

Low resting heart rate in women is associated with criminal offending, unintentional injuries

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The new research suggests there is a link between lower resting heart rate and an elevated risk of criminality and unintentional injuries among female conscripts. Credit: niu niu, Unsplash, CC0 (creativecommons.org/publicdomain/zero/1.0/)

In women, a low resting heart rate is associated with a slightly raised incidence of criminal offending as well as unintentional injuries, in a large all-female study published March 27 in the open-access journal *PLOS ONE* by Sofi Oskarsson of School of Behavioural, Social and Legal Sciences, Örebro University, Sweden, and colleagues. This is the first time such an association has been shown in women, although it is well-established in studies of men.

Intervention efforts for crime tend to focus on structural and social factors as well as personality traits and behaviors. Less is known about biological factors, although there is an established association between the autonomic nervous system—a network of nerves that regulates unconscious body processes like breathing and heartbeat—and criminal offending in men. Oskarsson and colleagues wanted to see if the same is observed in [women](#).

Using population registers, the team identified 12,500 Swedish women who volunteered for military service at around 18 years old, where physical assessments recorded resting [heart rate](#) and blood pressure. They also tracked records for violent and nonviolent criminal offenses and unintentional injuries for up to 40 years.

Female conscripts with the lowest resting heart rates (under 69 bpm) had 35% higher risk for any [criminal conviction](#) compared to those with rates above 83 bpm. However, no significant associations were found for violent crime. Lower resting heart rate was associated with an increased risk of unintentional injuries, which in past research has been interpreted as potentially reflecting fearlessness and stimulation seeking tendencies.

The team found a significant association between [blood pressure](#) and violent crime, but no significant association was found for non-[violent crime](#).

The authors state that low [autonomic nervous system](#) arousal might drive stimulation-seeking tendencies, but that their findings should be interpreted with caution. They saw lower rates of criminal offending compared to women who had not done [military service](#), and a higher rate of unintentional injuries, so further work is needed to establish whether the same is seen in wider cohorts.

If replicated by further research, this finding could have the potential to serve as a predictor of criminal offending, in women as well as men.

The authors add, "Our research reveals a compelling link between lower resting heart rate and an elevated risk of criminality and unintentional injuries among female conscripts. This association, previously underscored primarily in men, paves way for innovative strategies predicting crime risk among women."

More information: Lower autonomic arousal as a risk factor for criminal offending and unintentional injuries among female conscripts, *PLoS ONE* (2024). [DOI: 10.1371/journal.pone.0297639](https://doi.org/10.1371/journal.pone.0297639)

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