**Mail Online**

**Losing a loved one really CAN make you die of broken heart**

By [Sophie Borland](http://www.dailymail.co.uk/home/search.html?s=&authornamef=Sophie+Borland)

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Losing a loved one really can cause someone to die from a broken heart, scientists claim.

They say that intense grief weakens the body’s immune system leaving it more vulnerable to infections.

Academics from the University of Birmingham have found that increased stress levels and depression brought on by bereavement interferes with a type of white blood cell called neutrophils.

These are key to fighting certain bacterial infections such as pneumonia.

The researchers say the effects worsen with age as adults lose the ability to produce another hormone that can counteract the damage.

They believe this could in part explain why couples who have been married for years die months, weeks or even days apart.

Professor Janet Lord, who led the research, said: ‘There are a lot of anecdotes about couples who were married for 40 years when one of them passes away and then the other dies a few days later.

It seems there is a biological basis for this.

Rather than dying of a broken heart, however, they are dying of a broken immune system. They usually get infections.

‘We think that what is going on is that even in previously healthy people are becoming very depressed and this has a powerful effect on the immune system.’

Professor Lord and her colleagues looked at the immune systems and hormone levels of 48 healthy adults aged 65 and over.

Half of the group had suffered a major bereavement in the past 12 months.

They found that the ability of neutrophils to fight bacteria was lower in people who had suffered a bereavement.

They also had raised levels of the stress hormone cortisol, which is known to suppress the activity of neutrophils making them less active.

In 1995 former Prime Minister James Callaghan died of pneumonia aged 92, just ten days after his wife of 67 years Audrey.

And in 2003 musician Johnny Cash died of complications related to diabetes aged 71.

His 73-year-old wife June had died just four months earlier.

Telegraph

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Grief leaves the body at risk of infection;   
It really is possible to "die of a **broken heart**" according to research that has revealed how bereavement can weaken the body's ability to fight off infections.  
  
**BYLINE:** By Richard Gray, Science Correspondent  
  
**LENGTH:** 569 words

Scientists have found that the emotional stress of losing a loved one can lead to parts of the **immune system** being suppressed, which in turn can leave grieving relatives more vulnerable to infections from bacteria.

The findings may help to explain anecdotal incidents of widows and widowers who have died days or even hours after their spouse.

Former Prime Minister James Callaghan died of pneumonia aged 92 in 1995, just 10 days after Audrey, his wife of 67 years.

Musician Johnny Cash, who died of complications related to diabetes while in hospital in 2003 at the age of 71. It was said at the time that he had been left weakened by the grief of losing his 73-year-old wife June four months earlier.

Now immunologists at the University of Birmingham have found that increased stress levels and depression brought on by grief can interfere with the function of a type of white blood cell known as neutrophils, which are responsible for fighting bacterial infections like pneumonia.

The impact becomes more profound in older adults as, with age, they lose the ability to produce a hormone that can counteract this dampening affect, meaning even previously healthy elderly people can fall victim to disease following a bereavement.

Professor Janet Lord, who led the research, said: "There are a lot of anecdotes about couples who were married for 40 years when one of them passes away and then the other dies a few days later. It seems there is a biological basis for this.

"Rather than dying of a **broken** **heart,** however, they are dying of a broken **immune system**. They usually get infections."

The researchers studied the **immune systems** and hormone levels of 48 healthy adults aged 65 and over. Half of the group had suffered a major bereavement in the past 12 months.

They found that the antibacterial action of neutrophils from grieving participants were significantly reduced compared to those who had not suffered a bereavement. They also had raised levels of the stress hormone cortisol.

Cortisol is known to suppress the activity of neutrophils, making them less active.

Most young healthy people produce a second hormone called DHEA, which Professor Lord and her colleagues found can counteract this affect, allowing their **immune system** to function normally.

With age, however, adults lose the ability to produce this second hormone and so they become more vulnerable to disease at moments of stress.

The researchers have also found that suffering a hip fracture can also lead to this hormone imbalance that suppresses the **immune system**.

It helps to explain why around 25% of people over the age of 80 who suffer a hip fracture subsequently die within one year.

Among patients who had previously been healthy, Professor Lord found that one in ten died within the year.

Those suffering from depression or heightened levels of stress as a result of their injury had reduced immune responses and were most at risk of dying.

Professor Lord said: "Our results in healthy adults who have suffered bereavement, the stress response and the effect on the **immune system** is as profound as we saw in those who had suffered a hip fracture.

"We think that what is going on is that even in previously healthy people are becoming very depressed and this has a powerful effect on the **immune** **system.**

"A 70 year old has around 10 to 20 per cent of the DHEA of a 30 year old, so it may be why older people are less able to cope with bereavement."