

# Insomnia is linked to increased risk of heart failure

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People who suffer from insomnia appear to have an increased risk of developing heart failure, according to the largest study to investigate the link.

The study, which is published online today (Wednesday) in the [European Heart Journal](#), followed 54,279 people between the ages of 20-89 for an average of more than 11 years, and found that those who suffered from three symptoms of insomnia had a more than three-fold increased risk of developing [heart failure](#) compared to those with no [insomnia symptoms](#).

Dr Lars Laugsand, a post-doctoral fellow in the Department of Public Health, Norwegian University of [Science and Technology](#), Trondheim, Norway, said: "We related heart failure risk to three major insomnia symptoms including trouble falling asleep, problems staying asleep, and not waking up feeling refreshed in the morning. In our study, we found that persons suffering from insomnia have increased risk of having heart failure. Those reporting suffering from all three insomnia symptoms simultaneously were at considerably higher risk than those who had no symptoms or only one or two symptoms."

However, he stressed that although the study shows that insomnia is linked to an increased risk of heart failure, it does not show that it causes it. "We do not know whether heart failure is really caused by insomnia, but if it is, insomnia is a potentially treatable condition using strategies such as following simple recommendations concerning sleeping habits (often referred to as sleep hygiene), and several psychological and

pharmacological therapies. Evaluation of [sleep problems](#) might provide additional information that could be used in prevention of heart failure."

He said further research would be required to establish whether or not insomnia caused the condition. "It is still unclear why insomnia is linked to higher heart failure risk. We have some indications that there might be a biological cause, and one possible explanation could be that insomnia activates stress responses in the body that might negatively affect heart function. However, further research is also needed to find the possible mechanisms for this association."

Dr Laugsand and his colleagues collected data from men and women enrolled in the Nord-Trøndelag Health study (HUNT) between 1995 and 1997 and who were free from heart failure when they joined. Heart failure is a condition in which the heart is unable to pump enough blood around the body at the right pressure. It usually occurs because the heart muscle has become too weak or stiff to work properly. The researchers followed the study participants until 2008, by which time there had been a total of 1412 cases of heart failure.

When participants joined the study they were asked whether they had difficulty going to sleep and staying asleep, with the possible answers being "never", "occasionally", "often" and "almost every night". They were also asked how often they woke up in the morning not feeling refreshed (non-restorative sleep): "never, few times a year", "one to two times per month", "once a week", "more than once a week".

After adjusting for factors that could affect the results, such as age, sex, marital status, education, shift work, blood pressure, cholesterol, diabetes, body mass index, physical activity, smoking, alcohol, any previous heart attack, depression and anxiety, the researchers found that having difficulties going to sleep and staying asleep almost every night, and having non-restorative sleep more than once a week were associated

with an increased risk of heart failure when compared with people who never or rarely suffered from these symptoms. There was a trend showing a link between the frequency of the symptoms and the increased risk, although most of these findings did not reach statistical significance.

When they looked at the number of symptoms, the researchers found a statistically significant three-fold (353%) [increased risk](#) of heart failure for people who had all three insomnia symptoms, compared to those with none, after adjusting for most confounding factors apart from depression and anxiety. When they adjusted their findings to include depression and anxiety, the risk was still significant, with a slightly more than four-fold risk (425%) of heart failure.

The authors write in their paper: "We found a moderate risk increase related to the individual insomnia symptoms. However, the risk among those with all the three [insomnia](#) symptoms simultaneously was particularly high even after adjustment for established cardiovascular risk factors and psychological distress. This finding may be interpreted as suggesting that compromising some aspects of sleep may be somehow compensated for, and the net effect on cardiovascular disease may be limited. For example, having difficulty falling asleep might be compensated for by a satisfactory depth and a good continuity of sleep. However, if the initiation of sleep is poor and combined with repeated awakenings and superficial [sleep](#), there may not be any compensatory mechanisms."

**More information:** "Insomnia and the risk of incident heart failure: a population study", by Lars E. Laugsand, Linn B. Strand, Carl Platou, Lars J. Vatten, and Imre Janszky. *European Heart Journal*.

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