

Recovery after Covid-19

Introduction

Recovery from COVID-19 is a journey and will take time. The length of time needed will vary from person to person and it is important not to compare yourself to others. Ongoing symptoms (outlined below) could last for several months after you had COVID-19 - this is normal. Small steps are steps in the right direction. It is important to listen to your body, prioritise sleep, healthy eating, and physical activity to help your body to recover.

Post-COVID-19 effects could include:

- Extreme tiredness (fatigue) and a lack of energy
- Breathlessness
- Muscle weakness and joint stiffness
- Loss of appetite and weight loss
- Sleep problems
- Changes in your mood, anxiety or depression
- Problems with mental abilities (for example: not being able to remember some events, think clearly or being more forgetful)
- Nightmares or flashbacks
- Cough (either a dry cough or with phlegm)
- General aches and pains or pain specific to one area (e.g. your chest).

This resource is appropriate for people who have suffered from Covid-19 and contains information and advice on:

- Advice on pacing your activity
- How to improve your sleep
- Healthy eating
- How to manage breathlessness
- How to manage your pain
- Exercising.

This information should not replace any individual advice you may have received on discharge from the hospital. If you have any concerns about ongoing or worsening symptoms, please seek advice from either your GP or the NHS Inform website <https://www.nhsinform.scot/illnesses-and-conditions/infections-and-poisoning/coronavirus-covid-19>

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Progress monitoring and goal setting

Setting your own personal goals of what you want to achieve in the coming days, weeks, months and years is important. Monitoring your progress will help to keep you motivated.

Sometimes you don't notice the progress you have made. You may find it helpful to use **Table 1** (page 39) to track your progress. Fill in activities you want to do. In the corresponding columns fill in a number (0-10) with how well you are able to do the activity. Repeat this task every 2 weeks, 4 weeks, 8 weeks and 12 weeks.

When you achieve your goal, try a new activity. To make the habit stick- make it simple and achievable.

Goals and barriers

You may have times where you are faced by barriers or setbacks to achieving your goals. To minimise these, it's important to consider:

- What can you think of that might stop you from achieving your goal?
- What ideas will help you stop or limit this from happening?
- How might you get back on track if you stop working on your goals?

Pacing advice

You may feel you want to quickly increase your physical activity and return back to previous levels. However, this can lead to an increase in your fatigue. Some people will get into a 'boom and bust' pattern where they push themselves to do more on a better day and then feel worse for several days afterwards.

Pacing is a way of doing activities differently to try and reduce the chance of increasing your fatigue, by breaking activities up into manageable chunks. All types of activities can impact on fatigue so pacing applies to all activities: such as cognitive or 'thinking' activity, social activity, emotional and physical activity.

Do a task for a short time and then take a break and rest, have a drink, listen to music or watch TV before continuing or starting another task. How you need to pace an activity may be different from someone else. Energy levels can vary on a day to day basis. Allow yourself enough time to complete the activity without rushing.

Tips for more consistent energy levels:

- Avoid eating lots of sugary foods or drinking energy drinks. These can give you a quick energy burst which can lead to a crash in energy levels later
- Avoid sitting in one position for long periods of time. This can sap your energy as your body equates this stillness with going to sleep
- Break up your exercise in the day into manageable chunks.

You may find it helpful to use **Table 2** (page 41) or download and print this interactive activity planner <https://www.csp.org.uk/media/1265833>. Try to fill in the physical activities you do daily. This will help to document your recovery journey and limit booming and busting.

Sleep

Sleep is important for recovery. A good night's sleep should be deep, refreshing and uninterrupted. The average adult needs around 7.5 to 8 hours per night. Quality of sleep is important. A few hours deep and refreshing sleep may be better than more hours of poor quality sleep.

Benefits of sleep:

- Improves your energy levels
- Improves your mood
- Improves control of your weight and blood sugar levels
- Strengthens your immune system.

Top tips to improve sleep quality:

- 1. Keep regular sleep hours:** Regular bedtime/waking up time will help programme your body to sleep better.
- 2. Relax your mind and body before going to bed:** Try a warm bath, listen to quiet music and avoid stimulating activities such as computer work. Write away your worries before bed by making a plan or a list. Try relaxation techniques.
- 3. Create a restful sleeping environment:** Temperature (17-21°C), lighting and noise/distractions should be controlled to help you to fall (and stay) asleep. Only use the bed for sleep and intimacy as that will help associate the bed with sleep.
- 4. Make sure your bed is comfortable:** Do you have the right bed/mattress? Can you get in/ out easily and move around in bed? Is your sleeping position/posture comfortable?
- 5. Exercise regularly in daylight:** Moderate exercise on a regular basis can help relieve some of the tension built up over the day. Spend time outside in the daylight.
- 6. Cut down on caffeinated drinks/foods,** especially in the evening. Tea, coffee, energy drinks or cola interferes with sleep and prevents deep sleep. Try a warm, milky drink or herbal tea instead.
- 7. Avoid too much food or alcohol,** especially late at night as this can interrupt your sleep. Alcohol may help you to fall asleep but it will disrupt your sleep later in the night.
- 8. Avoid smoking:** Nicotine is a stimulant. Smokers tend to take longer to fall asleep, wake up more frequently and often have more disrupted sleep.
- 9. If you can't sleep** – try not to worry. Get up and do something relaxing until you feel sleepy again, then go back to bed.

If lack of sleep is affecting your daily life, make an appointment to see your GP.

For further information explore <http://www.nhs.uk/Livewell/insomnia/>

Eating and hydrating for recovery

After a hospital stay and recent infection, your body needs more energy and fluids to recover.

- Aim for more than 5 handfuls of vegetables and fruit a day. Can you add an extra vegetable to each meal? Try to increase the number of different colours on your plate
- Drink regularly throughout the day (at least 6-8 mugs of water a day). If you are active, or if the weather is hot, you should increase the amount that you drink
- Aim to eat foods higher in protein to help rebuild your strength. Try to eat 3 hand sized items from the protein group of foods each day (eggs, dairy products, meat products, fish products).



Further Resources on Healthy Eating:

The Association of UK Dieticians- for information on malnutrition caused by COVID-19:

<https://www.bda.uk.com/resource/malnutrition-pathway-covid-19-leaflets.html>

The Association of UK Dieticians- for information on healthy eating: www.bda.uk.com/resource/healthy-eating

NHS Inform- for information on staying hydrated: <https://www.nhsinform.scot/campaigns/hydration>

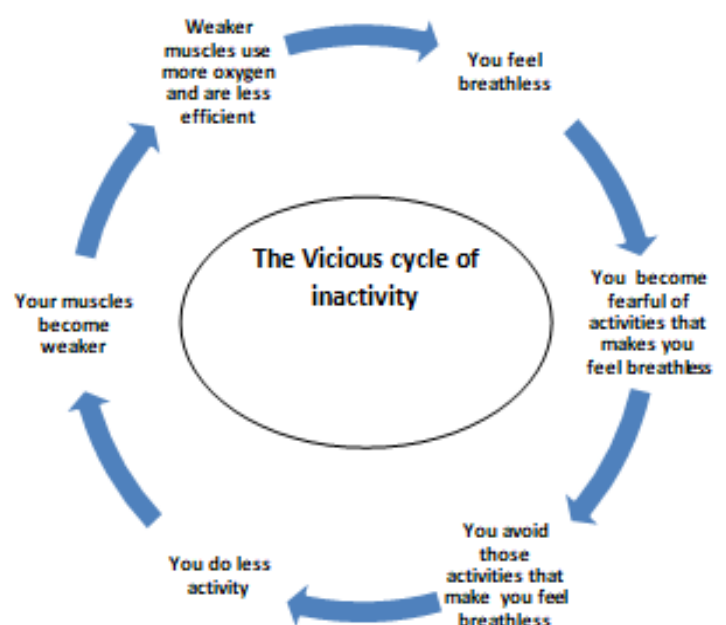
Managing your breathlessness

When recovering from a virus, you may feel breathless more easily. Day-to-day tasks such as: walking, getting dressed, housework or climbing stairs may make you feel short of breath.

Breathlessness can be frightening and can cause anxiety and panic. Learning to control your breathing can help reduce these feelings.

Tips to help relieve breathlessness

- Don't avoid doing things that make you breathless as becoming more inactive can make your breathlessness worse (as shown in "The Vicious cycle of inactivity"). Becoming more active will help increase muscle strength meaning your lungs won't have to work so hard
- Always stop an activity before you reach your limit so that you have some reserve of energy once you have stopped. You should still be able to speak comfortably
- Slow your pace to match your breathing
- Don't hold your breath- breathe out on effort. (For example: try to breathe out as you stand up, sit down, bend over or climb stairs). If you hold your breath during the most strenuous part of a movement, it can make you more breathless.



If you do get very breathless during an activity, stop.

- Try not to panic. Panic increases your heart rate and use of oxygen and you will feel more breathless
- Do not try to take deep breaths
- Do not try to speak
- Use positions of ease (detailed below) and try to breathe calmly.

Positions of ease to help your breathlessness

Try the following positions to help your breathlessness

Forward lean sitting



Sit comfortably, leaning forward with your elbows resting loosely on your knees or a table.



High side lying Lie on either side with pillows under your head and shoulders. Your hips and knees should be slightly bent. Make sure

your pillows support your head and shoulders



Standing leaning forward Lean forwards and rest your elbows on to a chair, windowsill, worktop or chair. A walking stick can also be used

Other positions which will help your breathlessness are leaning back against a wall letting your hands hang loosely or sitting upright in a chair

The images and text for “Positions of ease” are used with permission from The Association of Chartered Physiotherapists in Respiratory Care (ACPRC) patient information leaflet: *How to Cope with Being Short of Breath- Positions*.

Breathing techniques to manage breathlessness

Breathing control

Breathing control can help you to relax and control your shortness of breath. It is normal gentle breathing with the least effort.

Sit comfortably with your shoulders relaxed and feet flat on the floor. You can also do this in the high side lying position.

Place one hand on your stomach just below the ribs. Breathe in gently through your nose and feel your abdomen rise gently, then exhale slowly through your nose or mouth but don't force your breath out. You

may find it easier to breathe out through pursed lips (see below). Concentrate on letting go of tension and feel your breathing slow down.

Pursed lip breathing

Breathe in gently through your nose then purse your lips as though you were going to blow out a candle or whistle. Blow out with your lips in this position. Breathe out slowly, for as long as is comfortable; do not force your lungs to empty.

Blow-as-you-go

Use this while you are doing something that makes you breathless. Breathe in before you make the effort. Then breathe out while making the effort (e.g. breathe out as you lift a heavy bag or bend down). Do not hold your breath. It can be helpful to use pursed lip breathing as you blow.

Paced breathing

Use this while you are walking or climbing stairs. Count to yourself as you walk (e.g. count 1 as you breathe in and then count either 2 or 3 as you breathe out). You can count for longer as you breathe in or out if that feels better for you.

How to clear my chest

Phlegm is normally present in the lungs. It helps clean, moisten and protect the lungs by trapping inhaled dust and germs. During recovery from a virus, you may have more phlegm than usual. It is important to clear phlegm from your chest to allow more air to get into your lungs.

This will help you breathe more easily, prevent chest infections and reduce your cough.

Coughing is tiring and bouts of coughing can cause headaches, painful muscles and bladder leakage.

Tips for clearing your lungs

- Try to clear phlegm at regular intervals- do not try to force it up
- Drink at regular intervals (water, juice or tea) as this will help to thin phlegm
- Keep active as this helps loosen phlegm.

If you have trouble clearing your chest of phlegm, the following technique may help:

Active Cycle of Breathing Technique (ACBT)

ACBT is a set of breathing exercises that helps move phlegm, making it easier to cough up. This link will take you to a Youtube video which demonstrates ACBT:

<https://www.youtube.com/watch?v=XvorhwGZGm8>

Choose a comfortable position to perform the technique, keeping the shoulders relaxed but make sure you are not too slouched. Sitting is a good position for these exercises.

1. Breathing control

Place one hand on your stomach just below the ribs. Breathe in gently through your nose and feel your belly button rise gently, then exhale slowly through your nose or mouth (but without pushing).

You may find it easier to breathe out through pursed lips. Concentrate on letting go of tension and feel your breathing slow down. Do this for 30 seconds.

2. Deep breathing exercises

Take 3-4 deep long slow deep breaths in through your nose, allowing the lower chest to expand. Try to make sure your neck and shoulders remain relaxed.

At the end of the breath in, hold the air for 2-3 seconds. Let the air out gently.

3. Huffing

A huff is breathing out with your mouth and throat open instead of coughing. It helps move phlegm so you can clear it in a controlled way. To huff, you squeeze air quickly from your lungs through an open mouth, as if trying to mist up a mirror.

Take a **small long huff** first – this will move phlegm from lower down in your chest. Take a small to medium breath in and then huff until your lungs feel empty.

Then take a **big short huff** when the phlegm feels ready to come out. This will clear phlegm from higher up in the chest. Take a deep breath in and then huff the air out quickly.

You should then repeat the cycle until your chest is clear.

You should always follow deep breathing and huffing with breathing control – see diagram above.

If you have a dry troublesome cough

A cough may persist for weeks after you have recovered from the virus. Constant coughing irritates the upper airways making them sore, red and swollen and causing even more coughing. If you do not have any phlegm to clear, try the following tips to help control your cough:

- Breathe through your nose
- Do your breathing control regularly
- Sip water frequently
- Try sucking liquorice pastilles, a square of dark chocolate, frozen green grapes or ice cubes
- Lemon juice or ginger may also help.

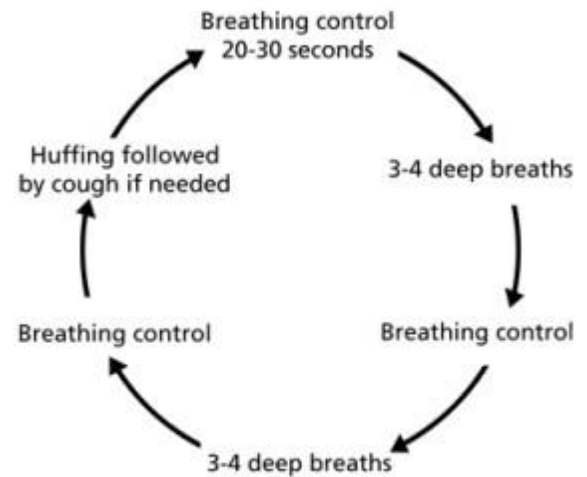
Feelings of anxiety and how to manage these

Everyone experiences anxiety at some time in their life. It is a normal reaction when we are in danger or under threat. Anxiety can start when we don't feel in control- experiencing a stressful event like having COVID-19 or a stay in hospital can cause anxiety.

You may worry this will happen again and this can make you feel more anxious about the future. This is a normal reaction.

Symptoms of anxiety

Anxiety affects people in different ways. You may have: trouble sleeping; difficulty concentrating or remembering things; changes in mood; flashbacks or more breathlessness.



You may notice rapid shallow breathing and have difficulty in slowing your breathing down.

10 top tips to help with anxiety

The following link will take you to a NHS webpage with 10 tips to help you to manage anxiety:

<https://www.nhs.uk/oneyou/every-mind-matters/coronavirus-covid-19-anxiety-tips/>

Pain management

You may be experiencing pain after your hospital stay or illness at home. There can be many reasons for this, such as: ventilation, surgery, prolonged sitting/lying in bed or a continuous cough (which may cause some types of persistent pain).

Pain is an evolutionary response. If you put your hand on a hot iron, the pain you feel will make you remove your hand quickly and this stops you from burning yourself. However, sometimes certain pain signals can become persistent.



Over a long period of pain, the nerves that send these signals to your brain can turn up the pain volume. This “volume button” can be turned up and down by many factors such as: stress, poor diet, poor sleep or high caffeine. The brain remembers these pain signals and can produce them even when there is no longer any harm/damage. The nerves have become more sensitive meaning that they respond quicker and last for longer.

Pain does not necessarily mean there is any new damage in your body. The result of all of these changes is that the pain system itself generates and maintains pain even when there is no ongoing damage and even after any original injury has healed.

Strategies to help turn the pain “volume button” down to facilitate your recovery:

- Pause and reflect about what may be turning up your pain volume button
- Take your prescribed pain medication as instructed
- If you are sitting more than usual, it is important to move and change positions regularly.

You can find further information about managing your pain on The Physiotherapy Pain Association’s website at: <https://ppa.csp.org.uk/content/links>



Exercise

Exercise is an important part of your recovery after your illness. The benefits of exercise include:

- Reduces breathlessness
- Improves your mood
- Improves sleep
- Strengthens your muscles and bones
- Maintains healthy weight
- Helps manage your pain
- Improves your quality of life
- Improves your balance
- Reduces risk of falls.



When recovering from an illness it is important to build up your exercise levels gradually. In the long-term you should aim to meet the Government recommendations to exercise at a moderate level for 150 minutes each week. Try to split this up into 30 minute blocks. This is combined with twice weekly strengthening and balance sessions.

Exercise program

This program takes about 16 weeks and progresses through 3 different levels, creating the foundations for you to be more physically active in the long-term and to enjoy the benefits of exercise.

Level 1 (page 13)

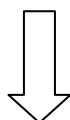
Progress to Level 2 when you can manage breathlessness successfully



Level 2 (page 21)

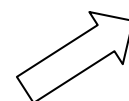
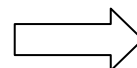
Progress to Level 3 only if after 4 weeks you are able to stand on 1 leg unsupported for more than 15 seconds (if you do not have a history of falls) and can walk for 30 minutes without stopping.

(If you don't meet the above criteria then continue in this level for 12 weeks or until you do meet this criteria).



Level 3 (page 30)

Complete this level for at least 8 weeks.



Let's continue to be physically active with:

Long-term physical activity goals (page 12)

Tips to get started:

- Wear comfortable and sensible clothes
- Don't exercise immediately after eating a meal
- You may notice an increase in your breathlessness when you stop exercising. It is normal to get breathless when exercising. You need to reach and maintain a moderate level of breathlessness (3 on the scale) when you exercise to see any improvement in your exercise tolerance. Monitor your breathlessness using the breathlessness scale
- If breathless use your **Breathing techniques to manage breathlessness** e.g. blow as you go, breathing control (pages 6 and 7)
- Drink enough fluid to keep you hydrated
- Do not exercise if you feel unwell.

Tips to continue exercise

- Find a consistent time in the day to exercise
- It is ok to ache but if pain persists, ease back and go slower
- When you feel able, try to add weights into your exercise routine for a more challenging workout
- Ask someone to join you for motivation and support.

General exercise disclaimer

You should understand that when you voluntarily participate in this exercise program, you appreciate there is a chance of injury risk.

You must stop your exercise immediately if you feel any of the following:

- Chest pain or tightness in your chest
- Dizziness or nauseous
- Clammy or cold
- Increasingly wheezy
- Pain in your joints or muscles.

Breathlessness Scale	
0	No breathlessness
1	Very slight breathlessness- just noticeable
2	Slight breathlessness- more noticeable but you are okay to keep going
3	Moderate breathlessness- you are breathless but can still hold a conversation
4	Breathlessness now affecting your ability to hold a conversation
5	Strong or hard breathing- you are unable to say 5-6 word sentences
6	Severe breathlessness- you are only able to say 2-3 words at a time
7	Very severe breathlessness- you can only say 1 word at a time
8	You cannot talk
9	Almost the worst breathlessness you have ever had
10	The worst breathlessness you have ever had.

What can I use as weights?

Get creative and find weighted objects in the house (e.g. tins of beans, books, water bottles). You can fill a backpack or sturdy shopping bag with weighted objects.

Water Bottle (litres)	Kilograms
1	1
2	2
3	3
4	4
5	5
6	6
Milk Container (pints)	Kilograms
1	0.6
2	1.2
3	1.8
4	2.4
5	3
6	3.6

Long-term physical activity goals

Congratulations on all the hard work you have put in. Can you continue this great progress?

It is important to find a physical activity that you enjoy. The following webpages have some suggestions for exercises and activities that may interest you:

Discover new exercise programs:

<https://www.nhs.uk/oneyou/for-your-body/move-more/>

<https://www.nhs.uk/apps-library/iprescribe-exercise>

Discover a new activity/hobby:

<https://www.bbc.co.uk/sport/get-inspired/activity-guides>

Other resources for a healthier lifestyle

Quitting Smoking: The NHS website has information on ways to stop smoking.

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

<https://www.nhs.uk/live-well/quit-smoking/nhs-stop-smoking-services-help-you-quit/>

Alcohol intake: If you would like advice on how to reduce your alcohol intake, the Drink Aware website has information which could help you.

<https://www.drinkaware.co.uk/>

Weight management: If you decide to try to lose weight, the NHS website has some advice which could help you.

<https://www.nhs.uk/live-well/healthy-weight/start-the-nhs-weight-loss-plan/>

Drug addiction: The NHS website can provide you with advice on treating a drug addiction.

<https://www.nhs.uk/live-well/healthy-body/drug-addiction-getting-help/>

Chronic pain: If you would like advice about chronic pain, try the Pain Association's website.

<https://painassociation.co.uk/videos>

Level 1

Walking

- The best way to improve your walking is to practise walking
- Start with a short walk with your appropriate walking aid around the house. Don't walk so far that you can't get back to your starting position
- Stop and rest whenever you are short of breath (use your **Breathing techniques to manage breathlessness** (page 6-7). Place chairs around the house so that you can sit down when required
- Try to gradually increase your walking distance/time on your feet every few days safely, without increasing your symptoms. Aim to build up to 20-30 minutes of walking. Once you can comfortably walk for 20 minutes, try to walk faster (as if you are slightly late)
- It is important to measure how breathless and tired you feel during and after exercise. You can do this with the breathlessness scale. You need to reach and maintain a moderate level of breathlessness (3 on the scale on page 11) when you exercise to see any improvement in your exercise tolerance.
- You might find it helpful to use **Table 2** (page 41) to keep track of your progress.

Strengthening

- Perform these exercises little and often throughout the day in any particular order, resting as required
- The more each exercise is performed throughout the day, the better your body starts to remember these movements
- Try to fit these exercises within your daily routine (e.g. While you are waiting for the kettle to boil, you could do some standing exercises)
- When you are doing the exercises from this leaflet- start off with the easier exercise at the top of the page and move on to the harder version of that exercise when you feel you are able to do so
- If there is a timer picture next to an exercise- try to time yourself doing the exercise. See if you can add a few more seconds each time that you do the exercise
- If you can't do a certain exercise, skip it and see if you can go back to it when you feel ready.



Exercise 1: Heel raises



Start in a seated position with your feet on the floor (hip width apart) and your knees bent to approximately 90 degrees.

Raise your heels to come up onto your toes slowly, pause at the top.

Lower your heels back to the ground slowly.



To make this exercise more challenging, start in a standing position, holding onto the back of a chair for support.

Stand with your feet hip-width apart.

Use your hands for balance- do not push with them.

You can make this exercise even more challenging by trying heel raises while standing on one leg.



Exercise 2: Hip side kicks



Start in a standing position, holding onto the back of a chair for support.

Stand on 1 leg and kick your other leg out to the side as shown. Try to keep your legs straight and your feet facing forward.

Slowly lower your leg down.

Repeat the exercise on the other side.



To make this exercise more challenging, add a resistance band around your ankles as shown.



Exercise 3: Marching on spot



Sit upright in a chair with your feet on the floor.

Alternate lifting each knee up towards the ceiling and down again.



To make this exercise more challenging, start in a standing position, holding onto the back of a chair for support.

If your balance is steady, you can try lifting your hands from the support as you do the exercise.



Exercise 4: Knee bends



Sit upright in a chair with your feet flat on the floor.

Straighten one leg out (as shown) and pause to hold the position.

Slowly lower your leg, bending your knee as much as you can.

Alternate on both sides.



To make this exercise more challenging, start in a standing position, holding onto the back of a chair for support.

Bend one knee, bringing your foot up towards your bottom.

Slowly lower your leg to the starting position.

Alternate on both sides.

If your balance is steady, you can try lifting your hands from the support as you do the exercise.



Exercise 5: Squats



Sit in a chair with your feet hip width apart and your knees bent. Shuffle your bottom forwards in the chair (keep a support in front of you, if required). Place your hands on the arm rests as shown below.

Bring your nose over your toes and push through your legs and arms into a standing position

Pause at the top (holding onto a support if required) reach back with your arms and when you can feel the back of the chair on your legs, slowly lower back down to sitting.



To make this exercise more challenging, place your hands on your hips or chest and push up through your legs.



If you feel able, you can make this exercise even harder by starting in a standing position with your feet hip width apart. Keep your back straight and squat down, sinking your bottom backwards. Then push up through your legs to stand back up.



Exercise 6: Boxing



You can do this exercise standing or sitting in a chair.

Punch one arm out in front of you and pull it back again to return to the starting position.

Alternate with your other arm.



You can also punch at different angles (e.g. punch above your head)

To make these exercises harder, you could try doing these while holding a weight in each hand.



Exercise 7: Grip squeezes



Hold a rolled up towel or a tennis ball in your hand and squeeze, hold for 5 seconds before releasing.

Repeat with your other hand.



Exercise 8: Balance



Start in a standing position and hold onto a sturdy chair as shown below.

Stand upright with one foot in front of the other, forming a straight line with a gap between both feet.

When you are able, try to have your toes touching the heel of your front foot.

Aim to stand in this position for over 15 seconds and then repeat on the other side

If your balance is steady, try to lift your hand from the supporting chair.



Start in a standing position and hold onto a sturdy chair.

Stand upright on one leg as shown below.

Aim to stand in this position for over 15 seconds.

Repeat on both sides

If your balance is steady, try to lift your hand from the supporting chair.



Exercise 9: Roll downs

Start sitting in an upright position in a chair.

Take a deep breath in and as you breathe out, slowly slide your hands down the front of your legs.

Stop just before you feel any pain or stiffness.

Take a deep breath in as you slowly roll back to sitting upright.

Repeat this exercise.



Exercise 10: Twists

Start sitting in an upright position in a chair with your hands across your chest.

Take a deep breath in and as you breathe out, slowly turn your chest so that you are looking over your shoulder.

Take another deep breath in and as you breathe out, slowly turn back to the starting position.

Repeat on the other side.



Exercise 11: Neck mobility

Start sitting in an upright position in a chair, looking forward.

Slowly look up to the ceiling. Pause, then slowly lower chin towards chest. Pause then slowly raise your chin back to the starting position.



Slowly lean your right ear down towards your right shoulder (keeping shoulders level). Pause and then slowly bring your head back to the starting position. Then slowly lean your left ear towards your left shoulder. Pause and then slowly bring your head back to the starting position.



Slowly rotate your head to the right. Pause and then slowly return to the starting position. Then slowly rotate your head to the left. Pause and then slowly return to the starting position.



Level 2

Cardiovascular exercise

- Continue to keep progressing your walking (indoors or outdoors) by increasing your step count or by walking longer without stopping
- Try to walk for 30 minutes every day
- Try adding in some gentle hills outdoors or stairs indoors
- Continue to monitor your breathlessness. You need to reach and maintain a moderate level of breathlessness (3 on the scale on page 11) when you exercise to see improvement in your exercise tolerance. If you become breathless, use your **Breathing techniques to manage breathlessness** (page 6-7) to recover
- You might find it helpful to use **Table 2** (page 41) to keep track of your progress
- If you previously had a hobby/physical activity (e.g. gardening), try to slowly reintroduce it for 15-30 minutes, before getting tired. Have at least one day of rest in between each session of this activity. This is to allow your body to recover and prevent injuries.

Return to running

Week 1: 2-3 runs on non-consecutive days

Begin with a brisk 5-minute walk, then alternate 1 minute of running and 1-and-half minutes of walking for a total of 20 minutes.

Week 2: 2-3 runs on non-consecutive days

Begin with a brisk 5-minute walk, then alternate 1-and-a-half minutes of running with 2 minutes of walking for a total of 20 minutes.

Week 3: 2-3 runs on non-consecutive days

Begin with a brisk 5-minute walk, then 2 repetitions of 1-and-a-half minutes of running and 1-and-a-half minutes of walking, followed by 3 minutes of running and 3 minutes of walking.

Week 4: 2-3 runs on non-consecutive days

Begin with a brisk 5-minute walk, then 3 minutes of running, 1-and-a-half minutes of walking, 5 minutes of running, 2-and-a-half minutes of walking, 3 minutes of running, 1-and-a-half minutes of walking and 5 minutes of running.

Continue with “Couch to 5km” or progress back to your running, gradually increasing your mileage. Avoid introducing speed work and hills all at once. <https://www.nhs.uk/live-well/exercise/couch-to-5k-week-by-week/>

Return to cycling

Start on an exercise bike if you have one. If not try to do a short duration ride on a flat surface. Try to gradually build up your total distance each week. Avoid introducing speed work and hills all at once.

Strengthening

- There are 2 different sessions (A & B) within Level 2. You should do each session once per week with at least one rest day in between
- You should start with the easier version of the exercise at the top of the page and progress to the more difficult exercise when you feel able to do so
- If you can't do a certain exercise, then skip it and see if you can go back to it when you feel ready
- If you become breathless, use your **Breathing techniques to manage breathlessness** (page 6-7) to recover
- The process of strengthening your muscles needs you to regularly increase the difficulty level. It can take up 8-12 weeks before you start noticing these changes.

Level 2- Sessions A & B

- Perform a warm-up before and a cool-down after each session
- Perform each individual exercise for 6-8 repetitions. Your muscles should feel tired. If you can/are performing more than 8 repetitions- add more weight/resistance, perform the exercise slower or do more sets of each exercise (see table below for guidance).
- Rest in between each repetition for at least 120 seconds or until you feel ready to repeat the exercise.

Level 2 Strength	Repetitions	Sets	Rest	Too easy or doing more than 8 reps?
Weeks 0-4	6-8	1-3	120 seconds or until you feel ready	Add more weight, perform exercise slower
Weeks 4-8	6-8	2-4	120 seconds or until you feel ready	Add more weight, perform exercise slower

Warm-up

You should do these movements from Level 1, becoming slightly breathless to prepare for Level 2 exercises:

- Marching on the spot for 20 seconds (Page 15)
- Heel raises for 20 seconds (Page 14)
- Boxing at different angles for 20 seconds (Page 17)

Cool down

You should perform these movements from Level 1 slowly to return your body to its pre-workout state:

- Marching on the spot slowly x5 each side (Page 15)
- Heel raises x5 each leg (Page 14)
- Boxing at different angles x5 each arm (Page 17)
- Balance exercises x3 each leg (Page 18)
- Twists x5 (Page 19)
- Roll downs x 5 (Page 19)
- Neck mobility x5 (Page 20)

Level 2- Session A

Exercise 1: Heel raises

Start in a seated position with your feet on the floor (hip width apart) and your knees bent to approximately 90 degrees.

Raise your heels to come up onto your toes slowly, pause at the top

Lower your heels back to the ground slowly.



To make this exercise more challenging, start in a standing position, holding onto the back of a chair for support.

Stand with your feet hip-width apart.

Use your hands for balance- do not push with them.

You can make this exercise even more challenging by trying heel raises while standing on one leg.



Exercise 2: Rows

Start in a standing position with your arms by your side.

Hold weights in your hands and keep your palms facing downwards.

Pull the weights up towards chin level as you bring your elbows out to the side.

Pause at the top, then slowly lower the weights back down to your starting position.



Exercise 3: Squats

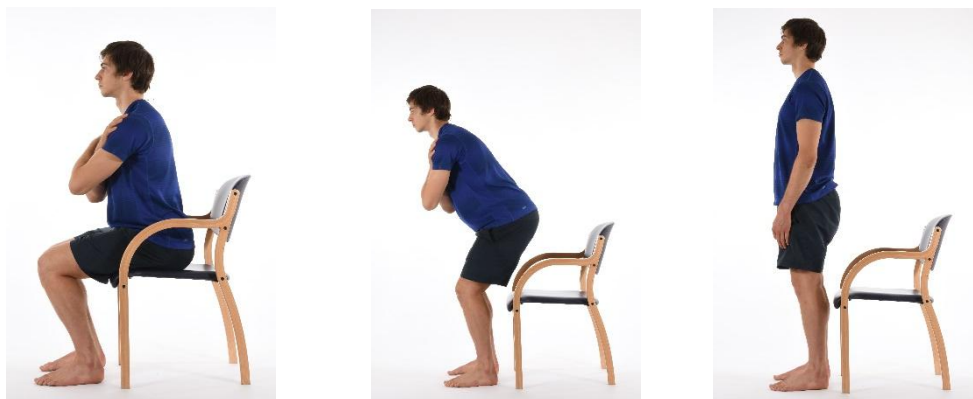
Sit in a chair with your feet hip width apart and your knees bent. Shuffle your bottom forwards in the chair (keep a support in front of you, if required). Place your hands on the arm rests as shown below.

Bring your nose over your toes and push through your legs and arms into a standing position.

Pause at the top (holding onto a support if required) reach back with your arms and when you can feel the back of the chair on your legs, slowly lower back down to sitting.



To make this exercise more challenging, place your hands on your hips or chest and push up through your legs.



If you feel able, you can make this exercise even harder by starting in a standing position with your feet hip width apart. Keep your back straight and squat down, sinking your bottom backwards. Then push up through your legs to stand back up. For a further challenge, hold weights in your hands or across your chest as you do the exercise.



Exercise 4: Press ups

Stand next to a sturdy chair or a wall with your hands at chest level.

Slowly lower yourself forwards and bend your elbows out to the side and then push yourself back up to your starting position.

You can make this more challenging by standing further away from the chair or the wall.



When you feel able to, try to make this exercise more challenging as follows:

Start on all fours with your hands under your shoulders, your knees hip width apart and your fingers spread wide on the ground.

Bring your weight forward; slowly lower yourself to the floor as your elbows bend out to the side and then push back to starting position while keeping a flat back throughout.



To make this exercise even more challenging, raise your knees. Keep your hands under your shoulders with your fingers spread wide on the ground. Your feet should be hip width apart.

Lower yourself down slowly drawing elbows out to the side and then push back up- keeping your back flat.

For a further challenge, try to lower yourself all the way to the ground and hover before pushing yourself back up. You can also try this exercise while wearing a backpack with weighted objects inside.



Exercise 5: Hip side kicks

Start in a standing position, holding onto the back of a chair for support.

Stand on 1 leg and kick your other leg out to the side as shown. Try to keep your legs straight and your feet facing forward.

Slowly lower your leg down.

Repeat the exercise on the other side.



To make this exercise more challenging, add a resistance band around your ankles as shown.



Level 2- Session B

Exercise 1: Step ups

Use your stairs or a small step, holding onto a handrail if required.

Step up with one leg then bring the other foot onto the step.

Step down with the first foot, then the other.

Alternate the leading leg.

You can make this harder by holding onto weights or by wearing a backpack with weighted objects inside.



Exercise 2: Triceps extension

You can do this in a seated or a standing position.

Hold a weighted object in one hand with your elbow pointing forwards. Support the elbow underneath with the other hand- as shown

Straighten your elbow and then slowly return to the starting position

To make this exercise more challenging, straighten your elbow towards the ceiling as shown.



Exercise 3: Trunk rotations

You can do this exercise sitting in a chair or sitting on the floor with both knees in front of you, hip width apart.

Keep your arms straight and slowly rotate to each side.

Perform this exercise for 30-45 seconds.

You can make this harder by holding a weighted object.



To make this exercise more challenging, sit on the floor with your legs out in front of you, with a slight bend in your knees (as shown). Again you can make this harder by holding a weighted object.



Exercise 4: Bend and press

Place an object on a chair in front of you. Stand with your feet hip width apart with a slight bend in your knees. Aim to keep your back straight as you do this exercise.

Slowly lower down, bending at your hips and avoid your knees coming forward.

Pick up the object and slowly stand back up, pushing the object up above your head.

Slowly lower the object to your chest, bend down from your hips, place the weight back on the chair and repeat the exercise.

You can make this easier by not pushing the object above your head- try to aim as far as is comfortable for you or use a lighter weight object.

If you want to make this harder, you can try to use a heavier weighted object.



Exercise 5: Lunges

Start in a standing position, holding onto the back of a sturdy chair as shown.

Place one leg in front, keeping both feet facing forward.

Bend your front knee until it is over the middle of your foot and then push back up.

Repeat the exercise and then repeat on your other leg.



When you feel able, you can try this exercise without the support of the chair. Place your hands on your hips to do the exercise.



To make this exercise even harder, bend both of your knees for a deeper lunge.

For a further challenge, hold weights in your hands or wear a backpack with weighted objects inside.



Level 3

Cardiovascular exercise

You should continue with your cardiovascular exercise as described in **Level 2** (page 21).

Strengthening

- There are 2 different sessions (A & B) within Level 3. You should do each session once per week with at least one rest day in between
- You should start with the easier version of the exercise at the top of the page and progress to the more difficult exercise when you feel able to do so
- If you can't do a certain exercise, then skip it and see if you can go back to it when you feel ready
- If you become breathless, use your **Breathing techniques to manage breathlessness** (page 6-7) to recover
- The process of strengthening your muscles needs you to regularly increase the difficulty level. It can take up 8-12 weeks before you start noticing these changes.

Level 3- Sessions A & B

- Perform a warm-up before and a cool-down after each session
- Perform each individual exercise for 6-8 repetitions. Your muscles should feel tired. If you can/are performing more than 8 repetitions- add more weight/resistance, perform the exercise slower or do more sets of each exercise (see table below for guidance)
- Rest in between each repetition for at least 120 seconds or until you feel ready to repeat the exercise.

Level 3 Strength	Repetitions	Sets	Rest	Too easy or doing more than 8 reps?
Weeks 0-4	6-8	2-3	120 seconds or until you feel ready	Add more weight, perform exercise slower
Weeks 4-8	6-8	3-5	120 seconds or until you feel ready	Add more weight, perform exercise slower

Warm-up

You should do these movements from Level 1, becoming slightly breathless to prepare for Level 3 exercises:

- Marching on the spot for 20 seconds (Page 15)
- Heel raises for 20 seconds (Page 14)
- Boxing at different angles for 20 seconds (Page 17)

Cool down

You should perform these movements from Level 1 slowly to return your body to its pre-workout state:

- Marching on the spot slowly x5 each side (Page 15)
- Heel raises x5 each leg (Page 14)
- Boxing at different angles x5 each arm (Page 17)
- Balance exercises x3 each leg (Page 18)
- Twists x5 (Page 19)
- Roll downs x 5 (Page 19)
- Neck mobility x5 (Page 20)

Level 3- Session A

Exercise 1: Press ups

Stand next to a sturdy chair or a wall with your hands at chest level.

Slowly lower yourself forwards and bend your elbows out to the side and then push yourself back up to your starting position.

You can make this more challenging by standing further away from the chair or the wall.



When you feel able to, try to make this exercise more challenging as follows:

Start on all fours with your hands under your shoulders, your knees hip width apart and your fingers spread wide on the ground.

Bring your weight forward; slowly lower yourself to the floor as your elbows bend out to the side and then push back to starting position while keeping a flat back throughout.



To make this exercise even more challenging, raise your knees. Keep your hands under your shoulders with your fingers spread wide on the ground. Your feet should be hip width apart.

Lower yourself down slowly drawing elbows out to the side and then push back up- keeping your back flat.

For a further challenge, try to lower yourself all the way to the ground and hover before pushing yourself back up. You can also try this exercise while wearing a backpack with weighted objects inside.



Exercise 2: Squats

Start in a seated position with your feet hip width apart and your hands on your hips or your chest (as shown).

Stand upright by pushing through your legs and then sit back down slowly.



To make this slightly more challenging, try to do the exercise without the chair.

From a standing position with your feet hip width apart, squat down, sinking your bottom backwards. Keep your back straight throughout.

Push back up through your legs to a standing position.



For a further challenge, hold weights in your hands or across your chest as you do the exercise.



Exercise 3: Rows

Start in a standing position with your arms by your side.

Hold weights in your hands and keep your palms facing downwards.

Pull the weights up towards chin level as you bring your elbows out to the side.

Pause at the top, then slowly lower the weights back down to your starting position.



Exercise 4: Trunk rotations

You can do this exercise sitting in a chair or sitting on the floor with both knees in front of you, hip width apart.

Keep your arms straight and slowly rotate to each side

Perform this exercise for 30-45 seconds

You can make this harder by holding a weighted object.



To make this exercise more challenging, sit on the floor with your legs out in front of you, with a slight bend in your knees (as shown). Again you can make this harder by holding a weighted object.



Exercise 5: Catching the bag

Stand upright with your feet slightly wider than hip width apart.

Drop a plastic bag from shoulder height with one hand and snatch the bag with your other hand.

Alternate on each side for 30-45 seconds.

If you want to challenge your balance, try standing on one leg as you do this exercise.



Exercise 6: Hinges

Start in a standing position with your feet hip width apart and a slight bend in your knees, holding onto a weighted object. Keep your back straight and focus your eyes on a point ahead of you.

Slowly lower the object down in a straight line, bending (or hinging) at the hips, not letting your knees come forward.

Then push back up to standing.



Level 3- Session B

Exercise 1: Heel raises

Start in a standing position with feet hip width apart, holding onto a sturdy chair with two hands (as shown). Use your hands for balance- do not push with them.

Slowly raise your heels and come onto your toes. Then slowly lower your heels to the ground.



To make this exercise more challenging, stand on the edge of a step (with your feet hip width apart) while holding onto a banister or a wall.

If you do not have a step, then try to do this exercise on one leg, or while wearing a backpack with weighted objects inside.



For a further challenge, do this exercise while standing on one foot on the step (as shown).

Repeat the exercise on one side and then do the exercise on the other side.



Exercise 2: Flies

Stand with your feet hip width apart and with a slight bend in your knees. Hold a weight in each hand.

Bend forward from your hips, keeping your back flat.

Lift your arms up to the side with your elbows slightly bent. Pause at the top, squeezing shoulder blades together.

Slowly lower your arms to the starting position.



Exercise 3: Lunges

Start in a standing position with your hands on your hips.

Place one leg in front, keeping both feet facing forward.

Bend your front knee until it is over the middle of your foot and then push back up.

Repeat the exercise and then do the exercise on your other leg.



To make this exercise more challenging, bend both of your knees for a deeper lunge.



For a further challenge, hold weights in your hands or wear a backpack with weighted objects inside.



Exercise 4: Curl into press

Start in a standing position with your feet hip width apart and a slight bend in your knees.

Hold a weight in each hand by your side with your palms facing inwards. Keep your elbows tucked in.

Bend your elbow of one arm and raise your hand to your shoulder. Then straighten your arm- pushing the weight towards the ceiling, turning your palm to face forwards. Pause and then slowly lower your hand back towards your shoulder, turning your palm back inwards. Then return your arm to the starting position.

Repeat the exercise and then do the exercise on the other side.



Exercise 5: Glute bridges

Lie on the floor on your back with your knees bent (as shown). Your feet and knees should be hip width apart.

Push through your feet and lift your hips up. Pause at the top.

Slowly lower down.



To make this more challenging, lift one foot off the ground

Perform the number of repetitions and then repeat the exercise on the other side.



Exercise 6: Triceps dips

Sit on the edge of a stable chair or a sofa. Place your hands, palms downward, onto the seat, underneath your shoulders with your fingers pointing towards your feet. Keep both knees bent, hip width apart and squeeze your shoulder blades together.

Bend your elbows behind you to lower yourself (as shown).

Push back up to your starting position by straightening your elbows.

You can make this exercise easier by keeping your knees bent and using your legs to help push you back to the starting position.



To make this exercise more challenging, keep your legs straight throughout and use only your arms to lower and push back up.

For a further challenge, you can go lower and slower.



Acknowledgements

Many thanks to the contributions from Physio@Home clinicians, Pulmonary Rehab, Musculoskeletal, Medical photography, The Association of Chartered Physiotherapists in Respiratory Care (ACPRC), Duncan Grant and Hamish Grant.

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Table 1

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Patient-specific activity scoring scheme:

0 1 2 3 4 5 6 7 8 9 10
 Unable to perform activity Able to perform activity at the same level as before injury or problem

Activity	Today's Date	2 Weeks	4 Weeks	8 Weeks	12 Weeks
<i>For example: Walking 20 minutes to the shops</i>	<i>2</i>	<i>4</i>	<i>10</i>		
1.					
2.					
3.					
4.					
5.					
Additional/new					
Additional/new					

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Table 2	This table can be removed for your convenience						
Physical Activity Diary	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Week 1							
Week 2							
Week 3							
Week 4							
Week 5							
Week 7							
Week 8							
Week 9							
Week 10							
Week 11							
Week 12							

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