



Moving Medicine

**Oxford Centre for Enablement
Prosthetic Service**

**Physical Activity Information for
Amputees**

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Introduction

Undergoing a lower limb amputation is life changing, and everyday tasks that were once taken for granted can become very challenging. Regardless of whether or not you use a prosthesis, living a physically active lifestyle helps you to maintain your independence, makes everyday tasks more achievable and reduces the risk of developing further medical problems.

This booklet details a number of exercises that are being undertaken regularly by amputees at the OCE and in their homes. The exercises have been designed specifically for amputees and include a warm up and cool down along with cardiovascular fitness, strengthening, flexibility and balance. In addition, there are instructions and advice on how to set up a home exercise circuit.

Setting goals can be a helpful way of monitoring your progression and ensuring that the exercises are having the desired effect. These goals are likely to be specific to you, varying from person to person, and we would encourage you to discuss them with your therapist. If you are interested in exploring this further we can provide you with a goal-setting booklet that helps to guide you through the process.

How to Use This Booklet

Each exercise sheet has been designed in the same way, and you will see a number of symbols throughout the booklet. These are explained below:



Step by step instructions explaining how to perform the exercise.



Tips on how the exercise can be adapted and completed at home.



The reason the exercise is important for you.

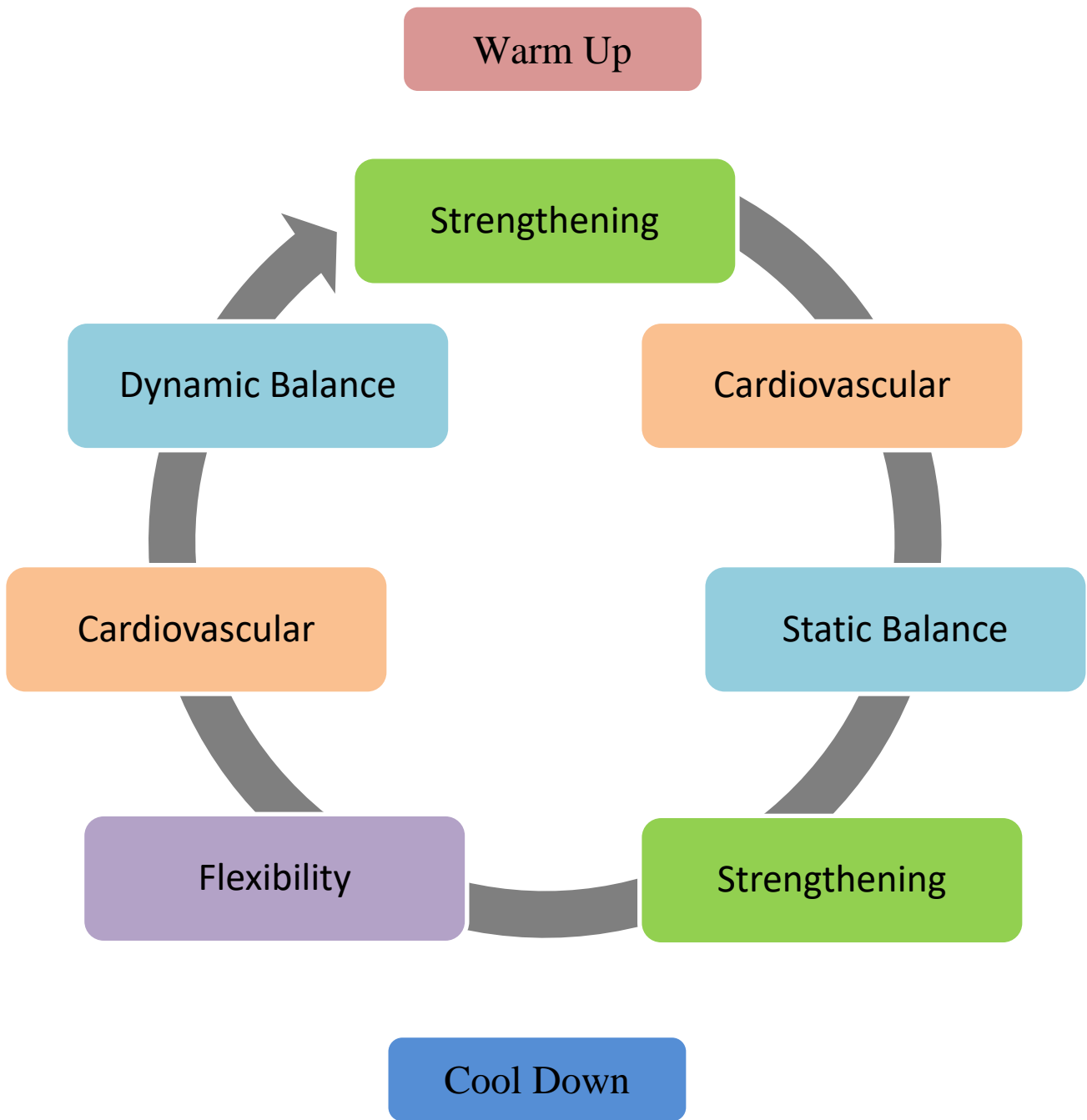
Setting Up a Home Exercise Circuit

Each circuit should last at least 20 minutes and include:

- A warm-up at the beginning
- 7 exercise stations, each lasting 2-3 minutes
- A 1 minute break between stations
- A range of fitness, balance and strengthening exercises
- The option of completing the circuit once or twice
- A cool down at the end

A template for setting up a circuit can be found on the next page. Different exercises from each category can be used. For example, the strengthening exercises you choose for your first circuit may be chest press and lateral raise, whereas the next time you do it you may choose bicep curl and bridging.

Setting Up a Home Exercise Circuit - Example



Types of Exercise

Warm Up and Cool Down

The warm up and cool down have been designed to include number of stretches for different parts of the body, and we advise doing these before undertaking any dedicated physical activity.

Cardiovascular Fitness Exercises

Better cardiovascular fitness means that the heart and lungs are able to pump oxygen to the working muscles and vital organs around the body more efficiently. With better fitness you will find you are able to do more everyday tasks without becoming as tired or breathless. Regular cardiovascular exercise is also effective for preventing and treating many medical conditions including high blood pressure, heart disease, stroke and diabetes. Examples of cardiovascular fitness exercises included in this booklet are walking or wheelchair laps and using the Motomed/hand bike. To stay healthy, adults should do 30 mins of moderate intensity physical activity on 5 days of the week.

Strengthening Exercises

Maintaining and improving the strength in the muscles around your body helps make everyday tasks, such as getting up from a chair or carrying shopping bags, easier to do.

Within this booklet we have given examples of a number of exercises that use a resistance band to help strengthen the muscles of your arms, chest and back. Your therapist will be able to give you a resistance band, enabling you to do the exercises at home. Exercises to strengthen your lower limbs

include bridging, which is an excellent exercise to help improve the strength and control of your buttocks, thighs and tummy muscles. These muscles are very important in ensuring that you have a strong base of support when moving, making it easier to do everyday tasks and reducing your risk of falls. We advise that you do strengthening exercises on at least two days of the week that work all the major muscles (legs, hips, back, abdomen, chest, shoulders and arms).

Flexibility Exercises

Tight muscles around your joints can cause pain, which may make using a wheelchair or walking with your prosthesis even more difficult. Maintaining flexibility around your joints will aid movement, reduce the stress on your joints and improve your stability.

Balance Exercises

Having a lower limb amputation will significantly affect your balance. Regaining your balance is vitally important in order to reduce your risk of falling and sustaining an injury. Simple everyday tasks, such as attempting to reach or grab something when sitting or standing, are common reasons for people to lose their balance and fall over. We recommend that you do balance exercises for 30 mins for two days of the week.

Warm Up and Cool Down

Each of these exercises should be held or continued for at least 15 seconds, Exercises can be done in sitting or standing:



1. Neck Movements

- Bring your chin to your chest, tilt your head back and look upwards
- Turn your head to one side and look over your shoulder, then repeat on the other side
- Try to touch one ear to the shoulder on that side, then repeat on the other side

2. Shoulder circles

- Rotate your shoulders forwards, then repeat backwards

3. Arm circles

- Hold your arms straight out to the side and rotate them forwards to make small circles, then repeat backwards

4. Wrist circles

- Make circular motions with your hands clockwise, then repeat anti-clockwise

5. Trunk Rotations

- Twist your body to one side so that you're looking over your shoulder, then repeat on the other side

6. Leg circles

- Rotate one leg clockwise, then repeat anti-clockwise
- Repeat the above for the other leg

7. Ankle circles

- Rotate your foot and ankle clockwise, then repeat anti-clockwise

Warm Up and Cool Down



All of the warm up exercises can be easily performed at home.

You should ensure that you complete an adequate warm up before performing any home exercises.

The warm up is designed to ensure that your body is primed and ready to begin the exercise programme.

An adequate warm up gently increases your heart rate and circulation, increasing blood flow to your muscles and helping to loosen your joints and prevent injury.



The cool down is designed to help your heart rate and breathing to return towards resting levels gradually, helps prepare your muscles for the next exercise session, whether it's the next day or in a few days time.

Cardiovascular Fitness – MotoMed/Hand Pedal



Cardiovascular Fitness – MotoMed/Hand Pedal



1. Your therapist will assist you with setting up the MotoMed hand bike function to the most appropriate settings
2. Work at an intensity where your breathing rate is increased to the point where you can hold a conversation, but are unable to sing
3. Continue the exercise for 2 minutes
4. Stop and tell your therapist if you develop any chest pain, difficulty breathing or begin to feel faint/light-headed



Whilst the MotoMed is an expensive, specialised piece of equipment, hand bikes that can be placed on a table can be readily purchased online for as little as £20. This is an excellent way to help maintain your fitness at home. Ask your therapist for further details.



Maintaining and improving your cardiovascular fitness helps the heart and lungs to pump oxygen around the body more efficiently.

With better fitness you will find you are able to do more everyday tasks without becoming as tired or breathless.

Regular exercise is also effective for preventing and treating many conditions including high blood pressure, heart disease, stroke and diabetes.

Cardiovascular Fitness– Walking/Wheelchair Laps

Start



Finish



Cardiovascular Fitness – Walking/Wheelchair Laps

1. Walk or wheel your wheelchair around two cones that are 6 metres apart
2. Continue the exercise for 2 minutes
3. Work at an intensity where you feel it is somewhat hard, but not too difficult
 - An alternative is to work to an intensity where you could still hold a conversation, but you would be unable to sing a song
4. This exercise can be made more difficult by completing a figure of 8 loop, rather than a circle, or by moving backwards



Practising walking or using your wheelchair can be easily done at home or in your garden, so long as you have sufficient space. You could use simple everyday items, such as shoes, instead of cones. Speak to your physio before attempting walking exercises, rather than using your wheelchair, at home to ensure that they feel it is safe for you to do so.

Maintaining and improving your cardiovascular fitness helps the heart and lungs to pump oxygen around the body more efficiently.



With better fitness you will find you are able to do more everyday tasks without becoming as tired or breathless.

Regular exercise is also effective for preventing and treating many conditions including high blood pressure, heart disease, stroke and diabetes.

Upper Limb Strength – Chest Press

Start



Finish



Upper Limb Strength – Chest Press

Attach the resistance band to a fixed point behind you



1. You can perform this exercise either sitting or standing
2. Put the resistance band behind your back, holding one end in each hand
3. Stretch both arms out straight in front of you
4. Return to your arms back to their starting position
5. Complete 10 repetitions before having a 30 second break
6. Then repeat the above
7. If this is too easy, ask your therapist for a band with more resistance, or increase the number of repetitions to 15



These exercises can be easily performed at home using the instructions above.

Resistance bands are cheap to buy, but you may be able to ask your therapist if they have any.



Resistance band exercises for your upper body help to strengthen the muscles of your arms, chest and back.

Maintaining and improving the strength in these muscles helps make everyday tasks, such as getting up from a chair or carrying shopping bags, easier to do.

Upper Limb Strength – Bicep Curl

Start



Finish



Upper Limb Strength – Bicep Curl



1. Either stand on the middle of the resistance band *or* feed it under your chair
2. Hold one end of the resistance band in each hand
3. Lift the band up in front of you, towards your chest, bending your elbows
4. Bend elbows & return your arms back to their starting position
5. Complete 10 repetitions before having a 30 second break
6. Then repeat the above
7. If this is too easy, ask your therapist for a band with more resistance, or increase the number of repetitions to 15



These exercises can be easily performed at home using the instructions above & fix the theraband to a point behind you.

Resistance bands are cheap to buy, but you may be able to ask your therapist if they have any.

Resistance band exercises for your upper body help to strengthen the muscles of your arms, chest and back.



Maintaining and improving the strength in these muscles helps make everyday tasks, such as getting up from a chair or carrying shopping bags, easier to do.

Upper Limb Strength – Tricep Press

Start



Finish



Upper Limb Strength – Tricep Press



1. Pass the resistance band underneath a chair or your wheelchair
2. Hold one end of the resistance band in each hand
3. Lift the band up behind your body and bend your elbows so that your hands are touching your shoulders
4. Lift your arms above your head so that the elbows straighten fully
5. Return your arms back to their starting position on your shoulders
6. Complete 10 repetitions before having a 30 second break
7. Then repeat the above
8. If this is too easy, ask your therapist for a band with more resistance, or increase the number of repetitions to 15



These exercises can be easily performed at home using the instructions above.

Resistance bands are cheap to buy, but you may be able to ask your therapist if they have any spares.

Resistance band exercises for your upper body help to strengthen the muscles of your arms, chest and back.



Maintaining and improving the strength in these muscles helps make everyday tasks, such as getting up from a chair or carrying shopping bags, easier to do.

Upper Limb Strength – Lateral Raise

Start



Finish



Upper Limb Strength – Lateral Raise



1. Stand up and place both feet on the middle of the resistance band, or if you are using a wheelchair run the band beneath your wheelchair
2. Hold one end of the resistance band in each hand and start with your arms by your sides
3. Raise both arms up at the side as far as is comfortable with your knuckles facing upwards
4. Return your arms to the starting position
5. Complete 10 repetitions before having a 30 second break
6. Then repeat the above
7. If this is too easy, ask your therapist for a band with more resistance, or increase the



These exercises can be easily performed at home using the instructions above.

Resistance bands are cheap to buy, but you may be able to ask your therapist if they have any spares.



Resistance band exercises for your upper body help to strengthen the muscles of your arms, chest and back.

Maintaining and improving the strength in these muscles helps make everyday tasks, such as getting up from a chair or carrying shopping bags, easier to do.

Upper Limb Strength – Seated/Standing Row

Start



Finish



Upper Limb Strength – Seated/Standing Row



1. You can perform this exercise either sitting or standing. If you are a wheelchair user remember to put your brakes on
2. Loop the resistance band around a fixed point in front of you at the level of your chest
3. Hold one end of the resistance band in each hand
4. Start with your arms stretched out straight, then pull the band towards your chest
5. Return your arms to the starting position
6. Complete 10 repetitions before having a 30 second break
7. Then repeat the above
8. If this is too easy, ask your therapist for a band with more resistance, or increase the number of repetitions to 15



These exercises can be easily performed at home using the instructions above.

Resistance bands are cheap to buy, but you may be able to ask your therapist if they have any spares.

To repeat this at home tie the resistance band to an appropriate strong fixed point



Resistance band exercises for your upper body help to strengthen the muscles of your arms, chest and back

Maintaining and improving the strength in these muscles helps make everyday tasks, such as getting up from a chair or carrying shopping bags, easier to do.

Lower Limb Strength – Bridging

Start



Finish



Start



Finish



Lower Limb Strength – Bridging



1. Lie on your back with your arms by your side, or across your chest
2. Place a rolled-up blanket or towel beneath your thighs
3. Pull in your stomach, tighten your buttocks and lift your bottom off the couch
4. Try to keep your pelvis level
5. Hold the position for as long as you can, up to 1 minute
6. Repeat on the other side



Bridging can be easily performed at home, either on a firm mattress or on the floor, provided you can safely get back up.



Bridging is an excellent exercise to help improve the strength and control of your buttocks, thighs and tummy muscles.

All these muscles are very important in ensuring that you have a strong base of support when moving, making it easier to do everyday tasks and reducing your risk of falls.

Flexibility – Hip Flexor Stretch



Flexibility – Hip Flexor Stretch



1. Lie on your back, with as few pillows as possible
2. Bring your thigh towards your chest and hold it with your hands
3. Push the back of your other leg into the couch feeling a stretch in the front of your hip/groin in this leg
4. Hold the stretch for 30 seconds, then repeat on the other leg
5. Continue to repeat until changing to the next exercise
6. If you don't feel a stretch at the front of your hip/groin, ask your therapist for assistance



Hip flexor stretches can be easily performed at home, either on a firm mattress or on the floor, provided you are able to safely get yourself back up from the floor.



Tight muscles around your hips can cause pain, which can make walking with your prosthesis even more difficult.

Maintaining flexibility around your hips will aid walking, reduce the stress on your joints and improve your stability.

Static Balance



This can be performed by wheelchair users and those using prostheses. The exercise lasts for 2 minutes

Prosthesis on – using a step:

1. Stand on the step using your leg with the prosthesis whilst keeping your other foot on the floor
2. Maintain your balance in that position
3. If this is too easy, practice stepping on and off the step

Prosthesis off – using a wobble cushion:

1. Take the sides of your wheelchair off
2. Put the wobble cushion on the chair and sit on the wobble cushion, making sure you

Static Balance



These exercises can be easily performed at home. Rather than using a free-standing step, you could use the first step on the stairs. Wobble cushions are relatively inexpensive and can be bought easily online, but a suitable alternative would be to sit on a sofa cushion and follow the instructions above.



Practising these exercises will help improve your balance which is vitally important to reduce your risk of falling.

Attempting to reach or grab something is a common reason for people to lose their balance and fall both when standing or sitting.



Wobble Cushion

Dynamic Balance – Rainbow Reaching

Start



Finish



Dynamic Balance – Rainbow Reaching



1. This can be performed both by wheelchair users and those using a prosthesis
2. You will see a number of different coloured dots on the wall
3. Sit or stand in the centre of the rainbow, facing the wall
4. Start by attempting to touch all of the purple dots, from number 1-11, on the wall by reaching from your sitting/standing position
5. If this is performed easily, try touching all of the blue dots, then try the green dots etc
6. Ensure that you maintain your balance, and do not attempt to touch dots that are realistically too far away
7. Continue the exercise for 2 minutes



We wouldn't expect you to place coloured dots on your walls at home, but you could do something similar by sitting or standing in front of a kitchen cupboard or chest of drawers and attempting to reach out and touch different areas, alternatively you could set up post-it-notes on a wall at home to recreate the rainbow dots.



Practising these exercises will help improve your balance which is vitally important to reduce your risk of falling.

Attempting to reach or grab something is a common reason for people to lose their balance and fall both from standing or sitting.




Community and Charitable Organisations

There are numerous community organisations and charities that can offer help and support to those that have undergone a lower limb amputation and their loved ones. We have provided details below of those that we think you'll find most helpful, but please speak to your therapist if you would like further advice on where to seek help.

Sport, Health and Physical Activity

	Who are they?	A charity that aims to engage amputees and individuals with limb impairments in physical activity, sport and the arts to improve quality of life.
	What do they do?	Provide information and events to increase participation in physical activity, sport and the arts.
	Contact details	http://limbpower.com/index.php
	Who are they?	The national charity for wheelchair sport.
	What do they do?	They provide opportunities in sport for people with physical impairments.
	Contact details	https://www.wheelpower.org.uk/ 01296 395995 or email us: info@wheelpower.org.uk
	Who are they?	A charity that aim to make active lives possible for those with a disability.
	What do they do?	Activity Alliance works to make active lives possible. They challenge perceptions and change the reality of disability, inclusion and sport.
	Contact details	http://www.activityalliance.org.uk
	Who are they?	The nation's largest cycling organisation.
	What do they do?	Govern cyclesport and aim to inspire and support people to cycle regularly, including those with disabilities.
	Contact details	https://www.britishcycling.org.uk


Sport, Health and Physical Activity

	Who are they?	A programme for people with diabetes to help motivate and support them in becoming more physically active.
	What do they do?	Free motivational coaching sessions, incentive vouchers, long term support and access to a range of classes and opportunities in Oxfordshire.
	Contact details	https://www.getoxfordshireactive.org
	Who are they?	Age UK Oxfordshire's physical activity service.
	What do they do?	Offer a wide range of physical activity opportunities across Oxfordshire and a home exercise DVD following registration.
	Contact details	https://www.generationgames.org.uk
	Who are they?	An organisation offering aquatic exercise in Oxfordshire.
	What do they do?	Offer aquatic exercise programmes at local swimming pools under the supervision of an instructor.
	Contact details	https://www.ocaw.co.uk





Health and well being

	Who are they?	Health Improvement Advice Centre for our patients, staff and visitors.
	What do they do?	<p>We offer a range of support methods, to help people change their behaviour in order to:</p> <ul style="list-style-type: none"> • manage their weight • give up smoking • reduce their drinking • become more active • eat a healthier diet • Access healthy living community services
	Contact details	<p>Email: hereforhealth@ouh.nhs.uk</p> <p>Phone: 01865 21429</p> <p>Website: https://www.ouh.nhs.uk/hereforhealth</p>
<p>Contact your local council for further information about local disability inclusive activities.</p>		

Disability Support

	Who are they?	A charitable foundation that promotes the physical, mental and spiritual welfare of persons who are born without or have lost one or more limbs, or otherwise physically disabled.
	What do they offer?	Support and advice services, peer support, financial grants to enable individuals to achieve their goals.
	Contact details	https://www.douglasbaderfoundation.com
<p>For further disability support, please contact your local council for advice.</p>		

Mental Health Support

	Who are they?	An NHS service offering to talking therapy to those registered with an Oxfordshire GP.
	What do they do?	A range of talking treatments and wellbeing activities that help people to overcome depression and anxiety.
	Contact details	https://www.oxfordhealth.nhs.uk/talkingspaceplus/
	Who are they?	An Oxfordshire-based mental health charity
	What do they do?	Offer recovery groups, training and employment coaching to those recovering from mental health problems
	Contact details	https://www.restore.org.uk
	Who are they?	Samaritans was founded in 1953 by Chad Varah We have 201 branches across the UK and Republic of Ireland. Since 1984 Samaritans has received over 68 million contacts in which people felt able to speak, type or write.
	What do they do?	We're here round the clock, every day of the year We know our service can help people before it's too late.
	Contact details	https://www.samaritans.org/ 116 123
	Who are they?	A charity for those with mental health problems.
	What do they do?	"Mind provides advice and support to empower anyone experiencing a mental health problem. The charity campaigns to improve services, raise awareness and promote understanding. Mind won't give up until everyone experiencing a mental health problem gets support and respect."
	Contact details	Website: https://www.mind.org.uk/ www.facebook.com/mindforbettermentalhealth @MindCharity

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