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**Static and dynamic modeling of the operating point of the
arterial baroreflex.**

Outline

1. Autonomic nervous system (in relation to the cardiovascular system)
2. Body fluid & blood pressure regulatory mechanisms
3. Heart as an electric driven pump
 - (a) Action potential generation & propagation
 - (b) Rhythm generation
 - (c) Electrocardiogram, chest wall projection, forward & backward
 - (d) Excitation-contraction coupling
 - (e) Ventricular stiffness in diastole & systole
 - (f) Ventricular 'function curves'; description & 'contractility'
4. (Left) ventriculo-vascular coupling; function of aorta and elastic vessels
5. Vascular bed, pulse wave transfer & reflection
6. Microvasculature; fluid & solutes exchange; NO & cytokines signaling
7. Venous system; depot function, elastic recoil, 'unstressed volume', venous return, cardiac filling
8. Right ventricle & Pulmonary system; specialized low pressure circulation for oxygen uptake & CO₂-delivery
9. Mechanisms of respiratory control; respiratory - cardiovascular interaction (with a special note on sleep-apnea)
10. Analysis & interpretation of cardiovascular variability
11. Effects of posture on heart & circulation & pulmonary function
12. Regulation of flow in special areas, in particular cerebral blood flow-Cardiac defibrillation.