

# Results from world's first registry of pregnancy and heart disease

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Results from the world's first registry of pregnancy and heart disease have shown that most women with heart disease can go through pregnancy and delivery safely, so long as they are adequately evaluated, counselled and receive high quality care.

However, this is not always the case: [women](#) and babies in developing countries are more likely to die than those in [developed countries](#) where women are more likely to access better care and counselling before and during [pregnancy](#); women with [cardiomyopathy](#), a disease of the [heart muscle](#), are also more affected by pregnancy. The findings are published online today in the [European Heart Journal](#) [1].

In 2007 the European Society of Cardiology set up the European Registry on Pregnancy and [Heart Disease](#) because deaths during pregnancy among women with heart disease were rising in [western countries](#) and it is a major cause of [maternal death](#), yet there was limited understanding about the consequences of heart disease on pregnancy outcome and the best ways of caring for these women. Overall, about 0.9% of [pregnant women](#) have some form of heart disease.

Between 2007 and 2011, 60 hospitals in 28 countries enrolled 1321 pregnant women with heart disease to the registry, and collected data on all aspects of the pregnancy and delivery and the mothers' heart condition and medication use.

Congenital heart disease (CHD) was the most common, with 66% of the

women having the condition, which is a problem with the heart's structure and function that is present at birth; 25% of women had valvular heart disease (VHD), a disease of one or more of the valves in the heart; 7% had cardiomyopathy (CMP); and 2% had ischaemic heart disease (IHD), where insufficient blood reaches the heart and can result in problems such as [heart attack](#).

There were clear differences in outcome for mothers and babies by type of heart disease. Women with CMP were more likely to die or to suffer from serious problems such as heart failure and irregular heart beat (ventricular arrhythmias) than women with other conditions. Women with CHD had relatively good outcomes compared to women with other conditions, probably because most of these patients were diagnosed and treated either soon after birth, or long before becoming pregnant, and had benefited from improved treatments and pre-pregnancy counselling.

There were significant differences in outcome between developed and developing countries, although the authors warn that these figures need to be treated with some caution because of the differences in the numbers of women in the different countries. In developing countries 3.9% of women in this study died compared to 0.6% of women in developed countries, and 6.5% of babies died compared to 0.9% in developed countries.

Overall, the study showed that pregnancy in patients with heart disease resulted in one percent of mother dying, which was 100 times higher than in the normal population of pregnant women. Among women with heart disease 10 in every 1000 died, compared to less than one per 10,000 in the European population of pregnant women without a heart condition. Death of the foetus during pregnancy was five times higher (17 per 1000 dying compared to 3.5 per 1000 of the normal population), and death of the baby within 30 days of birth was 1.5 times higher (6.4 per thousand dying compared to four per 1000 in the normal

population). However, these figures varied enormously between developed and developing countries.

Professor Jolien Roos-Hesselink, who is Director of Adult [Congenital Heart Disease](#) Programme at the Erasmus Medical Centre in Rotterdam, The Netherlands, and who led the research together with Professor Roger Hall from Norwich Medical School, University of East Anglia (UK), said: "The most striking findings from this study were these differences between different parts of the world, with worse outcomes in [developing countries](#). Our Egyptian colleagues explained there are important cultural factors influencing the results. For instance, it is very important in Egypt to have a child in order to deserve respect. Therefore, women will become pregnant there although they are aware of the very high risks.

"The differences in outcome between groups of women with different conditions was also striking, particularly the higher mortality in cardiomyopathy patients, where 2.4% of them died compared to just 0.007% in the normal population."

The problem with cardiomyopathy is that, because the heart muscle is diseased, there is an increased risk of [heart failure](#) during pregnancy as the heart has to work harder. Professor Mark Johnson, one of the paper's authors and Chair in Obstetrics at Imperial College London (UK), explained: "The heart has to pump 50% more blood than usual during pregnancy, a significant increase in work load, which exacerbates an underlying cardiac disease or, in some cases, will bring out a hitherto unrecognised problem."

The authors conclude that "the vast majority of patients can go safely through pregnancy and delivery as long as adequate pre-pregnancy evaluation and specialised high-quality care during pregnancy and delivery are available." However, they point out that there are important

differences.

Professor Roos-Hesselink said: "These data show large differences between groups and that some groups do very well, while others do not, and especially patients with a cardiomyopathy are at risk and should be counselled and followed carefully. In addition, foetal outcome, as well as maternal outcome, can be hampered and influenced by the mother's disease."

Professor Johnson said: "This study gives us the essential basic information about the size and extent of the problems facing women with pre-existing heart disease during pregnancy. This will allow us to start to design interventional studies in high-risk groups with the aim of improving their outcome."

**More information:** [1] "Outcome of pregnancy in patients with structural or ischaemic heart disease: results of a registry of the European Society of Cardiology," by Jolien W. Roos-Hesselink et al. European Heart Journal. [doi:10.1093/eurheartj/ehs270](https://doi.org/10.1093/eurheartj/ehs270)

[2] More information on the Pregnancy and Heart Disease Registry can be found here: [www.escardio.org/guidelines-suy/Pages/welcome.aspx](http://www.escardio.org/guidelines-suy/Pages/welcome.aspx)

Provided by European Society of Cardiology

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