

Public release date: 14-Mar-2008

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[Mayo Clinic](#)

Mayo researchers say ECG standards should be revised for elderly

ROCHESTER, Minn. -- Researchers at Mayo Clinic suggest that the established normal ranges for evaluating electrocardiograms for persons over 80 years old should be revisited. The recommendation comes in a study published today in the American Journal of Geriatric Cardiology.

After analyzing readings from more than 700 patients 80 or older, the researchers discovered that the average cutoffs (beginning and end points) for measuring all three ECG intervals -- PR, QRS and QT -- were greater than the current established norms. The findings also showed that the intervals, while greater in general, were significantly higher in men. The intervals refer to the times between recorded peaks of the specific motions in a heartbeat as represented on an electrocardiogram.

That is normal for a population of middle-aged individuals may not be the same for the steadily increasing elderly population in this country," says Latha Stead, M.D., lead author of the study and chair of the Division of Emergency Medicine Research at Mayo Clinic.

Significance of the Findings

America's Boomer generation is quickly aging into a geriatric generation. In 1994 one person in eight was elderly; by 2030, that figure will be one in five. As these individuals age, physicians need to have appropriate standards to evaluate their cardiac health, whether they have a routine checkup or appear in an emergency department. Mayo is seeking the best information about how to treat each individual, no matter what the age.

Researchers studied ECG results from 702 patients who came to Mayo Clinic for routine annual examinations. Forty-six percent, or 331, were men. Just under 18 percent of all patients had a history of cardiac disease. Basing their reference ranges on the healthy subgroup -- 578 patients who either had no history of heart disease or who were taking heart medication -- the

researchers established averages for each of the three ECG prolonged intervals, in men and women. In all cases, the average interval cutoffs for women were higher than the standards set out in the current medical literature. For men, the cutoffs were considerably higher -- in some cases more than twice as high. Based on the findings, the researchers suggest ECG standards be re-examined for both age and sex for the older population.

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The research team also included Lekshmi Vaidyanathan, M.B.B.S.; Sandhya Behera, M.B.B.S.; Rachel Gilmore, M.B.B.Ch., M.R.C.P.I.; Amy Weaver; Gerald Gau, M.D.; and Wyatt Decker, M.D.; all from Mayo Clinic; and Krishna Vedula, University of Minnesota.

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