

Traditional Samurai Movement Improves Knee Strength and Mobility for Seniors

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STORY AT-A-GLANCE

- › A traditional Japanese practice called Rei-ho improved knee strength by more than 25% in just three months of short daily sessions
- › The slow, upright movements in Rei-ho target your quadriceps, the key muscles that help you stand, walk, and climb stairs with ease
- › Practicing Rei-ho takes only five minutes a day, making it realistic for busy schedules and easy to stick with long term
- › Slow, controlled movement reduces stress on your joints, lowering the risk of injury while still delivering powerful strength gains
- › Stronger knees from Rei-ho lower your risk of falls and help you maintain independence as you age

Aging changes more than appearance – it directly impacts how strong and mobile your body stays over time. One of the earliest and most noticeable shifts happens in your legs, where muscle loss erodes balance, stability, and confidence. Without steady strength, even routine movements like standing from a chair or walking across the room become more difficult.

The problem is not just weakness – it's the cascade of risks that follow. Loss of leg strength raises the likelihood of falls, fractures, and hospital stays, which often trigger a downward spiral in independence. Once daily tasks feel unsafe, quality of life drops and

recovery from setbacks becomes harder.

Conventional strength training has long been the answer, yet it's not practical for everyone. Heavy weights, gyms, and high-intensity exercise often discourage older adults who fear injury or lack time. What many people need is a simple, safe, and sustainable way to keep their legs strong enough to support the life they want to live.

That search for practical solutions has led researchers to revisit movement patterns hidden in tradition. One example is Rei-ho, a centuries-old practice from Japan's samurai culture, now being studied as a modern tool for protecting mobility.

Samurai-Inspired Movements Deliver Significant Strength Gains

A study published in the *Tohoku Journal of Experimental Medicine* explored whether a traditional Japanese movement practice known as Rei-ho could strengthen knee muscles in adults.¹ Rei-ho's effectiveness has cultural origins. The movements come from traditional Japanese practices like floor-sitting, using futons, and squat toilets, which naturally involved frequent squatting and standing.

As Western-style chairs and beds replaced these habits, opportunities for natural strength training disappeared. Rei-ho revives these beneficial motions in a structured way that fits modern life. The researchers were interested in testing if these short, structured movements rooted in samurai etiquette could produce measurable gains in leg strength without the need for heavy weights or long workout sessions.

- **Rei-ho originated as a form of daily movement practiced by samurai** – It's defined by slow, deliberate sit-to-stand motions. The key features include keeping your feet together, avoiding leaning your upper body forward, moving at a steady rhythm, and holding each squat or stand for four to five seconds. Unlike fast **squats**, your buttocks remain above your knees, which forces your thigh muscles to stay engaged longer and builds strength without added weights.

- **Participants were healthy adults with no prior training** – The trial included 34 healthy adults who had never practiced Rei-ho before. They were randomly assigned to either a training group or a control group. Those in the training group practiced Rei-ho for just five minutes per day, four times a week, over three months. The control group continued their normal routines with no new exercise.
- **Knee strength increased by more than 25%** – The results were striking: participants who practiced Rei-ho increased their knee extension strength by 25.9% compared to only 2.5% in the control group. This means that the training was not only effective but also highly efficient, especially when compared with more time-consuming or equipment-heavy exercise programs.
- **Rei-ho improved quadriceps strength** – Your quadriceps, the large muscle group at the front of your thighs, plays a central role in standing, walking, climbing stairs, and preventing falls. The study showed that Rei-ho movements, which keep your trunk upright and push your knees forward, placed more emphasis on activating the quadriceps than conventional squats. That activation translated directly into stronger, more resilient legs.
- **Improvements occurred within three months of practice** – Over the 12-week period, participants consistently practiced a set of controlled movements, such as slow squats and sit-to-stands, with each motion taking four to five seconds to complete. This slow pace forced the muscles to stay engaged longer, and the accumulated effort over time produced clear, measurable strength gains without the strain of heavy lifting.

Daily Rei-ho Requires a Minimal Time Commitment

The total training session lasted only five minutes per day, and most participants averaged fewer than five days of training per week. Despite the small time investment, the gains were comparable to or even greater than those seen in previous studies requiring much higher training volumes. This highlights how Rei-ho is both realistic and sustainable for people with busy schedules.

- **Benefits were seen in those who practiced consistently** – Participants who followed the training protocol averaged 4.6 days per week and experienced strong improvements in knee extension strength. This finding shows that even small amounts of effort, when done consistently, deliver noticeable results, reinforcing the importance of routine for long-term strength and mobility.
- **Rei-ho produced better results than conventional squat programs** – When compared with past squat-based training studies, Rei-ho stacked up impressively. Some squat programs with up to 99 repetitions per day over several months only increased strength by 8% to 16%, while Rei-ho achieved more than 25% improvement with fewer total repetitions and less time commitment. This makes Rei-ho a highly efficient choice for strengthening your legs.
- **Muscle activation patterns explained the strength gains** – Rei-ho movements were deliberately slow, upright, and controlled. Unlike conventional squats that rely on leaning forward to balance, Rei-ho shifted more torque onto the knees and quadriceps. This biomechanical loading pattern required sustained contraction of the thigh muscles, creating the conditions for strength improvements without heavy weights.
- **Slow movement reduced risk of injury** – One of the most important findings was safety. The study emphasized that the slow, deliberate pace of Rei-ho avoided sudden or jerky motions that often injure ligaments. Because movements lasted four to five seconds in each direction, participants built strength while protecting the knees and back. Only one participant reported temporary knee discomfort, which resolved without stopping training.
- **Rei-ho builds strength while keeping blood pressure stable** – High-intensity **strength training** often spikes blood pressure, which is risky for older adults. In contrast, slow bodyweight movements like Rei-ho kept intensity low and stress on the cardiovascular system minimal. This makes the practice especially suitable for seniors or anyone concerned about heart health.

The study proves that even if you avoid gyms or heavy weights, you still have options to protect your mobility and independence. Adding just five minutes of Rei-ho to your day provides a realistic, effective way to build leg strength, **lower your risk of falls**, and keep everyday movements easier as you age. By practicing slowly and consistently, you gain confidence and control over your health without needing expensive equipment or long workouts.

Simple Steps to Strengthen Your Legs and Protect Your Independence

Losing strength in your legs isn't inevitable. The root cause of weakness in your knees and thighs is lack of consistent, targeted use. **Sitting too much** and avoiding strength-based movement sets the stage for muscle loss, making everyday activities harder. If you want to stay independent, prevent falls, and keep doing the things you love, you need simple strategies that train your legs in ways that fit your daily life. Here's how you can start:

- 1. Practice Rei-ho daily for five minutes** — Begin with Rei-ho, which involves slow, deliberate sit-to-stands and squats, where each movement lasts four to five seconds. Just five minutes a day, at least four days a week, improves knee strength by over 25% in three months.² You don't need weights, equipment, or even a gym — just your body and a chair.
- 2. Use natural movements throughout your day** — If you avoid exercise routines, you can still build strength by making small changes. Try sitting on the floor instead of the couch, or use stairs instead of elevators. These movements mimic the natural squats and stands that used to be part of everyday Japanese life. Each time you move this way, you train your legs to support you better.
- 3. Go slow to protect your joints** — Fast, jerky movements stress your knees and back. By slowing down, you increase muscle activation while lowering your risk of injury. Think of Rei-ho as moving in slow motion: five seconds down, five seconds up. This

steady rhythm keeps your quadriceps working hard while keeping your joints safe.

- 4. Stay consistent rather than intense** – Your body responds to steady effort, not one-time bursts. If you're busy or easily discouraged by long workouts, remind yourself that shorter, regular practice works better. Even four sessions a week is enough to create change. Consistency builds both strength and confidence, giving you proof that your actions pay off.
- 5. Track your progress and challenge yourself** – You're more likely to stick with a habit if you see results. Keep a simple log of your sessions, or mark each day on a calendar. Over time, increase the number of repetitions slightly, or add an extra practice day. This gives you a sense of accomplishment and turns training into a personal challenge you can win.

By putting these steps into action, you address the root cause of weakness – muscle loss from inactivity – and replace it with habits that restore strength and stability. This isn't about punishing workouts. It's about using simple, natural movements to keep your body strong enough to live life on your terms.

FAQs About Rei-ho for Leg Strength

Q: What is Rei-ho and why does it matter for leg strength?

A: Rei-ho is a traditional Japanese samurai practice involving slow, controlled squats and sit-to-stand movements. A study in the *Tohoku Journal of Experimental Medicine* found that practicing Rei-ho for just five minutes a day increased knee strength by more than 25%.³ Stronger knees help you stay mobile, reduce your risk of falls, and protect your independence as you age.

Q: How much time do I need to practice Rei-ho for results?

A: The study showed that five minutes a day, at least four times per week, was enough to significantly increase knee extension strength. Consistency matters more than duration, so sticking with this routine gives you better results than longer but less frequent workouts.

Q: How is Rei-ho different from regular squats?

A: Unlike conventional squats that involve leaning your trunk forward, Rei-ho keeps your torso upright and pushes your knees forward. This posture shifts more load to your quadriceps – the large muscles at the front of your thighs – making them stronger with less strain on your back.

Q: Is Rei-ho safe for older adults or people with knee concerns?

A: Yes. Because the movements are slow and bodyweight-based, Rei-ho lowers the risk of injury compared to heavy weightlifting. The deliberate pace also avoids sudden stress on your joints, making it safer for older adults and those worried about joint pain.

Q: What practical steps can I take to start strengthening my legs today?

A: You can begin with five minutes of Rei-ho, practice standing from a chair slowly, and add more natural movements like using stairs or sitting on the floor. Track your progress by logging sessions or marking a calendar. Over time, this builds confidence, consistency, and strength that helps you stay active and independent.

Sources and References

- [1, 2, 3 Tohoku Journal of Experimental Medicine August 14, 2025](#)