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The Role of Technologists (and Technology) in Sleep Medicine: Past, Present and Future

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Disclosures

- There are no conflicts of interest.

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Objectives

At the conclusion of this presentation participants will be able to discuss various ways in which polysomnographic technologists have made significant, historical contributions to the field of sleep medicine.

At the conclusion of this presentation the participant will be able to discuss :
Technological development in sleep medicine

The role of the sleep technologists in the evolution of sleep medicine, the delivery of the highest standards of patient care and rigorous scientific research

Hopes for the future, guided by the work of those before us

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- The presentation will include photos and stories of historical nature

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MOC Question

- **The Differential amplifier is an important component of the recording system for polysomnography, especially for EEG, EMG, EOG signals.**
- A) this is true because the differential amplifier provides for the comparison between 2 inputs and the output is the difference between the inputs. This is known as common mode rejection.
- B) this is true because a differential amplifier usually has both high frequency and low frequency filters to allow for the selection of the range that most likely contains the signal of interest.
- C) Both A and B are true
- D) This is not true because of the use of computers. They are not needed because everything is digitized and stored in high- capacity servers.

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MOC question answer: both a and b are correct.

- Rationale : the differential amplifier remains the workhorse of the PSG data collection process. The amplifier receives signals from the electrodes placed on the body. Usually there are 2 inputs to the amplifier(brain and reference for example). The amplifier compares these inputs and rejects signals that are the same. Things that are the same on both electrodes are usually artifact from the body and the environment. Filters are an important part of the function of the differential amplifier because they allow the user to define the range and display of signals of interest. And decrease the amplitude (display) of noise. Reference: Keenan, Polysomnographic Technique: An Overview. P 153. in, Chokroverty, *Sleep Disorders Medicine Basic Science, Technical Considerations and Clinical Aspects*, 2nd Edition Butterworth Heinemann, 1999

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