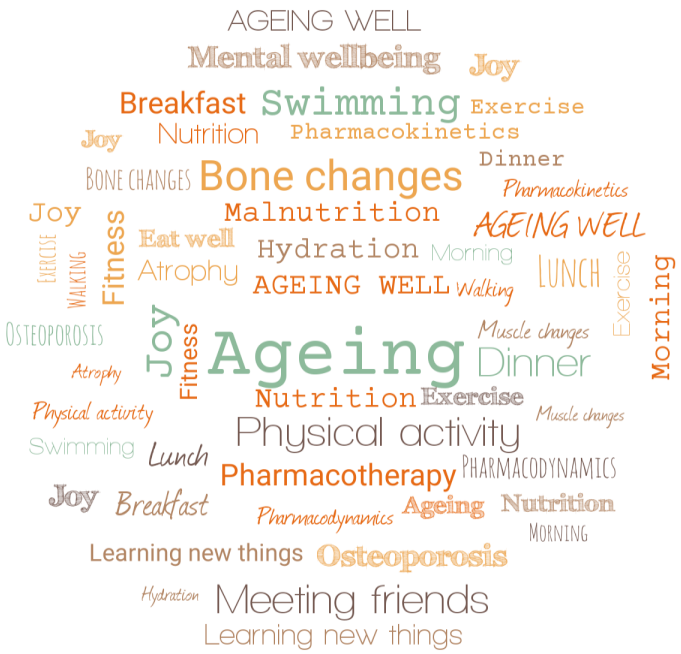

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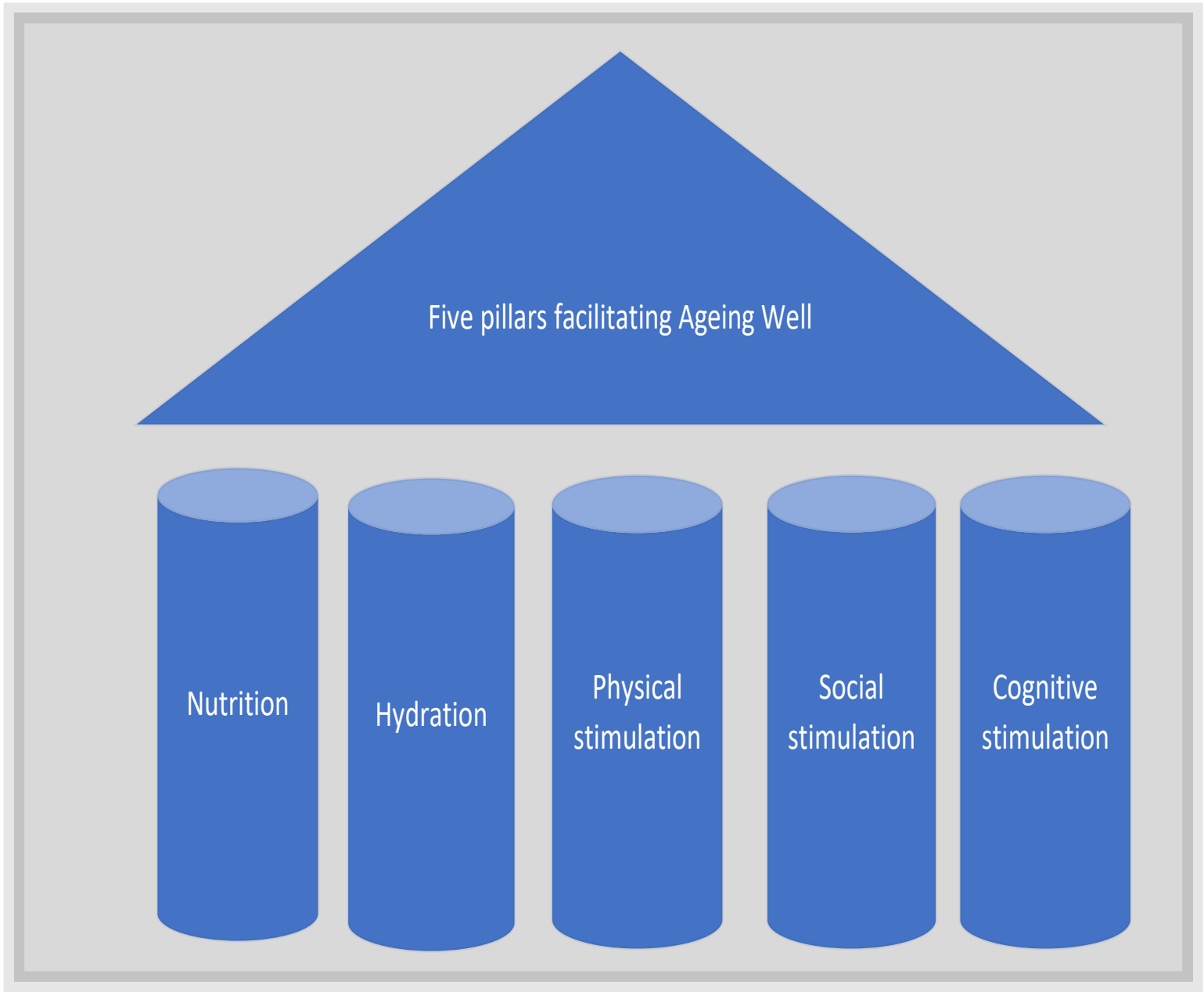
Ageing Well Series
Talk 5. Move it and Breathe!

Dr Jitka Vseteckova , Senior Lecturer health and Social Care, PhD, D.Prof, SFHEA,
Faculty WELS
The Open University

Today's talk – in partnership with Voluntary Health Scotland

- 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**



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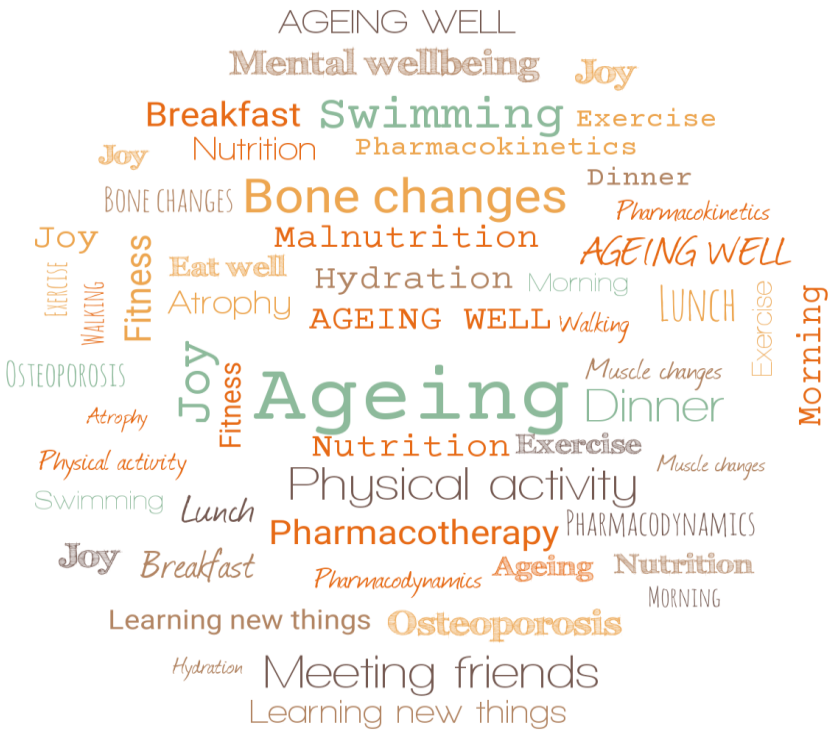


1. Are we prepared to live longer? (basic biomedical and psycho-social aspects of ageing, age-related conditions e.g. bone health, frailty etc. and overview of the next talks)

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 (What nutrients we tend to lose while ageing and what nutrients and diet/eating habits we should keep an eye on)

4. Pharmacotherapy while ageing (age-related changes in pharmacokinetics and pharmacodynamics – how the drugs behave in our body while ageing)

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')

- 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**

Physical ageing - what we have learnt so far

- **Muscles**
- **Bones**
- **Skin**
- **Liver**
- **Kidneys**
- Postural alignment
- Postural stability
- Mobility

- **Cardiovascular system**
- Respiratory system
- **Sensory system (receptors)**
- **Immune system**
- **Nervous system**
- **Endocrine system**
- **Metabolic system**

Resulting often in…

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

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

Physical activity/stimulation and breathing

- Types of physical activity/stimulation
- Aerobic / anaerobic
- Suitability
- **Regularity**

- Not just what you do but especially how you do it!

- Breathing well is an important part of any activity.
- Correctly and regularly

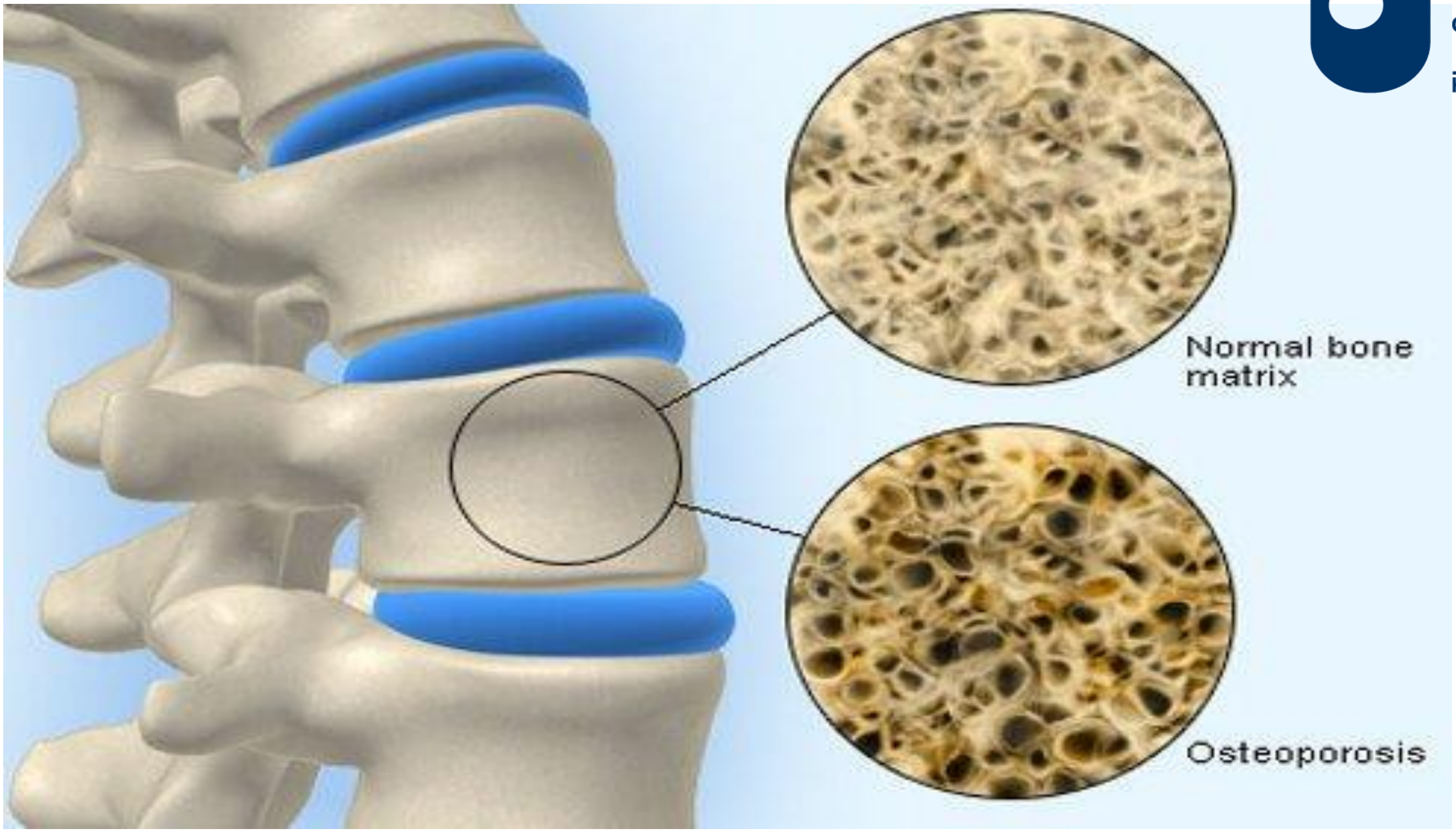
Bones while ageing

- The mineral content of bones decreases, so that bones become less dense and more fragile.
- The chemistry of cartilage, which provides cushioning between bones, changes. With less water content, the cartilage becomes more susceptible to stress. As cartilage degenerates, arthritis can develop.
- Ligaments, connective tissues between bones, become less elastic, reducing flexibility.

Healthy bones vs Osteoporosis

- **Osteoporosis** is a condition of fragile bone (increased porosity of the bone)
- Osteoporosis weakens bone and increases risk of bones breaking
- Low levels of physical activity, malnutrition, smoking, decreased levels of calcium and other minerals, menopause – rapid decrease of hormones
- Bone mass (bone density) decreases after 35 years of age, and bone loss occurs more rapidly in women after menopause.
- Manifests via back pain, sometimes decrease in height, decreased mobility
- As bones lose mass, osteoporosis develops, affecting both women and men. Osteoporosis is responsible for almost all hip fractures in older men and women.

- **Physical activity, nutrition, hydration, supplementation of vitamin D** (D3 – active form – calcium binding protein)


Normal bone matrix
Osteoporosis

- Bone is very important as it **protects internal organs**, creates support for the body, **muscles & tendons are attached to it**

- Healthy bone is very important to healthy ageing

- They are important support for muscles

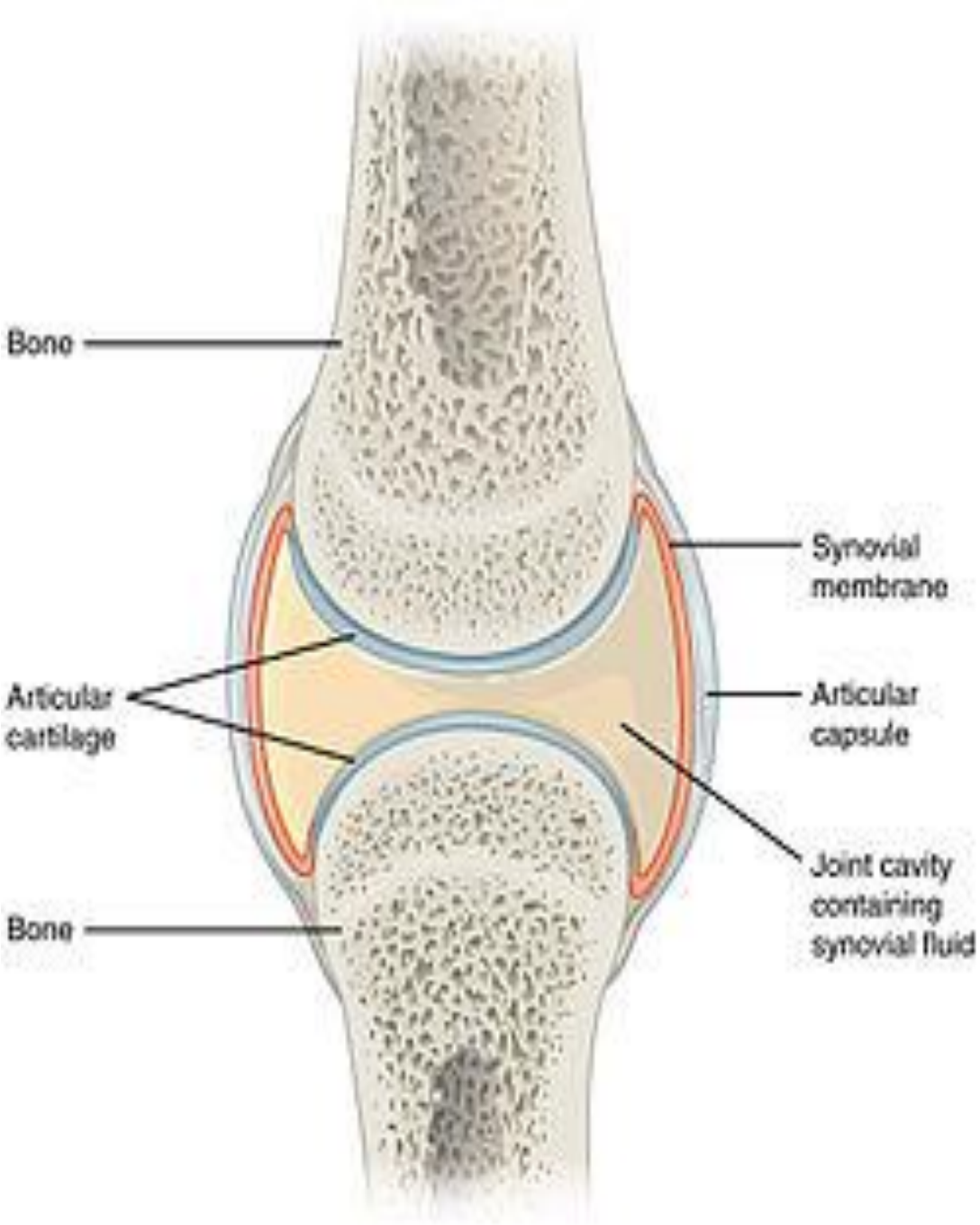
- Muscle atrophy is a big problem while ageing as it affects directly our bones health, our postural stability, mobility and consequently add risk for falls and falls related injuries…

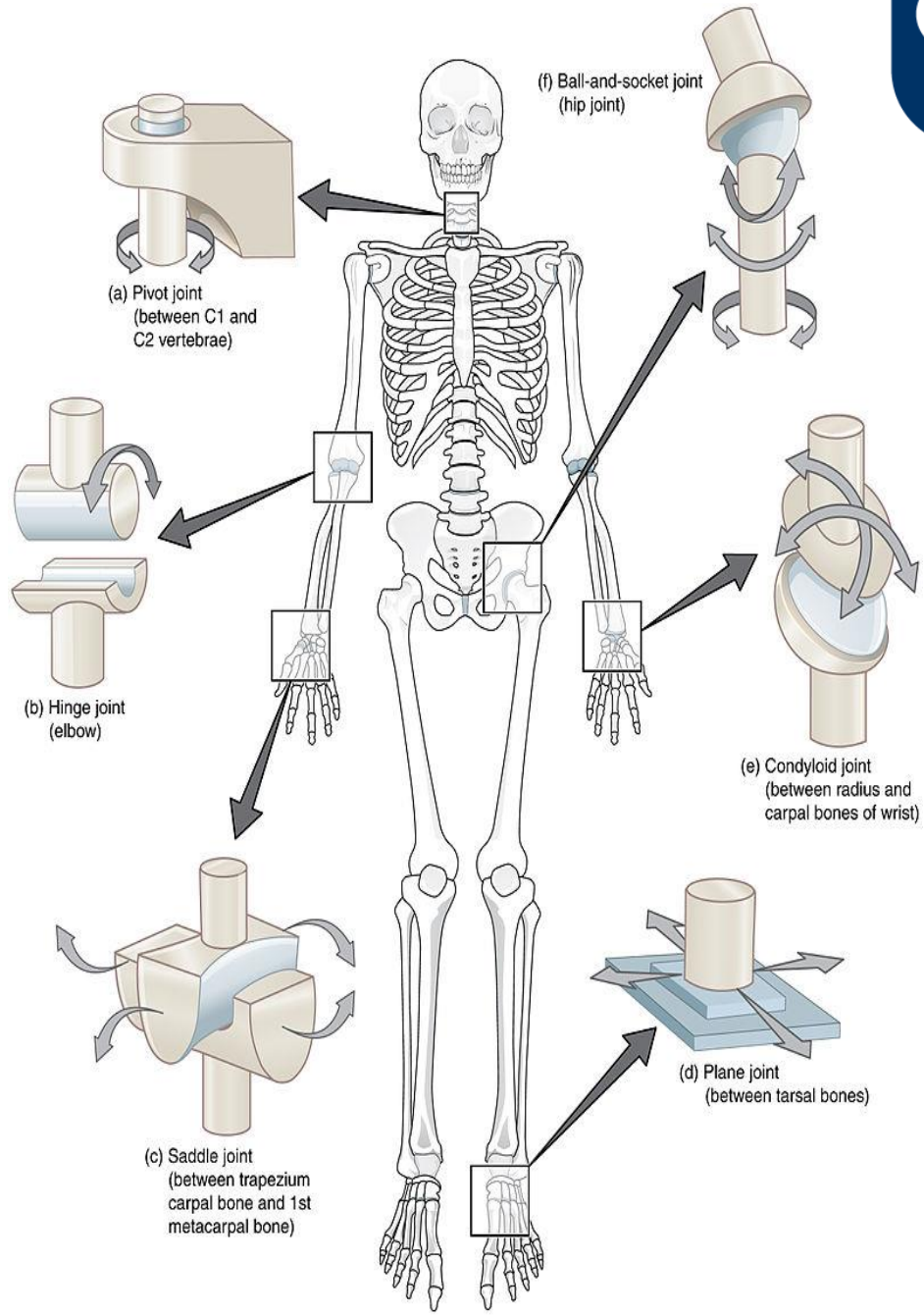
Joints while ageing

- **Joint** motion becomes more restricted and overall joint (and tendon/muscle/ligament) flexibility decreases with age because of age related changes in muscles, tendons and ligaments (connective tissue between bones).

- The chemistry of cartilage, which provides cushioning between bones, changes. With less water content (and synovial fluid in some joints), the cartilage becomes more susceptible to wear and tear. As cartilage degenerates, arthritis can develop.

- As the cushioning cartilage begins to break down from a lifetime of use, joints become inflamed and arthritic.


Bone
Synovial membrane
Articular cartilage
Articular capsule
Joint cavity containing synovial fluid
Bone

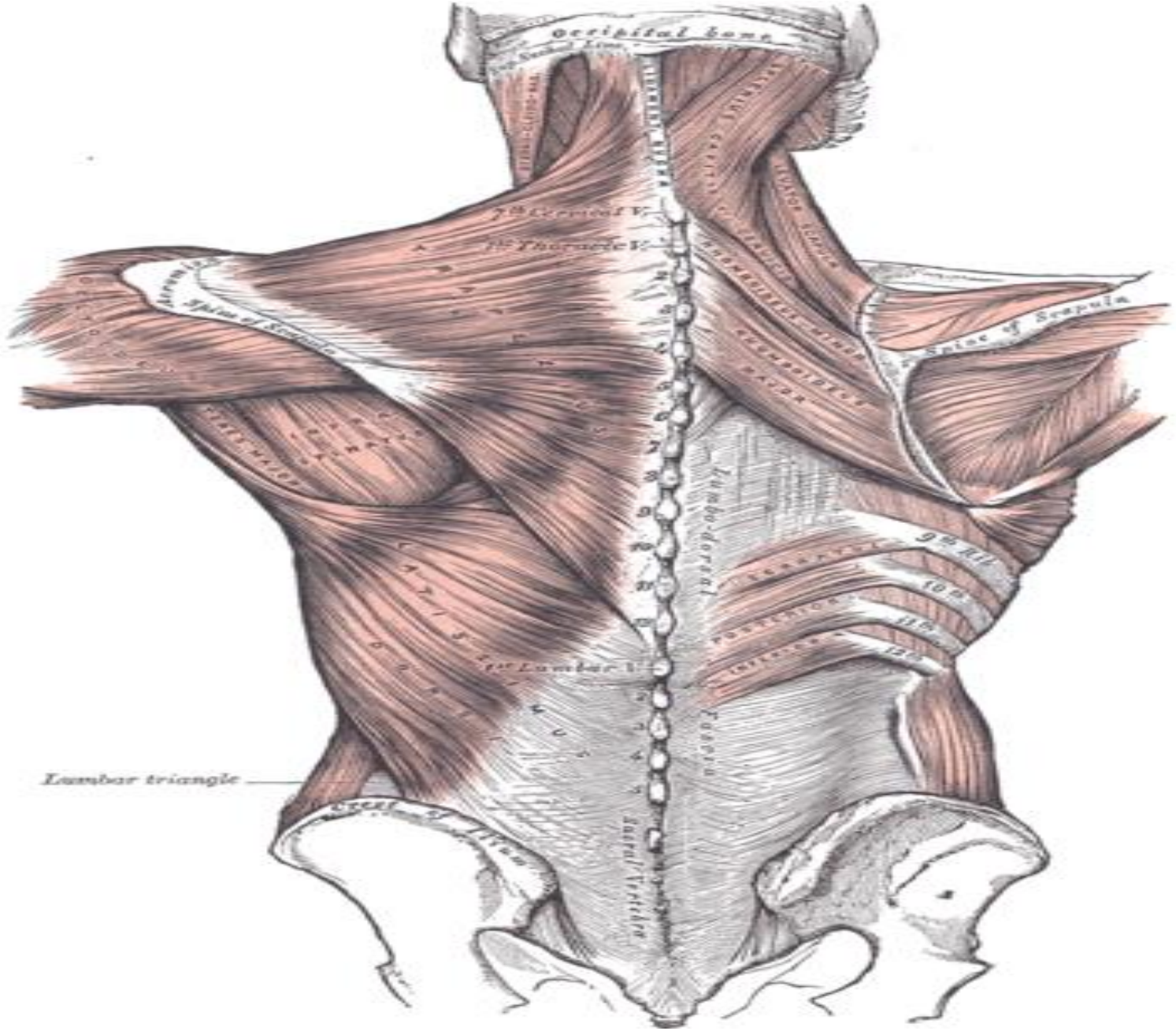

(f) Ball-and-socket joint (hip joint)
(a) Pivot joint (between C1 and C2 vertebrae)
(b) Hinge joint (elbow)
(e) Condyloid joint (between radius and carpal bones of wrist)
(c) Saddle joint (between trapezium carpal bone and 1st metacarpal bone)
(d) Plane joint (between tarsal bones)

- The **synovial membrane** is a specialized connective tissue that lines the inner surface of capsules of **synovial joints** and tendon sheath. It makes direct contact with the **synovial fluid (lubricant)**, which it is primarily responsible for maintaining. (see next picture)

- Synovial joints lose synovial fluid with ageing, the synovial fluid prevents the wear and tear of the joint so when it is missing, joints suffer.

Muscles

- Muscle and changes while ageing
- Muscles and lack of physical activity
- Why is muscle atrophy a problem for our bones?


Occipital bone
Spine of Scapula
Lumbar triangle

Muscle changes while ageing

- As muscles age, they begin to shrink and lose mass and water. This is a natural process, but a sedentary lifestyle will accelerate it. **Up to 40%** by the **age of 80.**

- The number and size of muscle fibres also decrease. Contractility decreases. Thus, it takes muscles longer to respond in our 50s than in our 20s.

- Decrease of muscle loss generally happens faster from 65+, unless we regularly exercise (and keep an eye on nutrition and hydration).

- The water content of tendons (the cord-like tissues that attach muscles to bones) decreases as we age. This makes the tissues stiffer and less able to tolerate sudden physical stress or sudden moves.

Muscle changes while ageing

- Handgrip strength decreases, making it more difficult to accomplish routine activities such as opening a jar or turning a key.

- The heart muscle becomes less able to propel large quantities of blood quickly to the body. We tire more quickly and take longer to recover.

- The body's metabolic rate (how quickly the body converts food into energy) slows. This can lead to obesity and an increase in "bad" cholesterol levels and increase depositing of fat tissue in our body (unless we exercise regularly and keep an eye on nutrition and hydration).

- Immobilisation (sometimes necessary due to e.g. injuries and hospitalisation) – makes us lose muscles mass (atrophy) faster
- Dehydration also contributes to muscle loss

Muscles and lack of physical activity

- Overall weakness & loss of immediate strength and faster continuous muscle atrophy
- As mentioned before, working / exercised muscle has a network of capillaries that bring nutrition to the muscle AND TO THE BONE
- Nutrition to bones & cushioning of bones – when we DON'T EXERCISE WE make muscles AND bones more fragile – in terms of nutrition going to the bone but also in terms of lack of 'padding' around the bone that is becoming fragile – this means the bone fractures easier
- Changes the mechanics of the movement overall happen with ageing, also due to more fragile bone and weaker muscle (when we don't exercise)

- Having less of working muscles means we may overload our ligaments – ligaments are not supposed to take the load of the movement and may become inflamed (could become a chronic long term condition), fractures, changes how the joint is pulled around and this creates more dysbalances for our posture

- All these changes then again affect joints and related joint flexibility (decrease could be around 60 % at the age of 70)
- All the above brings increased muscle stiffness

- **When we exercise, we keep our muscles, tendons, ligaments and joints in a more optimal condition and the age related changes are happening very slowly and do not prevent us to keep exercising, doing activities of daily living and keeps us mobile and living independently.**

Frailty

- In clinical terms, frailty is characterised by **loss of biological reserves across multiple organ systems** and increasing vulnerability to physiological decompensation after a stressor event.

- Loss of resilience that **people living with frailty do not bounce back quickly after a physical or mental illness, an accident or other stressful event.**

- **Frailty is a common geriatric syndrome**, the overall prevalence of frailty in people aged **over 60 is 14%** and it tends to be more common in women.

- **5% of people aged 60-69 have frailty**. This rises to **65% in people aged over 90**. In England there are 1.8 million people aged over 60 and 0.8 million people aged over 80 living with frailty.

- Frailty is linked with **lack of exercise**, **poor mobility**, **difficulty doing Activities of Daily living** (ADL), but specially **with complications after injuries, illnesses**, other accidents or stressful events…

- **If we are inactive (mainly physically), we don't eat well, we are dehydrated what happens next really is a worry as this will be** (see next slide)…

Resulting often in…

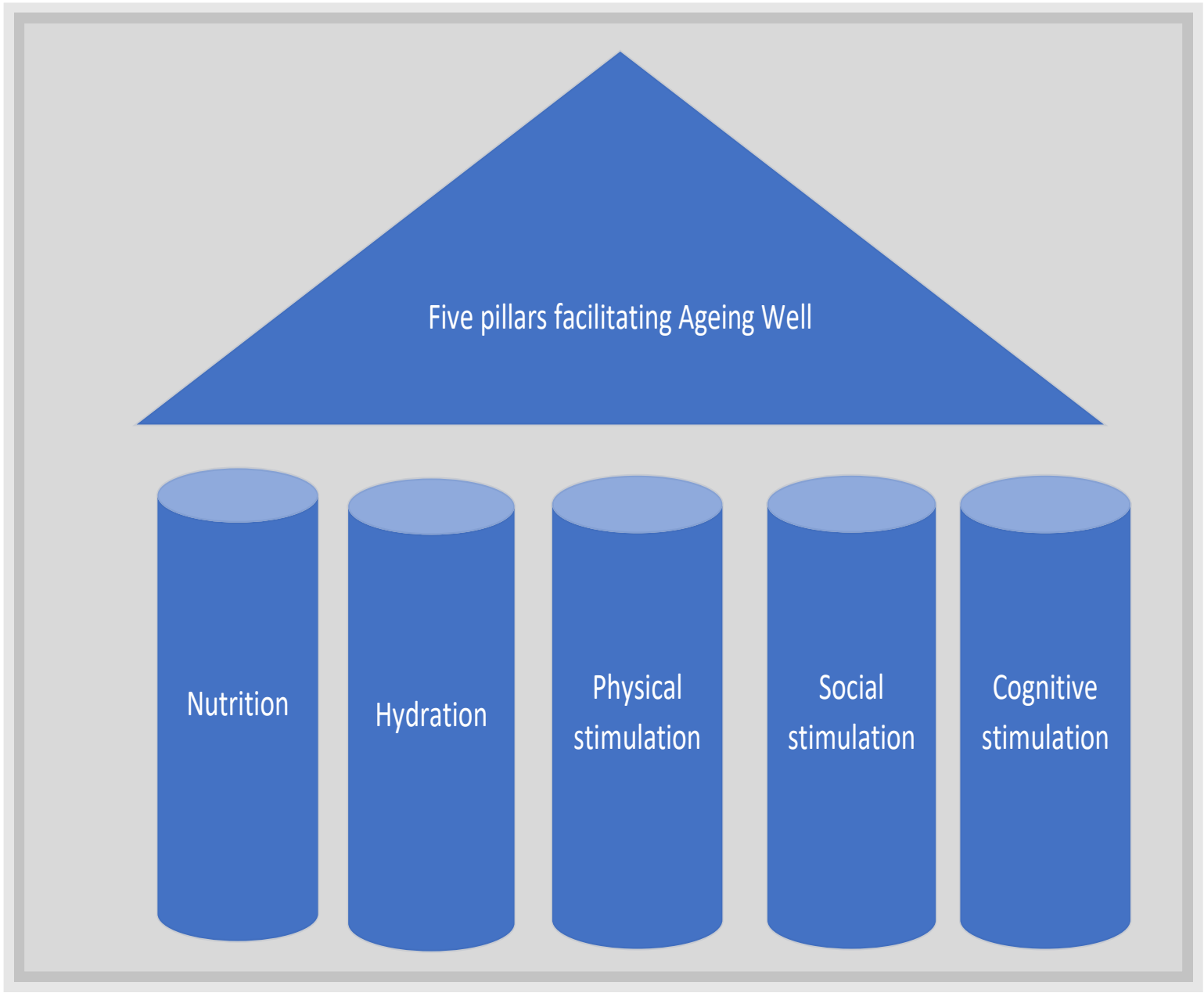
- Further increase in **WEAKNESS, DIZZYNESS**
- Further **INACTIVITY AND** resulting **FASTER MUSCLE ATROPHY**
- Even more exacerbated **FRAILTY** symptoms
- Higher **RISK OF FALLS** – because we feel weak and perhaps dizzy
- Further **INACTIVITY** – we are afraid to walk, as we fear more falls and possible fractures…
- **INACTIVITY** unfortunately leads to **FURTHER DECREASE OF MUSCLE MASS**
- And unfortunately to **EVEN GREATER RISK OF FALLS**
- To be followed by the worsening vicious circle of **FEAR OF FALLING**
- **FRACTURES**
- **IMMOBILITY**
- **LOSS OF INDEPENDENCE**
- **DEHYDRATION**
- Sometimes changes due to **PHARMACOKINETICS & PHARMACODYNAMICS** (discussed in out previous talk available online) **& DEHYDRATION** and so on…

So let's be mindful of the Five Pillars of Ageing Well and prevent as much as we are able to – the resources below might be helpful

- 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 (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



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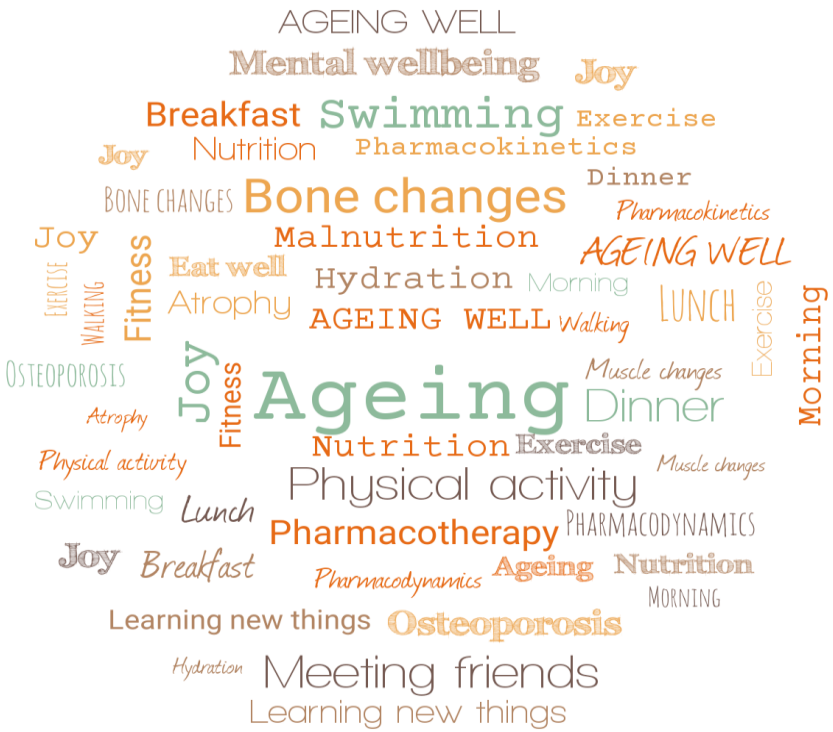

Respiratory system changes while ageing

- **Muscles**
- **Bones**
- **Lung tissue / parenchyma**

- The respiratory system comprises primarily the **thoracic cage**, **lungs**, and **diaphragm …and many smaller muscles**
- Total respiratory system compliance includes **lung** and **chest wall compliance**.

- Compliance is change in volume relative to change in pressure.

- **Lung compliance determines the rate and force of expiration** and the **thoracic compliance determines the elastic load (**ribcage and muscles**) during inspiration**.

- With aging there are structural changes to the thoracic cage – this may be causing reduction in chest wall compliance and effectiveness of breathing.

- **Stiffening of the thoracic cage and reduces the ability of the thoracic cage to expand sufficiently during inspiration** and places the diaphragm at a mechanical disadvantage to generate effective contraction.

- We have mentioned the **bone changes** related to ageing – this **affects the ribcage and other structural bones that also affect or posture**. (changes in posture will effect changes in breathing – usually making it more difficult and less efficient)

- We have mentioned the **muscle changes** related to ageing – affects all the small and bigger muscles involved in breathing I and breathing out… and it is a **LOT OF MUSCLE!**

- This will eventually prompt **insufficient expiration**, which then in turn will prompt **insufficient inspiration**.
- Breathing not only becomes **more laborious** but also **less effective** in terms of bringing the necessary **oxygen in**. (all our organs, tissues and especially our brain need oxygen! – see **Ageing Brain talk**)

- This can be worsened at moments of stress, trauma, injury (physical or mental)
- **REGULAR EXERCISE keeps our muscles active, bones stronger and breathing overall more effective**

Most of these muscles are directly or indirectly involved in breathing … and that is just our back muscles…

Breathing changes while ageing

- Impaired total respiratory system compliance leads to increase work of breathing.
- **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**.

- Picture **C** is what we need to achieve – no matter gravity and age related changes on bones, muscles and breathing.
- This is why **REGULAR EXERCISE IS CRUCIAL** – it will enable us to keep muscles, bones and joints in good health, not reducing our flexibility and changing so drastically our breathing and posture AND not putting us at risk of easily tripping over an obstacle as we are stable.

Fay Horak: 2006, *Age & Aging*

RESOURCES for postural stability:

- ***Movement strategies***

reactive; anticipatory; voluntary

Ankle - hip - stepping

Lung tissue / parenchyma

- The lung parenchyma is the portion of the lung involved in gas transfer - the alveoli, alveolar ducts and respiratory bronchioles.

- The lung parenchyma loses its supporting structure causing dilation of air spaces, respiratory muscle strength decreases with age (impairs effective cough, which is important for airway clearance).

- Age related changes may also cause a chronic underlying condition, constant coughing (may not allow us to sleep/rest well, recovery is increasingly difficult).

- As the airways receptors undergo functional changes with age they are less likely to respond to drugs used in younger counterparts to treat the same conditions, this further affects the recovery.

- **EXERCISE AND THE OTHER PILLARS OF AGEING WELL WILL HELP WITH PREVENTING THESE AGE RELATED FUNCTIONAL CHANGES**
- **THE SOONER WE START THE BETTER**
- **WE NEED TO USE WHATEVER WE DON’T WANT TO LOSE.**

Breathing stereotypes

- Thoracic
- Abdominal

- Breathing THAT increases intraabdominal pressure BRINGS CENTRE OF GRAVITY LOWER has stabilising effect on our posture. Co-creates equilibrium, balance AND IS Grounding.
- As opposed to thoracic breathing one that is further disbalancing us as it raises the centre of gravity in already dysbalanced body.

Diaphragm

- The diaphragm is the most important respiratory muscle and plays an essential role during expiration and should paly essential role in inspiration too.

- Diaphragm is a muscle so need to be exercised too otherwise atrophies.

- Examples of different breathing stereotypes

Breathing and posture

- Breathing influences our posture
- Laborious breathing or coughing can make us more prone to falls as it changes our centre of gravity
- Our posture influences our muscle synergies
- Healthy posture = healthy stance
- Keeping maintaining it

- We were equipped with healthy reflexes and synergies for posture and breathing we are just not using them fully!

Breathing and immunity

- Age related changes in immune system
- Age-related decline in down regulatory response to antigenic/ toxic environmental exposure
- Persistent low grade inflammation in the lower respiratory tract can cause injury to the lung and decrease its capacity to function

Types of physical activity/stimulation

Many types of physical activities that are suitable for you

- Walking, stretching, dancing, jogging, swimming, cycling (stationery bikes), aerobic, aqua aerobic, weight training, mountain walking – **what else can you think of?**
- Other activities gardening, house chores, shopping, linen changing

Avoid – squash, badminton, volleyball anything involving fast moves & jumping

Not just what you do but how you do it!

Keep straightening your spine & keep breathing (if possible with diaphragm – postural alignment) - even at 'rest' (sitting watching tv, standing and waiting for a bus/train) – keep pushing yourselves up from the floor

150 min per week (WHO recommended)

As much and as often as you can, ideally every day

How easy is it to stop?

- **Myth about people who exercise**

- We resist this temptation (and temptation it is) and instead we go out at least for 15-20 minutes (usually when out we decide to stay longer) as we know that we will feel much better when we are back! We don't do it for now… we do it for **how wonderfully we feel when we come back home**.

- Create a **motivation** – good reason why keeping physically active
- Finding a **suitable** exercise or activity / stimulation
- Something you will like – as you need to keep getting back to it

- All rounded, not just one sided activity
- Even if you don’t feel up to do your usual amount of it go and do less
- You may change your mind while doing it / you won’t change your mind if you stay at home
- 150 min per week should be the minimum!

- What works for you? In terms of type of PA & motivation
- What doesn’t?

Lack of physical activity/stimulation

Affects:

- Metabolism –slows down even more
- Hydration
- Pharmacokinetics & pharmacodynamics
- Sleep
- Muscle atrophy
- Bone atrophy

Resulting often in…

- Further increase in **WEAKNESS, DIZZYNESS**
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To summarize…

- Stretching is an excellent way to help maintain joint flexibility and prevent muscle loss.
- Weight training can increase muscle mass and strength, enabling people to continue their daily routine activities without maximal exertion.
- Even moderate amounts of physical activity (150 minutes per week) can reduce your risk of developing high blood pressure, heart disease, and some forms of cancer.
- Long-term regular exercises may slow the loss of muscle mass (atrophy) and prevent age-associated increases in body fat.
- 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 the health benefits**.

- **An exercise program doesn't have to be strenuous to be effective. It has to be REGULAR! – cannot stress this enough**

- Walking, any dancing, swimming, and cycling 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.

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 researchhttps://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 Committment 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

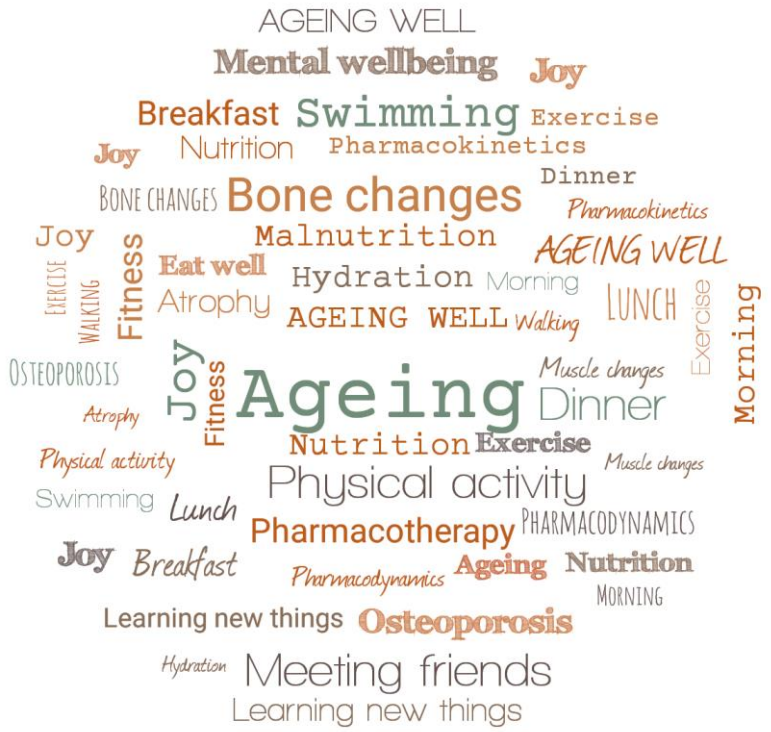
Ageing Well series of Public Talks

"*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



Venue: online recorded & Berrill Lecture Theatre, Walton Hall, Milton Keynes, MK7 6AA, talks held 11AM-1PM

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 & Stephanie Warren)* ***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 & Jason Gibb)* ***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

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