

Patient information

# Strength and conditioning

**Barts Health Physiotherapy Website:**

**[www.bartshealth.nhs.uk/physiotherapy](http://www.bartshealth.nhs.uk/physiotherapy)**



## **What is the purpose of this booklet?**

As part of your rehabilitation, you may need to get increase the strength of certain muscles in order to improve your pain and level of function.

This can be a challenging task, and this booklet is designed to provide the introductory information on the strengthening process.

It is likely you will need to continue exercising after your have been discharged from Physiotherapy in order to maintain the strength you have gained. It is common that when people stop exercising, their symptoms return.

It is normal to experience muscle pain after you have exercised, which can last up to 2 days. This is a normal part of the rehabilitation and strengthening process. However, please ensure you do not exercise into pain and if you notice a worsening of your symptoms, please discuss this with your Physiotherapist. If your medical history changes during your rehabilitation, please discuss this with your Physiotherapist or GP.

You may find it useful to attend a gym within a leisure centre. A list of these can be found on the internet. There will be staff members who can show you how to use the machines and offer advice on varying your exercise routine. You can also discuss this with your Physiotherapist.

## Calculating your weight requirements

- To identify how much weight you should lift, you need to know your '1-Rep maximum.' This is the maximum amount of weight you can lift in one repetition of a specific exercise
- From this number you need to calculate approximately 80% or 60% of this depending on whether you need to improve endurance or strength. Your Physiotherapist can guide you with this.
- The table below may be helpful

Kg			lb		
1 Rep Max	80%	60%	1 Rep Max	80%	60%
10	8	6	20	16	12
20	16	12	40	32	24
30	24	18	60	48	36
40	32	24	80	64	48
50	40	30	100	80	60
60	48	36	120	96	72
70	56	42	140	112	84
80	64	48	160	128	96
90	72	54	180	144	108
100	80	60	200	160	120
110	88	66	220	176	132
120	96	72	240	192	144

## Guides

- Below are general guides for training either endurance or strength.
- Everyone varies, so you may find you need to adapt the repetitions or sets as time goes on. This can be due to a number of factors including age/diet or gender.
- Only increase weights gradually, you may need someone to 'spot' you if you are lifting heavy weight for the first time.
- Remember, rest days are important to allow muscles to recover.
- Your ongoing exercise programme should reflect your goals. For example, if you play a particular sport your training should incorporate movements or muscle groups that are used in that sport. Similarly, if you got pain with a certain movement or activity, your training should progress towards strengthening those movements.

## Guide to Improving Strength

Goal	Performance enhancement Increase physical capacity
Weight	At least 80% of 1 Rep Max
Volume	3 – 6 repetitions (3 sets) 2 – 3 minutes rest between sets
Frequency	2 - 3 x week (rest days in between)
Fatigue/RPE (Rate of Perceived Exertion)	Not necessary to fatigue muscles

## Guide to Improving Muscular Endurance

Physiological goal	Improve muscular endurance Increase physical capacity
Intensity required	60 – 80% of 1 rep max
Volume	6 - 12 repetitions (3 – 5 sets) 1 - 2 minutes rest between sets
Frequency	2 - 3 x week (rest days in between)
Fatigue/RPE (Rate of Perceived Exertion)	Fatigue necessary

Over the next pages are sections to consider what you want to achieve from this programme, such as returning to a particular hobby or sport. There is a diary you can fill in with your Physiotherapist with your specific exercises to achieve this goal. This includes the weight you should work at and the number of repetitions. It may be helpful to tick off each exercise as you go.

Even when achieve your goals, it is worth continuing with these exercises to prevent recurrence of your injury

# Goals

For example...

*'To be able to return to 45 minutes of 5 a-side football, playing as a defender within 2 months'*

The programme may consist of the following...

		Week 1 (√)			Week 2 (√)			Week 3 (√)			Week 4 (√)			Week 5 (√)		
Leg Press		X	X	X	X	X	X	X	X	X						
60kg	8 reps/3 sets															
Straight leg dead-lift		X	X	X	X	X	X	X	X	X						
20Kg	10 reps/4 sets															
Lunge		X	X	X	X	X	X	X	X	X						
25kg	12 reps/4 sets															

And may progress to...

		Week 1 (√)			Week 2 (√)			Week 3 (√)			Week 4 (√)			Week 5 (√)		
Single Leg Press											X	X	X	X	X	X
40kg	12 reps/4 sets															
Straight leg dead-lift											X	X	X	X	X	X
25Kg	12 reps/4 sets															
Lunge											X	X	X	X	X	X
30kg	12 reps/5 sets															

## Training Diary

[illegible]

## Contact Information for Barts Health Therapies Department

The Royal London Hospital  
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For patient information leaflets on other conditions please visit:  
[www.bartshealth.nhs.uk/physiotherapy](http://www.bartshealth.nhs.uk/physiotherapy)

## Patient Advice and Liaison Service

If you need general information or advice about Trust services, please contact the Patient Advice and Liaison Service (PALS) on 020 3594 2040 or visit [www.bartshealth.nhs.uk/pals](http://www.bartshealth.nhs.uk/pals). Alternatively please contact staff who are providing your care if you require clinical advice.

## Large print and other languages

For this leaflet in large print, please speak to your clinical team.

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