Top Ten Things to Know
Salt Sensitivity of Blood Pressure

1. High blood pressure is a major risk factor for cardiovascular disease (CVD) and stroke. Its prevalence is estimated to be 1 in 3 among U.S. adults.

2. Salt sensitivity of blood pressure (SSBP) is a physiological trait found in mammals, including humans, by which the blood pressure (BP) of some members of the population exhibits changes parallel to changes in salt intake.

3. The study of SSBP in humans has been challenging because of issues such as random error in BP measurements and multiple sources for BP variability. Additionally, SSBP of humans is a continuous, normally-distributed trait. Thus, defining individuals as salt-sensitive (SS) or salt-resistant (SR) requires the selection of arbitrarily chosen cutoffs.

4. Investigators have described potential causes of SS in humans that include abnormalities of the renin-angiotensin-aldosterone system, endothelin system, sympathetic nervous system, and other pathways.

5. Although at least 85 genes have been associated with SS in rodent models, no associations have been confirmed in humans, in part, because of the large sample sizes necessary to achieve sufficient statistical significance of modest effects.

6. Factors that may influence the BP response to salt intake include sex, age, adiposity, race-ethnicity, and clinical conditions (hypertension, diabetes mellitus, and chronic kidney disease).

7. The ability to specifically target SS patients in clinical settings has been limited, since current methods for determining SSBP are labor-intensive and costly, and have generally been limited to research settings. The identification of a biomarker for SSBP would help clinicians target therapy.

8. The applicability of SSBP to public health approaches is currently limited. Factors have included a lack of uniformity across research studies in defining SSBP, the lack of an established practical method of assessment, and the fact that the prevalence of SSBP is heavily influenced by the definition used.

9. Further study of SSBP has the potential to elucidate its causative mechanisms and allow treatment of the phenotype with drugs that target its causation rather than more traditional antihypertensive agents.

10. The resolution of methodological issues in the measurement of SSBP in humans will be key in order to address the significant gaps in our current knowledge, and to ultimately translate these findings for public health and clinical settings.