

Sniffing and gasping can prevent fainting

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Dr Bavolarova said: "Recurrent syncope (fainting) has serious effects on quality of life. Patients are often injured when they fall, which reduces their mobility and ability to look after themselves. Depression is common in these patients."

The current study focused on the most common type of fainting, called vasovagal syncope, which can be caused by prolonged standing or standing up quickly. It leads to drops in [blood pressure](#) and [heart rate](#), and a brief loss of consciousness.

Vasovagal syncope is an abnormality in the reflex actions controlled by the autonomic nervous system (ANS). The sympathetic and parasympathetic nervous systems together create the ANS. They have opposite effects on the cardiovascular system - sympathetic actions increase heart rate and blood pressure while parasympathetic actions (which are mediated by the vagal nerve) lower them.

Dr Bavolarova's research explores the impact of respiratory reflexes on the cardiovascular system. The current study investigated whether sniffing and gasping could prevent fainting by interrupting the falls in blood pressure and heart rate.

The study included two women aged 56 and 62 years with a history of vasovagal syncope. The head up tilt test was performed on each patient. For the test, patients lie on a table which is rapidly tilted to a 60 degree angle to mimic standing up. The table has built in monitors for blood pressure and heart rate (using ECG).

At the moment blood pressure began to drop, patients were asked to sniff or gasp twice with their mouths closed and then breathe out. The researchers found that blood pressure and heart rate did not drop and syncope was avoided.

Dr Bavolarova said: "Our test, which is like standing up quickly, previously led to falls in blood pressure and heart rate and subsequent syncope in these patients. But strong and forced inhalation by sniffing or gasping seemed to prevent these drops and they did not faint."

"We believe that sniffing and gasping have a strong sympathetic effect that inhibits the abnormal parasympathetic activity in these patients," said Dr Bavolarova. "This stops fainting at the highest level."

She concluded: "Patients with recurrent fainting are advised to avoid standing up quickly and standing for long periods of time. Those who have prodromal symptoms like weakness, sweating or visual disturbances are advised to do counterpressure manoeuvres like leg crossing and hand grips to increase their heart rate and blood pressure. We now also tell patients that they can sniff or gasp to prevent themselves from [fainting](#). This was a small preliminary study and we will confirm our findings in a larger number of patients."

Provided by European Society of Cardiology

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