# ECT generalized seizure drives heart rate above treadmill stress test maximum

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## 摘要

## Abstract

Objectives: Heart rate (HR) accelerates with the electroconvulsive therapy (ECT) seizure and decelerates when it ends. The peak HR during ECT seizure has been reported to reflect clinical impact. We aimed to identify the expected range for ECT peak HR and how it varies with age and sex, as a reference in clinical use. Methods: We examined medical records for the maximum peak seizure HR over the ECT course for all ECT patients over defined periods at 2 clinical sites. Methohexital-succinylcholine anesthesia was usually used. Subject totals were 87 men and 90 women. Results: Electroconvulsive therapy peak HR was 140 to 180 bpm and did not fall with age through 80 years, separately for men and women. A few patients lay outside this cluster and showed age-related decrease. Overall and including the extreme elderly, peak HR fell by 0.29 bpm/yr. Conclusions: Electroconvulsive therapy seizure peak HR less than 140 bpm points to weakness of the ECT seizure (and need to increase stimulus dose), cardiac disease, or medication effect limiting HR. Electroconvulsive therapy peak HR exceeds treadmill exercise maximum HR after 60 years and falls significantly less with age than the 0.7 to 1 bpm/yr reported for maximum HR with treadmill exercise stress. These comparisons suggest that ECT peak HR and treadmill maximum HR are limited by different aspects of physiology, and that exercise HR is limited by metabolic demand and humoral activity rather than the heart itself.