



# Resistance Training

Information for Cardiac  
Rehabilitation Patients



Resistance Training is the term used to describe a type of exercise where you lift an external load or use your bodyweight as resistance to improve the strength, size, or endurance of your skeletal muscles. Many people enjoy resistance training, which includes exercise using your own bodyweight, free-weights, weight machines, medicine balls or resistance bands. It should be performed in addition to the recommended 150 minutes of weekly aerobic activity.

## **WHAT ARE THE BENEFITS OF RESISTANCE TRAINING?**

- ❖ Improves and maintains muscle tone, strength and endurance
  - stronger muscles reduce strain on the heart during physical activity and exercise
- ❖ Makes everyday activities easier to perform
- ❖ Helps to maintain a healthy body weight and shape
- ❖ Helps to reduce the risk of falls, especially in older people
- ❖ Improves well-being and quality of life
- ❖ Improves / maintains bone density
- ❖ Helps to manage long-term health conditions such as high blood pressure and diabetes.

## WHEN IS IT SAFE TO START?

Your cardiac rehab physiotherapist will discuss your resistance program once appropriate. Your start date will vary, depending on your own circumstances and specific cardiac condition. For example:

- ❖ Angina or an Arrhythmia – You should be able to start as soon as your condition has stabilised.
- ❖ Heart Attack or Coronary Angioplasty/Stents – You should be able to start in the first few weeks dependant on your diagnosis and treatment.
- ❖ Pacemaker, cardiac resynchronisation therapy (CRT-P or CRT-D) or Implantable Cardioverter Device (ICD) – In the first six weeks caution is needed with certain upper body movements used in resistance training and also in the longer term to minimise damage to the device wires.
- ❖ Open-Heart Surgery – During the first 12 weeks you should be cautious before upper body strength training in order to minimise problems with breastbone healing.

### HOW FIT DO I NEED TO BE?

There is no minimum fitness level required. Strength training may be the most appropriate initial type of exercise for people with low fitness or limited mobility allowing them to progress to other types of exercise once they have improved muscle strength.

## HOW OFTEN SHOULD I DO STRENGTH TRAINING?

Resistance training should be performed 2 to 3 times per week. You should wait 48 hours between each resistance training session.

## HOW MUCH SHOULD I DO?

1 set of 8-10 repetitions (reps) for each muscle group. If you cannot perform at least 8 reps one after the other then the weight is too heavy

### HOW DO I PROGRESS?

- ❖ Increase the number of sets up to 3 with a minute rest in between
- ❖ Increase the weight

## WHEN SHOULD I PERFORM STRENGTH TRAINING?

Resistance training can be done:

1. as a 'stand-alone' session on its own, or
2. if you want to do your resistance training along with your aerobic 'pulse-raising' exercise then make sure you perform a partial cool down (5 to 10 minutes) after your aerobic exercise before starting your resistance exercises.

### SHOULD I WARM UP/COOL DOWN AT HOME?

Yes, if you are doing strength training as a 'stand-alone' you should warm up by performing the exercise 10 times without a weight. Cooling down should be done by stretching the muscles used.

## HOW SHOULD I FEEL?

The fatigue in your muscles should increase gradually as you increase the number of reps performed. By your last repetition the muscle group you are exercising should feel tired to the point you are unable to continue. It is normal to feel some muscle soreness up to 48 hours after performing these exercises. If muscle soreness is excessive, you have probably overdone it and should reduce either the weight or the number of sets performed at your next session.

## WHAT ABOUT TECHNIQUE?

Strength training should be performed

- ❖ With a good posture
- ❖ In a rhythmical manner
- ❖ At a controlled slow to moderate speed
- ❖ Through a comfortable range of movement
- ❖ With alternation between lower and upper body work to allow muscles to rest between exercises if working both areas
- ❖ With avoidance of gripping the weights excessively and holding your breath because both these actions may cause a rapid increase in your blood pressure.
- ❖ By counting out loud with each rep to help you breathe naturally. Do not hold your breath, which can affect your blood pressure. Inhale and exhale through each phase of the exercise

## **OTHER CONSIDERATIONS:**

Only exercise when you are feeling generally well.

Keep hydrated when you are exercising.

Stop exercising if you experience chest pain, palpitations or light-headedness. If symptoms do not go away promptly with rest and/or prescribed GTN spray use, seek medical advice as soon as possible.

Dress appropriately; loose and light comfortable clothing

Session	Squat	Chest press	Lunge back	Overhead shoulder press	Hip abductions	Bent over row	Heel raises	Bicep Curls
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## RESISTANCE STATIONS



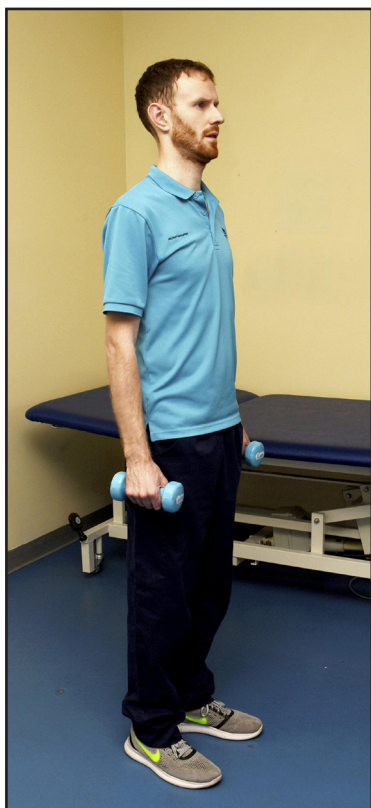
### Squat

- ❖ Stand with your feet shoulder width apart.  
Hold your weight(s) in both hands.
- ❖ Slowly bend your knees and push your bottom behind at the same time, keeping your back straight and your head up.
- ❖ Lower slowly towards the floor as far as feels comfortable, then return slowly to the starting position



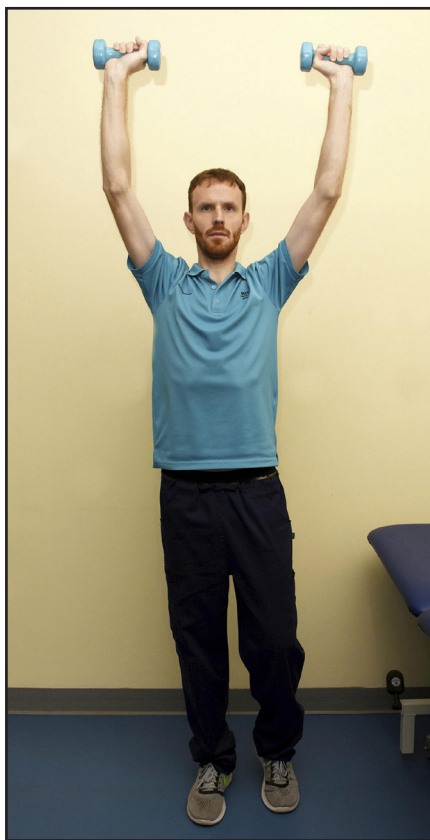
## **Chest press**

- ❖ Keeping your toes on the floor, raise alternate heels. Hold your weight(s) in your hands.
- ❖ Place the weight(s) in front of your chest with your elbows in line with your shoulders.
- ❖ Slowly push your hands forwards until your elbows are straight and then return slowly to the start position.



## **Lunge back**

- ❖ Standing with both feet together holding your weight(s) in your hands. Alternatively, hold onto a worktop or table for balance should you need to.
- ❖ Step your right foot backwards, creating a right angle at your knee, with your knee pointing towards the floor. Keep your trunk and head upright.
- ❖ Return slowly to the start position, by pushing through your right forefoot.



## Overhead shoulder press

- ❖ Keeping your toes on the floor, raise alternate heels.
- ❖ Place your hands just above each shoulder. Hold your weight(s) in both hands.
- ❖ Slowly raise each hand upwards towards the ceiling, until both elbows are straight and then slowly return to the start position.



## **Hip abductions**

- ❖ Standing with both feet together. Hold gently onto a worktop or table if required.
- ❖ Raise your right leg slowly to the side, while keeping your trunk upright and straight. Slowly lower back down to the starting position.



### **Bent over row**

- ❖ Standing with your right leg straight, with left leg bent. Lean your trunk forwards, keeping your back straight and head up.
- ❖ Let the weights rest towards the floor.
- ❖ Raise your hands slowly upwards to your chest, while pushing your elbows outwards to the side, in line with your shoulders. Try to “pinch” your shoulder blades together.
- ❖ Return slowly to the starting position.



## Heel raises

- ❖ Standing with both feet together, holding onto a weight. Alternatively, hold onto a worktop or table for balance should you need to.
- ❖ Lift your heels together off the floor, keeping your toes on the floor.
- ❖ Return slowly to the starting position.



## **Bicep curls**

- ❖ Bend your elbow while holding a dumbbell.
- ❖ At the top of the movement, slowly lower the dumbbell in a controlled way.
- ❖ Keep your elbow tucked in to your side

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