**Stretching has Numerous Benefits for our Seniors**

**The Association of Flexibility, Balance, and Lumbar Strength with Balance Ability: Risk of Falls in Older Adults**

[**Emilio J. Martínez-López Emilio**](https://www.ncbi.nlm.nih.gov/pubmed/?term=Emilio%20EJ%5BAuthor%5D&cauthor=true&cauthor_uid=24790489)**,1,✉**[**\***](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#d35e38)[**Fidel Hita-Contreras**](https://www.ncbi.nlm.nih.gov/pubmed/?term=Hita-Contreras%20F%5BAuthor%5D&cauthor=true&cauthor_uid=24790489)**,2,**[**\***](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#d35e73)[**Pilar M. Jiménez-Lara**](https://www.ncbi.nlm.nih.gov/pubmed/?term=Jim%26%23x000e9%3Bnez-Lara%20PM%5BAuthor%5D&cauthor=true&cauthor_uid=24790489)**,1,**[**\***](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#d35e108)[**Pedro Latorre-Román**](https://www.ncbi.nlm.nih.gov/pubmed/?term=Latorre-Rom%26%23x000e1%3Bn%20P%5BAuthor%5D&cauthor=true&cauthor_uid=24790489)**,1,**[**\***](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#d35e142)**and**[**Antonio Martínez-Amat**](https://www.ncbi.nlm.nih.gov/pubmed/?term=Mart%26%23x000ed%3Bnez-Amat%20A%5BAuthor%5D&cauthor=true&cauthor_uid=24790489)**2,**[**\***](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#d35e177)

**Abstract**

The purpose of the present study was to determine the effects of a proprioceptive training program on older adults, as well as to analyze the association between flexibility, balance and lumbar strength (physical fitness test) with balance ability and fall risk (functional balance tests). This study was a controlled, longitudinal trial with a 12-week follow-up period. Subjects from a population of older adults were allocated to the intervention group (n = 28) or to the usual care (control) group (n = 26). Subjects performed proprioceptive training twice weekly (6 specific exercises with Swiss ball and BOSU). Each session included 50 minutes (10 minutes of warm-up with slow walk, 10 minutes of mobility and stretching exercises, 30 minutes of proprioceptive exercises). The outcome variables were physical fitness (lower-body flexibility, hip-joint mobility, dynamic balance, static balance, and lumbar strength) and functional balance (Berg scale and Tinetti test). The experimental group obtained significantly higher values than the control group in lower-body flexibility, dynamic balance, and lumbar strength (p = 0.019, p < 0.001, and p = 0.034 respectively). Hip-joint mobility, dynamic balance, and lumbar strength were positively associated with balance ability (p < 0.001, p < 0.001, and p = 0.014, respectively) and the prevention of falls (p = 0.001, p < 0.001, and p = 0.017 respectively). These findings suggest that a 12-week proprioception program intervention (twice a week) significantly improves flexibility, balance, and lumbar strength in older adults. Hip-joint mobility, dynamic balance and lumbar strength are positively associated to balance ability and the risk of falls in older adults. This proprioceptive training does not show a significant improvement in hip-joint mobility or static balance.

***Key points***

* A 12-week proprioceptive intervention program (two times per week) significantly improves flexibility, balance, and lumbar strength in older adults.
* The risk of falls and balance ability are significantly improved after a training program with Bosu and Swiss ball in older adults.
* An improvement in joint mobility, dynamic balance and lumbar strength is positively associated with balance ability and improved fall risk in older adults.
* A 12-week proprioceptive intervention program (two times per week) does not show a significant improvement in hip-joint mobility and static balance.

**Introduction**

Falls are considered the most common geriatric syndrome (Chang et al., [2010](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#ref5); Legters et al., [2006](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#ref13)) and they are often related to mobility, as well as to neurological and cardiovascular causes (Lord et al., [2003](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#ref16)). The structural changes that occur as a result of aging imply an important decrease in physical condition (Katsura et al., [2010](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#ref11)). These facts have a negative influence on functional balance, interfering with essential daily activities such as bathing, getting dressed, and climbing or descending stairs (Lacour, [2000](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#ref12)). Anticipating the causes that limit functional balance can be relevant, given that around 30% of falls result in an injury that requires medical attention (Berry and Miller, [2008](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#ref3)). Health care costs for treatment of fall-related injuries was 1.85 times higher than the cost of implementing a fall prevention program (Hektoen et al., [2009](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#ref8)), and a few fall prevention studies reported a positive effect on the quality of life (Host et al., [2011](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#ref9); Vaapio et al., [2009](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#ref34)).

Studies in older adults have shown a relation between the lack of muscle flexibility and poor walking ability and body balance (Iwamoto et al., [2009](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#ref10)). It has been described that greater efficacy of the lumbopelvic muscles can contribute to postural stabilization (Cosio-Lima et al., [2003](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#ref6)). Balance improvement is associated with decreased risk and fear of falling, and with an improvement in quality of life (Chang et al., [2010](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#ref5); Legters et al., [2006](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#ref13)). In the last few years, several training programs based on aquatic exercises (Katsura et al., [2010](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#ref11)), or on a peer-led model have helped subjects maintain strength and balance levels (Waters et al., [2011](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#ref38)), thus contributing to reducing falls in older people. More precisely, proprioceptive exercises on unstable surfaces (Swiss ball or BOSU) have been shown to improve flexibility, balance and lower-limb strength in sedentary women (Sekendiz et al., [2010](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#ref27)), as well as providing a basis for a muscle strength increase (Teixeira et al., [2010](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#ref31)). Martínez-Amat et al. ([2013](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#ref18)) showed how a 12-week proprioception training program in older adults caused improvements in stabilometric measures such as Romberg surface and Romberg speed as recorded with unstable platforms. Westlake and Culham ([2007](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#ref39)) also reached the conclusion that, in older adults, there was a short-term enhanced postural response to proprioceptive reintegration following a sensory-specific balance exercise program. Such exercises are based on the potential increase of muscle activity produced by maintaining postural stability, as the decrease in the unstable surface contact area leads to increased muscle recruitment (Marshall and Murphy, [2006](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#ref19)).

Although all types of training (traditional strength training, functional strength training, endurance training) can enhance physical capacity in older adults (Solberg et al., [2013](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#ref29)), there are many studies that have found a more specific association between physical activity and balance ability (Cadore et al., [2013](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#ref4); Katsura et al., [2010](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#ref11)) or risk of falling (Chang et al., [2010](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#ref5); Teixeira et al., [2010](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#ref31)). Nevertheless, some other studies revealed no conclusive differences in training between stable and unstable surfaces (Uribe et al., [2010](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#ref33)). It is important to note that most of the studies mentioned above establish a general relation between training and fall prevention. More specifically, Granacher et al. ([2008](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990889/#ref7)) concluded that in the near future, strength training could be replaced by high-velocity forms of power training and balance training by perturbation-based training programs. Nevertheless, to our knowledge, there are no studies showing the degree of influence of proprioceptive-training-improved physical abilities (flexibility, balance, and strength) on balance ability and on the risk of falls in older adults.

In light of the research mentioned before, the purpose of the present controlled trial was to determine the effects of a 12-week proprioceptive training program on the improvement of flexibility, balance and lumbar strength (primary outcome) as well as to analyze the association between flexibility, balance and lumbar strength, and balance ability *and risk of falls (secondary outcome) in* older adults.

**The importance of stretching**

March 14, 2022

*It's not enough to build muscle and achieve aerobic fitness. You need to think about flexibility, too. Stretching can help.*

You may think of stretching as something performed only by runners or gymnasts. But we all need to stretch in order to protect our mobility and independent ce. "A lot of people don't understand that stretching has to happen on a regular basis. It should be daily," says David Nolan, a physical therapist at Harvard-affiliated Massachusetts General Hospital.

**Why stretching is important**

Stretching keeps the muscles flexible, strong, and healthy, and we need that flexibility to maintain a range of motion in the joints. Without it, the muscles shorten and become tight. Then, when you call on the muscles for activity, they are weak and unable to extend all the way. That puts you at risk for joint pain, strains, and muscle damage.

For example, sitting in a chair all day results in tight hamstrings in the back of the thigh. That can make it harder to extend your leg or straighten your knee all the way, which inhibits walking. Likewise, when tight muscles are suddenly called on for a strenuous activity that stretches them, such as playing tennis, they may become damaged from suddenly being stretched. Injured muscles may not be strong enough to support the joints, which can lead to joint injury.

Regular stretching keeps muscles long, lean, and flexible, and this means that exertion "won't put too much force on the muscle itself," says Nolan. Healthy muscles also help a person with balance problems to avoid falls.

**Where to start**

With a body full of muscles, the idea of [daily stretching](https://www.health.harvard.edu/staying-healthy/the-ideal-stretching-routine) may seem overwhelming. But Nolan says you don't have to stretch every muscle you have. "The areas critical for mobility are in your lower extremities: your calves, your hamstrings, your hip flexors in the pelvis and quadriceps in the front of the thigh." Stretching your shoulders, neck, and lower back is also beneficial. Aim for a program of daily stretches or at least three or four times per week.

Find a [physical therapist](https://www.health.harvard.edu/blog/need-physical-therapy-3-key-questions-your-pt-will-ask-202106072470) (your local Y is a good place to start) who can assess your muscle strength and tailor a stretching program to fit your needs. If you have chronic conditions such as Parkinson's disease or arthritis, you'll want to clear a new stretching regimen with your doctor before you start.

**The cumulative effect of stretching**

Stretching once today won't magically give you perfect flexibility. You'll need to do it over time and remain committed to the process. "It may have taken you many months to get tight muscles, so you're not going to be perfectly flexible after one or two sessions," says physical therapist David Nolan of Massachusetts General Hospital. "It takes weeks to months to get flexible, and you'll have to continue working on it to maintain it."

A hamstring stretch will keep the muscles in the back of your thigh flexible. Sit on the floor with your legs in front of you. Slide your hands down your legs until you feel a burning sensation. Hold for 30 seconds, then slowly return to a sitting position.

**Proper execution**

We used to believe that stretching was necessary to warm up the muscles and prepare them for activity. However, mounting research has shown that stretching the muscles before they're warmed up can actually hurt them. "When everything is cold, the fibers aren't prepared and may be damaged. If you exercise first, you'll get blood flow to the area, and that makes the tissue more pliable and amenable to change," says Nolan. All it takes to warm up the muscles before stretching is five to 10 minutes of light activity, such as a quick walk. You can also stretch after an aerobic or weight-training workout.

Hold a stretch for 30 seconds. Don't bounce, which can cause injury. You'll feel tension during a stretch, but you should not feel pain. If you do, there may be an injury or damage in the tissue. Stop stretching that muscle and talk to your doctor.

SOURCE: <https://www.health.harvard.edu/staying-healthy/the-importance-of-stretching>

**ELDERLY FLEXIBILITY EXERCISES FOR SENIORS**

**We need to stretch for our elderly flexibility**

Stretching is an important part of elderly and seniors’ flexibility and will help offset the effects of normal decline in the flexibility of your joints, and help you remain active and independent.

As we age muscles become shorter and lose their elasticity. Aging can affect the structure of your bones and muscles causing pain and decreased range of motion in the shoulders, spine and hips.

Stretching is an excellent way to relax and relieve tension if you incorporate breathing exercises and good posture in your stretching program.

It becomes very important for seniors to maintain range of motion and your ability to move all joints normally with activities during the day.

**Types of stretching**

Generally, when we speak of stretching exercises we are talking about either **static**or **dynamic**stretching.

**Static** stretching is the preferred method to create lasting lengthening of a muscle and surrounding tissue, which increases your available range of motion.

We also refer to **static** stretching as Low load prolonged stretch. This is the application of a low load over a longer period of time. To stretch in this manner, simply hold a position for 10 to 30 seconds or more.

**Dynamic** or oscillatory motions are used to increase available range of motion in a joint. This can be used in addition to **static** stretching.

It is a form of stretching that is usually done after you are well warmed up and can tolerate a bouncy pull on your joints. **Static** stretching is generally considered the safer choice.

**Most older adults and seniors can safely perform stretches**

The great thing about stretching is that it can be fun and done almost anytime and any place. My patients with upper body stiffness due to injury or surgery are encouraged to perform range of motion exercises with the affected body part at least three times per day.

* Stretching can greatly help **back pain**.
* Stretching can improve your **posture**.
* Stretching is beneficial for **arthritis**.

**When and how much should I stretch?**

Generally elderly and seniors stretching should be done 2 to 3 days per week, performing each stretch 3 to 5 times with a 20 to 30 second hold. Try one or two stretches for each body region.

If you would like to increase your flexibility, stretches should be performed 4 to 5 days per week. Remember that it is important to warm-up before beginning an elderly flexibility exercise program.

The warm-up is an excellent place to use your stretching exercises.

**General flexibility guidelines**

1. Warm up before stretching
2. Don’t bounce during stretching.
3. Don’t hold your breath during a stretch.
4. Stretching should not cause pain, be gentle.
5. Don’t combine turning and bending back exercises at the same time. To stretch the back relax in a chair by supporting yourself with your hands on your legs while leaning forward.
6. When performing knee bends, don’t drop your buttock below the level of your knees. This places too much strain on your knees. Better to do shallow knee bends, keeping your feet apart and not locking the knees. Keep your back straight throughout the exercise.
7. Avoid pressing the head backward during head rolls which can damage the vertebrae in your neck. Move the head gently from side to side, never too quickly.

Remember, elderly and seniors’ flexibility training will only show benefits if it is done regularly with the correct form and duration of stretch.

**Upper Body Stretches**

Improve your upper back, arm and neck mobility with these excellent stretching routines. Start a upper body stretching program today by choosing 2 or 3 upper body stretching exercises to perform 3 times per week.

Most stretches can be held for 30 seconds. Repeat 3 times. You can then choose 2 or 3 new stretches every week. This will add greatly to the flexibility of your arms, chest and upper back.

So, give it a try and see how much better you can reach to those high shelves!

1. [Shoulder And Upper Back Stretch](https://eldergym.com/shoulder-stretches/)

* Shoulder stretches to increases your shoulder and scapular range of motion.
* Stretches your chest and shoulder.
* Will make it easier to reach to that high shelf in your kitchen.

2. [Shoulder Rolls](https://eldergym.com/stretching-routines/)

* Improve the range of motion in your shoulder and upper back region with these stretching routines.
* Will assist in keeping your rib muscles flexible.
* Help in activities like reaching up to a high shelf or across the table at dinner.

3. [Neck Side Stretch](https://eldergym.com/good-stretching-exercises/)

* Improve the range of motion in your neck and upper back with these good stretching exercises.
* Helps with those everyday movements you need to do like looking under the bed for that other shoe!

4.[Neck Rotation](https://eldergym.com/neck-stretches/)

* Improve the range of motion in our neck with these neck stretches.
* Help stretch the upper back and scapular muscles.

5. [Shoulder Circles](https://eldergym.com/types-of-stretching/)

* Improve the range of motion of your shoulders and upper back with these types of stretching.
* Helps increase flexibility in your chest and lungs.

6. [Shoulder Stretch](https://eldergym.com/benefits-of-stretching/)

* Helps stretch our shoulder, scapula and supporting muscles and joints.
* Improves our reaching ability especially across the body for these benefits of stretching.

7. [Chest Stretch](https://eldergym.com/chest-exercises/)

* Stretches the chest and shoulders with these chest exercises.
* Improves posture and lung functioning.

8. [Overhead Reach](https://eldergym.com/arm-stretches/)

* Increase the range of motion in your shoulder and upper back with these arm stretches.
* Help improve your ability to reach, as in getting a pan out of the cabinet or ice cream out of the freezer.

9. [Reach Back](https://eldergym.com/arm-exercises/)

* Improve your ability to reach behind as in reaching back to hold on to an armrest before sitting down.
* Increase the range of motion of your shoulders and stretches your chest muscles with these arm exercises.

10. [Triceps Stretch](https://eldergym.com/stretches-before-exercise/)

* Stretches the shoulder and triceps with these stretches before exercise.
* Improves the mobility of your upper arm and shoulder.

11. [Hand Stretch](https://eldergym.com/hand-exercises/)

* Increase the flexibility and range of motion of your hand and fingers with these hand exercises.
* Warms up your hand to prepare for the activity of the day.

12. [Arm Raises](https://eldergym.com/muscle-stretching/)

* Improves the range of motion of your shoulders with these muscle stretching exercises.
* Strengthens your arm for activities that require overhead reach like up to a shelf or pulling the light cord in the basement.

**FIRST:**Make sure to sign up for my [Eldergym® Senior Fitness Newsletter](https://eldergym.com/newsletter/) to make the most of these exercises and receive my free 4 week exercise program!

**Lower Body Flexibility Exercise**

1. [Seated Lifts](https://eldergym.com/what-is-flexibility/)

* Improve the range of motion in your hips and legs.
* Help stabilize  your low back and pelvis

2. [Standing Quadriceps Stretch](https://eldergym.com/exercises-to-increase-flexibility/)

* Will improve your hip and knee range of motion with these.
* Can improve your standing posture by allowing you to stand up straighter.

3. [Back Stretch](https://eldergym.com/lower-back-stretching/)

* Improves the range of motion in your spine and trunk.
* Increases your ability to bend and reach low or high.

4. [Inner Thigh  Stretch](https://eldergym.com/stretching-legs/)

* Improve your hip and thigh range of motion with exercises.
* Increase your functional ability in standing, walking and stepping.

5. [Calf Stretch](https://eldergym.com/calf-muscle-stretches/)

* Targets the flexibility of your calf muscle and heel cord. .
* Increases your ability to straighten your knee

6. [Hip Side Stretch](https://eldergym.com/stretching-techniques/)

* This is a good stretch for the side hip area.
* Improve the range of motion of our hips.
* These also can help with balance.

7.  [Hip Rotation Stretch](https://eldergym.com/flexibility-stretches/)

* Increase the range of motion of your hips.
* Improve the functional use of your legs as in getting out of a car or stepping over the side of your bath tub.

8. [Soleus Stretch](https://eldergym.com/flexibility-stretching-exercises/)

* Increases the flexibility of the deep calf muscle.
* Generally improves your lower body flexibility and functional use of your legs.

9. [Ankle Circles](https://eldergym.com/warming-up-stretching/)

* Improve the range of motion of the ankle and foot.
* Can help with ankle swelling

10. [Hamstring Stretch](https://eldergym.com/hamstring-stretching/)

* Increases your ability to lean forward and reach your feet.
* Improves the flexibility of your low back and legs.

11. [Knee To Chest](https://eldergym.com/flexibility-importance/)

* Stretches your knee and hip joints.
* Improves low back flexibility.

12. [Ankle Stretch](https://eldergym.com/ankle-stretching/)

* Helps maintain good ankle flexibility which will assist with walking and standing.
* Also helps with knee and hip stiffness.

SOURCE: <https://eldergym.com/elderly-flexibility/#:~:text=Generally%20elderly%20and%20seniors%20stretching,to%205%20days%20per%20week>.

Routine physical activity is an important part of healthy aging as it helps prevent several health problems, such as diabetes and heart disease.

Developing and maintaining your flexibility as you age can also be beneficial by reducing the risk of injury, maintaining good balance, and having a better range of motion. You will feel stronger once you gain a bit of flexibility, simply because that flexibility gives you the range of motion to let your muscles work more efficiently.

Maintaining flexibility will aid in muscle and joints health, which can keep older adults doing their favorite daily activities and remain independent.

**The Significance Of Flexibility While Aging**

If you are wondering if it’s possible to become flexible as we age, the answer is YES! As we age, our bodies have a tendency to degenerate. We lose our skin’s elasticity, our muscle tone, and bone density. Also, the water content in our tendons decreases and as a result, our tendons get stiffer. All these factors can contribute to the natural decrease in our flexibility.

The most common areas affected with decreased flexibility are often the shoulders and the hips. Other parts of the body that can be affected by the changes include the spine, neck, knees, ankles and any part of the body that has joints. This can result in chronic aches and pains.

**The Benefits of Flexibility While Aging**

1. Improves your ability to perform daily physical activities.
2. Decreases the risk of injuries such as fractures and muscle strains.
3. Improves balance which also decreases the risk of falling and injury.
4. Decreases chronic pain.
5. Improves your workouts due to better overall muscular performance.
6. Improves your posture which reduces hunching over.
7. Helps you keep a more youthful appearance.

**Increasing Flexibility**

Many experts suggest that simple stretching techniques are best to help us ease into our workout routines and increase our flexibility.

Gaining flexibility takes time so be sure to go slowly, and pay attention to your body. One stretch doesn’t fit everyone, but there are many variations that can be made. As you improve your flexibility, you’ll be able to reach farther with the same stretch or add different stretches for the same muscle.

Stretching exercises are essential to help maintain flexibility and range of motion in joints. Yoga and Pilates are great forms of stretching exercise as they build core body strength and increase stability.

**Additional tips to keep in mind:**

1. Warm up the body by walking in place for five minutes. This will prepare your heart, muscles, and joints for activity.
2. Never force a stretch and do not bounce or jerk to get deeper into a stretch. Smooth and gentle movements are safer.
3. Don’t lock your joints. Your arms and legs can be straight while stretching, but they shouldn’t be stiff and locked. If it’s more comfortable try bending your elbows and knees slightly.
4. Keep breathing. As with your movements, your breath should be slow and steady.
5. Aim to stretch every day. Try for 10 to 15 minutes a day, at least three days a week.
6. Don't forget recovery time. You will need to focus more on recovery after 50. Tissue recovery may take more time and more effort to support that recovery. Knowing how much recovery time that is needed often depends on your baseline fitness level.

**The Takeaway**

In conclusion, age is only a number and doing nothing will not help the aging process in the least. For many older adults, maintaining mobility can be difficult. Muscles and joints weaken and range of movement deteriorates as we age.

Stretching benefits include the development and maintenance of strength, improving flexibility, and increased circulation and blood flow, all of which will provide a greater quality of life and healthy aging.

SOURCE: <https://www.uniquehealthandfitness.com/why-flexibility-is-so-significant-as-we-age>