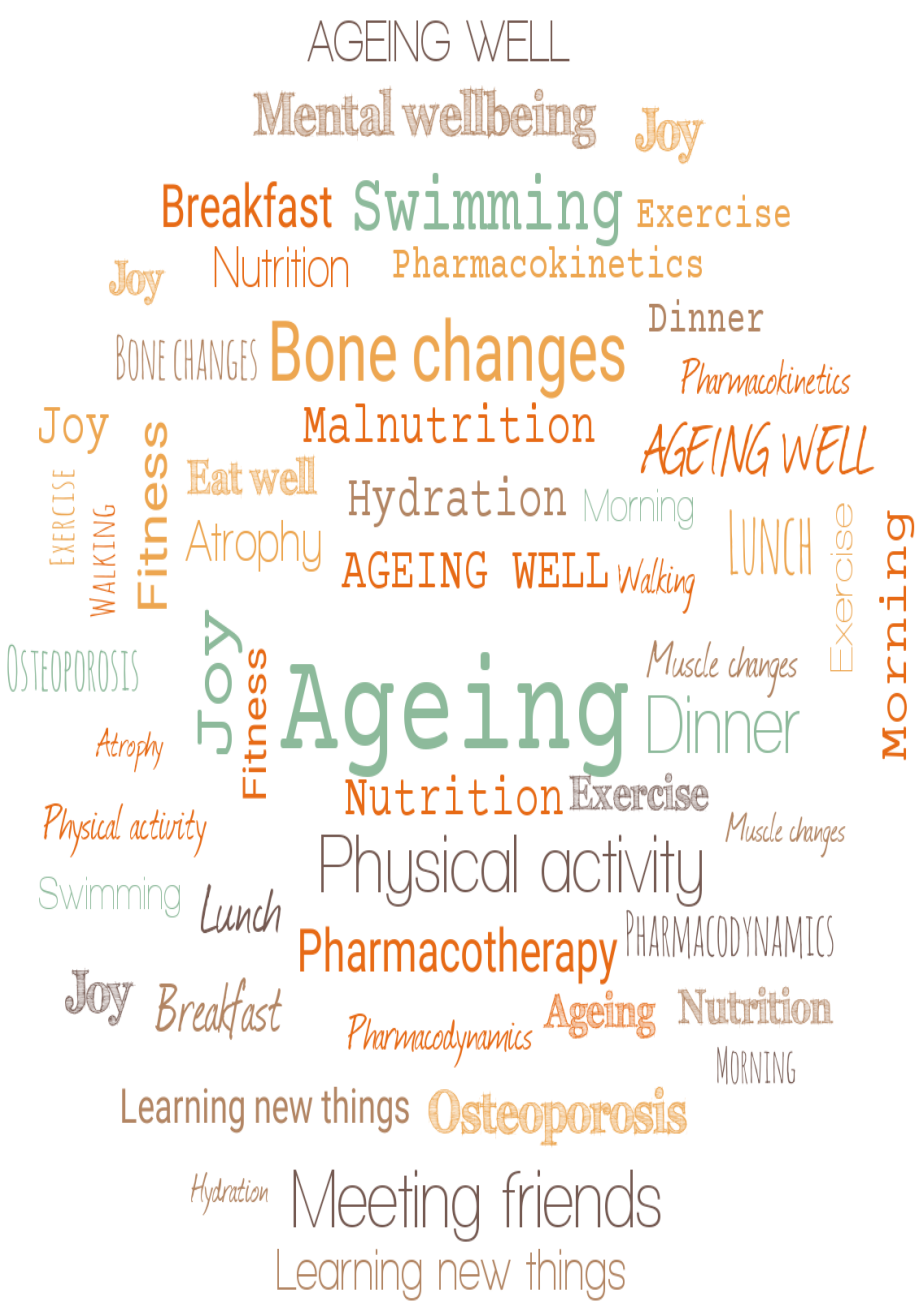

Ageing Well Public Talks - Ageing Brain

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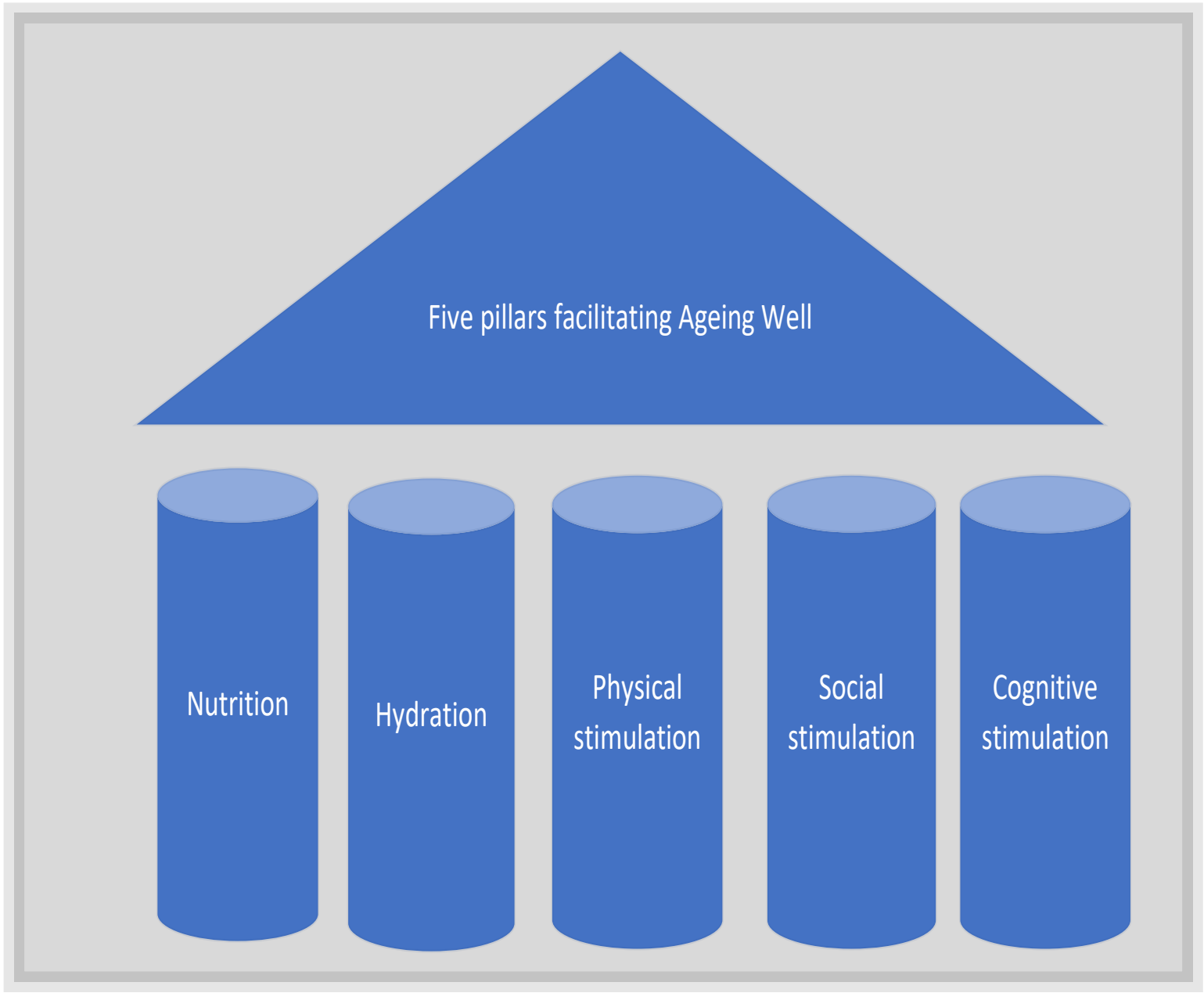
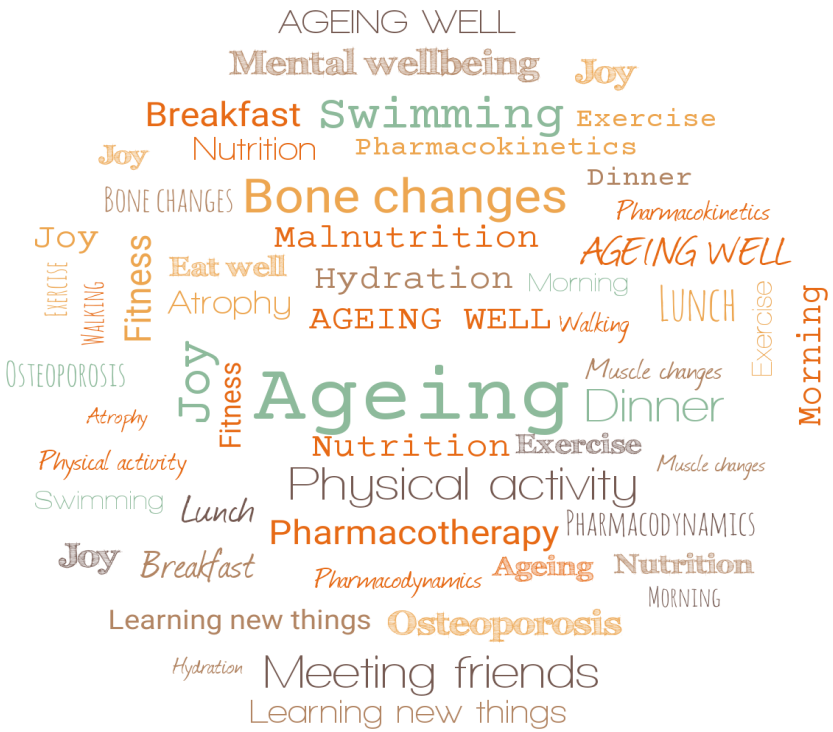
Today's talk – in partnership with Voluntary Health Scotland

- 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**



The Open University



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 activity, networking, learning and healthy lifestyle**
- **Building bridges**

Ageing Brain - Cognitive ageing

- Diminished ability to remember names
- Diminished ability to find the correct word
- Diminished ability to remember where objects are located
- Diminished ability to concentrate
- Is this “**normal**”?

Cognitive ageing

- Diminished ability to remember names
- Diminished ability to find the correct word
- Diminished ability to remember where objects are located
- Diminished ability to concentrate
- Is this “**normal**”?

- The answer is **YES**
- **Normal wear and tear of our cognitive system**

- Tiredness of our systems – when young we have it too but we can sleep it off – not so easy while ageing as many other things come together.

- Multitasking –stress and ageing enhance further changes on hormonal and cognitive and physical levels

- Stress management (different set of hormones)

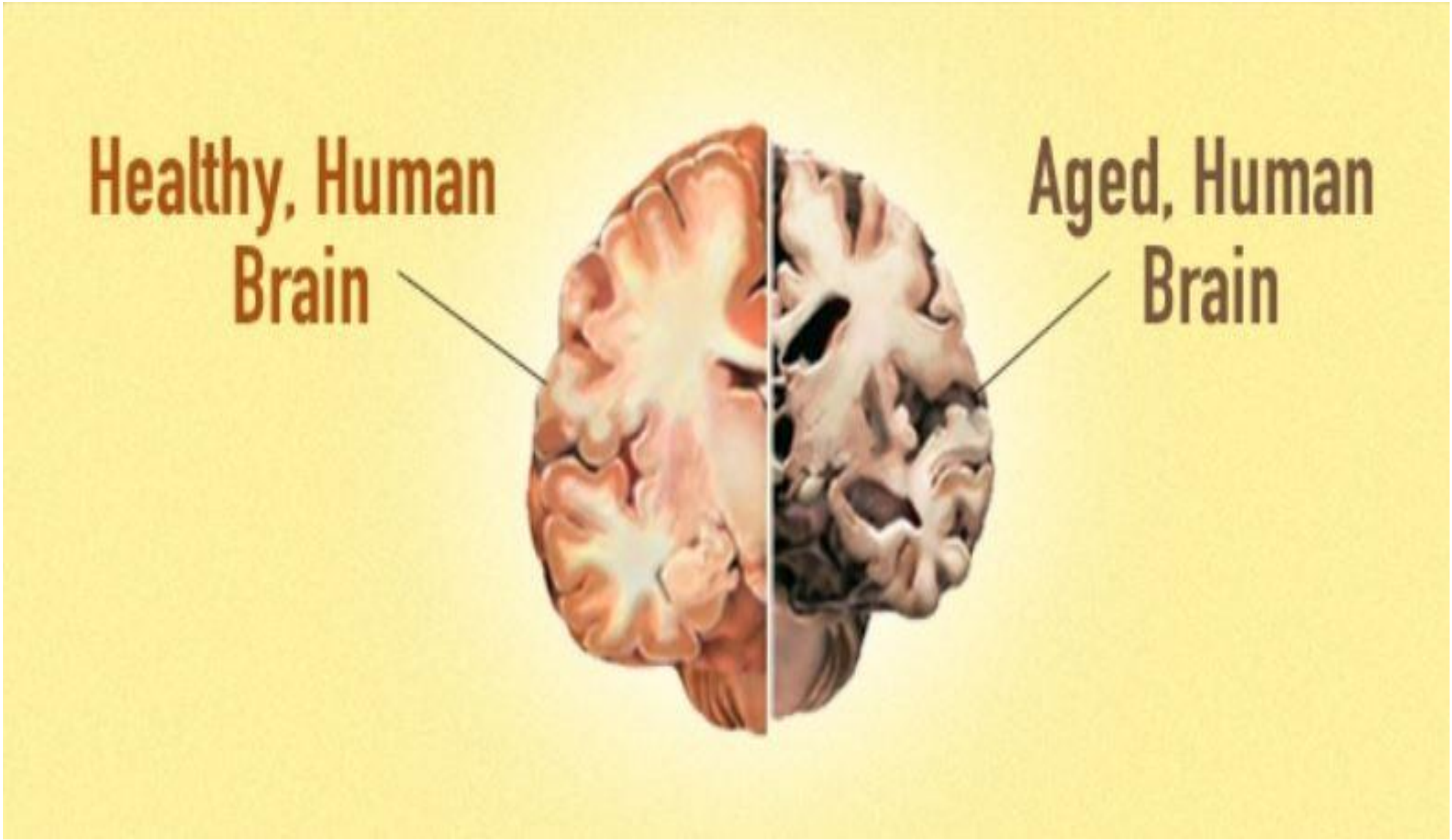
Ideal response:

Good lifestyle choices can make these changes **partially reversible – *'The Five Pillars of Ageing Well'***

Neuron

Normal

With stimulation


Healthy, Human Brain
Aged, Human Brain

What else is normal for cognitive ageing?

- General slowing of neuronal and sensory processing & perception and increased spatial segmentation

→ Becoming slower when responding or reacting (**slower postural reflexes lead to higher risk of falls**) and worsened orientation in space.

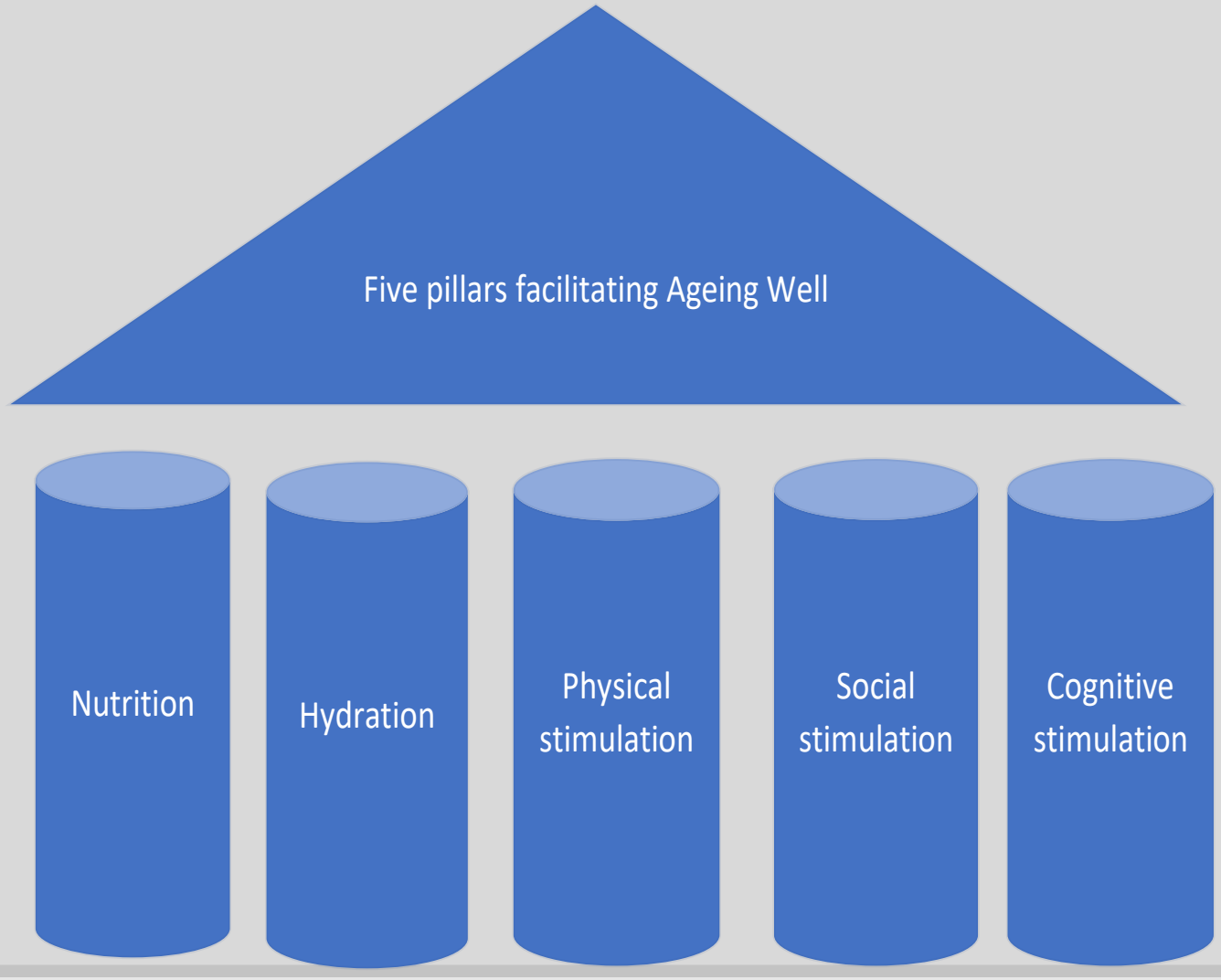
- Decreased complex, divided, and sustained attention, primary and working memory, retrieval of stored memory

→ Shortened attention span (very important when it comes to memory)

- Accentuation of certain personality traits

→ Personality traits & chronic conditions may **become more prominent**

Are we winners by choice?



- The brain is capable of producing new brain cells at any age (at much slower rate when older), but still significant memory loss is *not* an inevitable result of aging.

- But just as it is with muscle strength, we need to exercise /stimulate it if we don't want to lose the function.

- Our lifestyle, health habits, and daily activities have a huge impact on the health of our brain.

- Whatever our age, there are many ways we can improve our cognitive skills, prevent memory loss, and protect the grey matter.

- Furthermore, many mental abilities are largely unaffected by normal aging, such as:

- Our ability to do the things we've always done and continue to do often
- The wisdom and knowledge we've acquired from life experience
- Our innate common sense and ability to form reasonable arguments and judgments

- For most people, **occasional lapses in memory** are a **normal part** of the **aging process**, not a warning sign of serious mental deterioration or the onset of dementia.

Main causes of age-related memory loss

- The **hippocampus**, a region of the brain involved in the formation and retrieval of memories, **often deteriorates with age**.
- **Hormones and proteins** that protect and repair brain cells and stimulate neural growth also **decline with age**.
- Older people often experience **decreased regular blood flow** to the brain, which can impair memory and lead to changes in cognitive skills - **lack of exercise**

- **Dehydration**
- **Sleeplessness**

- **Important to do it all when we are still well!**

- The following types of memory lapses are normal among older adults and generally are *not* considered warning signs of dementia:

- **Occasionally forgetting** where we left things we use regularly, such as glasses or keys.

- **Forgetting names of acquaintances** or blocking one memory with a similar one, such as calling a grandson by the son's name.

- **Occasionally forgetting** an appointment or walking into a room and forgetting why we entered.

- **Becoming easily distracted** or having trouble remembering what we've just read, or the details of a conversation.

- Not quite being able to **retrieve information** we have "on the tip of our tongue."

Normal age-related memory changes	Symptoms that may indicate dementia
Able to function independently and pursue normal activities, despite occasional memory lapses	Difficulty performing simple tasks (paying bills, dressing appropriately, washing up); forgetting how to do things you've done many times
Able to recall and describe incidents of forgetfulness	Unable to recall or describe specific instances where memory loss caused problems
May pause to remember directions, but doesn't get lost in familiar places	Gets lost or disoriented even in familiar places; unable to follow directions
Occasional difficulty finding the right word, but no trouble holding a conversation	Words are frequently forgotten, misused, or garbled; Repeats phrases and stories in same conversation
Judgment and decision-making ability the same as always	Trouble making choices; May show poor judgment or behave in socially inappropriate ways

The **primary difference between age-related memory loss and dementia** is that the former **isn't disabling**.

Dementia, on the other hand, **is marked by a persistent, disabling decline** in two or more intellectual abilities such as memory, language, judgment, and abstract thinking.

When memory loss becomes so pervasive and severe that it disrupts our work, hobbies, social activities, and family relationships, we may be experiencing the warning signs of Alzheimer's disease, or another disorder that causes dementia, or a condition that mimics dementia.

- Mild cognitive impairment (MCI) is an intermediate stage between normal age-related cognitive changes and the more serious symptoms that indicate dementia.

- Memory, language, thinking, and judgment that are greater than normal age-related changes, but the line between MCI and normal memory problems is not always a clear one.

- While many people with MCI eventually develop Alzheimer's disease or another type of dementia, that doesn't mean it's inevitable. Some people with MCI plateau at a relatively mild stage of decline.

MCI / Alzheimer's Questionnaire

https://www.helpguide.org/articles/alzheimers-dementia-aging/age-related-memory-loss.htm

Reversible causes of memory loss

Depression

- Depression can mimic the signs of memory loss, making it hard for us to concentrate, stay organized, remember things, and get stuff done.

- Depression is a common problem in older adults — especially if we are less social and active than we used to be or we've recently experienced a number of important losses or major life changes (retirement, a serious medical diagnosis, the loss of a loved one, moving out of their home).

Vitamin B12 deficiency.

- Vitamin B12 protects neurons and is vital to healthy brain functioning. In fact, a lack of B12 can cause permanent damage to the brain. Older people have a slower nutritional absorption rate, which can make it difficult to get the B12 the ageing mind and body need.
- If you smoke or drink, you may be at particular risk. If you address a vitamin B12 deficiency early, you can reverse the associated memory problems. Treatment is available in the form of a monthly injection.

Thyroid problems

- The thyroid gland controls metabolism: if our metabolism is too fast, we may feel confused, and if it’s too slow, we can feel sluggish and depressed.

- Thyroid problems can cause memory problems such as forgetfulness and difficulty concentrating. Medication can reverse the symptoms.

- Hormonal chaining

Alcohol abuse

- Excessive alcohol intake is toxic to brain cells, and alcohol abuse leads to memory loss. Over time, alcohol abuse may also increase the risk of dementia. Because of the damaging effects of excessive drinking, experts advise limiting our daily intake to just 1-2 drinks if we have to have them.
- Proportion of alcoholic drinks compared to clear fluids taken in the day (1.5 l is strict minimum – ideally around 2 l – 4 pints)

Dehydration

- Older adults are particularly susceptible to dehydration. Severe dehydration can cause confusion, drowsiness, memory loss, and other symptoms that look like dementia. It’s important to stay hydrated (aim for 6-8 drinks per day – 4 pints). Be particularly vigilant if you take diuretics or laxatives or suffer from diabetes, high blood sugar, or diarrhoea.

Side effects of medication

- Many prescribed and over-the-counter drugs or combinations of drugs can cause cognitive problems and memory loss as a side effect. This is especially common in older adults because they break down and absorb medication more slowly. Common medications that affect memory and brain function include *sleeping pills, antihistamines, blood pressure and arthritis medication, muscle relaxants, anticholinergic drugs for urinary incontinence and gastrointestinal discomfort, antidepressants, anti-anxiety meds, and painkillers*.

- The same practices that contribute to **healthy aging and physical vitality also contribute to a healthy memory.**
- So, by taking steps early to prevent cognitive decline, you'll also be improving all other aspects of your life as well.

Stay social

- People who aren't socially engaged with family and friends are at higher risk for memory problems than people who have strong social ties. Quality face-to-face social interaction can greatly reduce stress and is powerful medicine for the brain, so scheduling time with friends, joining a book club, or visiting the local senior centre. And putting the phone away and focusing fully on the people we're with if we want the full brain benefit.

- '*I don't want to see my neighbours, they make me angry*'

Exercise regularly

- Starting a regular exercise routine, including cardio and strength training, may reduce our risk of developing dementia by up to 50 percent. What's more, exercise can also slow further deterioration in those who have already started to develop cognitive problems.
- Exercise protects against Alzheimer's by stimulating the brain's ability to maintain old connections as well as make new ones.

Don't smoke

- Smoking heightens the risk of vascular disorders that can cause stroke and constrict arteries that deliver oxygen to the brain.

Manage stress

- Cortisol, the stress hormone, damages the brain over time and can lead to memory problems. But even before that happens, stress or anxiety can cause memory difficulties in the moment. When we’re stressed out or anxious, we’re more likely to suffer memory lapses and have trouble learning or concentrating.

Get plenty of sleep

- Sleep is necessary for memory consolidation, the process of forming and storing new memories so you can retrieve them later. Sleep deprivation reduces the growth of new neurons in the hippocampus and causes problems with memory, concentration, and decision-making. It can even lead to depression—another memory killer.

Watch what we eat

- Eat plenty of fruits and vegetables and drink green tea as these foods contain antioxidants in abundance, which can keep our brain cells from “rusting.” Foods rich in omega-3 fats (such as salmon, tuna, trout, walnuts, and flaxseed) are particularly good for your brain and memory. Eating too many calories, though, can increase our risk of developing memory loss or cognitive impairment.
- Glucose intolerance and risk of Type 2 Diabetes

Exercise for brain as well as for the body

- When it comes to memory, it's "use it or lose it." Just as physical exercise can make and keep our body and brain stronger, mental exercise can make our brain work better and lower the risk of mental decline.
- Try to find brain exercises that you find enjoyable. If you dislike what you're doing, it won't have the same benefit. The more pleasurable an activity is to you, the more powerful its effect will be on your brain.
- You can make some activities more enjoyable by appealing to your senses—by playing music during the exercise, for example, or lighting a scented candle, or rewarding yourself after you've finished.

Here are some ideas for brain exercise, from '*light workouts to heavy lifting*':

- Play games you are not already familiar with that involve strategy, like chess or bridge, and word games like Scrabble. Try crossword and other word puzzles, or number puzzles such as Sudoku.
- Read newspapers, magazines, and **books** that challenge you.

- Get in the habit of learning new things: games, recipes, driving routes, a musical instrument, a foreign language. Take a course in an unfamiliar subject that interests you. The more interested and engaged your brain, the more likely you'll be to continue learning and the greater the benefits you'll experience.
- Take on a project that involves design and planning, such as a new garden, a quilt or redecorating …

- New research indicates that walking six to nine miles every week can prevent brain shrinkage and memory loss. According to the American Academy of Neurology, older adults who walked between six and nine miles per week had more grey matter in their brains nine years after the start of the study than people who didn't walk as much.

- https://www.helpguide.org/articles/alzheimers-dementia-aging/age-related-memory-loss.htm

Thank you for joining today.

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http://www.open.ac.uk/people/jv2595

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).

What is your experience?

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 "*mental sweat*."	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.

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) **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
- Vseteckova J & King J (2020) **COVID-19 Interview podcast for The Retirement Café: *'Ageing Well Under Lockdown'*** https://theretirementcafe.co.uk/077-dr-jitka/

AGEING WELL related

- Vseteckova J (2020) **Ageing Well Public Talk Series- landing page OpenLearn** 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

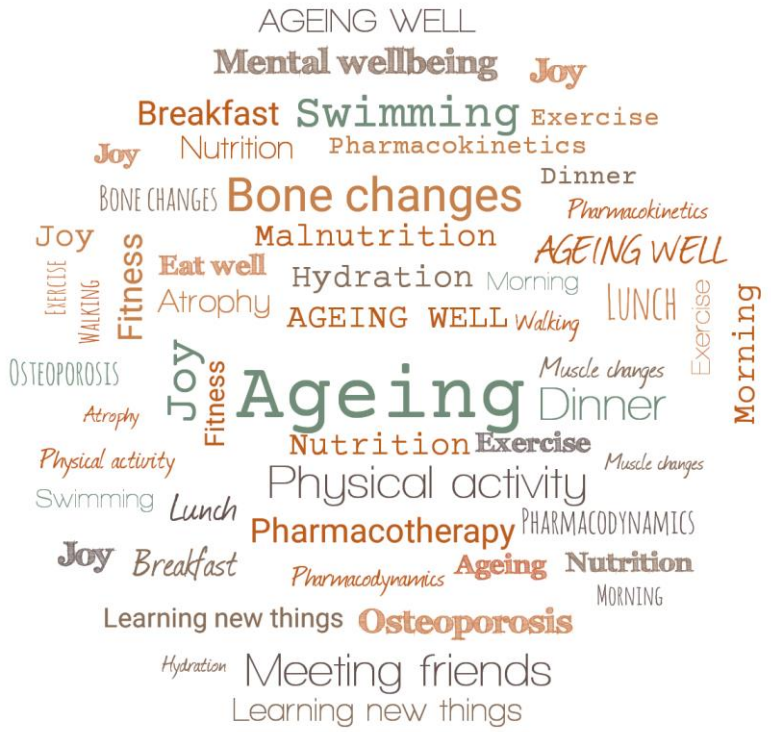
Ageing Well series of Public Talks

"*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: 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)* ***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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