

Ageing Well Public Talks

- For the past **15 years in the UK and mainly overseas**
- Supporting members of public, clinicians and allied health professionals in areas relating to Ageing Well
- **Five Pillars of Ageing well**
- We explore how using this knowledge might facilitate self-management and delay the ageing processes
- Basic facts & research findings
- With focus on optimizing physical and cognitive wellbeing and self-management

- **Promoting physical activity and healthy lifestyle**
- **2 stretching session in each lecture**
- **Short evaluation forms**



1. Are we prepared to live longer?

(basic biomedical and psycho-social aspects of ageing, age-related conditions e.g. sarcopenia, frailty etc. and overview of the next more detailed lectures)

2. Ageing brain

(basic facts on neurodegenerative conditions associated with ageing and age-related and non age-related memory loss)

3. Nutritional needs of ageing

4. Pharmacotherapy while ageing

(age-related changes in pharmacokinetics and pharmacodynamics)

5. Move it and breathe – (more detailed journey into age-related changes in muscles, tendons, bones and the importance of breathing well, exercising well and enough)

6. Standing tall – (more detailed journey into age-related postural alignment changes affecting postural stability and balance, and ways to compensate for 'gravity of ageing')

This talk and all other talks were posted via the usual link to **ORDO collections** [ordo.open.ac.uk/collections/Ageing Well Public Talk/4716437](https://ordo.open.ac.uk/collections/Ageing_Well_Public_Talk/4716437) and also recorded.

The talks and all the available recordings can be accessed via the link above or via the **OpenLearn Create** free course

<https://www.open.edu/openlearncreate/course/view.php?id=5016>

What we have learnt so far

- Physiological and psycho-social changes associated with ageing
- Bone thinning, muscle atrophy
- Ageing brain
- Metabolism and nutritional needs while ageing
- Liver and kidney senescence & associated changes in pharmacodynamics and pharmacokinetics
- Cardiovascular and respiratory system changes
- ‘Five Pillars of Ageing well’
- The importance of exercise and stimulation of all we don’t want to lose

Physical and psychological aspects of ageing



- Muscles
- Bones
- Skin
- Liver
- Kidneys
- Postural alignment
- Postural stability
- Mobility & Independence
- Cardiovascular system
- Respiratory system
- Sensory system (receptors)
- Immune system
- Nervous system
- Endocrine system
- Metabolic system

Today we will summarize

- Age-related postural alignment changes
- Affecting postural stability and balance
- Ways to compensate for 'gravity of ageing'

'Five Pillars of Ageing Well' - Nutrition, hydration, physical, cognitive and social stimulation

- In order to delay the falls for as long as possible we need **to keep standing tall!**

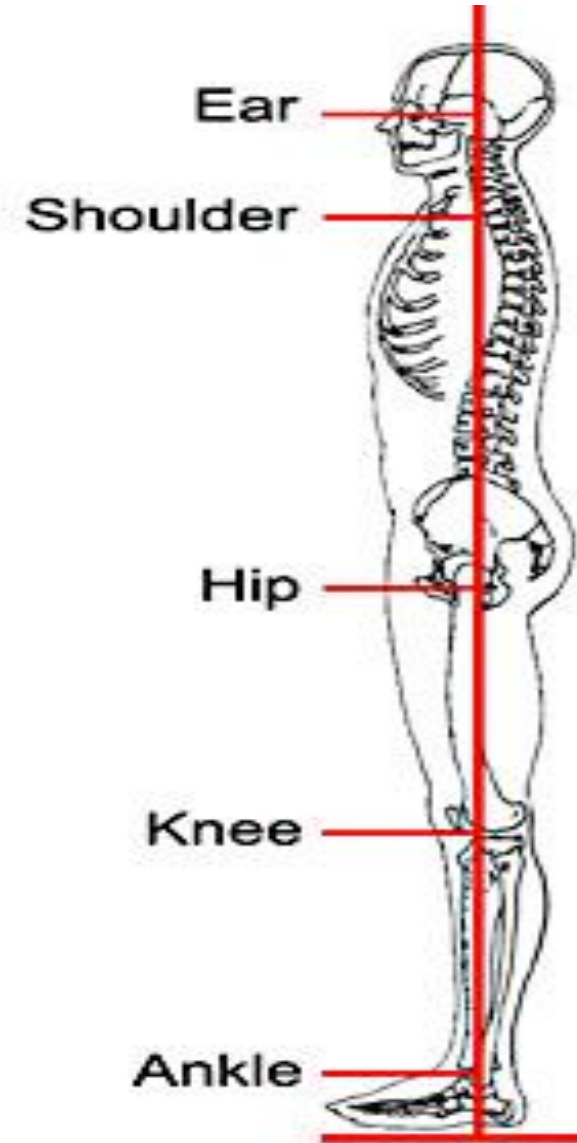
Posture, postural stereotype, postural alignment

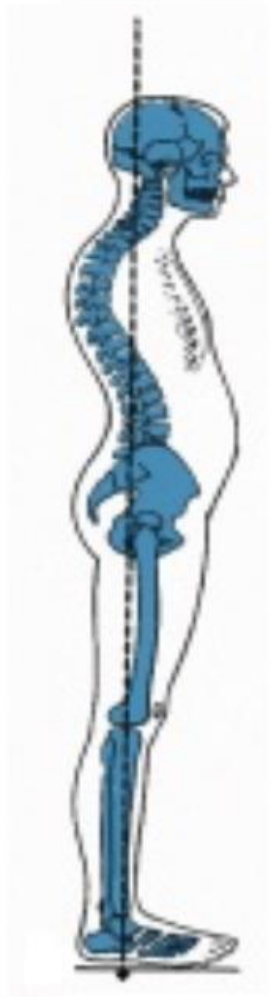
What is it

- position in which someone holds their body when standing or sitting

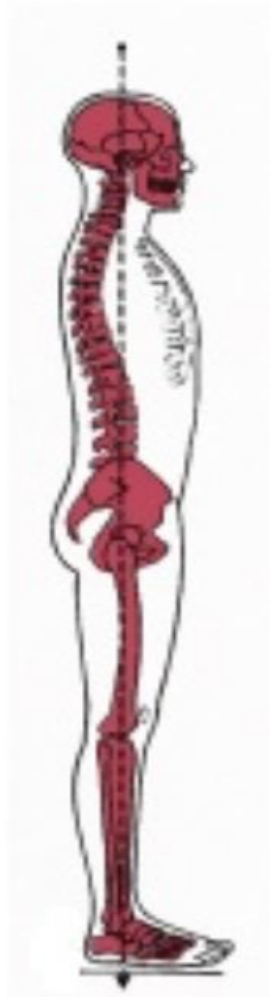
Stereotype – pattern

Alignment and neutral position





Kyphosis-Lordosis



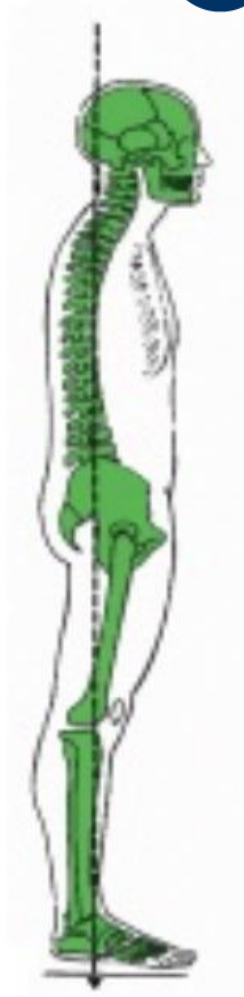
Ideal



Lordosis



Sway Back



Flat Back



FUNCTIONAL DESIGN POSTURE: FRONT VIEW

FUNCTIONAL DESIGN POSTURE: SIDE VIEW

RIGHT **LEFT**

Right and left shoulder, hip, knee & ankle levels parallel with one another

All right (90°) angles at all 8 load joints (horizontal and vertical)

Equal balance, function, and parts of either side of the center line of gravity and body axis

S-CURVED CENTERED SPINAL COLUMN designed to bear weight in an upright position and to move the body

MIRROR IMAGE BILATERAL BODY SYMMETRY

GROUND LEVEL

BACK **FRONT**

Shoulder, hip, knee and ankle joints vertically aligned with gravity line

Pelvis in neutral alignment to support the S-curve of the spine and ready to move the body

Head erect and straight chin level

Efficiently bearing weight in a body of perfect balance as nature intended it to be

Weight evenly distributed from front-to-back in feet

GROUND LEVEL

Neutral position

- This is a comfortable working posture in which your joints are naturally aligned.
- Working with the **body** in a **neutral position** reduces stress and strain on the muscles, tendons, and skeletal system and reduces your risk of developing a musculoskeletal disorder (muscle dysbalancies)



Causes of Poor posture

Structural Causes

Permanent anatomical deformities not amenable to correction by conservative treatments

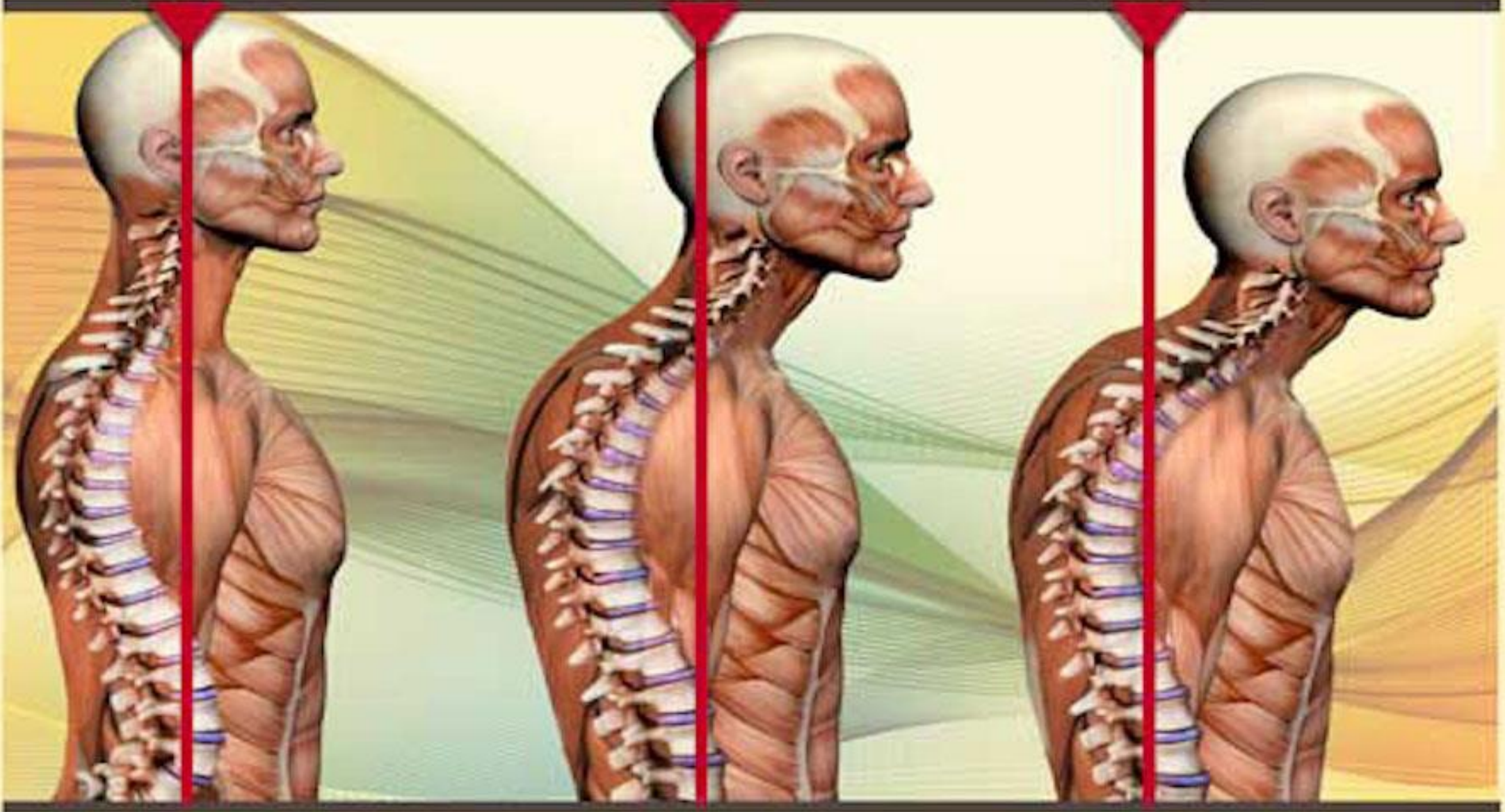
Positional Causes

- 
- ❖ Poor postural habit--for whatever reason, the individual does not maintain a correct posture
 - ❖ Psychological factors, especially self-esteem.
 - ❖ Respiratory conditions
 - ❖ General weakness
 - ❖ Loss of the ability to perceive the position of your body

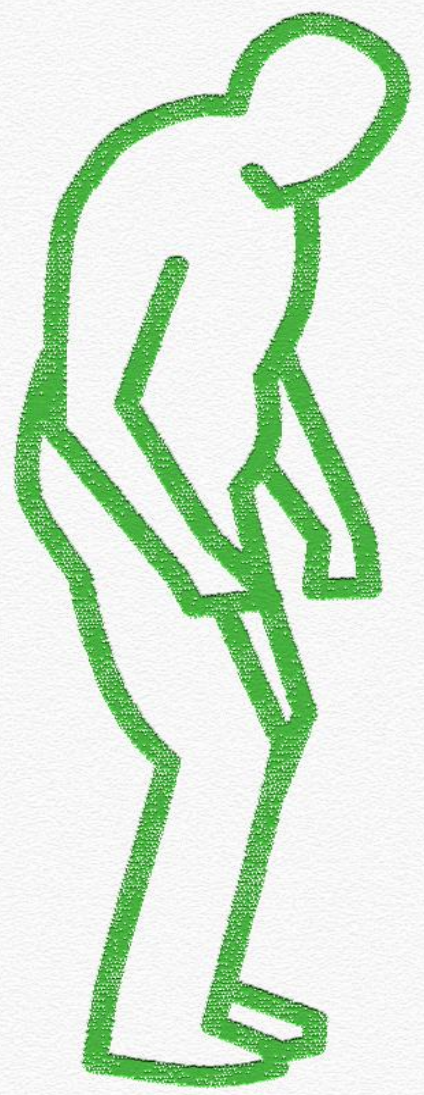
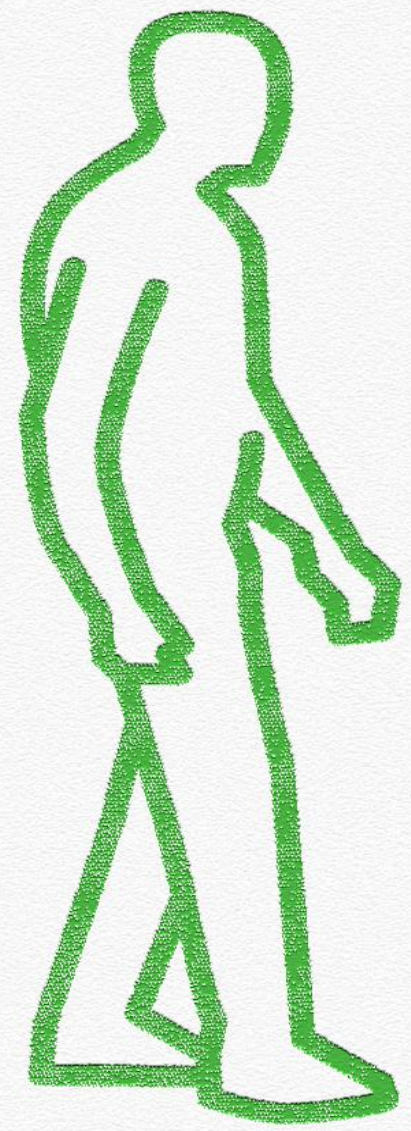
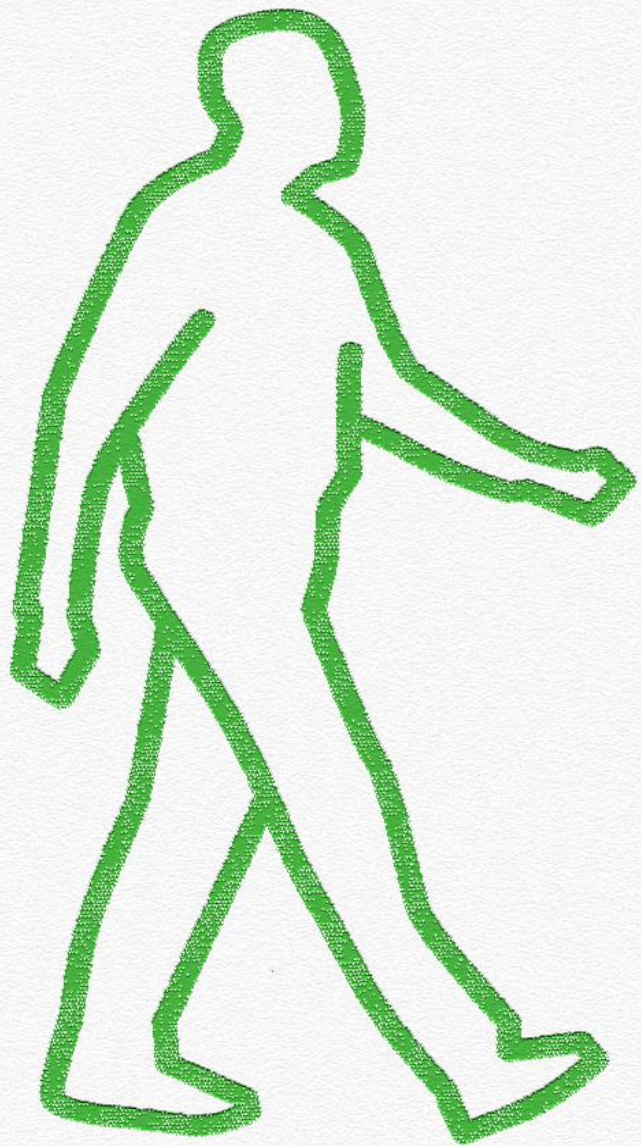
12 lb.

32 lb.

42 lb.







- Posture changes with ageing unless we decide to help it as much as we can
- What else can affect postural stereotype:
 - **breathing,**
 - **coughing,**
 - **dizziness,**
 - **feeling weak,**
 - **frailty and/or sarcopenia syndromes,**
 - **insecurity feelings,**
 - **worsened vision and hearing,**
 - **polypharmacy**
- Our posture affects our postural stability (static or dynamic)

How can we improve postural stereotype/alignment?

- **WITH EXERCISE – mindful of naturally decrease of muscle strength and muscle , tendon and joints flexibility**
- Postural stereotype/alignment & mental health
- Postural stability & mental health
- Plasticity of the system – we can re-programme the postural stereotype / alignment

How it changes with ageing?

- **Neural pathways, slower response central & peripheral, weaker muscles (unless exercised, stiffer joints), metabolic problems, breathing problems, mechanics of musculoskeletal system**

What affects postural stability other than ageing

- **Breathing, coughing, dizziness, feeling weak, frailty or sarcopenia syndromes, insecurity feelings, worsened vision and hearing, dizziness, polypharmacy**

Resulting often in...

- DIZZYNESS, WEAKNESS
- FRAILITY
- INACTIVITY
- FURTHER DECREASE OF MUSCLE MASS
- FALLS
- FEAR OF FALLING
- FRACTURES
- IMMOBILITY
- LOSS OF INDEPENDENCE

- **Nutrition, hydration, PHYSICAL, cognitive & social stimulation**

- How can we maintain & protect our postural stability
- **Nutrition, hydration, physical, cognitive and social stimulation**
- Postural stability and mental health

Falls

- Likely to happen in older age due to all previously mentioned physiological processes associated with ageing

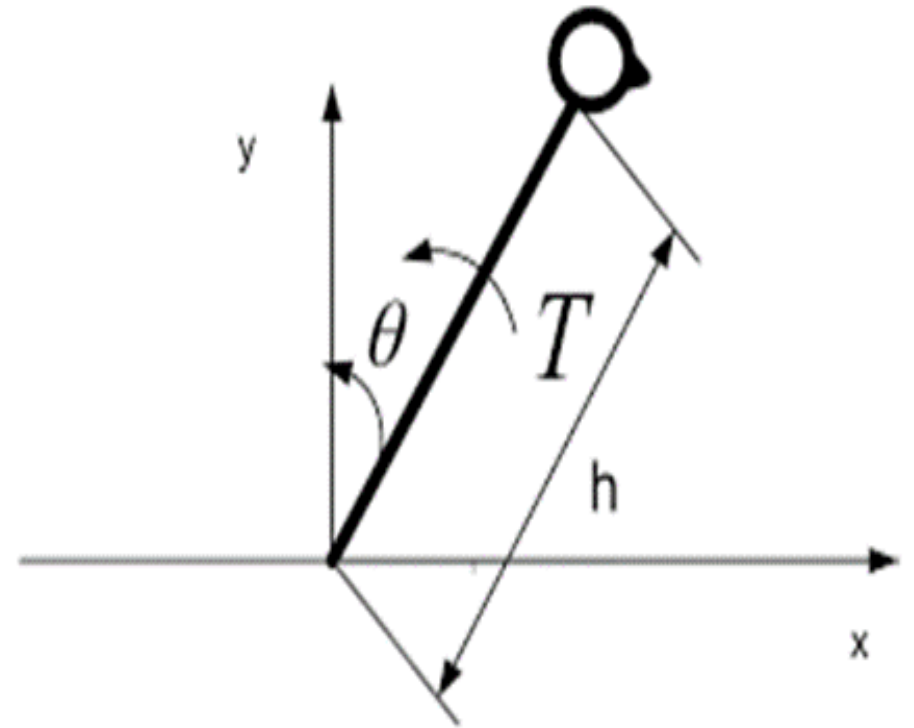
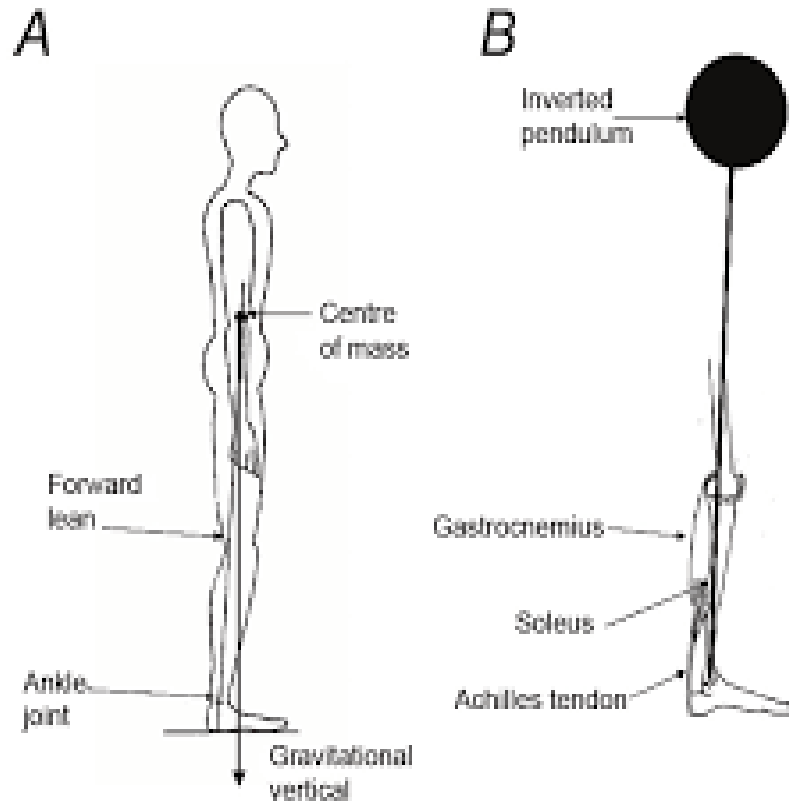
Directly result from:

- Age related changes in bones and muscles = posture & postural stability (affects directly likelihood of falls)
- Changes in proprioception – changes in reflexes and responses to perturbations

Indirectly result from:

- Comorbidities & polypharmacy
- Dehydration and anything else that prompts DIZZINESS (medication, drug induced), WEAKNESS (mental health, physical inactivity, dehydration, poor nutrition, FRAILITY (as above + inactivity = fast decrease of muscle mass and more weakness feelings), INACTIVITY (fast decrease of muscle mass/muscle atrophy), DECREASE OF MUSCLE MASS (brings more weakness, frailty etc.)

Inverted pendulum – human body



- **More laborious breathing** = may represent **more risk of destabilisation in relation to our posture**
- **Here is why** – our body ‘mechanically’ works as an inverted pendulum – on next slide picture A&B is what most likely happens while ageing due to muscle, bone, breathing age related changes that **affect our posture**.
- So that’s how incorrect breathing pattern, coughing, feeling low and uninterested, anxious, sad or weak... will only increase our likelihood to fall

RESOURCES for postural stability:

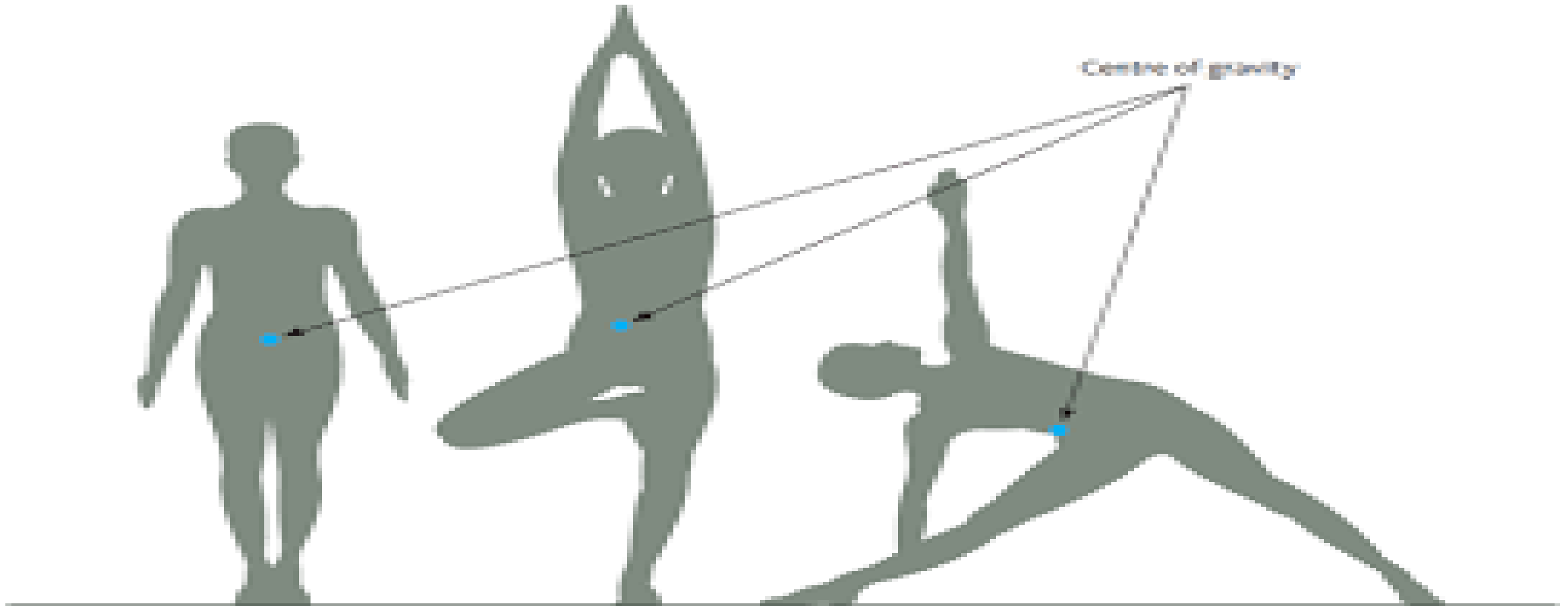
- *Movement strategies*
reactive; anticipatory; voluntary

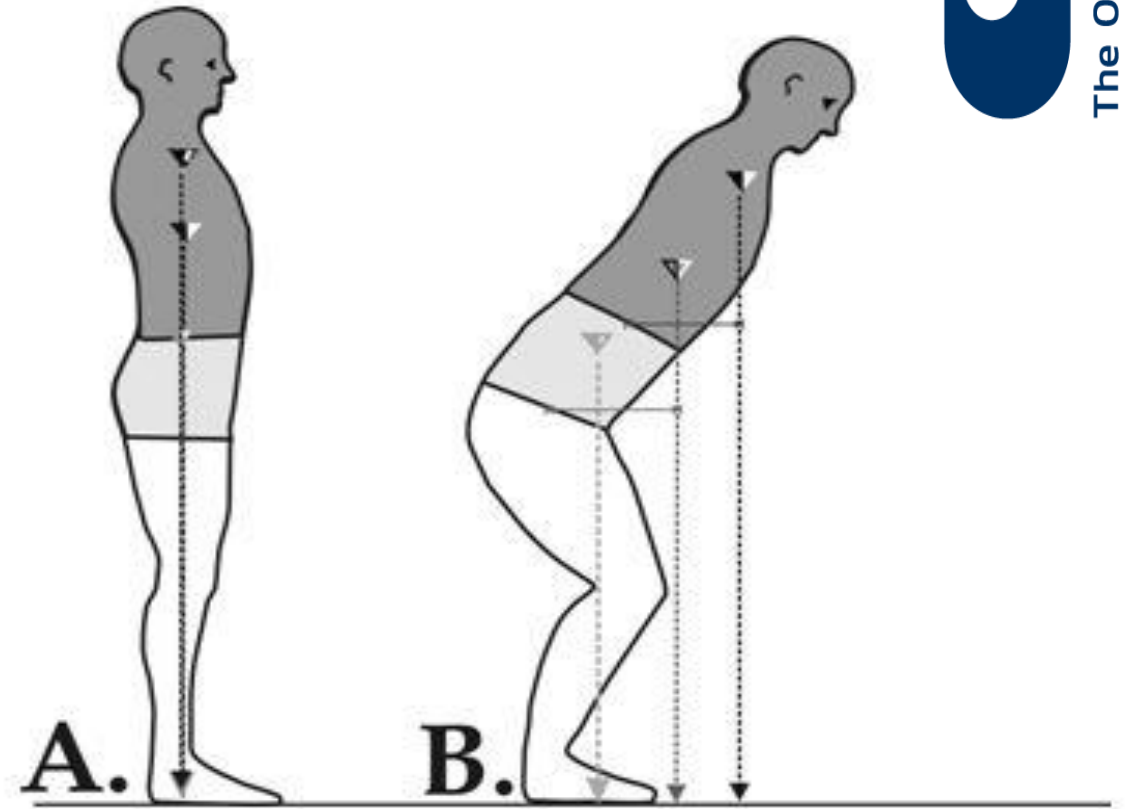
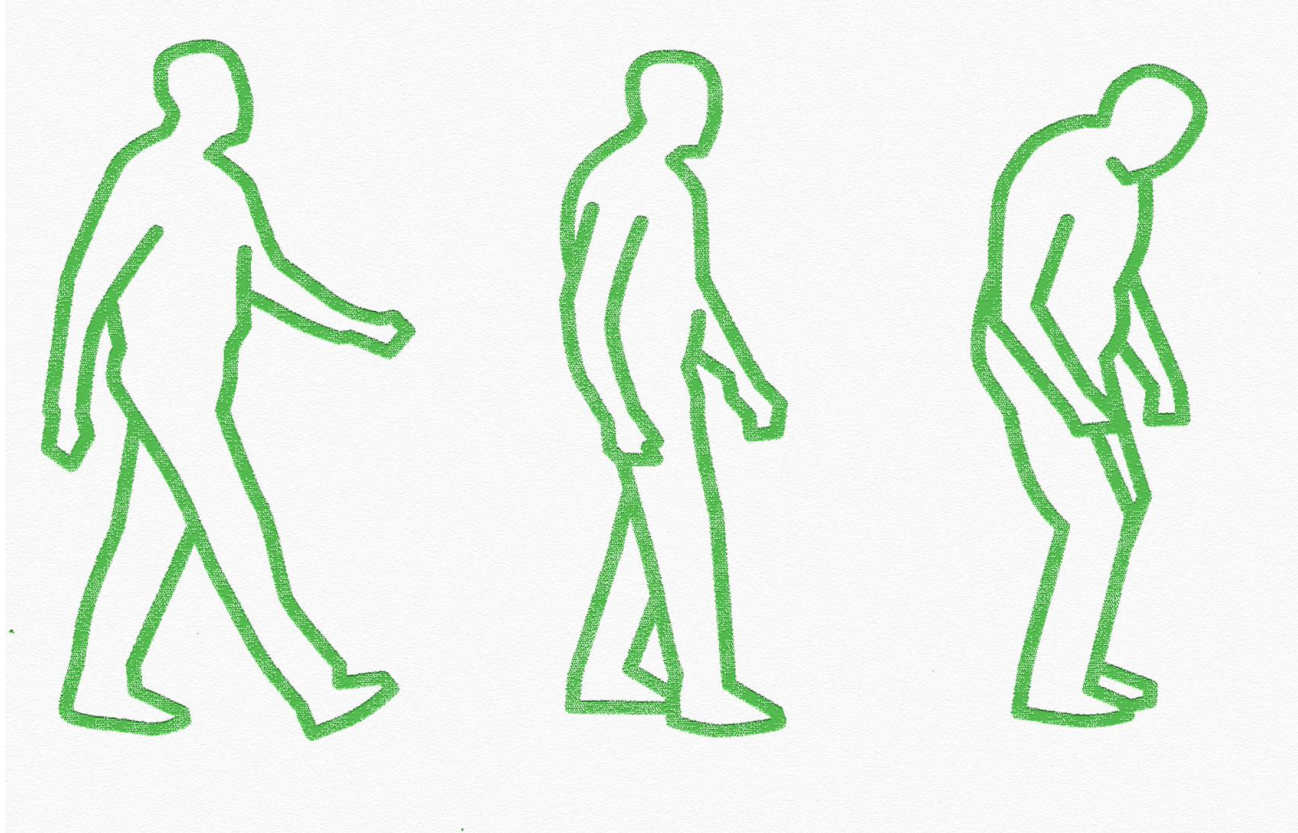
Ankle - hip - stepping



If we move and breathe correctly (abdominal breathing) our centre of gravity (COG) doesn't need to change massively as we move (**raising up principle**)

However, when we move incorrectly the COG changes its position and can make us more prone to falls





- Age related changes in bones and muscles tend to change our posture & postural stability naturally (this affects directly the likelihood of falls)
- Changes in **proprioception** – changes in **reflexes** and **responses** to perturbations
- **Velocity/speed** of neural conductivity
- **Weaker** muscles, possibly feeling weaker overall, **dizzy, disoriented - DEHYDRATED, POLYPHARMACY**, - the chances are we fall...

Age related changes in bones and muscles tend to change our posture & postural stability naturally (this affects directly the likelihood of falls)

- Changes in **proprioception** – changes in **reflexes** and **responses** to perturbations
- **Velocity/speed** of neural conductivity
- Regularity of **blood circulation**
- **Muscle atrophy**
- Possibly **feeling weaker** overall, **dizzy, disoriented** - **DEHYDRATED, POLYPHARMACY**,
- the chances are we fall...

- Sadly the **older** we are, the more likely it is that **when we fall we break** something...
- Chances are that **hospitalisation** will make us **lose more muscle faster**... some losses of functionality of some organs might be irreversible...

'Five Pillars of Ageing Well' - The sooner the better

Five pillars facilitating Ageing Well

Nutrition

Hydration

Physical stimulation

Social stimulation

Cognitive stimulation



To summarize...

- Stretching is an excellent way to help maintain joint & muscle & tendon flexibility.
- Even moderate amounts of physical activity can reduce your risk of developing high blood pressure, heart disease, and some forms of cancer and help to keep fit.
- Long-term regular exercises may slow the loss of muscle mass and prevent age-associated increases in body fat. Increase the muscle strength and help to prevent/delay falls.
- Exercise also helps maintain the body's response time, as well as its **ability to deliver and use oxygen efficiently. Just 30 minutes** of moderate activity, incorporated into **your daily routine, can provide health benefits.**

- **An exercise program doesn't have to be strenuous to be effective. It has to be regular!**
- Walking, square dancing, swimming, walking, cycling etc. are all recommended activities for maintaining fitness as we age.
- The 30 minutes of moderate activity can be broken up into shorter periods. For example, you might spend 15 minutes working in the garden in the morning and 15 minutes walking in the afternoon. It all adds up.

Interesting link to follow for home exercise 

<https://selsdotlife.wordpress.com/2020/04/01/home-exercises-for-older-adults-no-equipment-no-problem/>

Lifestyles that combine cognitively stimulating activities with physical activities and rich social networks may provide the best odds of preserving cognitive function in old age ([La Rue, 2010](#)).

Recommendation	Rationale
Make time for cognitively stimulating activities that you've always enjoyed.	Continuing favourite activities can ensure sustainability of cognitive stimulation. Long-term exposure to cognitive stimulation may be needed for practical functional benefits.
Add some new cognitive challenges, as your time and enjoyment permit	Trying new activities may enhance brain plasticity by requiring new learning or development of new cognitive strategies MUSIC LESSONS, LEARNING NEW LANGUAGE, AQUA

Recommendation	Rationale
Aim to engage in cognitively stimulating activities several times a week or more...generate some “ <i>mental sweat</i> .”	Current knowledge does not permit a prescription for how often or how long individuals should engage in cognitively stimulating activities. However, epidemiologic studies suggest that more is better, within clinically reasonable limits.
Be aware that there is no one cognitive activity, or combination of activities, that is uniquely good for reducing AD risk.	Many different types of cognitively stimulating activities have been associated with preserved cognitive skill. There are no data yet to show that cognitive activities prevent or delay AD.
Social interactions are a great way to stimulate the mind.	Group training of cognitive skills has been shown to be effective in sharpening specific cognitive skills, and broader social networks have been associated with reduced AD risk.

**Thank you for your attention and for coming to the series I
hope you will ENJOY STANDING TALL **

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COVID-19 and caring related

- **Vseteckova J**, How to age well, while self-isolating (2020) <https://www.open.edu/openlearn/health-sports-psychology/how-age-well-while-self-isolating>
- **Vseteckova J**, (2020) SHORT FILM - Ageing Well in Self-Isolation <https://youtu.be/LU4pXFgcGos>
- **Vseteckova J**, (2020) ANIMATION - Keeping healthy in Sel-Isolation <https://youtu.be/M9yUC-MUugA>
- **Vseteckova J** et al (2020) COVID-19 The effects of self-isolation and lack of physical activity on carers <https://www.open.edu/openlearn/health-sports-psychology/social-care-social-work/the-effects-self-isolation-and-lack-physical-activity-on-carers>
- Taverner P, Larkin M, **Vseteckova J**, et al. (2020) Supporting adult carers during COVID-19 pandemic <https://www.open.edu/openlearn/health-sports-psychology/social-care-social-work/how-can-adult-carers-get-the-best-support-during-covid-19-pandemic-and-beyond>
- Robb M, Penson M, **Vseteckova J**, et al. (2020) Young carers, COVID-19 and physical activity <https://www.open.edu/openlearn/health-sports-psychology/social-care-social-work/young-carerscovid-19-and-physical-activity>
- **Vseteckova J** et al. (2020) Carers, COVID19 and Physical Activity: The research <https://www.open.edu/openlearn/health-sports-psychology/social-care-social-work/carers-covid-19-and-physical-activity-the-research>
- Penson M, **Vseteckova J** et al. (2020) Older Carers, COVID-19 and Physical Activity <https://www.open.edu/openlearn/health-sports-psychology/social-care-social-work/older-carers-covid-19-and-physical-activity>
- Methley A & **Vseteckova J** & Jones K (2020) Green & Blue & Outdoor spaces <https://www.open.edu/openlearn/health-sports-psychology/mental-health/the-benefits-outdoor-green-and-blue-spaces>
- **Vseteckova J** & Methley A (2020) Acceptance Commitment Therapy (ACT) to help carers in challenging COVID-19 times <https://www.open.edu/openlearn/health-sports-psychology/health/how-can-acceptance-and-commitment-therapy-help-carers-challenging-times-such-the-covid-19-pandemic>

AGEING WELL related

- **Vseteckova J** (2020) Ageing Well Public Talk Series <https://www.open.edu/openlearn/health-sports-psychology/health/the-ageing-well-public-talks>
- **Vseteckova J** (2019) 5 reasons why exercising outdoors is great for people who have dementia <https://www.open.edu/openlearn/health-sports-psychology/mental-health/5-reasons-why-exercising-outdoors-great-people-who-have-dementia> <https://doi.org/10.21954/ou.rd.c.4716437.v1>
- **Vseteckova J** (2019) Depression, mood and exercise https://www.open.edu/openlearn/health-sports-psychology/mental-health/depression-mood-and-exercise?in_menu=622279 <https://doi.org/10.21954/ou.rd.c.4716437.v1>
- **Vseteckova J** (2019) Five Pillars for Ageing Well <https://www.open.edu/openlearn/health-sports-psychology/mental-health/five-pillars-ageing-well> <https://doi.org/10.21954/ou.rd.c.4716437.v1>
- **Vseteckova J** (2020) Ageing Brain <https://www.open.edu/openlearn/health-sports-psychology/health/the-ageing-brain-use-it-or-lose-it>
- **Vseteckova J** (2020) Ageing Well Public Talks Series II. Plan for 2020 – 2021 <https://www.open.edu/openlearn/health-sports-psychology/health/ageing-well-public-talk-series-plan-2020/2021>
- **Vseteckova J** (2020) Walking the Parks with The OU and The Parks Trust <https://www.open.edu/openlearn/health-sports-psychology/social-care-social-work/keep-me-walking-people-living-dementia-and-outdoor-environments>

Podcasts

- **Vseteckova J & King J** (2020) COVID-19 Interview podcast for The Retirement Café: *'Ageing Well Under Lockdown'* <https://theretirementcafe.co.uk/077-dr-jitka/>
- **Vseteckova J & Broad E** (2020) Keep Me Walking - researching with people living with dementia and their carers - Podcast – Open University in collaboration with The Parks Trust <https://youtu.be/0QHAS88C-LU>
- **Vseteckova J** (2020) Podcast - areas for research with The Open University https://youtu.be/vE6J9J_ovOM

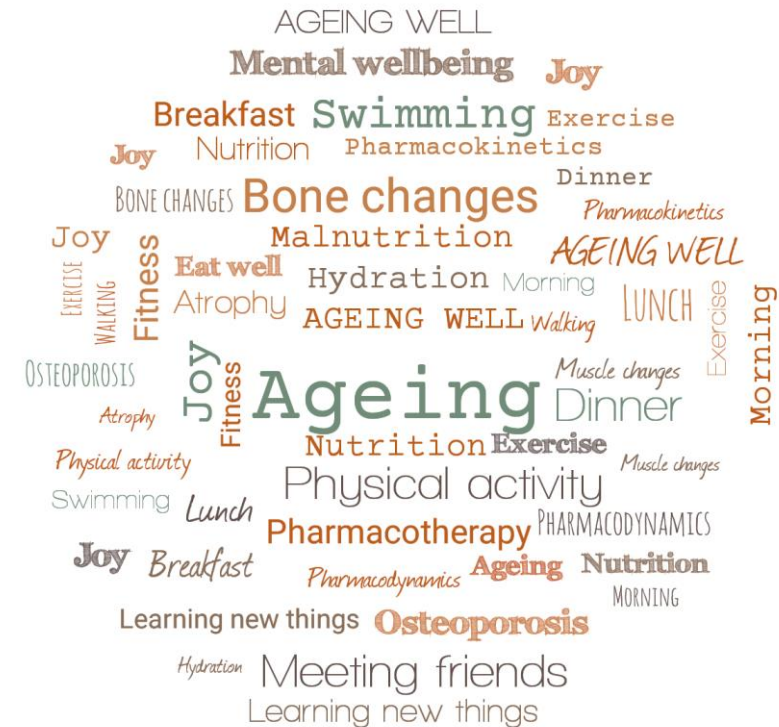
Ageing Well series of Public Talks

“Being mindful of eating well, hydration, physical activity, learning new things and social connections can delay the decline caused by ageing.

Come and join us for the series of public talks with the title “Ageing Well”



Dr. Jitka Vseteckova
Senior Lecturer, Health and Social Care



Ageing Well series of Public Talks - topics



- ***Are we prepared to live longer? (Jitka Vseteckova) September 23rd 2020***
- ***Advanced care planning (Barbara Gale & Erica Borgstrom) October 21st 2020***
- ***Ageing brain (Jitka Vseteckova) November 18th 2020***
- ***Learning languages and digital technologies in older age (Ursula Stickler) December 2nd 2020***
- ***Care and caring in older age (Mary Larkin) January 20th 2021***
- ***Nutritional needs while ageing (Jitka Vseteckova) February 24th 2021***
- ***Pharmacotherapy while ageing (Jitka Vseteckova & Sonal Mehta) March 24th 2021***
- ***Mindfulness and ageing (Adele Pacini) April 14th 2021***
- ***Move it and breathe (Jitka Vseteckova) May 19th 2021***
- ***Standing tall (Jitka Vseteckova) June 16th 2021***
- ***The things we don't talk about – Intimacy and ageing (Andreas Vossler) July 14th 2021***

Useful resources:

https://ordo.open.ac.uk/collections/Ageing_Well_Public_Talk/4716437

<https://www.open.edu/openlearncreate/course/view.php?id=5016>

