

### Article of Interest

Franco, O, et al. Blood Pressure in Adulthood and Life Expectancy With Cardiovascular Disease in Men and Women. *Hypertension*. 2005. (Click to Access)

### Context and Study Objective

The risk reductions in cardiovascular (CV) events, end stage renal disease, and mortality achieved with effective blood pressure control have been clearly demonstrated. Less well characterized is the effect of hypertension on life expectancy, the objective of this paper.

### Main Outcome

The impact of elevated blood pressure on remaining life expectancy from the age of 50.

### Design, Setting, and Participants

Using the Framingham Heart Study cohort (initiated 1948), participants were stratified by BP at the index age of 50 and followed until death. Those with known CV disease were excluded. Confounders including tobacco use, diabetes, and BMI were controlled for. Data on cholesterol was not available; the use of anti-hypertensive therapy was not controlled for but the authors estimate less than 10% of the cohort was appropriately treated.

### Results

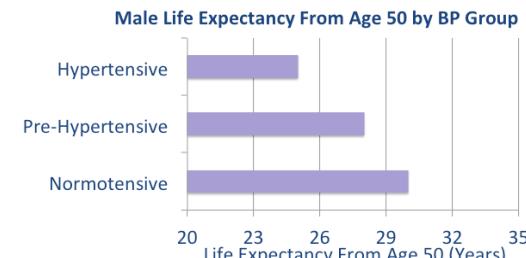
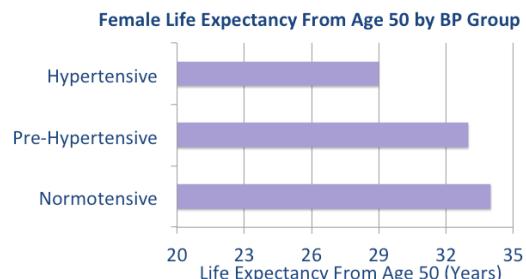
-3100 patients were followed for an average of 28 years.

85% of men and 50% of women were active/former

smokers. 1-2% of individuals were diabetics. Mean BMI was 26.

-From the age of 50, mean remaining life expectancy for the overall population was 27 (men) and 32 (women) years.

-Figures: There was an inverse relationship between BP at age 50 and longevity. Hypertensives (BP >140/90 mm Hg) had the shortest life expectancy, normotensives (BP <120/80 mm Hg) the longest. Those with pre-hypertension (BP 120-140/80-90 mm Hg) had a residual life expectancy between these groups



### Clinical Perspective

-Evidence-based medicine is characterized by relative risk reductions and number needed to treat. This paper offers a concrete estimate with respect to the association between elevations in BP and declining life expectancy.

-Given the statistical methods employed and the era from which the data was gathered, numerous qualifications exist:

- The nature of the study only allows for an association between hypertension and life expectancy rather than a cause/effect relationship.
- The use of anti-hypertensives was not controlled for (however, the authors estimate that <10% of individuals were appropriately treated).
- The magnitude of reductions in life expectancy associated with (largely untreated) hypertension is undoubtedly lower in the current era of effective therapies for hypercholesterolemia and diabetes. Tobacco use today is a fraction of those noted.
- Nonetheless, the article illustrates the natural history of disease in essentially untreated hypertensives; importantly even pre-hypertension is associated with reductions in life expectancy.