

Heart sounds

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Propositions

1. The START-estimated second heart sound splitting interval can be used as an indicator of interventricular dyssynchrony. (Chapter 2)
2. A shortened interval between ventricular activation and first heart sound and a prolonged interval between the first and second heart sound are associated with better myocardial contractility. (Chapter 3)
3. Heart sounds provide a novel, simple marker of E/e' elevation in patients with heart failure with preserved ejection fraction. (Chapter 4)
4. The ability to record heart sounds with a smartphone provides a unique opportunity for simple and cheap out-of-hospital check-ups of patients. (Chapter 5)
5. In its > 200 years long history, auscultation showed three waves of research enthusiasm, each following development of novel measurement tools. (Chapter 6)
6. Three basic aspects for heart sound analysis are amplitude, timing and frequency.
7. The production of sound requires the application of an appropriate force to a structure capable of vibrating within the frequency range of audibility. (Charles C. Wolferth, 1935)
8. Vibrations recorded by the phonocardiograph originate in the entire heart and cannot be attributed to a single cardiac structure. (Pravin M. Shah, 1963)
9. Our nature lies in movement. (Blaise Pascal)
10. *Non sunt multiplicanda entia sine necessitate.* (Occam's razor)

Hongxing Luo

Maastricht, July 2022