

**To all affected by The 2011 off the Pacific coast of Tohoku
Earthquake**

**-Ways to prevent venous thromboembolism and locomotive
syndrome-**

We understand that you must be both physically and mentally exhausted after this terrible earthquake and tsunami. But if you spend a long time sitting still at the evacuation shelter and don't move around, you will have a higher risk of developing **venous thromboembolism (economy-class syndrome, ECS)** or **locomotive syndrome** due to decreased mobility.

There are a number of different exercises you can do to help yourself keep moving and maintain a healthy level of mobility.

The locomotive syndrome refers to conditions under which the elderly have been receiving care services, or high-risk conditions under which they may soon require care services, due to problems of the locomotive organs.

1) For smoother ankle movement and to prevent EC

This exercise can be done either lying down or sitting with your knees extended.

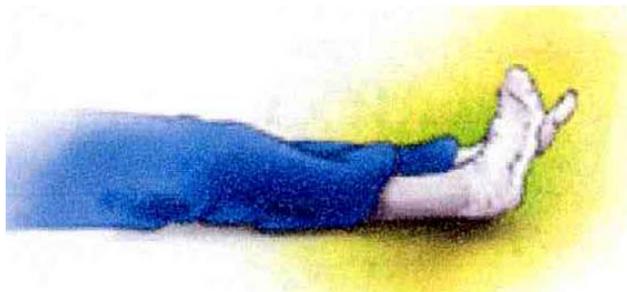
Flex your ankle towards yourself so that your toes are raised and hold for 5 seconds. Then flex the other way so that your toes are lowered and hold for 5 seconds. Repeat 10 times. Do the same with your other ankle.



2) For smoother knee movement (knee bend and flex)

Recommended for those who have previously had knee pain.

This exercise can be done either lying down or sitting with your knees extended. Slowly bend your knee, then slowly extend it. Stop if you feel any pain. Repeat 10 times. Do the same with your other knee.



3) To strengthen thigh muscles

Recommended for those who have, or have had knee pain.

•If lying down

Lie on your back with one knee bent at an angle of over 90 degrees. Slowly raise the other leg 10cm off the floor without bending your knee and hold for 5 seconds. Aim to repeat 20 times, although you can start by doing less than this. Do the same with your other leg. Do this exercise twice a day, once in the morning and once in the evening.

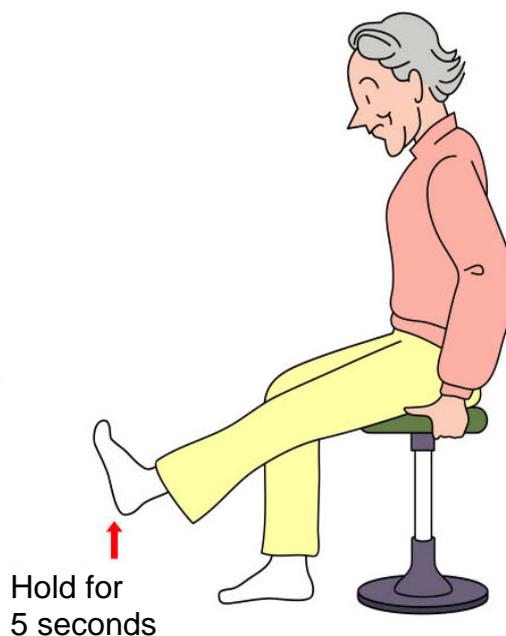


SLR (straight leg raising) exercise

Source: Patient Handbook No. 23, JOA

-If seated

Sit lightly, holding onto the edges of the chair. Bend one knee, and extend the other with your ankle forming at a right angle, toes pointed upward. Slowly raise your leg so that your heel is 10cm above the floor and hold for 5 seconds. Aim to repeat 20 times, although you can start by doing less than this. Do the same with your other leg. Do this exercise twice a day, once in the morning and once in the evening.



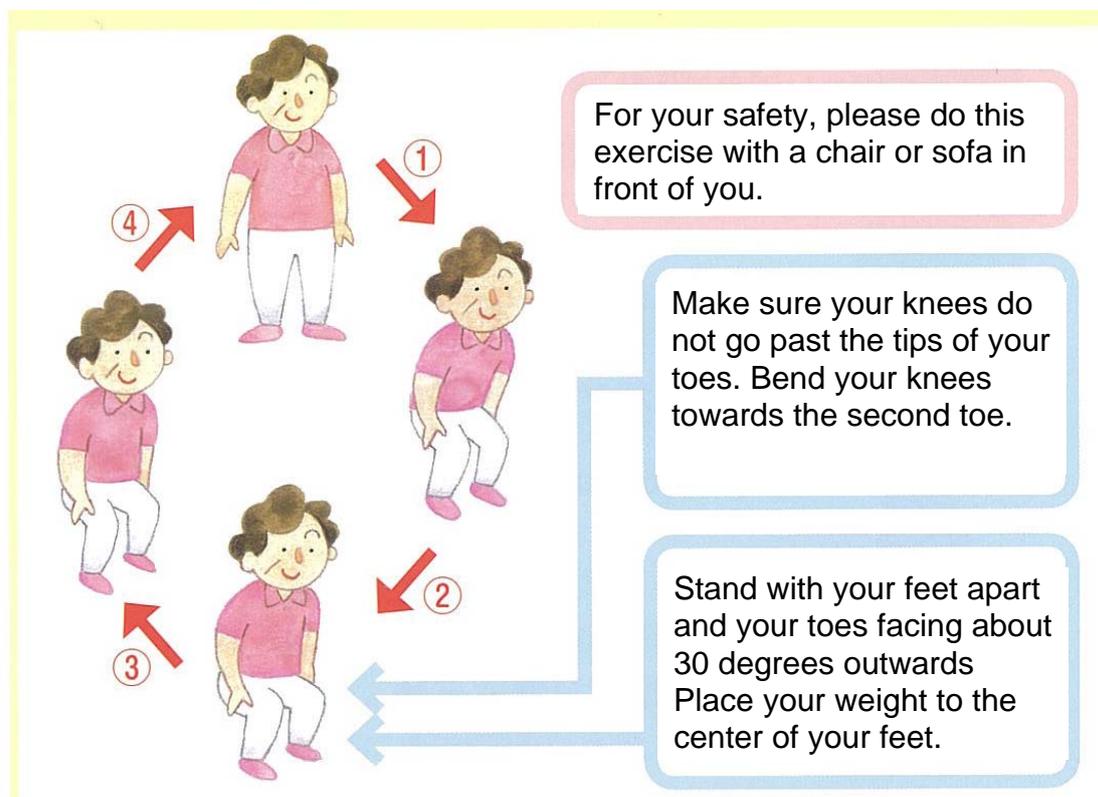
Source: Patient Handbook No. 23, JOA

4) Preventing locomotive syndrome

Recommended for those who feel they have decreased mobility, or for those who haven't been able to move around much.

- Squats: prevents loss of mobility

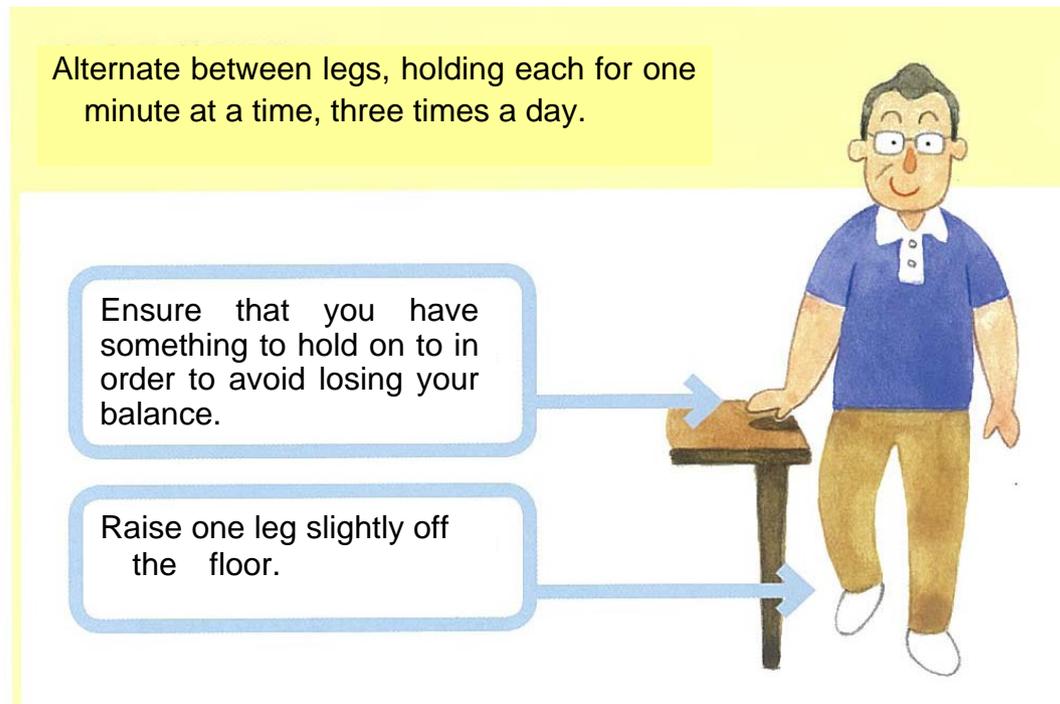
Stand with your feet apart and your toes facing about 30 degrees outwards, placing your weight at the center of your feet. Lean forward slightly, and slowly bend your knees while ensuring that your knees do not go past the tips of your toes. Try to bend your knees to about 90 degrees, then stand up slowly. This should take around 10-12 seconds (see Figure 5). Aim to repeat 5 times, although you can start by doing less than this. Repeat this exercise 3 times a day.



Source: Source: Locomotive Booklet 2010, JOA

- Standing on one leg: improves balance

Keeping your eyes open, raise one leg slightly off the floor and hold for one minute. Alternate with the opposite leg, holding each for one minute at a time. Aim to do this exercise 3 times a day. Please ensure that you have something to hold on to in order to avoid losing your balance.



Source: Locomotive Booklet 2010, JOA

5) Other

Taking short walks or doing **radio exercises** can also be effective.

Kozo Nakamura, Chairman
Japanese Orthopaedic Association

Committee on Musculoskeletal Rehabilitation, JOA
Keiji Fujino, Director
Masuo Senda, President