Elderly population now divided by functional aging
- Young old: 65-74 years
- Old old: 75-84 years
- Oldest old: 85+ years

Week 6 – Middle and late adulthood

DESCRIBE PHYSICAL GROWTH DURING MIDDLE AND LATE ADULTHOOD, INCLUDING THE SENSES, REACTION TIME AND BRAIN GROWTH

- **Primary aging:** involves universal and irreversible changes that, due to genetic programming, occur as people get older
- **Secondary aging:** changes in physical and cognitive functioning due to individual differences (e.g. illness, health habits), not due to increased age itself and are not inevitable
- After 55 years, bones become less dense (women lose 2 inches, men lose 1 inch in height) → women more prone to declining height due to osteoporosis; both men and women continue to gain weight in middle adulthood

SENSES

Sight

- Middle adulthood
  - From 40 years, visual acuity (the ability to discern fine detail) declines
  - *Presbyopia*: changing eye's lenses in shape and elasticity results in loss of near vision
  - *Glaucoma*: pressure of fluid in the eye increases, because the fluid can't drain properly or too much is produced
- Late adulthood
  - Lens become less transparent and pupils shrink; optic nerve becomes less efficient; distant objects become less acute
  - *Cataracts:* cloudy/opaque areas of the lens interfere with passing light (can be surgically removed; contact lenses can restore eyesight)
  - *Age related macular degeneration:* most common cause of blindness (>60yrs); affects the macula, a yellowish area of the eye where visual perception is most acute

Hearing

- *Presbycusis:* 45 and 65 years; men are more prone to hearing loss; sound localisation is diminished
- High frequencies are the hardest to hear
- Hearing aides are helpful ~70% of the time; only 20% wear one = stigma; imperfect and amplify all sounds so it is difficult to discern conversations

Taste and smells

- Becomes less discriminating → decline in taste buds on tongue; olfactory bulbs in brain shrink & reduce ability to smell
- Consequences: people eat less = poor nutrition; over-salt food = hypertension

REACTION TIME

- Decreases slightly in middle adulthood; improves or compensated for by being more careful and practicing the skill
- Use it or lose it – active exercise programs

BRAIN MATURATION

- Brain becomes smaller and lighter with age; reduction of blood flow to the brain; space between skull and brain doubles from age 20-70 years; number of neurons (brain cells) declines in some brain regions

UNDERSTAND SOME FACTORS AND CONSEQUENCES OF INDIVIDUAL DIFFERENCES IN GROWTH IN THESE DEVELOPMENTAL STAGES

STRESS

- ***Stress*:** Response to events that threaten or challenge an individuals wellbeing
- Long-term, continuous exposure may result in a reduction in the body's ability to deal with stress; become more susceptible to diseases as the ability to fight off germs declines
- Middle adulthood:
  - Continues to have a significant impact on health as it did in young adulthood BUT the nature may have changed
- Stress produces three main consequences:

- *Direct Physiological effects:* elevated blood pressure, decrease in immune system functioning, etc.
- *Harmful behaviours:* increased use of nicotine, alcohol, drugs; decreased nutrition & sleep
- *Indirect health*-related behaviours: decreased compliance with medical advice; delays seeking medical care

- ***Origins of stress:*** negative emotions; uncontrollable or unpredictable situations; ambiguous & confusing situations; simultaneous task demands
- ***Consequences of stress:*** increase the risk of becoming ill; may produce illness, make it more difficult to recover from illness; may reduce the ability to cope with future stress; might lead to psychosomatic disorders (medical problems caused by interaction of psychological, emotional and physical difficulties

Coping with stress

- ***Problem-focused coping:*** an attempt to manage a stressful problem or situation by directly changing the situation to make it less stressful
- ***Emotion-focused coping:*** involves conscious regulation of emotion
- ***Social support:*** coping is aided by presence of social support, assistance and comfort supplied by others
- ***Defence coping:*** involves unconscious strategies that distort or deny the true nature of the situation

- ***Hardiness:*** personality characteristic associated with lower rate of stress-related illness (e.g. react to threatening stressors with optimism, feeling they can respond effectively)
- ***Resilience:*** ability to withstand, overcome and actually thrive following profound adversity (tend to be easy going, good natured, good social & communication skills; independent, feel they can shape their own fate, not dependent on others for luck; work with what they have and make the best of situations

BRIEFLY OUTLINE SOME OF THE COMMON PSYCHOLOGICAL DISORDERS PRESENTING IN EARLY AND LATE ADULTHOOD

- 15-25% aged >65 years show symptoms of psychological disorders; lower rate than younger adults; behavioural symptoms differ in older compared with younger adults

MAJOR DEPRESSION

- Rates may be lower in late adulthood? → there might be different types of depression in older adults

DEMENTIA

- Broad category, serious memory loss accompanied by declines in other aspects of cognitive functioning, which encompass several diseases; causes may vary
- Symptoms are similar: declining memory and intellectual abilities; impaired judgment

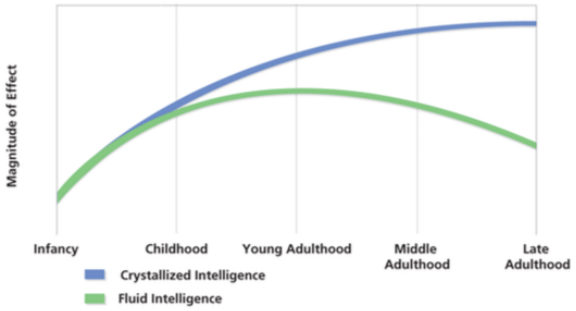
ALZHEIMER'S DISEASE

- Progressive disease; nearly half people aged >85 are affected; inherited but non-genetic factors might increase susceptibility (e.g. high blood pressure, diet, etc.)
- Symptoms develop gradually: *forgetfulness, recent memories and then older memories fade, total confusion, inability to speak intelligibly or recognise closest family members, loss of voluntary control of muscles*
- Production of the protein beta amyloid precursor protein goes awry - this normally helps production & growth of neurons
- Produces large clumps of cells that trigger inflammation & deterioration of nerve cell
- Certain neurons die, leading to shortage of some neurotransmitters (e.g. acetylcholine)

DESCRIBE THE PATTERNS OF DEVELOPMENT OF INTELLIGENCE AND MEMORY ACROSS MIDDLE AND LATE ADULTHOOD

INTELLIGENCE

- ***Fluid intelligence:*** the ability to deal with new problems or situations; inductive reasoning, spatial orientation, perceptual speed, verbal memory; *declines with age*
- ***Crystallised intelligence:*** the store of information, skills and strategies that people have acquired through education and prior experiences and through previous use of fluid intelligence; includes numerical and verbal abilities, such as crossword puzzles or mathematical problem; remains consistent OR *increases with age*



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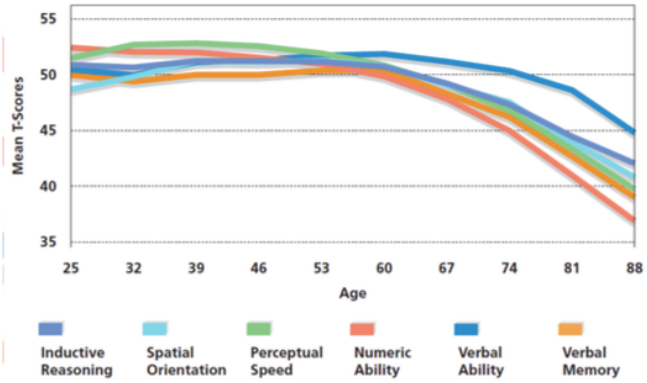

- Many types of ability (e.g. spatial orientation, numeric ability and verbal ability) rather than broad divisions
- Some abilities decline gradually around 25 inductive reasoning, spatial orientation, perce speed & verbal memory)
- Numeric ability increases until mid 40's, is lower at 60 & remains stable throughout the rest of life
- Verbal ability improves until ~40, & remains stable throughout the rest of the lifespan
- Acquired strategies remain steady and might improve

Factors influencing decline

- Plasticity or modifiable behaviour, suggests these skills are not fixed and changes can occur in late adulthood
- Less decline associated with: *good health, higher SES, involvement in an intellectually stimulating environment, flexible personality type, married to a bright spouse, maintenance of good perceptual processing speed, feeling self-satisfied with accomplishments*
- ***Cognitive reserve:*** allows continued performance at relatively high mental levels, even with underlying declines → controversial

MEMORY

- Most people show minimal loss and many experience no loss in middle adulthood
- *Sensory memory:* no decline in middle age
- *Short term memory:* no decline in middle age
- *Long term memory:* some decline in middle age; storage is less efficient; a reduction in efficiency of memory retrieval
- **Schemas:** help represent the way the world is organised; aid in categorisation & interpretation of new information

Strategies for remembering

- Mnemonics – formal strategies for organising material in ways that make it more likely to be remembered; get organised; pay attention; use encoding specificity phenomenon; visualise; rehearse

Late adulthood

- *Episodic memory:* age related decline is largely limited to episodic memory
- *Semantic memory:* largely unaffected by age
- *Implicit memory:* largely unaffected by age
- *Short*-term memory: gradually declines until 70 years, where it becomes more pronounced
- Information presented quickly and verbally is forgotten sooner
- ***Pollyanna principle***: pleasant memories more likely to be recalled than unpleasant (*autobiographical memories*)

Explaining memory changes in late adulthood

- ***Information processing deficits:*** ability to inhibit irrelevant information & thoughts declines; speed of processing declines; attention declines; less efficient retrieval methods

- ***Environmental factors:*** pharmacological interventions hinder memory; motivation to recall information and perform in testing environments might be reduced compared with younger adults
- ***Biological factors:*** brain and body deterioration – especially **frontal lobes*;*** continuation of education can improve cognitive skills