

BACK TO ACTION

Part Two: Free Weights & Gym Balls

The background is a solid orange color. On the left side, there is a series of thin, white, curved lines that originate from the top left and sweep downwards and to the right, creating a sense of motion and flow. These lines are of varying lengths and curves, some overlapping each other.

THE NASS GUIDE TO EXERCISING EFFECTIVELY AND SAFELY FOR PEOPLE WITH ANKYLOSING SPONDYLITIS (AXIAL SPONDYLOARTHRITIS) (AS)

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The advice in this booklet is as accurate and as comprehensive as possible but it is only general advice and should not be used as a substitute for individual advice you might receive from consulting your own doctor. If you are a health professional using this guide it is important that you use your own clinical judgement when interpreting the information and deciding how best to apply it to the treatment of your patients.

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SAFETY FIRST

The kind of moderate exercise recommended in this programme is designed to improve your health and wellbeing and should be good for you and very safe for almost everyone

However, ankylosing spondylitis (axial spondyloarthritis) (AS) can sometimes affect the heart or lungs and cause conditions that could be worsened by exercise. For this reason we would recommend that you see your doctor before starting the programme and annually.

This is particularly important if

- You already know that you have a medical condition, particularly if it affects your heart or lungs
- You get chest pain, palpitations (irregular beating of the heart), unexplained breathlessness, dizziness, or have lost consciousness
- You are on medication for your heart or blood pressure
- You are pregnant
- Your AS is affecting your joints, especially the leg joints, causing swelling, pain or stiffness
- You are not used to exercise
- You are aged over 65 years or have had AS for more than 10 years

Of course most people with AS will be seeing a rheumatologist regularly and will already have been advised whether they can exercise.

If you get any unexplained symptoms while exercising such as chest pain, palpitations, unexpected breathlessness, dizziness, faintness or lose consciousness, please stop and see a doctor straight away.

If you do need to see a doctor before starting, it would be useful to take the programme with you and in particular point out the next section that explains what is in each part of the programme.

INTRODUCTION

IF YOU HAVE ANKYLOSING SPONDYLITIS (AXIAL SPONDYLOARTHRITIS) (AS) AND WOULD LIKE TO START REGULAR EXERCISE, THIS PROGRAMME IS FOR YOU.

Exercise is very helpful in AS, reducing pain and stiffness and improving posture and wellbeing. In the long term, it may well help your spine to remain mobile. This is why exercise is usually recommended as part of the treatment of AS by rheumatologists and physiotherapists, and also by those who have AS. However, while many people with AS have heard about the benefits of exercise, many don't have a programme, don't do it regularly or do not have a programme that is right for their AS. If you are in one of these categories, this programme is especially for you.

We have tried to make the programme as clear, straightforward and enjoyable as possible, so that you can use it in a gym or at home as part of your daily routine. For a fuller programme of exercise which includes flexibility, mobility, strength, cardiovascular and breathing exercises, readers are directed to the original Back to Action book which details and recommends an overall exercise programme for AS. This booklet should be used as one element of an overall weekly exercise regime.

Why doesn't everyone with AS do regular exercise?

We asked a group of people with AS what stopped them doing a regular programme. Here are some of their answers.

- 'What is the point? It is going to get worse anyway.'
- 'I don't know which exercises to do.'
- 'It might hurt. I might damage my back.'
- 'It is too intimidating to go to the gym.'
- 'I don't have time.'
- 'It is too much effort.'

What is the point of a regular exercise programme in AS?

People with AS often have to deal with the day to day symptoms of pain and stiffness and the worry about long term effects on the spine and general health. helps relieve the symptoms of pain and stiffness and helps you sleep and improves your general health. So you feel better, look better and get more out of life. There are now some very effective medical treatments that can also reduce pain and stiffness, so it is important that everyone with AS is under regular care with a GP and rheumatologist. The best results come from a combination of medical treatments and a regular exercise programme.

INTRODUCTION

I don't know which exercises to do.

If you have AS, the priorities are to remain fit and healthy and also to promote good mobility of the spine and good posture. There is a huge range of exercise regimes on offer these days, designed to promote fitness or to improve sporting skills or simply to look good on the beach. They are usually good advice but not necessarily good for AS. This programme uses the most effective exercises for AS. The authors have years of experience prescribing exercise and have designed it so that it shouldn't take too long to get the full benefit.

It might hurt. I might damage my back.

This programme has been devised to minimise discomfort and risk of injury. All of the exercises are low impact and are carefully explained so that you are always in control. It is vital that you warm up and complete your mobility stretches on a daily basis and we strongly recommend that you follow the programme in the original Back to Action book. It shouldn't hurt, but you will feel the stretching. You may notice some muscle soreness for a few days after doing the free weights section. As with all medical conditions, you should check with your GP before starting the programme.

It is too intimidating to go to the gym.

Most people feel intimidated when they first go to a gym. They always seem to be full of super-fit people. In reality most people don't have much direction and many of the most eye catching exercises don't make you much fitter or stronger. If you use this programme, you will know exactly what you are doing and why. This will be very obvious to the staff in the gym and to anyone there who is serious about fitness.

It is too much effort.

This is probably the most difficult objection to answer! You may believe that exercise is important and that the programme is effective, clear and easy. But if you never enjoyed exercise and now on top of that have developed the pain and stiffness of AS, it can seem a lot to ask. All we can say is that many people have found it enormously worthwhile; it really does help your symptoms and can be great fun and great for your confidence.

Dr Tim Jones

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Readers are directed to the original **Back to Action** book which details and recommends and overall exercise programme for AS that includes mobility, flexibility, strength, cardiovascular and breathing exercises. This booklet on gym balls and free weights should be used as one element of an overall weekly exercise regime.



The original **Back to Action** book can be downloaded for free from the **NASS website** or costs **£14.99** from the **NASS online shop**.

Back to Action is also available to download as a free app and includes videos and voiceovers on all of the exercises featured in this book. You can download the Back to Action App for android phones from **Google Play**, on **Amazon Appstore** on **Kindle**, or you can download the Back to Action App for iPhones, iPod touches and iPads free of charge from the Apple **App Store**. When you are searching in the App Store, make sure that you search under 'mobile apps'.

GETTING STARTED

FREE WEIGHTS

The basic equipment you need for these gym ball exercises are:

- Gym kit that is loose enough to allow you to do the stretches
- Cross training shoes
- Free weights – these could range from 1kg to 5kg as you feel comfortable
- A gym mat, or carpet if you are at home
- A towel
- A water bottle

- When using any weights as part of your exercise program you need to make sure you keep to some basic rules that will help to ensure you do not over work your body and potentially give you more pain. So always think **low weight, high repetitions.**
- When you first begin using your weights always start with a weight lower than you think you need. It is much easier to gradually increase your weight over a period of sessions. If you are using a weight that is too heavy you will lose the quality of the movement that you are trying to do and you will compensate with poor posture or using different muscles that may aggravate your condition. If you have to use momentum to lift the weight (i.e.: sway your body to lift the weight) it is too heavy for you.
- Always check your posture before you start your exercises. Continue to check your position when you are performing the exercise with weights - **think quality over quantity.**
- Always perform your exercise in a slow controlled way. If you lift a weight too fast you will not get an overall muscle training effect. You also run the risk of causing yourself more discomfort / damage. **Slow controlled lift = more muscle tension and training.**
- Between each set of exercises make sure you allow your muscles to rest, 30-90 seconds should be enough.
- If you use to lift weights but you are now returning to the exercise having not done so for sometime, you must start with a low weight again so to avoid injury or increased discomfort.
- Try to perform some strengthening exercises at least twice a week but ensure that you have a rest day between each strengthening session. Never do strengthening exercise for the same muscles 2 days in a row.

“I AM 43 NOW AND I WAS DIAGNOSED WITH AS OVER 15 YEARS AGO. I WAS IN DENIAL WHEN I WAS DIAGNOSED. NOW I WISH I HAD DONE MY EXERCISES: EVERYONE TOLD ME HOW IMPORTANT IT WAS BUT I CHOSE NOT TO LISTEN.”

GETTING STARTED

GYM BALLS

The basic equipment you need for these gym ball exercises are:

- Gym kit that is loose enough to allow you to do the stretches
- Cross training shoes
- A gym ball (see page 9 for how to choose one)
- A gym mat, or carpet if you are at home
- A towel
- A water bottle

Exercising with a gym ball can be a lot of fun, it is a versatile piece of gym equipment and it will add variety to your exercise regime.

Once you have chosen the correct size ball for your height and inflated it correctly, you will need to think about the space where you are going to exercise.

- If you are exercising at home it needs to be free of furniture and clutter.
- You need to have plenty of space to perform your exercise safely without the fear of rolling off the ball and bumping into furniture.
- Also check for sharp objects on the floor as you don't want anything to burst your ball.
- If you are exercising on a hard floor then a yoga mat is recommended or else a carpeted area.
- Be aware of your own safety when sitting or lying on the gym ball – maintain good stability on the ball throughout each exercise.
- Perform the exercises slowly so that you remain in control of your gym ball.
- Some of the exercises have you lying on the gym ball, care must be taken when returning to the start position once the exercise has been completed.

CHOOSING A GYM BALL

GYM BALLS ARE NOW COMMONLY SEEN IN MANY GYMS AND HEALTH CLUBS

- **Do you know how to pick the correct size gym ball for your height and weight?**
- **Do you know if your gym ball is anti-burst or not?**

Addressing these two issues is essential to ensure that you are exercising in a safe and correct way when using a gym ball.

The following points should help you to answer all of the questions that you may have about selecting a gym ball during your work out.

Remember however that there are many different manufacturers of gym balls and so you should seek advice and guidance from your gym instructor if you are unsure of any points.

- Gym ball, exercise ball, Swiss ball, t ball, Reebok ball, stability ball – are all names for the same thing.
- Originally made for back rehabilitation, gym balls are now used for many different forms of exercise including yoga and Pilates.
- Always work with an anti-burst / burst resistant gym ball – anti-burst gym balls are labelled as being so. They are made of specially designed vinyl, sometimes with several layers, that when punctured will deflate slowly giving you time to stabilise yourself with your hands or feet as necessary. Non-burst resistant balls literally pop and can cause serious damage.

- Gym balls come in different colours according to their different size. Do not select a gym ball because it is your favourite colour!
- Generally most good quality gym balls are designed to take up to three times your body weight if the correct size is selected.
- If your gym ball is too small, your core centre is not as active as it should be and you will have the tendency to lean forward while sitting on the ball.
- If you are positioned too high, then you are working in a much more unstable position.
- A gym ball does not have to be pumped up so it is rock hard; it should be firmly inflated, so that when pressed with one finger, a slight dent is created, approximately 2 inches (5cm) across. Air can be added or removed from a gym ball easily and as required. To add or remove air from your gym ball seek the help of your gym instructor.

Anti-burst gym balls tend to be non-shiny and slightly textured – **choose this ball.**

Non-burst resistant gym balls tend to be shiny and smooth– **avoid this ball.**

If not already available request that your gym provides the appropriate gym ball for your safety

CHOOSING THE CORRECT SIZED GYM BALL

The general rule for choosing the correct gym ball size is to have your knees and hips bent to 90° (thighs parallel to floor) when sitting on the ball. Use the following as a rough guide to select a gym ball according to your height. Then try sitting on the gym ball as recommended above to get a good sitting position.

YOUR HEIGHT	GYM BALL SIZE TO SELECT
UNDER 5' 2" (1.57M)	45 CM
5'3" - 5'8" (1.60M-1.72M)	55 CM
5'9" - 6'2" (1.75M-1.88M)	65 CM
ABOVE 6'3" (1.90M)	75 CM

If you have back pain or longer legs it is acceptable to have your hips slightly higher than your knees but you must never have your hips lower than your knees.

If you are unsure if you are using the correct gym ball size for your height and weight please seek advice from your gym instructor.

REMEMBER:

REMEMBER TO SEEK MEDICAL ADVICE

if you become faint, short of breath, dizzy, unwell or experience unaccustomed chest pain during any exercise session.

SAFETY/POINTS TO REMEMBER

- **Don't overdo it.** Keep within your limits. Some people overdo it when they first start. For more information take a look at the section Information for Gym Personnel in the first Back to Action available to download for free from the NASS website or to buy online.
- **Don't expect** all gym equipment to look the same. Often different makes of gym equipment are set up slightly differently, so ensure a trained member of staff has shown you how to use each piece of equipment safely before you start. Don't overdo it.
- **You will have good and bad days** where you are able to do a bit more or may need to do a little bit less.
- **Pick a good time of day to exercise** – most AS patients experience some stiffness and pain in their spine or joints in the morning, so this is probably not a good time to exercise.
- **Don't worry** if you have some mild aches or pains when you are exercising. This is normal for people with AS. The pains should ease off after the exercise session is completed. If you have anything more than mild aches or pains that do not ease after the exercises, stop and seek medical advice.
- **Use a regime** that involves low weights and high repetitions – remember you are trying to stay mobile, strong and healthy. You are not training for a weight lifting competition.
- **Maintain a good posture** with all of your exercises. Neutral spine is an important part of this and is explained in the next section.
- **Stay motivated** – you may not notice big changes in your appearance but remember the exercises are to help you stay healthy, mobile and to help maintain a good posture.
- **Vary your exercises.** Remember that you need to do a mixture of strengthening, cardiovascular and stretching exercises. For more information take a look at the first Back to Action book available to download for free from the NASS website or to buy online.

PROMOTING GOOD POSTURE- NEUTRAL SPINE

- Looking from the side, the normal human spine at rest has three gentle curves: at the small of the back; between the shoulder blades; and at the neck.
- During movement, these curves may flatten or increase, but the closer they stay to their original shape, the better, because this shape leads to less strain on the ligaments and joints and therefore less risk of pain or injury. This position of good posture is often called the neutral spine position.
- Unfortunately, the pain and stiffness of AS encourages the spine to hunch forwards and over time, the spine may lose the ability to straighten back up.
- Here is a checklist that you can use to educate your spine to keep in a good posture. We suggest that you do this as often as possible through the day and while doing these exercises.

STARTING POSITION:

Stand with the feet shoulder width apart and grip the pelvis between the fingers at the front and the thumbs at the rear. Starting at the top is the best way to visualise correcting your posture. Making a mental check list is a good way to help.

- 1 Head position
- 2 Shoulder position
- 3 Hand position
- 4 Pelvis position
- 5 Knees

1 Draw the chin in but keep the head vertical aiming to line up the ear lobe with the mid line of the shoulder. This will bring the head back towards the mid line of the body (figure 1). Another way of thinking of this is to imagine that you are holding a tennis ball under your chin.

2 Draw the shoulders downwards towards the feet and lengthen the collar bones so your shoulders are open but NOT pinched back. Try to utilise the muscles in the mid and lower back rather than those at the top of the back. This will draw the shoulders back so they are not rounded, opening the front of the chest.

3 If your shoulders are rounded then you will find your hands tend to rest on the front of your thighs. To correct this you need to draw your arms, shoulders and shoulder blades back so your hands are now resting on the outside of your thighs (palms resting on your trouser seam).

4 To understand figure 2, the correct position of the pelvis, imagine that you are holding a bucket of water. Tipping water out of the front of the bucket will tip the pelvis forwards and vice versa. Working only in a range of movement that is comfortable, tip water out of the front, then back of the bucket, several times. At this point, stop in the mid position. Then slowly tip the bucket forwards to gently dribble water from the front of the bucket (slightly anteriorly tilted).

5 Finally, fully straightened knees can contribute to bad posture. Therefore softening and slightly bending the knees will help.



Figure 1

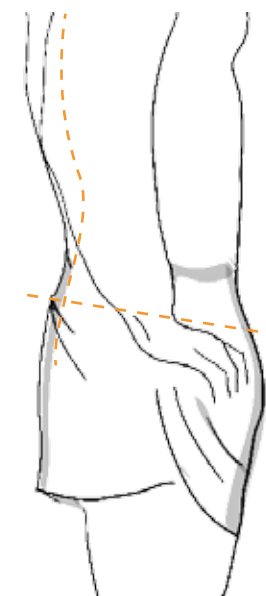


Figure 2

PRACTISE THIS AS OFTEN AS YOU CAN

WARM UP

- You should always warm up prior to any exercise session and especially before stretching.
- A warm up does exactly what it says it does and warms up your body by increasing the blood flow to the working muscles. This prepares your body for exercise and means the muscles are ready to exercise and are less prone to injury.

WARM UP IN THE GYM:

Static bike or cross trainer for 5-10 minutes on easy to moderate resistance. You should be able to hold a conversation throughout your warm up and not get out of breath. Remember even during your warm up you should be aware of your posture in sitting or standing and if using the cross trainer try not to let your chin poke forward.

WARM UP AT HOME:

March on the spot or use a bottom stair for step ups or else go for a walk for 5-10 minutes. You should be able to hold a conversation throughout your warm up and not get out of breath. Remember even during your warm up you should be aware of your posture in standing and if doing step ups try not to let your chin poke forward.

THE NASS GUIDE TO EXERCISE

FREE WEIGHT PROGRAMME

An abstract graphic consisting of numerous thin, white, curved lines that sweep across the orange background, creating a sense of motion and flow. The lines are concentrated in the lower half of the image, with some extending towards the top right corner.

SHOULDER EXTENSION

Benefit of exercise: To help strengthen shoulders and prevent forward rounding posture of the shoulders

Equipment required: Hand weights

If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

Repetition: 12 reps x 2 sets

Progression:

- Increase to x 3 sets
- Increase amount of hand weight

HINTS AND TIPS:

- Keep core engaged and neutral spine position throughout movement
- Keep chin tucked in
- Do not allow shoulders to raise up to ears
- Keep knees relaxed

STARTING POSITION:

Stand in neutral spine position, feet hip distance apart, arms relaxed by your side. Hold a weight in each hand.



MOVEMENT / ACTION:

Squeeze your shoulder blades together and then down. Hold the position for 5 seconds then return to the start position through the same movement line.



LUNGES

Benefit of exercise: To strengthen leg and buttock muscles

Equipment required: Hand weights

If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

Repetition: 12 reps x 2 sets right and left

Progression:

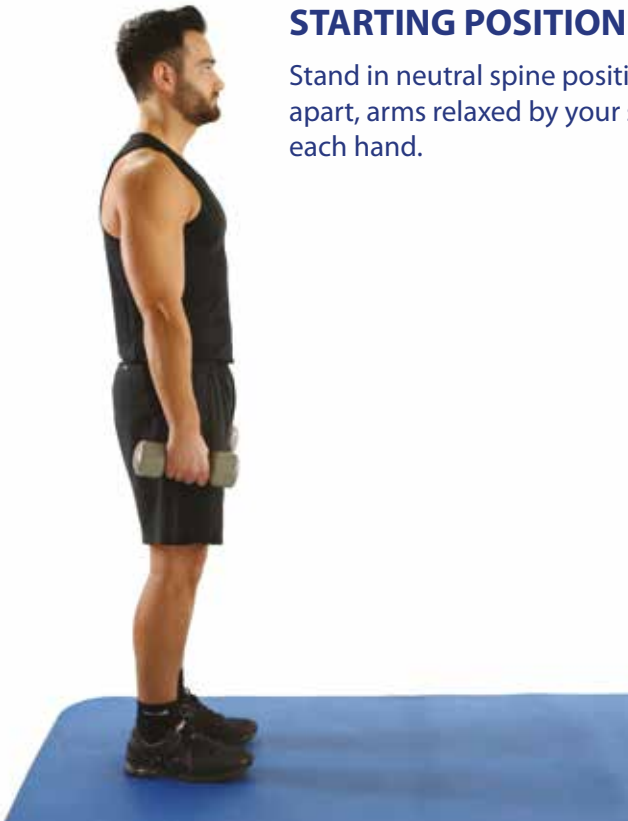
- Increase to x 3 sets
- Increase amount of hand weight

HINTS AND TIPS:

- Keep spine straight throughout movement, do not allow body to tip forward
- To control your balance, keep feet hip distance apart as you perform the movement
- Ensure you step forward far enough to allow the front knee to bend but do not allow it to pass over your toes

STARTING POSITION:

Stand in neutral spine position, feet hip distance apart, arms relaxed by your side. Hold a weight in each hand.



MOVEMENT / ACTION:

Engage core. Step forward with right foot into lunge position. Allow the left knee (back leg) to bend towards the floor at the same time. Continue the lunge movement until the right knee is bent to 90 degrees. Slowly return to the start position through the same movement line.



CALF RAISERS

Benefit of exercise: To strengthen calf muscles

Equipment required: Hand weights

If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

Repetition: 12 reps x 2 sets

Progression:

- Increase to x 3 sets
- Increase amount of hand weight

HINTS AND TIPS:

- Keep spine straight and engage core throughout movement to prevent body from "swaying"



STARTING POSITION:

Stand in neutral spine position, feet hip distance apart, arms relaxed by your side. Hold a weight in each hand.



MOVEMENT / ACTION:

Engage core. Raise both heels off the floor into a tip toe position. Hold the position for 5 seconds then slowly lower the heels back down to the start position through the same movement line.

SHOULDER SQUEEZE OVER GYM BALL (ARMS NEUTRAL)

Benefit of exercise: To strengthen back and neck

Equipment required: Gym ball, gym mat, hand weights

If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

Repetition: 10 reps, x 2 sets

Progression:

- Increase to x 3 sets
- Increase amount of hand weight

HINTS AND TIPS:

- Brace your feet up against a wall to aid stability
- Keep chin tucked in a little to maintain good neck position



STARTING POSITION:

Lay over gym ball with stomach/hips resting on ball. Extend legs out behind you resting on balls of your feet in a wide stance.

Have your arms by side of your body, a weight in each hand.

MOVEMENT / ACTION:

Keeping your neck in a neutral position, eyes looking to the floor and shoulders relaxed, lift your chest off the ball as high as you can. Squeeze shoulder blades together at the top of the movement and hold for 3 seconds. Slowly lower your shoulders and chest back down to the start position through the same movement line.

SHOULDER SQUEEZE OVER GYM BALL (ARMS AT 90 DEGREES)

Benefit of exercise: To strengthen back and neck

Equipment required: Gym ball, gym mat, hand weights

If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

Repetition: 10 reps, x 2 sets

Progression:

- Increase to x 3 sets
- Increase amount of hand weight

HINTS AND TIPS:

- Increase to x 3 sets
- Increase amount of hand weight



STARTING POSITION:

Lay over gym ball with stomach/hips resting on ball. Extend legs out behind you resting on balls of your feet in a wide stance.

Have arms out to the side at shoulder height and elbows bent to 90°, a weight in each hand.

MOVEMENT / ACTION:

Keeping your neck in a neutral position, eyes looking to the floor and shoulders relaxed, lift chest off ball as high as you can. Squeeze shoulder blades together at the top of the movement and hold for 3 seconds. Slowly lower your shoulders and chest back down to the start position through the same movement line.

SHOULDER SQUEEZE OVER GYM BALL (ARMS ABOVE HEAD)

Benefit of exercise: Strengthens whole of back and neck

Equipment required: Gym ball, gym mat, hand weights

If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

Repetition: 10 reps, x 2 sets

Progression:

- Increase to x 3 sets
- Increase amount of hand weight

HINTS AND TIPS:

- You can brace your feet up against a wall to aid stability
- Keep chin tucked in a little to maintain good neck position



STARTING POSITION:

Lay over gym ball with stomach/hips resting on ball. Extend legs out behind you resting on balls of your feet in a wide stance.

Have your arms out in front of you in line with your head, a weight in each hand.



MOVEMENT / ACTION:

Keeping your neck in a neutral position, eyes looking to the floor and shoulders relaxed, lift chest off ball as high as you can. Squeeze shoulder blades together at the top of the movement and hold for 3 seconds. Slowly lower your shoulders and chest back down to the start position through the same movement line.

FREE WEIGHT PROGRAMME

WALL SQUATS

Benefit of exercise: To strengthen leg and buttock muscles.

Equipment required: Gym ball, hand weights

If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

Repetition: 12 reps x 2 sets

Progression:

- Place feet further forward to increase depth of squat
- Increase to x 3 sets
- Increase amount of hand weight

HINTS AND TIPS:

- In squat position do not allow knees to move forward further than the position of your toes
- Keep chin tucked in throughout movement



STARTING POSITION:

Place gym ball between your low back and wall. Lean against ball to hold it in position. Feet slightly in front of body, hip distance apart. Hold a weight in each hand.



MOVEMENT / ACTION:

Slowly bend knees moving into a squat position. Allow ball to move up your back during movement. Return to the start position through the same movement line.

SIDE BEND SITTING

Benefit of exercise: To help maintain or increase your ability to side bend at the waist

Equipment required: Hand Weights

If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

Repetition: 12 reps x 2 sets

Progression:

- Increase to x 3 sets
- Increase amount of hand weight

HINTS AND TIPS:

- Do not allow yourself to bend forwards or backwards during the movement
- Do not allow yourself to rotate / turn your trunk
- Keep chin tucked in
- Keep palms facing inwards
- Keep shoulders relaxed
- Maintain even weight through your buttocks throughout the movement. Do not allow the opposite buttock to lift off the ball
- Ensure slow, continuous movement throughout

STARTING POSITION:

Sit on gym ball in neutral spine position, with your feet hip width apart and your hands down by your side. Hold a weight in each hand.



MOVEMENT / ACTION:

Keeping your elbows straight, reach down towards the floor with your right hand, allowing your trunk to side bend at the waist. Hold this position for 10 seconds. Return trunk to start position through the same movement line. Repeat to the opposite side.



BENT OVER ROW

Benefit of exercise: To help strengthen shoulders and prevent forward rounding posture of the shoulders

Equipment required: Workout bench, Hand weights

If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

Repetition: 10 reps, x 2 sets (left and right)

Progression:

- Increase to x 3 sets
- Increase amount of hand weight

HINTS AND TIPS:

- Engage core throughout movement
- Keep shoulders level throughout movement
- Keep neutral spine throughout movement
- Keep eyes looking to the floor throughout the movement



STARTING POSITION:

Rest right knee on workout bench. Bend trunk forward into lean position. Rest right hand on work out bench.

Extend left arm down towards the floor, weight in hand.



MOVEMENT / ACTION:

Keeping arm close to body, bend left elbow upwards bringing the weight up towards the side of the body. Return to the start position through the same movement line.

Repeat on the right side.

SHOULDER PUSH

Benefit of exercise: To help strengthen shoulders and prevent forward rounding posture of the shoulders

Equipment required: Hand weights

If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

Repetition: 12 Reps x 2 Sets

Progression:

- Increase to x 3 sets
- Increase amount of hand weight

HINTS AND TIPS:

- Keep palms facing in
- Keep neutral spine
- Keep chin tucked in
- Keep elbows and wrists straight throughout the exercise



STARTING POSITION:

Lay on your back, knees bent up, feet flat on the floor. Hold weight in each hand and lift hands straight up towards the ceiling.



MOVEMENT / ACTION:

Keeping arms extend, push hands up towards the ceiling, allowing shoulder blades to come away from the floor.

Hold position for 5 seconds.

Keeping arms extend to the ceiling slowly relax shoulders back down to floor.

TRICEPS PUSH

Benefit of exercise: To strengthen upper arms

Equipment required: Hand weights

If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

Repetition: 12 Reps x 2 Sets

Progression:

- Increase to x 3 sets
- Increase amount of hand weight

HINTS AND TIPS:

- Keep neutral spine
- Keep chin tucked in
- Keep palms facing inwards
- Keep shoulder and wrist still throughout the exercise
- Movement should occur from the elbow joint only
- Perform the whole exercise in a slow, smooth movement



STARTING POSITION:

Lay on your back, knees bent up, feet flat on the floor.

Hold weight in left hand.

Bend left elbow, taking hand weight to the side of your head.

Use right hand to support the left upper arm.



MOVEMENT / ACTION:

Extend the left elbow straight so the left hand moves up towards the ceiling. Hold the elbow straight for 3 seconds.

In a controlled slow movement lower the hand back down to the start position through the same movement line.

Repeat on the right side.

REVERSE FLYS

Benefit of exercise: To strengthen around shoulders and prevent forward rounding posture of the shoulders

Equipment required: Hand weights

If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

Repetition: 12 Reps x 2 Sets

Progression:

- Increase to x 3 sets
- Increase amount of hand weight

HINTS AND TIPS:

- Keep neutral spine
- Keep chin tucked in
- Keep palms facing inwards
- Keep wrist still throughout the exercise
- Perform the whole exercise in a slow, smooth movement



STARTING POSITION:

Lay on your back, knees bent up, feet flat on the floor.

Hold weight in each hand and lift hands straight up towards the ceiling.



MOVEMENT / ACTION:

Allowing both hands to separate, slowly bend and lower both elbows out to the side and towards the floor.

Continue the movement until both elbows become level with the shoulders but not touching the floor.

In a controlled movement raise hands back up to the start position through the same movement line.

TRUNK ROLL ON GYM BALL

Benefit of exercise: To strengthen bottom core and trunk muscles

Equipment required: Gym ball, gym mat, hand weights

If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

Repetition: x 3 Reps, left and right

Progression:

- Increase reps to x 5 each side
- Increase weight to a maximum of 2 Kg

HINTS AND TIPS:

- You can brace your feet up against a wall to aid stability
- Be aware of your own safety when lying on the ball – maintain good stability on the ball throughout the exercise
- Keep your core engaged throughout the exercise
- Don't let your bottom dip towards the floor – keep it lifted throughout the exercise
- Keep your head relaxed and resting on the ball
- Allow your head to turn and follow the movement of your hands
- Allow your arms to follow the movement

STARTING POSITION:

Sit on gym ball, slowly walk your feet forward, until your upper back and head are resting on the ball. Engage your core and lift your bottom up until it is in line with your back like a bridge position. With a weight in each hand lift hands straight up towards the ceiling.



MOVEMENT / ACTION:

Keeping your arms straight roll slowly onto your right shoulder, in a slow controlled movement return onto your back through the same movement line. Repeat to the left side.



THE NASS GUIDE TO EXERCISE

GYM BALL PROGRAMME

An abstract graphic consisting of numerous thin, white, curved lines that sweep across the blue background. The lines originate from the bottom left and top right, curving towards the center and then fanning out towards the right edge, creating a sense of motion and flow.

PELVIC TILTING

Benefit of exercise: To mobilise pelvis and lower back

Equipment required: Gym ball, gym mat

If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

Repetition: X 5 reps in each direction

Progression:

- Increase reps as you feel able
- If this movement is comfortable hold the “slouch” and “arch” position for 5 seconds

HINTS AND TIPS:

- Ensure slow continuous movement throughout the exercise.
- The ball will only move forwards and backwards by a few cm’s
- The movement should come from lower back, pelvis and hips and not through knees or shoulders



MOVEMENT / ACTION:

Keeping shoulders still and level, gently slouch low back and allow the gym ball to roll forwards. Then slowly arch the low back, allowing the gym ball to roll backwards.

PELVIS SIDE TO SIDE

Benefit of exercise: To mobilise pelvis and lower back

Equipment required: Gym ball, gym mat

If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

Repetition: x 5 Left and right

Progression:

- Increase reps as you feel able

HINTS AND TIPS:

- Allow body weight to move from one buttock to the other
- The ball will only move a few cm's from side to side
- Ensure shoulders stay still and only lower body moves
- Look forward and keep eyes level throughout the movement / exercise



STARTING POSITION:

Sit on gym ball in neutral spine position, feet hip width apart, hands on hips.



MOVEMENT / ACTION:

Keeping shoulders still and level, push hips from side to side, allowing the gym ball to move with the exercise.

HIP CIRCLES

Benefit of exercise: To mobilise pelvis and lower back

Equipment required: Gym ball, gym mat

If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

Repetition: x 5 clockwise
x 5 anti-clockwise

Progression:

- Increase reps as you feel able
- As your ease of movement improves, try and make bigger circles with your hips

HINTS AND TIPS:

- Keep eyes forward and shoulders level so that only the lower body moves
- Focus on the “quality” of the movement
- Keep movements slow and controlled so there is control of the ball throughout the exercise

STARTING POSITION:

Sit on gym ball in neutral spine position, feet hip width apart and hands on hips.



MOVEMENT / ACTION:

Keeping shoulders still, move the gym ball around in a large circle, moving from a slouched low back position to a fully arched low back position.



SLOUCHED LOWER BACK



HIPS TO THE LEFT



ARCHED LOWER BACK



HIPS TO THE RIGHT

LOOKING DOWN

Benefit of exercise: To help maintain or increase upward neck movement

Equipment required: Gym ball, gym mat

If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

Repetition: x 3

Progression:

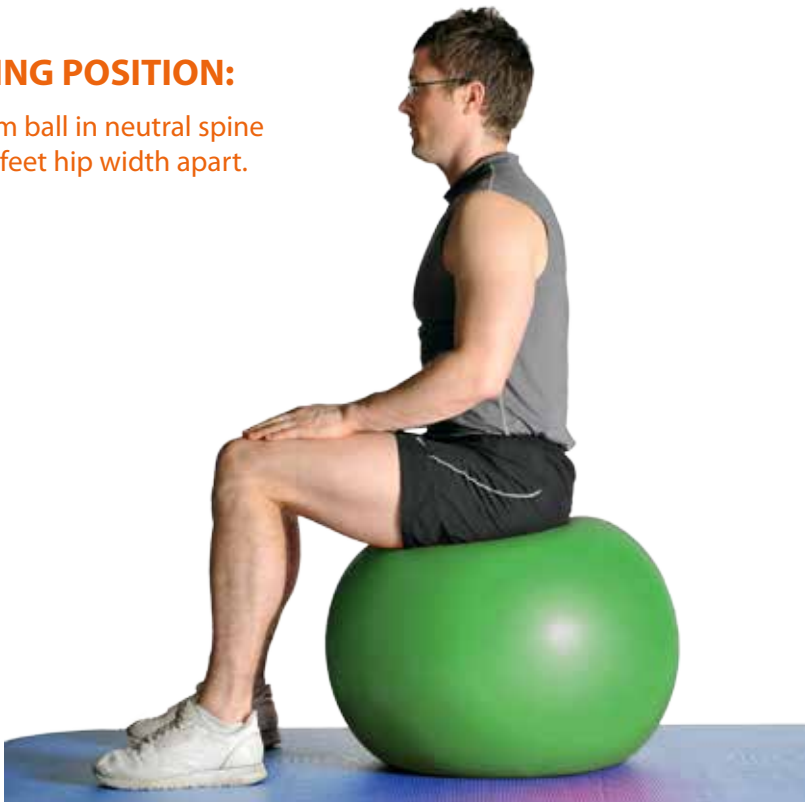
- Increase to x 5 repetitions

HINTS AND TIPS:

- Maintain neutral spine throughout the movement.
- Only neck should move
- Ensure slow, continuous movement throughout.
- If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

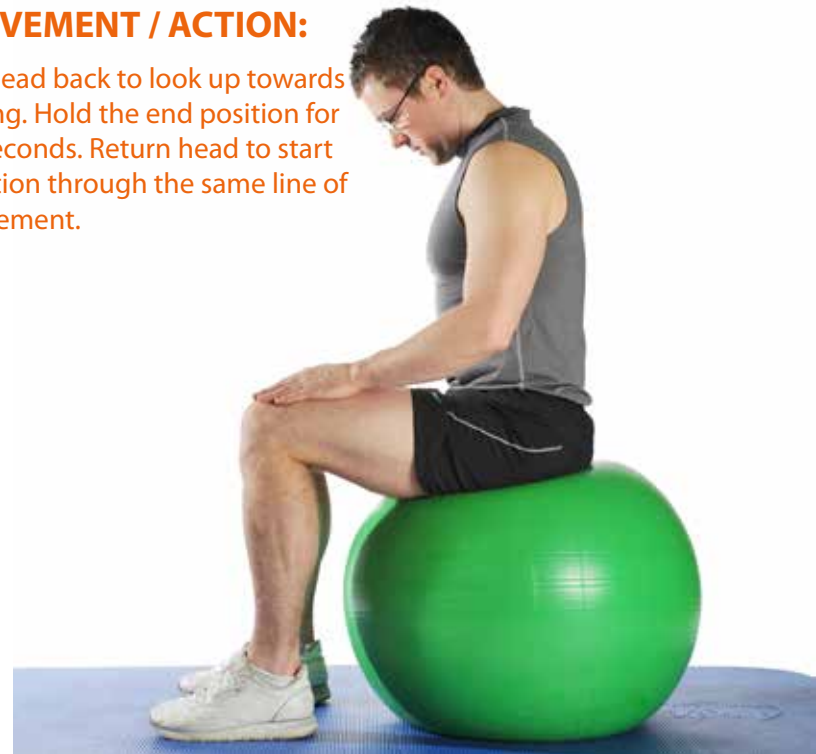
STARTING POSITION:

Sit on gym ball in neutral spine position, feet hip width apart.



MOVEMENT / ACTION:

Tip head back to look up towards ceiling. Hold the end position for 10 seconds. Return head to start position through the same line of movement.



LOOKING UP

Benefit of exercise: To help maintain or increase upward neck movement

Equipment required: Gym ball, gym mat

If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

Repetition: x 3

Progression:

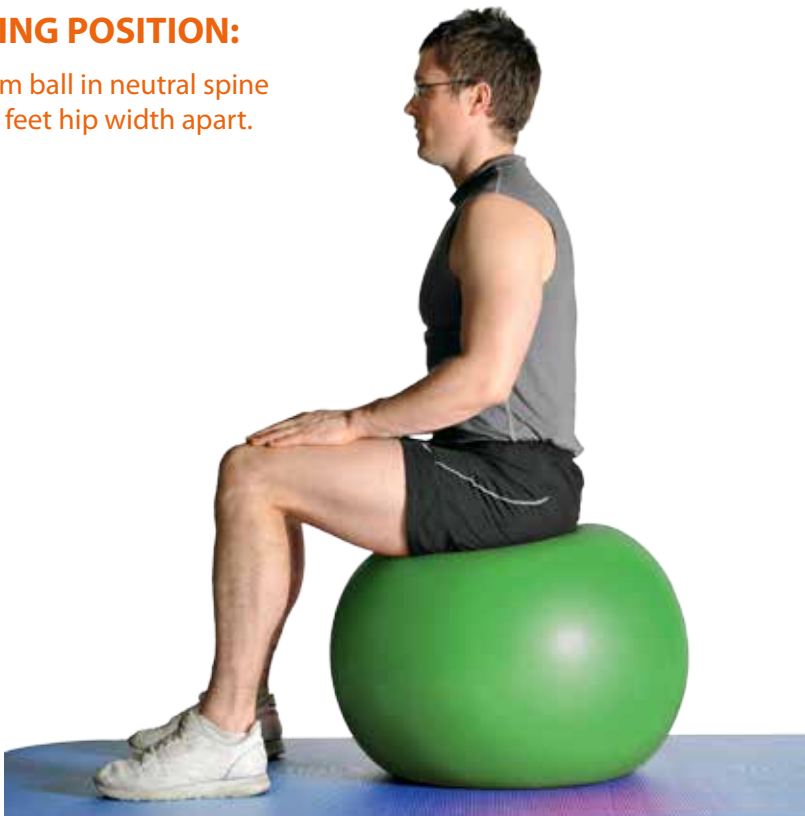
- Increase to x 5 repetitions

HINTS AND TIPS:

- Keep mouth shut throughout the exercise
- Maintain neutral spine throughout the movement
- Ensure slow, continuous movement throughout

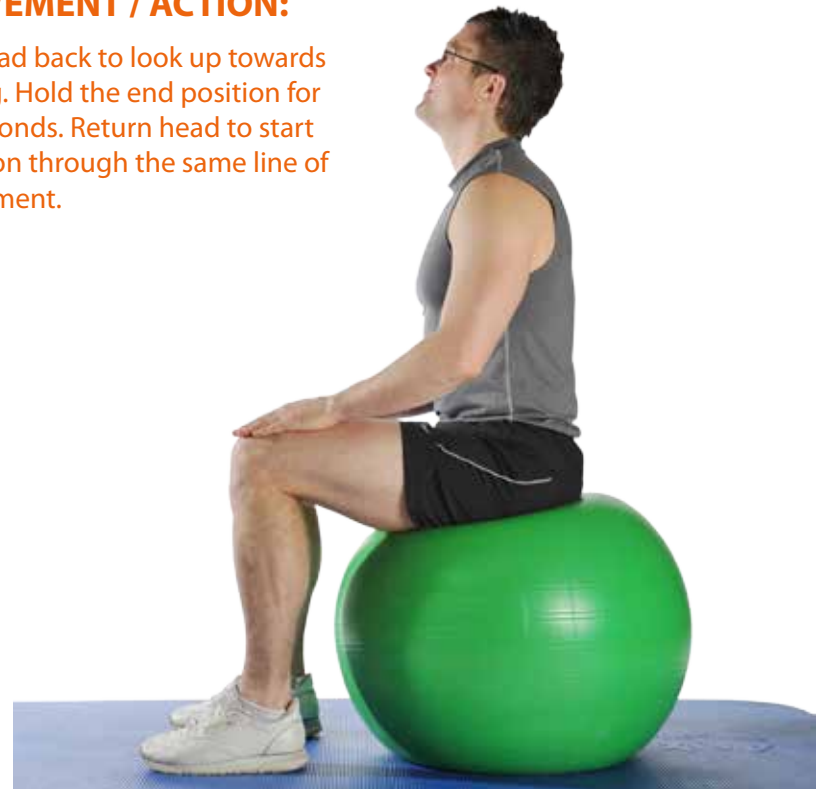
STARTING POSITION:

Sit on gym ball in neutral spine position, feet hip width apart.



MOVEMENT / ACTION:

Tip head back to look up towards ceiling. Hold the end position for 10 seconds. Return head to start position through the same line of movement.



CHIN TUCK

Benefit of exercise: To help maintain good posture and prevent forward poking chin

Equipment required: Gym ball, gym mat

If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

Repetition: x 3

Progression:

- Increase to x 5 repetitions

HINTS AND TIPS:

- Keep eyes level – do not look down to the floor or tip head up to the ceiling
- Keep shoulders still, do not allow them to raise up towards your ears
- Maintain neutral spine position in your back throughout the movement
- Ensure slow, continuous movement throughout
- If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

STARTING POSITION:

Sit on gym ball in neutral spine position, feet hip width apart.



MOVEMENT / ACTION:

Tuck chin. Hold the end position for 10 seconds. Slowly return head to the start position through the same movement line.



LOOK OVER SHOULDER

Benefit of exercise: To help maintain or increase ability to look over shoulder

Equipment required: Gym ball, gym mat

If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

Repetition: x 3 Left and right

Progression:

- Increase to x 5 repetitions each side

HINTS AND TIPS:

- Keep eyes level – do not look down to the floor or tip head up to ceiling
- Keep shoulders still, do not allow them to raise up towards your ears
- Maintain neutral spine position throughout the movement
- Ensure slow, continuous movement throughout
- If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

STARTING POSITION:

Sit on gym ball in neutral spine position, feet hip width apart.



MOVEMENT / ACTION:

Turn head to look over shoulder as far as possible. Hold the end position for 10 seconds. Slowly return head to the start position through the same movement line.



LOWER BACK STRETCH

Benefit of exercise: To stretch back, hamstrings and inner thigh muscles

Equipment required: Gym ball, gym mat

If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

Repetition: x 5

Progression:

- Increase to x 3 reps
- Hold end stretch position for 30 seconds
- Move the gym ball further away from you by walking your fingers down the ball

HINTS AND TIPS:

- Keep knees straight throughout the exercise
- Look at the floor, keeping chin to chest as the movement is performed

STARTING POSITION:

Sit on floor with legs apart, knees straight. Place gym ball between legs and rest both hands on the ball.

MOVEMENT / ACTION:

Keeping knees straight, roll gym ball forward as far as able, allowing trunk to bend forward from the waist at the same time. Hold end stretch for 10 seconds.

Slowly return to start position through the same movement line.



ARM LIFTS

Benefit of exercise: To strengthen shoulders and upper back muscles

Equipment required: Gym ball, gym mat

If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

Repetition: x 10, Left and right

Progression:

- Hold last 3 repetitions for 5 seconds

HINTS AND TIPS:

- Keep head relaxed and looking towards the floor
- Ensure you each hand is completely lifted off the ball
- The height of the hand lift will only be a few cm's
- Keep your core engaged throughout the exercise



STARTING POSITION:

Kneel up right behind a gym ball, hands resting on top of the ball, trunk bent forwards, hips and knees bent at 90 degrees.



MOVEMENT / ACTION:

Keep elbows straight and lift one hand off the top of the ball. Hold arm lift for 3 seconds. Slowly return to start position through the same movement line.



TRUNK SIDE BEND

Benefit of exercise: To help maintain or increase ability to side bend at the waist

Equipment required: Gym ball, gym mat

If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

Repetition: x 3 Left and right

Progression:

- Increase to x 5 reps

HINTS AND TIPS:

- Do not bend forwards or backwards during the movement
- Do not allow trunk to rotate
- Keep chin tucked in
- Keep shoulders relaxed
- Ensure slow, continuous movement throughout
- Do not allow the opposite buttock to lift off the gym ball

STARTING POSITION:

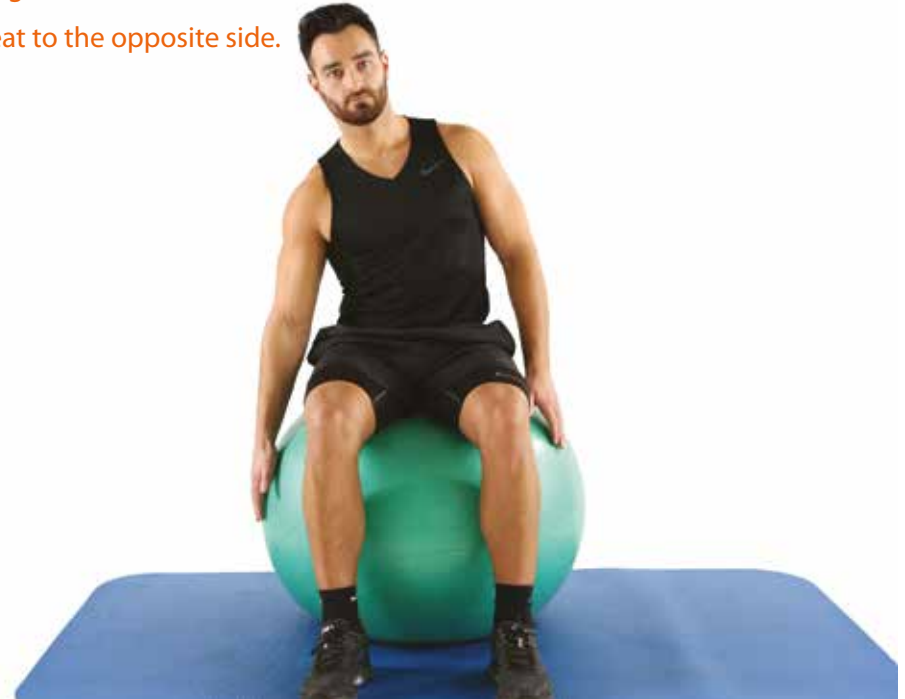
Sit on gym ball in neutral spine position, feet hip width apart, arms by side and palms resting on the side of the ball.



MOVEMENT / ACTION:

Keeping hands close to the side of the gym ball and elbows straight, reach down towards the floor with right hand, allowing trunk to side bend at the waist. Hold the end stretch position for 10 seconds. Maintain even weight through buttocks throughout the movement. Slowly return to start position through the same movement line.

Repeat to the opposite side.



BRIDGING

Benefit of exercise: To help maintain or increase strength in buttocks and lower spine

Equipment required: Gym ball, gym mat

If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

Repetition: x 10

Progression:

- Whilst holding the bridge position slowly raise and lower alternate arms off the floor
- Progress onto exercise No. 10

HINTS AND TIPS:

- Do not push through arms and legs to achieve the movement - use buttock and spinal muscles
- Do not let bottom dip down whilst holding the end position
- In the bridge position do not allow the gym ball or body to sway from side to side
- Ensure slow, controlled smooth movement throughout the exercise

STARTING POSITION:

Lie on back with heels and lower calves resting on the gym ball. Rest arms by side.



MOVEMENT / ACTION:

Lift buttocks and lower back off the floor into a bridge position. Hold at the top of the movement for 5 seconds. Slowly lower bottom down to the floor through the same movement line.



BRIDGING WITH ONE LEG EXTENDED

Benefit of exercise: To strengthen shoulders and upper back muscles

Equipment required: Gym ball, gym mat

If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

Repetition: x 10, Left and right

Progression:

- Hold last 3 repetitions for 5 seconds

HINTS AND TIPS:

- Keep head relaxed and looking towards the floor
- Ensure you each hand is completely lifted off the ball
- The height of the hand lift will only be a few cm's
- Keep your core engaged throughout the exercise



STARTING POSITION:

Lie on back with heels and lower calves resting on the gym ball. Rest arms by side.



MOVEMENT / ACTION:

Lift buttocks and lower back off the floor into a bridge position. Keeping bottom lifted, slowly lift one foot off the ball and straighten the leg. Hold the leg lift for 3 seconds. Slowly lower the foot back onto ball and then slowly lower back and bottom down to the floor through the same movement line.



TRUNK ROLL ON GYM BALL

Benefit of exercise: To strengthen bottom core and trunk muscles

Equipment required: Gym ball, gym mat

If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

Repetition: x 3 Reps, left and right

Progression:

- Increase reps to x 5 each side
- Increase weight to a maximum of 2 Kg

HINTS AND TIPS:

- You can brace feet up against a wall to aid stability
- Be aware of safety when lying on the ball – maintain good stability on the ball throughout the exercise
- Keep core engaged throughout the exercise
- Don't let bottom dip towards the floor – keep it lifted throughout the exercise
- Keep head relaxed and resting on the ball
- Allow head to turn and follow the movement of your hands



STARTING POSITION:

Sit on gym ball, slowly walk feet forward, until upper back and head are resting on the gym ball. Engage core and lift your bottom up until it is in line with back like a bridge position. Clasp hands together and lift hands straight up towards the ceiling.



MOVEMENT / ACTION:

Keeping arms straight slowly roll onto right shoulder, allowing the ball to move and the hands to rotate to the side until they are parallel with the floor. In a slow controlled movement return onto back through the same movement line. Repeat to the left side.



PRESS UPS OVER GYM BALL

Benefit of exercise: To strengthen chest, shoulder and arm muscles

Equipment required: Gym ball, gym mat

If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

Repetition: x 5 Reps (x 2 Sets)

Progression:

- Move the ball further down your legs towards your shins
- Increase the number of repetitions

HINTS AND TIPS:

- Keep looking to the floor throughout the movement
- Do not allow the ball to sway from side to side as push up is performed
- Do not let stomach sag – keep core engaged throughout the exercise



STARTING POSITION:

Lay on stomach over the gym ball, hands resting on the floor. Walk hands forward until only the front of thighs are resting on the gym ball and feet are off the floor. Ensure hands are under shoulders with fingers pointing forwards. Engage core and keep back straight.



MOVEMENT / ACTION:

Slowly allow elbows to bend to 90° into a pushup position. Slowly straighten elbows to return to the start position through the same movement line.

Progression positions /actions



UPPER BACK STRENGTHENING

Benefit of exercise: To help maintain or increase strength in buttocks and lower spine

Equipment required: Gym ball, gym mat

If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

Repetition: x 10

Progression:

- Whilst holding the bridge position slowly raise and lower alternate arms off the floor
- Progress onto exercise No. 10

HINTS AND TIPS:

- Do not push through arms and legs to achieve the movement - use buttock and spinal muscles
- Do not let bottom dip down whilst holding the end position
- In the bridge position do not allow the gym ball or body to sway from side to side
- Ensure slow, controlled smooth movement throughout the exercise

STARTING POSITION:

Lay on stomach over the gym ball, knees resting on the floor, head relaxed and chin resting on the gym ball. Place finger tips lightly to the side of head.



MOVEMENT / ACTION:

Keeping neck in a neutral position, eyes looking to the floor and shoulders relaxed, lift chest off the ball as high as possible. Hold the position for 5 seconds. Slowly lower chest back down to the start position through the same movement line.



WHOLE BACK STRENGTHENING

Benefit of exercise: To strengthen the whole of the back and neck

Equipment required: Gym ball, gym mat

If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

Repetition: 10 Reps (x2 Sets)

Progression:

- Perform exercise with arms out at shoulder height and elbows bent to 90°
- Perform exercise with arms out in front of you, level with your head

HINTS AND TIPS:

- Brace feet up against a wall to aid stability
- Keep chin tucked in a little to maintain good neck position



STARTING POSITION:

Lay on stomach over the gym ball, legs straight, feet/toes touching the floor, shoulder width apart. Arms by side of body.



PROGRESSION 1



MOVEMENT / ACTION:

Keeping neck in a neutral position, eyes looking to the floor and shoulders relaxed, lift chest off the gym ball as high as possible. Squeeze shoulder blades together at the top of the movement and hold for 3 seconds. Slowly lower shoulders and chest back down to the start position through the same movement line.



PROGRESSION 2

LOWER BACK STRENGTHENING

Benefit of exercise: To help maintain or increase strength in buttocks and lower spine

Equipment required: Gym ball, gym mat

If dizziness is experienced during the exercise, discontinue the exercise and seek medical review

Repetition: x 10

Progression:

- Whilst holding the bridge position slowly raise and lower alternate arms off the floor
- Progress onto exercise No. 10

HINTS AND TIPS:

- Do not push through arms and legs to achieve the movement - use buttock and spinal muscles
- Do not let bottom dip down whilst holding the end position
- In the bridge position do not allow the gym ball or body to sway from side to side
- Ensure slow, controlled smooth movement throughout the exercise

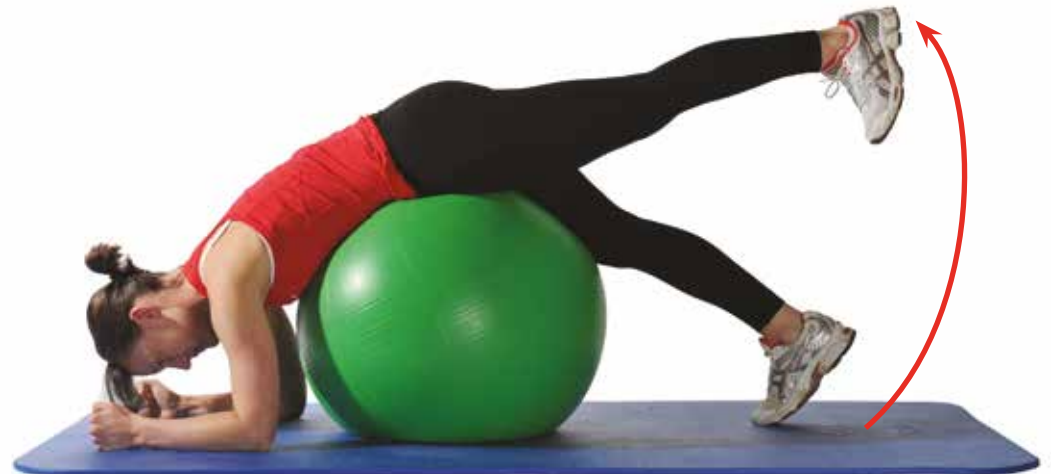
STARTING POSITION:

Lay on stomach over the gym ball, legs straight, feet/toes touching the floor, shoulder width apart. Rest forearms to the floor, elbows bent to 90° and the upper arm in line under the shoulder.



MOVEMENT / ACTION:

Keeping the knee straight and leading with the heel, raise one foot up towards the ceiling. Continue the movement until the leg comes into line with the spine. Slowly lower the foot to the floor through the same movement line.



BACKGROUND TO THIS PROJECT AND ACKNOWLEDGMENTS

In 2010 NASS launched *Back to Action: a guide to exercising safely in the gym for people with ankylosing spondylitis*. It proved to be incredibly popular with people with AS and as a result was launched as an app on the iOS platform in 2011 and for android in 2012.

In 2016 we decided it was time to further extend the range of exercises with the release of this book and an update to the apps with new sections on free weights and gym balls, as voted for in a survey of users of the original book and app.



Emma McLoughlin & Steve O'Meara, physiotherapists at Portsmouth Hospitals NHS Trust

Thank you to Claire Harris and Claire Jeffries, Members of AStretch for all their hard work devising all of the exercises and advising during the photography session. Thank you as well to Emma McLoughlin & Steve O'Meara, physiotherapists at Portsmouth Hospitals NHS Trust for volunteering as models and Portsmouth Hospitals NHS Trust for allowing NASS to use the gym at Queen Alexandra Hospital in Portsmouth. Thanks must also be given to Dr Tim Jones for writing the original introduction, used again in this book.



Claire Harris and Claire Jeffries, physiotherapists working in the NHS and members of AStretch



Dr Tim Jones, Consultant in Rheumatology and Rehabilitation Medicine, Defence Medical Rehabilitation Centre, Headley Court



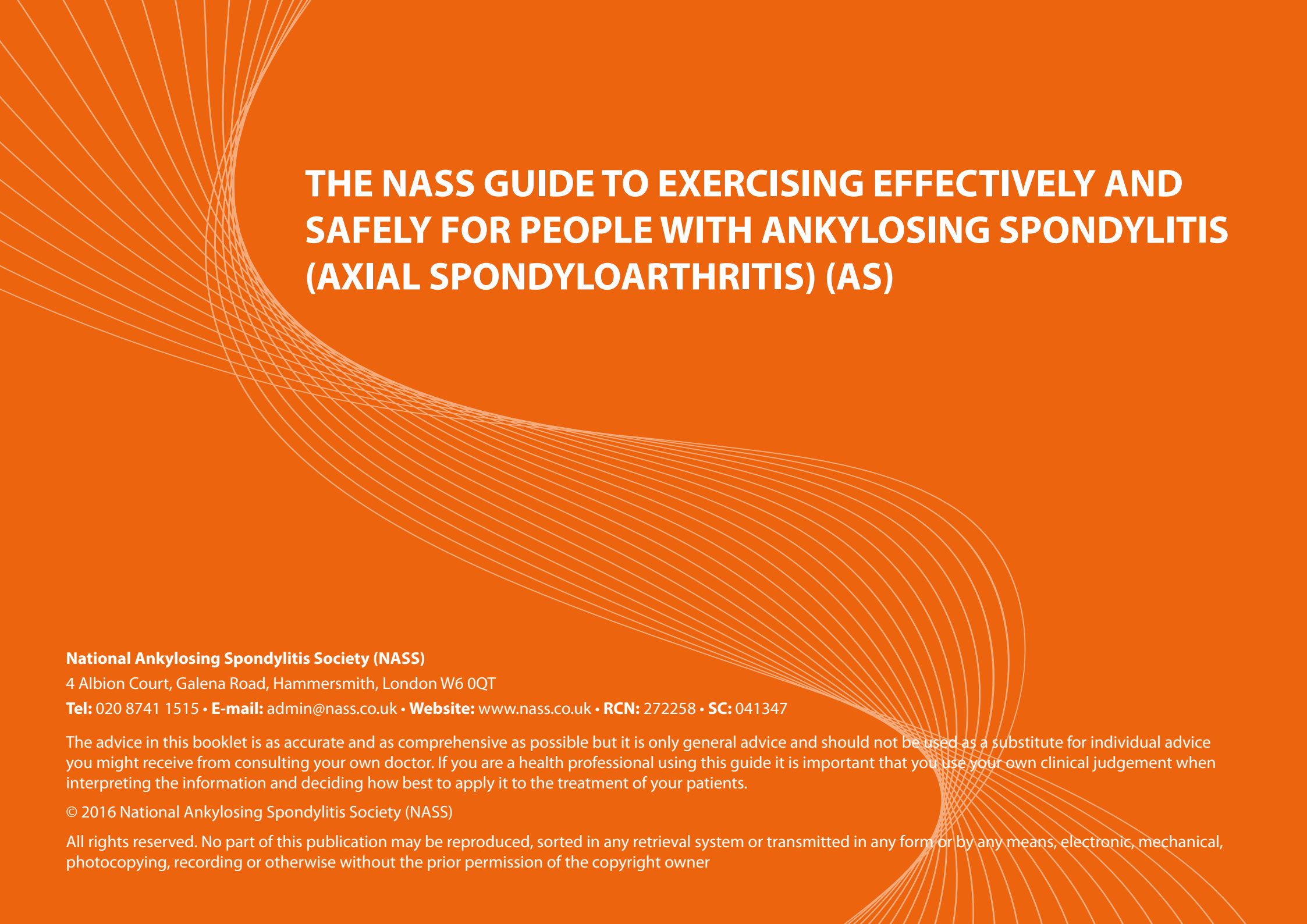
About NASS

NASS provide support, advice and information to people with AS. We are committed to keeping people as informed as possible about AS. We believe that people who understand their AS and how it should be managed will have the best possible outcome.



About AStretch

ASstretch is the name given to a group of physiotherapists, from around the country, whose aim is to steer the management, and improve the understanding, of AS.

The background is a solid orange color. On the left side, there is a series of thin, white, curved lines that originate from the top left and fan out towards the right, creating a dynamic, flowing pattern that frames the title text.

THE NASS GUIDE TO EXERCISING EFFECTIVELY AND SAFELY FOR PEOPLE WITH ANKYLOSING SPONDYLITIS (AXIAL SPONDYLOARTHRITIS) (AS)

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The advice in this booklet is as accurate and as comprehensive as possible but it is only general advice and should not be used as a substitute for individual advice you might receive from consulting your own doctor. If you are a health professional using this guide it is important that you use your own clinical judgement when interpreting the information and deciding how best to apply it to the treatment of your patients.

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