

## The role of stress in the development of cardiovascular diseases

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According to the American Heart Association, cardiovascular diseases are in the first place among the diseases that cause the most deaths in the world, responsible for 40,6% (95% confidence interval [CI] 24,5%-54,6%) of the world's total deaths. There are many risk factors for CVD, including: smoking, alcohol, high blood pressure, high blood cholesterol, being physically inactive, obesity, diabetes and stress. It should be underlined that stress is taken into account less than others. The effect of chronic and acute stress on the occurrence of CVD is slightly different. Acute stress causes a high amount of catecholamines to be secreted in the blood. These hormones can cause many changes in the body, including tachycardia, high blood pressure, coronary vasoconstriction and/or stress cardiomyopathy. Stress cardiomyopathy, also known as Takotsubo syndrome (TTS) is an interesting side effect of acute stress, that causes changes in heart anatomy and physiology. Suddenly experienced strong emotional stress causes the left ventricle to change shape and resemble a balloon. The pathophysiology of the syndrome is not well understood, but many experts assume that high catecholamine levels can induce this pathology. Also, the condition is thought to be responsible for 2% of all acute coronary syndrome cases presenting to hospitals. Chronic stress affects cardiovascular system a little differently. According to a longitudinal and cohort study, constant stress increases risk of the heart attacks, angina and stroke. We know amygdala, an area of the brain that plays an important role in stress responses. When we experience constant stress, our amygdala sends signals to the bone marrow to produce more white blood cells, which then causes leukocytosis. This in turn causes the arteries to become inflamed and can lead to some cardiovascular and other problems like i mentioned before: Heart attacks, angina and stroke [1-4].

**References**

1. Mozaffarian, D., Benjamin, E. J., Go, A. S., Arnett, D. K., Blaha, M. J., Cushman, M., ... & Turner, M. B. (2015). Heart disease and stroke statistics—2015 update: a report from the American Heart Association. *Circulation*, 131(4), e29-e322.
2. Prichard, B. N., Owens, C. W., Smith, C. C., & Walden, R. J. (1991). Heart and catecholamines. *Acta cardiologica*, 46(3), 309-322.
3. Eshtehardi, P., Koestner, S. C., Adorjan, P., Windecker, S., Meier, B., Hess, O. M., ... & Cook, S. (2009). Transient apical ballooning syndrome—clinical characteristics, ballooning pattern, and long-term follow-up in a Swiss population. *International journal of cardiology*, 135(3), 370-375.
4. Tawakol, A., Ishai, A., Takx, R. A., Figueroa, A. L., Ali, A., Kaiser, Y., ... & Pitman, R. K. (2017). Relation between resting amygdalar activity and cardiovascular events: a longitudinal and cohort study. *The Lancet*, 389(10071), 834-845.

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