

# Is it your waistline or your genes that predispose you to heart disease?

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Heart disease is widely attributed to lifestyle factors such as lack of physical exercise, smoking and unhealthy weight and diet but the onset of cardiovascular disease can also come down to genetics.

Dr Joanne Lind from the School of Medicine at the University of Western Sydney has been awarded a Peter Doherty National Health and Medical Research Council Fellowship grant to conduct a new four year study into the genes that lead to an increased risk of heart disease.

Heart disease is one of the biggest causes of death in Australia and about 3.5 million Aussies have a long-term cardiovascular condition. But why are some people more likely to develop heart disease than others and what has sex got to do with it?

"Our sex hormones can affect how our genes change and develop and how receptive they are to conditions which lead to cardiovascular disease," Dr Lind says.

"This may explain why pre-menopausal women are at a lower risk of developing heart disease than men of a similar age - the hormone 'estrogen' may help to protect them - while testosterone levels in male patients may also have adverse effects." This is the puzzle Dr Lind will try to piece together.

So, the more sex hormones you have the better protected against heart disease you are? Dr Lind says the body is much more complex than that.

"Understanding the genetic basis of cardiovascular disease can help health professionals to alleviate the risk and slow down the progression of the disease," Dr Lind says.

There are at least eight genes known to cause high blood pressure and a number of genes which are known to cause high cholesterol levels - both of which lead to an increased risk of heart disease.

The study will identify how different physical symptoms of an individual's 'heart health' are altered by DNA variations and hormone levels. This will be used to discover which symptoms of the disease are effected by genes and how they can be manipulated to curb the disease.

Dr Lind is optimistic that this genetic study will lay the groundwork required to develop new treatments that can help prevent the onset and development of many cardiovascular diseases.

Source: University of Western Sydney

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