



Ageing Well Public Talk Series



The Open
University

Series 2021/22 - Talk 10. Standing Tall

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Five pillars facilitating Ageing Well

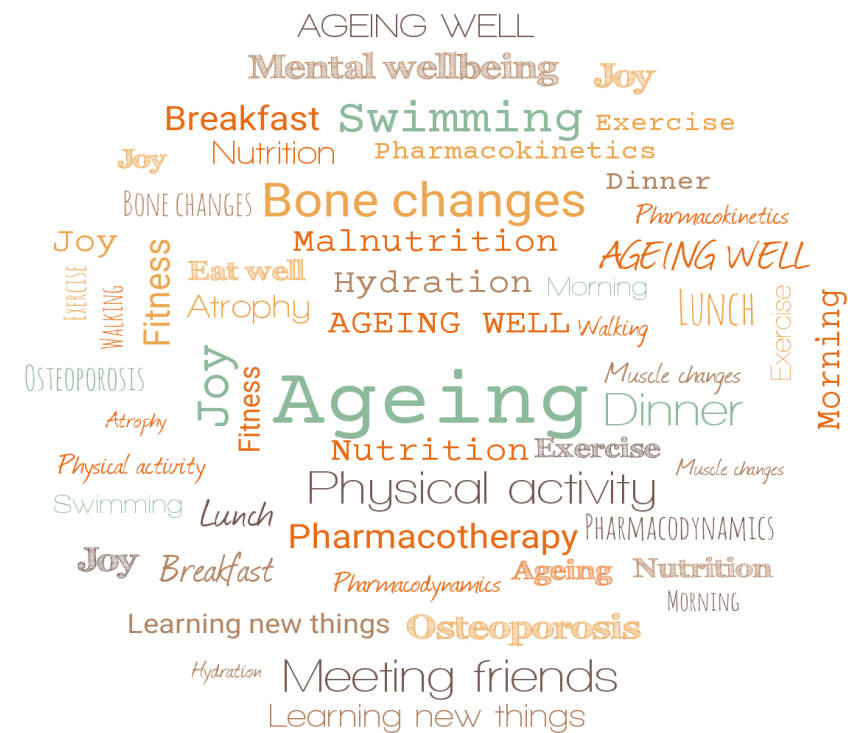
Nutrition

Hydration

Physical
stimulation

Social
stimulation

Cognitive
stimulation



2020/21 Series plan

- *Are we prepared to live longer?*
- *Advanced Care Planning*
- *Ageing brain*
- *Learning languages and digital technologies in older age*
- *Disenfranchising grief and care and caring in older age*
- *Nutritional needs while ageing*
- *Pharmacotherapy while ageing*
- *Mindfulness and ageing*
- *Move it and breathe*
- *Standing tall*
- *The things we don't talk about – Intimacy and ageing*

For more information and live streaming links follow:

[https://ordo.open.ac.uk/collections/Ageing Well Public Talks 2020-21/5122166](https://ordo.open.ac.uk/collections/Ageing_Well_Public_Talks_2020-21/5122166)

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!**

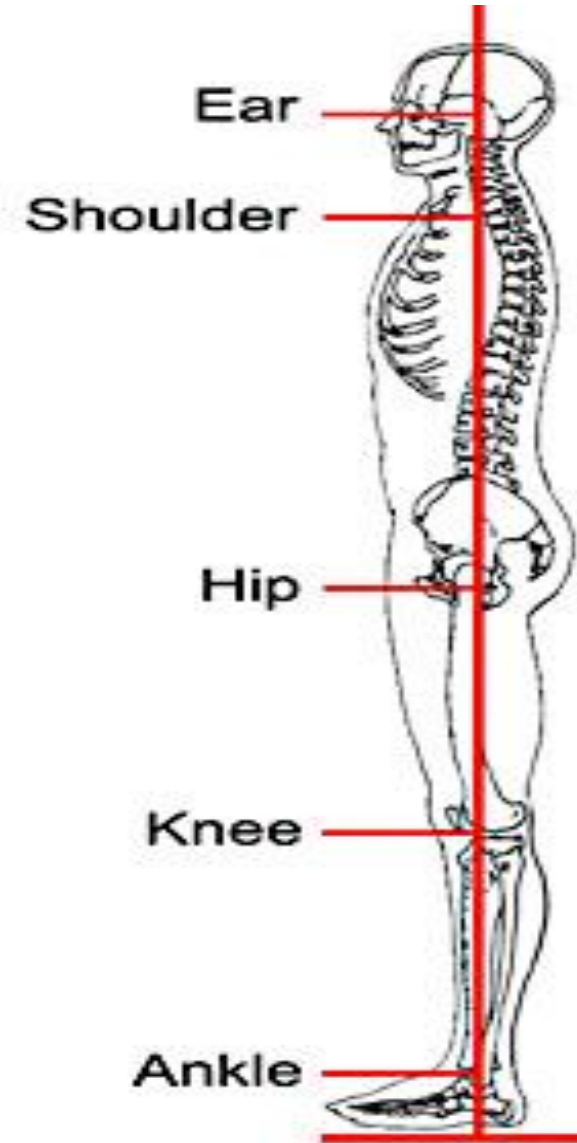
Posture, postural stereotype, postural alignment

What is it

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

Stereotype – pattern

Alignment and neutral position

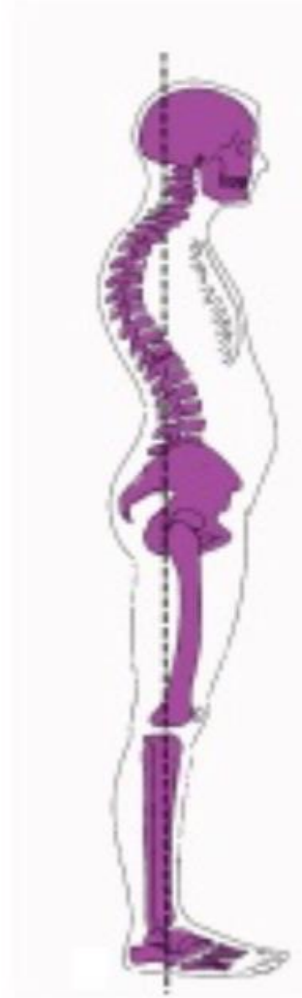




Kyphosis-Lordosis



Ideal



Lordosis



Sway Back



Flat Back

FUNCTIONAL DESIGN POSTURE: FRONT VIEW

RIGHT

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

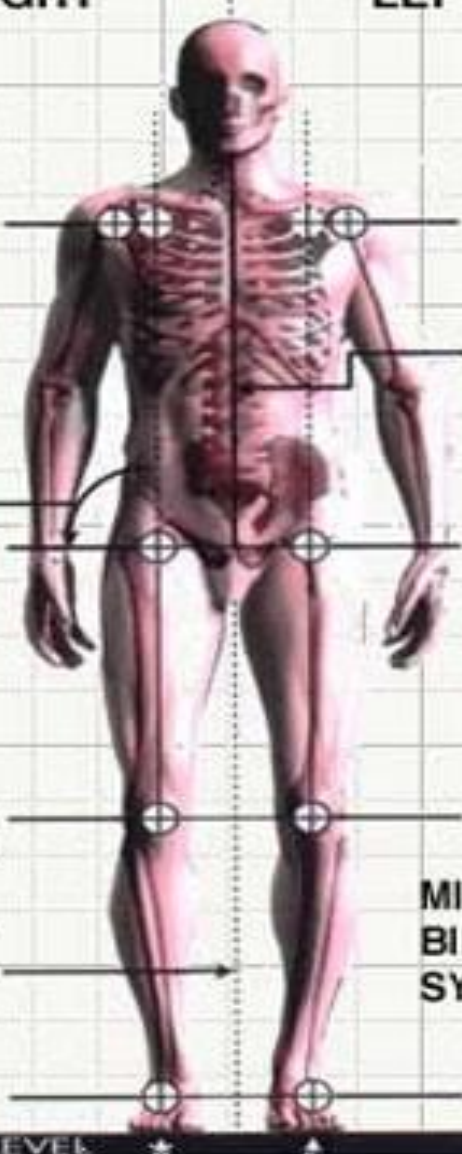
All right (90°) angles at all 8 load joints (horizontal and vertical)

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

LEFT

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

FUNCTIONAL DESIGN POSTURE: SIDE VIEW

BACK

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

FRONT

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

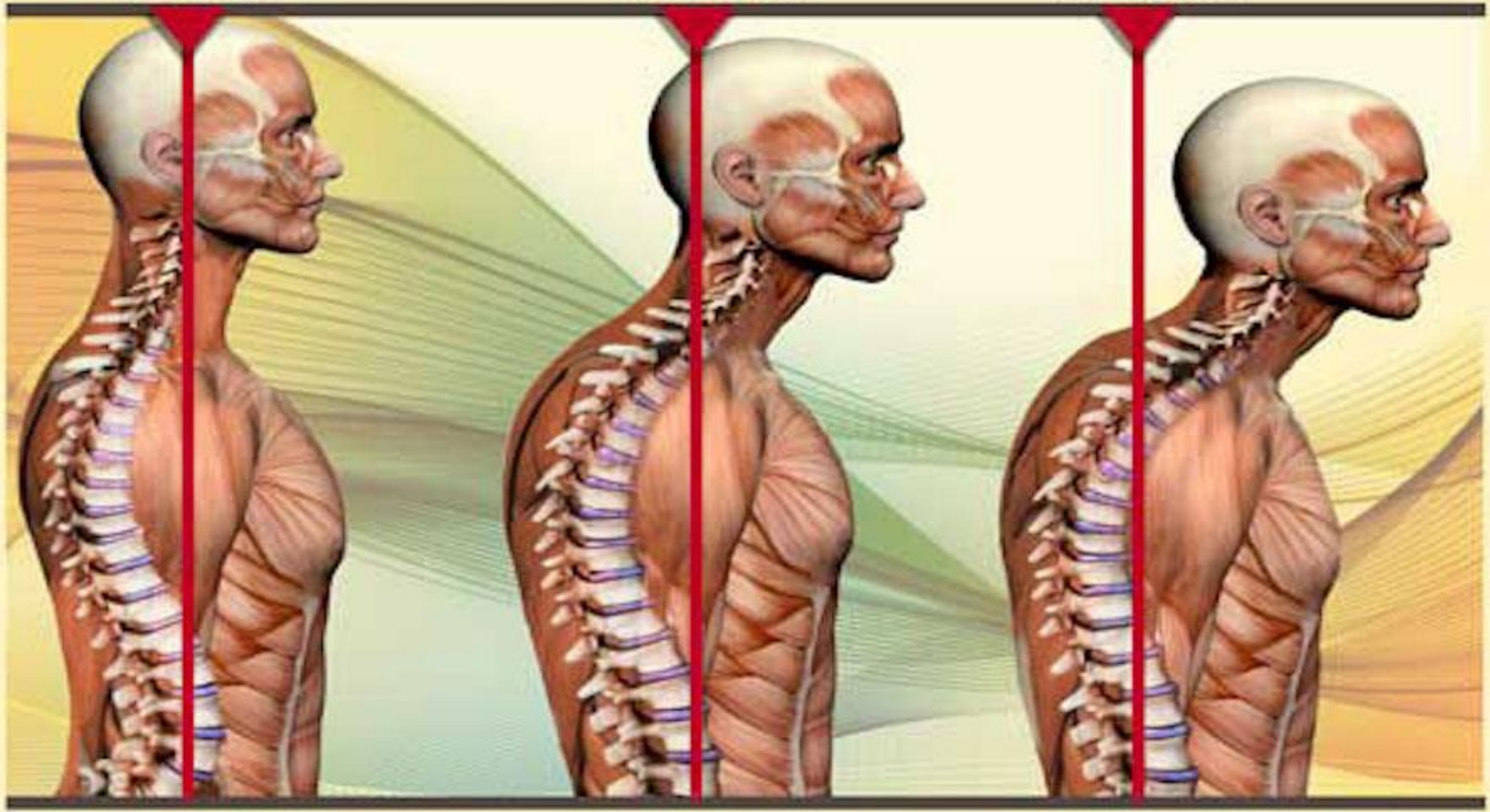
Positional Causes

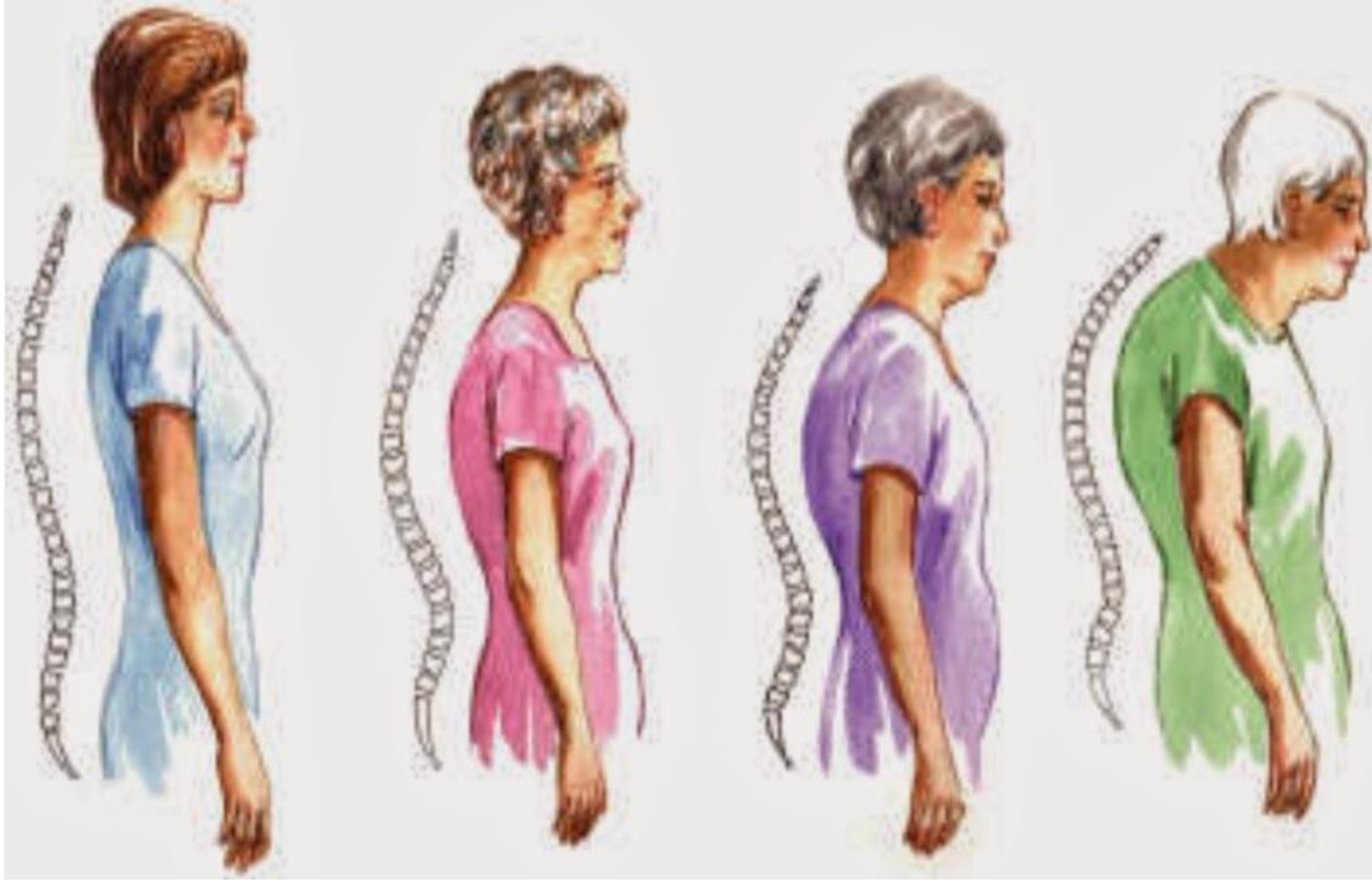
- 
- ❖ Poor postural habit--for whatever reason, the individual does not maintain a correct posture
 - ❖ Psychological factors, especially self-esteem.
 - ❖ Respiratory conditions
 - ❖ General weakness
 - ❖ Loss of the ability to perceive the position of your body

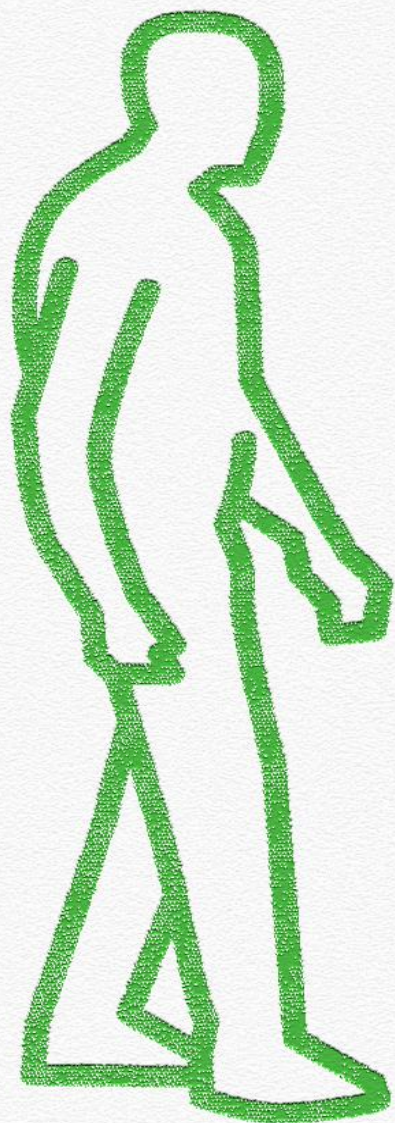
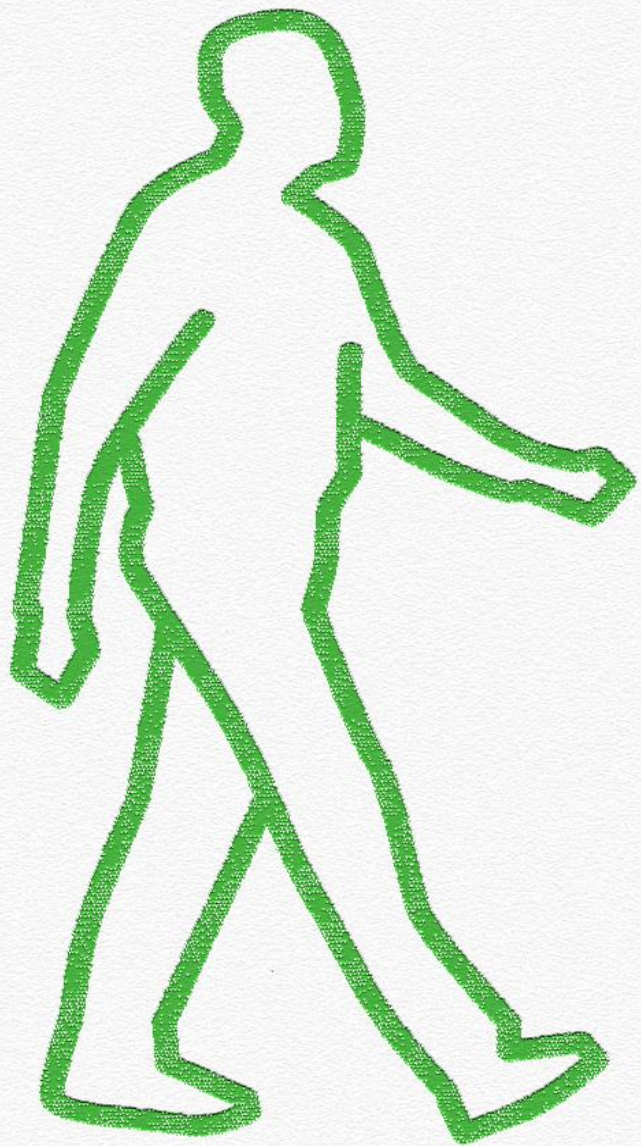
12 lb.

32 lb.

42 lb.







AGEING WELL
Mental wellbeing Joy
Breakfast Swimming Exercise
Joy Nutrition Pharmacokinetics
BONE CHANGES Bone changes Dinner
Pharmacokinetics
Joy Malnutrition
Eat well Hydration Morning
Atrophy AGEING WELL Walking LUNCH
EXERCISE WALKING Fitness Joy Fitness
OSTEOPOROSIS Atrophy Joy Fitness
Physical activity Nutrition Exercise
Swimming Lunch Physical activity Muscle changes
Joy Breakfast Pharmacotherapy PHARMACODYNAMICS
Pharmacodynamics Ageing Nutrition
Learning new things Osteoporosis MORNING
Hydration Meeting friends
Learning new things

- 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...

- DIZZINESS, WEAKNESS
- FRAILTY
- 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

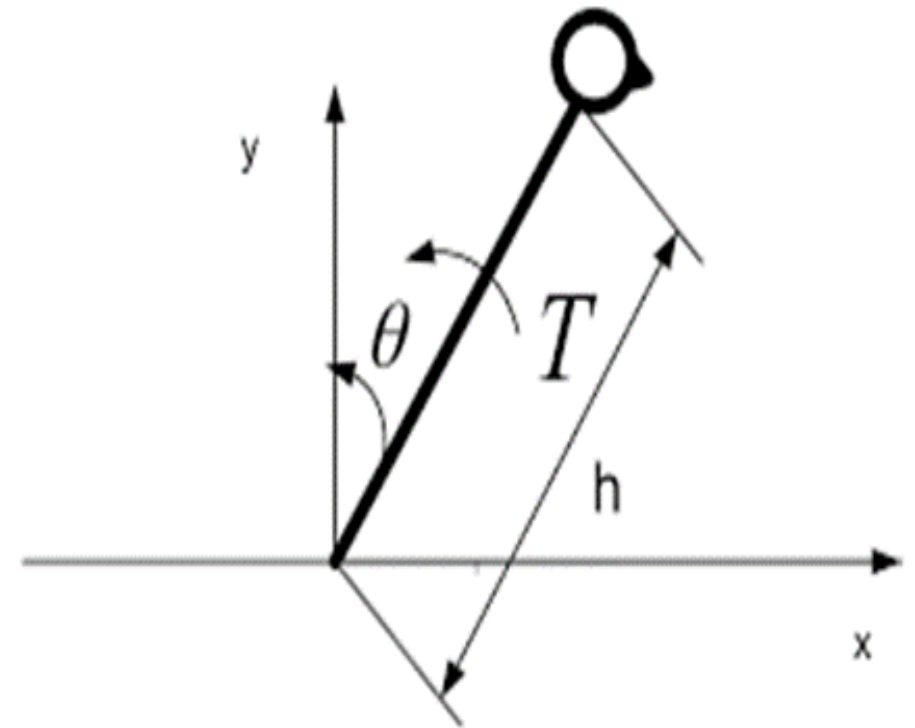
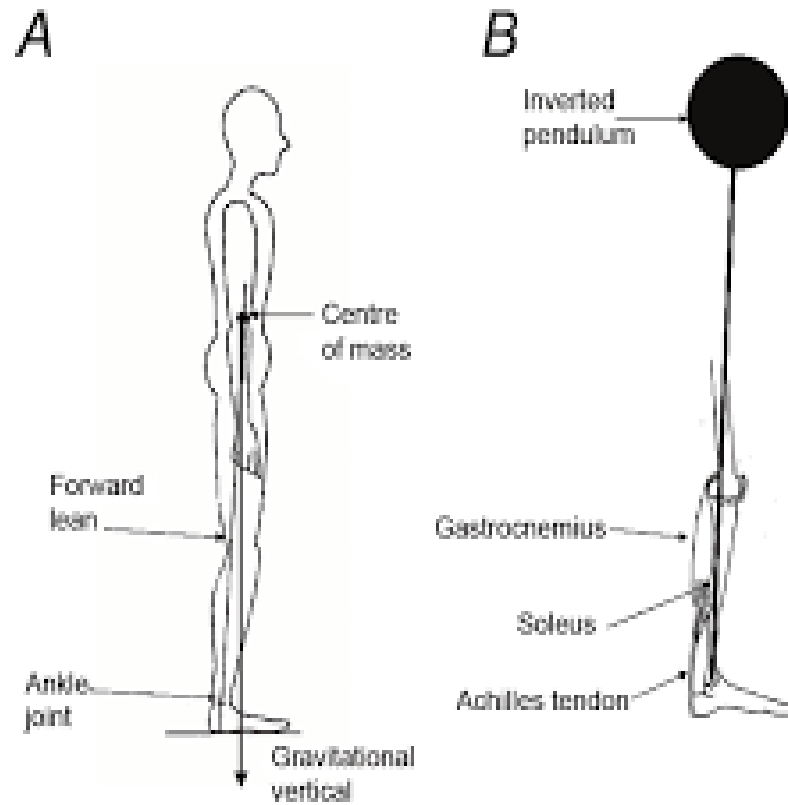
Directly result from:

- 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:

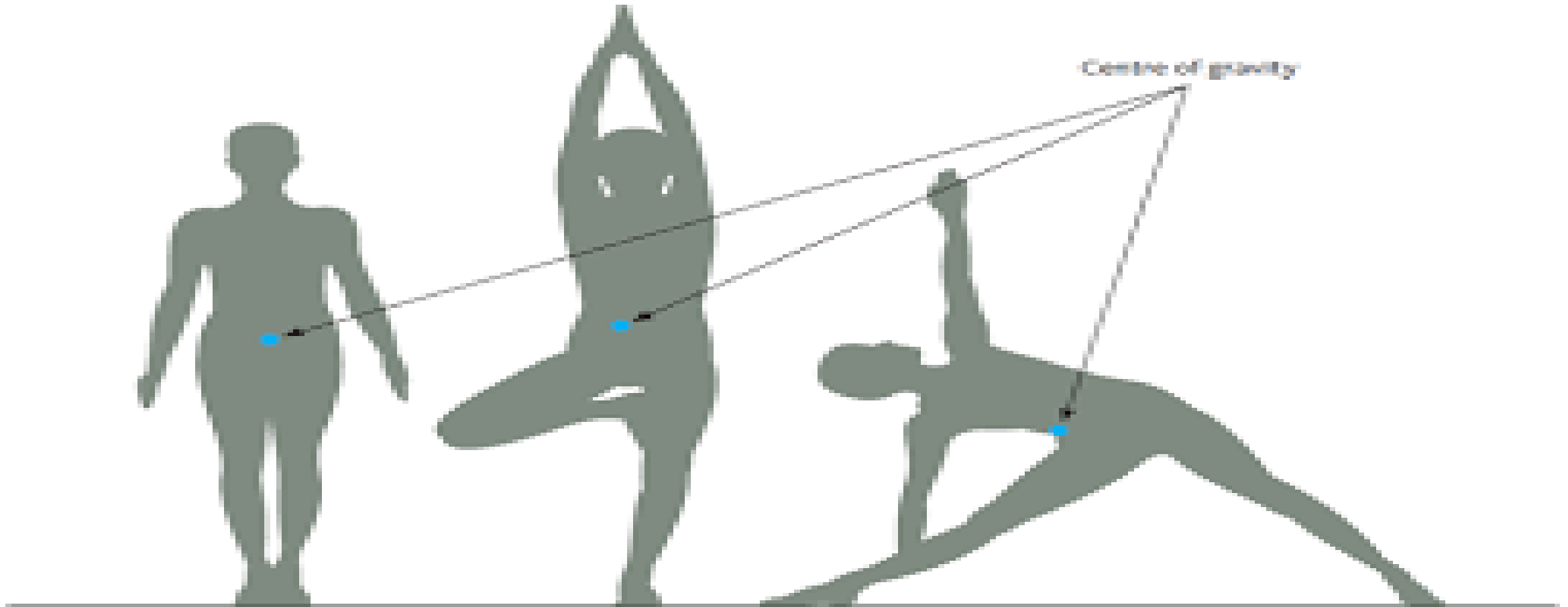
- *Movement strategies*
reactive; anticipatory; voluntary

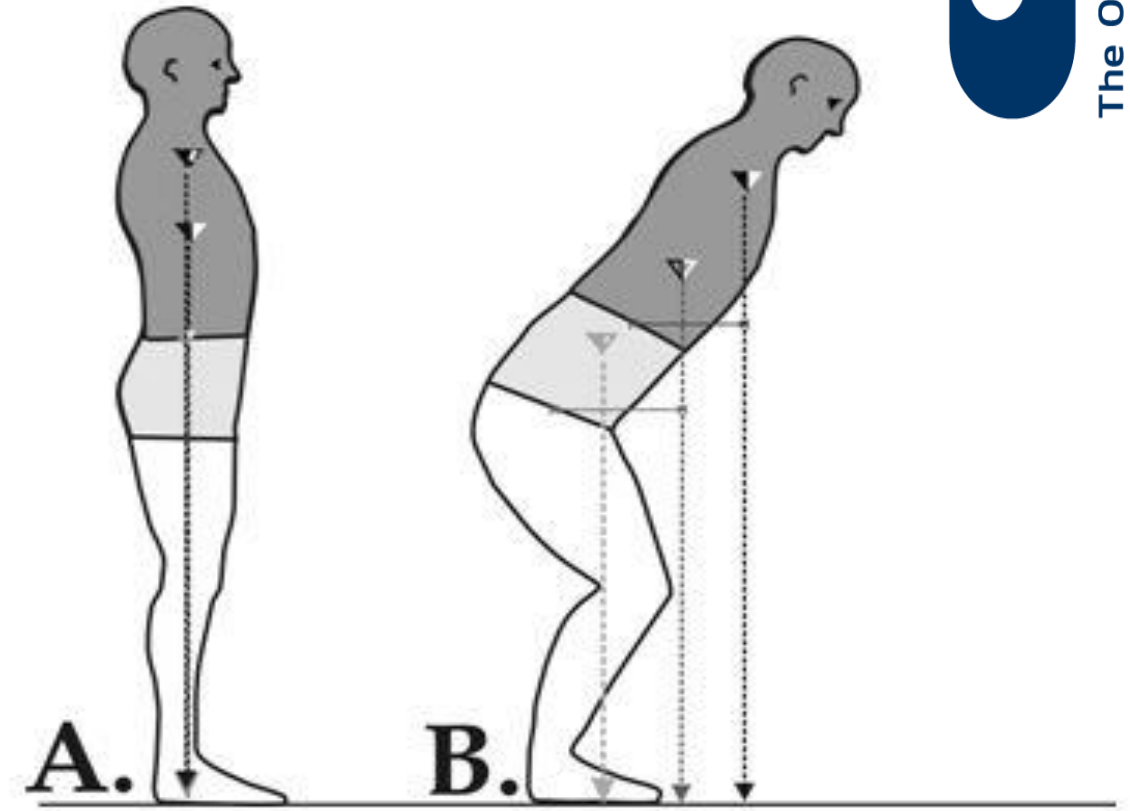
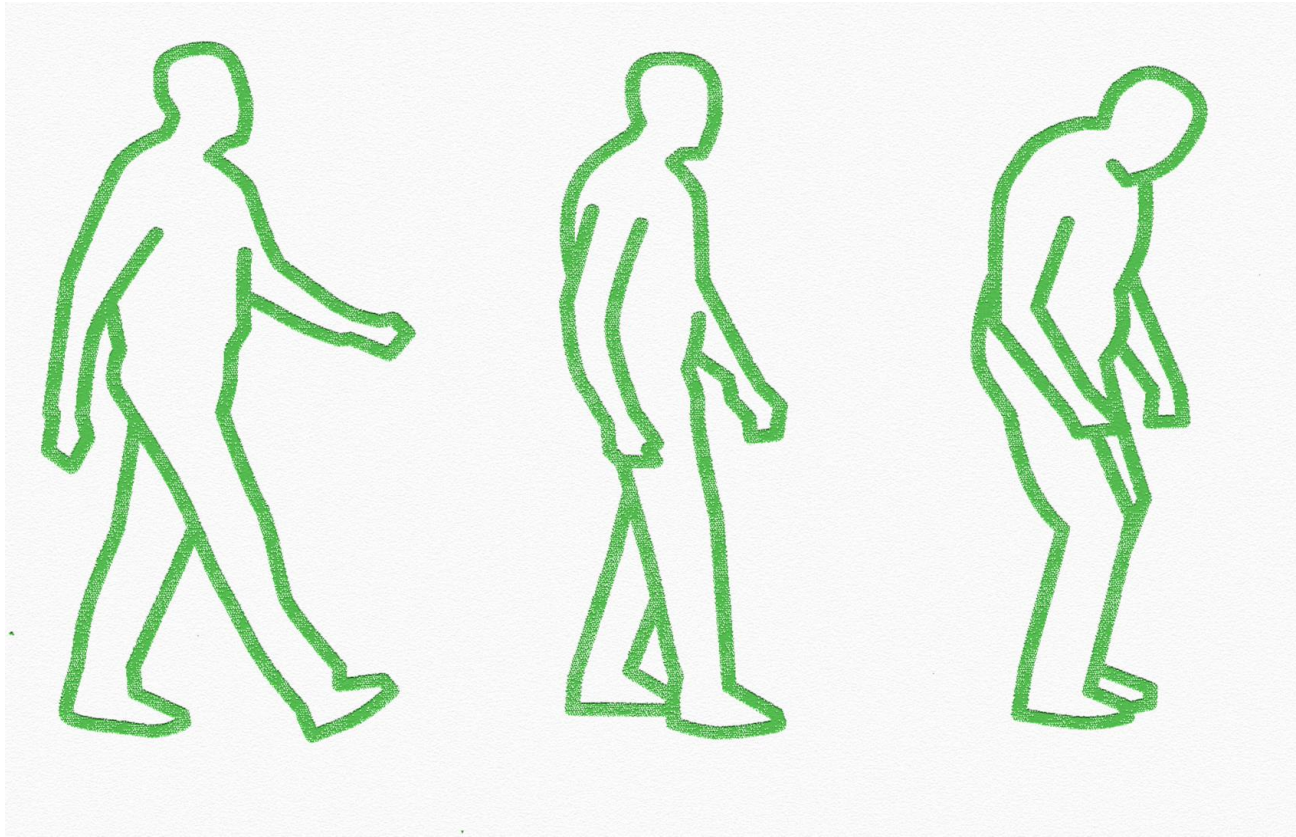
Ankle - hip - stepping



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



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/>

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

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The Open University



*Things we don't talk about (Andreas Vossler) July 20^h
2021*

Thank you for your attention.

- Jitka.vseteckova@open.ac.uk
- <http://www.open.ac.uk/people/jv2595>

‘Ageing Well Public Talks’ Series 2021/2022 repository on ORDO Collections

[https://ordo.open.ac.uk/collections/Ageing Well Public Talks 2021-22/5493216](https://ordo.open.ac.uk/collections/Ageing_Well_Public_Talks_2021-22/5493216)

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‘Ageing Well Public Talks’ Series 2019/2020 repository on ORDO Collections

<https://doi.org/10.21954/ou.rd.c.4716437.v1>

OpenLearnCreate Course on *‘Ageing Well’ 2019/2020*

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

Home exercise no equipment – no problem *Blog*

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

Summary of related resources to The Ageing Well Public Talk Series

Podcasts

- Vseteckova J & King J (2020) COVID-19 Interview podcast for The Retirement Café: '[Ageing Well Under Lockdown](#)'
- Vseteckova J & Broad E (2020) Podcast – Open University & The Parks Trust [Keep Me Walking - researching with people living with dementia and their carers](#) -
- Vseteckova J (2020) Podcast - [Areas of research with The Open University](#)
- Broad E, Methley A & Vseteckova J (2021) Podcast OU & The Parks Trust & Northamptonshire Healthcare NHS Foundation Trust - [Spotter sheet and mindful walking](#).
- Vseteckova J, Methley A, Broad E (2021) Podcast OU & The Parks Trust & Northamptonshire Healthcare NHS Foundation Trust [Preventing brain decline while ageing](#)
- Methley A, Broad E, Vseteckova J (2021) Podcast OU & The Parks Trust & Northamptonshire Healthcare NHS Foundation Trust [Walking therapy](#)
- Vseteckova J, Methley A, Broad (2021) Podcast OU & The Parks Trust & Northamptonshire Healthcare NHS Foundation Trust [Understanding our memory](#)
- Araya Y , Broad E, Vseteckova J (2022) [Engaging with our environment](#)
- The above podcasts can be also seen on [The Parks Trust YouTube Channel](#)

OpenLearn Resources:

- 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>
- Vseteckova J (2019) **Depression, mood and exercise** https://www.open.edu/openlearn/health-sports-psychology/mental-health/depression-mood-and-exercise?in_menu=622279
- Vseteckova J (2019) **Five Pillars for Ageing Well** <https://www.open.edu/openlearn/health-sports-psychology/mental-health/five-pillars-ageing-well>
- 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>
- Vseteckova J, Borgstrom E, Whitehouse A, Kent A, Hart A (2021) **Advance Care Planning (ACP)** - [Discuss, Decide, Document and Share Advance Care Planning \(ACP \) - Discuss, Decide, Document and Share - OpenLearn - Open University](#)

- Vseteckova J, Methley A, Lucassen M (2021) **The benefits of mindfulness and five common myths surrounding it** <https://www.open.edu/openlearn/health-sports-psychology/mental-health/the-benefits-mindfulness-and-five-common-myths-surrounding-it>
- Vseteckova J, Broad E, Andrew V (2021) **The impact of walking and socialising through 5 Ways Café on people living with dementia and their carers: A volunteer's perspective** <https://www.open.edu/openlearn/health-sports-psychology/health/the-impact-walking-and-socialising-through-5-ways-cafe-on-people-living-dementia-and-their-carers>
- Vseteckova J, Methley A, Lucassen M (2021) **The benefits of mindfulness and five common myths surrounding it** <https://www.open.edu/openlearn/health-sports-psychology/mental-health/the-benefits-mindfulness-and-five-common-myths-surrounding-it>
- Methley A, Vseteckova J, Broad E (2021) **Outdoor Therapy: The Benefits of Walking and Talking** <https://www.open.edu/openlearn/health-sports-psychology/mental-health/outdoor-therapy-the-benefits-walking-and-talking>
- Vseteckova J, Methley a, Broad E (2021) **What happens to our brain as we age and how we can stop the fast decline** <https://www.open.edu/openlearn/health-sports-psychology/health/what-happens-our-brain-we-age-and-how-can-we-stop-the-decline>
- 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, Broad E (2021) **Understanding our memory** [What do we need to know about our memory? - OpenLearn - Open University](#)
- Vseteckova J (2022) **Pharmacotherapy while ageing** <https://www.open.edu/openlearn/health-sports-psychology/pharmacotherapy-while-ageing>
- Gale B (2022) **How can we prepare for death while ageing?** Ageing Well Public Talk Series related - <https://www.open.edu/openlearn/health-sports-psychology/health/valuing-death>

COVID-19 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 Self-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>
- 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>
- 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 series of Public Talks 2021/22



“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



Venue: online webinars via Microsoft Teams, talks held 11AM-1PM

Ageing Well series of Public Talks 2021/22- topics



- ***Are we prepared to live longer?*** (Jitka Vseteckova & Catherine Pestano) **September 14th 2022**
- ***Taking control of dying*** (Barbara Gale & Amanda Whitehouse) **October 19th 2022**
- ***Memory and preserving Sense of Self while ageing*** (Jitka Vseteckova & Helen Joannidi & Ellie Broad) **November 16th 2022**
- ***Equality, diversity and inclusion in access and provision of care in health services*** (Carlos M Lequizamón) **December 14th 2022**
- ***General Practices 'COVID-19 and beyond'*** (Andrew Potter) **January 18th 2023**
- ***Living with diabetes and nutrition while ageing*** (Jitka Vseteckova & Alan Hastings) **February 22nd 2023**
- ***Relationships and couple intimacy while ageing*** (Andreas Vossler) **March 15th 2023**
- ***Lets' talk about sleep*** (Abi Methley) **April 19th 2023**
- ***Health Inequalities and Ageing*** (Sonal Mehta) **May 17th 2023**
- ***Ways to exercise and having fun at the same time*** (Jackie Richards & David Curry) **June 14th 2023**
- ***Ageing, later life and caring in LGBTQ communities*** (Joseph DeLappe & Tony Collins-Moore) **July 12th 2023**

Useful resources:

https://ordo.open.ac.uk/collections/Ageing_Well_Public_Talks_2020-21/5122166

https://ordo.open.ac.uk/collections/Ageing_Well_Public_Talks_2021-22/5493216

