

10-Minute Physiology Overview.

What Happens Inside Your Body During KAATSU.

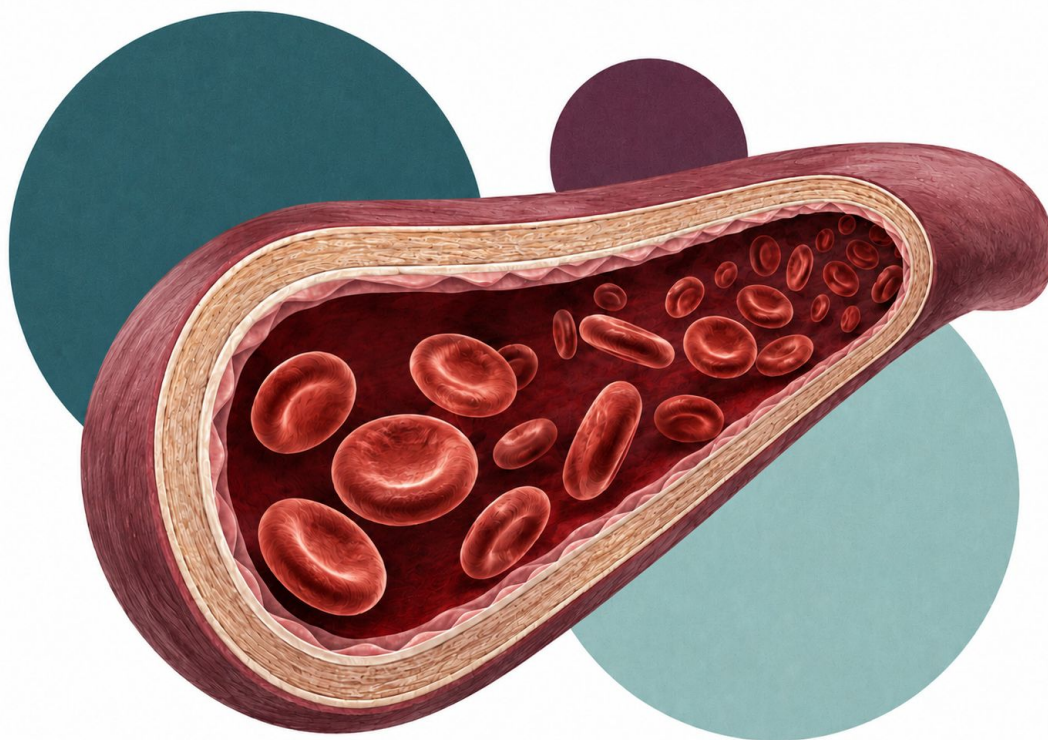
From gentle pressure to angiogenesis and powerful hormonal signals, here's what unfolds inside your body minute by minute.

Introduction - The Invisible Made Visible

When you exercise, you feel your muscles begin to fatigue, your heart beats faster, you perspire. But underneath the surface, a complex and profoundly invisible chemical process is happening inside your body—mechanisms that enable your body to get stronger, heal faster, and stay young.

What if you could start that powerful transformation without the time, stress, joint pain, and muscle soreness of a grueling workout?

That is what KAATSU offers. It's a modality that effectively and efficiently serves as a catalyst to unlocks your body's own ability to repair, reshape, and rejuvenate itself. Over the next few pages, you will learn how simple 20-minute sessions can trigger a cascade of benefits that positively and profoundly impact your muscles, circulatory system, and your brain.



The Intensity Gap - Why **Exercise** Gets **Harder**

We have been repeatedly told that high-intensity weight training and a sustained amount of aerobic training are keys to health. To get the best results—to build muscle, maintain an optimal hormonal balance, and strengthen our circulatory system—we assume that we have to push ourselves to exertion, to extend our physical limits.

But what happens when things change?

01

After an injury or surgery, high intensity is impossible.

02

As we age, joint pain makes heavy lifting risky and uncomfortable.

03

With a busy schedule, a 90-minute gym session is unrealistic.

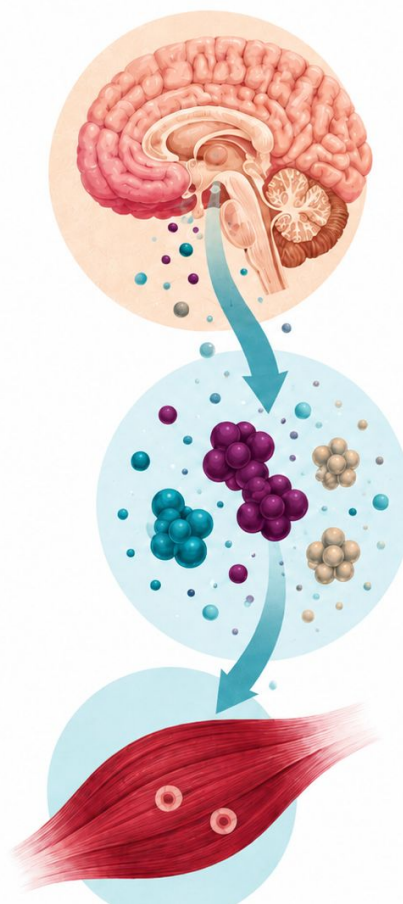
This creates **The Intensity Gap**: The people who most need the profound benefits of exercise are often the ones least able to perform the requisite exercise. This is the problem KAATSU conveniently solves.

The KAATSU Solution: A Smarter Signal, Not a Harder Workout

Instead of forcing the body to adapt through heavy stress, KAATSU works by naturally sending signals from your muscles to your brain through your central nervous system.

Even though you just walk or stretch or do light chores around the house with KAATSU equipment on either your arms or legs, your body and brain reacts as if you are doing an intense, lengthy, full-body workout.

KAATSU uses a patented method called **Blood Flow Optimization** to create the *biochemical environment* of a hard workout. Your brain receives these signals and responds by releasing a flood of regenerative hormones, proteins, and growth factors—the same ones you would get from intensive training sessions, but without the wear and tear.



The Engine of KAATSU: A Step-By-Step Look at Cycle Mode

The essence of KAATSU is its patented, automated Cycle Mode. It's a simple, rhythmic process designed for safety and maximum benefit. Here's what's happening second-by-second:

01

Inflation & Gentle Compression

0-10 seconds

The narrow, elastic KAATSU bands on your arms or legs slowly inflate to a light pressure. This compression around your arms or legs gently slows the venous blood (the blood leaving your limbs to your torso) as it returns to the torso.

02

Blood Pooling & Elasticity Begins

During the 30 seconds

Because blood outflow is moving slower than the blood inflow, your limbs gradually become engorged with blood. This engorgement in your capillaries is the catalyst for your vascular tissue to become more elastic and angiogenesis to begin.

03

Pressure Release

Next 10 seconds

The bands fully deflate and the blood engorged in your limbs, now rich in lactate and other metabolites, rushes to your core, creating shear stress against the walls of your capillaries and veins..

04

Signals Sent

Continues during and up to 12 minutes after removing the bands

Signals, that your muscles are working hard, are sent to your brain through the central nervous system, serving as the catalyst for production of growth hormone and other metabolites.

This process repeats, with each subsequent inflation getting slightly greater, creating more engorgement, more angiogenesis, and increased elasticity as well as additional powerful signals to your brain.

How **Angiogenesis** Builds New Blood Vessels

THE SIMPLE IDEA

When your body senses that an area isn't getting enough oxygen, it builds new blood vessels to help circulation.

WHAT IS ANGIOGENESIS?

Angiogenesis is the process of creating new blood vessels from existing ones. Your body naturally creates tiny new capillaries when necessary. This process is commanded by a powerful signaling molecule called **VEGF**.

HOW KAATSU TRIGGERS IT

The brief (30-second) pooling of blood during a KAATSU session creates a safe, temporary low-oxygen state in the limb muscles. This signals the body that more efficient pathways are needed, triggering the release of VEGF.

WHY YOU SHOULD CARE

A denser network of blood vessels means better delivery of oxygen and nutrients to *all* your tissues—your muscles, your bones, your organs, and your brain. This can lead to increased stamina, faster healing, better bone density, and better overall vitality.

Blood Flow is Increased, Not Restricted

This is a very important concept to understand about KAATSU. The widely accepted description of Blood Flow Restriction is quite misleading and is, frankly, inaccurate when describing KAATSU.

KAATSU is Blood Flow Optimization.

RESTRICTION (BFR)

BFR blood pressure cuffs or tourniquets work by clamping down and *restricting* the arterial blood flowing *into* the limb. This is due to the use of blood pressure cuffs.

OPTIMIZATION (KAATSU)

KAATSU's narrow, elastic, stretchable bands gently and progressively slow the venous blood flowing *out of* the limb, while the arterial flow remains unimpeded.

THE POOLING EFFECT

This moderation causes a temporary pooling of blood in the natural, elastic capacitance of your vascular system. Think of filling a water hose — it expands safely and never close to popping. This pooling is what creates the powerful metabolic signal. Once the pressure is released, not only does the pooled blood rush out of the limbs, but the body also responds with an **overall increase in total circulation** to the area.

This effect is systemic, meaning it also leads to increased **cerebral blood flow** in the brain.

The Implications of Increased Blood Flow

When your circulation improves, your body functions better. The effects help improve your blood circulatory system and your recovery process.

BETTER DELIVERY

More Oxygen & Nutrients: Every cell in your body, from your brain to your toes, gets more blood that it needs to function optimally. This means more energy and better performance.

Hormone Transport: The anti-aging hormones released during KAATSU are delivered more efficiently to the tissues that need them.

BETTER WASTE REMOVAL

Reduced Soreness: Improved blood flow helps flush out the metabolic byproducts that cause muscle soreness after activity.

Detoxification: Your lymphatic system and organs of elimination work more effectively when circulation is robust, helping to clear waste and toxins from your tissues.

How the Pituitary Gland Gets Signals

How does an action in your arms or legs tell your brain what to do? It happens through a process called the **metaboreflex**.

01**Metabolite Build Up**

During a KAATSU session, metabolites like lactate accumulate in the muscle.

02**Nerve Receptors Triggered**

Tiny nerve receptors within the muscle (Group III and IV afferents) sense this change in the chemical environment.

03**Signal to the Brain**

These nerves send a signal through the spinal cord to the hypothalamus and pituitary gland in the brain.

04**Hormone Release**

This signal is interpreted by the brain as a sign of intense effort, leading the pituitary gland to release a cascade of powerful hormones — most notably, Human Growth Hormone (HGH).

Essentially, KAATSU conveniently and naturally enhances this signaling pathway, getting the powerful hormonal response without the intense physical effort.

The Vascular Reset: Nitric Oxide & Shear Stress

WHAT IS SHEAR STRESS?

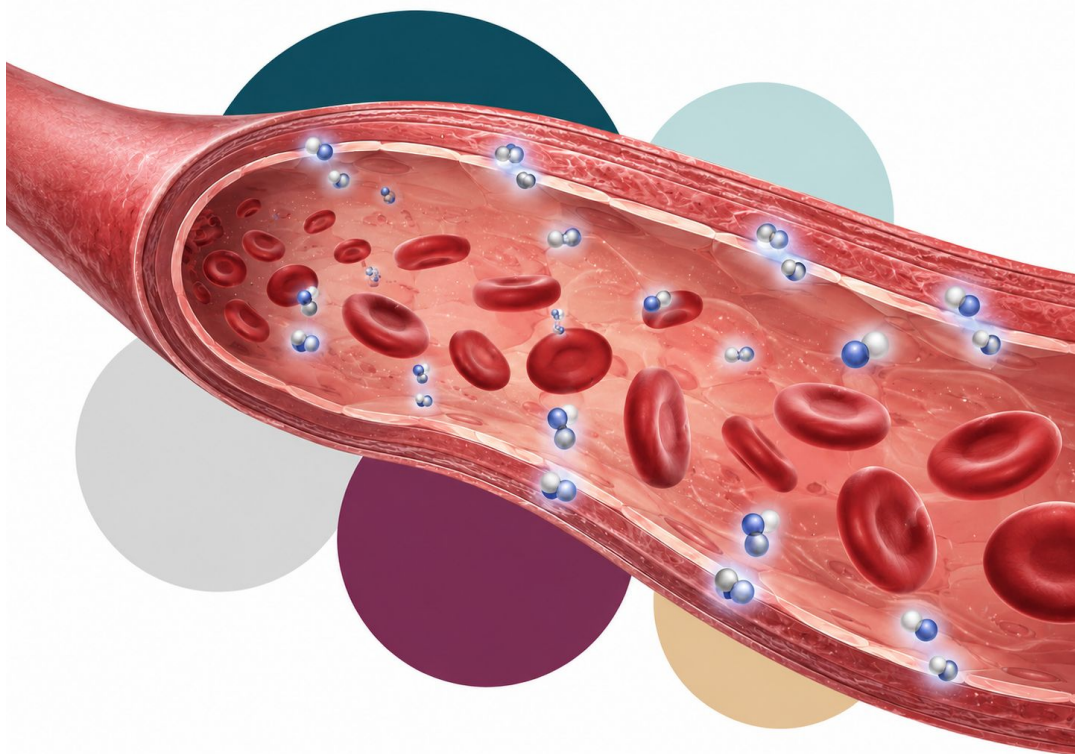
Imagine water flowing through a garden hose. The friction of the water rushing against the inner wall of the hose is referred to as shear stress. The same thing happens in your blood vessels.

HOW KAATSU MAXIMIZES IT

The KAATSU Cycle mode—with its repeated release of pooled blood—creates a powerful, rhythmic surging of blood flow in your limbs. This surge dramatically increases the shear stress against the inner lining of your blood vessels (the endothelium).

THE NITRIC OXIDE SWITCH

The endothelium responds to this shear stress by releasing a molecule called **Nitric Oxide (NO)**.



Nitric Oxide: The Body's Master Regulator



Nitric Oxide is one of the most important molecules for cardiovascular health and longevity. Its primary importance is its vasodilation effects - relaxing and widening blood vessels to optimize blood circulation, deliver vital nutrients, and regulate blood pressure.

WHY YOU SHOULD CARE ABOUT NITRIC OXIDE

It's a Vasodilator: Nitric Oxide tells your blood vessels to relax and widen, which can help lower blood pressure and improve circulation everywhere.

It Improves Vascular Elasticity: It keeps your arteries and veins supple and flexible, like a new rubber band instead of an old, brittle one. This is a key marker of a youthful and healthful cardiovascular system.

It Supports Brain & Nerve Function: Healthy blood flow is critical for delivering oxygen to your brain and nerves.

By stimulating Nitric Oxide production, KAATSU helps keep your vascular tissue healthy and supple.

The Local Growth Factor: IGF-1



Insulin-like Growth Factor 1 (IGF-1) is a powerful anabolic hormone, largely produced by the liver in response to Growth Hormone.

WHAT IS IGF-1?

Insulin-like Growth Factor 1 (IGF-1) is a powerful anabolic hormone, largely produced by the liver in response to Growth Hormone. While HGH is produced in the brain, IGF-1 builds muscle cells, strengthens bones, and regulates metabolism to grow and repair.

HOW KAATSU TRIGGERS IT

The release of Human Growth Hormone (HGH) from the pituitary gland travels to the liver and other tissues, signaling them to produce and release IGF-1.

WHY YOU SHOULD CARE

IGF-1 is one of the primary drivers of **muscle protein synthesis** —the process of using protein from your diet to repair and build stronger muscle tissue. For anyone looking to combat age-related muscle loss (sarcopenia) or recover from an injury, stimulating IGF-1 is critical - especially if you are disabled, weaker than normal, in a wheelchair, bedridden, or lead a largely sedentary lifestyle.

The Blueprint for New Blood Vessels: VEGF



Vascular Endothelial Growth Factor (VEGF) is the body's signaling protein for angiogenesis—the creation of new blood vessels that help improve your circulation.

WHAT IS VEGF?

Vascular Endothelial Growth Factor (VEGF) is the body's signaling protein for **angiogenesis** —the creation of new blood vessels that help improve your circulation.

HOW KAATSU TRIGGERS IT

The temporary low-oxygen state created in the muscles during a KAATSU session sends powerful signals for more efficient delivery routes in the body. The body responds to this signal by releasing VEGF.

WHY YOU SHOULD CARE

Faster Healing: New blood vessels are essential for delivering oxygen and nutrients to injured tissues.

Increased Stamina: A denser capillary network in your muscles allows them to work longer before fatiguing.

Reaching Capillary-poor Areas: VEGF can help build new pathways to tissues that have poor circulation, like tendons and certain areas of the brain.

Growth Factor For Your Brain:

BDNF



Brain-Derived Neurotrophic Factor (BDNF) is a protein that acts as a support for your brain cell and nervous system..

WHAT IS BDNF?

Brain-Derived Neurotrophic Factor (BDNF) is a protein that acts as a support for your brain cells. It is one of the most important molecules for neuroplasticity – your brain's ability to learn, adapt, and heal – and neurogenesis, the birth of new brain cells.

HOW KAATSU TRIGGERS IT

The intense metabolic signal created during a KAATSU session – particularly the production of lactate – travels to the brain and is a known trigger for the release of BDNF.

WHY YOU SHOULD CARE

BDNF does three critical things:

Protects Existing Brain Cells: It keeps your current neurons resilient and healthy.

Grows New Brain Cells: It encourages the birth of new neurons, especially in the memory center of your brain.

Strengthens Connections: It helps your brain cells communicate more effectively.

KAATSU is an efficient means to trigger a BDNF release without the need for exhaustive, high-intensity exercise.

The Master Hormone: Human Growth Hormone (HGH)



Human Growth Hormone (HGH) is often called the body's master repair hormone as it maintains muscle mass, strengthens bones, supports immune function, and regulates how the body converts food into energy.

WHAT IS HGH?

Human Growth Hormone (HGH) is often called the body's master repair hormone. Released by the pituitary gland, it leads to muscle growth and maintains normal body structure and metabolism.

HOW KAATSU TRIGGERS IT

The buildup of lactate in the muscles during KAATSU sends powerful signals to the brain, which responds with significant releases of HGH — a response that can be up hundreds of times higher than a comparative baseline.

WHY YOU SHOULD CARE

HGH plays a critical role in:

Muscle Maintenance: It signals the body to build and preserve lean muscle mass.

Metabolism: It helps your body metabolize fat for energy.

Deep Sleep & Repair: HGH release is highest during deep sleep, which is when your body and brain perform their most important repair work.

Bone Density: It supports the maintenance of strong, healthy bones.

The Cross Transfer Effect: Healing from The Other Side

WHAT IS IT?

One of the most remarkable phenomena in rehabilitation is the cross-transfer effect. This is where training one side of your body can lead to strength and muscle preservation in the opposite, untrained limb.

HOW KAATSU AMPLIFIES IT

KAATSU takes this to the next level. Research shows that performing KAATSU on your legs creates such a powerful systemic hormonal response (HGH, IGF-1, etc.) that these circulating repair signals benefit your entire body. This means you can trigger an anabolic, muscle-preserving environment in an immobilized arm by training your legs.

WHY YOU SHOULD CARE

For anyone with a broken bone, a non-weight-bearing injury, or recovering from a unilateral surgery (like a rotator cuff repair), this can offer a particularly useful outcome. It gives you a safe and effective way to combat muscle loss in your injured limb long before you can train it directly.

Why This Matters For Longevity

Living longer is good. Living better is another goal. The mechanisms of KAATSU directly target the key pillars of both a long and vibrant healthspan.

Combat Sarcopenia: By stimulating HGH and IGF-1, you safely maintain the lean muscle mass that is critical for a healthy metabolism, stable balance, and physical independence.

Improve Vascular Health: By stimulating Nitric Oxide and VEGF, you keep your 60,000 miles of blood vessels flexible and efficient, supporting heart health and robust circulation.

Support Brain Health: By stimulating BDNF and improving cerebral blood flow, you give your brain the tools it needs to stay sharp, focused, and resilient against age-related cognitive decline.



Why This Matters for Quicker Rehabilitation

The traditional challenge of rehabilitation is that you can't load an injured joint to train. KAATSU allows you to get the benefits of a long, heavy workout without taking the risk of using the same amount of resistance or applying a risky amount of stress on the joint..

Reduce Muscle Atrophy: Passive KAATSU Cycle sets can be used a few days after surgery to signal the body to preserve muscle mass, even before active exercise is possible.

Accelerate Healing: By increasing the production of VEGF and improving blood flow, you deliver more oxygen and nutrients to the surgical site, speeding up tissue repair.

Manage Pain: The hormonal cascade triggered by KAATSU has a natural analgesic (pain-relieving) effect.

Rebuild Strength Safely: Once you can move, you can regain strength using just bodyweight or extremely light loads, protecting the healing joint from stress.



Why This Matters For Athletic Performance

For an athlete, the key to better performance is not only training harder, but also recovering faster.

Recover Faster: KAATSU Cycle sets are a uniquely powerful tool to flush out metabolic waste, reduce muscle soreness, and down-regulate the nervous system, allowing you to train hard, recover, and train hard again sooner.

Build Strength with Less Damage: You get a powerful hypertrophic stimulus without the heavy joint-loading and muscle damage of traditional weightlifting, allowing for more frequent training and strengthening for sports-specific movements.

Break Through Plateaus: KAATSU provides a unique physiological stimulus that can shock the body into a new phase of adaptation - in speed, strength, and stamina - through progressive increments.

Get a Competitive Edge: The systemic hormonal response optimizes your body's internal environment for peak performance, resilience, and recovery.



Your Next Step

The human body is a highly intelligent and adaptive system. For decades, we believed the only way to grow stronger and healthier was through intense, often punishing, physical stress. Now, with KAATSU, we know there is a smarter way. By understanding the body's own physiological language, KAATSU allows you to send a powerful signal for rejuvenation and repair safely, efficiently, and conveniently in just minutes a day.

Whether your goal is to maintain your vitality as you age, recover from an injury with unprecedented speed, or unlock a new level of athletic performance, the underlying mechanisms are the same. By optimizing your body's circulation and hormonal environment, you are giving it the tools it needs to do what it does best: heal, adapt, and thrive. You now understand the science behind this revolutionary technology.

The next step is to experience it for yourself. If you have any questions about how KAATSU can fit into your specific health goals, our team of certified specialists is here to help. Please don't hesitate to reach out.

Email our team at info@kaatsu.com if you have any additional questions, or questions about whether or not KAATSU is right for you.