

A Case of Neurocardiogenic Syncope

by

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Case Presentation

Allison Jacobson is a 19-year-old sophomore majoring in pre-medicine at the University of Arizona. In the past few weeks leading up to final exams, Allison has felt unusually tired despite receiving an adequate amount of sleep at night. She also has had frequent headaches, and has experienced times when her heart “felt like it was missing a beat.” Yesterday at lunch, Allison fainted while waiting in line in the cafeteria. Initially, she attributed this episode to being unusually tired and hungry, but later in the day she fainted again while waiting to mail a package at the Post Office.



When Allison informed her mother about what had happened that day, her mother immediately scheduled an appointment for Allison to see the family physician. Though no abnormalities were found when he examined Allison, her physician ordered a battery of diagnostic tests, including a head-up tilt (HUT) test.

Questions

1. Define the following terms as they relate to cardiodynamics: *stroke volume*, *end systolic volume*, and *end diastolic volume*. Define the following terms and state how each relates to systemic arterial blood pressure: *cardiac output* and *total peripheral resistance*.
2. Explain the following: the *Frank-Starling law of the heart*, the control of cardiac activity by the autonomic nervous system, and the *baroreceptor reflex* in the maintenance of systemic blood pressure.
3. Define the term *dysautonomia*, and briefly describe the condition known as *neurocardiogenic syncope* (NCS).
4. What are the symptoms of NCS?
5. What is the mechanism by which NCS occurs?
6. Discuss how NCS is diagnosed and treated.

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