

AgeingWell Public Talk Series

Series 2021/22 - Talk 10. Standing Tall

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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: [Ageing Well Public Talks](#)

- All the way through the 'Ageing Well' talks we explore how using this knowledge might facilitate self-management, become partners in our care and delay the ageing processes for as much as we can.
- The emphasis of the 'Ageing Well' series is on optimizing cognitive and physical well-being, physiological ageing and self-management. To a lesser extent, on pathological processes while ageing.
- Promoting physical activity, social and cognitive activities, networking, learning and healthy lifestyle
- Building bridges

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

- position in which someone holds their body when standing or sitting
- Alignment and neutral position
- Ideal
- Kyphosis-Lordosis
- Lordosis
- Sway Back

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 imbalances)

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
- 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 (directly affects 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

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 directly affects 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 directly affects 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...

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: [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. Jitka.vseteckova@open.ac.uk

Our next talk is July 20th, 2022: Things we don't talk about (Andreas Vossler)

Podcasts

- Vseteckova J & King J (2020) COVID-19 Interview podcast for The Retirement Café: 'Ageing Well Under Lockdown'
- 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
- Vseteckova J (2020) Podcast - areas for 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.
- Broad E & Methley A & Vseteckova J (2021) Preventing brain decline while ageing

OpenLearn Resources:

- Vseteckova J (2020) Ageing Well Public Talk Series
- Vseteckova J (2019) 5 reasons why exercising outdoors is great for people who have dementia
- Vseteckova J (2019) Depression, mood and exercise
- Vseteckova J (2019) Five Pillars for Ageing Well
- Vseteckova J (2020) Ageing Brain
- Vseteckova J (2020) Ageing Well Public Talks Series II. Plan for 2020 – 2021
- Vseteckova J (2020) Walking the Parks with The OU and The Parks Trust
- Vseteckova J, Borgstrom E, Whitehouse A, Kent A, Hart A (2021) Advance Care Planning (ACP) - Discuss, Decide, Document and Share Advance Care Planning (ACP)
- Vseteckova J, Methley A, Lucassen M (2021) The benefits of 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

- Vseteckova J, Methley A, Lucassen M (2021) The benefits of mindfulness and five common myths surrounding it
- Methley A, Vseteckova J, Broad E (2021) Outdoor Therapy: The Benefits of 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
- Methley A & Vseteckova J & Jones K (2020) Green & Blue & Outdoor spaces

COVID-19 related

- Vseteckova J, How to age well, while self-isolating (2020)
- Vseteckova J, (2020) SHORT FILM - Ageing Well in Self-Isolation
- Vseteckova J, (2020) ANIMATION - Keeping healthy in Self-Isolation
- Vseteckova J et al (2020) COVID-19 The effects of self-isolation and lack of physical activity on carers
- Taverner P, Larkin M, Vseteckova J, et al. (2020) Supporting adult carers during COVID-19 pandemic
- Robb M, Penson M, Vseteckova J, et al. (2020) Young carers, COVID-19 and physical activity
- Penson M, Vseteckova J et al. (2020) Older Carers, COVID-19 and Physical Activity
- Vseteckova J & Methley A (2020) Acceptance Commitment Therapy (ACT) to help carers in challenging COVID-19 times
- ‘Ageing Well Public Talks’ Series 2021/2022 repository on ORDO Collections
- ‘Ageing Well Public Talks’ Series 2020/2021 repository on ORDO Collections
- ‘Ageing Well Public Talks’ Series 2019/2020 repository on ORDO Collections
- OpenLearnCreate Course on ‘Ageing Well’ 2019/2020
- Home exercise no equipment – no problem (Blog)