

You are never too old to exercise, and it is the cheapest way to good health, coaxes Cindy Ng, senior physiotherapist at Singapore General Hospital. She shows you how to pump up your fitness level, gradually.



Exercise in the Golden Years

Exercise is for everyone. Even the elderly and patients with chronic illnesses such as heart disease, high blood pressure, diabetes, and arthritis can exercise safely. In fact, many of these conditions can be improved with regular and safe exercise.

As one ages, the muscles undergo structural and functional changes. For most people, these muscle changes start from the age of 40 and may cause frailty and disability in later years.

Our body composition also changes as we age. The percentage of fat free mass or muscle mass decreases and this may indirectly cause metabolic diseases such as diabetes, hypertension and hyperlipidemia (increased bad cholesterol or triglycerides and low density lipoproteins LDL).

Exercises such as aerobics or resistance training can help to build muscle proteins and retard the degeneration of muscles. With stronger muscles, joints are also protected from injuries. Balance training also helps prevent the elderly from falls.

Brisk walking, cycling, low impact aerobics and line dancing are just some of the aerobic exercises that the elderly can participate in to build up their fitness level. For amateurs, walking continuously daily at their own pace for at least 15 minutes will be a good start, increasing five minutes every two weeks until they are able to walk briskly non-stop for 30 minutes covering a distance of 2.4km. For those working out in the

“As one ages, the muscles undergo structural and functional changes. For most people, these muscle changes start from the age of 40 and may cause frailty and disability in later years.”

gym, you can use the formula below to calculate one's maximum heart rate.

For a start, you can exercise at 60 to 70% of your predicted maximum heart rate. However, if you are taking any heart medication or have any symptoms of chest pains or joint pains or have past medical history of heart condition, you should consult a cardiologist and an exercise physiologist to tailor a suitable exercise programme in the gym.

Predicted maximum heart rate = $208 - (0.7 \times \text{age})$

Strengthening exercises can be easily done at home using elastic bands or free weights. It is important to train both the leg and shoulder muscles. For example, sit on a chair with an ankle weight strapped at the lower leg and then straighten the knee, one to three sets of eight to 15 repetitions on each leg.

An example of dynamic balance training is *taiqi*. Home exercise can be as simple as doing a quadriceps stretch without holding to a

support. Balance training has been shown to reduce falls in the elderly by improving proprioception, which trains the elderly to cope with different terrains.

Exercise, therefore, has many benefits for the elderly and can be done easily without much cost, even at home. In fact, some physical activity is better than none and there is no age limit!

The benefits of exercise for the elderly are legion.

Regular exercise:

- Strengthens the heart
- Improves circulation
- Reduces blood pressure
- Increases good cholesterol level
- Reduces bad cholesterol level
- Increases energy
- Reduces stress
- Improves sleep
- Strengthens bone
- Strengthens muscles and joints
- Reduces body fat
- Improves quality of life and functional capacity

References:

Carroll S & Dudfield M. (2004). What is the relationship between exercise and metabolic abnormalities? A review of the metabolic syndrome. *Sports Medicine*, 34(6), p371-418.

Hurley BF & Roth SM. (2000). Strength training in the elderly: Effects on risk factors for age-related diseases. *Sports Medicine*, 30(4), 249-268.



◀ Hip extension in standing

Attach a 1kg weight at the ankle. You may need to support yourself by holding onto the wall or a chair. Extend one leg backwards while keeping your body upright. Do one to three sets of eight to 15 repetitions.



◀ Hip abduction in standing

Attach a 1kg weight at the ankle. You may need to support yourself by holding onto the wall or a chair. Extend one leg sideways (abduction) keeping the knee straight and body upright. Do one to three sets of eight to 15 repetitions.

Wall push-up ▶

Place both hands on the wall about shoulder-width apart, standing about one arm's length away from the wall. Lean forward without moving the feet, bending the elbows. Do one to three sets of eight to 15 repetitions.



◀ Knee extension in sitting

Sit upright on a chair. Attach a 1kg weight at the ankle. Keep knees at right angle. Straighten the knee slowly. Hold for five to 10 seconds. Do one to three sets of eight to 15 repetitions.

Knee extension in high sitting ▶

Extend or straighten the knee using an elastic band for resistance.

