
BACKGROUND: Previous reports have described favorable changes in the relationship between systolic blood pressure and age in recent birth cohorts. The obesity epidemic might threaten that pattern.

OBJECTIVES: To update analyses of differences between birth cohorts in the relationship between systolic blood pressure and age and to determine whether increases in obesity have had adverse effects.

METHODS: We examined the systolic blood pressure distributions across birth cohorts born between 1890 and 1990 in 68,070 participants, aged 18-74 years, in the National Health (and Nutrition) Examination Surveys between 1960 and 2008. We postulated that age-adjusted 10th, 25th, 50th, 75th, and 90th percentiles of systolic blood pressure had decreased in more recent versus earlier cohorts, and that this pattern had slowed or reversed recently due, at least in part, to obesity.

RESULTS: After adjusting for gender, race, age and age(2), the 10th, 25th, 50th, 75th, and 90th percentiles of systolic blood pressure were 1.1, 1.4, 1.9, 2.5, and 3.4 mmHg lower for each decade more recently born (all P < .0001). Quadratic terms for birth cohort were positive and significant (P < .001) across all percentiles, consistent with a decelerating cohort effect.
Mediation of this deceleration was observed for body mass index ranging from 20.4% to 44.3% (P < .01 at all percentiles).

CONCLUSIONS: More recent cohorts born in the United States between 1890 and 1990 have had smaller increases in systolic blood pressure with aging. At any age, their systolic blood pressure distributions are shifted lower relative to earlier cohorts. Decreases of 1.9 mmHg in the median systolic blood pressure per decade translates into 11.4-13.3 mmHg over 6-7 decades, a shift that would contribute importantly to lower rates of cardiovascular diseases. These favorable changes are slowing, perhaps owing, at least in part, to the obesity epidemic.

DOI
10.1016/j.annepidem.2012.04.021
Alternate Journal
Ann Epidemiol
PubMed ID
22683025