

## New link between pre-eclampsia and diet

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A chemical compound found in unpasteurised food has been detected in unusually high levels in the red blood cells of pregnant women with the condition pre-eclampsia.

These results are important because they suggest that the compound, 'ergothioneine', is an indicator of pre-eclampsia and may help scientists to understand the cause of the condition, which is currently unknown.

Scientists at the University of Leeds took blood samples from a group of thirty-seven pregnant women and compared the [red blood cells](#) from women with pre-eclampsia with the red blood cells from women with no symptoms.

In results published in the journal *Reproductive Sciences*, chemists found a significantly higher concentration of the ergothioneine - a compound made by [fungi](#) - in the red blood cells of the women with pre-eclampsia.

Ergothioneine is already well known to be made by micro-organisms that are commonly found in foods such as unpasteurised dairy products. As it cannot be synthesised by humans it finds its way into human cells exclusively through our diet.

The NHS does not advise against pregnant women eating fungi or foods such as unpasteurised dairy products which contain ergothioneine producing fungi. In fact scientific studies on animals highlight the benefit of ergothioneine.

"These results suggest that a higher level of ergothioneine is an indicator of pre-eclampsia," says Dr Julie Fisher, a chemist at the University of Leeds who lead the research.

"I would not recommend that pregnant women stop eating fungi. However, the high concentration of ergothioneine in the red blood cells of women with pre-eclampsia is a very interesting finding - the more we know about the chemicals involved in the disease the closer we get to understanding what causes it," says Professor James Walker, Professor of Obstetrics at the Leeds Institute of Molecular Medicine (LIMM), and a co-author of the research.

The symptoms of pre-eclampsia include high blood pressure, protein in urine and fluid retention and affects almost 10% of pregnancies after 20 weeks. Left untreated, the condition can cause a range of problems such as growth restriction in babies and even foetal and maternal mortality. There is no known cause of the condition.

"Ergothioneine is known as an antioxidant and antioxidants have been proposed to be helpful in reducing the risk of preeclampsia. It is therefore very interesting that we have found it to be in excess for women with the condition," says Dr Fisher.

The team used a technique which is based on the same science as MRI scans but which operates on fluids taken from the body, to identify chemicals in the red blood cells of [pregnant women](#). The amount of these chemicals was found to depend on whether the women were healthy or whether they were suffering from pre-eclampsia. In previous studies the team found that chemical markers for pre-eclampsia also exist in blood plasma.

**More information:** The paper Imidazole-Based Erythrocyte Markers of Oxidative Stress in Preeclampsia-An NMR Investigation is published in

the journal *Reproductive Sciences*.

Source: University of Leeds ([news](#) : [web](#))

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