

Sex hormone protects women but hurts men

by ROBIN McKIE, Science Correspondent

A HORMONE responsible for the sexual development of women has been linked to heart disease — in men. Bizarrely, the hormone, oestrogen, is thought to protect women against such disease.

The finding results from work by several American research teams and follows original observations by Dr Gerald Phillips of Columbia University, New York. He noticed that among his patients there were several young male heart attack victims who had developed female attributes.

One had rounded hips and breast tissue and had lost his sex drive three years earlier. Others were discovered to shave only once or twice a week. Yet their blood samples did not lack the male sex hormone, testosterone, Dr Phillips found. However, they did have significantly higher than normal levels of oestrogen.

This hormone is produced in a woman's ovaries and regulates her menstrual cycle, promotes breast development and controls her sexual behaviour. It has three main forms. One of these, oestradiol, is also found in tiny amounts in men and is the type linked with heart disease.

When the oestradiol link was first suggested by Dr Phillips several years ago, most medical researchers dismissed the idea. It is still commonly assumed that women have fewer heart attacks than men because of high oestrogen levels in their bodies. Indeed women who have had their ovaries removed suffer increased risk of heart disease — unless they take oestrogens.

However, in the most recent issue of the US research journal *Science*, several research groups present evidence which supports Dr Phillips's theory.

In one study, researchers of the Framingham Heart Study of Massachusetts compared elderly men with heart disease with those who were free from illness. Even though they had similar blood pressure and cholesterol levels and smoked the same, there was a clear difference in oestrogen levels in their blood.

'Of course, increased oestrogen in men may be an effect, not a cause of heart attacks,' said Dr Robert Levy, of Tufts University Medical School, who has been closely involved in the oestrogen studies. 'The men may be producing oestrogen after attacks to deal with its consequences.'

Other studies suggest this is unlikely. One group, based at two Cleveland hospitals, found that men who had chronic angina, but who had not yet suffered any heart attacks, had the same raised oestrogen levels as those who had already suffered attacks.

There is also support from results of tests carried out in the 1960s in which male cancer and heart disease patients were given oestrogen as potential treatment. These had to be stopped after several died of premature heart attacks.

Why some men should have more oestrogen in their blood remains unclear. Diet, stress and even fatty tissue have all been suggested as possible causes of oestrogen production, and are also known to be associated with heart disease.

'What we need now is a long prospective study,' Dr Levy told *The Observer*. 'We must find those in the population with high oestrogen levels, investigate their life style, and survey those who later have heart attacks.'

'That way we may solve the paradox of why women are protected by oestrogen while at the same time it is linked to heart attacks in men.'

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