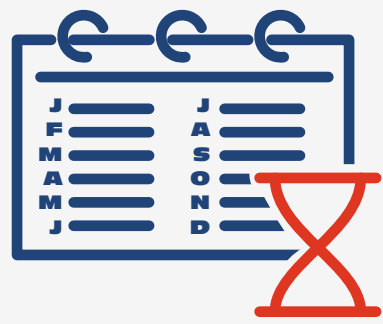


# The science of ageing

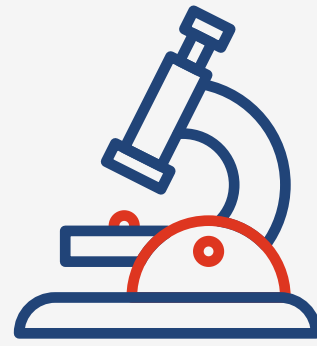
## What is ageing?

Ageing is a normal consequence of biological processes gradually getting slower and less efficient over time. When processes get very slow or stop working entirely we can develop age-related illnesses.



## Measuring ageing

There are biological signs that can be measured over time to determine a person's rate of ageing (e.g. certain molecules in blood). Studying these biological markers alongside other measurements and symptoms may help us understand better how well someone is ageing.



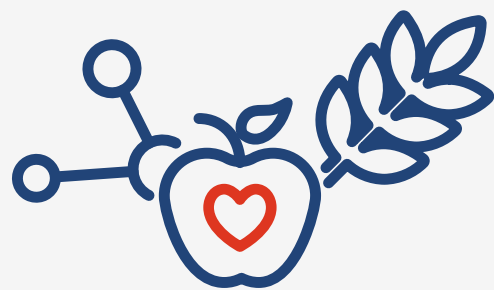
## Biological processes underlying ageing

There are nine identified 'hallmarks of ageing' which occur in the ageing body. Each of these processes have been shown to directly influence the speed of ageing in experiments.



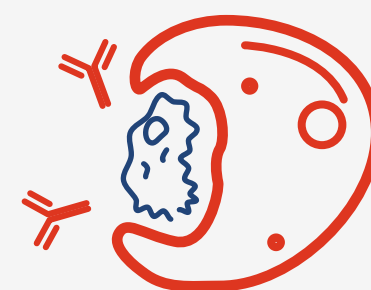
## The hallmarks of ageing include:

### Reduced ability to sense nutrients



The **body's response to nutrients** and cell growth is finely tuned; the wrong amounts or poor response to nutrients can directly affect ageing. **The way our body senses nutrients becomes less well controlled with age**, which can lead to increased risk of age-related diseases.

### Reduced cell growth and replacement



When **cells in our body can no longer divide and grow, they become 'senescent'** and are removed by the immune system. **With age, our immune system is less efficient** and senescent cells accumulate and can cause damage throughout the body.



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