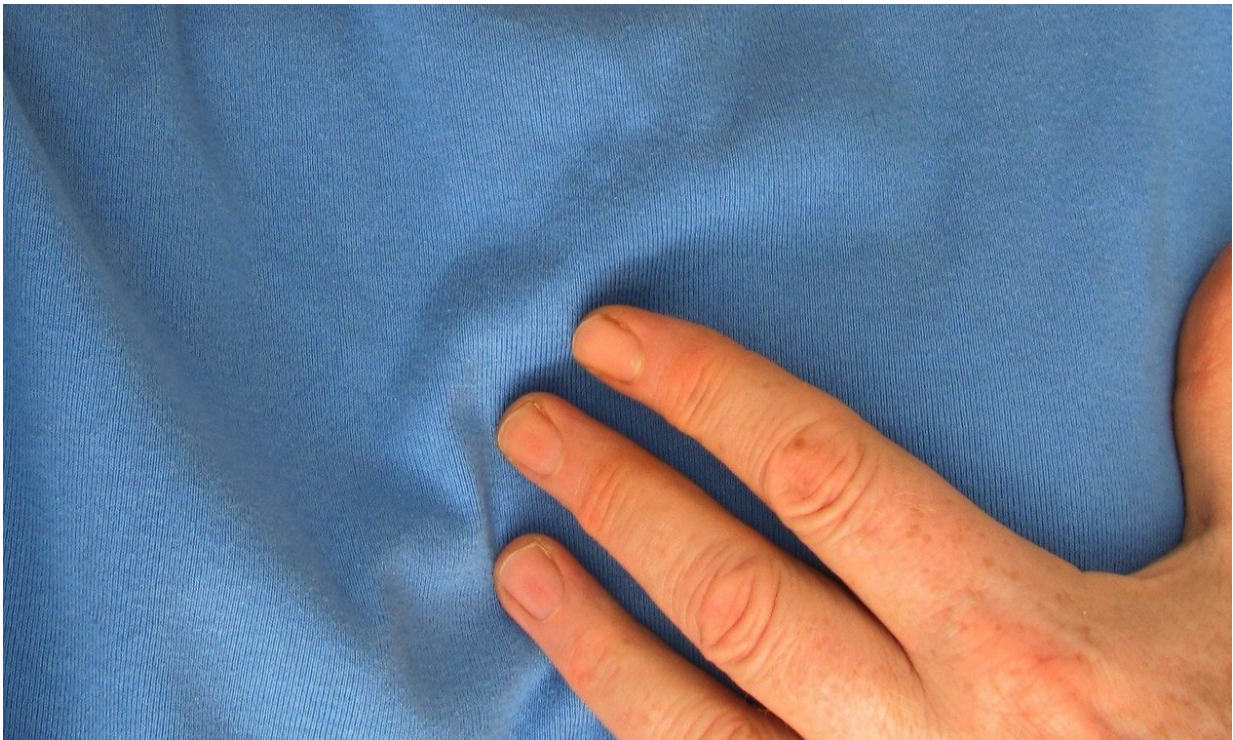


# High blood pressure during pregnancy increases risk of heart attacks and strokes

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Women who have high blood pressure during their pregnancies, or a related more severe condition called pre-eclampsia, are at much higher risk of heart attacks and strokes than those who have normal blood pressure, according to new research funded by the British Heart Foundation (BHF) and presented at the British Cardiovascular Society

Conference today in Manchester.

By studying information from nearly 6.5 million women in English hospitals between 1997-2015, a team from The University of Cambridge and the University of Bristol found just over 276,000 pregnancies affected by [high blood pressure](#) and 223,715 with pre-eclampsia. This high number of people studied for nearly twenty years allowed them to look for the risks of more than 15 different kinds of heart and circulatory diseases, from heart attack and stroke to [heart failure](#) and cardiomyopathy.

The team found that the risk of developing a serious heart and circulatory condition increased by 45% if a woman had high [blood pressure](#) during [pregnancy](#), or by nearly 70% for women who had experienced pre-eclampsia, compared to those who had normal blood pressure during pregnancy.

For example, when just considering first pregnancies, 3 in every 1000 women who had normal blood pressure went on to develop heart and circulatory diseases after their pregnancy, while for women who had high blood pressure during pregnancy, it was 5 in every 1000, and 6 in 1000 for women who had pre-eclampsia.

A history of high blood pressure during pregnancy raised the risk of having the most common form of stroke by 80% and doubled the risk of potentially fatal cardiomyopathies, a family of conditions where the heart muscle is diseased and becomes ineffective at pumping blood.

A history of pre-eclampsia during pregnancy led to a three-fold increased risk in heart attacks and over double the risk of cardiomyopathy, when compared to women with normal blood pressure during pregnancy.

The more affected pregnancies that a woman had, the more her risk of serious heart and circulatory complications increased. For example, women with two or more pregnancies where they had high blood pressure were more than twice as likely to have a stroke than those with normal blood pressure. Those with two or more pregnancies with pre-eclampsia were nearly 4 times as likely to have the most common form of stroke and 3 times more likely to have a heart attack, compared to women with pregnancies with [normal blood pressure](#).

Pregnancy-related high blood pressure, or gestational hypertension, is high blood pressure that first starts when a woman is pregnant and usually goes away after they have had their baby. It can be mild (90-99/140-149), moderate (100-109/150-159) or severe (above 110/160). This study covered nearly all (97%) of women who gave birth in England over the 18 years studies. 3% of the women studied had pre-eclampsia and 4% had high blood pressure when pregnant.

Dr. Clare Oliver-Williams, who carried out the research at the University of Cambridge, said:

"The women we studied had all recently had babies so they were younger than the average person who has a heart attack or stroke. So, although the number of cases of serious events like heart attack and stroke isn't huge, there is an important increase.

"A [pregnant woman](#) can be busy worrying about lots of things—her due date, her work and maybe her other children, so it can be easy to put themselves last. But it's important that all expectant mums to keep a close eye on their own heart and circulatory health, and it's equally important that doctors recognise the symptoms of heart and circulatory diseases in women who have had complications during their pregnancies."

Professor Metin Avkiran, Associate Medical Director at the British Heart Foundation, which funded this research, said:

"This study doesn't show that having high blood pressure or developing pre-eclampsia while you are pregnant means you're guaranteed to go on to have a [heart attack](#) or stroke, but it does raise some important red flags.

"Developing high blood pressure when you're pregnant could be an early warning of an underlying problem that might lead to other heart and circulatory diseases at a later date. We still don't understand exactly what causes pre-eclampsia. Much more research is needed so that we can understand the condition better and improve the lives of those living with heart and circulatory diseases, pregnant or not."

While this research studied women in the years following their pregnancies, these findings come after the MBRRACE Report in 2018 revealed that heart disease remains the leading cause of women dying during or up to 6 weeks after the end of pregnancy. Many symptoms of [heart](#) diseases look similar to those expected during pregnancy and shortly after birth—shortness of breath, tiredness and swollen ankles. At the BCS conference this year there will be a session to highlight the need for doctors not to write off suspicious symptoms in pregnant [women](#) by cardiologist Dr. Dawn Adamson.

As well as funding £22.7million of research into high blood pressure and just over £1 million into [pre-eclampsia](#), the BHF is also currently funding £1.5 million worth of community projects across the country that aim to reach and test people who are most at-risk of high blood pressure in everyday settings such as train stations, barber shops and football grounds. The charity says reaching people outside of hospitals and GP surgeries is key to making sure that millions of people with undiagnosed high blood pressure in the UK understand their risk and are

able to get the treatment and advice they need.

Provided by British Heart Foundation

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