Information Guide

Your Health and Fitness

Chair-based aerobic exercises

What this guide is about

Aerobic training refers to exercise that involves repeated contractions of large muscle groups against little or no resistance (other than that imposed by gravity). Think of walking, swimming and cycling, for example – all of these use rhythmic and continuous contractions of large muscle groups, so would be classed as aerobic exercises if performed at a submaximal intensity (i.e. when not putting in a maximal effort and working to exhaustion). Chair-based exercise sessions include aerobic training which use continuous movements of the arms and/or legs – a selection of these exercises are included in this guide.

The main purpose of aerobic exercise is to increase the maximum amount of aerobic work that you can perform, and to reduce the physical response and perceived effort of submaximal aerobic workloads – in other words, the same workload starts to feel easier after regular training as your aerobic fitness improves. If carried out frequently, aerobic training can contribute to improved cardiovascular fitness, reduced metabolic risk factors, and decreased risk for many chronic (long-term) diseases.

Aerobic exercises are performed in all components of a seated exercise session – they are used in the warm-up to increase body temperature and blood flow, in the main component to improve cardio-respiratory fitness, and in the cool-down to remove waste products and gradually lower circulation to pre-exercise levels.

Please see the following information guide for information on creating your own chair-based exercise workout to see where aerobic exercises fall within it:

- Building your own chair-based exercise session.

Contents

How much aerobic activity should I do?

The Department of Health (2011) recommend adults (19 to 64 years) and older adults (65+years) should aim to be active daily, carrying out at least 150 minutes of moderate-intensity or 75 minutes of vigorous-intensity physical activity over the course of a week. Bouts of this physical activity should be at least 10 minutes at the required intensity.

In the table below you will find ACSM's (2014) recommendations for aerobic exercise:

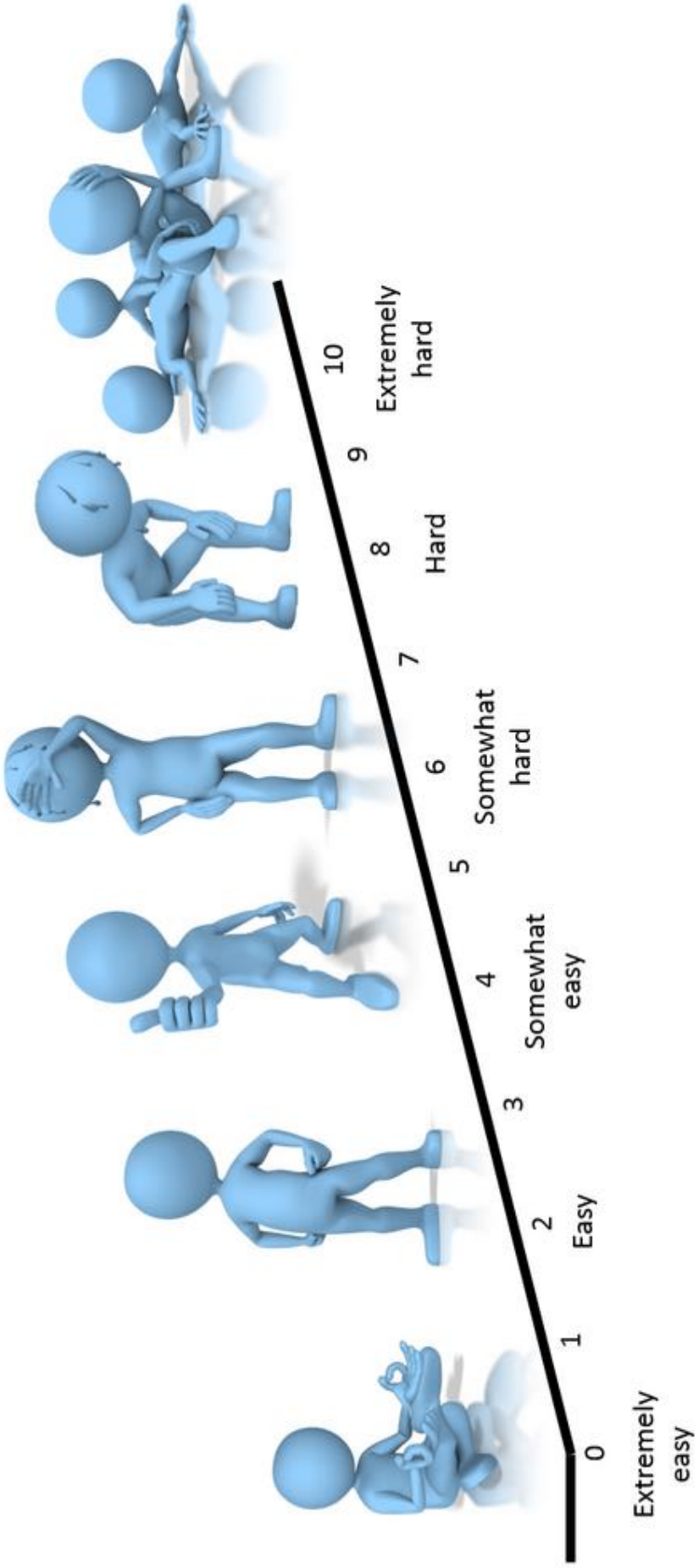
Frequency (how often)	5 or more days per week of moderate-intensity exercise, OR 3 or more days per week of vigorous-intensity exercise, OR a combination of moderate and vigorous exercise on 3-5 days per week.
Intensity (how hard)	Moderate and/or vigorous intensity is recommended for most adults, although light-to-moderate intensity exercise may be beneficial in deconditioned individuals. • Light-intensity = 30-40% HRR, OR a rating of 9-11 ('very light' to 'fairly light') on the Borg 6-20 scale (see page 6). • Moderate-intensity = 40-60% HRR, OR a rating of 12-14 ('somewhat hard') on the Borg 6-20 scale (see page 6). • Vigorous-intensity = 60-90% HRR, OR a rating of 15-17 ('hard' to 'very hard') on the Borg 6-20 scale (see page 6). For older adults: Intensity for older adults should be expressed relative to a person's physical fitness within the context of perceived exertion on a 10-point scale (see page 7), where 0 equates to exertion comparable to sitting, and 10 is equivalent to all-out maximal effort. • Moderate-intensity = a rating of 5 or 6 ('somewhat hard'), and should result in a noticeable increase in heart rate and breathing. • Vigorous-intensity = a rating of 7 or 8 ('hard'), and should result in a substantial increase in heart rate and breathing.
Time (how long)	30-60 minutes a day of purposeful moderate exercise to total at least 150 minutes a week, OR 20-60 minutes a day of vigorous exercise to total at least 75 minutes a week, OR a combination of moderate and vigorous exercise. Less than 20 minutes a day can be beneficial, especially in those who have previously been sedentary.
Type (what to do)	Regular, purposeful exercise that involves major muscle groups and is continuous and rhythmic in nature, requiring little skill to perform. Other exercise and sports requiring skill to perform or higher levels of fitness are recommended only for those possessing adequate skill and fitness to perform the activity.

These guidelines all seem terribly complicated! What you really need to remember is that you need to perform moderate-intensity activities for at least 150 minutes over the course of a week (in bouts of at least 10 minutes). A moderate-intensity physical activity requires a moderate amount of effort, and will result in you breathing faster - but you should still be able to hold a conversation; you will also experience a noticeable increase in heart rate, feel warmer and maybe even sweat on hot or humid days.

Alternatively, you could perform 75 minutes or more of vigorous-intensity activity over the week. This intensity requires a large amount of effort, and will result in you having a substantial increase in heart rate, rapid breathing and a shortness of breath, so you cannot hold a conversation comfortably.

BORG SCALE

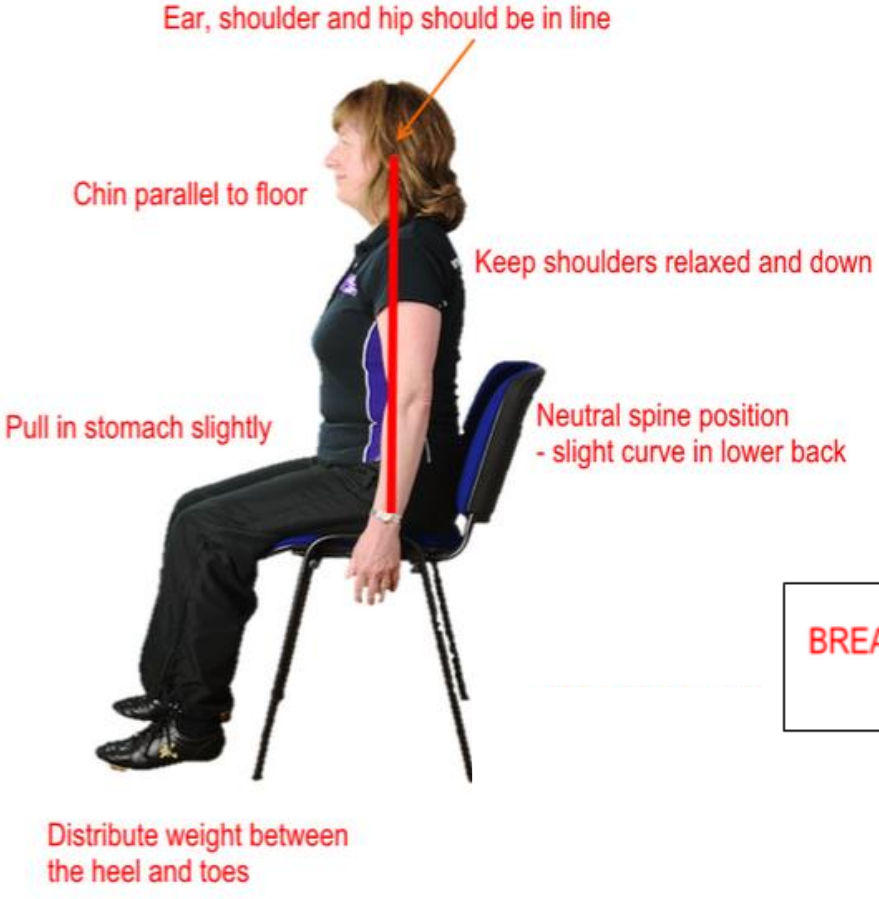
RPE	Description
6	
7	Very, very light
8	
9	Very light
10	
11	Fairly light
12	
13	Somewhat hard
14	
15	Hard
16	
17	Very hard
18	
19	Very, very hard
20	


0
Extremely easy
1
2
Easy
3
4
Somewhat easy
5
6
Somewhat hard
7
8
Hard
9
10
Extremely hard

Seated Posture

There are a lot of key points to remember here. Do not worry about remembering them all at once – focus on a couple each time you exercise and they will soon become a habit.

Feedback from another person or from looking at yourself in a mirror is a good way of checking and improving your seated posture.



BREATHE COMFORTABLY AT ALL TIMES

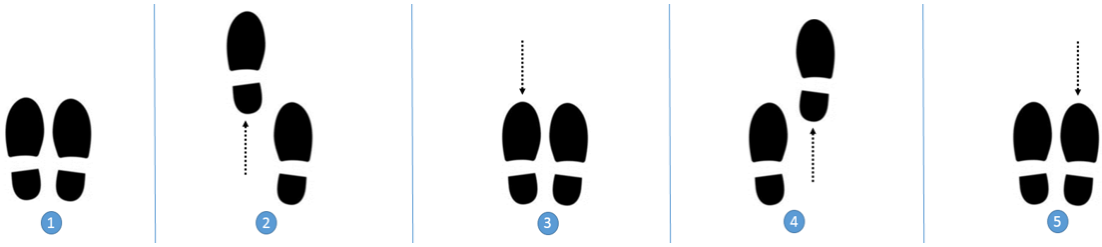
1. Toe taps - front

Purpose:

- This will increase heart and breathing rates, benefiting the cardio-respiratory system. It will also help to mobilise the ankle joints.

Instructions:

- Step with your left foot to the front, tapping the ball of the foot onto the floor.
- Return to the starting position and repeat with the right foot.
- Continue alternating left and right toe taps to the front.



2. Toe taps - side

Purpose:

- This will increase heart and breathing rates, benefiting the cardio-respiratory system. It will also help to mobilise the ankle joints.

Instructions:

- Step with your left foot out to the side, tapping the ball of the foot onto the floor.
- Return to the starting position and repeat on the right side.
- Continue alternating left and right toe taps to the side.

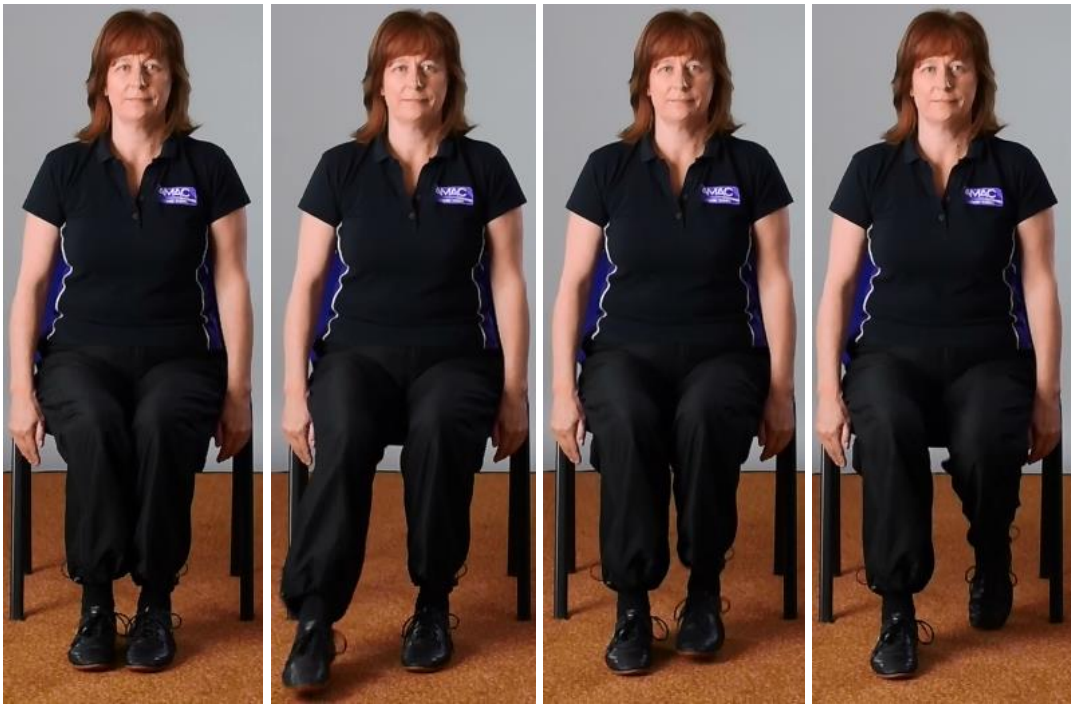
3. Charleston step

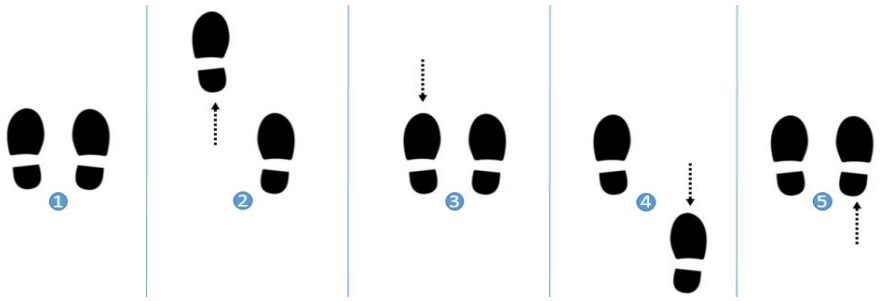
Purpose:

- This will increase heart and breathing rates, benefiting the cardio-respiratory system. It will also help to mobilise the ankle joints.

Instructions:

- Step forwards with the left foot, tap the ball of the foot onto the floor, then return to the starting position.
- Step backwards with the right foot, tap the ball of the foot, then return.
- Repeat.
- Switch to right foot forwards, left leg back.





4. Heel-to-toe

Purpose:

- This will increase heart and breathing rates, benefiting the cardio-respiratory system. It will also help to mobilise the ankle joints.

Instructions:

- Hold onto the seat of the chair, and keep the right foot flat on the floor throughout.
- Place the heel of the left foot onto the floor, raising your toes up as you do so.
- Then lift the left heel off the floor and press the ball of that foot into the floor.
- Repeat this sequence, and then perform using the right foot.

5. Heel digs

Purpose:

- This will increase heart and breathing rates, benefiting the cardio-respiratory system. It will also help to mobilise the knee joints.

Instructions:

- Step with your left foot to the front, pushing the heel of the foot onto the floor.
- Return to the starting position, and repeat on the right side.
- Continue alternating left and right heel digs.

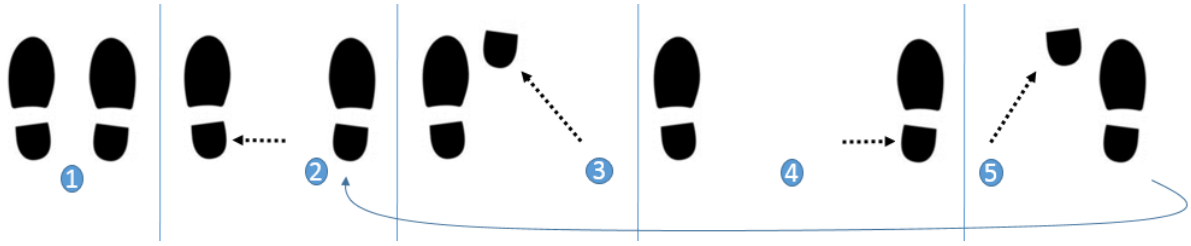
6. Step heel

Purpose:

- This will increase heart and breathing rates, benefiting the cardio-respiratory system. It will also help to mobilise the knee joints.

Instructions:

- Step out slightly to the left with your left foot.
- Bring the right foot over, straighten the right leg and plant the right heel lightly on the floor.
- Repeat on the right side.
- Continue alternating left and right step heels.



7. Kicks

Purpose:

- This will increase heart and breathing rates, benefiting the cardio-respiratory system. It will also help to mobilise the knee joints.

Instructions:

- Raise the left knee upwards as you straighten the leg (as if performing a kick).
- Lower and repeat on the right side.
- Continue alternating kicks with the left and right legs.

8. Leg marching

Purpose:

- This will increase heart and breathing rates, benefiting the cardio-respiratory system. It will also mobilise the hip joints.

Instructions:

- Perform a marching action by lifting the left knee (thereby raising the left foot off the floor), placing it down, and then repeating with the right foot.

9. Knee taps

Purpose:

- This will increase heart and breathing rates, benefiting the cardio-respiratory system. It will also help to mobilise the hip joints.

Instructions:

- Lift your left foot off the floor and touch your left knee with your right hand.
- Lower and repeat, either continuing on the same side or alternating right and left sides.

10. Arm swings

Purpose:

- This will increase heart and breathing rates, benefiting the cardio-respiratory system. It will also help to mobilise the shoulder joints.

Instructions:

- Keeping elbows bent, swing your arms back and forth.
- You can do both arms travelling in the same direction, or in alternate directions.

11. Marching

Purpose:

- This will increase heart and breathing rates, benefitting the cardio-respiratory system. It will also help to mobilise the hip and shoulder joints.

Instructions:

- Perform a marching action by raising the left foot, placing it down, and then repeating with the right foot.
- As a knee is raised, swing the opposite arm forwards.

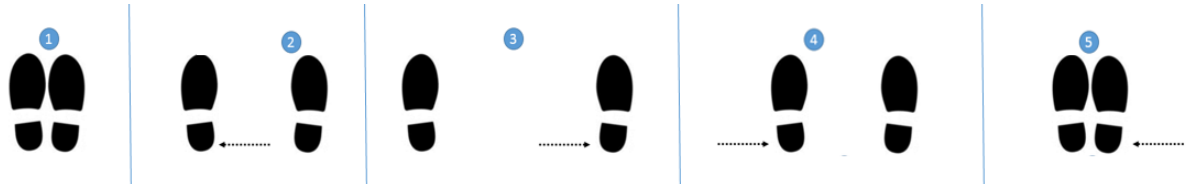
12. Marching out and in

Purpose:

- This will increase heart and breathing rates, benefiting the cardio-respiratory system. It will also help to mobilise the hip joints.

Instructions:

- Perform a marching action by raising the left foot, placing it down, and then repeating with the right foot.
- As you do this, march your feet out to the sides one at a time, and then back in again one at a time.
- Repeat the sequence ('out, out, in, in').



13. Clap hands

Purpose:

- This will increase heart and breathing rates, benefiting the cardio-respiratory system. It will also help to mobilise the shoulder joints.

Instructions:

- Clap your hands together at waist or chest height.
- There are two types of clap: (1) slower claps where you take the hands out wide before clapping, and (2) faster claps with a smaller range of movement.

14. Clap hands with thigh tap

Purpose:

- This will increase heart and breathing rates, benefiting the cardio-respiratory system. It will also help to mobilise the shoulder joints.

Instructions:

- Clap your hands together at waist or chest height.
- Tap your thighs in between each clap.

15. Clap swings

Purpose:

- This will increase heart and breathing rates, benefiting the cardio-respiratory system. It will also help to mobilise the spine and shoulder joints.

Instructions:

- Clap to the left side of your body at waist height by twisting the upper body.
- Repeat to the right side.

16. Clap swings with thigh tap

Purpose:

- This will increase heart and breathing rates, benefiting the cardio-respiratory system. It will also help to mobilise the spine and shoulder joints.

Instructions:

- Clap to the left side of your body at waist height by twisting the upper body.
- Tap your thighs and repeat to the right side.
- Tap your thighs in between each clap swing.

17. Half jacks

Purpose:

- This will increase heart and breathing rates, benefiting the cardio-respiratory system. It will also help to mobilise the hip and shoulder joints.

Instructions:

- Start with feet and knees together and arms hanging by your sides (or crossed in front of the stomach).
- Jump the left foot out to the side, whilst raising the left arm up and out to the side.
- Return to the starting position.
- Repeat – either continuing on the left side, or alternating left and right sides.

18. Canoeing

Purpose:

- This will increase heart and breathing rates, benefiting the cardio-respiratory system. It will also help to mobilise the spine and shoulder joints.

Instructions:

- Imagine you are holding a paddle - hold your left hand a few inches above your right, in front of your left shoulder; now pretend you are paddling by pulling your hands down towards your right hip.
- Now repeat on the other side by holding the right hand above the left in front of the right shoulder, and this time pulling down to the left hip. Continue, alternating left and right sides.

19. Sit, stand and clap

Purpose:

- This will increase heart and breathing rates, benefiting the cardio-respiratory system. It will also help to mobilise the hip and knee joints, and strengthen muscles of the thigh and bottom.

Instructions:

- Place your hands on your thighs, fingers pointing in, and lean forwards
- From here, drive up through your heels to stand up and then clap.
- Sit back down under control.

20. March and sprint

Purpose:

- This will increase heart and breathing rates, benefiting the cardio-respiratory system. It will also help to mobilise your hip joints.

Instructions:

- March normally
- After a few repetitions, perform the movement as quickly as possible for a few seconds as if sprinting.
- Continue, alternating marching with sprinting.
- Please note that during the sprint most people have difficulty coordinating hand and leg movements - this does not matter.

Links

American College of Sports Medicine, and Pescatello, L. S. (2014). *ACSM's guidelines for exercise testing and prescription*. Philadelphia: Wolters Kluwer/Lippincott Williams & Wilkins Health.

American College of Sports Medicine, and Swain, D. P. (2014). *ACSM's resource manual for guidelines for exercise testing and prescription*. Philadelphia: Wolters Kluwer Health/Lippincott Williams & Wilkins.

Department of Health (2011) *Start Active, Stay Active*.

https://www.gov.uk/government/publications/start-active-stay-active-a-report-on-physical-activity-from-the-four-home-countries-chief-medical-officers

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