Inflammation in the body gives a two- to threefold risk of depression.

Inflammations that are hidden inside your body as a result of disease or an unhealthy lifestyle do not only damage your physical body.

It appears that they can also affect your mental state by triggering a depression.

Higher-than-normal blood levels of C-reactive protein (CRP), an indicator of inflammatory disease, increase the risk of depression two- to threefold, according to a comprehensive new Danish study.

“The risk of inflammation increases with an unhealthy lifestyle, obesity and chronic diseases. Our message to the public is that one should avoid getting into situations that increase inflammatory protein levels in the body,” says lead researcher Dr Børge Nordestgaard, of Copenhagen University Hospital.

The findings, published in the *Archives of General Psychiatry*, are based on data from the lives of 73,000 Danes.

The researchers have charted the number of participants who had a hidden inflammation in their body by studying blood samples from the two population studies ‘The Copenhagen General Population Study’ and ‘The Copenhagen City Heart Study’. This enabled the researchers to measure CPR levels dating back to 1991.

They also looked into the Danish Civil Registration System to find out about self-reported antidepressant use, antidepressant prescriptions and hospitalisation for depression.

**Greater insight into depression**

After comparing those with inflammation and those with depression, the researchers found a clear correlation:

Some 21 percent of the participants were found to have CPR levels of above 3 mg/litre. These people were found to be more likely to have a strong stress response, an increased use of antidepressants and more depression-related hospitalisations than those with CPR levels below 1 mg/litre.

“Our discovery increases our understanding of depression,” says Nordestgaard. “It proves that there’s an interaction between our body and our mind, and that disease in one system can create an imbalance in the other. And when you think about it, it actually makes good sense.”

He says it’s well-known in medical circles that people whose bodies do not function optimally as a result of excessive weight usually have high levels of CRP.

**Mechanism remains unclear**
Although the correlative link between depression and inflammation was clearly identified, the actual mechanism at work remains unclear.

According to Marie Kim Wium-Andersen, who also took part in the study, it appears that the inflammatory molecules affect some of the transmitter substances and receptors in the brain that determine our state of mind and regulate our mood.

"We cannot prove it conclusively," she says, adding that in principle it could just as well be the other way round – that it’s the depression that triggers an inflammation. A third possibility could be that there’s an underlying disease in the body that triggers inflammation and depression.

"The underlying cause needs to be determined with further studies,” says Andersen.

“All we can say with certainty at this point is that there is a correlation between the two conditions. An understanding of the biological cause is a key step towards effective prevention and treatment of the condition.”

Read the Danish version of this article at videnskab.dk

Fact box

The link has been established in previous studies. With its sample size of 73,000 people, however, this is the first one to document the link with a high degree of certainty.


Sybille Hildebrandt [19] Dann Vinther

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