Professor Robyn Cosford

Where are we now? How did we get here? How do we get back?

WHERE ARE WE NOW?

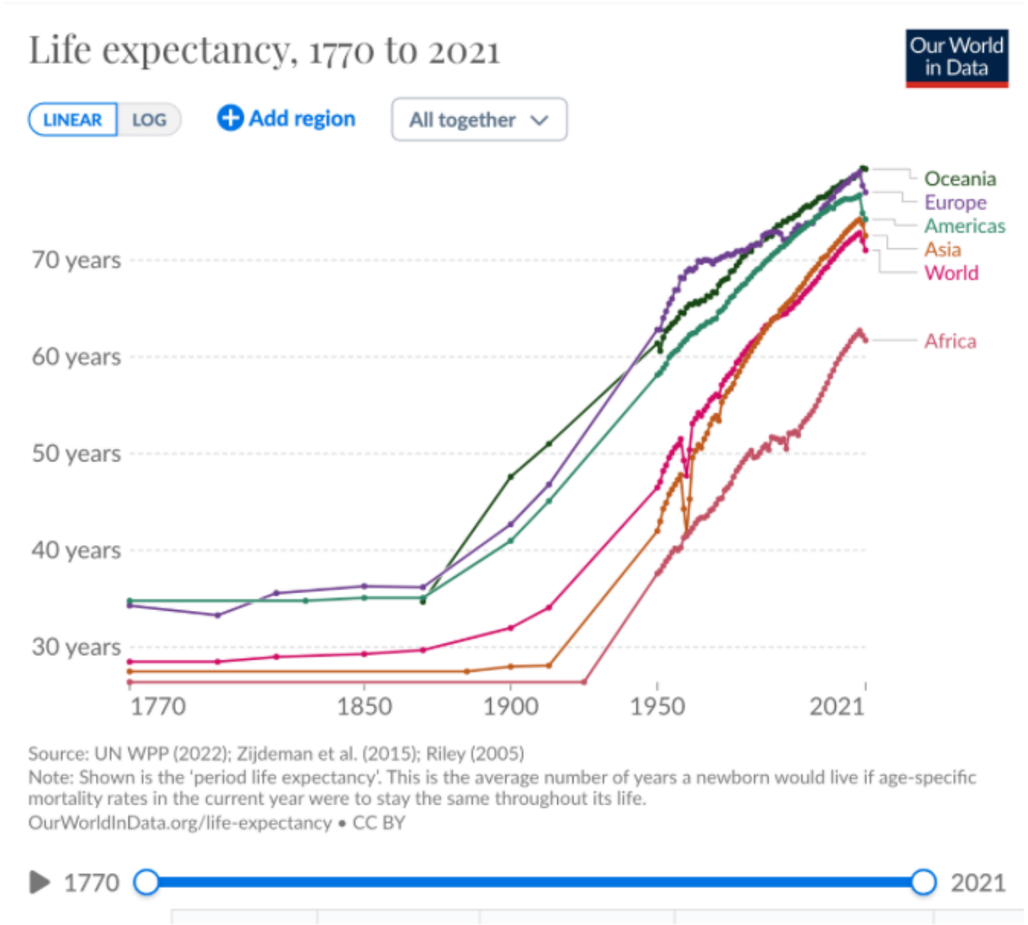
HOW DID WE GET HERE?

HOW DO WE GET BACK?

PROF ROBYN COSFORD

AUSTRALIA

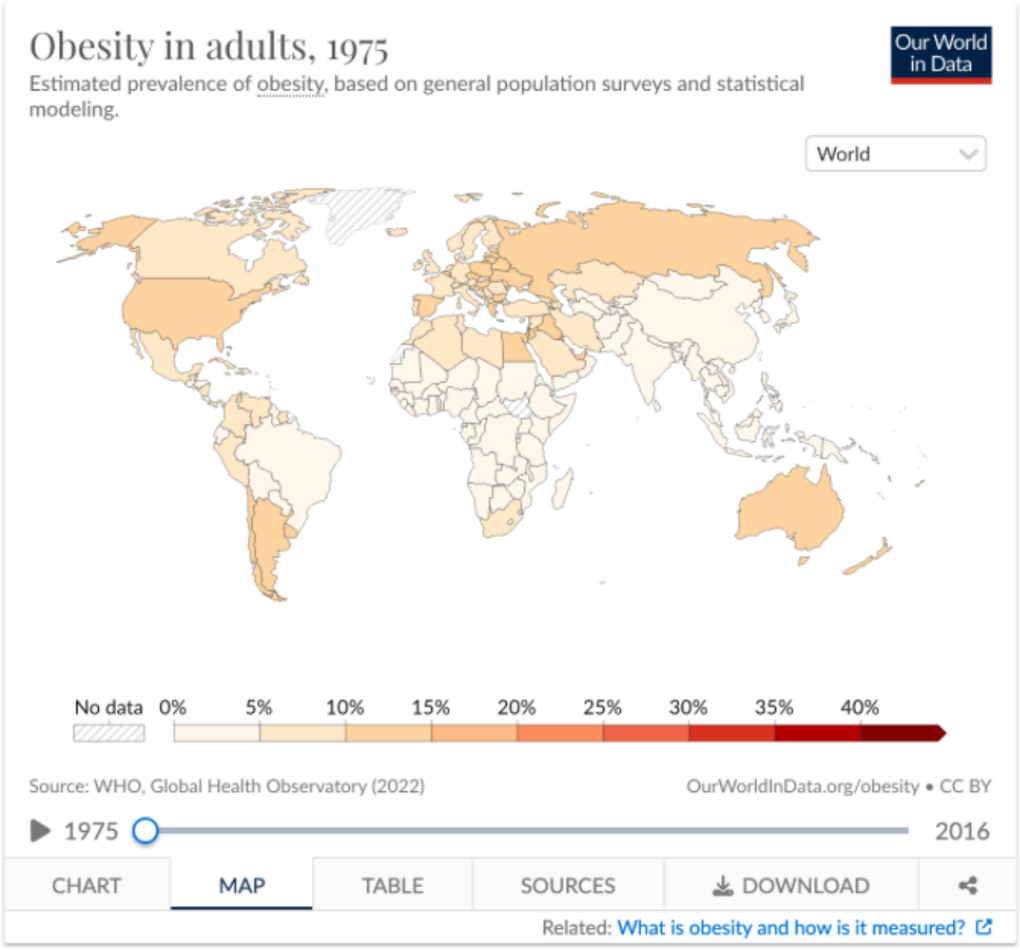
LIFE EXPECTANCY



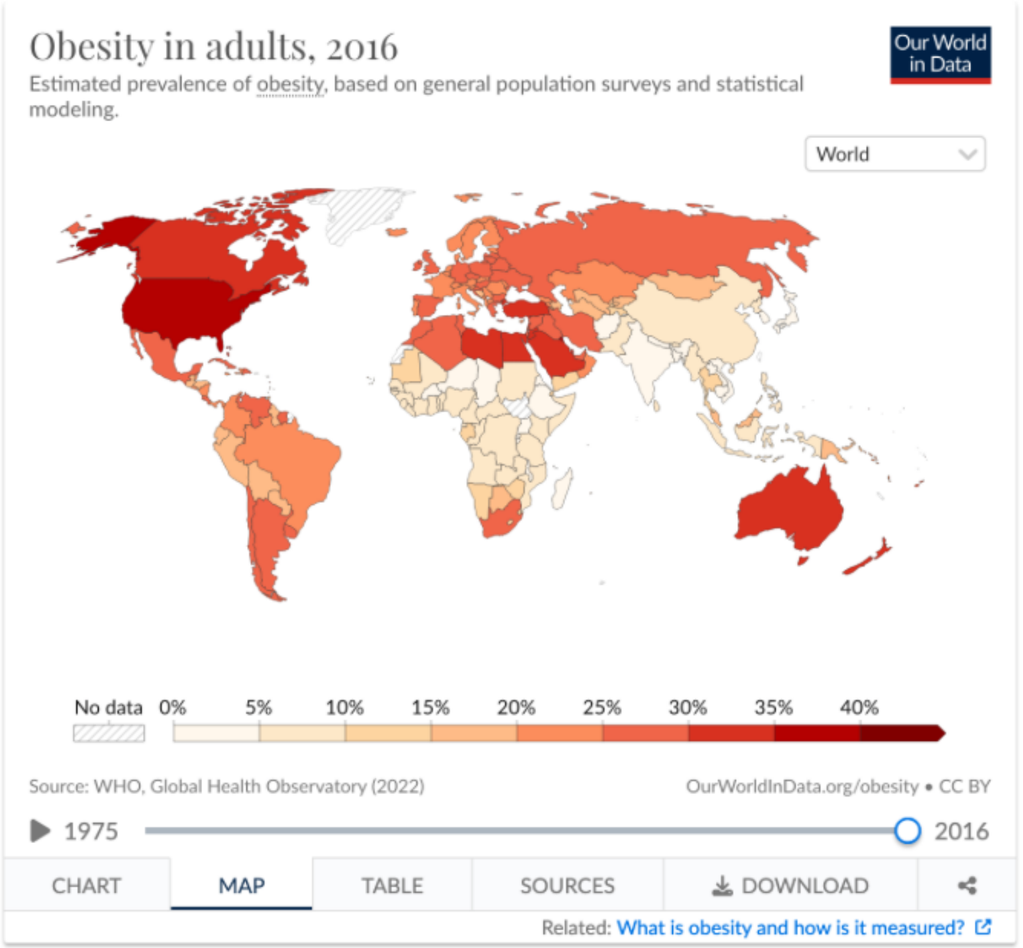
DROPPING LIFE EXPECTANCY

	2020	2021
OCEANIA	79.5	79.4
EUROPE	77.7	77.0
AMERICAS	74.8	74.2
ASIA	73.7	72.5
WORLD	72.0	71.0
AFRICA	62.2	61.7
AUSTRALIA	84.5	?

OBESITY


Obesity in adults, 1975
Estimated prevalence of obesity, based on general population surveys and statistical modeling.
Our World in Data
World
No data
0%
5%
10%
15%
20%
25%
30%
35%
40%
Source: WHO, Global Health Observatory (2022)
OurWorldInData.org/obesity • CC BY
1975
2016
CHART
MAP
TABLE
SOURCES
DOWNLOAD
Related: What is obesity and how is it measured?

OBESITY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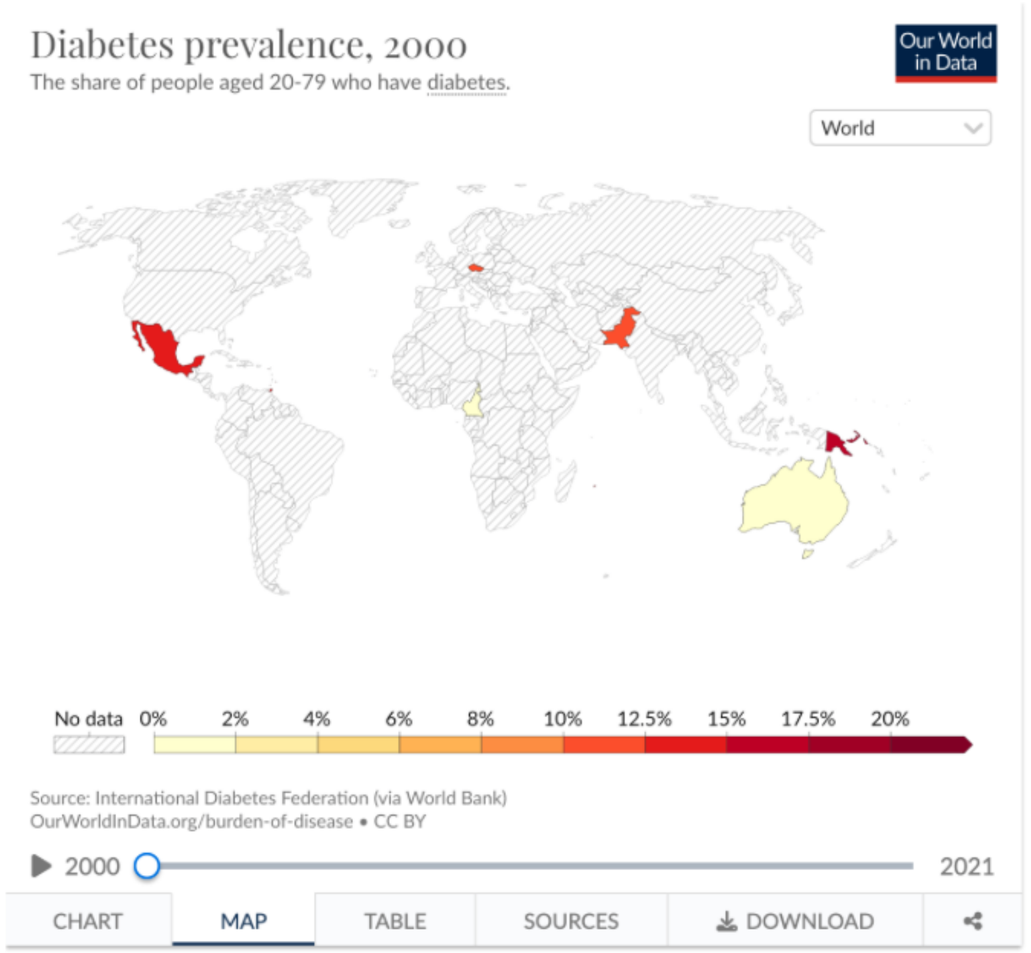
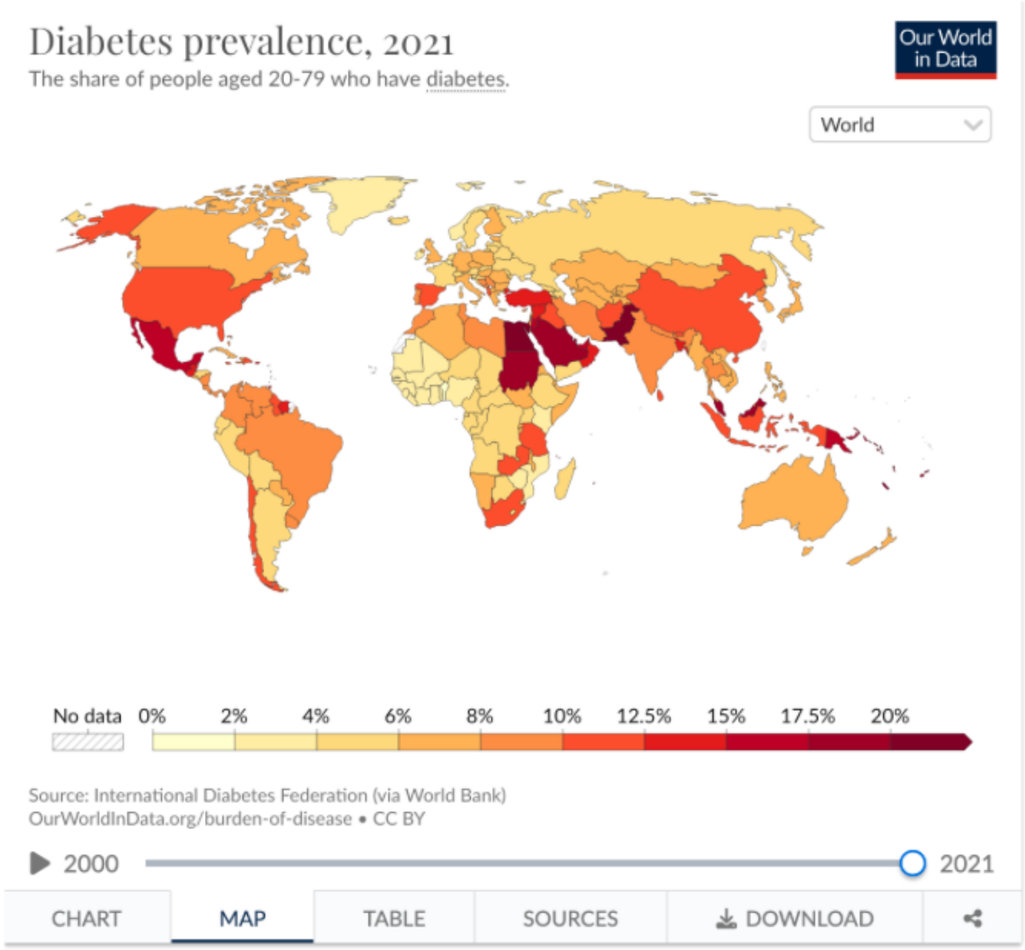
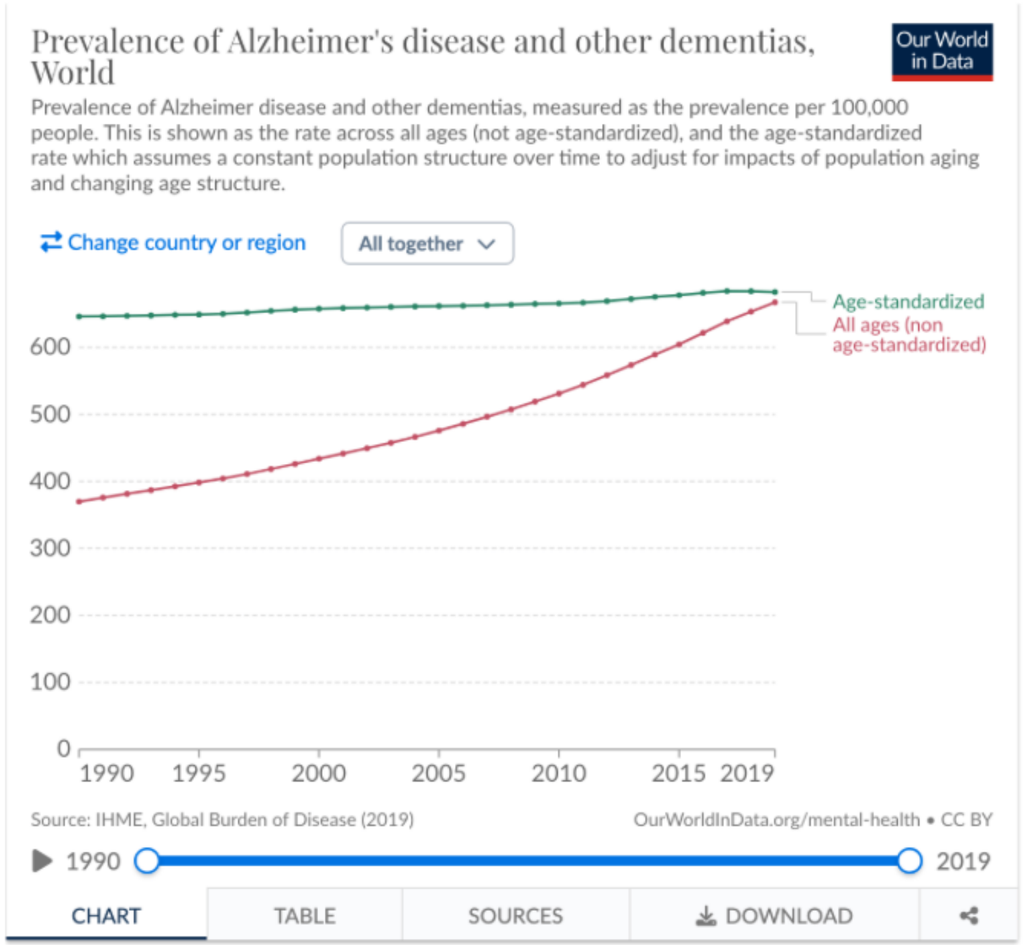
DIABETES 2000



DIABETES 2021



DEMENTIA 1990-2019



ABS 2020/2021

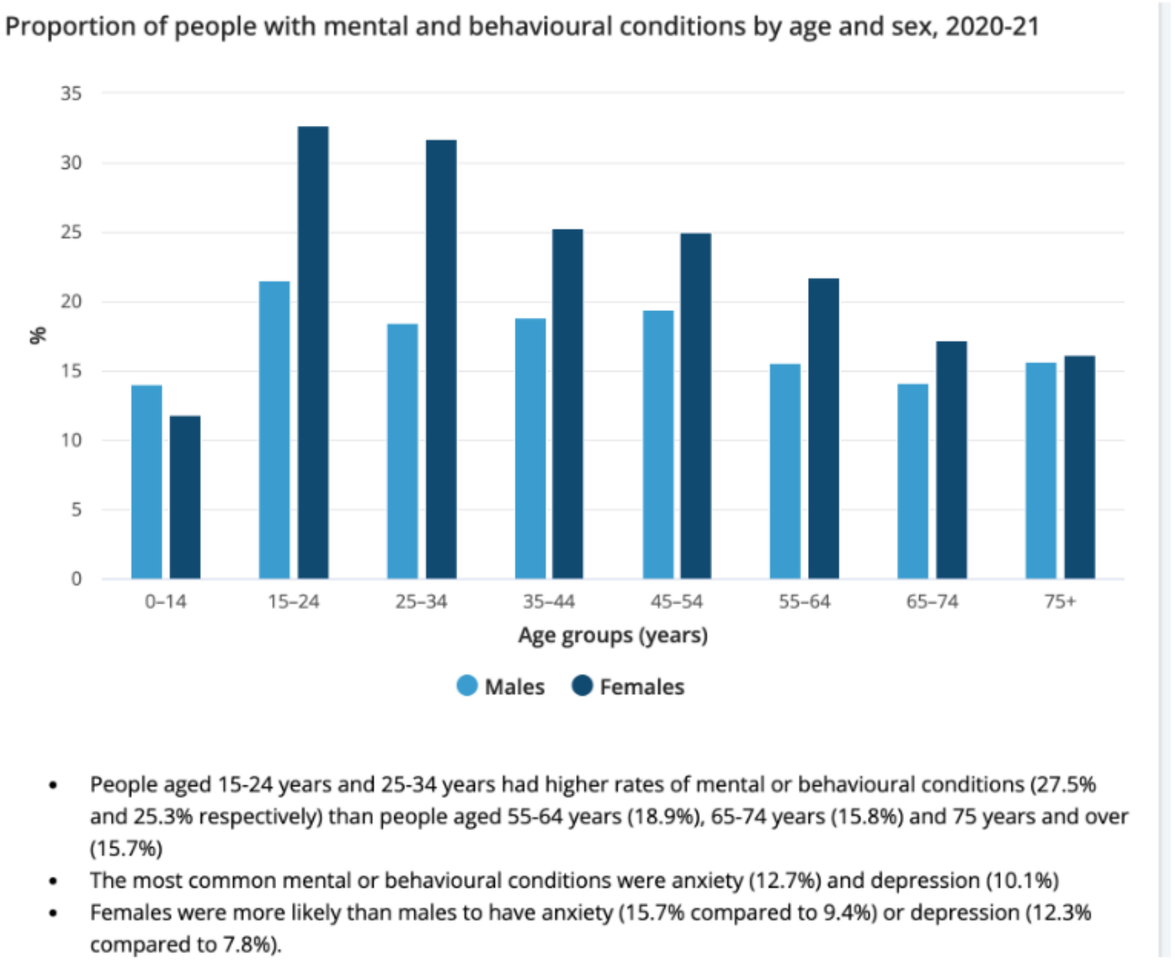
- Over three quarters (78.6%) of Australians had at least one long-term health condition
- Nearly half had at least one chronic condition (46.6% or 11.6 million)
- Almost 1 in 5 (18.6%) had 2 or more chronic conditions.

- https://www.abs.gov.au/statistics/health/health-conditions-and-risks/health-conditions-prevalence/latest-release 21/3/22

CHRONIC DISEASE

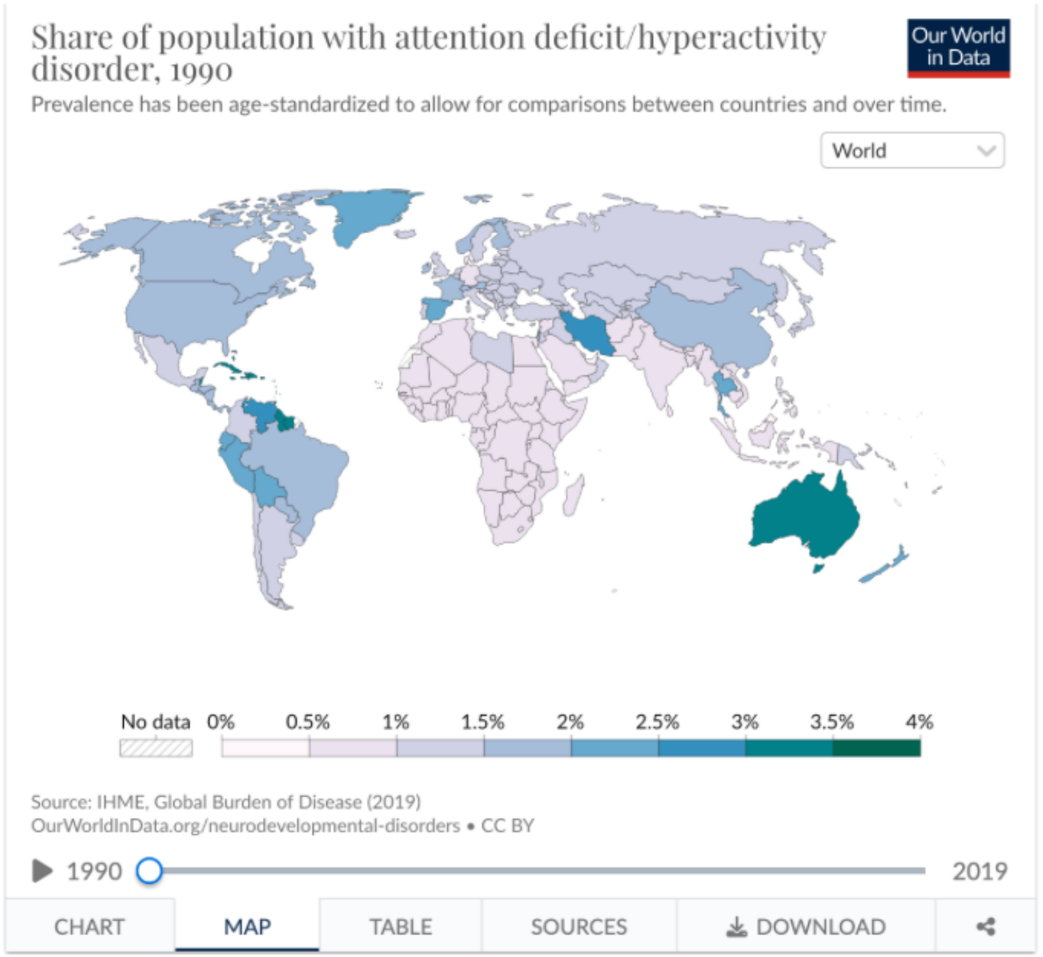
- Mental and behavioural conditions – 20.1%
- Back problems – 15.7%
- Arthritis – 12.5%
- Asthma – 10.7%
- Diabetes – 5.3%, comprised of Type 1 diabetes (0.6%) and Type 2 diabetes (4.5%)
- Heart, stroke and vascular disease – 4.0%
- Osteoporosis – 3.6%
- Chronic Obstructive Pulmonary Disease (COPD) – 1.5%
- Cancer – 1.6%
- Kidney disease – 1.1%.

MENTAL, BEHAVIOURAL

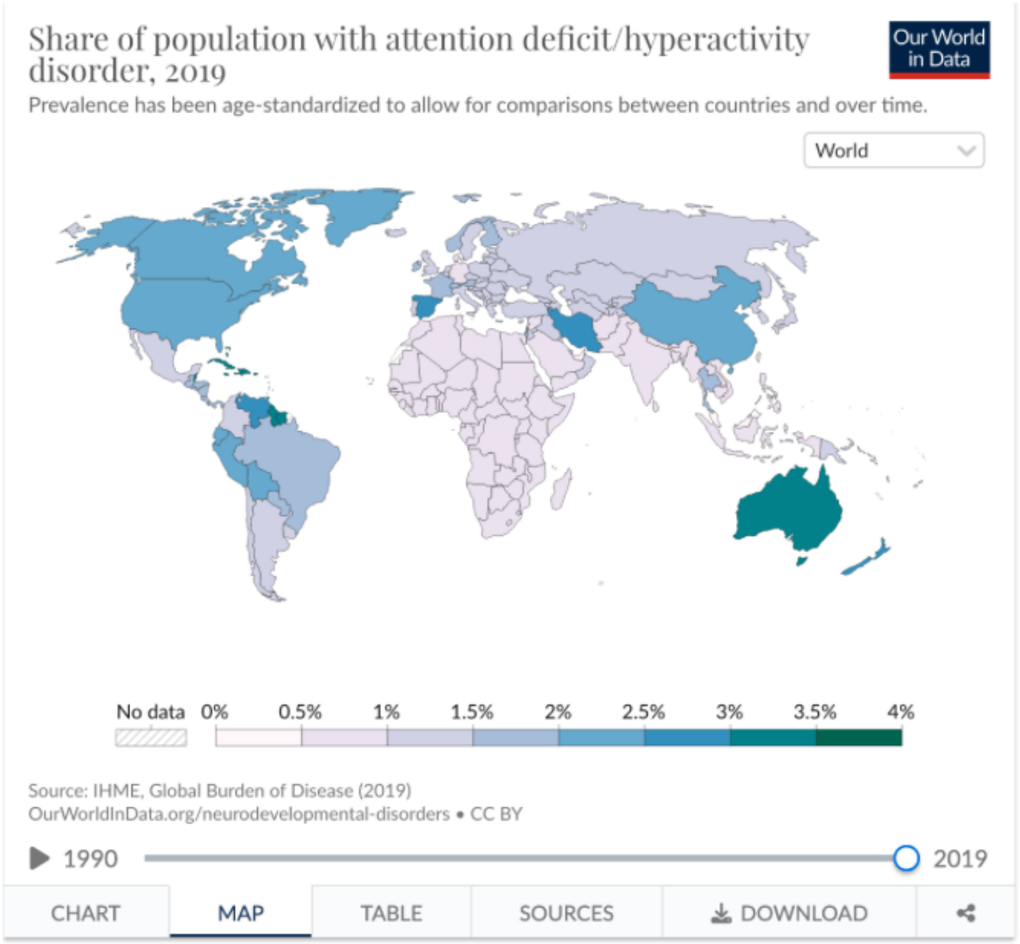


- People aged 15-24 years and 25-34 years had higher rates of mental or behavioural conditions (27.5% and 25.3% respectively) than people aged 55-64 years (18.9%), 65-74 years (15.8%) and 75 years and over (15.7%)
- The most common mental or behavioural conditions were anxiety (12.7%) and depression (10.1%)
- Females were more likely than males to have anxiety (15.7% compared to 9.4%) or depression (12.3% compared to 7.8%).

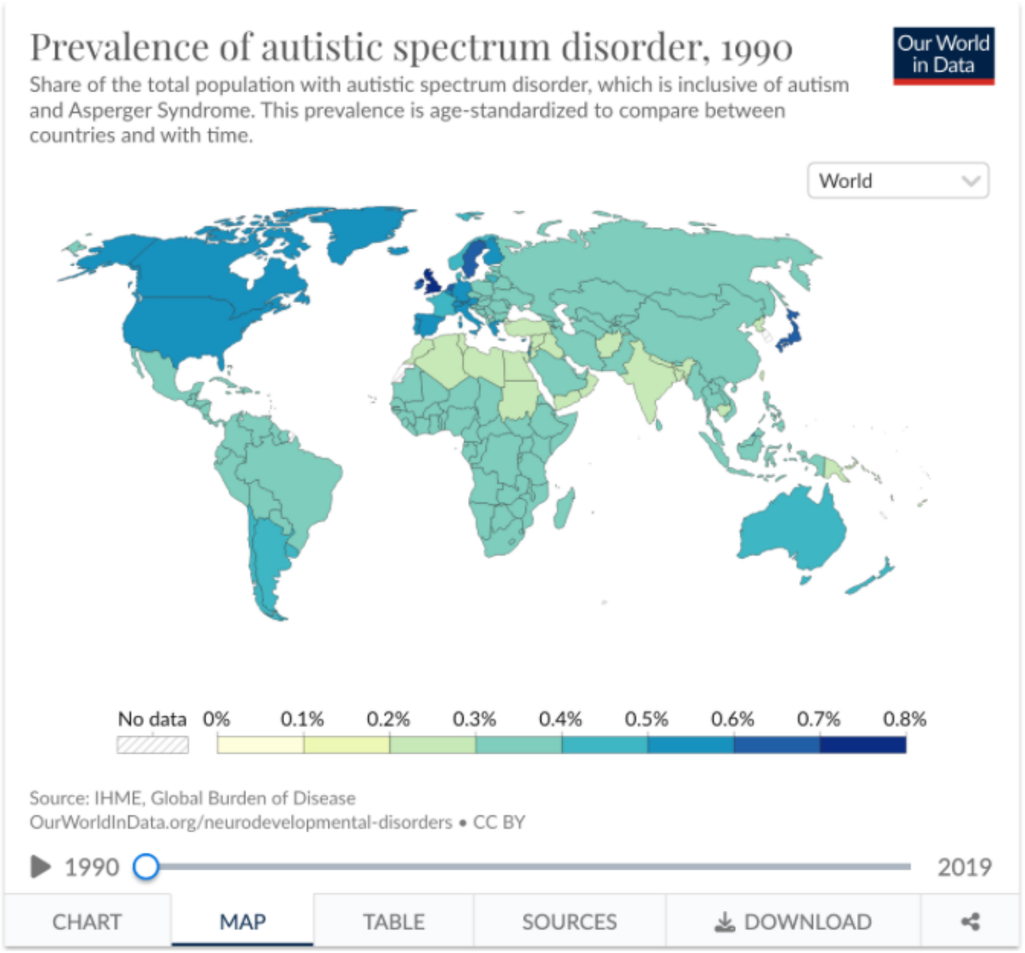
ATTENTION DEFICIT DISORDER



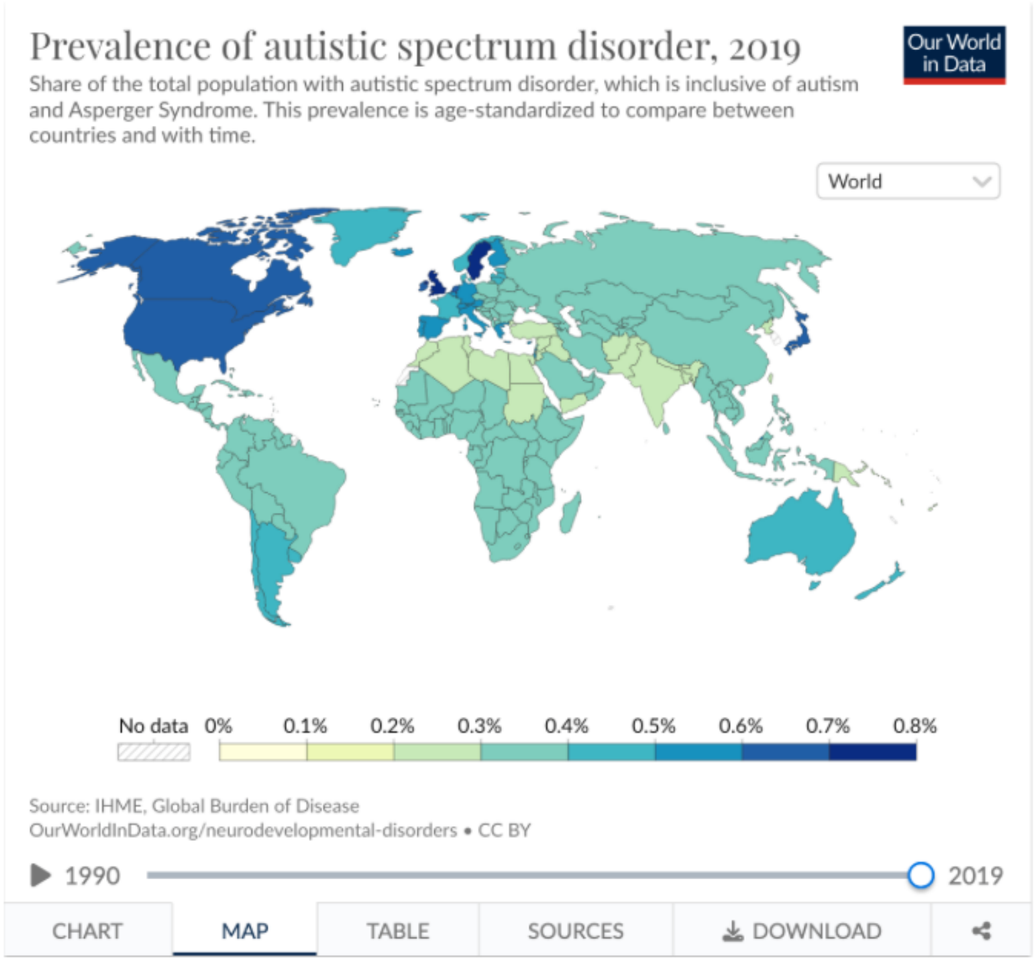
ATTENTION DEFICIT DISORDER



ASD


Prevalence of autistic spectrum disorder, 1990
Share of the total population with autistic spectrum disorder, which is inclusive of autism and Asperger Syndrome. This prevalence is age-standardized to compare between countries and with time.
Our World in Data
World
No data
0%
0.1%
0.2%
0.3%
0.4%
0.5%
0.6%
0.7%
0.8%
Source: IHME, Global Burden of Disease
OurWorldInData.org/neurodevelopmental-disorders • CC BY
1990
2019
CHART
MAP
TABLE
SOURCES
DOWNLOAD

ASD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Source: IHME, Global Burden of Disease
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1990
2019
CHART
MAP
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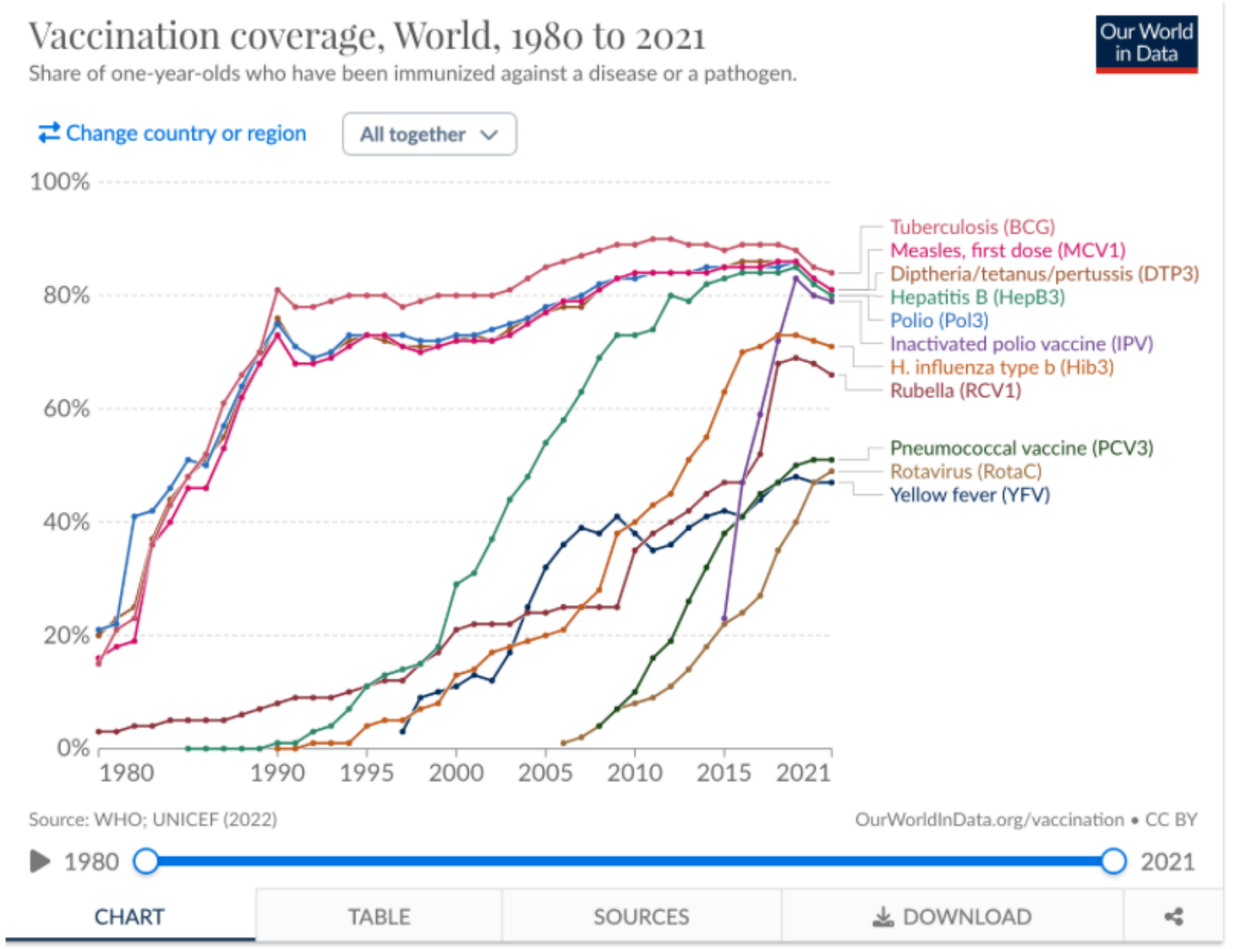
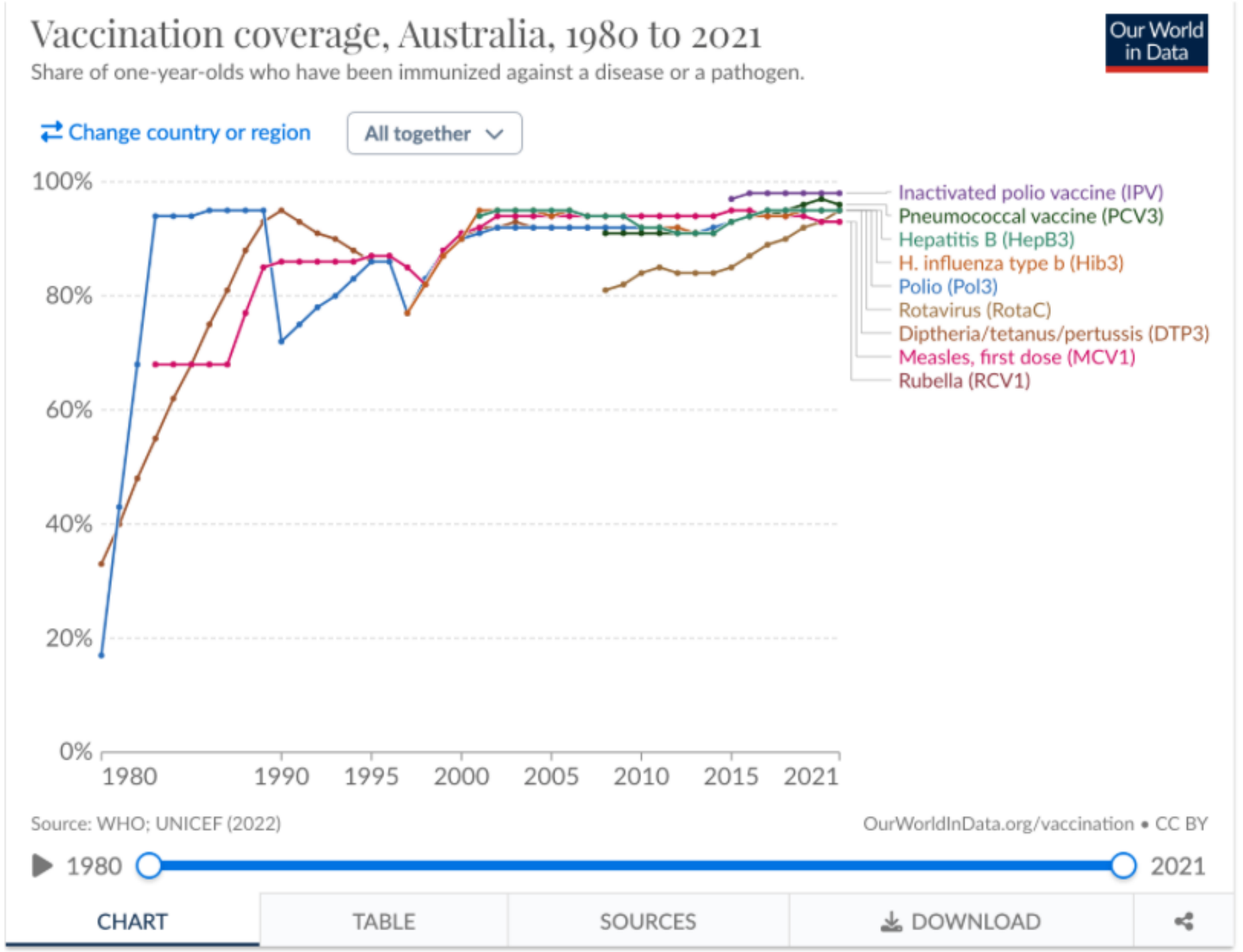
DOWNLOAD

Vaccination coverage 12 month olds 1980-2021



VACCINATION RATES 12 months- AUSTRALIA



HEALTH RISK FACTORS CHILDREN
ABS 2017-2018

- 25% of children aged 5-17 years were overweight or obese.
- 6% of children met both the fruit and vegetables recommendations
- On average, children aged 2-17 years: 2.2 serves of fruit, 2 serves of vegetables/ day.
- 9% of adults, 7% of children consume sugar sweetened drinks daily.
- 45% of children aged 2-17 years either sugar sweetened drink or diet drinks at least once per week.

HOW DID THIS HAPPEN

- Progressive, little steps
- Progressive disconnect
- In the name of 'Progress'

Age	**Hunter/Gatherer**
When	Prehistory
Where Live	Nomadic
Social Structure	Tribal
Ethos	Tribal focus: long term, time; elders revered; societal structure foremost; rules
Lifestyle	Outside, physical activity; primitive, temporary shelter; continual connection environment
Childcare	Infants carried, breastfed, eat adults foods premasticated by mother; raised within tribe; as come of age, inducted into ways of adults
Day/Night	Sleep wake cycles according to natural daylight; firelight, candle light
Seasons	Activities, foods seasonal: 'hibernation'
Clothing	Simple clothing, all natural materials; connected to earth (barefoot or leather-soled)
Pollution	No toxins except naturally released eg volcanos, bushfires
Electromagnetic Environment	No electromagnetic radiation other than occasional solar flares: connected to earth (giant magnet)
Diet	Game meats, roots, nuts, seeds, berries, leaves (organic, seasonal, freshly harvested when ripe)
Communication	Face to face communication: hand to hand combat; signals
Diseases/Lifespan	Starvation, acute severe infection, trauma, childbirth: survivors lived to long age

Age	**Herder**
When	Early recorded history
Where Live	Nomadic
Social Structure	Tribal
Ethos	Tribal focus; elders revered; societal structure, rules
Lifestyle	Outside, physical activity; primitive, temporary shelters
Childcare	Infants carried, breastfed, raised within tribe; as come of age, inducted into ways of adults
Day/Night	Natural lighting: sleep wake cycles according to natural daylight
Seasons	Activities, foods seasonal: 'hibernation'
Clothing	Minimal clothing, all natural materials; connected to the earth
Pollution	No toxins except naturally released eg volcanos, bushfires
Electromagnetic environment	No electromagnetic radiation other than occasional solar flares: connected to earth (giant magnet)
Diet	**Domesticated meats, (sheep, goats), milk (A2), fermented dairy products (in sheep/stomach – natural rennin)**
Communication	Face to face communication: hand to hand combat; letters
Diseases/Lifespan	Starvation, acute severe infection, trauma, childbirth

Age	**Industrial Revolution**
When	Mid-1800s
Where Live	**Cities**
Social Structure	**Extended families**
Ethos	**Family focus; elders revered**
Lifestyle	**Factories: inside**
Childcare	**Increasing separation of families, infants cared for by others, children schooled outside of home, fathers working apart from family**
Day/Night	**Increasing work in poor light, lack of sunlight**
Seasons	**Work increasingly unrelated to seasons**
Clothing	**Heavier clothing as protection, still natural fibres**
Environmental Pollution	**Large scale industrial pollution (coal); sanitation wastes cities**
Electromagnetic Environment	Still mostly environmental electromagnetism
Diet	**Introduction refined foods, sugars more widespread**
Communication	Face to face communication: hand to hand combat; letters
Diseases/Lifespan	**Increasing disease (pollution, poor food, sanitation, sunlight, overcrowding)**

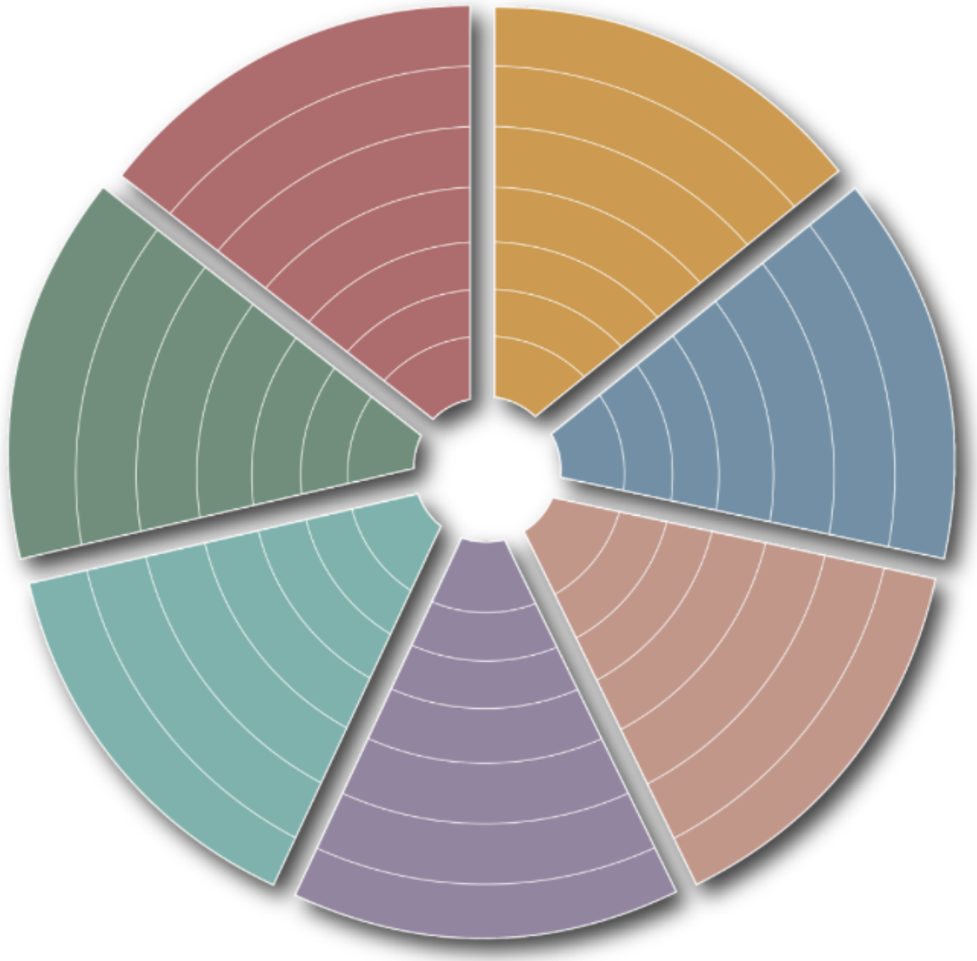
Age	**Electrical Revolution**
When	1900s
Where Live	Cities
Social Structure	Extended families
Ethos	Family; elders revered
Lifestyle	**Increasingly indoors; working increasingly into nights; homes with electricity**
Childcare	Continued separation families, children
Day/Night	**Increasing hours in artificial lighting, working into nights**
Seasons	Work not related to seasons
Clothing	No further change
Pollution	Increasing pollution (coal-fired power plants)
Electromagnetic Environment	**Abnormal electromagnetic radiation from electrical machinery**
Diet	**Refrigeration; increasing use of refined foods, sugars; less fermentation foods**
Communication	**Telegraph; telephone; increased distance conversation and brevity of conversation**
Diseases/Lifespan	**Reduction infectious diseases (improved sanitation); improved lifespan**

Age	**Chemical Revolution**
When	WWII
Where Live	Cities
Social Structure	Extended families
Ethos	Family focus; elders revered
Lifestyle	Factories, offices - more indoors. Chemicals in home and work environments
Childcare	Continued separation families, children
Day/Night	Increasing hours in artificial lighting, working into nights
Seasons	Work not related to seasons
Clothing	**Introduction of synthetic materials**
Environmental Pollution	**Chemical fertilisers, pesticides, herbicides: large scale land and water pollution; antibiotics in feed; plasticisers**
Electromagnetic Environment	Abnormal electromagnetic radiation from electrical machinery
Diet	**Increasing use of refined foods, sugars; introduction of food additives; packaged foods;** still often backyard gardens, chooks
Communication	No further change
Diseases/Lifespan	**Improved recovery infections (antibiotics); further reductions infectious disease (sanitation, specific vaccination), improved lifespan**

Age	**Technological Revolution**
When	1970s +
Where Live	Cities
Social Structure	**Nuclear families**
Ethos	**(Nuclear) family focus; elders now longer revered but separated, burden**
Lifestyle	**Predominantly indoors, little physical activity; more women in workforce, increasing speed**
Childcare	Infants separate from mothers, prolonged breastfeeding rare, external childcare routine, loss of generational trade skills
Day/Night	Increasing office work, artificial environments, disruption of natural sleep-wake cycles
Seasons	Work almost completely unrelated to natural seasons
Clothing	**Synthetic clothing, rubber soled shoes, synthetic floor covering and housing materials, people often disconnected from earth 24/7**
Pollution	**Additional chemicals in homes, offices**
EMR	**Increasing EMR pollution as increasing use electrical goods in homes, work**
Diet	**Supermarket diet – little/no contact with food sources, food increasingly refined, processed, packaged; 'fast foods'**
Communication	**Increasing use of distance communication**
Diseases/Lifespan	**Reduction previous 'childhood infections' (?vaccination/sanitation), Increasing autoimmune, degenerative diseases, new infections, childhood neurodevelopmental disorders**

Age	**Communication Revolution**
When	1990s+
Where Live	Cities
Social Structure	**Single parent families/lone**
Ethos	**Self focus: fast, immediate; youth, beauty revered**
Lifestyle	Indoors, often no significant physical activity
Childcare	**Infants routinely separated, bottle fed, cared for outside home in childcare centres; children schooled outside of home; young people change jobs every 2 to 3 years**
Day/Night	Little dependence on natural day-night cycles
Seasons	No change in work according to seasons
Clothing	Synthetic
Environmental Pollution	Widespread chemical pollution
Electromagnetic Environment	**Widespread pollution with microwaves (mobile phones), increasing use of wireless technology**
Diet	**Predominantly shop bought, processed, packaged, prepared foods, take aways; no connection with source of food**
Communication	**Communication via computer, mobile phones: messages brief, superficial**
Diseases/Lifespan	**Increased behavioural, psychological, neurodevelopmental abnormalities, cancers, obesity, 'new diseases' etc; shortening lifespan**

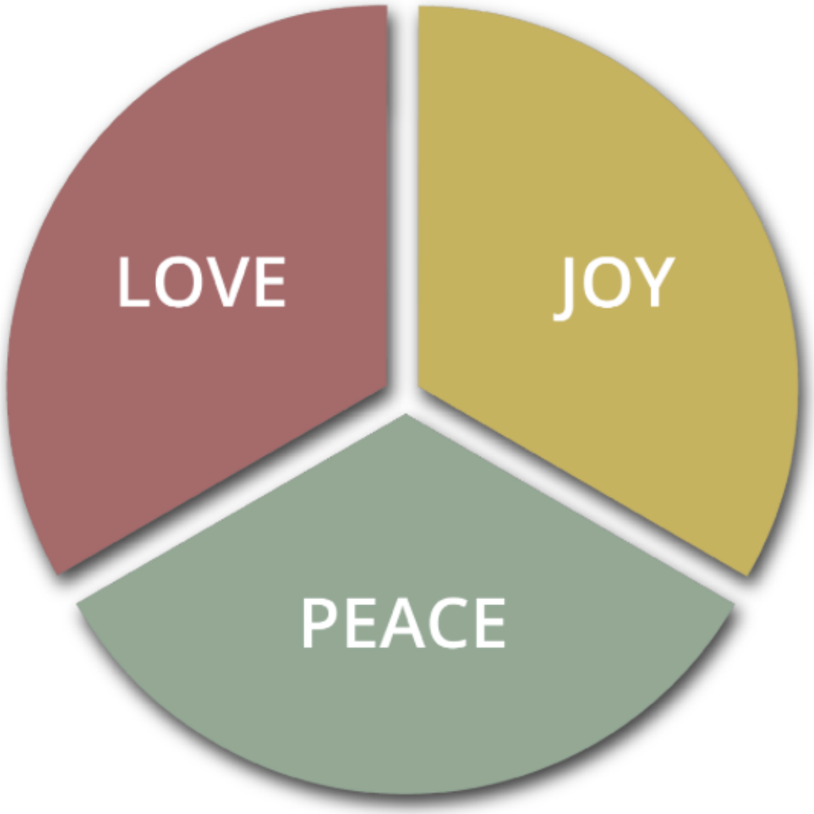
WHEEL OF LIFE



CORE:

AXLE OF WHEEL OF LIFE

- LOVE
- JOY
- PEACE



LOVE VIBRATION:


PEACE

JOY


TRUTH

SPOKES OF WHEEL

- Air
- Light
- Water
- Sleep, rest, recreation
- Movement
- Foods
- Nutrients


AIR,
BREATHING

AIR, BREATHING

The air we breathe:

purified, energised, negative ions

How we breathe:

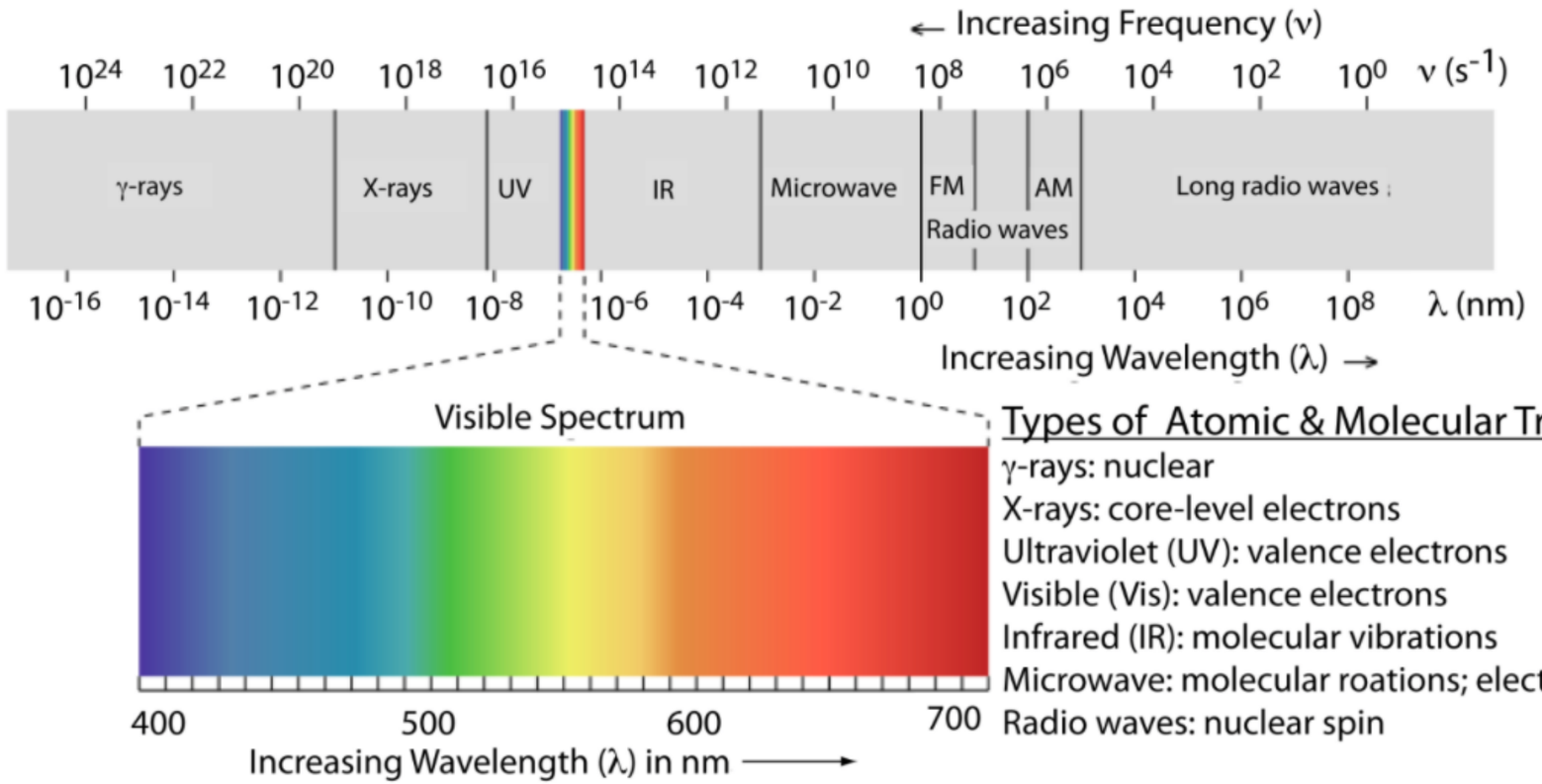
nasal, diaphragmatic

activate PNS

'heart coherence'

LIGHT

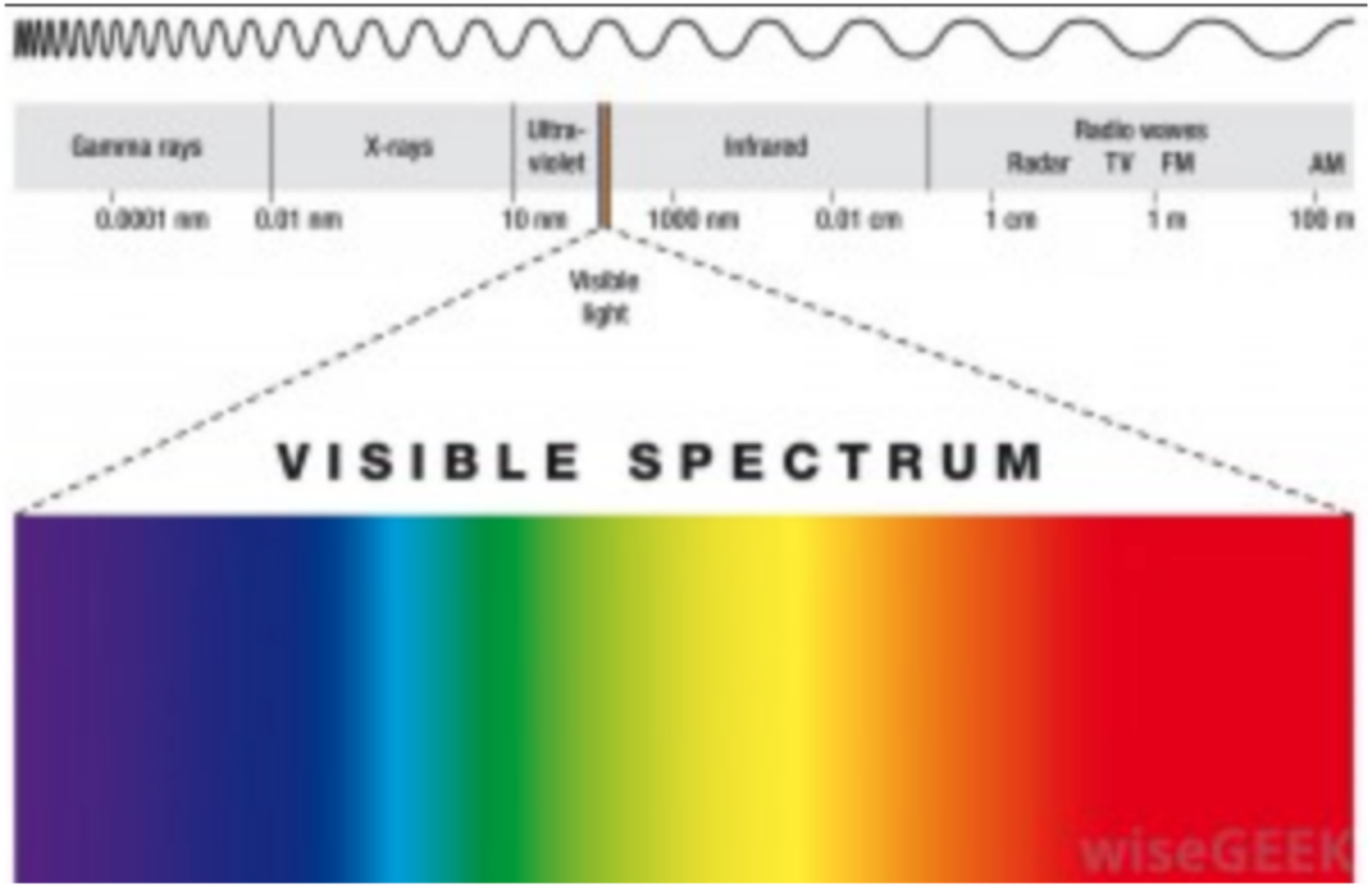
ELECTROMAGNETIC SPECTRUM

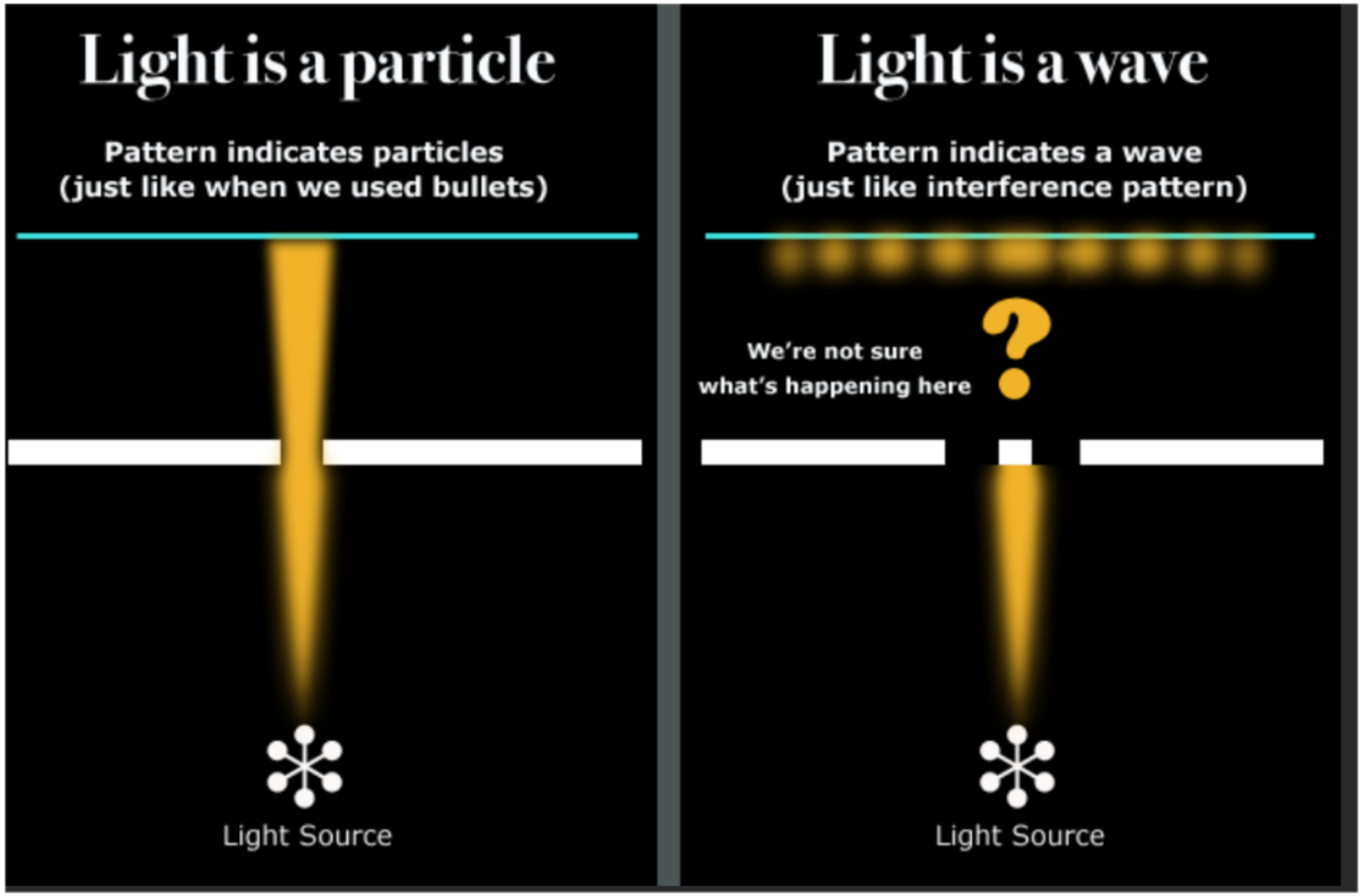


Types of Atomic & Molecular Transitions

γ-rays: nuclear
X-rays: core-level electrons
Ultraviolet (UV): valence electrons
Visible (Vis): valence electrons
Infrared (IR): molecular vibrations
Microwave: molecular roations; electron spin
Radio waves: nuclear spin

WAVE / FREQUENCY




Light is a particle
Pattern indicates particles
(just like when we used bullets)
Light Source
Light is a wave
Pattern indicates a wave
(just like interference pattern)
We're not sure
what's happening here
Light Source

PHOTONS

Photon Energy

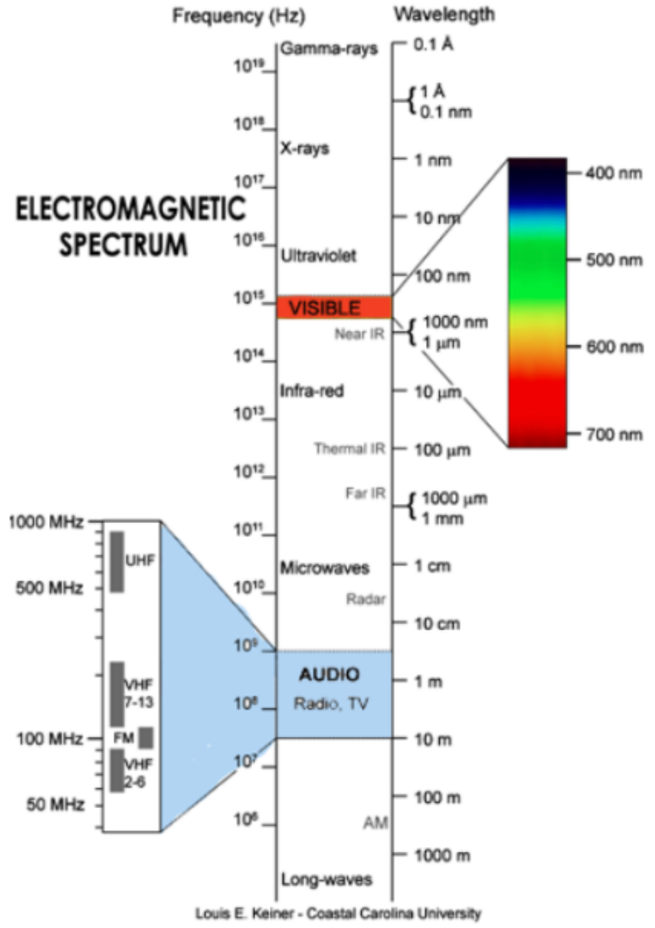
- **The energy of a photon is given by this equation:**

$$E = h\nu$$

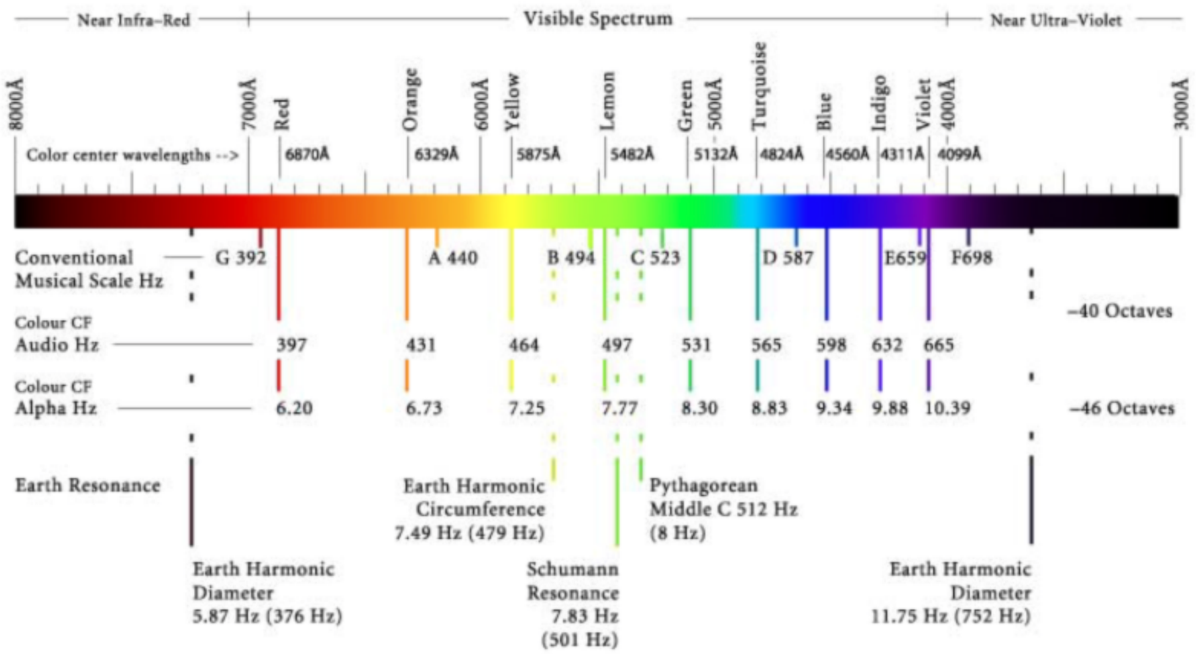
- **where** **h = 6.6262 x 10^{-34} J•s**
  v = frequency (Hz)

SOUND

LIGHT / SOUND


Frequency (Hz)
Wavelength
ELECTROMAGNETIC SPECTRUM
Gamma-rays
X-rays
Ultraviolet
VISIBLE
Near IR
Infra-red
Thermal IR
Far IR
Microwaves
Radar
AUDIO
Radio, TV
AM
Long-waves
0.1 Å
1 Å
0.1 nm
1 nm
10 nm
100 nm
1000 nm
1 µm
10 µm
100 µm
1000 µm
1 mm
1 cm
10 cm
1 m
10 m
100 m
1000 m
400 nm
500 nm
600 nm
700 nm
1000 MHz
500 MHz
100 MHz
50 MHz
UHF
VHF 7-13
FM
VHF 2-6
Louis E. Keiner - Coastal Carolina University

Light, Sound & Alpha Brain Wave Correspondences



Audio frequencies are 40 octaves down from the visible light spectrum. Alpha brain wave frequencies are 46 octaves down from the visible light spectrum. Light (color) is measured by its wavelength (in Ångstroms) and must be converted to frequency before finding a color's corresponding lower harmonic frequency.

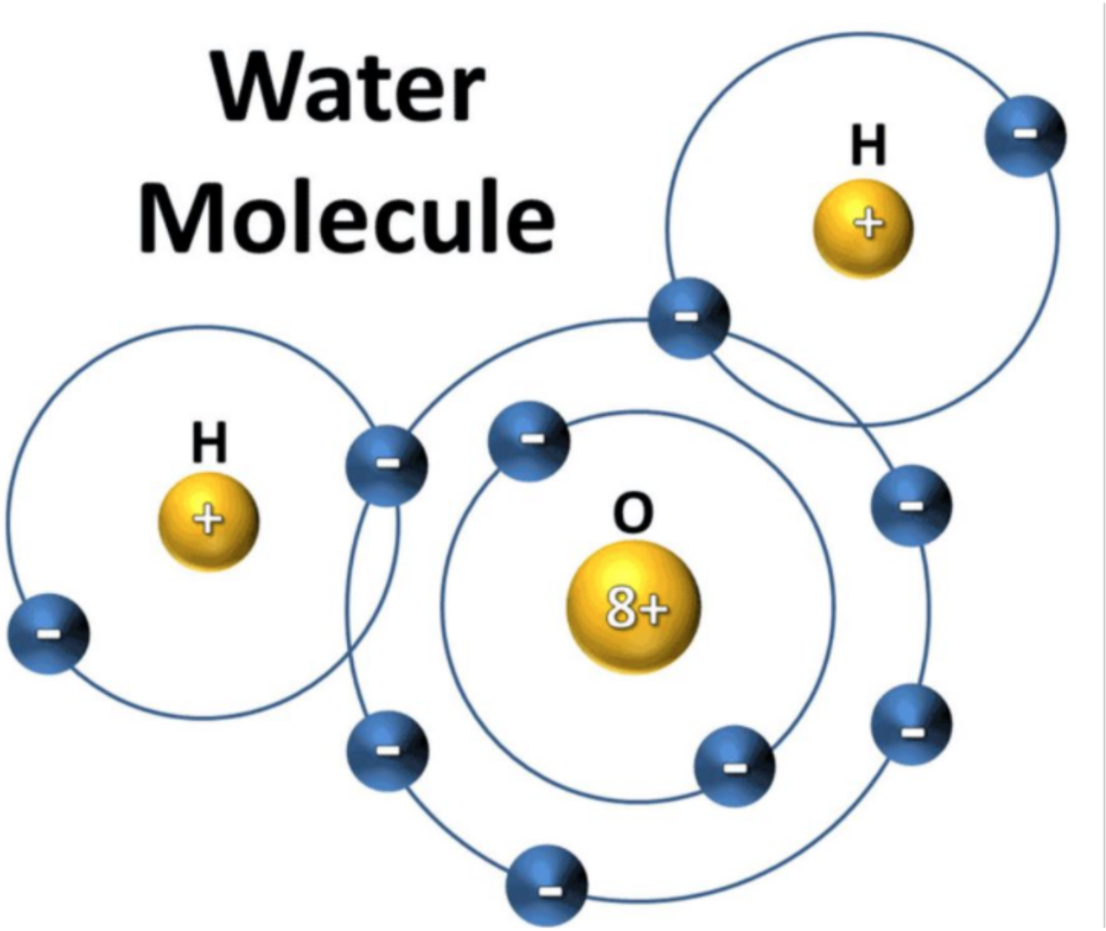

WATER

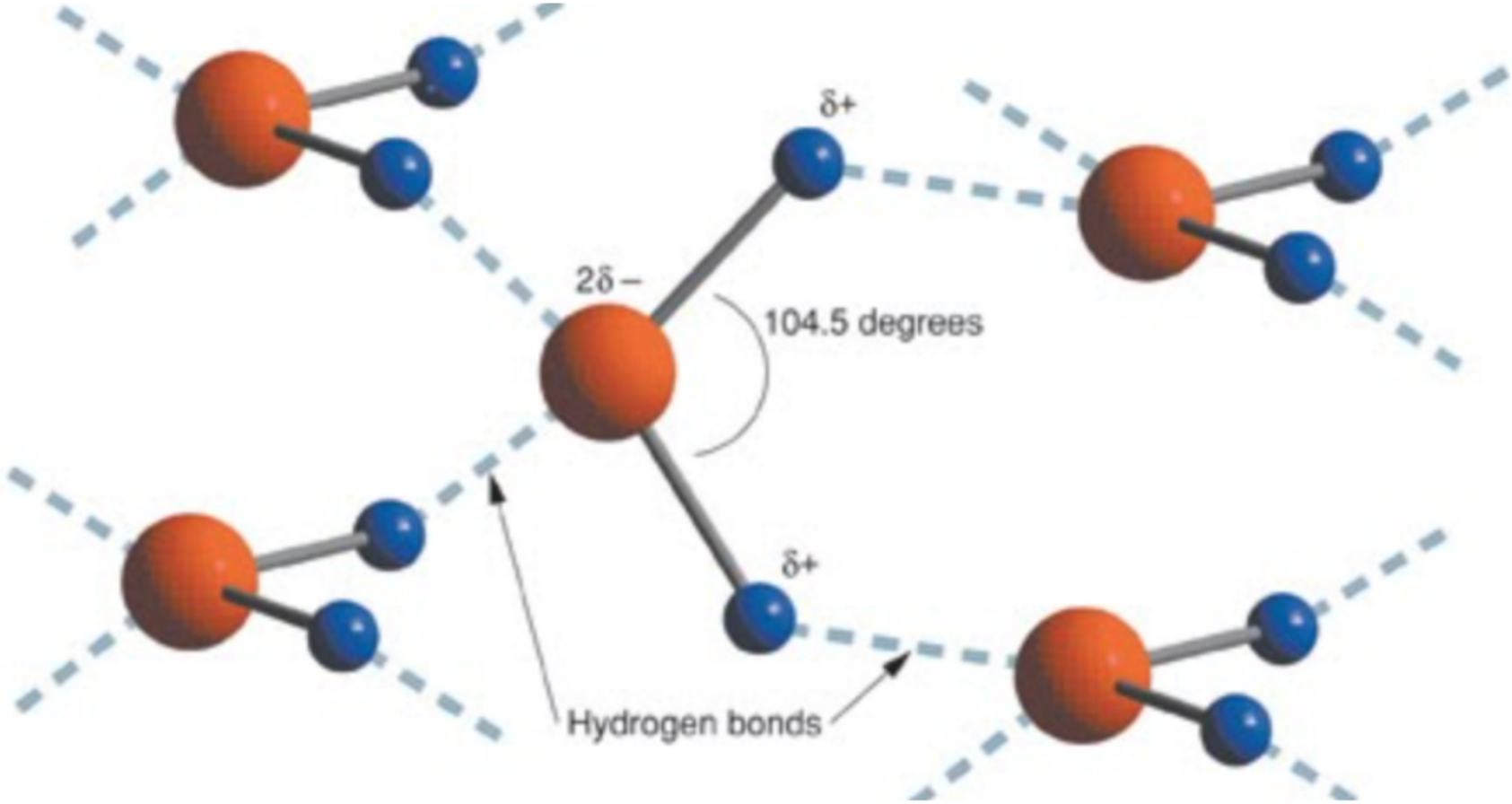
WATER

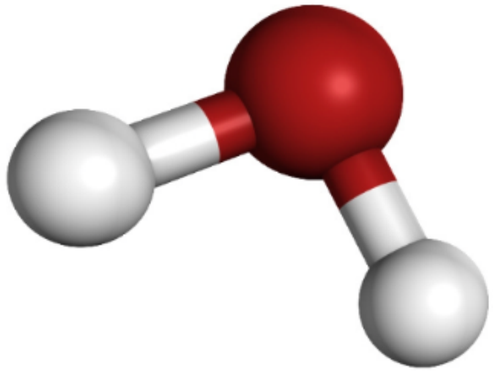
WATER PRECEDES LIFE: CRUCIAL TO LIFE

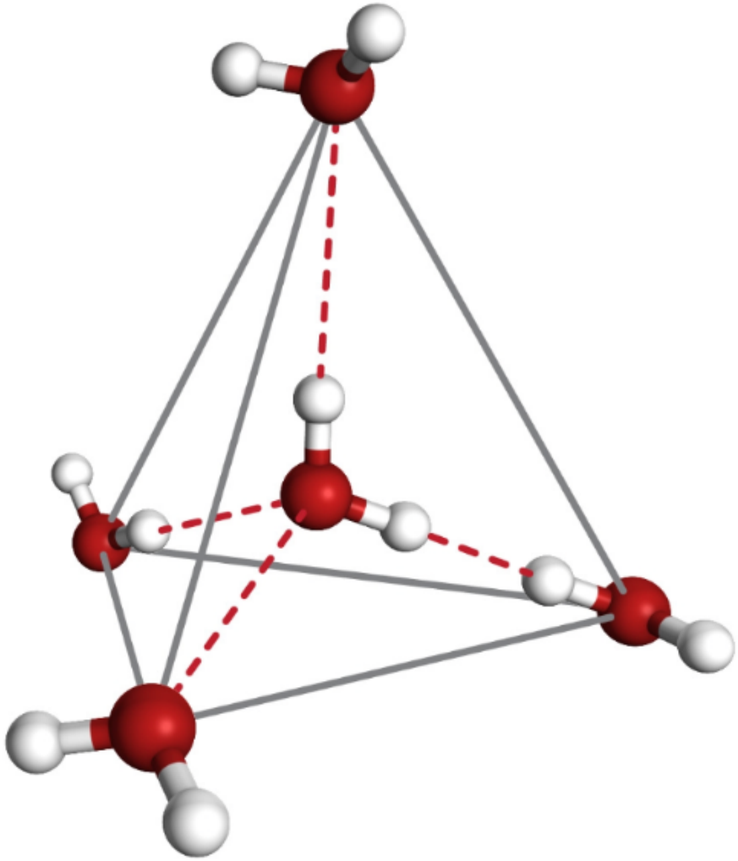
Animals are made mostly of water. When we are conceived and become an embryo, science tells us that we are 95% water.

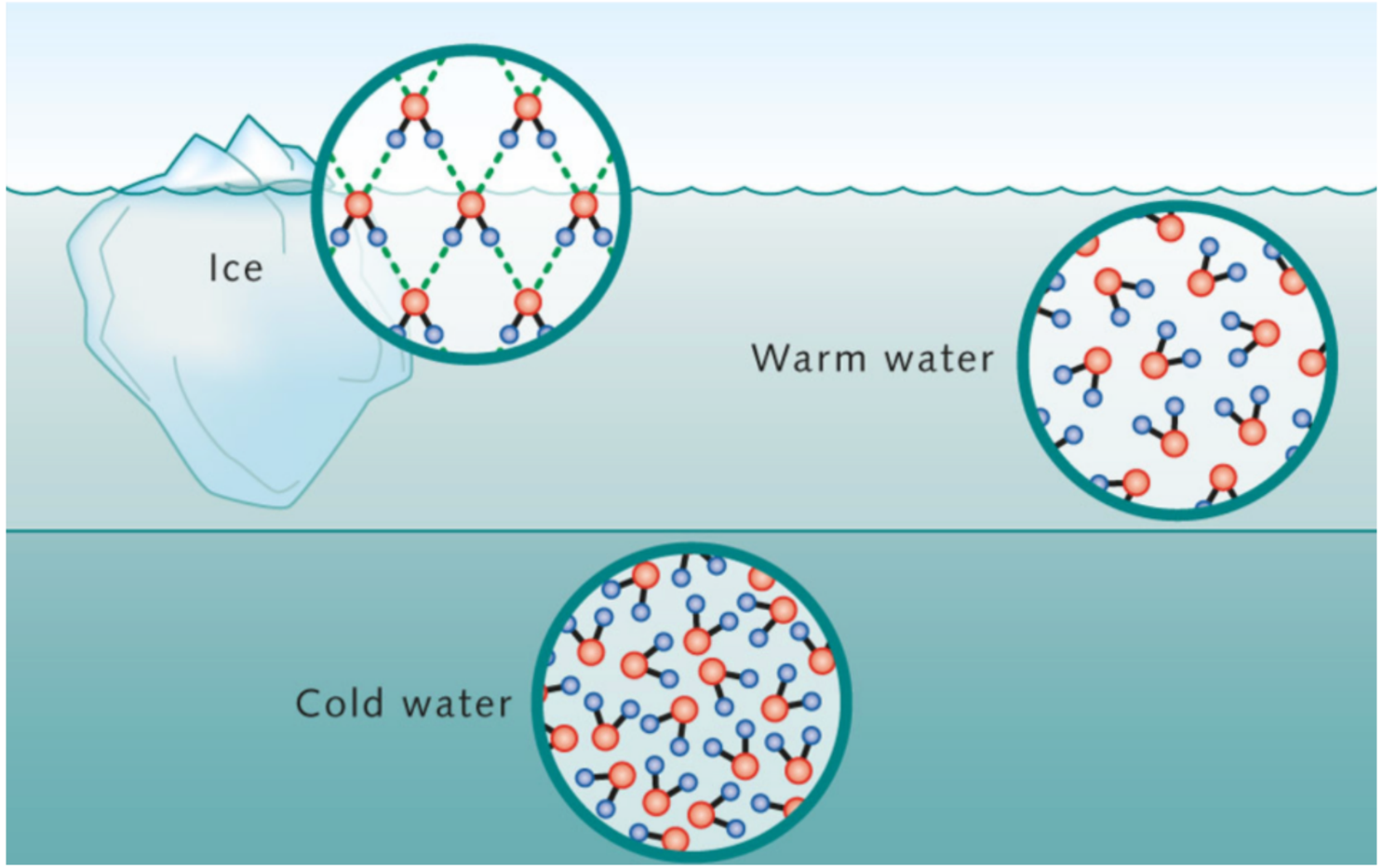
By the time we are born, we are between 60% and 70% water, roughly the same percentage covering the earth

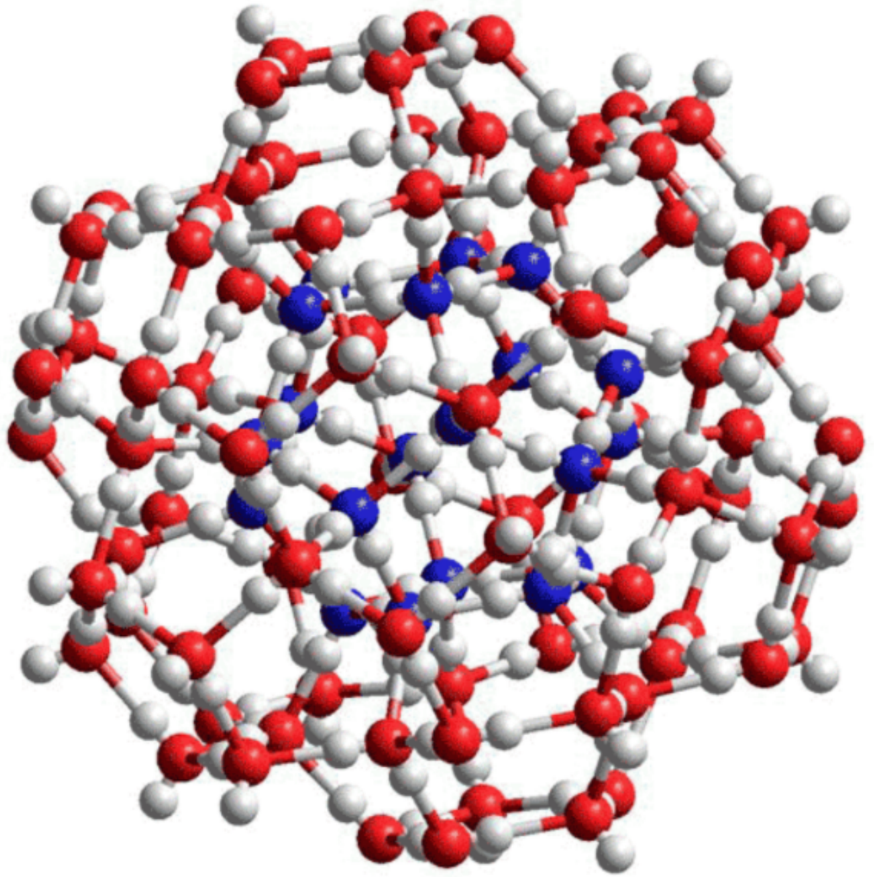

Water
Molecule
H
+
H
+
O
8+
-
-
-
-
-
-
-
-
-
-

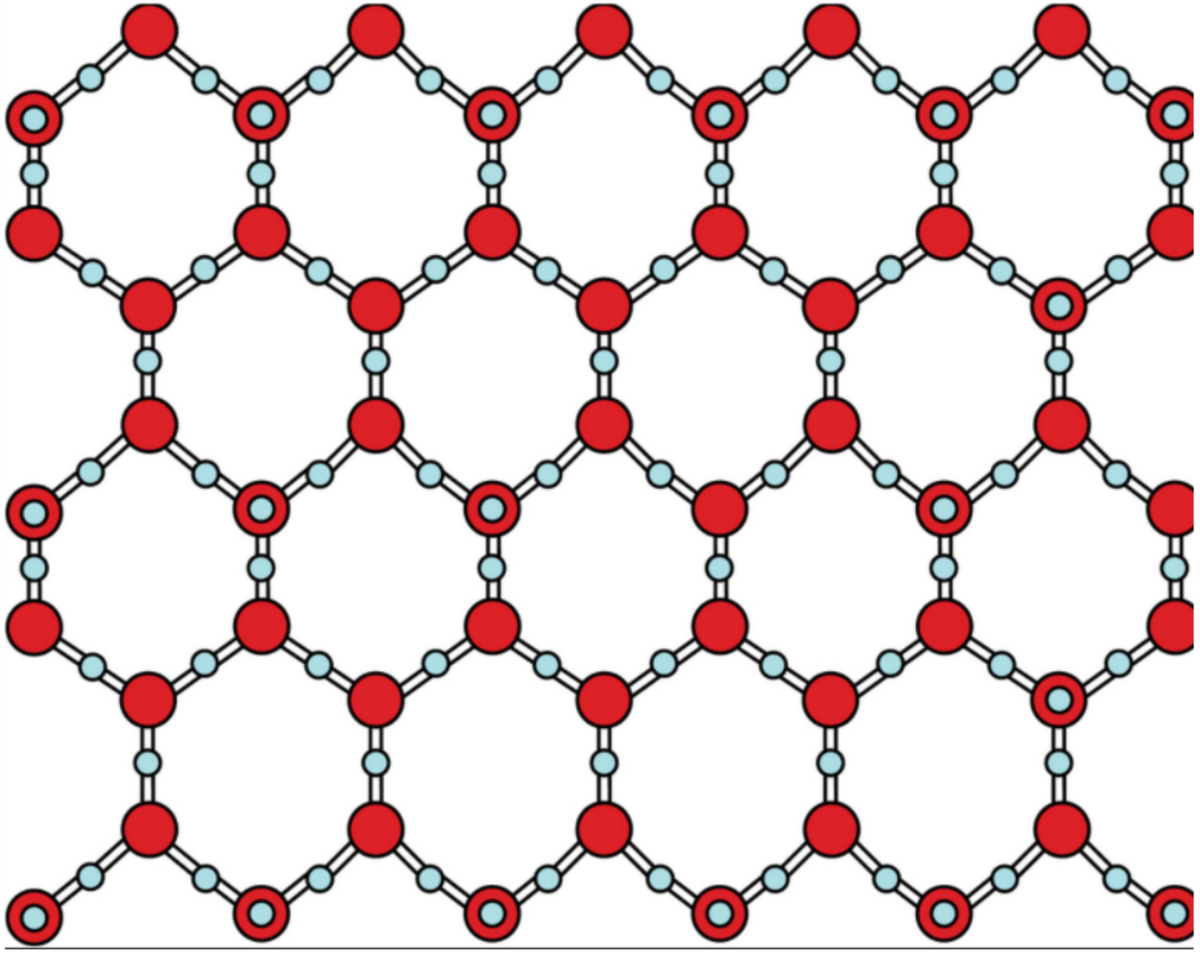

δ+
2δ –
104.5 degrees
δ+
Hydrogen bonds

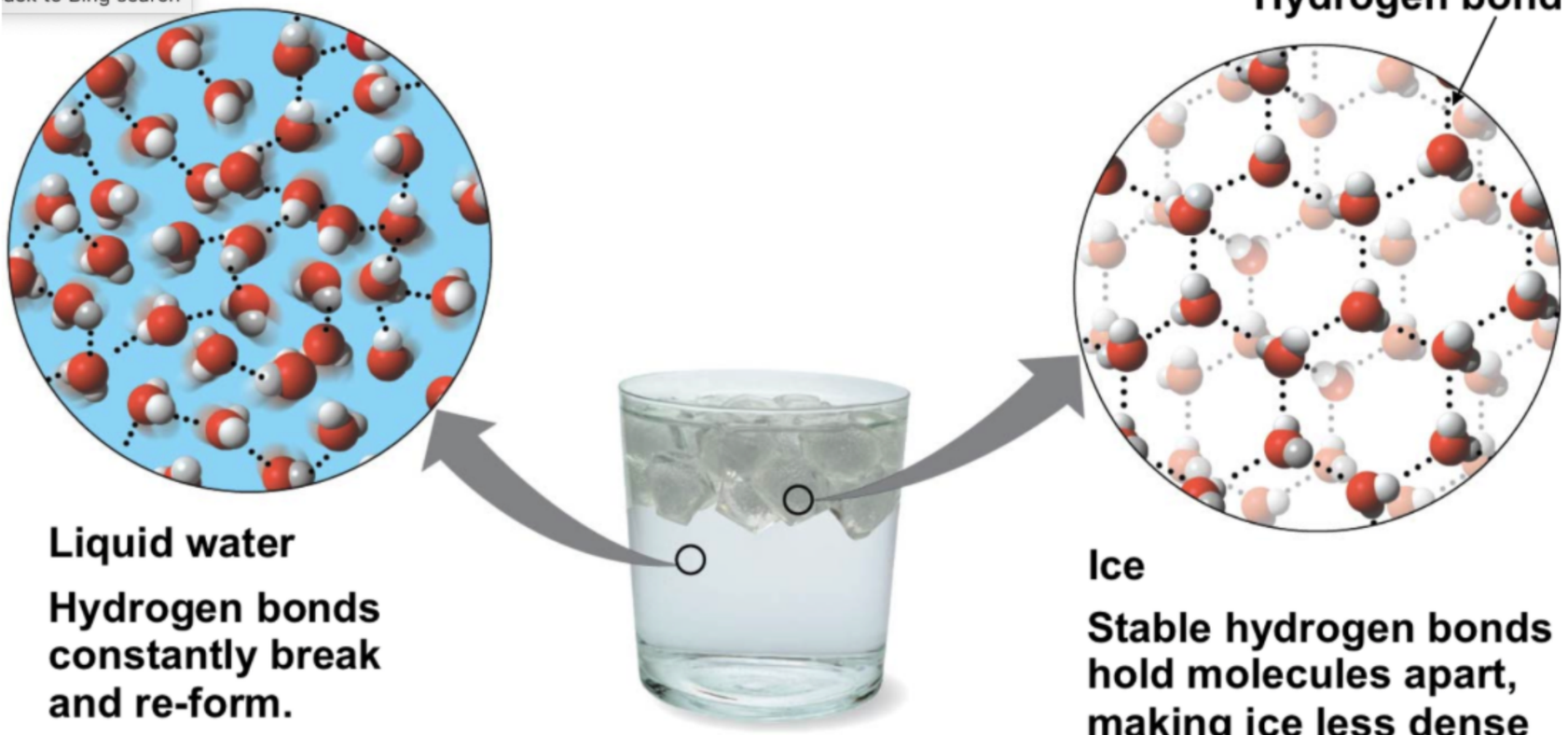





Ice
Warm water
Cold water








THANK YOU
WISDOM
TRUTH
ETERNAL
ANGEL
I LOVE YOU
PEACE
YOU FOOL
YOU MAKE ME SICK
EVIL
POLLUTED WATER
BEFORE PRAYER
POLLUTED WATER
AFTER PRAYER

- SLEEP
- REST
- RECREATION

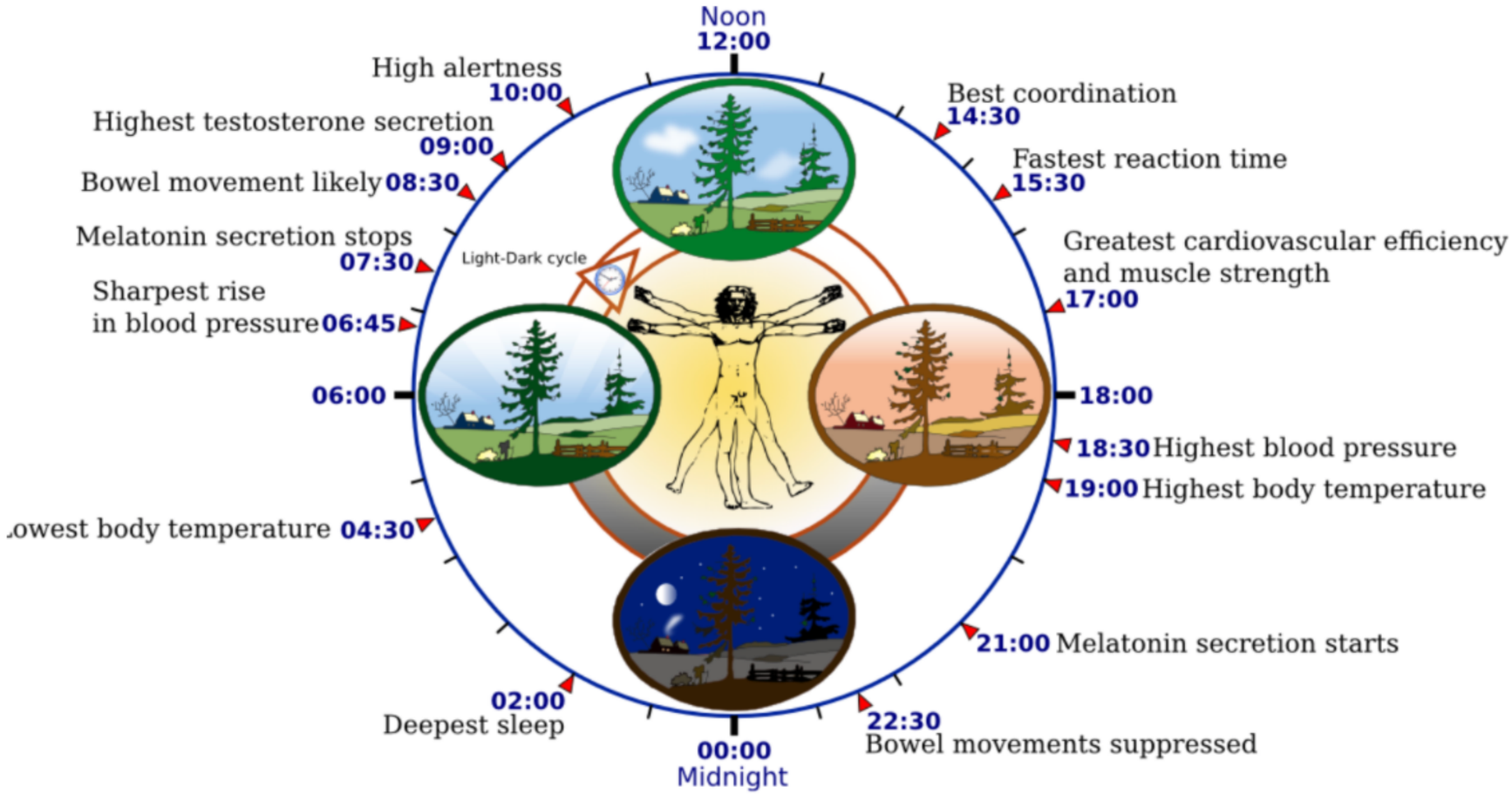
CHRONOBIOLOGY

Chronobiology is a field of biology that examines timing processes, including periodic (cyclic) phenomena in living organisms, such as their adaptation to solar- and lunar-related rhythms.

These cycles are known as biological rhythms

Study of variations of the timing and duration of biological activity in living organisms which occur for many essential biological processes.

BIOLOGICAL CLOCK




MOVEMENT

MOVEMENT

REQUIREMENT FOR LIFE

Definition of life: movement, growth (reproduction)

Adults: 'exercise prescription'

Children: play, sports

FOODS

As created:

- Organic, whole foods (unprocessed)
- Raw, not overcooked
- No additives, preservatives, colourings
- Minimally / not processed
- Predominantly plant based: vegetables, fruits (esp Berries), nuts, seeds, root vegetables
- 5Ps

Provide macronutrients:

- Calories (carbs)
- Protein (muscles, proteins)
- Fats (cell membranes, brain, hormones)


NUTRIENTS

NUTRIENTS

Plant based superfoods:

- High plant phenolics (antioxidant, anti-infection, anti-inflammatory, cell signalling molecules)

Minerals:

- We are made of the dust: structure

Vitamins:

- Enzyme cofactors

TOTAL PICTURE

Children' s Health Defense:

Social

Family

Education/schooling – 'raise up a child in the way'

Environment (home, external): EMR, chemicals

Communication

Foods

Medical interventions/pharmaceuticals

WHAT CAN WE DO?

Yourselves: your family, your home

We need your help: community, government

Thank you!

PROF ROBYN COSFORD

AUSTRALIA