

What is epidemiology?

Epidemiology is the study of how often diseases occur in different groups of people and why. It is often referred to as population research.

To help understand why certain people suffer from a condition whereas others are unaffected, it can be useful to analyse data on large numbers of people within a geographical area – be it a country, state or other area.

Researchers look for correlations to find factors that might indicate the causes of illness. In vision research, epidemiological information is used to plan and evaluate strategies, firstly to prevent vision loss, and furthermore to guide the management of already diagnosed patients. In the past, large population studies have been used to prove the dangers of smoking and poor diet on eye health.

There have been a number of large Australian epidemiological studies of eye health.

Most recently, the National Eye Health Survey (NEHS) was led by the Centre for Eye Research Australia in 2016. This nationwide survey looked at the prevalence of eye disease and vision loss in 4,836 volunteers.

The full report can be found [here](#), with the main findings including:

- In 2016, more than 453,000 Australians were living with vision impairment or blindness.
- The prevalence of vision impairment was three times higher in Indigenous Australians (13.60%) compared to non-Indigenous Australians (4.57%)
- Cataract was the main cause of blindness in Indigenous Australians (40%).
- Age-related macular degeneration was the leading cause of blindness in non-Indigenous Australians (71.42%).

Given the rare nature of inherited retinal diseases (IRDs), the survey did not capture information on the prevalence of these conditions in Australia.

Future research is planned to gather a better understanding of how many Australians are living with an IRD, but we do know that IRDs are the leading cause of blindness in working aged adults.⁽¹⁾ It is currently estimated that around 19,000 people are living with an IRD, which is ~ 1 in 1380 people.⁽²⁾ IRDs are currently the leading cause of blindness in working age adults and the second leading cause of blindness in children in Australia (following cerebral visual impairment).⁽¹⁾

References

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(2)Hanany M, Rivolta C, Sharon D. Worldwide carrier frequency and genetic prevalence of autosomal recessive inherited retinal diseases. *Proc Natl Acad Sci U S A.* Feb 4 2020;117(5):2710-2716. doi:10.1073/pnas.1913179117

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