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### Sudden Death in Military Recruits

#### What is the problem and what is known about it so far?

“Sudden death” is a medical term referring to death that occurs abruptly and unexpectedly without trauma or other obvious cause. Sudden death is rare in young adults. It often occurs during exercise. Because extensive medical information is available on military recruits, studying sudden death in this population may provide useful information about sudden death in young adults. Learning more about sudden death in military recruits might also help researchers discover ways to prevent it.

#### Why did the researchers do this particular study?

To learn about the underlying cause of sudden death in military recruits.

#### Who was studied?

126 nontraumatic sudden deaths that occurred among 6.3 million military recruits age 18 to 35 years from 1977 through 2001.

#### How was the study done?

The researchers reviewed the military medical records and autopsy reports for all 126 recruits who died suddenly.

#### What did the researchers find?

Sudden death among military recruits is rare; it occurred in only 126 of 6.3 million recruits who entered basic training during this 25-year period. Of the 126 sudden deaths, 108 occurred during exercise. Just over half of the recruits who died (64 of 126) had a heart abnormality identified at autopsy. The most common heart abnormalities involved the coronary arteries; in one of these conditions, people are born with an abnormally located left coronary artery. The second most common heart condition was myocarditis, an inflammation of the heart muscle. The third most common heart condition was hypertrophic cardiomyopathy, a condition in which people are born with an abnormally enlarged muscular wall of the heart that can block normal blood flow during heavy exercise. In 44 of the 126 recruits who died, examination of medical records and autopsy results revealed no explanation for the death. Other causes of death included sickle-cell crisis (3 deaths), blood clot to the lung (2 deaths), internal bleeding (1 death), bleeding into the brain (5 deaths), asthma or other lung disease (4 deaths), and heat stroke (3 deaths).

#### What were the limitations of the study?

The researchers had limited information about the events that immediately preceded death. It is uncertain whether these findings in military recruits apply to the general population of young adults because the military recruits had a medical examination before starting basic training. Some people at risk for sudden death may have been excluded from entering the military.

#### What are the implications of the study?

Sudden death is an infrequent event in military recruits. About half of the cases occurred in people with an underlying heart abnormality that could not be identified by using the current medical examinations or tests given before entering the military. A substantial number of the deaths had no identifiable cause. Additional research is necessary to see whether changes in the medical examinations for people entering the military would be a feasible way to exclude people at risk for sudden death. Some of these conditions would be identified only through invasive, costly medical testing.

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