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Revealed: why stress is bad for the heart



Stress triggers a response in the bone marrow, causing increased production of white blood cells Getty Images

Hannah Devlin Science Editor
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Stress is already known to be bad for the heart but now scientists have discovered why it is so harmful.

A study, involving 29 doctors working on intensive care wards, found that stress causes the body to produce an excess of white blood cells, which can cause inflammation of the arteries.

Matthias Nahrendorf, who led the work at Massachusetts General Hospital, said: “Usually white blood cells are a good thing, they help fight off infections, but if you have chronic high levels they can turn against you.”

The research, in the journal *Nature Medicine*, followed 29 medical residents who worked shifts of seven days on, seven days off. Their white blood cell count was found to rise during the stressful working periods and fall during days off.

White blood cells are immune cells that normally defend the body against infection. However, if levels of white blood cells remain high in the long term, they start to invade the arterial wall and gradually tunnel through a protective layer that separates the flowing blood from the arterial tissue. Damage to this separating layer can lead to blood clots, raising the risk of heart attack or stroke.

In a second experiment, using mice, Dr Nahrendorf’s team found that white blood cells increase because stress triggers a response in the bone marrow, causing increased production.

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