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ABSTRACTS IN CARDIOLOGY

Big people and big hearts

Many echocardiographic examinations and most necropsy reports adopt an arbitrary upper limit for left ventricular mass (allowing a difference for sex) to define the presence of hypertrophy. They do not make adequate allowance for the variation in body size.

Left ventricular mass correlates strongly with body height as was well shown in a previous Framingham study by Levy and colleagues (*American Journal of Cardiology* 1987;59:956-60). A further study reported in

the abstract below shows that even after adjustment for height there remains an independent strong positive association with body weight. Thus obese subjects have unduly large and heavy left ventricles. These data raise questions about what should be regarded as "normal" and what as "hypertrophy". Perhaps more important is the question whether the increased left ventricular mass in obese subjects is a cause of excess mortality.

MJ DAVIES

The impact of obesity on left ventricular mass and geometry: The Framingham Heart Study

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Objective.—To determine the relationship of varying degrees of obesity with left ventricular mass and geometry.

Design.—Survey.

Setting.—Population-based epidemiologic study.

Participants and Methods.—M-mode echocardiograms, which were adequate for estimation of left ventricular mass, were obtained in 3922 healthy participants of the Framingham Heart Study. Measured height and weight were used to calculate body-mass index, a measure of obesity.

Results.—Body-mass index was strongly correlated with left ventricular mass. After ad-

justing for age and blood pressure, body-mass index remained a strong independent predictor of left ventricular mass, left ventricular wall thickness, and left ventricular internal dimension ($P < 0.01$ for all). Body-mass index was associated with prevalence of echocardiographic left ventricular hypertrophy, particularly in subjects with a body-mass index exceeding 30 kg/m².

Conclusions.—Obesity is significantly correlated with left ventricular mass, even after controlling for age and blood pressure. The increase in left ventricular mass associated with increasing adiposity reflects increases in both left ventricular wall thickness and left ventricular internal dimension. — *JAMA* 1991;266:231-36.