

Heart health



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During the time it takes to read this brief article, ischaemic heart disease, in its various forms, will claim the lives of about 50 people around the world. This interrelated constellation of conditions – including myocardial infarction, atrial fibrillation and cardiac arrest – account for more deaths globally than any other cause (see page S3).

The seeds of heart disease are often apparent early in life – or even before birth (S4). An inherited form of high cholesterol, for instance, is linked to a 10- to 20-fold increased risk of coronary artery disease – blockages of the arteries that supply blood to the heart. By studying such conditions, researchers hope to gain insights into how to better prevent and treat heart disease in adults.

And as scientists dive deeper into the genetic roots of heart disease, they are finding out just how complex that story is. The study of the origins of heart disease has given rise to ‘polygenic risk scores’ that assess, with unprecedented precision, the chances that an individual will develop heart disease (S6).

The science of heart health focuses on several related biological phenomena, including inflammation (S8), cholesterol level (S12) and a lingering form of immune response that tends to exacerbate the risk of heart disease later in life (S10). Given the centrality of the heart to human health, it’s no surprise that the COVID-19 pandemic – by far the biggest medical story of the past year – has a strong connection to heart disease (S14).

One hopeful strand of research involves the use of stem cells – or the molecules secreted by those cells – to enable a damaged heart to repair itself (S16).

For all these aspects of heart health, researchers need to improve their understanding of how women are affected differently to men. In particular, scientists need to broaden their investigations beyond the influences of female hormones (S18).

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Herb Brody

Chief supplements editor

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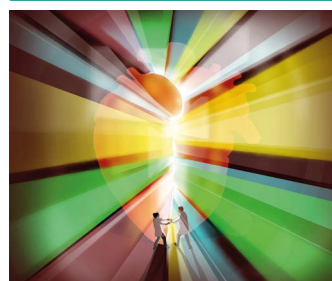
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**On the cover**

By discovering more about the heart, scientists hope to help those with heart disease. Credit: Sam Falconer

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