



TDI ACADEMY
LEARNING FOR THE DIGITAL AGE



Lesson 5 – More Change Coming



3. Crystal-ball: technology and the future of insurance

So far we have looked at technology that has created new insurance business models or where it enables significant cost savings or customer experience improvements in the existing insurance value-chain.



In this section, we are going to look at a range of future technologies that have the seeds of destruction for insurance as we know it.



For the next generation of insurance professionals it will be a case of making lemonade when the world hands you lemons.



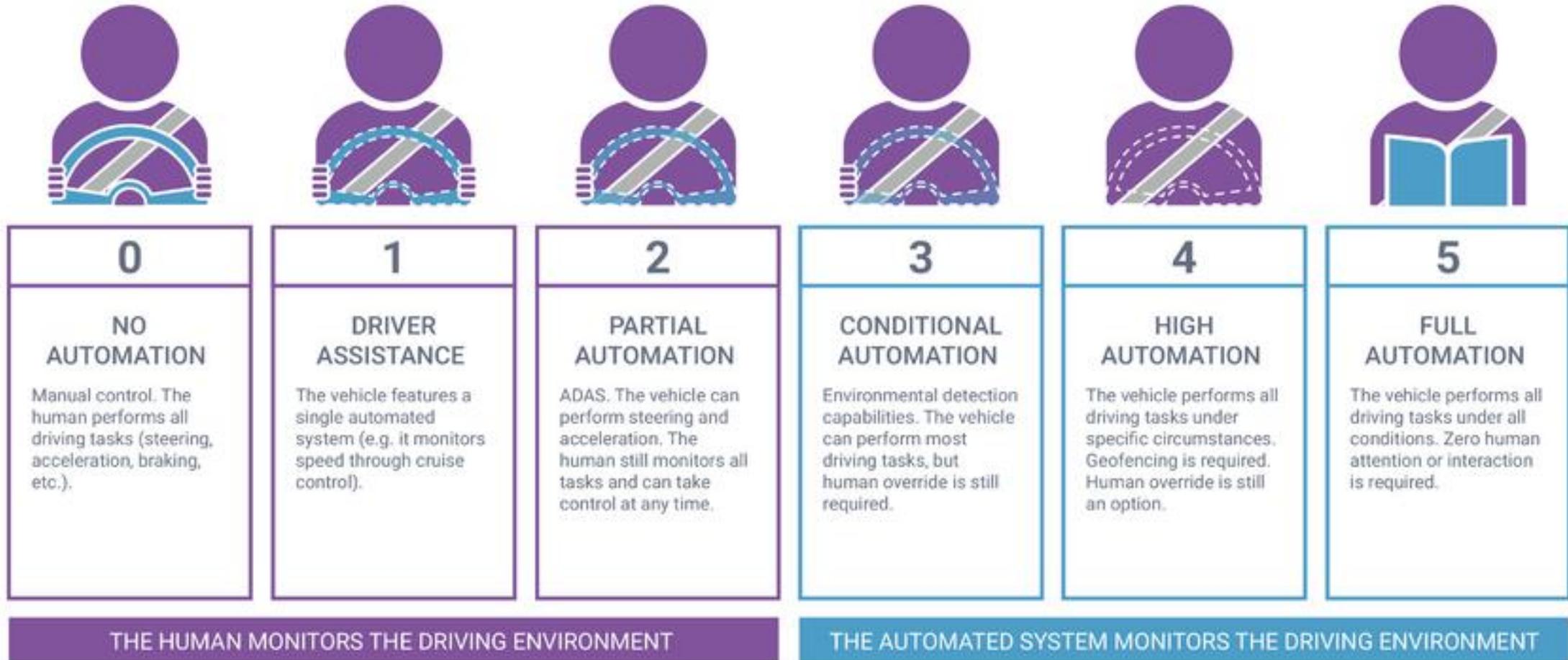
Overview – Section 3

- Examine the impact of Self-driving cars on Private Motor Insurance
- Examine the impact of Gene Editing on Life and Health Insurance
- What are the implications for Insurance as a result of Super Longevity?

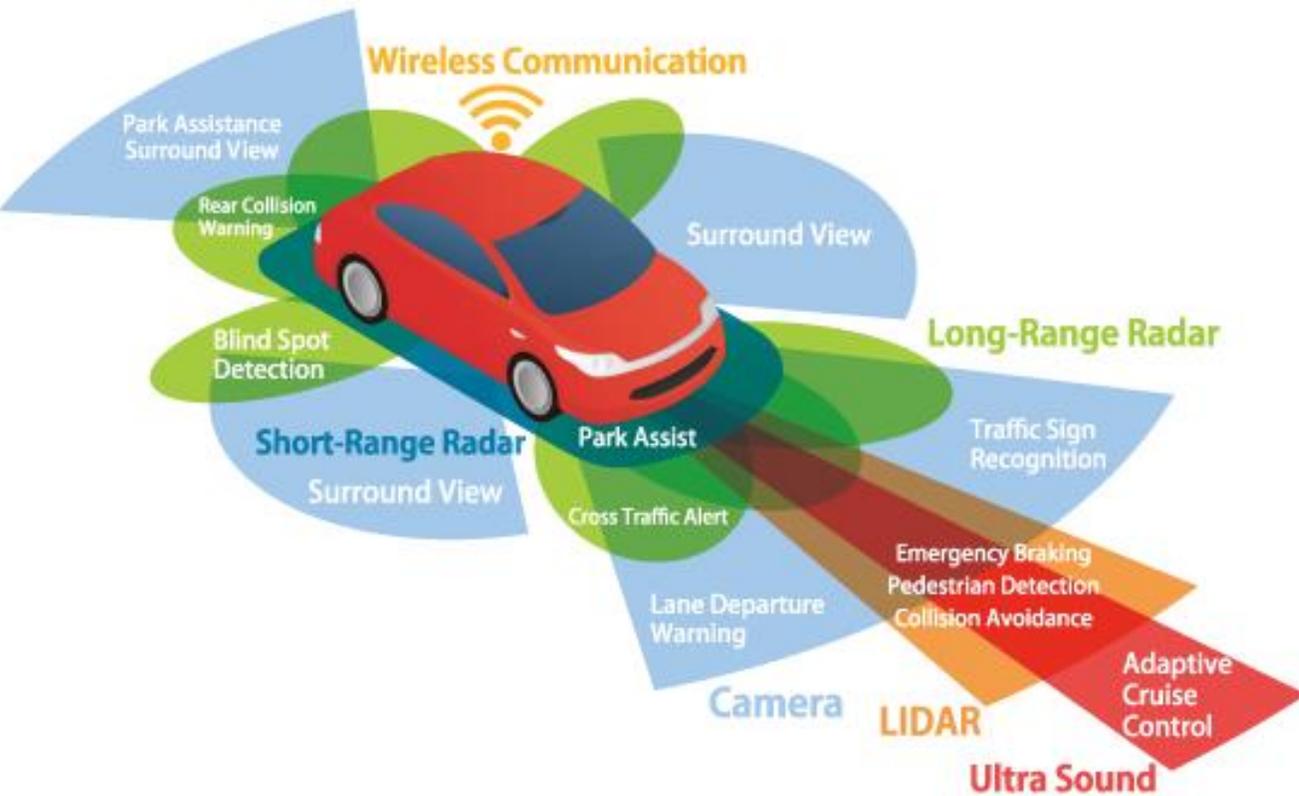


Self-driving cars – what is it?

LEVELS OF DRIVING AUTOMATION



Self-driving cars – How it works?



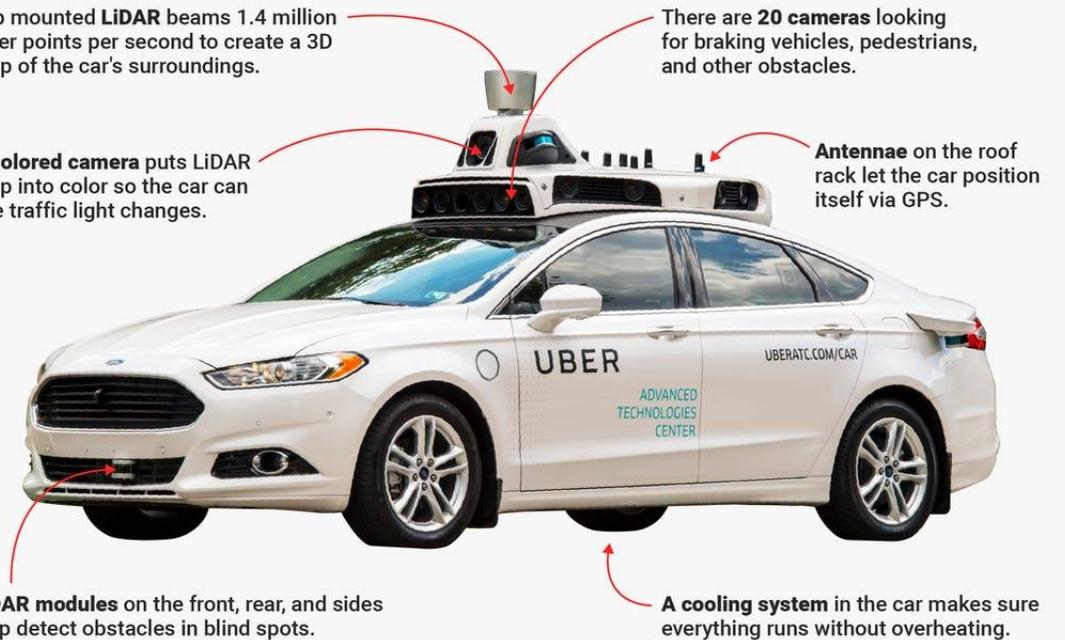
HOW UBER'S FIRST SELF-DRIVING CAR WORKS

Top mounted LiDAR beams 1.4 million laser points per second to create a 3D map of the car's surroundings.

There are 20 cameras looking for braking vehicles, pedestrians, and other obstacles.

A colored camera puts LiDAR map into color so the car can see traffic light changes.

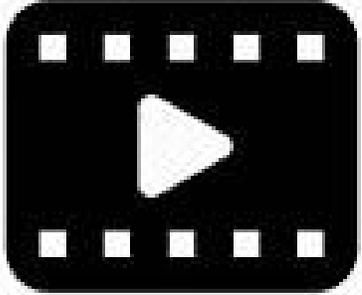
Antennae on the roof rack let the car position itself via GPS.



SOURCE: Uber

BUSINESS INSIDER





Duration: 12 mins

Self Driving Car - Automation and the Future of Transportation

Matt Ferrell, Undecided (2019)

TDI viewing Tip; This video gives some background on self-driving technology and a personal insight into the progress of one of the pioneers – Waymo. Well worth the time especially if you have not experienced a ride in a self-driving car. If you are time constrained view 4:01 – 9:05.

[video link](#)



Possible discussion points for Weekly Clinic / Things to think about

- Many think the technology for full autonomy is way into the future. What do you think?
- Self-driving cars are part of a mobility revolution in society. What opportunities do you think that revolution will create for insurance?
- Waymo's focus is making people comfortable with self-driving cars. What do you think will drive adoption of this technology?



Self-driving cars – insurance impacts

Self-driving car – Impact on insurance



Insurance and the future of mobility

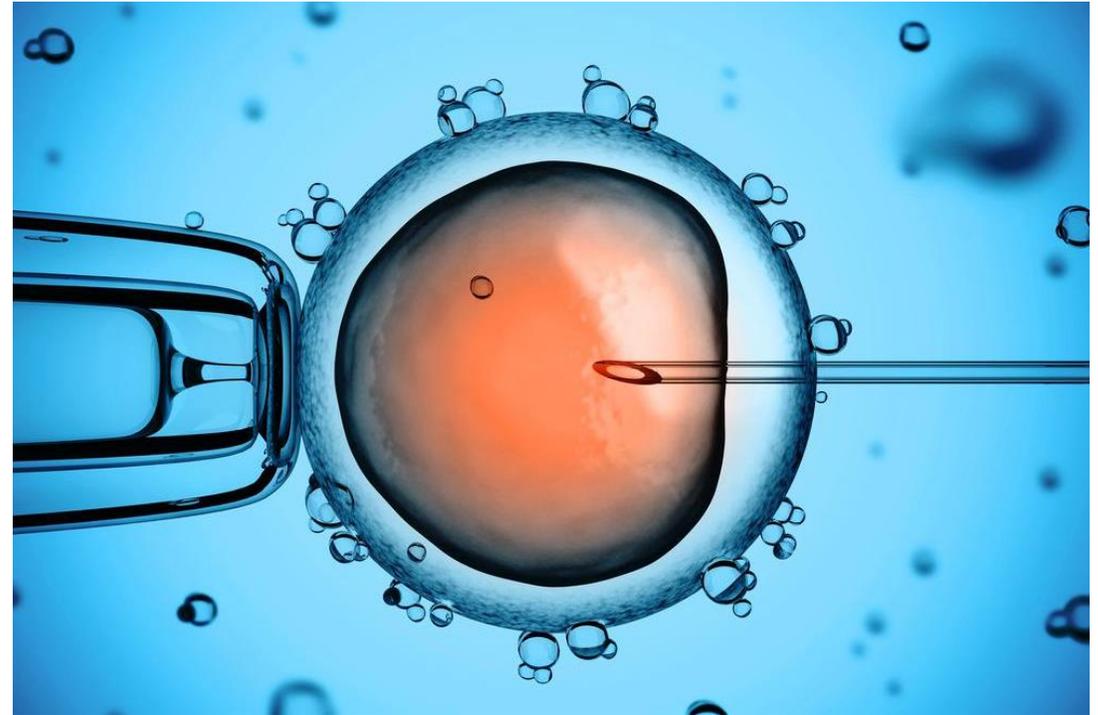
	Future state	Stakeholder model	Stakeholder	Primary coverages
Driver-driven	1 Personally owned driver-driven	Traditional personal auto insurance	Vehicle owner (individual)	Driver liability, collision, comprehensive
		Fleet (e.g., yellow cab, limo)	Vehicle owner (commercial)	Driver liability, collision, comprehensive
		Owner/operator (e.g., black car)	Vehicle owner (individual)	Driver liability, collision, comprehensive
	2 Shared driver-driven	Rental	Vehicle owner (commercial) Vehicle driver (individual)	Comprehensive, liability (e.g., road worthiness) Driver liability, collision
Autonomous	3 Personally owned autonomous	Personal autonomous vehicle insurance	Vehicle owner (individual) AV system manufacturer/ OS provider (commercial)	Comprehensive, liability (e.g., road worthiness) AV product liability
	4 Shared autonomous	Commercial autonomous vehicle insurance	Vehicle owner (commercial) AV system manufacturer/ OS provider (commercial)	Comprehensive, liability (e.g., road worthiness) AV product liability

Graphic: Deloitte University Press | DUPress.com

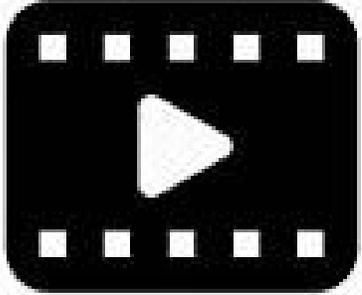


Gene editing – What is it?

- Ability to identify and modify gene sequences within the human genome and understand the impact on the individual from those modifications
- Can be used to eliminate genetic diseases such as sickle-cell anaemia, Tay Sachs disease (89% of genetic based disorders)
- Apart from eliminating diseases it becomes possible to “enhance” the human genome



Gene editing: CRISPR explained



Duration: 2 mins

CRISPR Explained

Mayo Clinic

TDI viewing Tip;

Slightly technical, but useful to understand how the technology works.

[Video link](#)



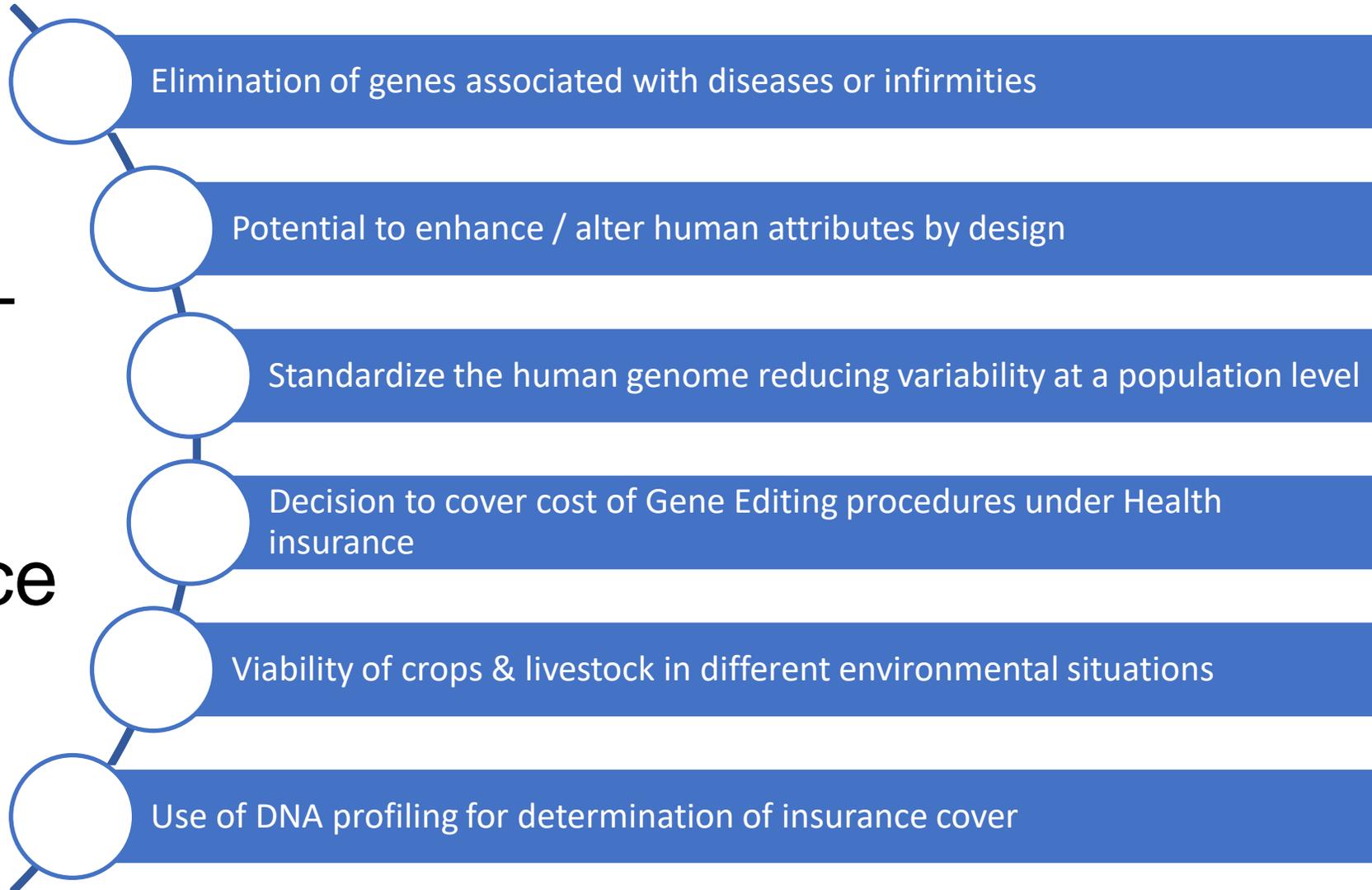
Possible discussion points for Weekly Clinic / Things to think about

- The gene editing process has an inherent risk that errors could be introduced, and these may not become apparent until long after the procedure. What stance should insurers take on providing life insurance cover for individuals undergoing such procedures?
- In the case of curing a 100% fatal genetic disorder using Gene Editing, are we potentially substituting a known risk for an unknown risk?
- Would medical liability insurance cover specialists who provide these kinds of services for patients? Are there historical medical breakthroughs we can examine to see how insurance proceeded to eventually grant coverage?

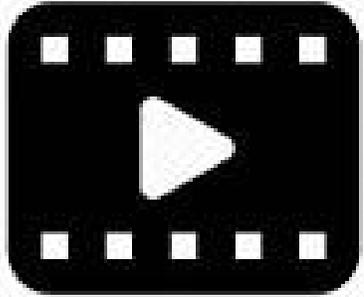


Gene editing: Insurance implications

Gene editing – Impact on insurance



Insurance issues in the face of new medical technology



Duration: 3 mins

Insurance Issues Related to Patient Treatments Using CRISPR Gene Editing ChristianaCare

TDI viewing Tip;

Quite a short video and introduces only a couple of the issues for Health Insurers to consider.



[Video link](#)

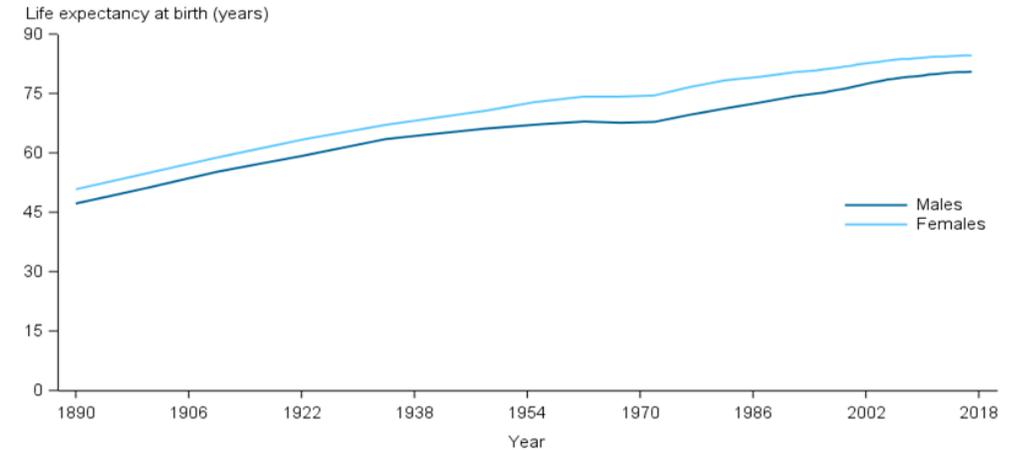
Possible discussion points for Weekly Clinic / Things to think about

- Do you agree with the analogy between the introduction of anaesthetics and the advent of Gene Editing? Is there a fundamental difference between saving a life and altering future generations?
- Come up with your own list of **insurance** (not ethical) implications from the use of this technology. Be prepared to discuss in the weekly clinic.

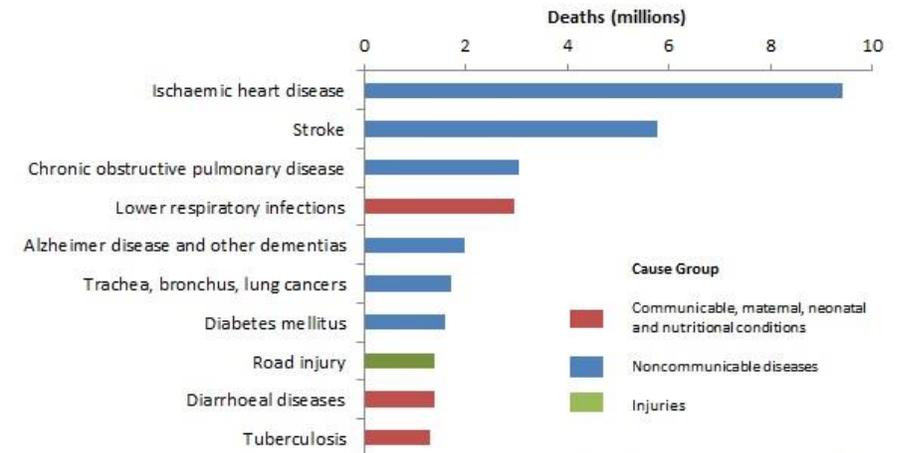


Super longevity – What is it?

- In many nations we have seen ever increasing life expectancy since the beginning of the twentieth century
- Many cancers which used to be fatal are now manageable
- Top 10 causes of death from the 1900's used to be dominated by infectious diseases where we now see non-infectious diseases predominate
- Global Life expectancy at birth is expected to increase by average of 8 years from 2015 to 2050



Top 10 global causes of deaths, 2016



Source: Global Health Estimates 2016: Deaths by Cause, Age, Sex, by Country and by Region, 2000-2016. Geneva, World Health Organization, 2018.



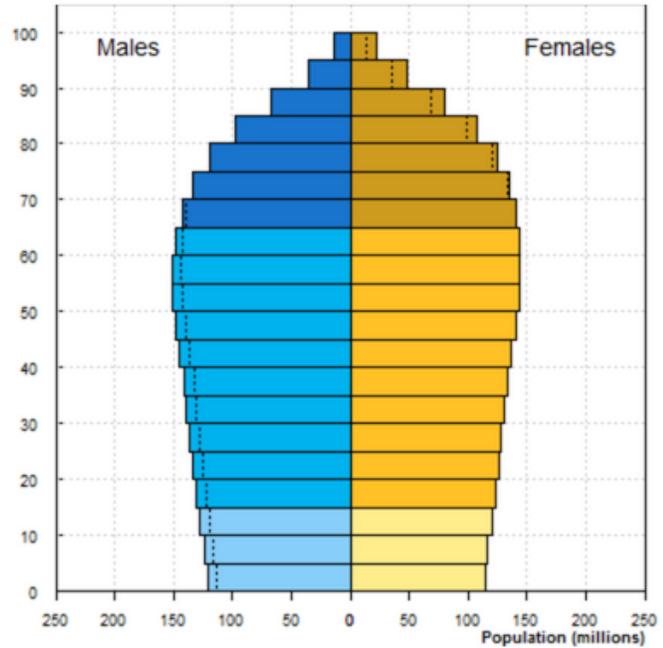
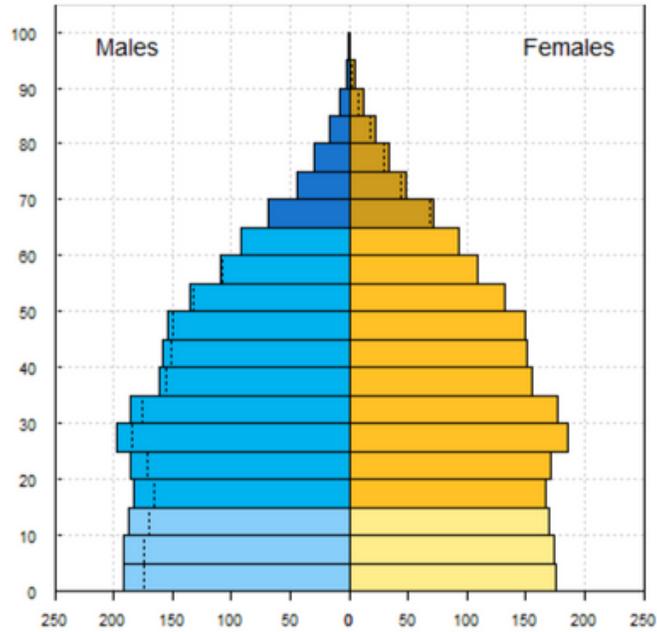
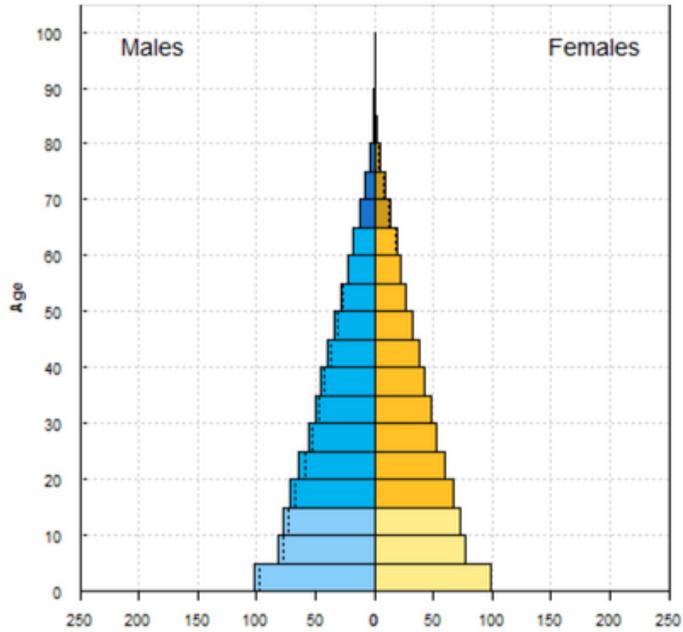
Super longevity – Demographic impact

Changes in age pyramids in Asia

1950

2017

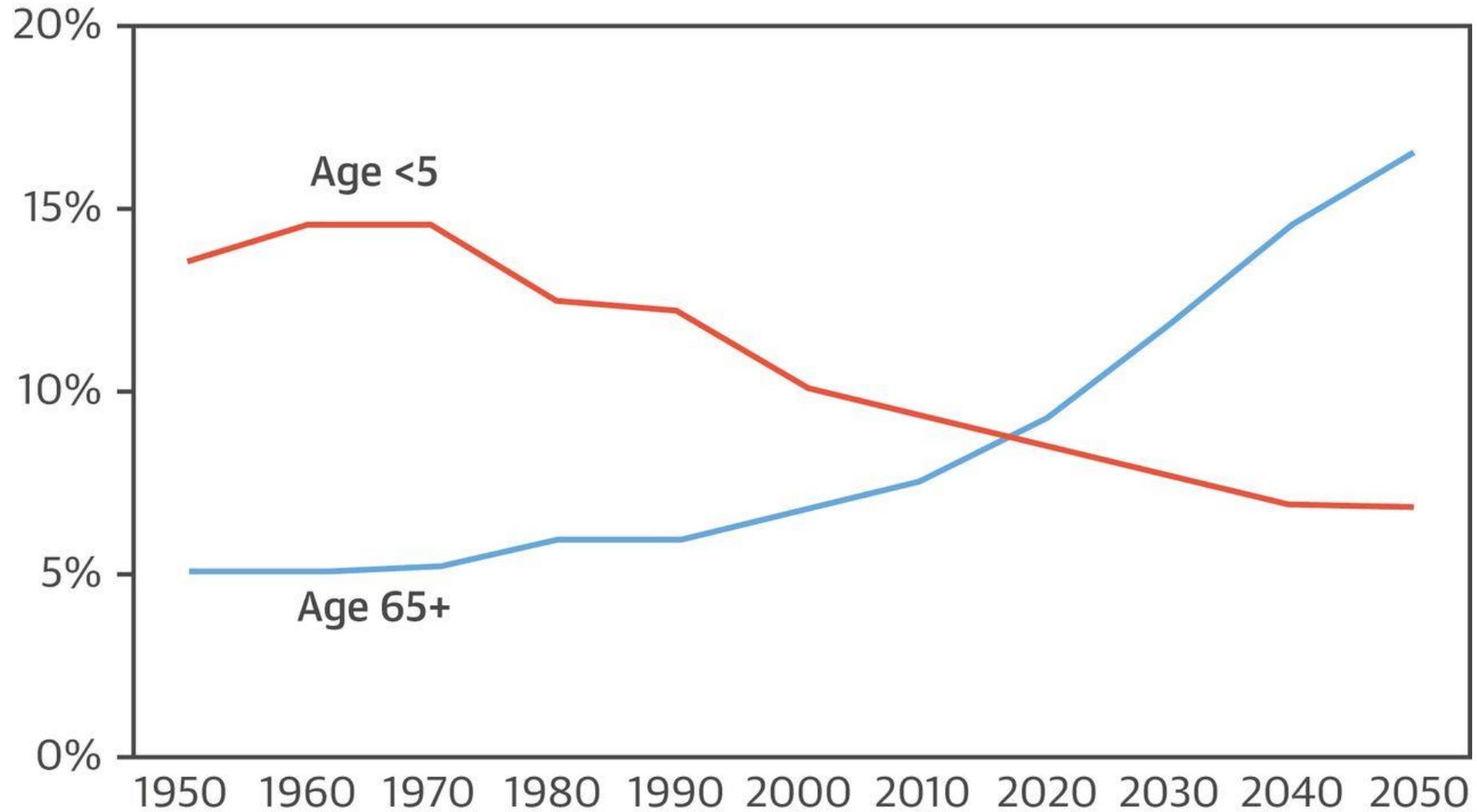
2100



Source: United Nations Department of Economic and Social Affairs, Population Division (2017). World Population Prospects: The 2017 Revision.

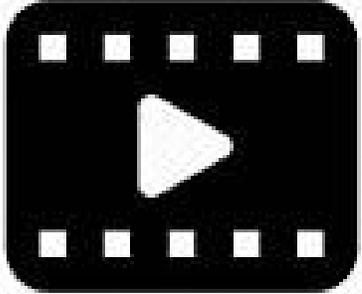


Super longevity – Demographic impact



Source: <http://www.onlinejacc.org/content/69/24/3002>





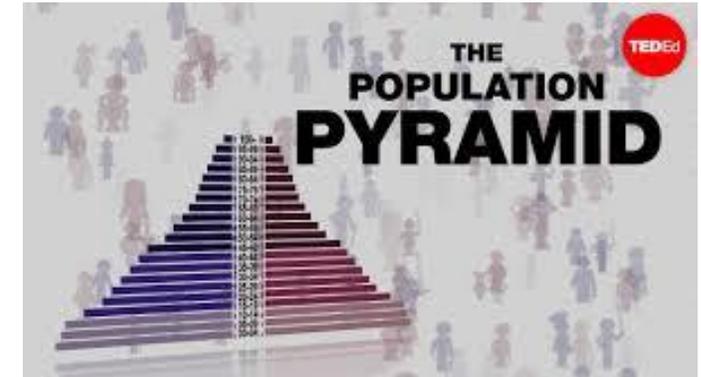
Duration: 5 mins

Population Pyramids: Powerful predictors of the future

Kim Preshoff, TED Ed lesson

TDI viewing Tip; This is an excellent primer into the drivers of population age demographics.

[video link](#)



Discussion points for Weekly Clinic / Things to think about

- Outline the main drivers of population aging changes since the 1950's for your country.
- Life & Pension insurance has been predicated on the age pyramid. What strategies can the industry pursue as the over 65 segment becomes the fastest growing population segment?
- What kinds of products should the insurance industry be promoting in the light of these demographic changes?



Super longevity – Implications on insurance

