3.3 OTHER BIOSIGNALS

Electromyography (EMG) is a technique for evaluating and recording the electrical activity produced by skeletal muscles. EMG is performed using an instrument called an electromyography, to produce a record called an electromyogram. An electromyography detects the electrical potential generated by muscle cells when these cells are electrically or neurologically activated. The signals can be analysed to detect medical abnormalities, activation level, and recruitment order or to analyse the biomechanics of human or animal movement. The electrical source is the muscle membrane potential of about -90 mV. Measured EMG potentials range between less than 50µV and up to 20 to 30 mV, depending on the muscle under observation. Typical repetition rate of muscle motor unit firing is about 7–20 Hz, depending on the size of the muscle (eye muscles versus seat (gluteal) muscles), previous axonal damage and other factors. Damage to motor units can be expected at ranges between 450 and 780 mV.

Electrooculography (EOG) is a technique for measuring the resting potential of the retina. The resulting signal is called the electrooculogram. The main applications are in ophthalmological diagnosis and in recording eye movements. Unlike the electroretinogram, the EOG does not represent the response to individual visual stimuli. Eye movement measurements: Usually, pairs of electrodes are placed either above and below the eye or to the left and right of the eye. If the eye is moved from the central position towards one electrode, this electrode "sees" the positive side of the retina and the opposite electrode "sees" the negative side of the retina. Consequently, a potential difference occurs between the electrodes. Assuming that the resting potential is constant, the recorded potential is a measure for the eye position.

Electroglottography (EGG) is technique for the non-invasive measurement of the time variation of the degree of contact between the vibrating vocal folds during voice production.

Links

- Electromyography
- Electrocardiography
- Electroencephalography