



CC0005 Healthy Living and Wellbeing

Lecture 5

Health and Maturation

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Intended Learning Objectives

1. Define the concept of age in the different stages of life
2. Relate to the challenges that arise from our lifestyle choices
3. Discuss the issues that affect the young adult and how proactive management can reduce the risk of ill health or premature disability

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01. Concept of Age in the Stages of Life

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Definitions of Age

- Legal age
 - Chronological years lived
- Biological age
 - Relative age or condition of a person's organs and body systems
- Psychological age
 - Person's adaptive capacities
- Social age
 - Relative to society's expectations
- Functional age
 - Physical and mental performance
- Life expectancy (LE): The number of years that a person at a given age can expect to live.

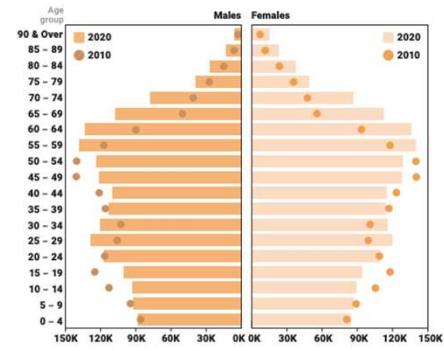


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Age Groups

- Infancy: Up to 1 year
- Childhood:
 - Early: 1 to 6 years
 - Middle childhood: 7 to 10 years
 - Pre-puberty: Girls, 9 to 15 years; boys, 12 to 16 years
- Adolescence: The 6 years following puberty
- Adulthood:
 - Early: 20 to 29 years
 - Middle: 30 to 44 years
 - Later: 45 to 64 years
- Senescence/Elderly:
 - 65 years and above



Source: Department of Statistics

Table 5: Old-age support ratio, as of Jun
(persons aged 20-64 years per person aged 65 years & above)

	2010	2015	2019	2020	2030 (Projected)
Residents	7.4	5.7	4.5	4.3	2.7
Citizens	6.4	4.9	4.0	3.7	2.4

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Why Do We Age?

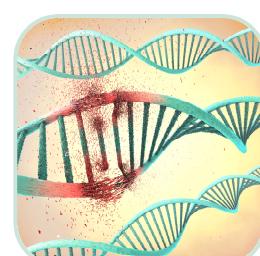
Theories of Aging



Wear and tear



Cellular



Genetic mutation



Autoimmune

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02.

Challenges That Arise From Lifestyle Choices

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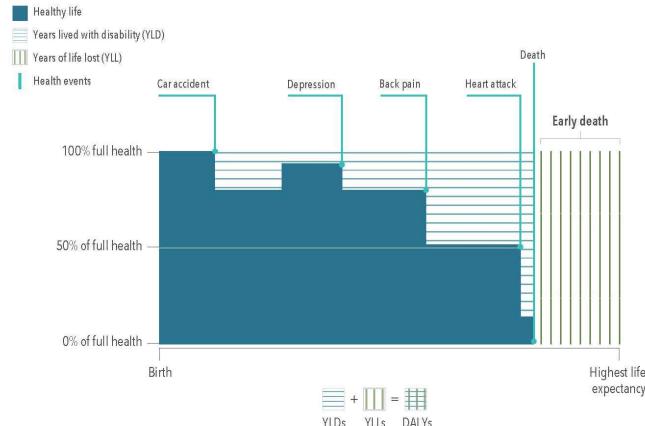
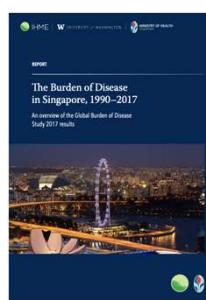
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Understanding DALYs (Disability-Adjusted Life Years)

Aim in life:

- To increase healthy years
- To decrease unhealthy years

Understanding disability-adjusted life years (DALYs)



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Issues That Affect DALYs

Lifestyle behaviours:

- Musculoskeletal injuries
- Posture and work-related injuries
- Hearing loss
- Sleep deprivation
- Behaviour-related infections



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What are the causes of premature death amongst the younger population in Singapore?

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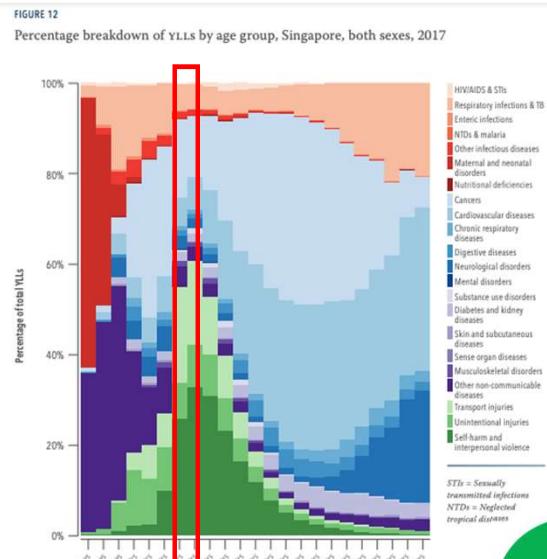
Young Adults

Impact of injuries among adolescents and young adults:

- **Injuries** caused just over 60% of Year of Life Lost (YLL) among 20- to 24-year-olds.
- **Self-harm and interpersonal violence:** 32.9% of total YLLs for those aged 20–24.
- Other key contributors to injury burden: **Transport injuries** among those in their teens and twenties (highest among 15- to 19-year-olds at 21.3% of YLLs).

Legend:

YLL = Years of Life Lost to premature death and disability



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Musculoskeletal Injuries

Acute Traumatic Injuries

- Motor vehicle accidents
- Physical accidents (can be caused by digital distraction)



Chronic Overuse Injuries

- Computer-related musculoskeletal injuries
- Hearing loss



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Acute Traumatic Injuries

Digital Distraction



Walking



Driving



Cycling



Other activities

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Chronic Overuse Injuries

What are Overuse Injuries?

- Also known as **repetitive stress injuries**
- Repeating the same movements over and over again
- Examples include:
 - Common work-related injuries
 - Excessive use of phones, computers, and other devices
 - Sports that involve repetitive motions like tennis, swimming, and soccer



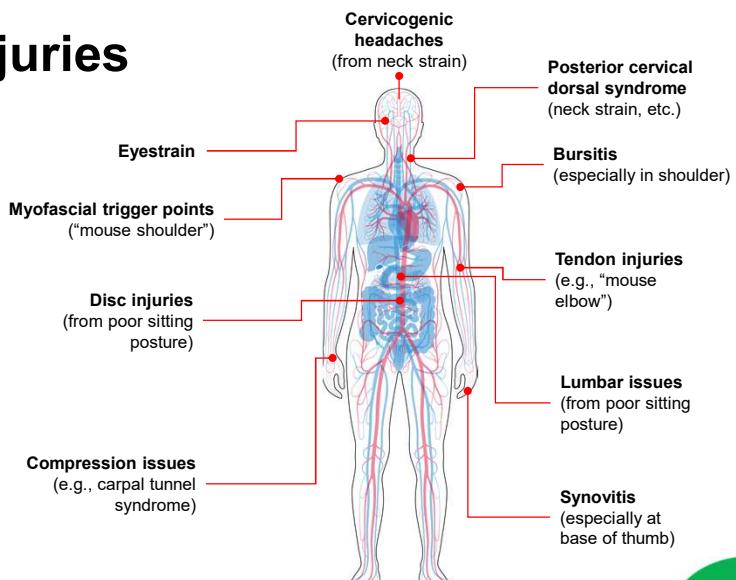
MYVA360. (n.d.). 10 common computer-related injuries (and how to prevent them). <https://myva360.com/blog/10-common-computer-related-injuries-and-how-to-prevent-them>

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Chronic Overuse Injuries

- Examples of **computer-related injuries in the workplace** include:
 - Muscle spasms
 - Strains
 - Sprains
 - Headaches
 - Joint pain
- It is common to be affected by a few conditions at the same time.



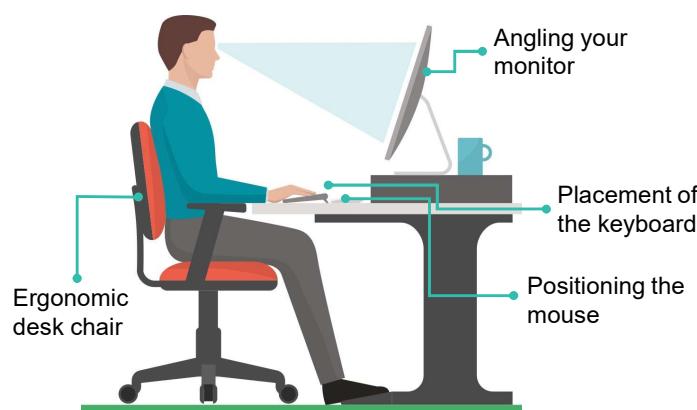
MYVA360. (n.d.). 10 common computer-related injuries (and how to prevent them). <https://myva360.com/blog/10-common-computer-related-injuries-and-how-to-prevent-them>

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Chronic Overuse Injuries – Ergonomics

How to Be Comfortable



Other Ways to Prevent Injuries

Postural relief position



Stretches



Clean your monitor



Short break from work



MYVA360. (n.d.). 10 common computer-related injuries (and how to prevent them). <https://myva360.com/blog/10-common-computer-related-injuries-and-how-to-prevent-them>

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Chronic Overuse – Hearing Loss

- Noise-induced hearing loss is irreversible.
- According to the World Health Organization (WHO), approximately 43 million young people aged 12–35 years worldwide face the risk of hearing loss due to unsafe listening practices.
 - Nearly 50% are using personal audio devices at unsafe levels of sound.
 - Around 40% face potential hearing damage from sound levels at clubs, discotheques and bars.



World Health Organization. (2015). *Make listening safe*. https://www.who.int/pbd/deafness/activities/MLS_Brochure_English_lowres_for_web.pdf

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Chronic Overuse – Preventing Hearing Loss

Here are some ways to listen to music without endangering your hearing:

- Follow the **60 percent/60-minute** rule, using headphones/earphones at volume levels no more than 60 percent of maximum and no more than 1 hour a day.
- Turn the volume down if
 - it's loud enough to prevent normal conversation;
 - it causes ringing in your ears;
 - you have trouble hearing for a few hours after exposure; or
 - the person next to you can hear the music from your headphones.



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The Unseen Epidemic

Sleep Deprivation
aka Sleepless in Singapore

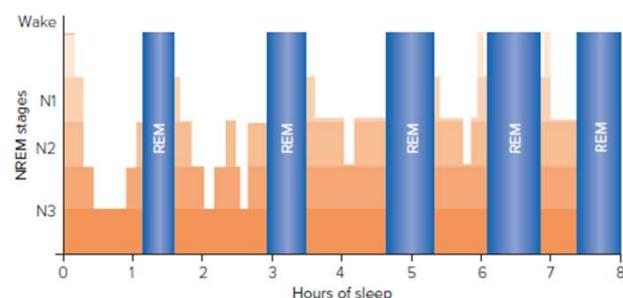


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The Science of Sleep

- Non-rapid eye movement sleep (NREM)
- Rapid eye movement sleep (REM)
- The sequence (NREM: REM) lasts about 90 minutes.
- During one night of sleep, a person is likely to go through four or five cycles.
- Ratios of NREM to REM differ throughout the night.



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When to sleep?

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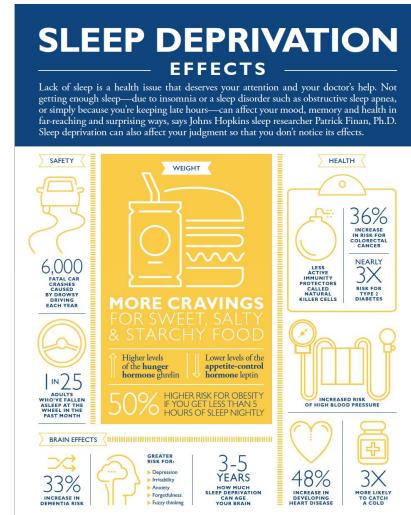
Do tools that track sleep work?

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Consequences of Sleep Deficit

- Short-term
 - Physical manifestations
 - Emotional manifestations
 - Mental health (anxiety, depression, addiction, etc.)
- Long-term
 - Sleep disorders (insomnia, sleep apnea, narcolepsy, restless leg syndrome)
 - Chronic diseases (CVD, diabetes, hypertension, obesity)
 - Weakened immunity



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What does sleep do for you?

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How do you catch up on sleep?

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**Are pulling exam all-nighters to cram worth the
sleep sacrifice?**

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Our Immune System

The Natural Protection Against Invaders

Level 1: Barriers
Skin and cilia prevent invaders from entering.



Level 2: Innate
Cells and chemicals stop invaders from spreading.

Level 3: Adaptive
Blood warriors (with a grudge) attack invaders.



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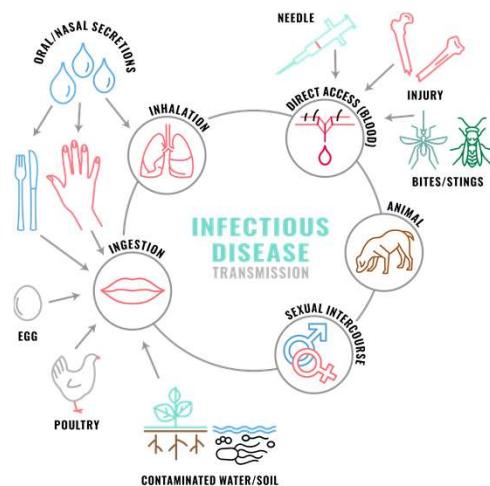
Infectious Diseases

Modes of transmission:

- Person to person
- Animal to person
- Insect bites
- Food contamination

Transmission that are behaviour-related:

- Travel and globalisation
- Callous sexual behaviour



COVID-19 Dashboard by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University (JHU)

Last Updated at (M/D/YYYY) 8/3/2021, 3:21 PM	Cases 198,944,127	Deaths 4,236,600	Vaccine Doses Administered 4,155,587,961
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03. Proactive Management of Risk Factors



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Proactive Management of Risk Factors Affecting Health

Level 1	Level 2
Metabolic Risks	High blood sugar Obesity and overweight High cholesterol High blood pressure Impaired kidney function Low bone mineral density
Environmental/Occupational Risks	Air pollution Occupational risks Other environmental risks Unsafe water, sanitation, and handwashing
Behavioural Risks	Alcohol use Child and maternal malnutrition Personal hygiene Dietary risks Drug use Intimate partner violence Low physical activity Tobacco Unsafe sex

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