

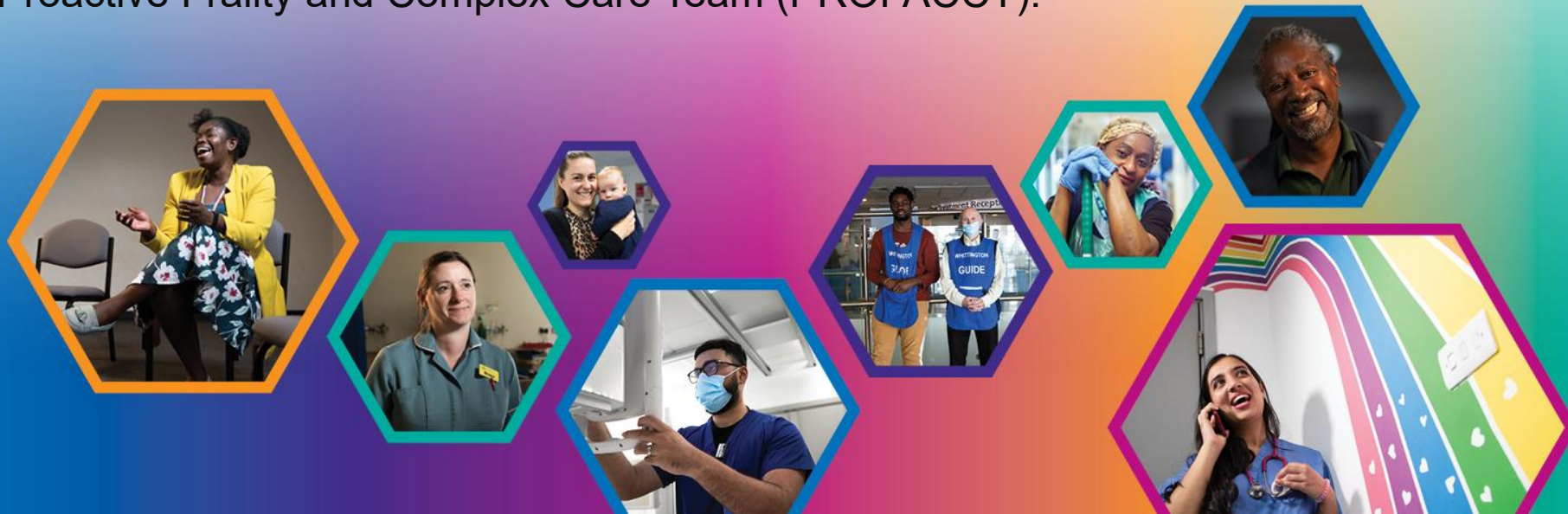
Ageing Well.

Keep Your Strength and Health

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Proactive Frailty and Complex Care Team (PROFACCT).



Topics

- **Intro - Frailty**
- **Resistance training**
- **Benefits of resistance training**
- **Muscle and joint strength**
- **Strong bones**
- **Assessing bone health**
- **Bone health treatment**
- **Medications and falls risk**
- **Balance**
- **Falls**
- **Fragility and Fractures**
- **Prevention is better than cure**



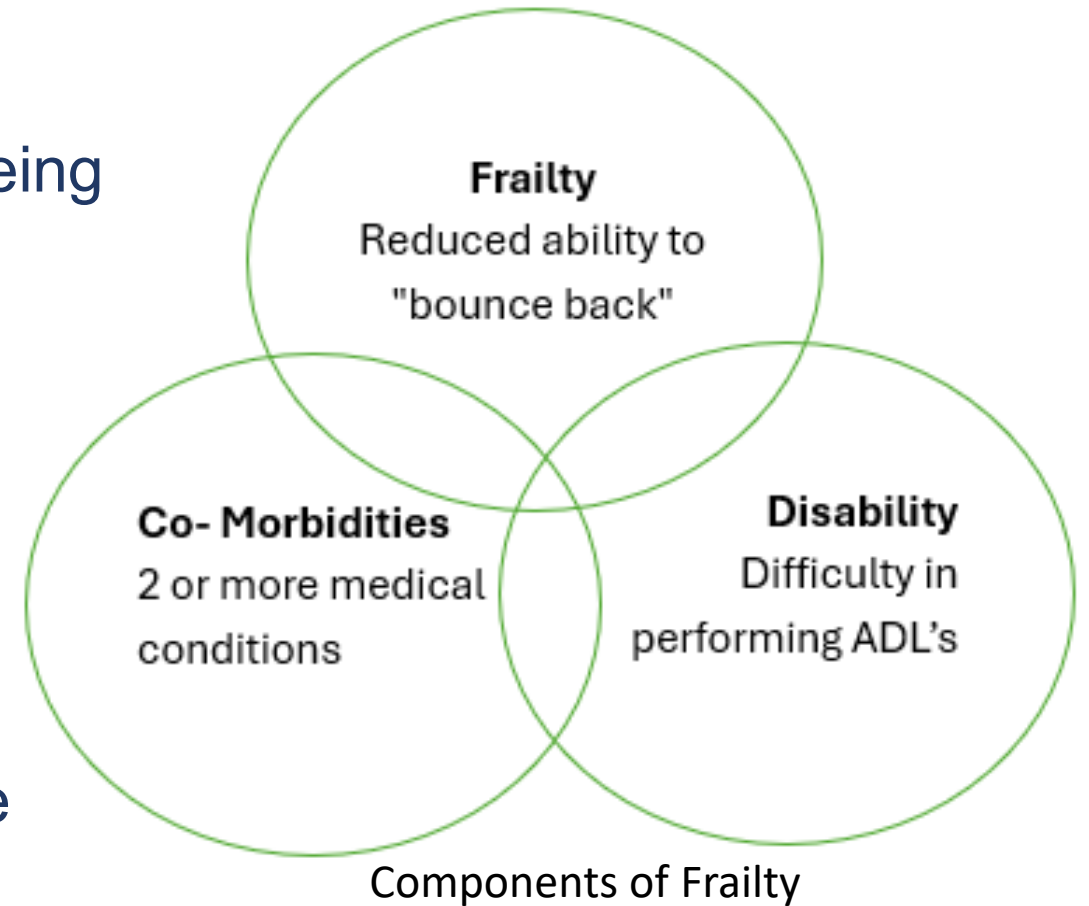
Frailty

Frailty – is **not an inevitable** part of ageing

Not all older people are frail, although prevalence increases with age

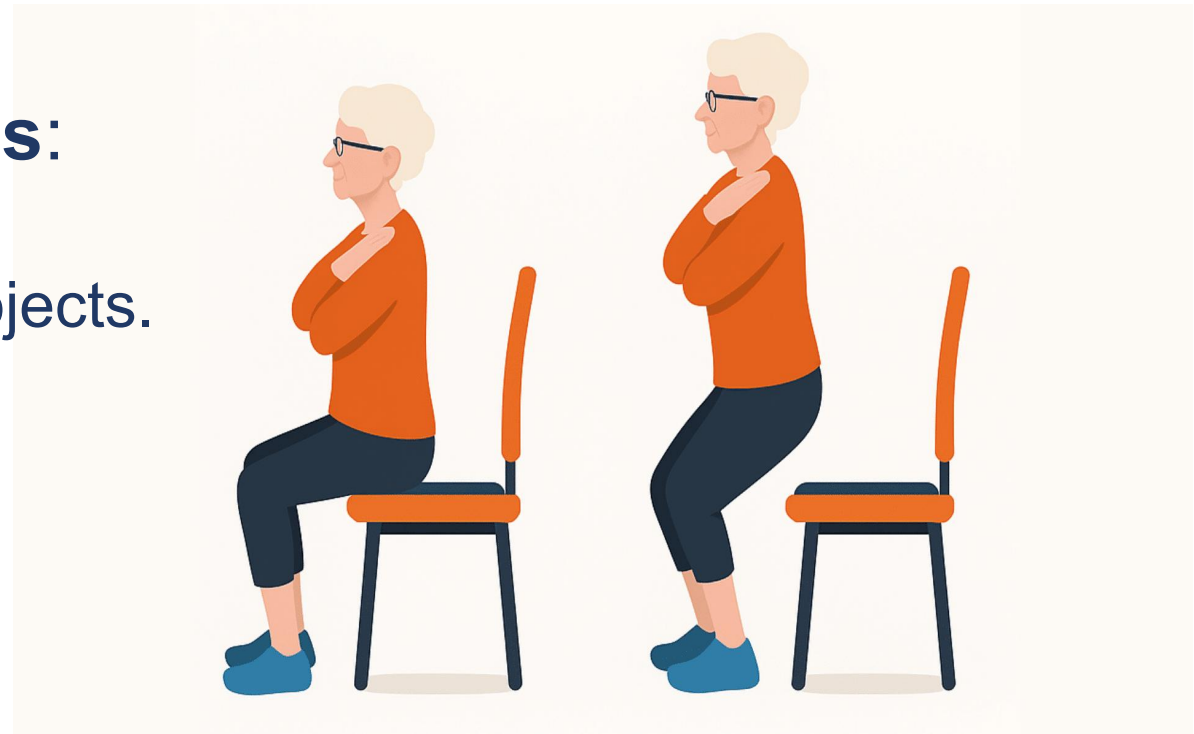
- 10%-15% over 65
- 25-50% of over 85

Frailty and **disability** are not the same



What is resistance training

- This is using your **muscles** to exert a force (push or pull) against **resistance**.
- **Resistance can be in many forms:**
 - Your body weight.
 - Bottle of water or other household objects.
 - Resistance bands.
 - Weighted vests.
 - Gym machines.
 - Free weights such as dumbbells.



Benefits of resistance training

- **Heart Health**
 - Quadriceps (leg) muscle strength is directly related to **heart function** and **cardiovascular longevity**
- **Reduced risk of diabetes**
 - Muscle mass influences your **metabolism** and can store glucose (**sugar**).
- **Stronger Bones**
 - **Weight bearing** stimulates cells that **build bone** (osteoblasts)
- **Improved cognitive function**
 - **Memory**, coordination and balance
- **Lower blood pressure**
 - **Blood flow improves** due to blood vessels becoming more elastic
- **A longer life!**



Muscles and joint strength

- **Muscles** work with **bones** to move body via joints.
- **Joints** are supported and made **more stable** by strong muscles.
- **Pain reduction**, building muscle around joints with arthritis can greatly **reduce pain** from that joint.

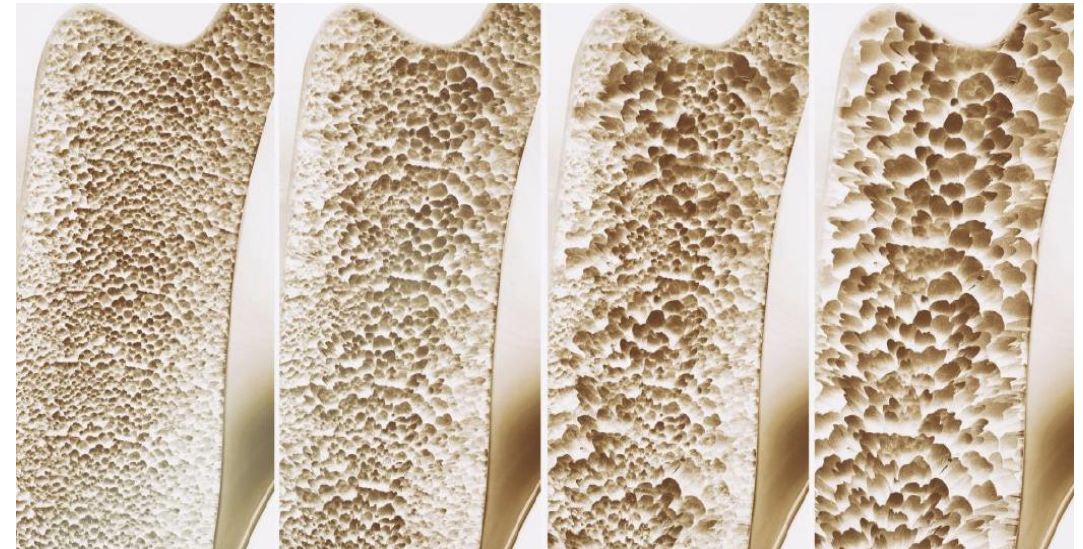


Strong bones

- What happens to bones as we age? In 2019, **3.75 million** UK citizens had a diagnosis of **osteoporosis**, 3 million were women.

- Keeping **bones strong**:

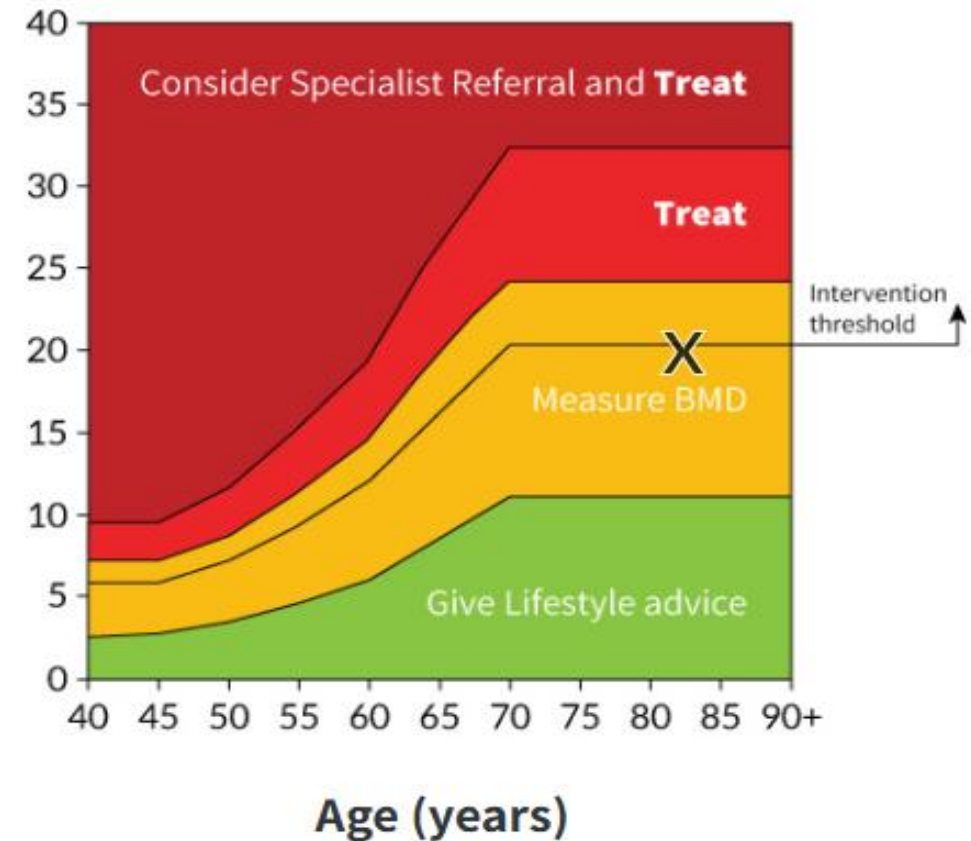
- Balanced diet
- Calcium
- Vitamin D
- Reducing alcohol
- Stop smoking
- Exercise – **cells that build bones** stimulated by **weight bearing** exercise and **resistance training**.



Assessing bone health

- **FRAX[®]** score
 - Low risk – lifestyle advice
 - High/very high risk – treat with medication
 - Intermediate risk – bone density scan (**DEXA** scan)
- Factors considered:
 - Age, Sex, Weight and height, Smoking/drinking, Previous fracture, Parental hip fracture, Secondary osteoporosis (e.g. Type I diabetes, early menopause, chronic liver disease), Long term steroids.

(%) 10-year probability of Major Osteoporotic Fracture





Bone health treatment

- Tablets (e.g. Alendronic acid, Risedronate)
 - **Pros:** Managed at home; **Cons:** Administration instructions
- Infusions (e.g. Zoledronic acid)
 - **Pros:** Once a year dosing; **Cons:** Need to attend outpatient clinic
- Injections (e.g. Denosumab)
 - **Pros:** Twice yearly dosing; **Cons:** Increased risk of fracture if stopped

Medication and falls risks

- **Prescribing/Deprescribing:** Always on a **risk vs. benefit** basis.
- **Regular medication reviews** by the prescriber/pharmacist.
- “But I’ve been taking this for years!”
- **Intentional or unintentional effects:**
 - Lowering of blood pressure (especially on standing).
 - Sedation.
 - Dizziness.
 - Confusion.
 - Multiple medications > increased chance of interactions/additive effects.



The usual suspects:

- **Sleeping tablets** (e.g. Zopiclone, Temazepam).
- **Anxiety medication** (e.g. Diazepam, Lorazepam).
- **Diuretics, aka “Water tablets”** (e.g. Furosemide, Bendroflumethiazide).
- **Strong pain relief** (e.g. Codeine, Morphine)
- **Neurotransmitter (nerve/brain chemicals) interference** (e.g. Amitriptyline, Solifenacin)



Balance

- Ability to maintain centre of mass over base of support.
- Basic components of balance.
 - Sensory **input**
 - Central (brain) **processing**
 - **Motor output** via **muscle** activation for movement
- Sensory input includes:
 - visual,
 - sensation (proprioceptive) feedback,
 - vestibular function (inner ear).



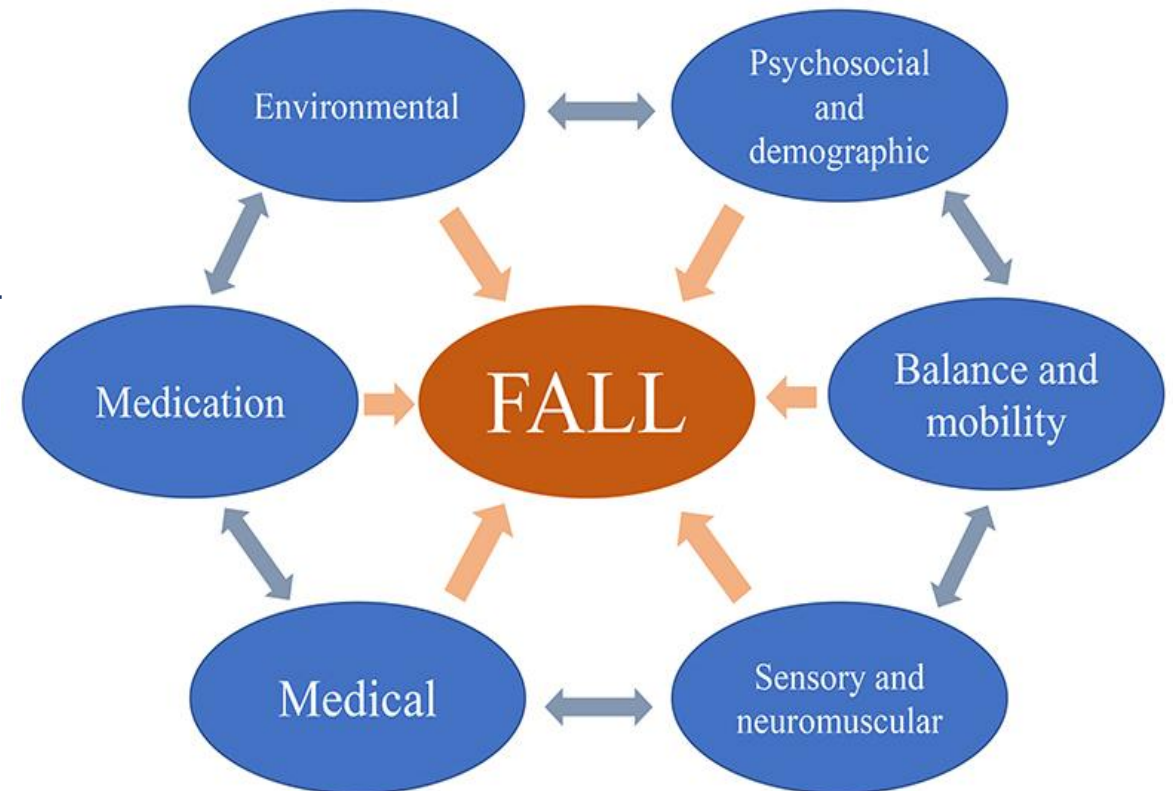
Balance Sensors

Falls

- “An unexpected event when the person 'falls' to the ground from any level, this also includes falling on the stairs and onto a piece of furniture with or without a loss of consciousness”.

- (NICE clinical guideline 21, 2004)

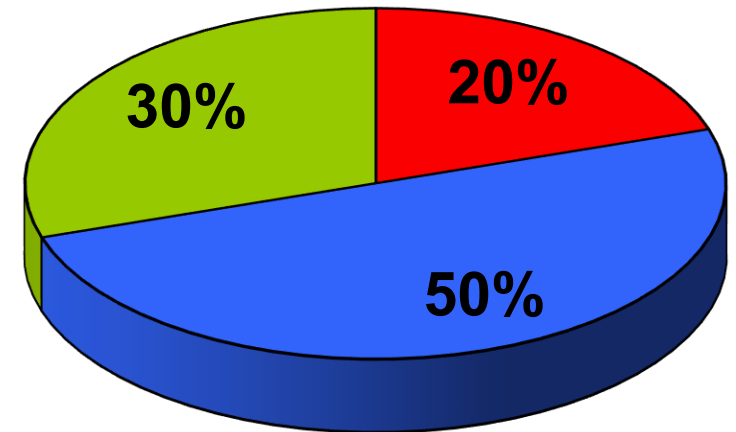
- Around **1 in 3** people over the age of 65 had at least 1 fall in the last year.



Fragility Fractures

- **Fragility fractures:** Low energy fracture due to osteoporosis and its associated risk factors.
- In the UK, over **70,000** fragility **hip fractures** annually
 - British Geriatrics Society 2026
- **Falls and fractures** in older people are **often preventable**, doing so is important for maintaining health, wellbeing and independence.

Hip fracture
1 year prognosis



■ Fatal ■ Loss of Function ■ Full Recovery

(NICE clinical guideline 146, 2012)



Prevention is better than cure

- Regular **medication review**
- Lifestyle to help your bones, **healthy diet (calcium, vit D)**
- Keep active with **regular exercises**, community **classes**, falls prevention classes.
- See the printable [Age UK Islington Get Together newsletter](#) for ideas!
- Report any significant **change in health**, function or ability to your **GP**.

Frailty and Complex Care Services

Islington

ICAT Integrated Community Ageing Team

65+ (younger with discussion first)

Referred: CGA assessment – aim to see within 4 weeks of referral
Proactive: from long lists – obtained from ED, DN's, memory service, GP lists etc.

Send ICAT referral form on EMIS

whh-tr.icat@nhs.net

0207 288 5326

INC Integrated Network Coordinators

Community matrons can visit and support patients as required, particularly those with multiple LTC at risk of admission

ILLT (formerly REACH) Falls

Therapy led service
No ACP/geriatrician
Limited pharmacy input

Strength and balance classes



Resources



Whittington Health
NHS Trust

- Bowman, A. (2024). *The many benefits of resistance training as you age* - Mayo Clinic Press. [online] Mayo Clinic Press. Available at: <https://mcpres.mayoclinic.org/healthy-aging/the-many-benefits-of-resistance-training-as-you-age/>.
- GOV.UK (2022). Falls: Applying All Our Health. [online] Gov.uk. Available at: <https://www.gov.uk/government/publications/falls-applying-all-our-health/falls-applying-all-our-health>.
- Anticholinergic Burden Calculator: <https://www.acbcalc.com/pages/about>
- Royal Osteoporosis Society: <https://theros.org.uk/>
- Barcik, D. (2023). *Osteoporosis, Fragility fractures and their impact on patient outcomes and health economics* | British Geriatrics Society. [online] British Geriatrics Society. Available at: <https://www.bgs.org.uk/osteoporosis-fragility-fractures-and-their-impact-on-patient-outcomes-and-health-economics>.