**Losing a partner can literally break your heart**

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The death of a life partner can throw your heart out of whack -- not just emotionally but physically, according to a new study.

Researchers found that people who lost their partner within the previous 30 days are 41% more likely to develop an irregular heartbeat compared with those who were not recently bereaved.

And it appears that the more unexpected the death, the higher the risk of a fluttering heart.

People under 60 were the most affected by the recent loss of a partner: Their risk of having an irregular heartbeat doubled compared with control groups. The risk of developing arrhythmia also increased for those who had a partner who died suddenly compared with those whose partners died after a long illness.

The study also suggests that just as time can heal an emotionally broken heart, it can also reduce the chances of developing a physically challenged one as well. The authors say the risk a person will exhibit heartbeat irregularities is most pronounced 8 to 14 days after a partner's death and then slowly begins to taper off. By one year after a partner's death, the bereaved is no more likely than anyone else to suffer from an irregular heartbeat.

"Stress has long been linked to arrhythmia in the heart, and the acute stress of losing your partner in life constitutes one of the biggest impacts of psychological stress one would experience," said Simon Graff, a researcher at the department of public health at Aarhus University in Denmark who lead the work. "We wanted to examine that association."

The results were [published](http://openheart.bmj.com/lookup/doi/10.1136/openhrt-2015-000367) Tuesday in the journal Open Heart.

To see whether there was a relationship between atrial fibrillation and the recent loss of a partner, the authors turned to Danish medical records that start in 1995 and go through 2014. From these they identified 88,612 cases in which people had been diagnosed with atrial fibrillation for the first time. Of those, 17,478 had lost a partner in the last year.

Atrial fibrillation is the most common type of arrhythmia, or abnormal heart rhythm, in the Western world. It occurs when the heart's electrical system malfunctions, causing the heart's two upper chambers to contract very fast and irregularly.

Graff explained that people who suffer from atrial fibrillation often report heart palpitations, shortness of breath and discomfort in the chest. It is also associated with increased risk of death, stroke and heart failure.

Using information collected by the Danish Civil Registration System, the researchers were to able to determine whether each of the diagnosed people had a partner, if they lived with them, if they were married, if that person had died recently, and how likely that the death occurred one month before the heart problem appeared. They were able to do this by looking at the partners' medical records to see how old they were, what medications they were on and whether they were hospitalized.

The researchers  were also able to get information about the atrial fibrillation patient's previous illnesses, age, sex and education status, among other things.

In addition to the findings reported above, the researchers said people who lived with their partners and those who lived separately were just as likely to develop atrial fibrillation after the partner's death.

The authors did not study what physiological mechanisms are responsible for the relationship between atrial fibrillation and the loss of a life partner, but they have a few ideas.

Graff said it is possible that the death of a partner could affect basic hormonal processes that can alter a heartbeat. For example, adrenalin in long-term and excessive amounts can disrupt heart rhythm, he said.

In addition, acute mental stress can also cause an imbalance in the part of the central nervous system that controls both heart rate and the electrical pathways that run through the heart, he said.

Graff and his team said they hope that more research will be done to look at other associations between heart health and emotional stress. In the meantime, they hope that relatives of those who lost a life partner and their doctors will keep an eye out for signs of a physically disrupted heart in the early stages of mourning.

"A timely diagnosis of this possible association between bereavement and [atrial fibrillation] could change the outcome of the condition," he said.