



The Open
University

Ageing Well Public Talk Series



The Open University

Series 2020/21 - Talk 10. Standing Tall

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Today's talk

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- The world population is rapidly ageing & we are all ageing since the day we are born.
- Physical and psychological/cognitive decline that happens at different speeds for different individuals.
- Ageing processes are in general very difficult to predict.
- Genetic predispositions we may need to take into account regarding the overall ageing the process is also co-defined by what we actually do about it.
- **USE IT OR LOSE IT** - in other words, both cognitive and physical stimulation while ageing, help to preserve cognitive and physical functions we don't want to lose. **Especially during COVID-19 times.**
- **The Five Pillars of Ageing Well**

2020/21 Series plan

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- ***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 & Alan Hastings) 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 & Declan Ryan) 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***

For more information and live streaming links follow:

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

- 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.
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- **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

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

Posture, postural stereotype, postural alignment

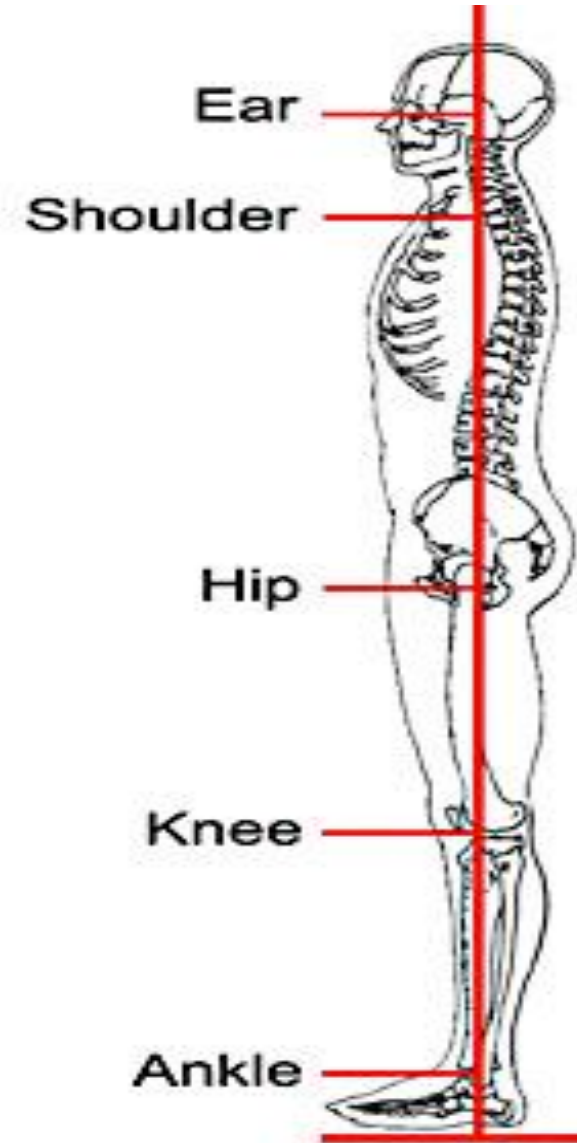
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What is it

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

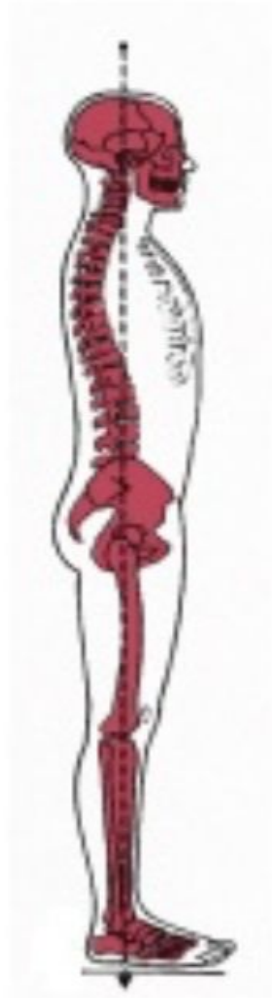
Stereotype – pattern

Alignment and neutral position

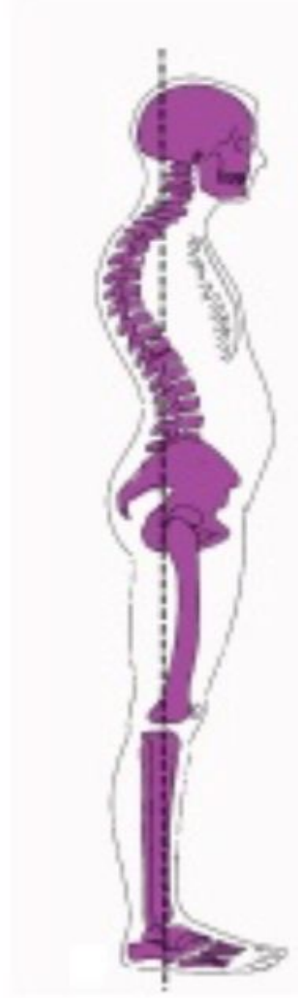




Kyphosis-Lordosis



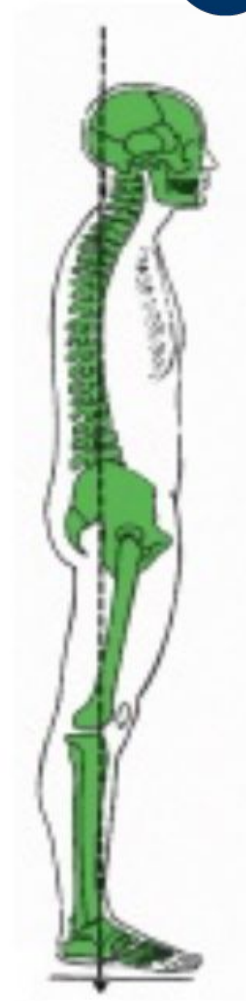
Ideal



Lordosis

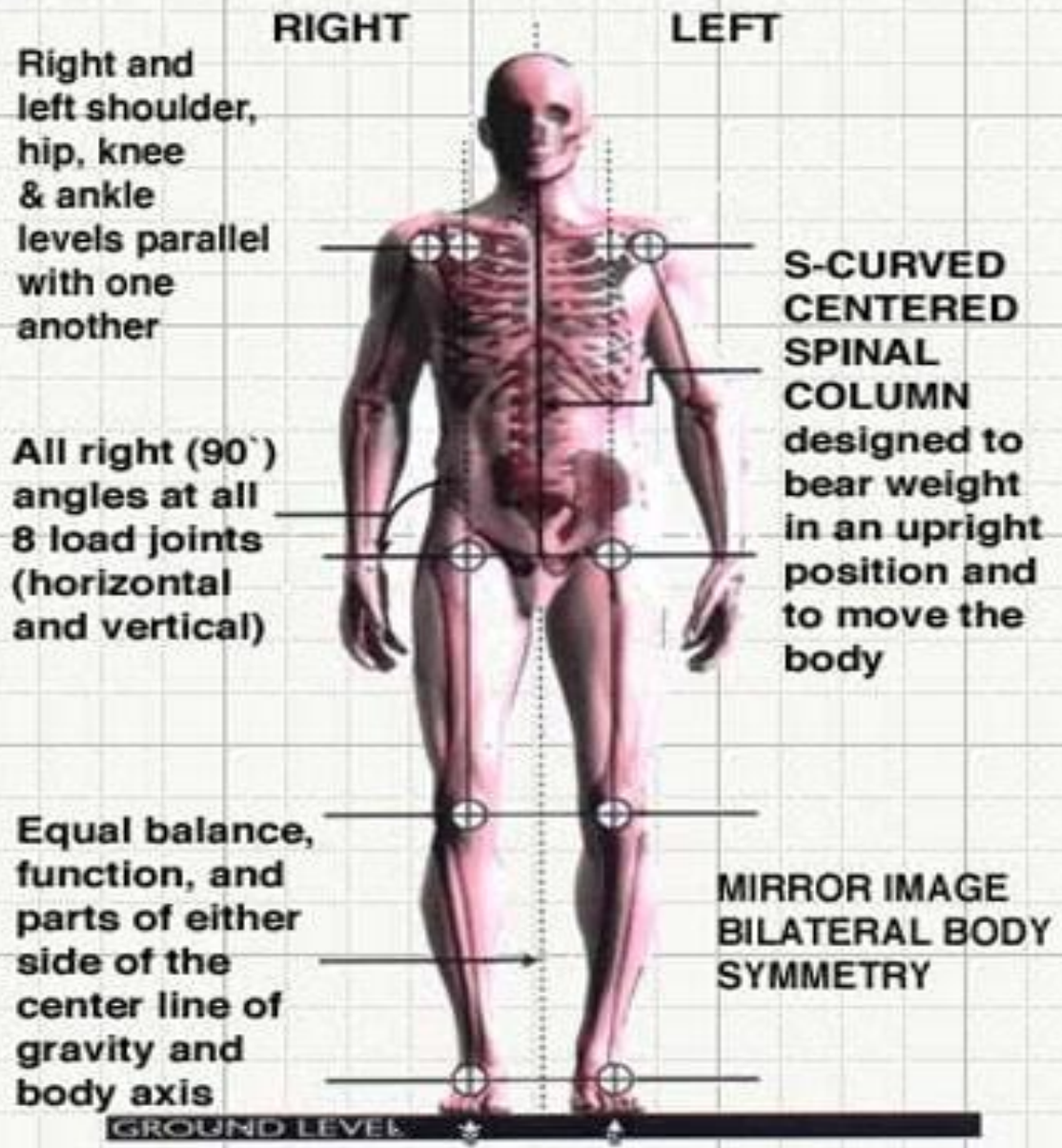


Sway Back

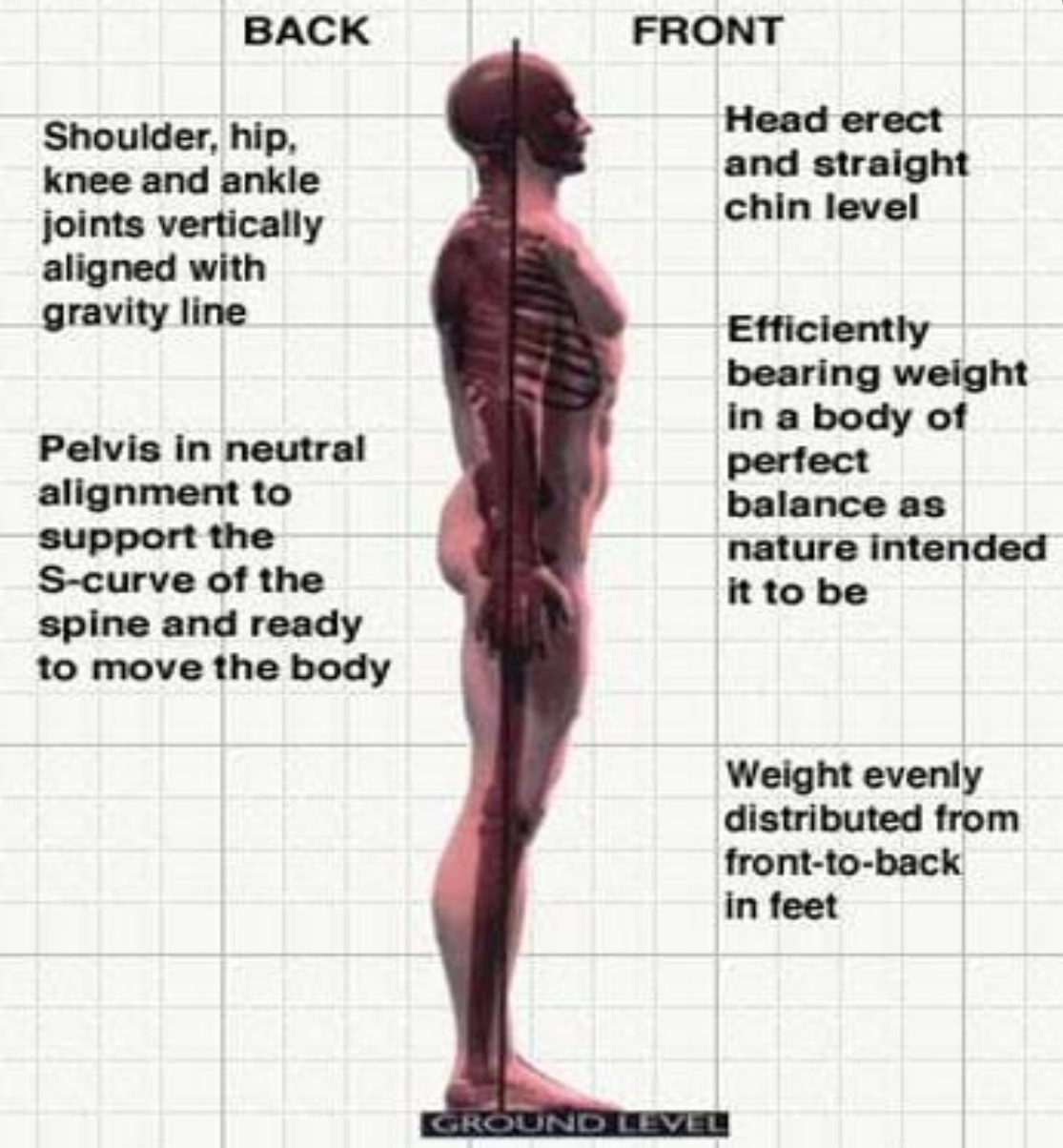


Flat Back

FUNCTIONAL DESIGN POSTURE: FRONT VIEW



FUNCTIONAL DESIGN POSTURE: SIDE VIEW



Neutral position

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- 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

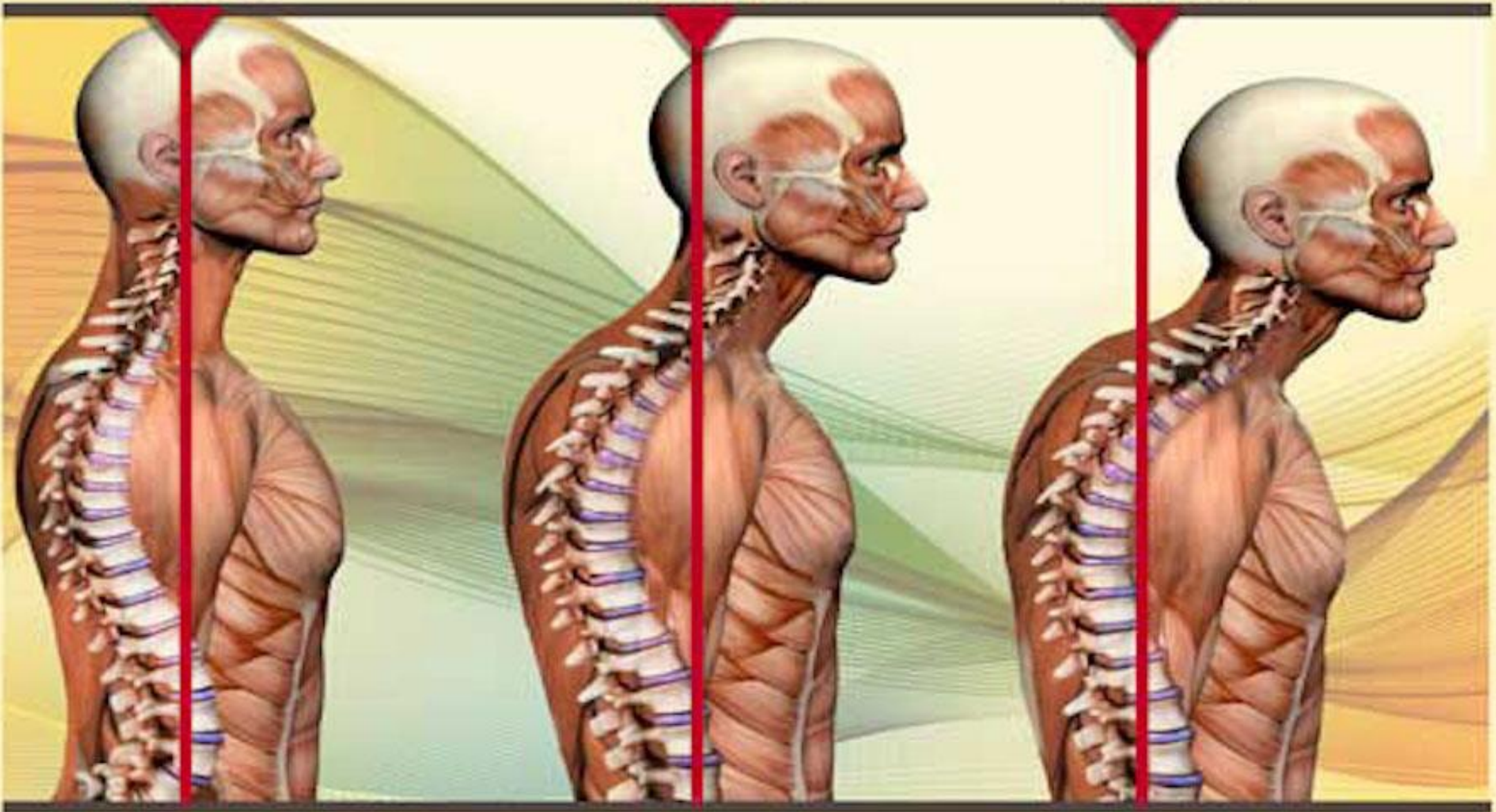
Positional Causes

- 
- ❖ 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

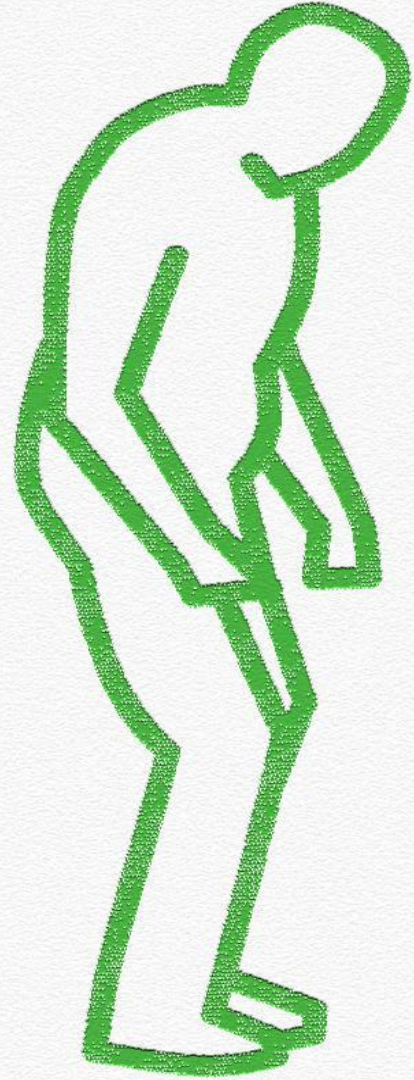
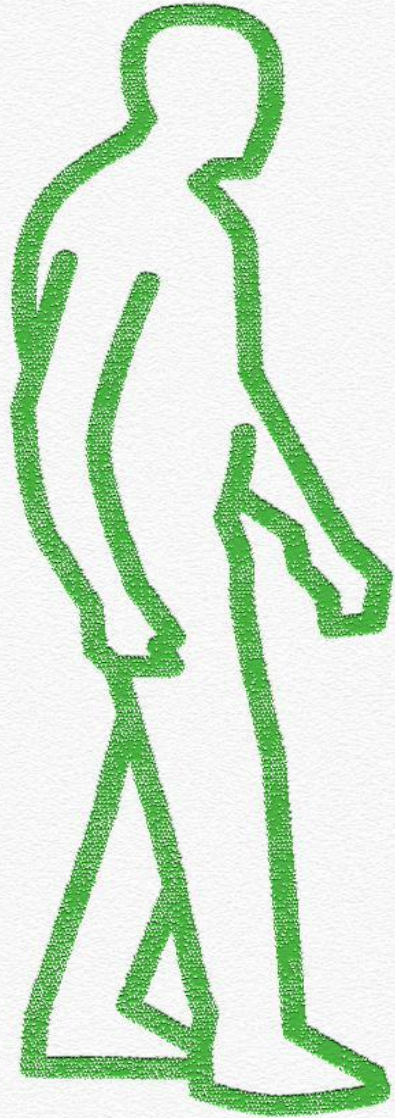
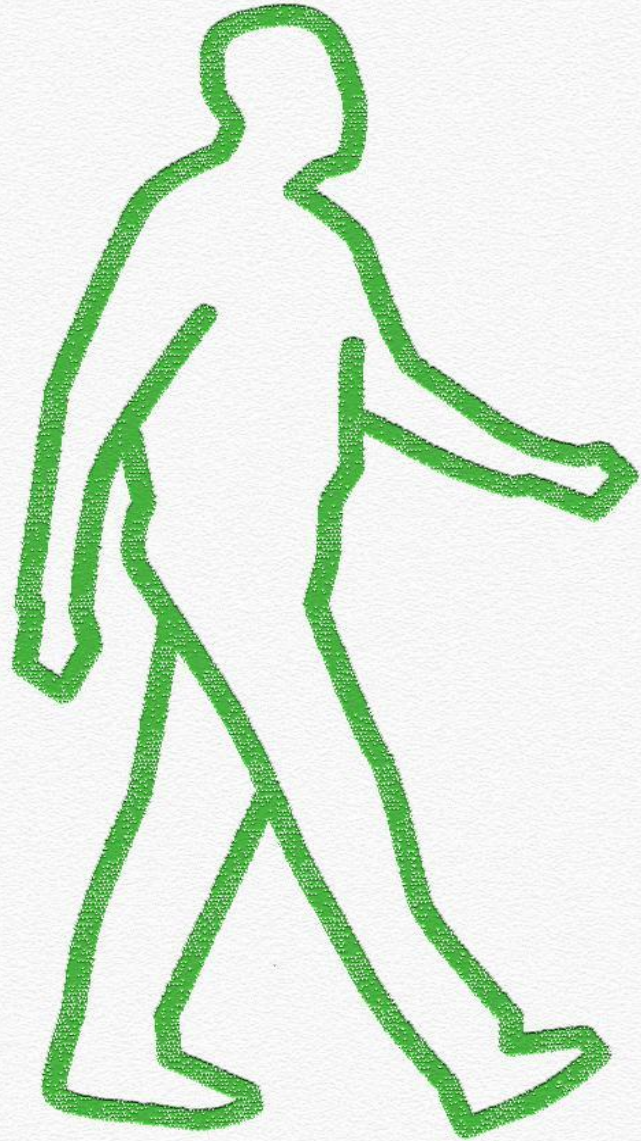
12 lb.

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
Muscle changes Dinner
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

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- Posture changes with ageing unless we decide to help it as much as we can
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- 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)
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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
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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**

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Resulting often in...

- DIZZINESS, 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
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Falls

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

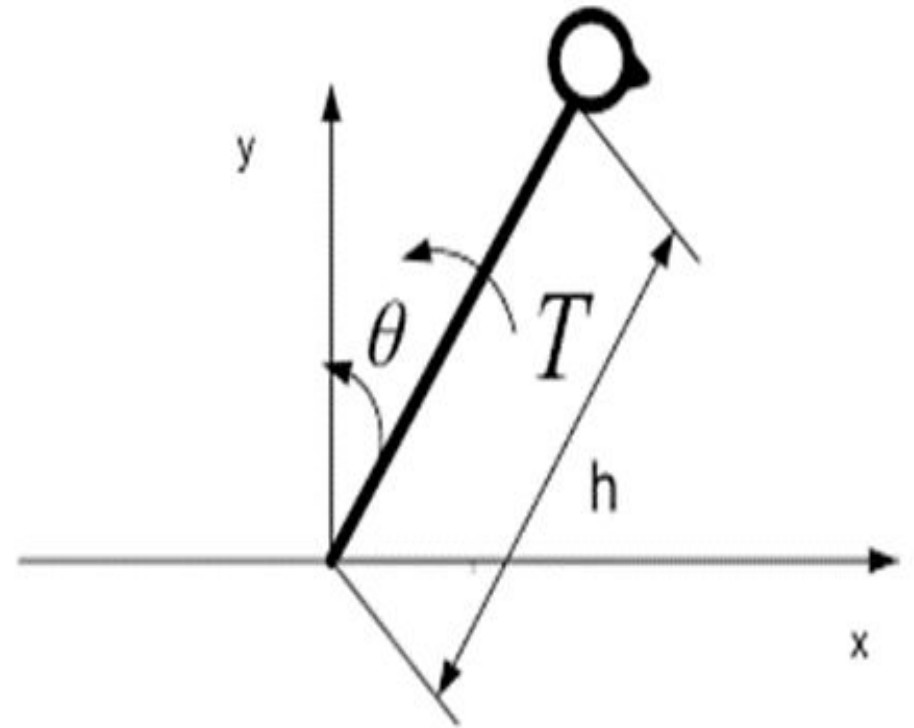
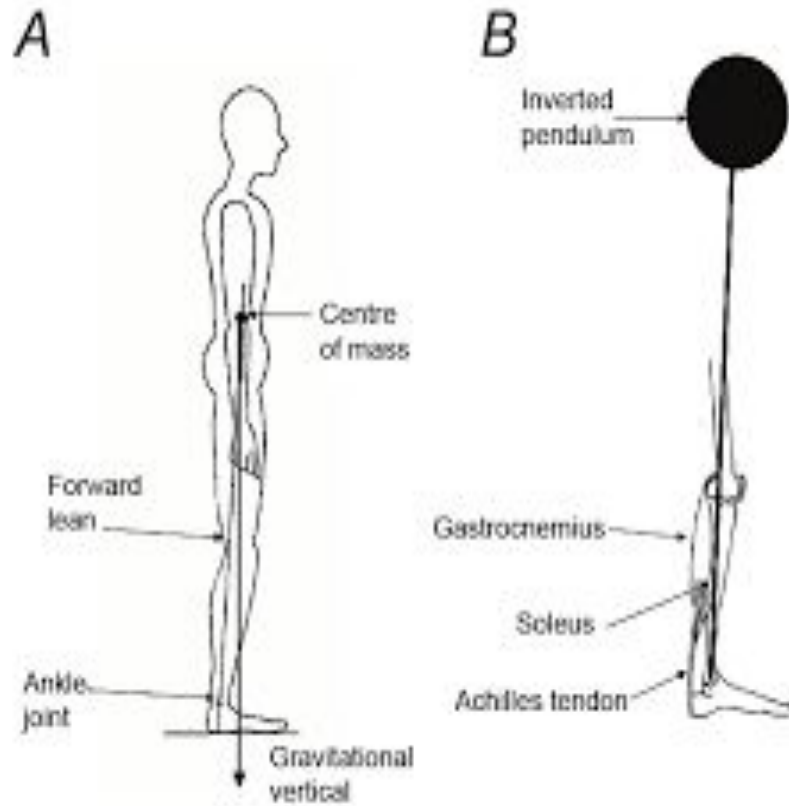
Directly result from:

- 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.)
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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**.
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- So that’s how incorrect breathing pattern, coughing, feeling low and uninterested, anxious, sad or weak... will only increase our likelihood to fall
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RESOURCES for postural stability:

- *Movement strategies*
reactive; anticipatory; voluntary

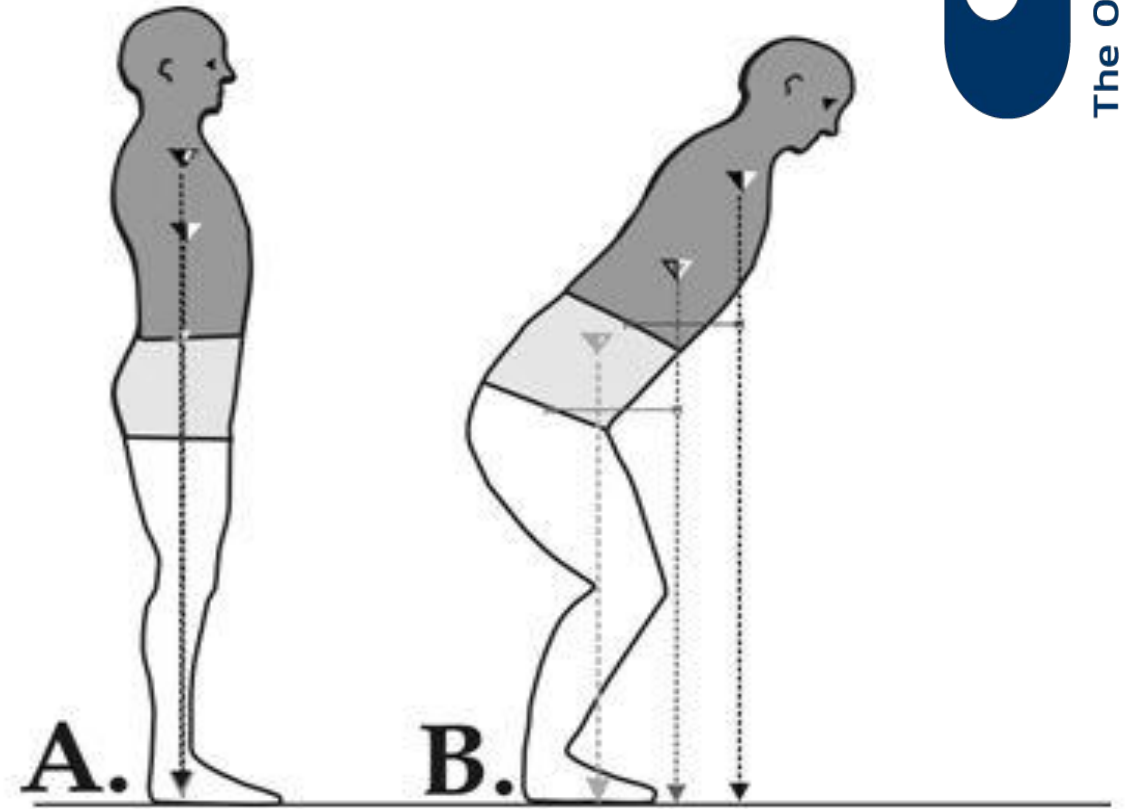
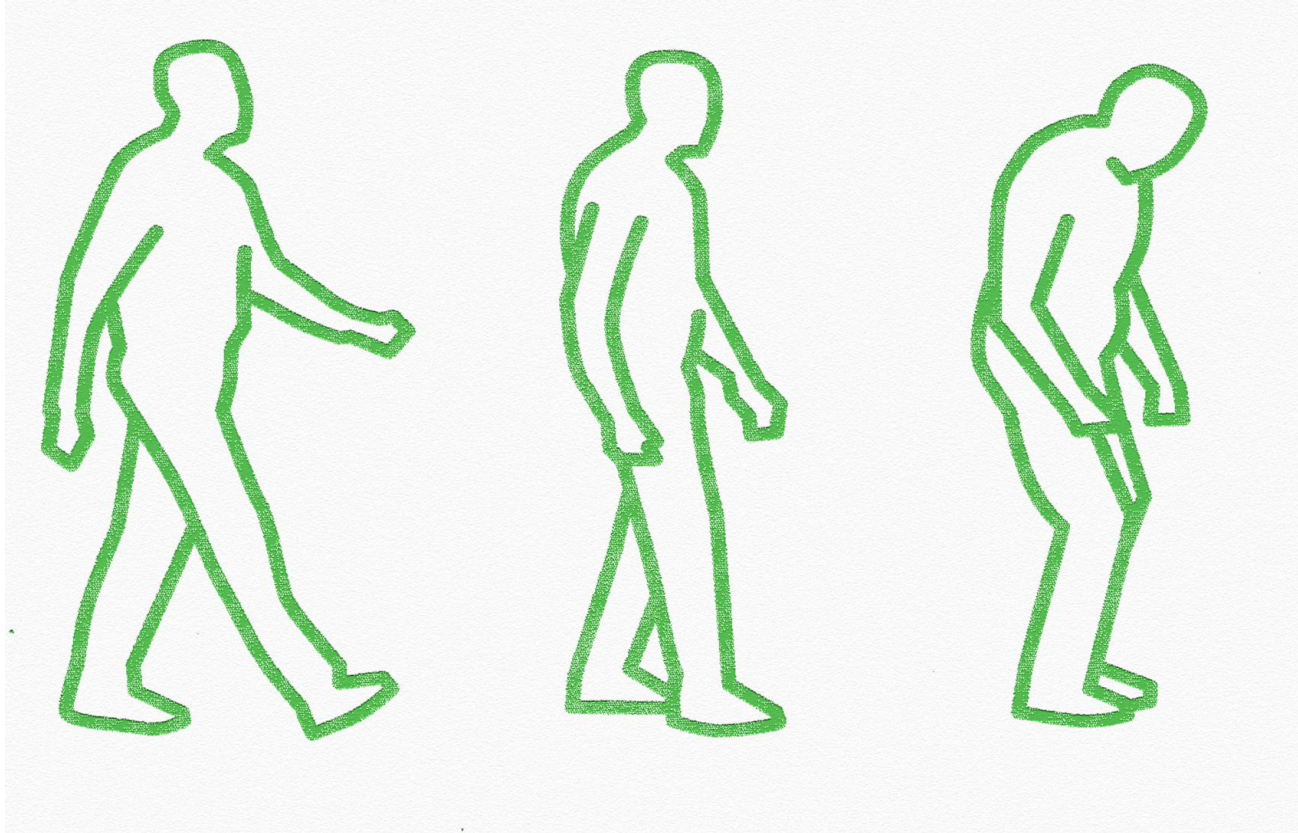
Ankle - hip - stepping



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...

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- 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.**
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- **An exercise program doesn't have to be strenuous to be effective. It has to be regular!**
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- Walking, square dancing, swimming, walking, cycling etc. are all recommended activities for maintaining fitness as we age.
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- 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/>

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

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Things we don't talk about (Andreas Vossler)

July 14th 2021

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’** <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
- Broad E & Methley A & Vseteckova J (2021) **Podcast OU & The Parks Trust & Northamptonshire Healthcare NHS Foundation Trust - Spotter sheet and mindful walking.**
<https://www.youtube.com/watch?v=dq5OXEBk3CA&feature=youtu.be>
- Broad E & Methley A & Vseteckova J (2021) **Preventing brain decline while ageing**
<https://www.youtube.com/watch?v=965w7K8XPdo>

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-is-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**

-
- 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>
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- 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>
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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-carers-covid-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 Public Talks' Series 2020/2021 repository on ORDO Collections

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

'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>

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Home exercise no equipment – no problem *Blog*

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

Ageing Well series of Public Talks - topics



- *Are we prepared to live longer?* (Jitka Vseteckova) **September 22nd 2021**
- *Advanced care planning* (Barbara Gale) **October 20th 2021**
- *Ageing brain* (Jitka Vseteckova & Marco Calabria) **November 17th 2021**
- *Learning languages and digital technologies in older age* (Ursula Stickler) **December 15th 2021**
- *Disenfranchising grief and caring while ageing* (Kerry Jones) **January 19th 2022**
- *Nutritional needs while ageing* (Jitka Vseteckova & Alan Hastings) **February 23rd 2022**
- *Pharmacotherapy while ageing* (Jitka Vseteckova & Sonal Mehta) **March 23rd 2022**
- *Mindfulness and ageing* (Abi Methley) **April 20th 2022**
- *Move it and breathe* (Jitka Vseteckova & Declan Ryan) **May 18th 2022**
- *Standing tall* (Jitka Vseteckova) **June 22nd 2022**
- *The things we don't talk about – Intimacy and ageing* (Andreas Vossler) **July 20th 2022**

Useful resources:

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



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