

Early-life trauma may increase heart disease risk in adults

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Stress in early life may change the immune response in the kidneys, increasing the risk of heart disease later in life, according to a new study. The paper, published ahead of print in the *American Journal of Physiology—Renal Physiology*, was chosen as an APSselect article for December.

Previous research has shown that traumatic events in childhood may lead to high blood pressure in adults, often a precursor to [heart disease](#). Animal studies suggest that [early life](#) stress may also increase markers of inflammation. The research team looked at the kidneys of rats separated from their mothers soon after birth. The kidneys are a major regulator of long-term [blood pressure](#). The researchers found that male rats in the separated group had higher concentrations of T cells and neutrophils compared to a control group not separated from their mothers. T cells and neutrophils are white blood cells that are key components of the immune system; an increase in these cells can be a marker of inflammation. In addition, the separated rats' kidneys had an increase in biomarkers that are indicative of inflammation and promoting immune responses.

These changes in the separated group "may play an important role in promoting cardiovascular disease earlier and more robustly in adulthood," the researchers wrote.

The article, "Early life stress induces priming of the [immune response](#) in kidneys of adult male rats," is published ahead of print in the *American*

Journal of Physiology—Renal Physiology.

More information: Carmen De Miguel et al. Early life stress induces priming of the immune response in kidneys of adult male rats, *American Journal of Physiology - Renal Physiology* (2017). [DOI: 10.1152/ajprenal.00590.2016](https://doi.org/10.1152/ajprenal.00590.2016)

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