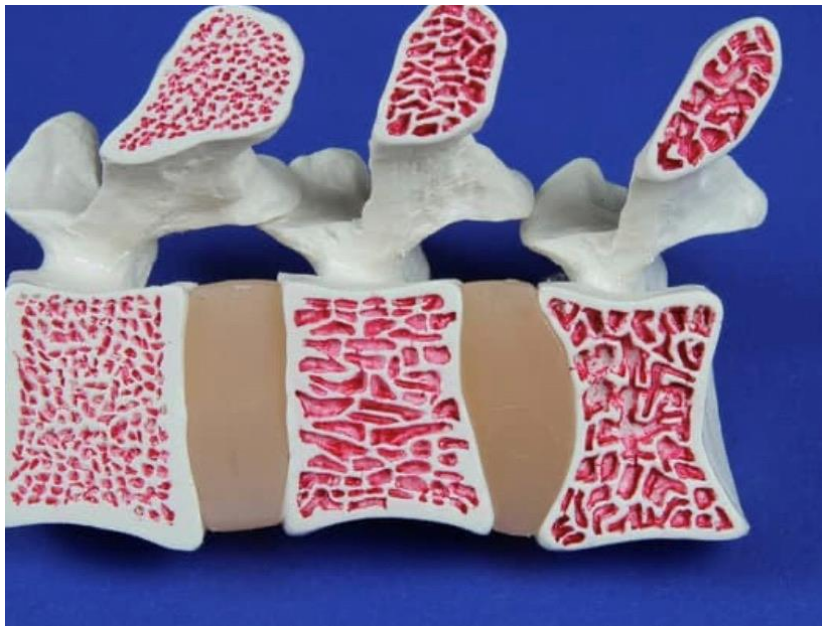


Osteoporosis

General Exercises



What is Osteoporosis?

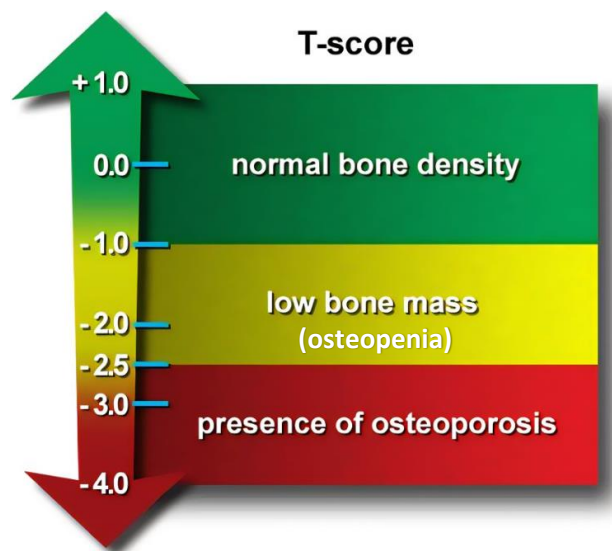
Osteoporosis is a condition where you lose bone mass, causing your bones to become weak and brittle. This increases the risk of fractures especially in the hip, spine, and waist.

Osteoporosis generally has no obvious symptoms, and one would not know that they have osteoporosis until a spinal issue or fracture occurs.

It is important to prevent and manage osteoporosis through lifestyle changes, such as diet and exercise to strengthen your bones and slow down bone loss.

How is Osteoporosis diagnosed?

Osteoporosis is diagnosed when the bone density is lower than normal. A special X-ray is taken of the hips and spine (dual energy X-ray absorptiometry or DEXA scan) and a T-score obtained from the scan shows how the bone mass compares to that of a healthy young adult. The picture below shows how to interpret the T-score:



Risk Factors of Osteoporosis

- Higher occurrence in females
- 50+ years of age
- Drinking too much alcohol
- Having too much caffeine
- Taking steroids for an extended period
- Smoking
- Medical conditions such as coeliac disease, inflammatory bowel disease, kidney/liver disease, cancers, rheumatoid arthritis, thyroid disease
- Low BMI
- Menopause

Use the following tool to find out if you are at risk of Osteoporosis

Osteoporosis Self-Assessment Tool for Asians (OSTA)

		Weight (kg)							
		40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79
Age (years)	45-49	Low	Low	Low	Low	Low	Low	Low	Low
	50-54	Low	Low	Low	Low	Low	Low	Low	Low
	55-59	Low	Low	Low	Low	Low	Low	Low	Low
	60-64	Low	Low	Low	Low	Low	Low	Low	Low
	65-69	High	Low	Low	Low	Low	Low	Low	Low
	70-74	High	High	Low	Low	Low	Low	Low	Low
	75-79	High	High	High	Low	Low	Low	Low	Low
	80-84	High	High	High	High	Low	Low	Low	Low
	85-89	High	High	High	High	High	Low	Low	Low

Osteoporosis Risk: High Moderate Low

Why is exercise important in the management of Osteoporosis?

Exercise can help patients with Osteoporosis prevent or delay bone loss, improve bone density and reduce the risk of falls and fractures. It is recommended that you do a combination of impact, weight-bearing, resistance, and balance exercises.

Aim to get stronger

- To get fitter and stronger, you need to feel that the exercise is challenging enough.
- As you get used to a regular exercise routine, you can gradually increase the number of repetitions for each exercise as well as increase the resistance level e.g. by using weights or an exercise flexi-band.
- It is normal to experience some muscle soreness 24-48 hours after your first few exercise sessions. If the soreness or pain persists, stop the exercise(s) and consult your doctor or physiotherapist.

Safety tips

- Do not exercise if you are not feeling well.
- Perform each exercise as far as your body can tolerate. If you experience any difficulty or pain during an exercise, stop. Do not continue with that exercise and check with your doctor or physiotherapist at your next visit.
- If an exercise involves a standing position, use a stable surface for support or have one close by just in case you lose your balance.
- Wear comfortable clothes and well-fitted shoes when exercising.
- If you have any existing medical conditions which may affect your ability to exercise, check with your doctor before you start exercising.

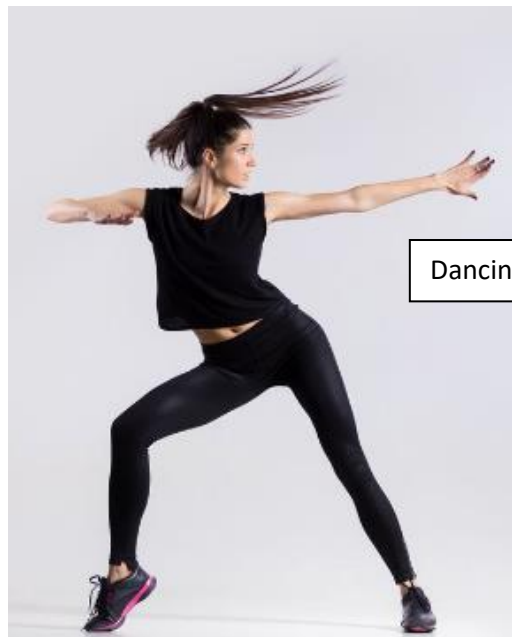
General Impact Exercises

(Aim for at least 30 minutes, 2-3 times a week with rest days in between)

Impact exercises help increase bone density through loading, which decreases the risk of fractures.



Skipping



Dancing



Badminton

Weight-Bearing Exercises (Daily)

Weight-bearing exercises stress the bones, which improves bone density and decrease the risk of fractures.



Brisk Walking (with weighted vests/ dumbbells)



Taichi



Stair Climbing

Resistance Exercises

(2 to 3 times a week with rest days in between sessions)

Resistance exercises help increase bone density, muscle strength and balance, which decrease the risk of fractures and falls.



Shoulder Press

Starting Position

Hold a 1-2 kg dumbbell in each hand while sitting on a chair with back support.

Exercise

1. Lift the dumbbells to shoulder height, with palms facing forward and your elbows bent.
2. Tighten tummy and sit upright.
3. Press the dumbbells upwards overhead until your arms are almost straight, and the dumbbells are directly above the shoulders.
4. Lower the dumbbells slowly back to the starting position.
5. Do this 8 times.
6. Repeat this exercise 2 more times.

** Take a 1-minute break between each round.*



Table Push-ups

Starting position

Place hands shoulder-width apart at the edge of a table and step back so your body is in a diagonal straight line.

Exercise

1. Keeping body straightened, tighten tummy, and lower yourself towards the table as far as you can, then push hands into the table and straighten arms to return to starting position.
2. Do this 8 times.
3. Repeat this exercise 2 more times.

** Take a 1-minute break between each round.*



Sit to Stand

Starting position

Sit at the front edge of a sturdy chair with feet shoulder-width apart and firmly on the floor.

Exercise

1. Form a cross with arms across chest.
2. Keep back and neck straight.
3. Leaning forward slightly, push body up to a standing position.
4. Do this 8 times.
5. Repeat this exercise 2 more times.

** Take a 1-minute break between each round.*



Wall Squats

Starting position

Stand with back against a wall with feet shoulder-width apart and move your feet forward approximately 1.5 feet (45cm) from the wall.

Exercise

1. Slide down the wall until thighs are parallel to the floor (legs form a 90-degree angle).
2. Keep upper body upright against the wall and hold this squat position for 10 seconds, then go back to the starting position.
3. Do this 8 times.
4. Repeat this exercise 2 more times.

**Take a 1-minute break between each round.*



Half Squats

Starting position

Stand with hands on hips, feet shoulder-width apart, and toes pointed forward.

Exercise

1. Tighten tummy, bend knees, and stick your buttocks out backwards to lower body until thighs are parallel to the floor (legs form 90-degree angle).
2. Stand back up to the starting position.
3. Do this 8 times.
4. Repeat this exercise 2 more times.

**Take a 1-minute break between each round.*

Balance Exercises (Daily)

Balance exercises enhance stability and improve posture and coordination, which decrease the risk of falls and fractures.



Semi-tandem Stance

Starting

Stand feet together with the left foot slightly in front.

Exercise

1. Hold position for 15 seconds, tighten tummy slightly and stand straight.
2. Keep eyes looking forward.
3. Relax with feet shoulder-width apart after completion.
4. Repeat this 3 times.
5. Switch over to repeat with the right foot slightly in front.
6. Do this 3 times.



Tandem Stance

Starting position

Place left foot in front of the right foot, directly in front of the other, with the left heel touching the toes of the right foot.

Exercise

1. Hold this position for 15 seconds, keep chest upright, tighten tummy and stand straight.
2. Keep eyes looking forward.
3. Relax with feet shoulder-width apart after completion.
4. Do this 3 times.
5. Switch over to repeat with right foot in front of the left foot.
6. Do this 3 times.



Single-leg Balance

Starting position

Stand with feet hip-width apart.

Exercise

1. Place hands on hips and lift left leg slightly off the floor.
2. Hold the position for 15 seconds, tighten tummy and stand straight.
3. Look straight ahead.
4. Repeat 3 times.
5. Repeat the exercise with right leg lifted.

Trunk extension exercises
(2 to 3 times a week with rest days in between sessions)

Extension exercises improve back and buttock muscles, which enhance bone density and reduce the risk of spine and hip fractures.



Glute Bridges

Starting position

Lie on back with knees bent and feet flat on the floor.

Exercise

1. Place arms beside body with palms faced down.
2. Raise hips and then upper body off the ground to form a straight line from the knees to shoulder, while tightening buttocks.
3. Hold for 10 seconds then slowly return to starting position.
4. Do this 10 times.




Bird Dogs

Starting position

Get on all fours maintaining a straight spine.

Exercise

1. Tighten tummy with eyes looking downwards.
2. Slowly lift left arm and right leg until they are in line with your body.
3. Keep the arm and leg straight and lift them to body height without arching the back.
4. Slowly return the arm and leg to the ground.
5. Repeat with right arm and left leg.
6. Do this 8 times for each side.
7. Repeat this exercise 2 more times.
**Take a 1-minute break between each round.*

	<p>Prone Press-ups</p> <p><u>Starting position</u> Lie flat on stomach with elbows bent and your hands flat on the ground below shoulders.</p> <p><u>Exercise</u></p> <ol style="list-style-type: none"> 1. Keep spine in neutral position and then lift upper shoulders up with hands supporting on the ground. 2. Hold the press-up position for 10 seconds, then slowly return to the starting position. 3. Do this 10 times.
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Scan the QR code for more information on maintaining a healthy diet and the importance of calcium for good bone health.



101 Guide to Healthy Eating

Credits: NUP Allied Health – Dietetic Services

References

1. Subramaniam, S., Ima-Nirwana, S., & Chin, K. Y. (2018). Performance of osteoporosis self-assessment tool (OST) in predicting osteoporosis—a review. *International journal of environmental research and public health*, 15(7), 1445.
2. Brooke-Wavell, K., Skelton, D. A., Barker, K. L., Clark, E. M., De Biase, S., Arnold, S., ... & Leyland, S. (2022). Strong, steady and straight: UK consensus statement on physical activity and exercise for osteoporosis. *British journal of sports medicine*, 56(15), 837-846.

Pictures taken from Physiotoools Ltd and Canva.

The information in this brochure is meant for educational purposes and should not be used as a substitute for medical diagnosis or treatment. Please seek your doctor's or physiotherapist's advice before doing any exercises, or if you have any questions related to your health, physical fitness or medical condition.

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