

METHODS FOR PROCESSING ELECTROGASTROENTEROGRAPHIC SIGNALS

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ABSTRACT

Electrogastroenterography (EGG) is a non-invasive diagnostic method used to analyze the electrical activity of the stomach. The analysis of EGG signals has become increasingly important in assessing the function of the gastrointestinal tract. Numerous processing techniques have been developed to analyze the EGG signals, including Fourier analysis, wavelet analysis, and time-frequency analysis. Fourier analysis is the most widely used method for EGG signal processing, while wavelet analysis has shown promising results in detecting abnormal gastric rhythms. Time-frequency analysis methods, such as spectrogram analysis, allow for an in-depth analysis of both the frequency and temporal characteristics of EGG signals. Other techniques, such as independent component analysis and principal component analysis, have been used to perform blind source separation and reduce noise in EGG signals. This review provides an overview of the EGG signal processing techniques and their applications in diagnosing gastrointestinal disorders. The review highlights the advantages and limitations of different methods and provides recommendations for selecting the appropriate technique for a specific EGG analysis.

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