

## Physiotherapy department

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# The dynamic control exercise class booklet

**This booklet aims to explain what happens in the dynamic control class and how the exercises may help your condition. We have included instructions for the exercises that make up the circuit in the back of this booklet, to help you to exercise at home. We would recommend that between classes you pick one of two of the exercises to carry out regularly.**

**We have also included a brief description of the Pilates moves that you will be shown at the end of each class, so that joining a local Pilates class in the future feels a little less daunting.**

**Please ask the physiotherapist and technicians who will be running the dynamic control class any other questions that you might have.**

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## What should I expect from the class?

During the class you will carry out an average of an hour of circuit based exercises. Classes take place once a week for six consecutive weeks. The circuit is made up of eight exercises, each with two parts, which have been chosen to improve weaknesses that are common in lower back/pelvic pain conditions. The exercise circuit is supervised by a chartered physiotherapist who will check that you are doing the exercises correctly and safely.

All of the exercises have been chosen as they will work to strengthen your back in a safe way. However, if you feel that your pain is worsening when doing the exercise class please tell the physiotherapist. We will be able to tell you if you are doing the exercises right or if they need to be altered.

We aim to provide you with six classes. However, if you cannot attend for a week, we cannot guarantee that we can offer you a further class to make up your six. We recommend you chose a time to start when you know you are going to be able to make the regular six weekly attendance. Most people manage well if they are able to attend between four and six sessions.

## Why have I been referred?

Nearly all research agrees that exercise is the best treatment for people that have had back problems for some time. Evidence shows that exercise can reduce pain and improve overall function. Other kinds of treatment can be helpful short term, but doing exercises seems to make the biggest difference in the long term. These particular exercises are designed for people who may want to return to sport or higher level activities.

## How does exercise help?

To get our spine moving well we need the muscles, ligaments, joints and nervous system to be working together. The muscles that control movement within the lower back and pelvis can be divided into two groups called 'local' and 'global' muscles.

Your local muscles (often called your deep or core muscles) surround your spine and pelvis close to the bones and joints. Normally these muscles switch on just before movement in order to protect the spine. The main muscles that make up this group are called **Transversus Abdominus** and **Multifidus**. As they surround the thorax (the part of the body between the neck and the stomach), they are often described as a corset of deep strength and support.

The global muscles (sometimes called slings) sit closer to the surface of your skin. These muscles, along with the local muscles, will work together to give the spine more support whilst you are moving. This is why we will be asking you to carry out exercises that work many different muscles, often at the same time.

Recent research has shown that when we have pain there is a change in how we control these abdominal and back muscles. For example, the deeper back muscles seem to be less active in people with long-standing low back pain. Having poor

muscle control can worsen the condition. This is because a person would be unable to automatically recruit the correct pattern of muscles around the spine to support the movement.

However, research has shown that exercise that focuses on the control of the deeper back muscles can improve both pain levels and function. It may also help reduce the risk of the pain coming back.

Therefore the main aim of this course is to teach you an exercise programme that will improve the control of your back whilst you move, so that you can consider returning to a sport or other important physical goals.

## Other benefits of exercise

Exercise can improve flexibility, endurance and fitness, all of which help in the prevention and treatment of back pain as well as cardiovascular disease.

People often feel nervous about moving their backs when they have pain. However, it has been shown that through a guided exercise programme, that these fears can be eased. Exercise can build your confidence with movement, therefore helping you to return to your daily activities.

## Should I do exercises outside of the class?

Yes! To get the best results from this programme, you should be doing exercise at home on a regular basis as well. If your physiotherapist gave you some exercises to carry out before the class, continue with these. We also suggest that you add at least one of the exercises taught to you during the class. Try and create a manageable daily routine to follow.

## Can I do other exercises?

Yes. It has been suggested that doing cardiovascular exercises (such as walking or gentle swimming) for around 20 minutes three to five times a week can improve both aerobic fitness and low back pain. Some other recommended exercise types include Pilates, Tai chi and yoga. At the end of every class we will demonstrate a Pilates move to you so that you can be familiar with a small routine by the end of your course.

It is advisable to pace your return to normal sporting activity. For example, if you haven't been exercising (for example swimming, running, gym) since your back pain started, you will need to restart at a lower level than you were used to before. You can then slowly and safely increase this amount. This is true for all sports. If you would like more information on this please speak with your physiotherapist.

## What should I do once the class is finished?

Some people do not see big improvements straight away. Generally muscle takes longer than just six weeks to start strengthening - it can take a few months before you get the most favourable result. Therefore it's important to **stay motivated and**

**carry on with the exercises** even when the class is finished. You may want to think about joining a local Pilates class to help with this motivation.

## What else can I do to look after my back?

As well as exercise there are other things you need to consider to improve the health of your back. Again, please ask a physiotherapist if you have any questions about these activities.

**Sitting:** By not moving your back regularly during prolonged sitting, stiffness can build up in your muscles and joints. If this continues over a long period it can lead to pain. To prevent this, it's recommended that you change your position every 20-30 minutes. So make sure you get up, move or stretch regularly throughout the day. Some people find putting a lumbar support in their chair helps them to keep a good upright posture and avoid slouching.

**Desk work:** It is also important to look at your workstation, especially if this is where you spend most of your day! For example, is your chair the correct height? Is your computer screen in a good position? Ask your physiotherapist for more information if you need.

**Driving:** If you are planning on a long drive, consider stopping for breaks to allow you to move and reposition your back (ideally every 30 minutes).

**Lifting:** Ask yourself if you really need to lift a load on your own or even do you need to lift it at all! When lifting think about using the large joints in your body (such as your knees) rather than putting the strain through your small back joints. Keep the load close to your chest, bend at the hips and knees and avoid any twisting.

**Sleeping:** Different people find different things useful. Some find a firm mattress helps, others prefer a softer mattress. There is no rule apart from making sure that it feels like your back is well supported whilst you sleep.

## What happens if my pain comes back again?

By following the advice and exercises given to you in the class you will be reducing the risk of future flare-ups. Unfortunately, there are no treatments that can guarantee your pain will not return. If you do experience a flare-up of your pain, what you do in the early stages is very important.

1. **Don't panic** – This is easier said than done, but stress has been shown to increase pain. Remember serious damage is very rare and often pain may flare and then settle down again quickly.
2. **Control your pain** – There are a number of treatments you might find helpful. The most effective can often be painkillers. Do not hesitate to take them if you need them. Talk with your GP/pharmacist about the best medication for you.

Other things that may help are heat and cold packs to reduce pain and relax your muscles. Try a hot water bottle or frozen peas wrapped in a damp tea

towel to see what works best for you. Place on the skin for no more than 15 minutes at a time.

- 3. Exercise and stay active** – We know that prolonged bed rest for more than a day or two can worsen your pain and recovery from back pain. So try to do some movement – be it stretching or a short walk – as early as you can and build this up a little more each day.

At first you may have to reduce the amount of exercise you do. However, as your pain settles, you will find that you can build your exercise up again.

Hopefully by completing the exercise class, we have given you the best tools to help manage these flare-ups yourself. Remember, you are your own best therapist.

## When should I contact the doctor?

Although back pain can be severe and worrying, it is rarely a sign of serious illness. However, if your symptoms change dramatically, or if you feel unwell with your back pain you should see your doctor.

## Useful websites

w: [www.backpain.org](http://www.backpain.org)

w: [www.arc.org.uk](http://www.arc.org.uk)

w: [www.spine-health.com](http://www.spine-health.com)

w: [www.spineuniverse.com](http://www.spineuniverse.com)

w: [www.nhsdirect.nhs.uk](http://www.nhsdirect.nhs.uk)

## The exercises

Over the next few pages, we have given you details of the exercises that you do within the dynamic control class circuit. Remember, it is important that you are doing some of these at home to get the best out of the programme.

All of the exercises have detailed descriptions next to them to help you. However, if you're unsure how to do an exercise, use the class sessions to ask a physiotherapist to check your technique.

Two terms which you may hear in the class when we are teaching the exercises are spinal neutral and lower abdominal activation/contraction. These are explained below.

## What is spinal neutral?

Spinal neutral is the best position in which you can switch your deep muscles on. This position is found by tilting your pelvis forwards and backwards and finding a comfortable mid position. Please discuss this with your physiotherapist if you are unsure.

## What is lower abdominal activation?

Once you find the neutral position, you can begin to gently contract your lower abdominal muscles (or local muscles).

- Place your fingers on your lower abdominal muscles just above your pelvic bones.
- **Gently** contract your lower abdominal muscles so that you can feel gentle tension under your fingers, whilst keeping your back still and your breathing normal.
- You may find it useful to think of lightly lifting up your pelvic floor (women can imagine pulling up their pelvic floor, whilst men can carry out a small lift of their testes).
- Hold this contraction whilst breathing in and out normally.

At first you may find it difficult to feel these muscles working, especially if you haven't done similar exercises in the past. Don't worry too much, because as long as you are doing these exercises with control (with your back in a good position) you are almost certainly switching on these deep muscles automatically.

## Pilates exercises

We also enclose a brief description of how to carry out some of the most frequently used Pilates moves. This will ensure attending a Pilates class is easier for you in the future. We recommend, should you attend a class in the community, that you always discuss your back and your progress with exercise with the instructor before starting. This will make sure that you make the most progress and have a safe experience.

## Feedback

We very much hope you enjoy and find this course useful. Should you feel that there are things we could improve upon, we will always welcome your feedback and comments. Please discuss any suggestions or feedback with your physiotherapist.



## 1. Forward ball roll-out / ball balance



### 1a

- Lean over the top of the ball and reach your hands towards the floor.
- Walk your hands forwards until the ball is under your hips or thighs.
- Maintain a neutral spine position using your deep abdominal muscles.
- Walk your hands backwards to return to the starting position.
- **To progress:** When you have walked the ball forwards try to raise one arm off the floor

### 1b

- Balance two balls one on top of the other.
- Rest both hands on the top and try to balance the balls without moving your feet.
- Maintain a neutral spine position and gently tighten your deep abdominal muscles.
- **To progress:** close your eyes, or use only one hand to balance the balls.  
**OR**
- Repeat the exercise whilst standing on one leg.



## 2. Kinesis machine



### 2a – Front sling

- Stand sideways to the kinesis machine.
- Adjust the weight as required.
- Maintain a neutral spine and relaxed breathing.
- Hold the overhead handle with one hand and pull down and in.
- At the same time raise the opposite knee.
- Maintain your balance and posture.



### 2b – Back sling

- Stand sideways to the kinesis machine.
- Maintain a neutral spine with your deep abdominal muscles gently contracted.
- Pull the handle back.
- At the same time pull your opposite leg back.
- Maintain your balance and posture.

### 3. Pointing and band row



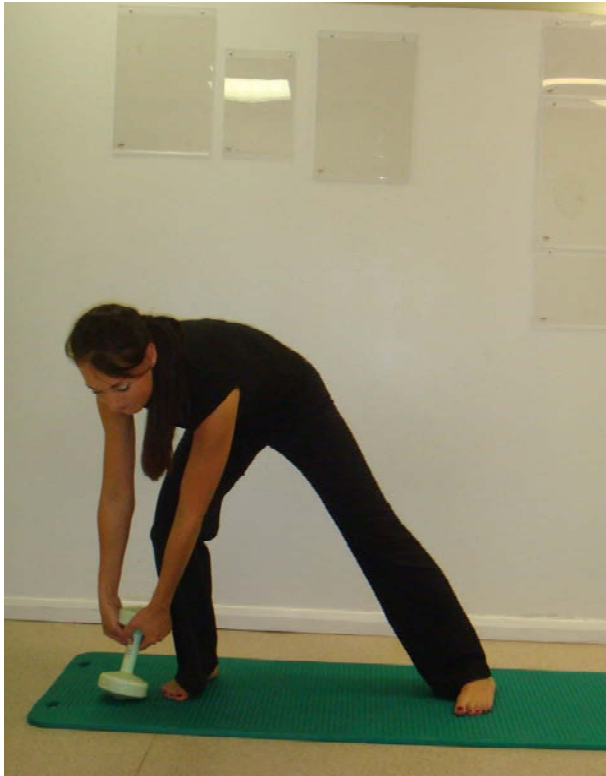
3a

- Stand on the trampette with your deep abdominal muscles gently contracted.
- Pick a point on the wall with your eyes.
- Close your eyes and point to the spot.
- Open your eyes and see how close you are!
- Repeat on one leg to make the exercise harder.



3b

- Stand with a neutral spine and gently contract your deep abdominal muscles.
- Bend your elbows and pull the band towards you, keep the weight on your feet even.
- **To progress:** repeat on one leg while maintaining your balance.



### 3c – Band row progression

- Side lunge down, bending your knees, and pick the weight up by the heel.
- Rotate round and reach up as if putting the weight on a shelf.
- Progress using the theraband.



## 4. Side strength



### 4a

- Stand side on to the wall.
- Balance on your outside leg.
- Place a ball between the inside knee and the wall.
- Bend and straighten the supporting leg.
- Maintain your neutral spine, posture and balance.
- Repeat on the other side.

### 4b



- Lie on one side and support yourself on your elbow, with your knees bent and feet together.
- Gently contract your deep abdominal muscles and raise your hips towards the ceiling, keeping your body in a straight line.
- **To progress:** repeat as above with your legs straight and only your feet and elbow on floor.





4c – Side plank progression



- Lie on one side and support yourself on your elbow, with your legs straight and only your feet and elbow on the floor.
- Gently contract your deep abdominal muscles and raise your hips towards the ceiling, keeping your body in a straight line.
- Lift your arm and / or leg.
- Hold for 30 seconds then relax and repeat.

## 5. Press ups / hip exercises



### 5a

- Start on your hands and knees, as shown in the photo, your weight on your arms.
- Ensure your back is neutral and gently contract your deep abdominals.
- Bend your arms to do a press-up.
- Keep your head in line with your body.
- **To progress:** start with your hands and toes on the floor and your back neutral, and repeat as above.



### 5b

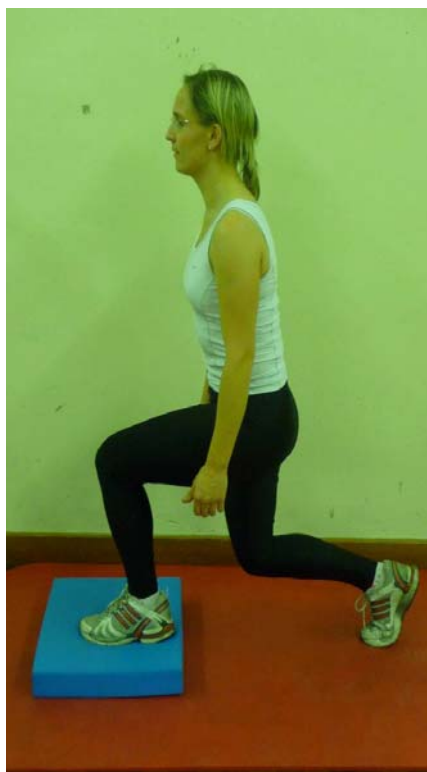
- Stand facing the wall bars and loop the band around one foot.
- Maintain a neutral spine position and gently contract your deep abdominals.
- Pull your leg back with the knee straight.
- Repeat sideways keeping your body straight.

## 6. Superman / lunges



### 6a

- Start on all fours with a neutral spine position.
- Gently contract your deep abdominals and maintain relaxed breathing.
- Stretch one arm and the opposite leg out towards the wall.
- You can use the band looped around opposite hand and foot for greater feedback.

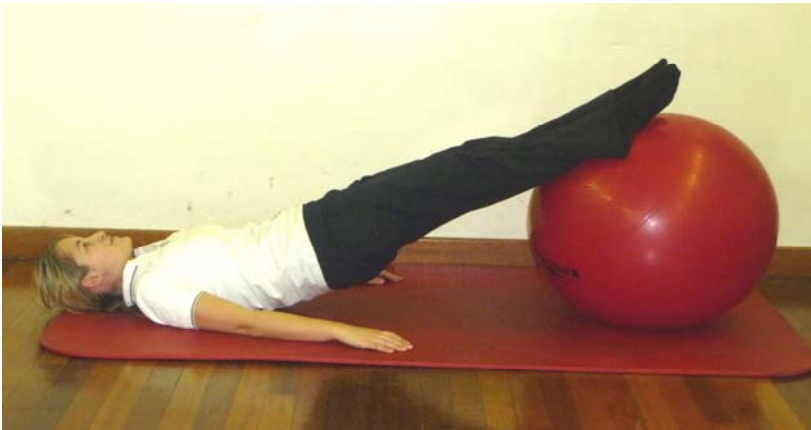


### 6b

- Stand with your feet together, spine neutral and deep abdominals gently contracted.
- Step forwards on one leg bending both knees as far as comfortable.
- **To progress:** hold weights or step onto a foam pad.



## 7. Bridging / arm circle with leg stretch



7a

- Lie on the floor with your heels on the gym ball.
- Maintaining a neutral spine position, raise your hips towards the ceiling.
- Lower slowly.
- Place your arms on the floor for support if you need to.
- **To progress:** raise one leg off the ball and maintain a neutral position at your pelvis and back.



7b



- Lay on your back with a neutral spine and deep abdominals contracted.
- Start with your arms overhead as shown, and slowly circle them back, out and around.
- As you do this, raise one leg and straighten the knee. Lower slowly and continue with other leg and another arm circle.
- **To progress:** repeat the exercise while lying on the foam roller. Ensure you can rest your head on it.

## 8. Squats – one and two legs



### 8a

- Stand on one leg.
- Gently contract your deep abdominal muscles.
- Bend the knee of the supporting leg as low as comfortable.
- Keep your spine in neutral and your breathing relaxed.
- Use the mirror for balance if you need to.



### 8b

- With your feet shoulder width apart, gently contract your deep abdominal muscles.
  - Bend your knees as if sitting down.
  - Keep your back in a neutral position.
- OR**
- With a band under your feet and in both hands, pull up with your arms as you squat.

## Contact us

If you have any questions or concerns about the dynamic control class, please contact the physiotherapy department on **020 7188 5094**.  
**(8.30am-5pm, Monday to Friday)**

### Pharmacy medicines helpline

For information about any medicines that you have been prescribed at Guy's and St Thomas' Hospitals, you can speak to the staff caring for you or call our helpline.

**t:** 020 7188 8748 9am to 5pm, Monday to Friday.

**Patient Advice and Liaison Service (PALS)** – To make comments or raise concerns about the Trust's services, please contact PALS. Ask a member of staff to direct you to the PALS office or:

**t:** 020 7188 8801 at St Thomas' **t:** 020 7188 8803 at Guy's **e:** [pals@gstt.nhs.uk](mailto:pals@gstt.nhs.uk)

**Knowledge & Information Centre (KIC)** – For more information about health conditions, support groups and local services, or to search the internet and send emails, please visit the KIC on the Ground Floor, North Wing, St Thomas' Hospital.

**t:** 020 7188 3416

**Language support services** – If you need an interpreter or information about your care in a different language or format, please get in touch using the following contact details.

**t:** 020 7188 8815 **fax:** 020 7188 5953

**NHS Direct** – Offers health information and advice from specially trained nurses over the phone 24 hours a day.

**t:** 0845 4647 **w:** [www.nhsdirect.nhs.uk](http://www.nhsdirect.nhs.uk)

**NHS Choices** – Provides online information and guidance on all aspects of health and healthcare, to help you make choices about your health.

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

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