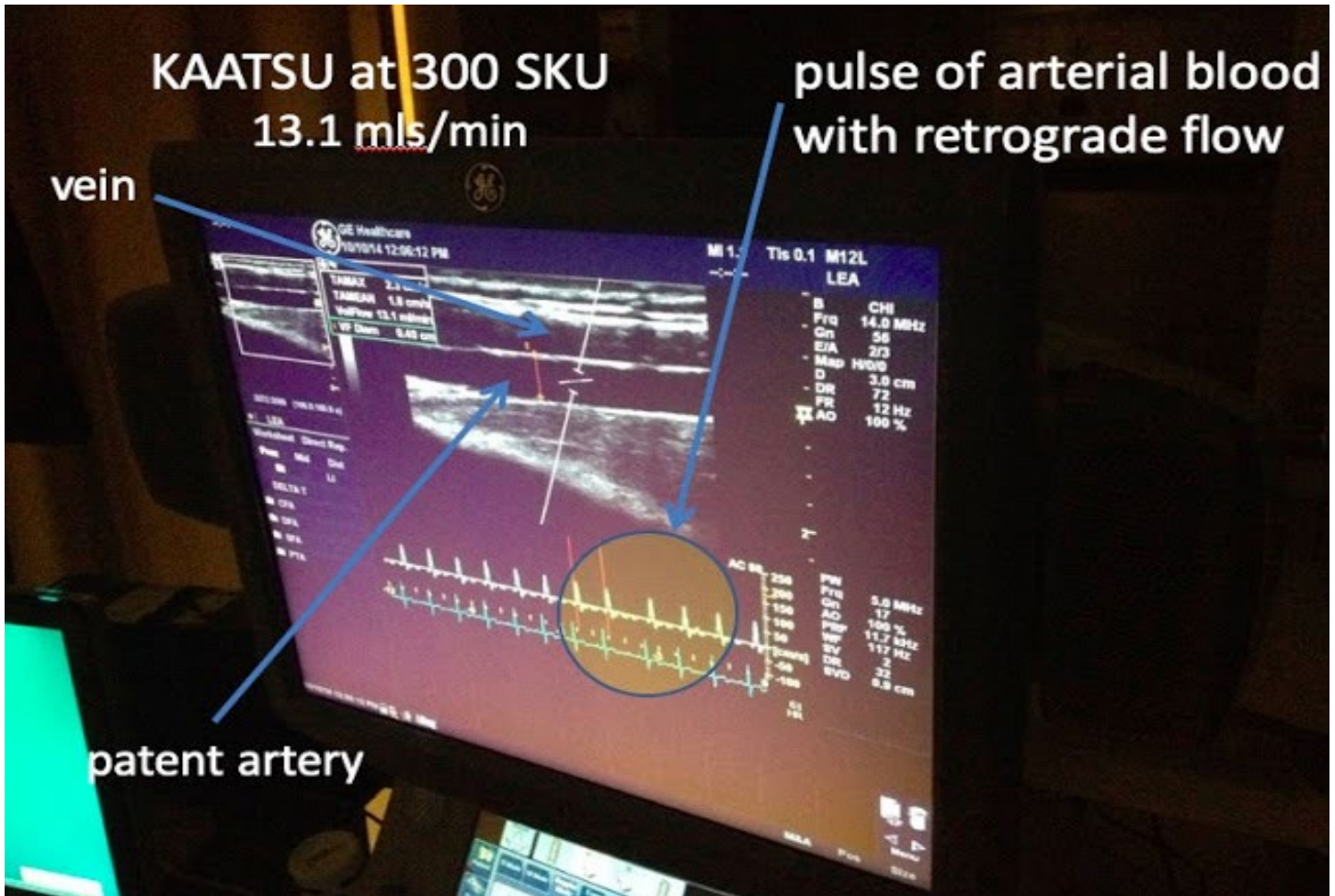
**A20.** We encourage doing KAATSU on the smallest muscles first and then gradually move to the larger muscles. This is why we do KAATSU first on the arms, and then on the legs.

In the standard arm KAATSU 3-Point Exercises, we start off with the forearms, then go to the biceps, and then the triceps.

In the standard leg KAATSU 3-Point Exercises, we start off with the toes, then go to the calves, and then the hamstrings and quadriceps.

This concept is also true for competitive sports like swimming. If you are doing different strokes but want to focus on backstroke (for example), first do the other strokes and then finish off with your backstroke sets.

# Introduction To The KAATSU Cycle



When many people first hear about and become interested in KAATSU, they Google “KAATSU”. The resultant Google search often lists many BFR (Blood Flow Restriction) products.

It is reasonable for most of these individuals to equate KAATSU with BFR and vice

versa - which is what the savvy online marketers of BFR want. “One way to get around this confusion is to input the Japanese symbols for KAATSU which is 加圧 - or for KAATSU Training which is 加圧トレーニング.” advises Steven Munatones. “But inputting Japanese kanji characters on an English keyboard or on their smartphone is difficult or impossible for most people.

So the best way to find out correct and non-misleading information about KAATSU is to go directly to the KAATSU website ([www.kaatsu-global.com](http://www.kaatsu-global.com)) or blog ([www.kaatsublog.com](http://www.kaatsublog.com)) or any of its social media platforms like [Facebook](#), [Twitter](#) or [Instagram](#).

While the information is entirely in Japanese, others can review the original KAATSU

website: [www.kaatsu.com](http://www.kaatsu.com). Interested consumers can also copy-and-paste [加圧](#) - or [加圧トレーニング](#) (Japanese for KAATSU Training) into [YouTube](#) and there will be plenty of videos and explanations about KAATSU."

Some of the questions that BFR users send into the KAATSU website include the following:

**Q1. Owens Recovery Science sells PTS Personalized Tourniquet System for Blood Flow Restriction and talks about limb occlusion pressure. Why doesn't KAATSU go to full occlusion or restrict blood flow to the degree recommended by BFR advocates?**

**A1.** The reason why KAATSU does not use full occlusion as a standard to perform BFR is because we do not believe it is necessary or optimally effective for most individuals. KAATSU equipment was designed based on 10 years of working with hundreds of cardiac rehabilitation patients per year (i.e., those who dealt with strokes, heart attacks, heart bypass surgery) at the University of Tokyo Hospital under the guidance of experienced cardiologists. This is where the KAATSU equipment design and protocols were tested and researched - under the guidance of

cardiologists and Dr. Yoshiaki Sato using MRI, ultrasound, and blood analyses with mass spectrometers. After a decade of testing and research comparing everything from partial to full occlusion and various degrees of modifying venous flow, we believe KAATSU equipment and protocols are optimally designed; we based this on thousands of sessions with thousands of subjects (patients) in controlled setting where many parameters were accurately measured, compared and tested. The modification of venous flow does not need to be extreme [see image above] in order to serve as the catalyst for significant hormonal secretion and metabolite production that is optimal for recovery, rehabilitation and athletic performance.

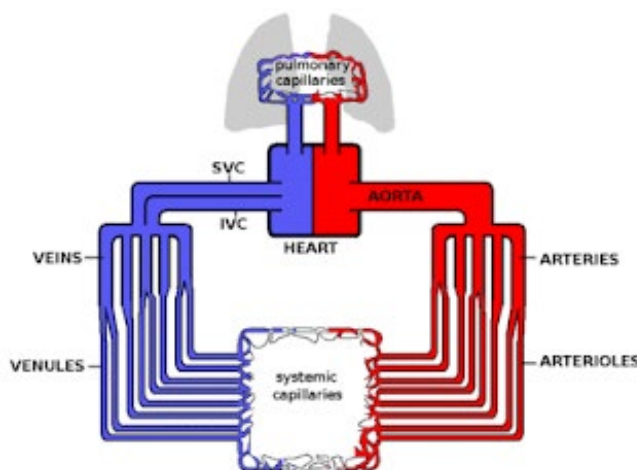
**Q2. Other BFR products are FDA approved. Is KAATSU FDA approved?**

**A2.** While some companies make claims or infer its own products are FDA approved,

this is not true. KAATSU equipment has also not submitted documentation for FDA clearance, but neither have other BFR companies as of 2019. FDA registration of equipment is not the equivalent of FDA approval. FDA registration is a relatively easy process that does not have the same medical, scientific or legal meaning as FDA clearance (or FDA approval in common vernacular).

**Q3. Other BFR products have Doppler devices. Why doesn't KAATSU have a Doppler device?**

**A3.** The Doppler devices that KAATSU used were used during its research phase, but since arterial flow is not occluded and venous flow is only slightly modified, there is absolutely no need for use of a Doppler device with KAATSU equipment. The only time that the Doppler was used was during the research and testing phase of KAATSU where experienced technicians and cardiologists were studying the effects of KAATSU. In contrast, it is logical that a Doppler device is necessary when there is full occlusion or anything near this degree of pressure with BFR devices. The use of Doppler is necessary in these cases with BFR - when the user is doing easy stretching or vigorous aerobic movements, is an active



teenager or a sedentary Baby Boomer, or takes myriad medications.

#### **Q4. What is the difference between arterial flow and venous flow?**

**A4.** Arterial flow is the blood flow from the torso into the limbs (arm and legs) via arteries. Venous flow is the blood flow back to the torso from the limbs (arm and legs) via veins.

The heart is the driver of the circulatory system, pumping blood through rhythmic contraction and relaxation. The rate of blood flow out of the heart (often expressed in L/min) is known as the cardiac output.

Blood being pumped out of the heart first enters the aorta, the largest artery of the body.

It then proceeds to divide into smaller and smaller arteries, then into arterioles, and eventually capillaries, where oxygen transfer occurs. The capillaries connect to venules, and the blood then travels back through the network of veins to the right heart. The microcirculation (via the arterioles, capillaries, and venules) constitutes most of the area of the vascular system and is the site of the transfer of O<sub>2</sub>, glucose, and enzyme substrates into the cells. The venous system returns the de-oxygenated blood to the right heart where

it is pumped into the lungs to become oxygenated and CO<sub>2</sub> and other gaseous wastes exchanged and expelled during breathing. Blood then returns to the left side of the heart where it begins the process again.

#### **Q5. Wider cuffs are always used with BFR products, but KAATSU uses flexible, elastic, pneumatic thin air bladders that is said to cause nerve damage. Is that true?**

**A5.** That is an absolutely false claim. If the Department of Defense, the Department of Veteran Affairs, many universities and hospitals, and professional and Olympic athletes regularly use KAATSU, there is no possibility of approving KAATSU equipment or using KAATSU protocols if there were any risk of nerve damage - or other misleading claims made by BFR advocates. KAATSU equipment is being used by many people over the age of 50 - up to 104 years old. The KAATSU equipment's primary feature is the Cycle mode which automatically shuts off after 4 minutes and allows for deflation every 30 seconds. These protocols are based on the decades of research and testing under the supervision of physicians of various disciplines and researchers with PhD who are under the obligation to report any untoward issue during their KAATSU research.

It should be noted that wide tourniquets and wide blood pressure cuffs are not properly used with the KAATSU equipment. KAATSU equipment is strictly limited to use with the patented, proprietary elastic, flexible pneumatic air bands. Using wide tourniquets with KAATSU equipment would be an intentional misuse of the KAATSU equipment. The pneumatic KAATSU bands serve to stimulate the optimal hormonal and metabolite response in the human body.

#### **Q6. When should the KAATSU Cycle be used? When should the KAATSU Training mode be used?**

**A6.** As with tactical athletes (i.e., special operators in the US military), collegiate athletes and professional athletes, we recommend that KAATSU Cycles are repeatedly used both before and after every workout and competition as well as during every workout (as possible). If there is a problem with insomnia or travel that requires crossing time zones, then the KAATSU Cycle is also best used within an hour of bedtime.

The KAATSU Cycle can be used every day whether you are at your home, traveling on business, or heading to a competition. Athletes, corporate executives, special operators in the military, and aging Baby Boomers can use KAATSU effectively no matter

where they are: in the office, at home or during travel.

### **Q7. Does KAATSU equipment change pressure with increased hypertrophy?**

**A7.** KAATSU equipment changes pressure upon movement by the limb in real time, it changes with hypertrophy, and it changes slightly and gradually every 30 seconds depending on what parameter you set.

### **Q8. As KAATSU increases the elasticity of the vascular system, muscle tissue tends to build more easily and rapidly regardless of the individual. So how do you perform KAATSU without building excess muscle mass?**

**A8.** Because KAATSU inventor Dr. Sato was a bodybuilder in his youth, building muscle was important to him. Many (or most?) current online references to KAATSU and BFR refer to muscle building, but this one outcome is just one of myriad possible outcomes. Because many young(er) men post information about BFR with the goal of building the muscles of their upper body (note: it is only occasionally about building lower body strength or girth), the Internet is overflowing with BFR experts talking about muscle building with BFR.

But muscle building is only one of the many goals of KAATSU. What can be seen

online vis-a-vis KAATSU is very incomplete and only tells a small sliver of KAATSU outcomes. In 1973, Dr. Sato got injured and broke his ankle and he realized the additional - and in many ways - the most important aspects of KAATSU: rehabilitation and recovery.

Rapid rehabilitation from injuries to bones, muscles, ligaments and tendons, and recovery from surgeries and accidents are critical outcomes for many. The use of the KAATSU Cycle is essential to achieving these outcomes.

Also, KAATSU is ultimately more beneficial because one of its primary benefits is increasing vascular elasticity. For any aerobic athlete (e.g., skiers, runners, swimmers, rowers, triathletes), or weight-based athletes (e.g., wrestlers, boxers, MMA fighters, powerlifters, martial artists), this increased vascular elasticity helps in 3 primary ways:

1. Improvement in stamina because the delivery of arterial blood to the working muscles is improved and made more effective) and the return of venous flow from the working muscles enables a faster dissolution of lactic acid.
2. Improvement in power output (however that is

measured in a variety of sports) because the working muscles are more efficient with increased vascular elasticity, especially at the capillary level.

3. Recovery from vigorous workouts enable increased performance in training over the long run.

For injured individuals, the hormonal and metabolite production and improved vascular elasticity are the goals of KAATSU - not muscle-building.

But even with a healthy, young athlete or an older woman recovering from surgery, there is no need for them to build muscle mass with KAATSU if they do not want. KAATSU users can stretch and do specific athletic or therapeutic movements with KAATSU in order to get better - without increasing mass.

They do not need to lift weights or do strength-building exercises with KAATSU - this WILL increase their muscle mass and tone. The KAATSU Cycle enables athletes or those recovering to become more powerful in their movements without the addition of adding muscle mass.

### **Q9. How do you properly size the KAATSU Air Bands?**

**A9.** Below shows proper sizing of the KAATSU Air Bands for the arms and legs:

**Arms:**

Small: circumference of upper arm is less than 11.5 inches (29 cm)  
 Medium: circumference of upper arm is between 11.5 -14 inches (29-35 cm)  
 Large: circumference of upper arm is between 14 - 16.5 inches (35-42 cm)  
 Extra Large: circumference of upper arm is between 16.5 - 21 inches (42-54 cm)

**Legs:**

Small: circumference of upper leg less than 16 inches (40 cm)  
 Medium: circumference of upper leg is between 16 - 21 inches (40-53 cm)  
 Large: circumference of upper leg is between 21-26 inches (53-66 cm)  
 Extra Large: circumference of upper leg is between 26-32 inches (66-81 cm)

To measure your arms, measure the girth above your biceps just below the deltoids. To measure your legs, sit on the edge of a chair and measure the girth as high in the groin as possible.

**Q10. What is the best way to use the KAATSU Cycle 2.0?**

**A10.** You can use the KAATSU Cycle 2.0 unit for both the KAATSU Cycle mode and the KAATSU Training mode. The KAATSU Cycle mode is an 8-stage series of 30 seconds of inflation of the KAATSU Air Bands followed by 5 seconds of deflation of the KAATSU Air Bands. At each stage, the inflated pressure is slightly higher (by 10 SKU). The duration of this 8-stage series of pressure-on and pressure-off is 4 minutes of total pressure.

The physiologic mechanism of the pressure-on and pressure-off is essential to KAATSU.

You can repeat the KAATSU Cycle of 8 stages as you wish up to 6 times.

There are 6 pre-set pressure levels on the KAATSU Cycle 2.0 [shown below]. The lowest pressures are selected by pressing the G (GROUP) button on the front face of the KAATSU Cycle 2.0 unit. The highest pressures are selected by pressing the P (PRO) button on the top side of the KAATSU Cycle 2.0 unit.

Within the G and P levels, there are also L (LOW), M

(MEDIUM) and H (HIGH) pressure settings.

So the lowest possible pressure is GROUP LOW (represented by GL). It is followed by GROUP MEDIUM (represented by GM), GROUP HIGH (represented by GH), PRO LOW (represented by PL), PRO MEDIUM (represented by PM), and PRO HIGH (represented by PH).

**GROUP**

	CYCLE	SKU	CYCLE	SKU
LOW	1	80	5	120
	2	90	6	130
	3	100	7	140
	4	110	8	150

	CYCLE	SKU	CYCLE	SKU
MEDIUM	1	130	5	170
	2	140	6	180
	3	150	7	190
	4	160	8	200

	CYCLE	SKU	CYCLE	SKU
HIGH	1	230	5	270
	2	240	6	280
	3	250	7	290
	4	260	8	300

**PRO**

	CYCLE	SKU	CYCLE	SKU
LOW	1	180	5	220
	2	190	6	230
	3	200	7	240
	4	210	8	250

	CYCLE	SKU	CYCLE	SKU
MEDIUM	1	280	5	320
	2	290	6	330
	3	300	7	340
	4	310	8	350

	CYCLE	SKU	CYCLE	SKU
HIGH	1	330	5	370
	2	340	6	380
	3	350	7	390
	4	360	8	400

As the KAATSU Cycle 2.0 unit is working, there are a series of letters and numbers shown on the LED display screen:

- \* GL1 means GROUP LOW setting on the 1st stage
- \* GM2 means GROUP MEDIUM setting on the 2nd stage
- \* GH3 means GROUP HIGH setting on the 3rd stage
- \* PL4 means PRO LOW setting on the 4th stage
- \* PM5 means PRO MEDIUM setting on the 5th stage
- \* PH6 means PRO HIGH setting on the 6th stage
- \* after the 8th stage has been completed, the unit automatically shuts off

You can repeat the same setting - or increase or decrease the pressure settings as you see fit.

The most highly recommended protocol is to start on GROUP LOW and then proceed gradually upwards on the pressure setting levels. Some users go all the way up to PRO HIGH level, but this level is not for everyone.

Any workout or movements (outside a pool) can be done in the KAATSU Cycle mode.

### **Q11. What if I would like to do the KAATSU Training mode?**

**A11.** If you would like to do the KAATSU Training mode, then untether (i.e., disconnect) the translucent connector tubes after you have inflated the KAATSU Air Bands. You should limit your use of the KAATSU Training mode to no more than 10 minutes.

### **Q12. How do I switch from the KAATSU Cycle mode to the KAATSU Training mode - and vice versa?**

**A12.** Put the unit in the neutral position (where neither the GROUP or PRO buttons are lit). Only the center button (ON/OFF button) should be lit. From this neutral position, press the LOW button on the top side of the unit for 3 seconds. The LED display should automatically change from CYCLE to TRAINING.

The TRAINING mode is pre-set to 200 SKU. You can change this pre-setting upwards or downwards as you see fit. If you press the GROUP button once, you will decrease the pre-set of 200 SKU by 10 SKU (to 190). If you press the GROUP button two times, you will decrease the pre-set of 200 SKU by 20 SKU (to 180). Each press decreases the SKU by 10.

Conversely, if you press the PRO button once, you will increase the pre-set of 200 SKU by 10 SKU (to 210). If you press the PRO button two times, you will increase the pre-set of 200 SKU by 20 SKU (to 220). Each press increases the SKU by 10.

The maximum SKU level is 400 SKU.

When you would like to switch back from the KAATSU Training mode to the KAATSU Cycle mode, press the LOW button again when the front face buttons are in the neutral position.

### **Q13. Can I do KAATSU more than twice per week?**

**A13.** Yes, you can do the KAATSU Cycle mode up to twice daily. The more KAATSU Cycles you do, generally the faster you will rehabilitate and the greater your vascular elasticity will become.





# Much More Than *muscles*

**A** quick Google search of KAATSU will result in plenty of young men and bodybuilders focusing a muscle building.

This result - however desirable by those who want big biceps - is like purchasing a car for its radio. The car offers so many more benefits than simply listening to music. Similarly, KAATSU offers so many more benefits than building biceps.

Depending on the protocols and pressures used, KAATSU is useful for:

1. Improving stamina
2. Improving speed
3. Increasing strength
4. Increasing size
5. Improving sleep
6. Improving recovery
7. Improving metabolism



## KEY POINTS

### IMPROVING STAMINA:

- \* In order to improve stamina, do KAATSU during aerobic exercise (e.g., running, jogging, walking, swimming, rowing, high intensity training, cycling, boxing) after an initial warm-up with KAATSU Cycles.
- \* Be very well hydrated before and while wearing KAATSU Air Bands.
- \* Select a specific distance/duration (e.g., 100 meters in a pool or 1 km on land or a 3-minute round), a relatively low SKU pressure for you (e.g., 150 SKU), and a pace/interval time (e.g., 5 sets of 100m swim every 2 minutes or 3 repeats of 1 km jogging every 4 minutes).
- \* Do this set within your normal workout routine.
- \* At the beginning, it is best to be very conservative and select parameters that you can achieve without maximum effort.
- \* Repeat this set at least 3 times per week until the pace/intensity becomes relatively easy with your given distance, pace/interval, and pressure.
- \* When the set can be performed moderately well, then slightly increase your SKU pressure and repeat the set at least 3 times per week (over the course of weeks) until the increased pace/intensity also becomes relatively easy.
- \* Continue increasing your pace/intensity and SKU pressure over a series of weeks or months.
- \* Always recover by doing KAATSU Cycles after your workout.

**Note 1:** you can think of this as high-altitude training. Every time that you increase the SKU pressure, it is similar to training at the same pace/interval over the same distance/duration at higher and higher altitudes.

**Note 2:** you can use this basic concept whether you are an Olympic runner or an older person simply trying to improve your stamina to climb a mountain or complete a local race.

### IMPROVING SPEED:

- \* In order to improve speed, do KAATSU Training during sprint sets after an initial warm-up with KAATSU Cycles.
- \* Be very well hydrated before and while wearing KAATSU Air Bands.
- \* Select a specific distance (e.g., 20 - 200 meters), a relatively high SKU pressure for you (e.g., 250 SKU), and an intensity level.
- \* Do this KAATSU Training set within your normal workout routine.
- \* At the beginning, it is best to be conservative and select parameters that you can achieve with moderate effort.
- \* Repeat this set at least 3 times per week until your desired speed becomes achievable given your distance, pressure, and intensity.
- \* When you are satisfied with your speed levels, then slightly increase your SKU pressure and repeat the set at least 3 times per week (over the course of weeks or months) until your speed has reached the next plateau.
- \* Continue increasing your intensity and SKU pressure over a series of months.
- \* Always recover by doing KAATSU Cycles after your KAATSU Training workout.

**Note 1:** you can think of this as a means of maintaining your speed in a race. Every time that you increase the SKU pressure, it is similar to moving at the same speed later and later in the race.

**Note 2:** you can use this concept whether you are an Olympic runner or an older person trying to improve your speed in the game of tennis or basketball or swimming.

### INCREASING STRENGTH:

- \* In order to increase strength, select a specific move or weight and a relatively high SKU pressure for you (e.g., 250 SKU) after doing an initial warm-up with 3-4 KAATSU Cycles.
- \* Be very well hydrated before and while wearing KAATSU Air Bands.
- \* Do 3-4 sets of the specific movement that you wish to improve upon - or do 3-4 sets with a very light weight (1-10 kg) that you wish to improve upon - with KAATSU Air Bands on.
- \* Do many repetitions on the first set (e.g., 30-80). This first set is called Priming The Pump.
- \* Rest 20-30 seconds (only). Note that your muscles will be fatigued and you will not be fully recovered.
- \* Do as many repetitions as you can on the second set (e.g., 15-30). This total number of repetitions should be fewer than the first set.
- \* Rest 20-30 seconds (only). Note that your muscles will be fatigued and you will not be fully recovered.
- \* Do as many repetitions as you can on the third set (e.g., 5-15). This total number of repetitions should be fewer than the second set.
- \* Rest 20-30 seconds (only). Note that your muscles will be fatigued and you will not be fully recovered.
- \* Do as many repetitions as you can on the fourth set (e.g., 1-5). This total number of repetitions should be fewer than the third set.
- \* The second, third and fourth sets will be difficult and your muscles will be fatigued.
- \* But these sets are critical for building strength.
- \* Do this set within your normal workout routine.
- \* Repeat this set at least 3-4 times per week.
- \* When you are satisfied with your strength levels, then slightly increase your SKU pressure and repeat the same protocols at least 3 times per week (over the course of months) until your strength has reached the next plateau.
- \* Always recover by doing KAATSU Cycles after your workout.

**Note:** move relatively quickly while doing KAATSU.

### INCREASING SIZE:

- \* In order to increase size, select a series of specific exercises centered around that body part (e.g., biceps or glutes) after doing an initial warm-up with 3-4 KAATSU Cycles.
- \* Be very well hydrated before and while wearing KAATSU Air Bands.
- \* Do 3-4 sets of each specific exercise for that body part.
- \* Slowly do many repetitions on the first set (e.g., 30-80). Contract your muscles in both the positive and negative directions. This first set is called Priming The Pump.
- \* Rest 20-30 seconds (only). Note that your muscles will be fatigued and you will not be fully recovered.
- \* Slowly do as many repetitions as you can on the second set (e.g., 15-30). Contract your muscles in both the positive and negative directions. This total number of repetitions should be fewer than the first set.
- \* Rest 20-30 seconds (only).
- \* Slowly do as many repetitions as you can on the third set (e.g., 5-15). Contract your

muscles in both the positive and negative directions. This total number of repetitions should be fewer than the second set.

- \* Rest 20-30 seconds (only).
- \* Slowly do as many repetitions as you can on the fourth set (e.g., 1-5). Contract your muscles in both the positive and negative directions. This total number of repetitions should be fewer than the third set.
- \* Rest 20-30 seconds (only) and move onto your next exercise.
- \* The second, third and fourth sets will be

difficult and your muscles will be fatigued and may start to quiver.

- \* Do this set within your normal workout routine.
- \* Repeat this set at least 3-4 times per week.
- \* When you are satisfied with your increased size, then slightly increase your SKU pressure and repeat the same protocols at least 3 times per week (over the course of months) until your size has reached the next plateau.
- \* Always recover by doing KAATSU Cycles after your workout.

### IMPROVING SLEEP:

- \* In order to improve sleep, select a relatively mild SKU pressure for you while doing 3-4 KAATSU Cycles.
- \* You can keep the same pressure on 3-5 KAATSU Cycles, or you can slightly increase the SKU pressure on each subsequent KAATSU Cycle.
- \* As you are doing the KAATSU Cycles, you can do shoulder rolls (forwards and backwards), head rotations, or simply stretching - nothing vigorous with KAATSU Air Bands on.
- \* Do this protocol ideally within 1 hour of your planned bedtime.

**Note:** this is especially helpful when you cross time zones or must get up very early.

### IMPROVING RECOVERY:

- \* In order to improve recovery, do a series of 3-6 KAATSU Cycles at a comfortable SKU levels.
- \* Be very well hydrated before and while wearing KAATSU Air Bands.
- \* Stretch and walk slowly (even with the KAATSU Air Bands on your arms) or simply sit comfortably while doing these series of KAATSU Cycles.
- \* Repeat this recovery set after each vigorous training session or athletic performance.

### IMPROVING METABOLISM:

- \* While doing KAATSU Cycle or KAATSU Training while standing or sitting upright, your blood is shifted to the lower part of your body by gravity while the blood flow is naturally increased.
- \* Increased blood flow improves blood circulation and the volume of oxygen that is carried to the cells is increased to improve

the metabolism.

- \* Diabetes is a disease in which insulin is not produced sufficiently; subsequently, levels of glucose in the blood are above normal.
- \* While doing KAATSU Cycle, insulin-like growth factor I - which lowers blood glucose levels, is secreted.
- \* KAATSU serves as the catalyst to secrete IGF-I and immediately lowers blood glucose level; the effect remains until the next day.

# THE THREE P'S OF KAATSU



Former NCAA athlete and KAATSU Specialist [Chris Dahowski](#) understands the three specific areas of advantages and benefits of KAATSU for competitive athletes. He calls this concept, the Three P's of KAATSU:

## PHYSICAL

### PHYSICAL

This is defined when the athletes are wearing their KAATSU Air Bands - either on their arms or legs - and are in either the KAATSU Training or KAATSU Cycle mode.

The lactate build-up that inevitably comes with movement while the KAATSU Air Bands are on literally kickstarts the natural biochemical process in the body. When this movement becomes technically flawless

## PHYSIOLOGICAL

with the KAATSU Air Bands on, this is the optimal way to start preparing the athlete for performance gains.

"After the athlete trains with technically flawless technique and builds that perfect movement into their muscle memory, even if they are not going all-out or at highly intense levels, this is the first part of our KAATSU protocol," explains Olympic coach [Chris Morgan](#). "Then, we ask the athletes to take off their

## PSYCHOLOGICAL

*KAATSU Air Bands and then replicate their technically flawless technique while working intensely and going all-out.*

*This can be done while improving free throws with a basketball player, swinging a golf club or baseball bat, or trying to improve times for an Olympic runner, swimmer or rower."*

The raw use of the KAATSU Air Bands during technically

flawless athletic movements, even without intensity of all-out exercise is the catalyst for improvement in speed, stamina, or strength. KAATSU introduces physiological changes in the body, a natural adaptation, while the mind-body connection is being refined.

### PHYSIOLOGICAL

This is defined when the athletes are wearing their KAATSU Air Bands - either on their arms or legs - and are in either the KAATSU Training mode and going close to or at race pain or at their highest level of intensity and focus.

When the athletes start to feel the discomfort of their lactate levels increasing as they start to train faster and more intensely, profound changes in their neuromuscular system, vascular system and endocrinology system have already begun. Increases in endothelial cells and IGF-1, and significant release of nitric oxide and human growth hormone, occur naturally and enable the athlete to improve physiologically.

This is especially true if the athlete does KAATSU Cycles before and after each workout, and KAATSU Training within each workout.

### PSYCHOLOGICAL

Coaches understand that their athletes' mindset is absolutely critical for self-confidence and positivity. If the athlete's mind is in the right place, then all their training and preparation will lead to improvement and achievement of their goals.

Morgan explains, *"Instead of 'race pace', I like to tell the athletes that they must become comfortable with 'race pain'. At every aerobically-based competition - whether it is swimming, running, rowing, or cycling - there comes a point where fatigue and discomfort come into play. The athletes feel that discomfort - or as they describe it as pain - and start to slow down and adjust their pace...downwards.*

*But with daily use of KAATSU Air Bands, they can become much more familiar with that race pain. With familiarity comes acclimatization and they learn how to deal with it psychologically."*

Dahowski, who coaches dozens of teenage athletes and prepares them for NCAA Division 1 competition, has a unique view of how to optimally use KAATSU Air Bands during coaching of his high school athletes.

*"We push our swimmers in fast-swimming sets for 12-18*

*minutes. Then we will build a social kick where the kids can grab their kick boards and talk as much as they want during specific times during a workout," Dahowski explains. "But if they do not give it their all or slack off, then we subtract a minute from the social kick. So if we have a built-in 5 minutes of social kicking within a workout and they slack off, then we knock off a minute of their social kick time.*

*Believe me, when their social kicking time is reduced, the kids have a great way to focus."*

The social kick serves another purpose. It is a great way for Dahowski to gauge whether or not his athletes are reaching their potential.

*"After a really hard set, they start their social kicking. But on the first 50, the kids are totally quiet, just kicking slowly with their kick boards. When they have really pushed themselves, they need time for their body - and minds - to recover. But by the 75, I start to hear murmurings and then by the 100, they are chattering like normal. This is a great indicator whether or not the intensity was there.*

*When I start to hear giggling, I know they are ready to go for the next (hard) time."*

# ARMS OR LEGS FIRST?



**W**hile doing KAATSU for your upper body and core and lower body is important, many users prefer to use KAATSU Air Bands only on their arms or only on their legs.

*"In general, we find that many men - not all, but enough - like to do KAATSU only on their arms and completely skip doing KAATSU on their legs," says KAATSU Master Specialist Steven Munatones.*

*"Conversely, we find that many women - not all, but enough - like to do KAATSU only on their legs and don't do KAATSU on their arms. Since*

*the benefits of KAATSU are systemic, there are still well-defined physiological benefits of doing KAATSU only on your arms or legs, but there are also clear advantages to doing KAATSU that focus on your arms, core and legs.*

*But we often receive questions if it is important to do KAATSU in a specific sequence. The standard KAATSU protocols, long ago tested, researched and proven by KAATSU inventor [Dr. Yoshiaki Sato](#) and at the University of Tokyo Hospital, is to first do KAATSU on your arms, and then your legs."*

The reasons for this specific order (i.e., first arms and then legs) are as follows:

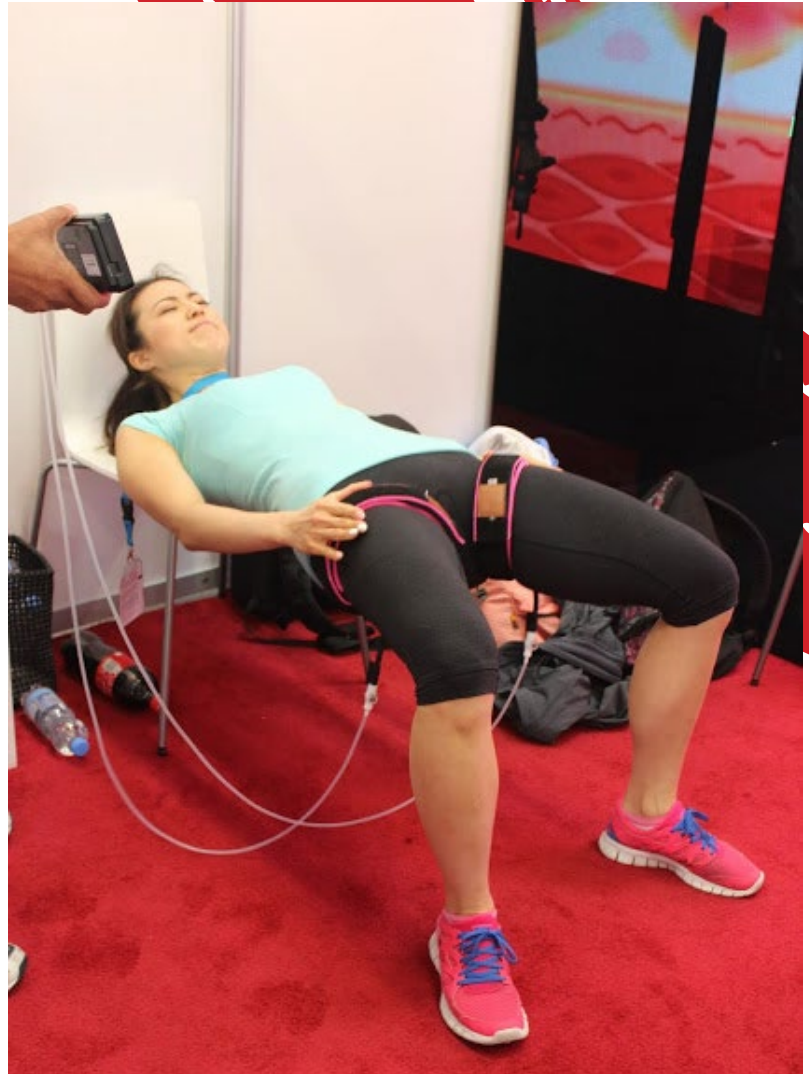
1. Like any form of exercise, it is very important and most beneficial to warm-up and gradually get the body physiologically ready for effective exercise or rehabilitation.

This is best done first with the arms because the number and cumulative length of the veins and capillaries is less in the arms compared to the legs. We want to prepare - or warm-up - the arms first.

2. The KAATSU Cycle 2.0 and KAATSU Master 2.0 were designed to enable users to warm-up gradually. In the KAATSU Cycle 2.0, users can start off with the GROUP LOW level, and then subsequently progress to the GROUP MEDIUM, GROUP HIGH, PRO LOW, PRO MEDIUM and PRO HIGH levels. Later, they can then customize their KAATSU Training mode up to 400 SKU. In the KAATSU Master 2.0, users can start off with Level 1, and then subsequently progress to Levels 2, 3, 4, and 5. Later, they can then customize their KAATSU Cycle or KAATSU Training mode up to 500 SKU.

3. Some people, if they first start with their legs and put their bands on too tightly and use them for too long (i.e., not abiding by standard KAATSU protocol), may get lightheaded because there is so much blood engorged in their legs and less blood in their head. But if they start off the KAATSU Cycle mode gently and gradually on their arms, and then do the KAATSU Cycle mode on their legs, then they give their bodies time to adjust and this potential issue is eliminated.

Of course, there are cases where either users may not be able (due to a disability or arm cast) to first do KAATSU on their arms - or there are cases where users only do KAATSU on their



legs (for personal reasons). But if they start the KAATSU Cycle gradually on their legs (i.e., starting at low levels of pressure), then their bodies naturally acclimate to the pressure and their own preferred KAATSU regimen.

*“Dr. Sato always works on his core after he does his legs,” explained [Steven Munatones](#). “This can be easily done if you do balance exercises as your core work. Your KAATSU Air Bands are already on your legs and you can transition easily from lower body work to core work by balancing on one leg until you lose your balance or too much fatigue sets in. Or you can do traditional core exercises like planks or sit-ups or something easier like walking slowly and with good posture and a book on your head.”*



# CELLULAR MECHANISMS BEHIND VASCULAR AGING

**D**avid A. Sinclair, Ph.D., A.O. [shown above] is a Professor in the Department of Genetics and co-Director of the Paul F. Glenn Center for the Biology of Aging at Harvard Medical School. Dr. Sinclair is best known for his work on understanding why we age and how to slow its effects, as he discusses above.

Many of the concepts and findings about key cellular mechanisms behind vascular aging and its effects on muscle health that Dr. Sinclair and his fellow researchers at the Harvard Medical School have identified are the same effects and findings that Dr. Yoshiaki Sato and his colleagues at the University of Tokyo Hospital discovered as a result of Dr. Sato's decades of research on KAATSU.

The 71-year-old Dr. Sato [shown on left] has used KAATSU daily for over 50 years. He practices what he preaches.

Anyone who meets Dr. Sato, the person who has done



more cumulative KAATSU than anyone in human history, can see the long-term physiological effects of KAATSU - and many of the concepts that Dr. Sinclair is researching in the field of longevity.

"While Dr. Sinclair clearly illustrates the cellular mechanisms behind vascular aging in the video above, Dr. Sato's obvious healthful vascularity (he is often at 100 SpO2 with a low blood pressure, a great pulse and a constantly low respiratory rate (8-10 breaths per minute) and muscularity is entirely due to a lifetime of KAATSU," says Steven Munatones.



# PRE-AND POST-ACL SURGERY PROTOCOLS

**B**efore and after anterior cruciate ligament (ACL) surgery, KAATSU can be effectively and efficiently used by patients of all ages and abilities.

KAATSU Therapy enables prehab before the ACL surgery and rehab immediately afterwards the

ACL surgery in order to help improve blood circulation, prevent blood clots from forming in your legs, and to prevent muscle atrophy.

KAATSU Specialists can use the following protocols to incorporate KAATSU into pre-ACL and post-ACL surgery rehabilitation.

With the approval of your physician and therapist, patients can begin KAATSU as soon as surgery is scheduled and return to KAATSU soon (72 hours) after the ACL surgery is completed if there are no complications. The patient can also do KAATSU Cycles on their other uninjured limbs (i.e., healthy leg and both arms)



throughout the prehab and rehabilitation period.

The standard protocol includes the following:

### KAATSU EQUIPMENT

- » Use either the KAATSU Master 2.0 or the KAATSU Cycle 2.0 (or the KAATSU Wearables or KAATSU AI) together with the KAATSU Air Bands.
- » The KAATSU Air Bands may look like a tourniquet or blood pressure cuff, but they are specifically designed and manufactured to allow arterial flow to continue and only moderate the venous flow.
- » Because KAATSU has systemic effects, it is recommended to do KAATSU both on the arms first and then the legs no

matter when the injury or surgery is located.

### IMPORTANT POINTS

- » Be well-hydrated before and during KAATSU.
- » Always follow KAATSU protocols (i.e., always have Capillary Refill Time within 3 seconds with no occlusion).
- » You should experience no lightheadedness, or no numbness or whiteness in your limbs. If you do, immediately take off the KAATSU Air Bands. » Always do KAATSU Cycles on first on both your arms and then your legs.
- » Proceed with KAATSU 3-point Exercises (first on your arms and then on your legs) and do KAATSU Cycles while doing traditional physical rehabilitation exercises, if allowed by your

physical therapist.

- » KAATSU Cycles can be done daily, even 2-3 sessions per day during prehab and rehabilitation or recovery from the ACL surgery.
- » Even if you do not “feel” anything, always begin with the low SKU pressures on the KAATSU Cycle 2.0 (i.e., Group LOW) or KAATSU Master 2.0 (i.e., Level 1). You do not have to feel anything if you can see the tone of your arms or legs becoming pinker or redder. You want the blood to start being engorged in your limbs. You do not have to generate significant amounts of lactate.
- » After doing a few low-pressure KAATSU Cycles, you can begin to increase the SKU pressure on the KAATSU Cycle 2.0 (i.e., from Group LOW to Group MEDIUM and GROUP HIGH) or KAATSU Master 2.0 (i.e., from Level 1 to Level 2, 3, 4 and 5).
- » Never experience pain in the joint, tendon, bone or injured areas while doing KAATSU Cycles. If so, remove or reposition the KAATSU Air Bands.
- » Always use the correct form in any movements.
- » Rest between sets and between exercises should be less than 30 seconds.
- » Always breathe normally throughout the KAATSU Cycle.
- » You can do KAATSU Cycle daily, but limit your KAATSU sessions to 15 minutes on

your arms and 20 minutes on your legs during each session.

- » The KAATSU Cycle (i.e., 30 seconds of pressure on + 5 seconds of pressure off) will help prepare (“warm-up”) your muscles, veins and capillaries before you do anything more strenuous in your physical therapy session.
- » In order to avoid atrophy especially in your legs, you can regularly do the KAATSU 3-Point Exercises on your legs (see below). Nothing has to be performed quickly; slow and steady in the KAATSU Cycle mode is more effective.

### KAATSU CYCLE MOVEMENTS

- » With the KAATSU Cycle 2.0 or KAATSU Master 2.0, select an appropriate SKU pressure level and do 3 sets each of

the following depending on how the you feel and your range of mobility:

- \* Toe Curls or Toe Raises
  - \* Heel Raises or Ankle Rotations
  - \* Repeated Sitting Quadricep Contractions (i.e., tighten and relax, tighten and relax)
  - \* Stretching (as you can)
  - \* Stationary Spinning (as you can)
  - \* Standing and Walking (as you can)
- » You can do the same KAATSU 3-Point Exercises on your healthy leg and the following KAATSU 3-Point Exercises for your arms, performed slowly while contracting your muscles:
- \* Hand Clenches
  - \* Biceps Curls

- \* Triceps Extensions
- \* Stretching

» As you become more mobile, simple walking (especially in the sand at the beach or on a soft yoga mat) with the KAATSU Air Bands on is beneficial. You can even do this at your home or office as you walk back and forth in your room as you get stronger. If you regularly do these exercises, you should not see any muscle atrophy.

» Your skin should turn pink or reddish as your limb should experience an engorgement of pool in the limbs.

This information is for educational purposes only and is not intended to replace the advice of your doctor or therapist.



# KAATSU And Cancer

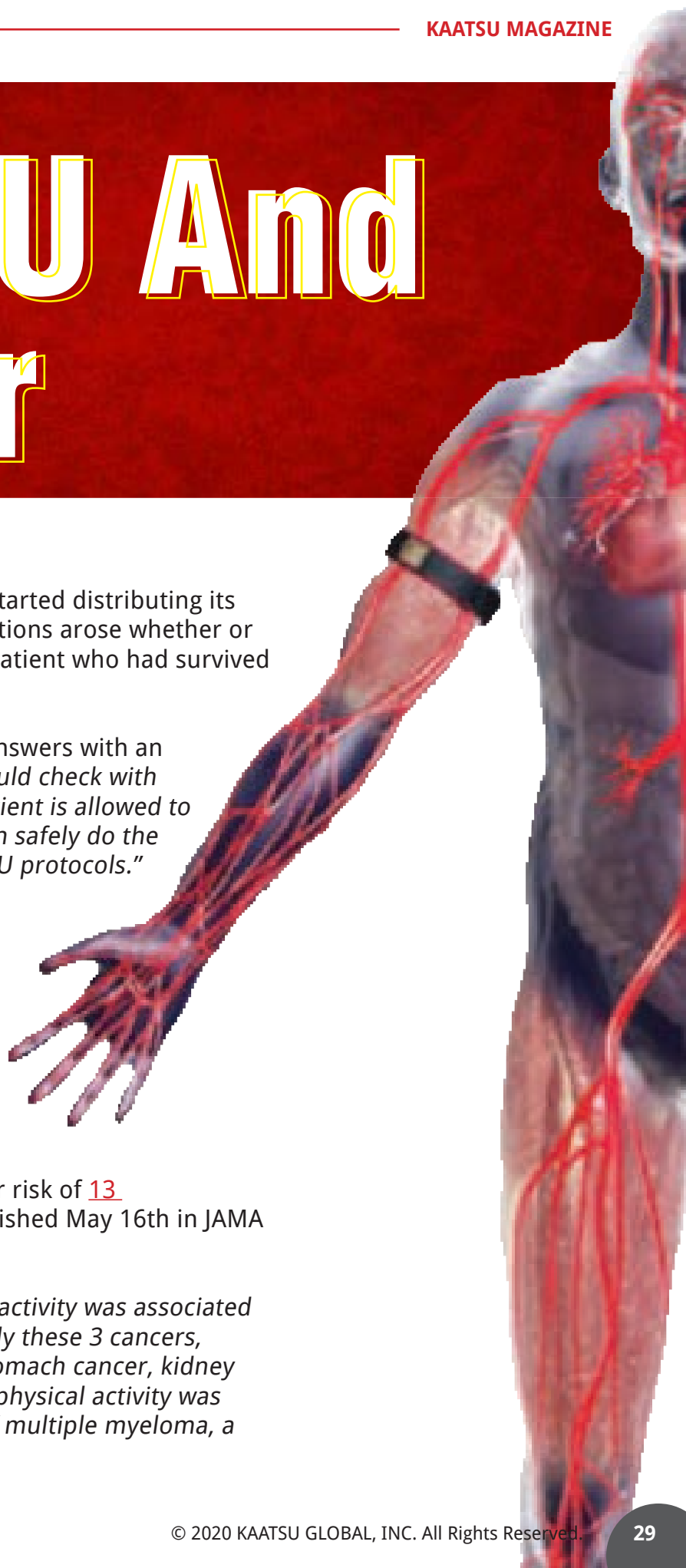
**S**ince 2014 when KAATSU Global first started distributing its equipment in the United States, questions arose whether or not KAATSU is safe and effective for patient who had survived bouts of cancer.

[Dr. Yoshiaki Sato](#), the inventor of KAATSU, answers with an emphatic yes. *“Of course, every patient should check with their own physician. Fundamentally, if a patient is allowed to do exercise by their physician, then they can safely do the KAATSU Cycle following the standard KAATSU protocols.”*

The [American Cancer Society](#) reports that exercise is important when it comes to cancer: “Exercise may lower cancer risk by helping control weight and strengthen the immune system, and it can boost quality of life during cancer treatment.”

A 2016 study from researchers at the American Cancer Society and the National Cancer Institute linked exercise with a lower risk of [13 specific types of cancer](#). The study was published May 16th in JAMA Internal Medicine.

*The study found that “leisure-time physical activity was associated with a significantly decreased risk of not only these 3 cancers, but also esophageal cancer, liver cancer, stomach cancer, kidney cancer, and myeloid leukemia. In addition, physical activity was strongly associated with a decreased risk of multiple myeloma, a*



*blood cancer, as well as cancers of the head and neck, rectum, bladder, and lung (in current and former smokers)."*

Walking 20 minutes per mile is considered moderate exercise.

The American Cancer Society recommends that adults get at least 150 minutes of moderate intensity or 75 minutes of vigorous activity each week (or a combination of these). The organization suggests that these recommendations can be reached by walking for 30 minutes 5 days per week during your lunch break.

*Dr. Sato lectures frequently about how KAATSU enables moderate exercise to be achieved with less time and lower intensity - an especially important factor for the aging Baby Boomer population. "The onset of cancer is related to the weakening of immunity. Growth hormone, which is secreted in large amounts with KAATSU, has an effect on improving immunity. Unless your own physician recommends no exercise or physical activity, then KAATSU is often done by cancer patients or cancer survivors."*

He recalled the experiences of two patients. "When KAATSU was performed by a patient with ovarian cancer metastasized to the lung, the tumor marker - immunosuppressive acidic protein which is a factor that weakens immunity - was significantly reduced.

*In addition, [Teruo Sugihara](#), a Japanese professional golfer [shown on left], developed prostate cancer at the age of 60 years, started doing KAATSU, and then continued with his golfing career.*

KAATSU can be performed in short durations - up to 20 minutes at a time.

This is true no matter what your age or gender is. You can do KAATSU with no special facilities

or equipment; just walking casually with KAATSU leg bands."

If patients are particularly weak, de-conditioned, significantly overweight, or unmotivated to do any kind of vigorous exercise including doing KAATSU Walking outside, they can comfortably do the standard KAATSU 3-Point Exercises in the KAATSU Cycle mode in the comfort of their home or office.

Because moderate exercise is beneficial for those who wish to prevent cancer or those who currently have cancer, KAATSU Cycle is an effective, efficient and sustainable form of exercise.

Of course, if moderate exercise causes pain, leads to a rapid heart rate or shortness of breath for the cancer patient, then the intensity, type or duration of exercise should be stopped, changed or modified. But exercise - or KAATSU Cycles - are safe and possible during cancer treatment.

Too much rest - as may be advised by family members - can actually lead to a loss or reduction of body functions, muscle weakness, and reduced range of motion. But, in general, the medical community understand the benefits of being as physically active as possible during cancer and after its remission.

This is especially true if a patient was previously physically active, but it also holds true for those who previously lead sedentary lives and then were diagnosed with a form of cancer. Moderate exercise helps the patient maintain or improve their physical abilities (from walking to lifting objects), maintain or improve their balance and therefore lower the risk of falls and broken bones, reduces or eliminates muscle atrophy, lessens the risk of osteoporosis, improves blood circulation to the lower body and reduces the risk of blood clots (especially with KAATSU Walking using the KAATSU Cycle mode), can lessen bouts of nausea and fatigue.

In other words, moderate exercise and KAATSU can help maintain or improve the quality of life during cancer or after its remission.

KAATSU enables cancer patients to realize the same or more benefits of moderate exercise in less time and lower intensity. The KAATSU Cycle can be performed anywhere anytime by anyone. It can be performed in short durations (i.e., under 20 minutes) regardless of age or gender, with no special facilities or equipment (other than the KAATSU Air Bands).

The KAATSU Cycle can be used in lower SKU pressure levels so as to reduce intensity relative to moderate or vigorous exercise, but the benefits to the musculoskeletal and vascular and endocrinological systems remain. The repeated changes in pressure and its effects on the musculoskeletal and vascular systems is very good for human health and immunity.

Ideal movement in the KAATSU Cycle mode include walking, balancing on one foot, stretching, and KAATSU 3-Point Exercises on the lower body (i.e., Toe Raises, Heel Raises, Leg Extensions, Standing Leg Curls, Quarter Squats) and upper body (i.e., Hand Clenches, Biceps Curls, Triceps Extensions), aqua therapy or aqua walking - all done slowly and deliberately with good KAATSU CRT (Capillary Refill Time). Less optimal KAATSU exercise include lifting weights, running, vigorously spinning or cycling, push-ups, pull-ups or burpees. In other words, intense vigorous exercises with KAATSU

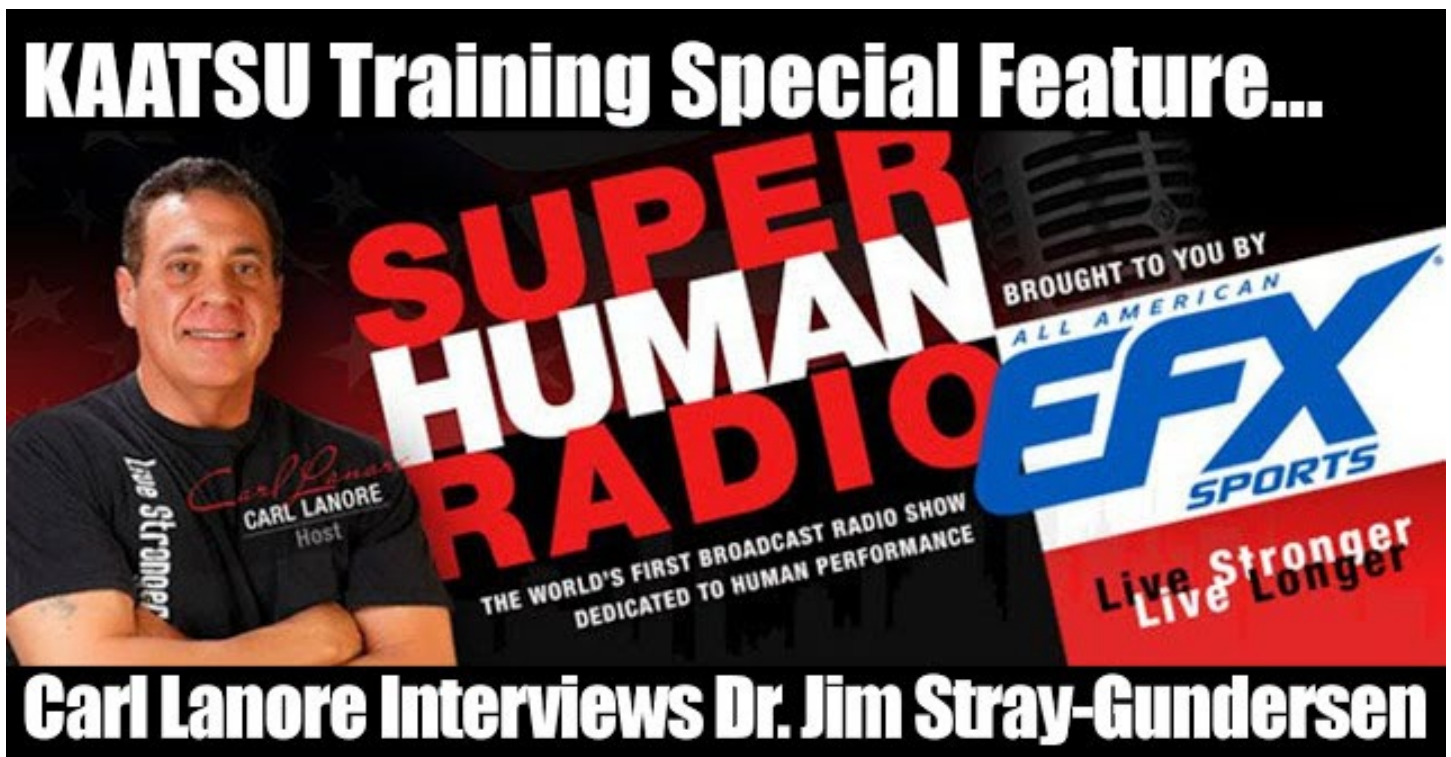
are significantly less beneficial and should be avoided.

KAATSU exercise and SKU pressure should be appropriate for the cancer patient based on what is safe for them and what they have previously done in the past. KAATSU movements should be something that is sustainable (i.e., enjoyable to do over the long term). So to ask a patient to start KAATSU Stretching or KAATSU Walking when they have not done either of those exercises in the past is suboptimal. But if they like yoga and walking outdoors, then KAATSU Stretching or KAATSU Walking would be ideal.

That being said, during cancer treatment, the duration and intensity of the exercise and KAATSU will probably be less (time) and lower (intensity) than before. That is, if a KAATSU user were accustomed to using the PRO MEDIUM and HIGH levels on the KAATSU Cycle 2.0 unit before cancer treatment, then perhaps they can do the same, but use the GROUP MEDIUM and HIGH levels. Or instead of doing an hour class of spin or aerobics, perhaps they only do 20 minutes of KAATSU Walking or 15 minutes of KAATSU body weight movements.

For older patients or those with osteoporosis or peripheral neuropathy, KAATSU balance exercises and KAATSU 3-Point Exercises while sitting and using the KAATSU Cycle mode are ideal.

# KAATSU INTERVIEW ON SUPER HUMAN RADIO



Carl Lanore of Super Human Radio interviewed Dr. James Stray-Gundersen about KAATSU on October 12th 2015.

...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:** [chuckles] 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 away. 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 gall-bladders. 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 awhile, 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 appli-



Dr. Jim Stray-Gundersen works with an athlete at the U.S. Ski Team headquarters in Park City, Utah, using a revolutionary new training device developed in Japan dubbed Kaatsu.  
(Photo: Courtesy of Jim Stray-Gundersen)

cations 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 a 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 20-miles out on a long run or by lifting 300-pounds 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 lose.

**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 adaptation 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 IGFE or 1E 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 its 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 IGF-1. Then IGF-1 then goes out throughout the whole the whole circulation. It then where there are cell receptors that have been up-regulated 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.

**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. [chuckles]

**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-global.com. I'm going to spell it for you, it's: K-A-A-T-S-U hyphen or dash depending on what part of the country you're from, global.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-global: K-A-A-T-S-U hyphen G-L-O-B-A-L.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 in contute 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 push-ups 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% 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 pushup. 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:** 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 kind 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 quick 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 Stray-Gundersen and the website is KAATSU-global: K-A-A-T-S-U hyphen global.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 10% 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-global.com: K-A-A-T-S-U hyphen global.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 read-back, it gives feed-back 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-alanine 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 non-starter, a not a good supplement to use if you're looking to use KAATSU?

**Dr. Stray-Gundersen:** No, I think beta-alanine 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 body-builders 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-alanine 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 kind 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-alanine 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 L-arginine 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 of 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 Valsalva-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 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 e-mail 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-GLOBAL.com](http://KAATSU-GLOBAL.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. Gundersen.

**Dr. Stray-Gundersen:** Oh, you're more than welcome.

**Carl Lanore:** Take care.

### **Dr. Stray-Gundersen on Local And Systemic Mechanisms Of KAATSU:**



# KAATSU WITH INDIVIDUALS WITH VARICOSE VEINS

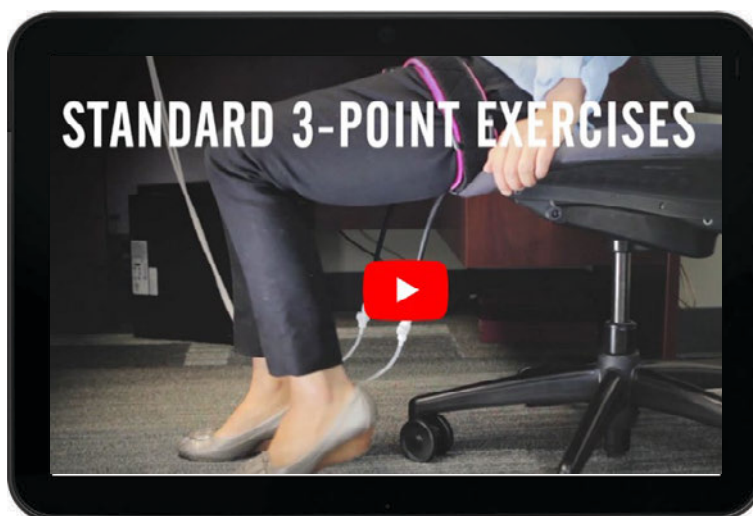
**T**ime and time again, male and female users of KAATSU have seen their varicose veins either go away or be minimized.

While eliminating or reducing their varicose veins was not their original goal, the cosmetic effect of this outcome has been greatly appreciated by many from women who have just given birth to older adults 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 back 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 act 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 that most commonly affected are veins in your legs because standing and walking upright increases the pressure in the veins of your lower body.

For many people, varicose veins and spider veins — 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 causes 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, people are often advised to ; exercise, elevate their 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 mechanisms: (1) Improved blood flow and (2) Increased vascular elasticity. Both of which 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) with the KAATSU Air Bands and 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, as a result, 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 their 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 attempt 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 KAATSU Air Bands are released (every 20 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 amount of 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:

1. The easiest and most convenient exercise is to simply sit and do several (3-6) KAATSU Cycles with the KAATSU leg bands on. You can do this anytime you are working in your office, watching TV or relaxing anywhere. The KAATSU Cycle pressure can start conservatively (i.e., a low SKU) and then gradually increase with each subsequent KAATSU

Cycle (e.g., 150 SKU for the first Cycle, 200 SKU for the second Cycle, 225 for the third Cycle, etc.).

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: (1) Heel Raises done slowly while sitting, (2) Leg Raises while standing, and (3) Non-lock Partial Squats. 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 [see video below].

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

### Contraindications

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 (heart bypass, heart attack) or who have survived strokes.

It is important and strictly recommended to only use the KAATSU Cycle mode with anyone with health concerns. All of 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).

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

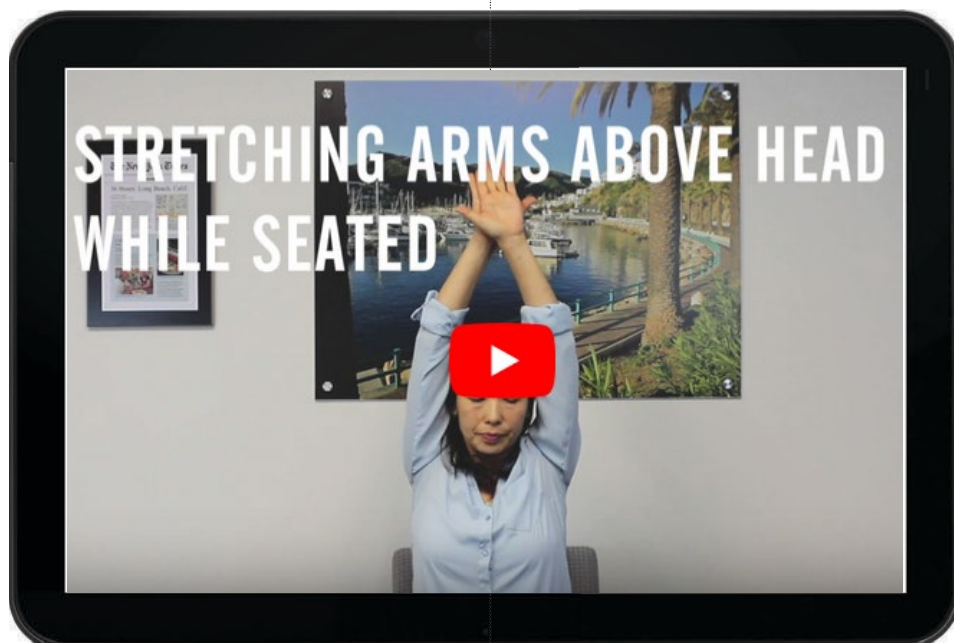
1. Manually tighten your KAATSU Air Bands on your legs at your appropriate Base SKU.
2. Inflate your KAATSU Air

Bands on your legs to your Optimal SKU.

3. Sit straight up in a chair or couch with your hips near the edge.
4. Slowly exhale and slowly lean forward, tightening your abdominal muscles as strongly as possible until your stomach is close to your legs.
5. Hold and then slowly inhale air on your return to a sitting position with good posture.
6. Repeat as desired.

### Core & Lower Back #2 Exercise

1. Manually tighten your KAATSU Air Bands on your legs at your appropriate SKU.
2. Inflate your KAATSU Air Bands on your legs to your Optimal SKU.
3. Stand on one foot, balancing only on your other leg for as long as possible.
4. When your balance is lost, rest for 10-20 seconds and



- repeat two more times.
- After 3 times, balance on your other foot.
  - This act of balancing will create instability in your core and will help strengthen your stomach and lower back.

### **Core & Lower Back #3 Exercise**

- Manually tighten your KAATSU Air Bands on your legs at your appropriate Base SKU.
- Inflate your KAATSU Air Bands on your legs to the Optimal SKU.
- 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**

- Manually tighten your KAATSU Air Bands on your legs at your appropriate SKU.
- Inflate your KAATSU Air Bands on your legs to your Optimal SKU.
- 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.
  - In order 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**

- Manually tighten your KAATSU Air Bands on your legs at your appropriate Base SKU.
- Inflate your KAATSU Air Bands on your legs at your Optimal SKU.
- Do planks as usual.
- Alternatively, tighten the KAATSU Air Bands on your arms at your Optimal SKU and do planks as normal.

### **Core & Lower Back #6 Exercise**

- Tighten your KAATSU Air Bands on your legs at your appropriate Base SKU.
- Inflate your KAATSU Air Bands on your legs at your Optimal SKU.
- 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**

- Tighten your KAATSU Air Bands on your legs at your appropriate Base SKU.
- Inflate your KAATSU Air Bands on your legs at your Optimal SKU.
- 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**

- Tighten your KAATSU Air Bands on your legs at your appropriate Base SKU.
- Inflate your KAATSU Air Bands on your legs at your Optimal SKU.
- 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**

1. Tighten your KAATSU Air Bands on your legs at your appropriate Base SKU.
2. Inflate your KAATSU Air Bands on your legs at your Optimal SKU.
3. 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).
4. Repeat as desired.

# KAATSU CYCLE 2.0

## BENEFITS



## KAATSU is the ultimate bio hack for health, rehabilitation and recovery.

Invented in 1966 by Dr. Yoshiaki Sato of Tokyo, Japan, and protected by 47 patents, KAATSU next-generation equipment and protocols have a unique and unprecedented safety track record with over 20 million individual KAATSU sessions in 48 countries around the globe.

Backed by over 50 years of expertise, KAATSU Global is excited to introduce the latest advancement in health and wellness, the KAATSU Cycle 2.0.

Fitting in the palm of your hand or in your pocket, the KAATSU Cycle 2.0 is the most advanced, most portable, easiest-to-use compression device in the world. In combination with a precise algorithm-controlled limb pressure, KAATSU's narrow, elastic bands yield to muscle contractions, providing safe and effective exercise and rehabilitation for users of all ages and from all walks of life, from Olympic champions to disabled individuals.

KAATSU users have a full range of motion providing complete control and the opportunity for a wide variety of movements and training.

*From elite athletes and soldiers to aging Baby Boomers and busy executives, KAATSU Cycle 2.0 is the next-generation training and rehabilitation device used around the world.*

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# KAATSU CYCLE 2.0



Unit weighs 3.5 ounces and measures 3.6" x 2.25" x 1"

## PACKAGE

- > Includes 4 KAATSU Air Bands (for arms + legs)
- > Rechargeable battery with USB-C charger

## BENEFITS

- > Tone muscle without weights
- > Convenient: do anywhere, anytime
- > Offers access to KAATSU Performance Database
- > Offers 6 pre-sent KAATSU Cycle levels
- > Improves speed, stamina and strength
- > Incredible time saver
- > Improves circulation
- > Faster recovery
- > Enables greater range of motion
- > Reimbursable with various CPT codes
- > Offers customizable KAATSU Training pressures
- > Proven safe for users up to 104 years old

## ABOUT KAATSU

KAATSU is the world-leader in blood flow moderation training and therapy. Invented in 1966 by Dr. Yoshiaki Sato in Tokyo, Japan and protected by 47 patents, our equipment and protocols have an impressive and unprecedented safety track record with over 20 million individual KAATSU sessions in dozens of countries across the globe. From elite athletes, to baby boomers, and everyone in between, KAATSU is the ultimate biohack for health and rehabilitation.

LEGAL NOTICE—DISCLAIMER Warning: KAATSU Global, Inc. cannot diagnose diseases, prescribe drugs, or recommend treatments for specific disease conditions and does not dispense medical advice. Any views and ideas expressed are opinions only and not intended to be a substitute for conventional medical advice or service. You agree that no responsibility or liability will be incurred to any person or entity with respect to any loss, damage, or injury caused or alleged to be caused directly or indirectly by the information contained within this document. If you have a medical condition, please see a licensed healthcare practitioner.

- > Exercise, recover and rehabilitate anywhere anytime
- > Offers KAATSU Cycle and KAATSU Training modes
- > Ultra compact, ultralight, durable
- > Utilizes precise, computer-controlled limb pressure on both arms, or both legs
- > The pneumatic elastic bands can be “untethered” from the KAATSU unit and are waterproof, for use in the pool
- > Utilizes original KAATSU know-how
- > US patent #9,775,619

## RETAIL PRICE

- > \$899.<sup>95</sup> (1-yr warranty on device, 6 mo on bands)
- > \$979.<sup>95</sup> (2-yr warranty on device, 6 mo on bands)

# KAATSU In The News

KAATSU is has received recognition and coverage in prominent and prestigious publications.



## "Can You Work Out Less, Get More Results?"

By Eleanor Warnock and Rachel Bachman  
The Wall Street Journal



*With Kaatsu, people do a light workout while wearing pressurized belts, first on the upper arms and then on the legs.*

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## "Could the Kaatsu Workout Be the Most Efficient Exercise?"

By WSJ Video  
The Wall Street Journal



*Japanese bodybuilder Yoshiaki Sato says he has a way for Hollywood's aging action stars to stay as youthful and fit as ever.*

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# MilitaryTimes

A TEGNA Company

## "Kaatsu training is blowing fitness researchers' minds"

By Jon R. Anderson, Staff Writer  
MilitaryTimes



*Read the article and discover why so many people are so excited about KAATSU Training.*

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# Outside

## "You Should Probably Try This Japanese Blood-Flow Routine"

By Devon Jackson, Staff Writer  
OutsideOnline.com



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# LIFEFORCE IQ PRESENTS KAATSU



"Our goal is to awaken human potential by sharing precise effective tools and methods to maximize the health, happiness and performance of people who want to realize their potential," explains David Weinstein of LIFEFORCE IQ and OASIS in Boca Raton, Florida.

Weinstein was an investment banker for 35 years, specializing in biotechnology and medical companies. With that background and knowledge, combined with his lifelong interest in athletics and anti-aging, he and his wife Leidy are offering their lifestyle design via LIFEFORCE IQ.

"We continuously monitor scientific advances and are quick to adjust products and protocols to assist our clients in optimizing their lifestyles."

In addition to KAATSU equipment including the new 2.0 and KAATSU Aqua, the Weinstein's offer Juvent Health Micro-Impact Platform, LiveO2, Viome, Tower Garden, and One Truth 818.

For more information, [visit here](#).

For additional examples of how people of all ages have improved themselves, [visit here](#).



# MR. UNIVERSE MASTERS KAATSU



**KAATSU**  
TRAINING



**KAATSU**  
**MAGAZINE**  
VOLUME 1: ISSUE 6



**Claude Groulx**

Claude Groulx is a professional athlete, he competed in 41 IFBB pro competitions, qualified for 5 Mr. Olympia shows and won the Mr. Olympia master title in 2003. He has 30 years of experience in resistance training, weight management and athlete preparation.

Claude launched CG Sports Performance Corporation in 2016 to enhance athlete performance and to promote health and wellness within the community.

The company is also proud to be the official Canadian distributor of Kaatsu equipment. We are also offering Kaatsu training and Kaatsu cycle training methods for high caliber athletes in various sports fields like NFL, NHL, NBA and the Olympics.

**KAATSU SCIENCE**

**KAATSU**  
TRAINING