

AGEING

MUSCLES BONES AND JOINTS

Some age-related changes, such as wrinkles and grey hair, are inevitable. It was once thought that changes to muscles, bones and joints were inevitable too, but researchers now suspect that at least half of the changes to bones and muscles are because they are simply not used often enough. Lack of physical activity can set up a vicious cycle, because an older person who lives a sedentary lifestyle is prone to a range of diseases that could impose bed rest. It is thought that a bed-ridden older person can lose around five per cent of their muscle strength for each day of their time in bed. Someone who is feeling weak and unsteady on their feet may avoid exercise, and so the physical decline continues.

Musculoskeletal diseases common in older age

Nearly half of all Australians over the age of 75 years have some kind of disability. Some diseases of the musculoskeletal system are more common in older people, and include:

Osteoarthritis – the cartilage within the joint breaks down, causing pain and stiffness.

Osteomalacia – the bones become soft, due to problems with the metabolism of vitamin D.

Osteoporosis – the bones lose mass and become brittle. Fractures are more likely.

Rheumatoid arthritis – inflammation of the joint/s.

Muscle weakness and pain – any of the above conditions can affect the proper functioning of the associated muscles.

Age-related changes in muscle

Muscle loses size and strength as we get older. This is caused by a number of factors working in combination, including:

Individual muscle fibres shrink in size.

Muscle fibres reduce in number.

Lost muscle fibres are replaced by non-functioning fibrous tissue.

The energy 'powerhouse' within each muscle cell, called the mitochondria, reduces its output.

Enzyme changes within each muscle cell reduce the amount of available energy.

The nerve impulses that control muscle cells aren't transmitted as efficiently.

Age-related changes in bone

Bones start to lose mass during middle age. This process accelerates after the age of 50 years, particularly for women. About one in four women over the age of 80 years is at risk of fracturing her hip. Bones become less dense as we age for a number of reasons, including:

A sedentary lifestyle causes bone atrophy.

The hormonal changes of menopause trigger the loss of minerals in bone tissue.

In men, the gradual decline in sex hormones leads to the later development of osteoporosis.

Loss of muscle tissue is associated with reduced bone mass.

Age-related changes in joints

Most of the age-related changes to joints are caused by lack of exercise. Cartilage doesn't have a blood supply, and relies instead on synovial fluid moving in and out of the joint to nourish it and take away wastes. This requires joint movement and some joint stress. A sedentary lifestyle causes the cartilage to shrink and stiffen, reducing joint mobility.

Exercise is the key

Recent studies show that less than one in 10 Australians over the age of 50 years do enough exercise to improve or maintain cardiovascular fitness. Exercise can not only prevent many of the age-related changes to muscles, bones and joints, but can reverse these changes too. It's never too late to start living an active lifestyle. Research shows that:

Older people can boost their muscle size and strength, just like younger people, through exercise.

Exercise increases the size and number of 'fast twitch' muscle fibres, which improves muscle strength and the speed of muscular contractions.

Falls are less likely if muscle strength and reaction times are improved.

Older women with osteoporosis can increase their bone mass through regular, gentle exercise.

Weight bearing exercise, such as walking or weight training, is the best type of exercise to build bone mass.

Older people who exercise in water (which is non-weight bearing) still experience increases in bone and muscle mass compared to sedentary older people.

People with arthritis can improve their symptoms through regular exercise.

See your doctor

See your doctor before you start any new exercise program. If you haven't exercised for a long time, are elderly or have a chronic disease (such as arthritis), your doctor or physiotherapist can help tailor an appropriate and safe exercise program for you. If you suffer from osteoporosis, you may also be advised to take more calcium and, sometimes, medications are needed to treat osteoporosis.

Where to get help

Your doctor

Physiotherapist

Exercise physiologist

Go for your life Infoline: **1300 73 98 99**

Things to remember

At least half of the age-related changes to muscles, bones and joints are caused by disuse. Recent studies show that less than one in 10 Australians over the age of 50 years does enough exercise to improve or maintain cardiovascular fitness.

See your doctor before starting any new exercise program.

This information has been provided by the Better Health Channel. Material on the Better Health channel is regularly updated, for the latest version of this information please visit:

www.betterhealth.vic.gov.au

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