

This guidance relates to clients aged 50 and over. 50 is the current internationally recognised age at which there is significant reduction in the safety margins relating to exercise and when pre-exercise screening is essential to ensure exercise professionals meet their duty of care.

The best practice guidelines are for 50+ individuals who:

- Are asymptomatic (ie determined by the pre-exercise completion and interpretation of one of the two recommended 50+ pre-exercise Screening Tools namely: Revised PARQ (PAR-QR) or the AHA/SCSM Health/Fitness Facility Pre-Participation Screening Questionnaire).
- Have little or no recent and frequent experience of the particular exercise modality.

Relation of these guidelines for highly trained, recently and frequently, physically active asymptomatic individuals in a particular exercise modality is at the client's own risk. However, the instructor needs to be mindful that regardless of the older adult's fitness levels and outward appearance, the ageing process is underway.

40 is the approximate age at which the ageing process begins and 50 is the age at which the progressive losses in the musculoskeletal/CV/neuromuscular systems means that adaptation of exercise needs to be considered.

Highly trained individuals in the 50+ age range are a very small and elite group accounting for approximately 1% of the 50+ population.

Ageing is not a disease. It is a natural, universal, complex and highly individual process characterised by progressive losses and declines in the function of most physiological and psychological systems and impacts on fitness and safety during exercise. Eventually these losses lead to increased frailty and inability to respond to stress and disease.

Functional status at any age depends not only on our age but also on our rate of ageing, health, gender, lifestyle (including our physical activity levels), behaviour and socio-economic influences.

Potentially serious disease is increasingly prevalent with increasing age.

Activity levels remain low or decrease with increasing age.

The proportion of those reaching 150+ minutes of physical activity a week generally decreases with age. People aged 75-84 are half as likely to be active as 16-24 year olds.

The losses in each of the body systems (NB from the age of 40) result in a corresponding loss of 1-2% loss per year in physical capacity in:

- Muscular Strength (few, smaller and weaker fibres)
- Power (fewer fast twitch, smaller, weaker and slower)
- Bone density (thinner, more brittle bone and less ability to withstand fracture)
- Aerobic endurance (fewer capillaries, less elastic vessels and reduced intake, uptake of utilisation of oxygen)
- Balance and co-ordination (less sensory input and less postural stability, co-ordinated and less ability to prevent a trip turning into a fall)
- Flexibility, agility and later mobility and transfer skills (stiffer joints, reduced range and ease of movement and less ability to perform activities of daily living (ADLs) eg get up and down from floor, chairs safely etc).

In addition, there are:

Sensory declines including:

- Reduced motor learning (slower motor learning)
- Reduced visual and aural acuity (sight and hearing difficulties).

Cognitive declines including:

- Poorer short term memory

International Activity Guidelines

To be safe (ie to reduce/minimise the risk of adverse, age-related cardiovascular and articular system events to a minimum) the following guidelines should be followed for adults age 50+:

- Current International Guidance (ACSM/AHA) recommends that all people over the age of 50 should complete a recommended pre-exercise health screening questionnaire (PARQ+ or AHA/ACSM) to establish whether they are asymptomatic and ready to participate or whether they should seek further medical assessment prior to participating in an exercise programme. A REPs branded PARQ is available here: <https://www.exerciseregister.org/downloads>.
- Spend longer warming up and warm up more gradually than younger clients (ie to ensure a total of 15 minutes) and begin with moderate shoulder circles before increasing the shoulder ROM and progressing to arm circles etc). Clients should be advised to do this by taking responsibility for themselves eg by walking to the session or by coming early and warming up for the session.
- Build-in a longer, more gradually tapered cool down after the aerobic training. Clients should be advised to do this by taking responsibility for themselves eg by keeping going for a few minutes after the rest of the class have stopped and/or are changing to the next activity (ie to prevent/minimize the potential of adverse cardiovascular events).
- Keep the intensity of all training components to a challenging but health related level ie without pain or strain and within their individual 'personal best training zone' by using the talk-test and educating clients on the use of the RPE scale as a means of monitoring and regulating exercise intensity, as required. (NB it should be challenging).

In addition, where appropriate, instructors should encourage 50+ clients to:

- Ensure correct technique as it is even more important for injury prevention with this client group.
- Take more time during transitions eg floor to standing etc.
- Simplify exercise. When correct technique cannot be maintained and risk is increased eg when any weight-bearing steps involving laterally crossing one leg over the other (eg grapevine) are included in a group session, the instructor should use their professional judgement (including the client's current physical activity history) before giving suitable alternatives to the older person eg adapt the grapevine by bringing the feet together, with turns of more than 90 degrees, breaking it down into stages can prevent dizziness until fitness improves etc.
- Learn new exercises with the easiest position and/or the lightest resistance and progress slowly initially.
- Avoid extreme spinal flexion (ie full or half curl-ups from supine) and make abdominal training more challenging and safer for the vertebrae by keeping the neck long and, if lifting off the floor, supported by the hands.

UK Activity Guidelines

Most exercise and activity guidelines in the UK categorise adults into 2 groups; those up to the age of 64 years and those above that age. The current Chief Medical Officer’s (CMO) guidelines for adults **UP TO** age 64 are as follows;

- Adults should aim to be active daily. Over a week, activity should add up to at least 150 minutes (2½ hours) of moderate intensity activity in bouts of 10 minutes or more – one way to approach this is to do 30 minutes on at least 5 days a week.
- Alternatively, comparable benefits can be achieved through 75 minutes of vigorous intensity activity spread across the week or a combination of moderate and vigorous intensity activity.
- Adults should also undertake physical activity to improve muscle strength on at least two days a week.
- Adults should do flexibility exercises at least two or three days each week to improve range of motion.
- All adults should minimise the amount of time spent being sedentary (sitting) for extended periods.

Suggestions for types and examples of activity for this population group are as follows;

Types of activity	Examples
Moderate intensity	Brisk walking, bike riding, dancing, swimming, active travel
Vigorous intensity	Running, playing sport, taking part in aerobic exercise classes, using cardiovascular gym equipment
Muscle strengthening	Weight training, working with resistance bands, carrying heavy loads, heavy gardening, push ups, sit ups

The current Chief Medical Officer’s guidelines for older adults **OVER** age 64 are as follows;

- Older adults who participate in any amount of physical activity gain some health benefits, including maintenance of good physical and cognitive function. Some physical activity is better than none, and more physical activity provides greater health benefits.
- Older adults should aim to be active daily. Over a week, activity should add up to at least 150 minutes (2½ hours) of moderate intensity activity in bouts of 10 minutes or more – one way to approach this is to do 30 minutes on at least 5 days a week.
- For those who are already regularly active at moderate intensity, comparable benefits can be achieved through 75 minutes of vigorous intensity activity spread across the week or a combination of moderate and vigorous activity.
- Older adults should also undertake physical activity to improve muscle strength on at least two days a week.
- Older adults at risk of falls should incorporate physical activity to improve balance and co-ordination on at least two days a week.
- All older adults should minimise the amount of time spent being sedentary (sitting) for extended periods.

Chronological age has quite limited value when describing differences in health, physical function and disease status within the older adult population. For the sake of simplification therefore the CMO suggests the following general guidelines for 3 distinct groups;

- Those who are already active, either through daily walking, an active job and/or engaging in regular recreational or sporting activity. This group may benefit from increasing their general activity or introducing an additional activity to improve particular aspects of fitness or function, as well as sustaining their current activity levels.

- Those whose function is declining due to low levels of activity and too much sedentary time; who may have lost muscle strength; and/or are overweight but otherwise remain reasonably healthy. National data indicate that this makes up the larger proportion of older adults and that they have a great deal to gain in terms of reversing loss of function and preventing disease.
- Those who are frail or have very low physical or cognitive function, perhaps as a result of chronic disease such as arthritis, dementia or very old age itself. This group requires a therapeutic approach (eg falls prevention programmes) as many will be in residential care.

Suggestions for types and examples of activity for this population group are as follows;

- daily walking or cycling
- active leisure pursuits, such as gardening, dancing, bowls or walking
- engagement in work-related activity such as a delivery round
- group exercise classes
- community or gym-based activities, either alone or in groups
- swimming
- breaking up time spent sitting with standing or walking

Benefits of being active

- Reduces risk of a range of diseases, e.g. coronary heart disease, stroke, type 2 diabetes
- Helps maintain a healthy weight
- Helps maintain ability to perform everyday tasks with ease
- Improves self-esteem and mental wellbeing
- Reduces symptoms of depression and anxiety
- Higher levels of cardiovascular fitness
- Reduce joint pain in those with arthritis and osteoarthritis
- Decrease symptoms of breathlessness in those with COPD

A note of caution however. Current research suggests spending large amounts of time being sedentary may increase the risk of some health outcomes, even among people who are active at the recommended levels.

Minimising sedentary behaviour may include:

- Reducing time spent watching TV, using the computer or playing video games
- Taking regular breaks at work.
- Breaking up sedentary time such as swapping a long bus or car journey for walking part of the way.