Build muscle

resistance bands

To)

3 sets, 8-12 reps of max weight

and everyday activities

Progressive resistance training •

Weights &

Sports

Frequency

Key recommendations: physical activity and exercise for osteoporosis

Strong

Build bone and muscle strength



Lower impact



Low impact - weight bearing



Most days

Frequenc\

Steady

Improve balance

Activities like tai chi or dance Frequency Or a challenging balance class











Positive approach

Reassurance - 'how to' not 'don't do' Benefits of exercise for osteoporosis







Improve balance

Improve pain, posture and movements



Aiming for fewer fragility fractures and improved wellbeing

Straight

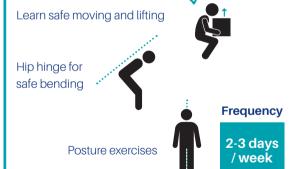
Improve pain, posture and movements

Manage pain from vertebral fractures Daily back muscle strengthening exercises





Improve posture and movements



Use alternatives

Extreme or loaded

Inactivity and prolonged

Avoid



National Osteoporosis Society

Strong, Steady and Straight: Physical Activity and Exercise for Osteoporosis Quick guide: summary (for use in conjunction with full Expert Consensus Statement)

The statement is structured around important themes for osteoporosis:

STRONG - the types and amount of exercise and physical activity needed to promote bone strength.

STEADY - the importance of including exercise and physical activity to reduce falls and resulting fractures.

STRAIGHT - a focus on 'spine care', keeping the back straight. A positive approach to bending, moving and lifting safely to reduce the risk of vertebral fracture. improve posture and relieve pain after vertebral fracture



Strong - for bone strength

Weight-bearing/impact exercise

- Most days of the week; build up to 50 moderate impacts (i.e. low level jumping, jogging, dancing, hopping).
- If frail, less mobile or has vertebral or multiple low trauma fractures - up to 20 minutes of lower impact activity (e.g. walking).
- Avoid sitting for long periods.

Muscle strengthening (with increasing resistance)

- On 2-3 days a week activities or exercise to feel a push or pull on the muscles (explain mild discomfort afterwards is normal). For maximum benefit, depending on fitness levels, recommend increasing the intensity of exercise to work muscles harder using weights or resistance bands. Build up to 3 sets of exercises with 8-12 repetitions of the maximum weight that can be lifted safely.
- Exercises to strengthen back muscles will promote bone strength in the spine.

Steady - to reduce falls

- If unsteady, over 65 and not taking regular exercise - do some challenging balance exercises 2-3 days
- If repeated faller consider referral to falls service/ physiotherapist.
- Posture training and back exercises to improve kyphosis may reduce falls risk.

Straight - a 'spine caring' approach

- Correct techniques for moving and lifting including the 'hip hinge'.
- On 2-3 days a week exercises to strengthen back muscles to help with posture with a focus on endurance by exercising at low intensity - up to 10 repetitions, held for 3-5 seconds. Daily exercises to relieve back pain.
- Consider physiotherapy referral for painful fractures or mobility problems.

Key Principles

Physical activity and exercise has an important role in the management of osteoporosis - promoting bone strength, reducing falls risk and managing

People with osteoporosis should be encouraged to do more rather than less. Adopt a positive and encouraging approach - 'how to' rather than 'don't do'.

Physical activity and exercise is not associated with significant harm including vertebral fracture - though some caution is advised, the benefits of physical activity and exercise outweigh the risks.

Professionals should avoid restricting physical activity and exercise unnecessarily according to bone mineral density (BMD).

People with painful vertebral fractures need clear and prompt guidance or how to adapt movements involved in day-to-day living, and exercises for posture and pain.

SAFETY - Adopt a positive encouraging approach - explain that fractures are rarely caused by exercise and the benefits outweigh the risks.

- Recommend correct techniques when using weights or resistance bands, gym equipment get specialist advice if unsure.
- Recommend modification of exercises that involve end range sustained repeated forward bending unless you are using the 'hip hinge' / are very experienced / have very good muscle tone and control.
- · Always increase intensity gradually and tailor according to individual fitness and ability.

With vertebral or multiple low trauma fractures

 Recommend lower impact rather than moderate impact exercise (jogging, low level jumping) as a general rule. May be appropriate to increase after individualised discussion

Recommend improving balance and muscle strength before increasing physical activity levels.

Vertebral or multiple fractures, or less able

Some extra caution

Individualised advice

Exercise up to lower impact

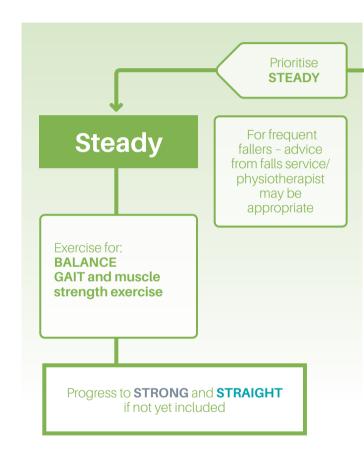
Ensure safe technique







Using the recommendations



All patients with osteoporosis*

IMPACT FOR

BONE STRENGTH

Vertebral fracture?

YES

Lower impact

NO

Moderate

impact

Low BMD, higher fracture risk, fragility fractures including vertebral

Strong

AND

Frail, falling or

unsteady?

MUSCLE

STRENGTH

Progressive

muscle resistance

Advise to consider

balance exercises

STEADY, posture and lifting advice **STRAIGHT**

if not yet included

mineral density (BMD) in the osteoporosis range (a DXA bone density scan measurement) or a significant fracture risk (based on fracture risk assessment) with or without **fragility** fractures (including vertebral). Back pain or other vertebral fracture symptoms

Modify extreme or loaded flexion unless used to movements/very good muscle

Prioritise

STRAIGHT

tone

Definition of osteoporosis

The term osteoporosis is used throughout this statement

as an umbrella term to include someone with low bone

Exercise for: **BACK STRENGTH POSTURE**

Advice on:

MOVING

LIFTING

Progress to **STRONG** and **STEADY** if not yet included

Straight

For some individuals moderate impact may be appropriate depending on number of vertebral and other fragility ractures, level of fitness & muscle tone, previous experience of moderate impact exercise, back pain from fractures etc.

Quick guide: exercise and activity details

Lower

Strong

Lower body/hip

Upper body/spine

Wall press

Stair climbing (repeated)

Skipping/hopping

Marching/brisk walking Walking

Standing

Joggina

Stamping

Frequency and amount

Weight-bearing/impact

Moderate Low jumps

Increase up to moderate impact for optimum benefit:

- Most days about 50 moderate impacts
- Include a variety of movements/speeds/ directions e.g. a jog/walk
- 5 sets of 10 with reduced impacts in between
- 20 mins session if only lower impact advised

Squats Sit-to-stand Bicep curl/tricep press Chest press Hip abduction, extension Back extension & flexion Tennis ball squeeze Lunges Overhead press Lea press Dead lift

Using weights (best evidence), resistance bands or body weight

Frequency and amount

- 2-3 days per week
- Build up to 3 sets of each exercise
- Progressive muscle resistance (using weights or resistance bands for upper and lower body including spine) 8-12 repetitions (most you can lift until fatigue)

Steady

Sit to stand/lunges

Compensatory stepping

Heel raises/toe walking

Toe raises/heel walking

Reduced base of support/

Frequency and amount

- 2-3 days per week

For fallers - Most days,

challenging balance

For the less steady and over 65s

programme - under guidance

Tandem stand/walk

Single leg stand

uneven surfaces

Back muscle strengthening exercises

Straight

Safe moving and lifting techniques

Hip hinge for safe bending

Frequency and amount

- For all 2-3 days per week
- Focus on endurance by exercising at low intensity - up to 10 repetitions, held for 3-5 seconds
- **Daily** if experiencing pain from vertebral fractures

Swimming

Hydrotherapy

Aqua-aerobics

Frequency and amount

Pilates

Yoga

Weight-bearing/impact

Moderate Running/jogging

ctivities

pu

Dancing including Scottish/Zumba etc Racquet sports Track events/team

sports/ball games Lower Nordic walking/rambling

Weight-bearing/impact

Frequency and amount

Most days or supplement with exercises

Lower body/ All sites* spine* Circuit training

Aerobics Aqua aerobic Pilates/yoga Heavy house

work Gardening/DIY

Hill walking Rowina Rambling Sports involving Stair-climbing upper body/

Upper body/

Fewer falls

spine*

Sports involving power Carrying lunges/squats

shopping etc

Frequency and amount

2-3 days per week

Strong bones

Fewer fragility fractures

- Muscles need to feel warmth/tension
- Unlikely to reach 'moderate or high intensity' especially in hip or spine but will help to maintain bone strength

Build muscle

Many activities under impact and muscle strengthening will help balance

(excluding rowing, running, jogging & swimming)

Pilates / yoga

Tai chi

Frequency and amount 2-3 days per week

Improve balance

• 2-3 days per week

Build back muscle

Correct technique

Improved posture and pain

Improved wellbeing and self esteem