



Information Guide

Your Health and Fitness



Building your own chair-based exercise session

What this guide is about

The American College of Sports Medicine, or ACSM for short, state older adults are one of the groups at highest risk for inactivity, as well as bearing “a large burden of the diseases amenable to prevention and treatment with exercise” (ACSM, 2014); yet, this group have the “least access and opportunity for health-promotion efforts related to physical activity”.

We have produced this information guide in the hope that it may help some older adults increase their health and well-being. Its purpose is to help you put together your own chair-based exercise training session. Use in conjunction with other free AllActive ® information guides which provide you with the actual exercises for the different session components described here.

A chair-based exercise session is divided into the warm-up, main component, and cool-down. We shall discuss each section in turn, and signpost the different AllActive ® guides that are relevant.

Timings for each component have been suggested. Please be aware, however, that the duration of the warm-up and cool-down components may need to be adjusted depending on:

- *Experience and fitness levels.* If you have previously been inactive and lived a sedentary lifestyle, or are generally unfit, it is a good idea to extend your warm-ups and cool-downs. This allows you to make a more gradual increase in intensity/difficulty in the warm-up, so you are adequately prepared for the harder effort needed later. A longer cool-down also enables you to decrease intensity/difficulty more gradually, returning you to pre-exercise levels at a slower pace. As your fitness and experience improves, you may be able to reduce the time taken for these two components.
- *Environment.* If you are performing your seated exercise workout in colder environments, then it is prudent to warm-up and cool-down for longer. Also make sure you are wearing adequate clothing to help prevent heat loss – layers of clothing are useful, as layers can be removed as you warm up. Likewise, in hotter conditions it may be the case that a slightly shorter warm-up and cool-down is needed.
- *Intensity of the main component.* If you plan to do a very intense and complex main component, it is wise to complete a more extensive warm-up to prepare you for this harder work and rehearse these more complex movement patterns. Similarly, a longer cool-down will facilitate a more gradual return to pre-exercise levels.

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Date of publication: December 2015 © Amacsports Ltd

Contents

The warm-up component	5
Purpose	5
Overview	6
Main component	7
Circulation booster 3 (CB3) and endurance exercises	7
Strength exercises	7
The cool-down component	8
Purpose	8
Overview	9

The warm-up component

Purpose

Whatever you want to achieve from your workout, you will need to start with some sort of warm-up to prepare yourself mentally and physically for the work to come. There are three main reasons why warming-up is essential:

1. *To protect against injury* by raising deep muscle temperature and making them more elastic, gently stretching the muscles, ligaments and connective tissue. In addition, secretion of synovial fluid within synovial joints increases, enhancing joint mobility.
2. *To improve the body's efficiency* by increasing heart rate, metabolic rate and respiratory rate. Raised temperature facilitates nerve transmission and muscle metabolism, and facilitates oxygen delivery to working muscles (blood vessels in and around muscles dilate increasing blood flow, and oxygen is released more readily from red blood cells).
3. *To practice and improve performance*, rehearsing movement patterns performed later in the workout facilitates the recruitment of specific motor units.

The warm-up should be gradual and result in increased core and muscle temperature without being too intense. It should set the mood and pace for the rest of the workout.

Overview

The warm-up should last approximately 10 minutes. It consists of the following sections which need to be followed in sequence:

1. **Circulation booster 1 (CB1):** the purpose of these exercises is to promote circulation and to warm up the muscles. A greater blood supply is taken to the working muscles, improving performance. These exercises also stimulate the nervous system, enabling more skilful performance.
2. **Joint mobility:** mobility exercises involve taking joints through their range of motion. Their purpose is to lubricate the joints worked, facilitating smooth, easy joint movements. They also help to relieve tension, prevent rounded shoulders, mobilise the spine and help with everyday activities.
3. **Circulation booster 2 (CB2):** similar in aim to circulation booster 1, the exercises become gradually larger and more energetic to further increase body temperature and blood flow.
4. **Warm-up stretches:** increased mobility will be generally achieved through the preceding warm-up exercises. Some areas of the body, however, need special attention. The purpose of these exercises is to stretch the specified muscles in preparation for the work to come, and taking your joints through their full range of movement. Hold each for 8-10 seconds.

Please refer to the free Information Guides on chair-based mobility, aerobic and flexibility exercises. They detail many sample exercises that could be included in the different sections of the warm-up component.

Main component

The main body of the session should last approximately 15-20 minutes. It consists of two sections:

Circulation booster 3 (CB3) and endurance exercises

Before starting the strengthening exercises, it is important to re-warm yourself after the warm-up stretches. Larger and more energetic movements are performed, going through a greater range of movement and raising muscle temperature and heart rate further; thereby improving cardio-respiratory fitness.

Strength exercises

The purpose of these exercises is to strengthen the muscles specified and to aid posture, ease breathing, strengthen the spine and increase bone density. Strength training enhances physical function and can significantly improve quality of life. Some strength exercises do not need the use of any equipment. Other strength exercises are better performed using equipment such as resistance bands, dumbbells, or weighted balls, for example:



Resistance bands come in various strengths (they are usually different colours depending on the brand); it is handy to have a range of band strengths so you can continue to improve as you get stronger. Bands offer variable resistance during an exercise, with greater resistance experienced when the band is stretched. Resistance bands allow you to work your muscles in a range of positions and is an effective way of developing muscular strength.



A **dumbbell** is a piece of equipment used in fitness training that can be used individually or in pairs to build strength. They come in a wide range of weights, so you can progress as you get stronger. Unlike resistance bands, dumbbells offer the same resistance throughout a movement.



Weighted balls are similar to dumbbells in many respects in that they are a fixed weight and offer the same resistance throughout a movement. They are, however, much more comfortable to hold and lend themselves better to many seated exercises.

Please refer to the free Information Guides on chair-based strength and aerobic exercises. They detail many sample exercises that could be included in this main component.

The cool-down component

Purpose

The end of the session is just as important as the workout itself and an active recovery period is necessary to give your body time to adapt and recover, enabling you to return to pre-exercise levels safely. This is achieved by performing gentle full body movement (circulation lowering) and some final stretching exercises.

The main purpose of the circulation lowering section is to return the cardiorespiratory system to its pre-exercise state. It helps remove waste products from the muscles, can prevent muscle cramps and stiffness, and potentially reduces muscle soreness in the days following the workout. It also plays a role in facilitating *venous return* and in lowering heart rate to pre-exercise levels. Venous return refers to the process by which blood returns to the heart via the veins. An inadequate venous return causes blood to 'pool' (accumulate) in the lower extremities, resulting in insufficient blood flow to the brain which can cause dizziness or even fainting. During the cool-down, you need to move at a slower pace, with simple and smaller arm and leg movements.

Exercise leads to a temporary reduction in blood pressure, referred to as *post-exercise hypotension*. The cool-down helps to prevent this hypotension which can occur if exercise is stopped suddenly. Hypotension occurs when blood pressure is much lower than normal, and can mean there is not enough blood (and therefore oxygen) flowing to the brain and other vital organs - this can lead to symptoms such as:

- Dizziness and light-headedness.
- Fainting.
- Unsteadiness, or feeling of a loss of balance.
- Nausea and general weakness.
- Blurred vision.
- Confusion.
- Palpitations (a rapid, irregular heart beat).

Flexibility refers to the intrinsic property of muscles and joints to go through a full or optimal range of motion (ROM). The final component of the cool-down aims to improve flexibility, stretching muscle groups worked during the workout. Muscles stretch best when they are warm and pliable. At this stage of the workout, muscle temperature should still be raised so these exercises should allow muscles to lengthen and relax. All muscles need to be stretched and relaxed after work so stretches should be included for all the muscles used in the main workout.

Overview

The cool-down should last approximately 10-15 minutes. It consists of the following sections:

1. **Circulation lowerer:** perform less energetically and gradually taper intensity to stillness. This section helps to remove waste products and gradually lower circulation to pre-exercise levels. Mild continuous activity keeping the legs moving helps promote venous return (blood returning to the heart) and prevents blood pooling in the legs with the associated risks of dizziness and fainting if exercise suddenly stops.
2. **Pelvic floor strengthener:** the purpose of this sub-component is to strengthen the pelvic floor muscles that help to maintain bladder control. With age, there is a reduction of the fast twitch muscle fibres in the pelvic floor.
3. **Cool-down stretches:** the purpose of these exercises is to achieve a good healthy functional range of movement for everyday life. Hold each stretch statically for 10-30 seconds.

Please refer to the free Information Guides on chair-based flexibility, aerobic and strengthening the pelvic floor exercises. They detail many sample exercises that could be included in this cool-down component.

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Please don't throw this guide away when you have finished with it; perhaps pass it on to a friend, health professional or to your local GP surgery.

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