

# Examining the link between blood pressure and emotions

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Hypertension is a disease. However, in the majority of cases, there is no clear medical explanation, referred to as "essential hypertension". Could psychological factors play a role? In this context, Konstanz biological health psychologists Alisa Auer and Professor Petra Wirtz conducted a study in male participants over several years together with colleagues

from Konstanz (Germany) and Switzerland. The researchers wanted to better understand the psychobiosocial mechanisms in hypertension, since previous work in this area has left many questions open.

In an article published in the *Annals of Behavioral Medicine* on 22nd March 2022, they show that compared to a healthy control group, men with essential hypertension more often recognized angry expressions when they looked into the faces of others. In addition, this anger recognition bias seems to contribute to blood pressure increases over time if someone tends to frequently and intensively experience anger. This tendency is called "trait anger".

## **Recognition of mixed emotions**

In their study in 145 hypertensive and normotensive men, researchers presented different pictures of people who were angry. However, the pictures did not just display anger alone, but combined anger with one of three other emotions: fear, happiness, and sadness. The background for this approach is that, in everyday life, people's faces rarely show just one emotion. Mixed emotions are more prevalent. Each of the computer-morphed pictures showed two emotions with varying affect intensities. Participants were asked which emotion they saw in the pictures.

"Hypertensive men recognized anger more often than any other emotion," Alisa Auer says. "So, they overrated anger displayed in other people's faces as compared to our healthy control group." Petra Wirtz adds: "Overrating anger displayed by other persons seems to affect whether high 'trait anger' contributes to blood pressure increases over time." Hence, interpersonal factors seem to play a role in essential hypertension. The expectation of associations between hypertension and [social aspects](#) was one of the reasons why the study was supported by the Cluster of Excellence "Centre for the Advanced Study of Collective Behaviour".

## Improving treatment of essential hypertension

Auer and Wirtz hope that their results will be examined and confirmed by other researchers. "Then, a next step would be to offer people with essential hypertension a more targeted support," says Alisa Auer, who is currently completing her doctorate in Psychology. Auer is thinking of "therapeutic treatments that address a person's perception of social environments in order to protect them from other people's [anger](#)."

Such therapeutic interventions would be important, because [blood pressure](#) lowering medication only treats the consequences of hypertension, but does not address potential causes. In addition, hypertension is one of the major risk factors for [cardiovascular disease](#). In 2020, as in previous years, the Federal Statistical Office (Destatis) listed cardiovascular disease as the leading cause of death in Germany. "338,001 deaths, or more than one third of all deaths (34%), can be attributed to cardiovascular disease," Destatis reports in a press release. Cardiovascular disease is especially deadly for older people: 93% of those who died of cardiovascular disease were 65 years or older.

What about women? The researchers hope that future studies will include women. Since women may possibly differ in their emotion recognition from men and as fewer women suffer from [hypertension](#), the study initially focused on men.

**More information:** Alisa Auer et al, Do Hypertensive Men Spy With an Angry Little Eye? Anger Recognition in Men With Essential Hypertension - Cross-sectional and Prospective Findings, *Annals of Behavioral Medicine* (2022). [DOI: 10.1093/abm/kaab108](https://doi.org/10.1093/abm/kaab108)

Provided by University of Konstanz

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