

Burn Injuries: A patient self-help guide to exercise and recovery

Developed by a group of Specialist Burns
Physiotherapists and Occupational Therapists in
response to the COVID-19 pandemic

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Introduction

Nationally, many specialist services, including burns services, are having to significantly reduce services to patients. This is in order to prioritise the care of the severely ill due to the Coronavirus (Covid-19).

Your Physiotherapist or Occupational Therapist may have been moved from their usual work caring for burns patients in order to provide respiratory care, or to speed up discharges, to make room in the hospitals for new admissions.

Therefore, they have developed this resource to help you manage your burn injury during this period. It provides advice and sign-posting to a variety of exercises and leaflets.

Unfortunately, it cannot take into account any other injuries or problems you may have. Therefore, you will be using this resource at your own risk.

If in doubt, please contact the burn service you have attended.

When would I normally see a Burns Therapist?

Many patients who have a burn injury do not need to see a burns therapist and are encouraged to move the area that has been burned by the nurses and doctors looking after them.

A patient may see a burns therapist when:

- The nurses or doctors have determined you could improve and maintain your range of movement with support from a therapist.
- You are having difficulty walking or are walking in a way which might lead to problems e.g. severely limping, walking on your toes rather than with your foot flat.
- When you are having difficulties managing at home as a result of your burn limiting your movement.
- If your burn is predicted to take longer than three weeks to heal. This may lead to scarring occurring that could limit your movement and function.

What can I do to help myself recover more quickly?

It is important to manage the problems that are preventing you from moving your affected limbs normally. This resource will help you to exercise and prevent or reduce movement problems once your burns are healed. This is important as it will allow you to get back to your work or hobbies quickly and as soon as is safely possible.

The main problems that can affect movement following a burn are:

- Pain
- Swelling
- Fear (of moving/causing further injury)
- The size of your dressings

The basics of managing pain

- Take pain relief regularly as prescribed so that you have a constant level on board which enables you to feel comfortable and be able to do your exercises. Do your exercises once your pain relief has taken effect (usually 30 to 60 minutes after taking them).
- Pain management advice can be obtained from your Pharmacist or by ringing your GP. Take your painkillers as prescribed and do not exceed the prescribed dose.
- It may hurt to move, but be reassured that pain is generally not a bad thing. You will not be creating more damage or delaying yourself from healing by moving. This is one of the most important things to remember!
- By continuing to exercise, your movement will improve, maintain and you will feel better.
- If you're struggling to motivate yourself through the pain, think of the good reasons to do it. Like keeping your muscles strong, being able to do everyday activities, preventing joint stiffness and muscles and structures such as ligaments and tendons from getting tight.

The basics of managing swelling

Swelling is a normal occurrence to injury and is related to the normal healing response whereby the body is trying to get all the special cells to the area to heal it for you.

Too much swelling, however, can be a problem as it can:

- Make movement difficult, and remember, we want you to move!
- It can make burns take longer to heal and we want you to heal quickly.
- Increase your pain.

To reduce swelling it's important to elevate the limb that is swollen.

How to elevate to reduce swelling

- **Position the arm or hand slightly above the level of the heart whilst sitting, using several pillows to support the arm on the bed or arm of the chair.**

You could purchase a sling to support the arm if you are moving about a lot and the hand would otherwise be down for a long time.

- **Raise the leg or foot up by resting it on a stool or on the sofa with pillows to support it.**
- **If it's your face that is swollen, you should sit and sleep more upright**

After a few days the swelling should settle. If you stop elevating and the limb swells, elevate again.

How to reduce fear

Fear is normal. We naturally think pain is bad, but it often isn't, it's just the way our bodies have interpreted the injury.

Try not to be frightened to move the areas that have been burned:

- Remind yourself of the positive effects of movement - strength, preventing stiffness and tightness, recovering more quickly.
- Try deep breathing and relaxation exercises before, during and/or after to help dampen down your nervous system - stress and anxiety can cause you to feel more pain.
- Use music or distraction to help you e.g. making something that might get you moving a bit more.
- Set yourself small goals e.g. *today I'm going to try to hold and eat with a fork or I'm going to try and touch my thumb to my middle finger.*

Dressings and exercises

Dressings can sometimes limit your movement. Initially dressings may need to be more padded if your wounds are wet/oozy to help absorb this. As your burns heal, the dressings will reduce in size.

- It is important to do your exercises whilst your burns are healing and not wait until they are healed.
- Whilst dressings can make exercise more difficult, they can and should be performed with dressings on.
- Try to take a moment during your change of dressing to exercise without the dressings on. This will allow you to achieve your full range of movement, that may have been limited by the dressings.

Scarring

What is considered a scar can vary from person to person. Some people are not concerned about scarring, while others are. If you have appearance concerns it is often useful to discuss this with the burns nurses, doctors or therapists who can signpost you to the support available.

As a general rule, if you have taken longer than three weeks, or needed a skin graft (surgery), to heal your burn, then you have an increased risk of developing a scar. Scars often develop over a three month period after your wound has healed, so it can be normal for it to get a little worse before improving.

This is a raised, red scar that is firm to the touch and can be itchy or sensitive. If on or near a joint, it can tighten which can cause reduced movement. An example of this would be if the scar was on your hand, you may have difficulty bending or straightening your fingers.

If you have healed in under three weeks, the skin may look pink or red for several months, but will fade over time. You may find the area of skin looks slightly lighter or paler than your normal skin tone once the redness has faded.

Scar management

The burns service would normally review any patient who has:

- Taken longer than three weeks to heal and is at risk of developing a scar.
- Had a skin graft and is at risk of developing a scar.
- Has movement problems and/or problems engaging in everyday tasks e.g. work.
- Has appearance or psychological concerns about their burn injury.

There are a range of treatments available to help improve scarring, however even without scar management, the body naturally settles scarring down. This process can take several months to years and whilst you would always be able to see the area that was injured, the scar will eventually soften, flatten and pale down.

If you believe you are at risk of a scar and had been reviewed by the burns service, please contact the Burns Secretary to ask for an appointment to be made to see the Burns team. Alternatively, if you were managed by your GP, discuss with them if a referral is appropriate.

Risks of scarring and exercise advice

If you are at risk of developing a scar, we advise you to continue your exercises whilst the scar is in a phase of tightening. This is often for about three months after you have healed.

- Check if you are moving fully by comparing the movement in your affected limb with the other side. If you don't consider yourself to have full movement, then you may benefit from exercises.

There are a selection of exercises to choose from at the end of this guide.

- If you're struggling to achieve your full range of movement by performing the exercises as shown in the videos, try adding some stretches or holds at the end of the movement. Stretches should be performed hard enough to feel like the scar is stretching and should be held for approximately twenty seconds before repeating.

Self-management of scarring

There are several things you can do to help manage your scarring so that you feel more comfortable:

- Cream the healed areas with a non-perfumed moisturiser twice a day. This can help with both itch and/or sensitivity. If your skin is particularly dry or itchy, try different creams and/or creaming more. Cooling the cream in the fridge prior to application can also feel soothing.
- If you have sensitive scars it can make wearing clothes or creaming uncomfortable. Try to persevere as much as possible as this will expose the skin to normal stresses/stimulation of everyday life and will help the skin to feel less sensitive with time.
- The skin will be more sensitive to sun exposure initially. Whilst you don't need to avoid the sun, wear a high factor sun cream and try to avoid the hottest time of the day.
- The use of tubigrip for a few weeks after healing can be useful to protect the skin initially from everyday stresses, but it is important not to continue this beyond this time frame.

Exercise FAQs

- **How often should I be exercising?**

Exercises should be performed every few hours. Aim for full movement at each session, or if you can't achieve it, aim for improvement each session. As a guide perform 10 repetitions of each exercise, but you can do more if you are not achieving good movement, or less if the exercises are aggravating your joints or muscles in any way.

- **Should I be using the affected arm or leg?**

Absolutely yes! Carry out activities which don't get your dressings dirty or wet.

If your hand is affected, try and use it to carry your bag, use a knife and fork. It may get you out of the washing up though!

If your leg is affected, get up and walk around regularly. Walk as normally as you can, just get a balance between rest and activity.

- **I'm worried my burn is going to split / my skin will tear.**

That's unlikely to happen. A scab may split and bleed and that's fine. The skin might feel tight, but remember if you don't move it, it will get tighter and you don't want that. Do exercises slowly and gradually increase movement.

- **When can I return to sport e.g. the gym or yoga?**

Due to Covid-19, social distancing rules may apply for some time and group exercise / gyms have stopped temporarily. Under normal circumstances, however, it depends on the sport and whether you are healed or not. As a general rule a 'clean' sport that is not a contact one e.g. yoga or aerobics, can be performed when you feel comfortable to. A more muddy contact sport such as football should be left until you are healed and your skin is more robust. If you were a patient with us on the ward, we would likely be engaging you in cardiovascular exercise e.g. a static bike or giving you light weights to use.

- **When can I stop exercising?**

This depends on how long your burns took to heal. If it was under three weeks then you can stop when you:

- **Have full movement**
- **Have no stiffness**
- **Are using the hand or limb normally (strength will improve when you're back doing everything you normally do)**

If your burns took longer than three weeks to heal this is when you can be at risk of developing hypertrophic scarring (scars which are more red, raised up and firm to touch). In this case you should continue to exercise and read the section on [Scar Management](#).

Useful exercise resources

Over the next few pages we have put together a selection of exercises, leaflets and resources from the internet to help you develop your own exercise programme that meets your needs.

Try to select exercises that are realistically achievable for you. Think about what your movement and strength is normally like. It needs to be achievable, but not too easy!

Some of the exercises can be progressed when you are moving well, by adding resistance e.g. using light weights you hold or strap on, or by using items in the home e.g. water bottles or cans to make the exercise harder.

Exercises for Elbows

Exercise	Video link
Bending the Elbow	https://www.youtube.com/watch?v=pYLBbBh3hKs
Straightening the elbow	https://www.youtube.com/watch?v=OMkC5FWz1HU
Palm to face down	https://www.youtube.com/watch?v=P0I7a4EiQaY
Palm to face up	https://www.youtube.com/watch?v=rRrKy72b1Ek

Exercises for Fingers & Thumbs

Exercise	Video link
Bending and straightening your knuckles	https://www.youtube.com/watch?v=KCAaC-GFphQ
Bending and straightening the ends of your fingers	https://www.youtube.com/watch?v=jFR_sdej4cE https://www.youtube.com/watch?v=Jdv8eRJGsxsc
<i>Make sure you are fully straightening your fingers when returning to the starting position</i>	
Making a full fist	https://www.youtube.com/watch?v=fayzyMi7Eal
<i>If you are having trouble touching your finger-tips to your palm try this exercise</i>	https://www.youtube.com/watch?v=J90eRhtgSTE

Fingers & Thumbs (cont.)

Exercise	Video link
Stretching your fingers apart	https://www.youtube.com/watch?v=mxG35cD-tuE
Thumb away from palm	https://www.youtube.com/watch?v=Wqcc3XrsOrk
Thumb out to side	https://www.youtube.com/watch?v=-aSCdBP_Osc
Thumb to oppose finger	https://www.youtube.com/watch?v=HcacSG5bxYc
Wrist bending and straightening	https://www.youtube.com/watch?v=C5Bvfr-gKNo https://www.youtube.com/watch?v=c8gnqhrHf1A

Exercises for wrists

Exercise	Video link
Wrist bending and straightening	https://www.youtube.com/watch?v=C5Bvfr-gKNo https://www.youtube.com/watch?v=c8gnqhrHf1A
Palm to face down	https://www.youtube.com/watch?v=P0I7a4EiQaY
Palm to face up	https://www.youtube.com/watch?v=rRrKy72b1E
Wrist deviation	https://www.youtube.com/watch?v=iv_Du6gJQVY

Exercises for Shoulders

Exercise	Video link
Reaching arm above head (flexion)	https://www.youtube.com/watch?v=fQ_WgZ8Z36g
<i>If you find this difficult you could try facing a wall and walking your fingers up the wall and down again or Laying on your back holding a stick or pole. With your arms straight, move your arms to above your head.</i>	
Reaching arm out to side	https://www.youtube.com/watch?v=Eoj4lhNHIVo <i>If you find this difficult you could try:</i> https://www.youtube.com/watch?v=z0wdaV-enkw
<i>Alternatively you could try standing side on to a wall and walk your fingers up the wall and down again.</i>	
Hand behind back	https://www.youtube.com/watch?v=3umZRWeYNfM
Hand behind head	https://www.youtube.com/watch?v=dIvuCY91dyc
Chest stretch	https://www.youtube.com/watch?v=cHXyXAS7Cmw

Exercises for the Neck

Exercise	Video link
Looking up (extension)	https://www.youtube.com/watch?v=gauz6xLTwXw
Looking down (flexion)	https://www.youtube.com/watch?v=KXAqyykjfuk
Rotation	https://www.youtube.com/watch?v=bDx2vHLjtWl
Ear to shoulder	https://www.youtube.com/watch?v=GyPGKpl7I38

If you are struggling to do any of these movements you can gently use your hands placed on your face, head or chin to help you move further. This may not be recommended if you have pre-existing neck problems or a history or spinal surgery to the neck

Exercises for Face & Mouth

Exercise	Video link
Wide mouth	https://www.youtube.com/watch?v=yXt0XkAf4rM
Wide mouth stretch	https://www.youtube.com/watch?v=9fb1x12rPCU
Smile	https://www.youtube.com/watch?v=YbBL5rUT-JI
Pout	https://www.youtube.com/watch?v=Q0axkbx_mzo
Eyes tight shut	https://www.youtube.com/watch?v=E3ji21IWY9E
Eyes open and raised eyebrows	https://www.youtube.com/watch?v=KnazTUQ7A94
Frown	https://www.youtube.com/watch?v=4uXGkgl3Wf8

Exercises for Feet & Ankles

Exercise	Video link
Pointing your foot away from you	https://www.youtube.com/watch?v=p2xfzDLLX_I
Bringing your foot up towards you	https://www.youtube.com/watch?v=kAmsg-8SBhhg
Turn your foot inwards	https://www.youtube.com/watch?v=COk3PL8Oclw
Turn your foot outwards	https://www.youtube.com/watch?v=ZzezWiHn8Q4
Ankle circles	https://www.youtube.com/watch?v=t5gMOv3muUU

Exercises for Ankles & Stretches

Exercise	Video link
<i>If when you move your ankle it does not match the movement on the other side, try adding these exercises for the movement you're struggling with:</i>	
Passive plantarflexion	https://www.youtube.com/watch?v=ZHOQbD9qSgw
Passive dorsiflexion	https://www.youtube.com/watch?v=FtwTap0PltQ
Passive inversion	https://www.youtube.com/watch?v=M20Y5fdt9cl
Passive eversion	https://www.youtube.com/watch?v=ev4v7nkEUts
Calf stretch	https://www.youtube.com/watch?v=UMAg6ZbvFLA

Exercises for Toes

Exercise	Video link
Toe bending and straightening	https://www.youtube.com/watch?v=5_f7zbrArY
Toe bending	https://www.youtube.com/watch?v=FE7rNOElgOc
<i>If your toes feel stiff try this exercise</i>	https://www.youtube.com/watch?v=l652egVx9oo

Exercises for Knees

Exercise	Video link
Knee bending	https://www.youtube.com/watch?v=TmwaKdukJXU
Knee Straightening	https://www.youtube.com/watch?v=_lwJneVR4N4
Knee bending and straightening	https://www.youtube.com/watch?v=XI6Cq4IXHYE
<i>If you are having difficulty with the exercises above, you could try:</i>	
Assisted knee straightening	https://www.youtube.com/watch?v=VmmXbB5SgTk
Assisted knee bending	Sitting in a chair. Cross good leg over leg to be bent and use it to bend the knee underneath you
Relaxed knee straightening	https://www.youtube.com/watch?v=WPS-sUb_Xkk

Exercises for Hips

Exercise	Video link
Hip bending	https://www.youtube.com/watch?v=5e_xmmmAkho
Hip extension on tummy	https://www.youtube.com/watch?v=KgjsTuCSldo
<i>Hip extension can also be performed lying on your side with your leg to be exercised uppermost, or in standing supporting yourself on a wall</i>	
Hip abduction (out to side)	https://www.youtube.com/watch?v=ajJZmIXGLpo
Hip rotation	https://www.youtube.com/watch?v=k5wNIKHf-FI

Additional leaflets and resources



South West UK Burn Care
Operational Delivery Network

Some further excellent leaflets and videos can be found on the Northern Burn Care Network website:

<https://www.csodn.nhs.uk/northern-burn-care/patient-information/>

Further information about the South West Burn Care Network can be found via:

<https://www.southwestukburnnetwork.nhs.uk/>