



1: [Am J Cardiol.](#) 2006 Apr 15;97(8):1255-61. Epub 2006 Mar 9.

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## **Frequency and causes of implantable cardioverter-defibrillator therapies: is device therapy proarrhythmic?**

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Implantable cardioverter-defibrillator (ICD) shocks diminish patients' quality of life, increase health care resource utilization, and may lead to other adverse sequelae. Better understanding of the factors that lead to ICD therapies, and better strategies to avoid unnecessary therapies, are needed to optimize patient outcomes. Data from major randomized clinical trials involving the use of ICDs and cardiac resynchronization therapy-defibrillator devices were reviewed to determine control group mortality rates, control group sudden death rates, and the frequency of appropriate and inappropriate ICD therapies. In all studies that classified deaths, appropriate ICD therapies outnumbered control group sudden cardiac deaths by a factor of 2 to 3. Some of these episodes can be explained by device programming, by the treatment of potentially unsustainable tachycardias, and by errors of episode classification. Another underexplored possibility is that device therapy is proarrhythmic. Reasons for frequent therapies and methods to prevent them are discussed, as well as the notion of device proarrhythmia and the potentially detrimental effects of ICD shocks. These issues clearly affect the overall benefit of device therapy and have important implications for patient management and health care delivery.

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