

Mothers of women with PCOS have increased risk of early death

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Mothers of daughters with polycystic ovary syndrome (PCOS) have a significantly increased risk of death, particularly if they also have diabetes, when compared to the general population, according to new research.

The Dutch study, published online today (Friday) in *Human Reproduction*, one of the world's leading reproductive medicine journals, compared death rates of [mothers](#) and fathers of 958 daughters with PCOS, with the general Dutch population. The researchers found that mothers aged over 60 had a risk of death that was one-and-a-half times greater than the [general population](#). When compared with a control group of women with type 2 diabetes from the general population, diabetic mothers of PCOS daughters had a two-fold [increased risk](#) of death.

"This is the first study to observe this excess risk of death in mothers of patients who have been diagnosed with PCOS, which is the most common hormone-related disease in women of reproductive age," said Dr Yvonne Louwers, the first author of the study and a resident doctor in the Department of Obstetrics and Gynecology at Erasmus MC University Medical Center, Rotterdam, The Netherlands. "Our findings justify the active screening of mothers of women with PCOS so that timely preventive and therapeutic measures can be taken. Although our study was based on questionnaires and retrospective data, and prospective, long-term follow-up studies are needed, the excess mortality risk is just too high for us to wait patiently for the results of these follow-

up studies before taking action to help reduce the risk of deaths in these mothers."

PCOS is a life-long condition that occurs in 6-10% of women of reproductive age. Women with PCOS may suffer from a range of symptoms including irregular ovarian function, excess (male) androgen hormones, excess body hair, and greater risks of obesity, insulin resistance, gestational diabetes and type 2 diabetes.

The researchers, led by Professor Joop Laven at the Erasmus MC University Medical Center, thought that the susceptibility to type 2 diabetes might explain an important part of the cardiovascular complications seen among patients with PCOS and their parents, especially as PCOS is often passed down the generations. So they set out to discover whether PCOS was associated with an increased risk of death in parents.

At the time that patients were diagnosed with PCOS they were asked to complete questionnaires about their parents' medical histories. The researchers obtained birth and death dates from a nationwide database of all people registered as living in The Netherlands. Mortality data for 946 mothers and 902 fathers of PCOS daughters was compared with the mortality rates of the general Dutch population and with the mortality rates of a control group of the population consisting of 1353 men and women diagnosed with type 2 diabetes.

The researchers conducted several analyses of the results. Dr Louwers explained: "In the first analysis, we compared the mortality of the total group of parents with the general population (independent of presence of diabetes), and we did not find an increased risk of death in the parents of PCOS daughters. However, when we performed sub-analyses based on age and gender, we observed that mothers aged above 60 years had an increased mortality compared to the general population. When we

compared the mortality rates in diabetic parents with the mortality of diabetic controls from the general population, we found an increased risk of death in diabetic mothers compared with diabetic women from the general population."

The researchers say that their findings may serve as a warning for the future risk of early death in the PCOS daughters. They write: "More importantly, the excess of mortality observed in diabetic mothers of patients with PCOS relative to the patients with diabetes recruited from the general population suggests that this specific high-risk group is not sufficiently recognized, limiting the use of preventive measures. Therefore, we feel that early and active screening as well as aggressive treatment for type 2 diabetes mellitus among these mothers of daughters is justified."

The researchers say that the study does not provide insight into the biological mechanisms that may play a role in the increased risk of death, and further studies will be needed to understand this.

As the parents in their study are relatively young, with an average age of 63, Dr Louwers and her colleagues have embarked on a prospective long-term follow up of patients and their parents who have been diagnosed with PCOS at their clinic and who have reached perimenopausal and postmenopausal ages. They will be monitoring their cardiovascular health and linking this with any cardiovascular-related events and deaths in order to understand more about the links between PCOS, cardiovascular complications and increased risk of [death](#).

More information: "Excess mortality in mothers of patients with polycystic ovary syndrome", by Y.V. Louwers et al. Human Reproduction journal. [DOI: 10.1093/humrep/deu107](https://doi.org/10.1093/humrep/deu107)

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