

## The Significance of Rising Systolic Blood Pressures between 110 and 140 mm Hg on Cardiovascular Risk

A global survey analysis was designed to estimate the association between a systolic blood pressure (SBP) of at least 110 to 115mmHg and an SBP of 140mmHg or higher and the burden of different causes of death and disability by age and sex for 195 countries and territories between 1990 and 2015 (1). In studies from 154 countries that included 8.69 million participants, it is estimated that between 1990 and 2015 the rate of systolic blood pressure (SBP) of at least 110 to 115 mm Hg increased from 73,119 to 81,373 per 100, 000 persons, and SBP of 140 mm Hg or higher increased from 17, 307 to 20, 526 per 100 000 persons. The estimated rate of annual deaths associated with SBP of of at least 110 to 115 mm Hg increased from 135.6 to 145.2 per 100 000 persons, and for SBP of 140 mm Hg or higher increased from 97.9 to 106.3 per 100 000 persons. In 2015, 7.8 million deaths were estimated to be related to SBP of 140 mm Hg or higher.

These data strengthen the case to lower the risk of cardiovascular diseases in those with an SBP of 140 mm Hg or greater by all effective means available including improving uptake of healthy diets, minimizing weight gain or promoting weight loss in overweight and obese individuals. Where necessary adherence to blood pressure lowering medications should be emphasized realizing that compliance with these medications is extremely poor estimated at 25 to 50 percent of patients at one or two years.

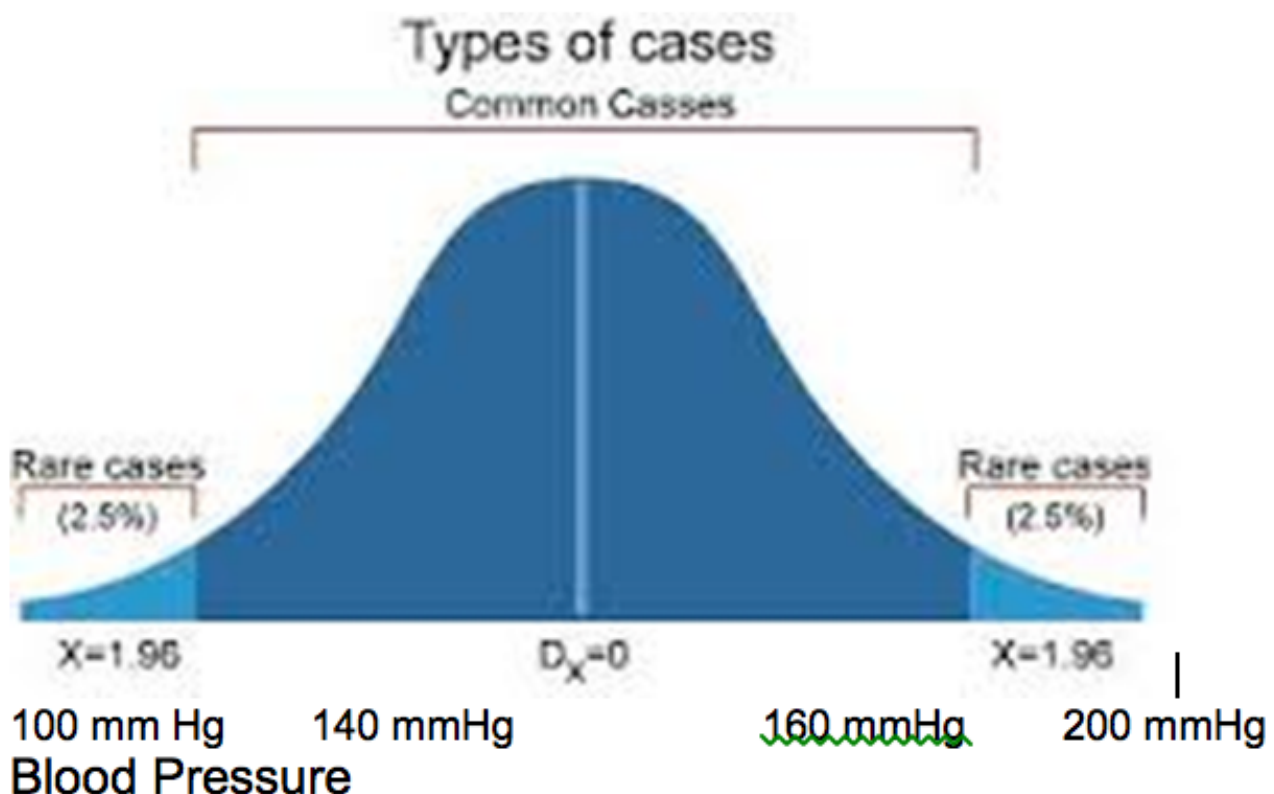


Figure 1: Projected Global Disability-Adjusted Life Years by Systolic Blood Pressure and Cause (adapted from Reference 1)

What is striking about this figure is the continuous increase in disabilities associated with blood pressure elevation. There is not a simple cutoff at 140 mm Hg with all levels below that being benign. Given the known association of obesity with high blood pressure, it is important to monitor blood pressure and take those steps in lifestyle change that could be effective in reducing systolic blood pressure. In addition, the known effects of the sympathetic nervous system on blood pressure suggests that other modalities including meditation and relaxation may be helpful. This global survey is a call to action for the prevention of hypertension.

1. Global Burden of Hypertension and Systolic Blood Pressure of at Least 110 to 115mmHg, 1990-2015. Mohammad H. Forouzanfar et al. *JAMA*. January 10, 2017;317:165-182.