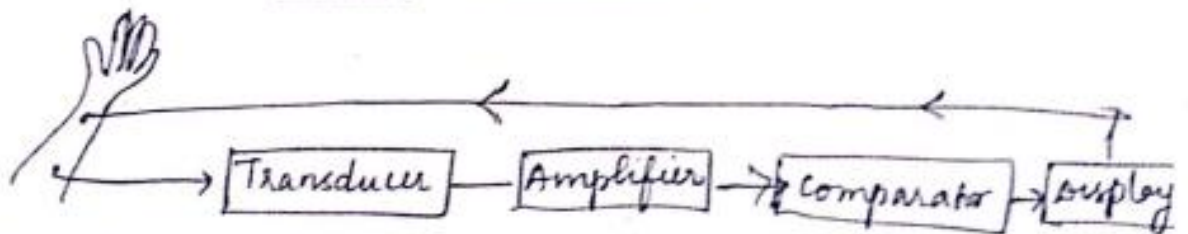


EMG Biofeedback Instrumentation

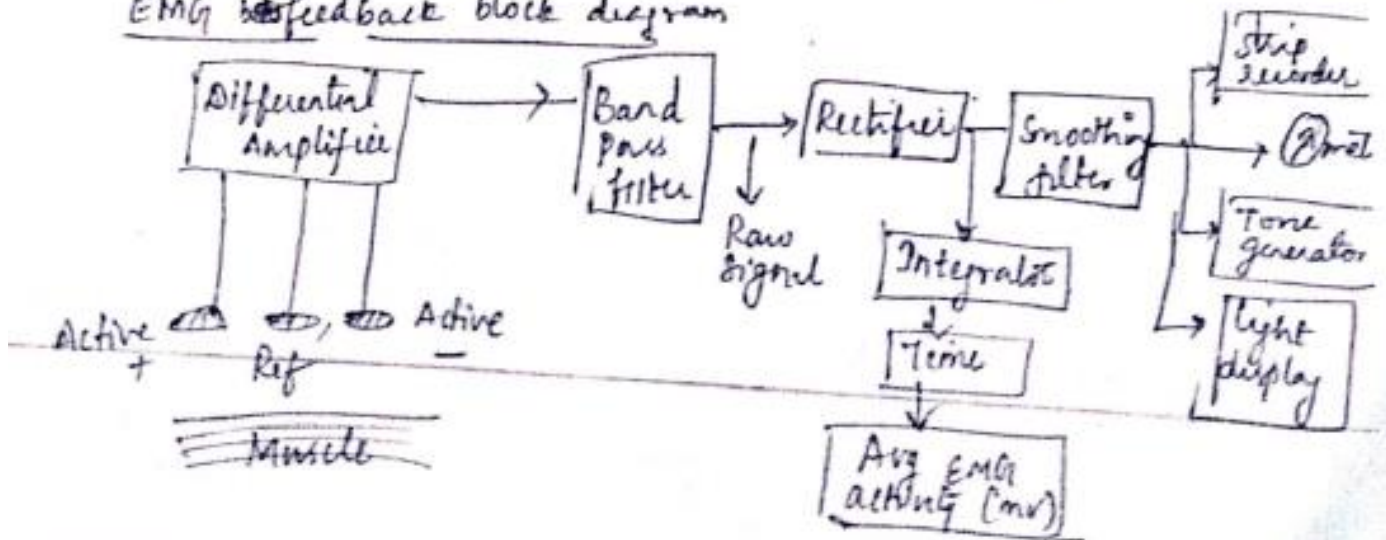
EMG feedback

* EMG feedback has been used in the treatment of bruxism [the nocturnal grinding of the teeth]. In case of paralytic patients, they are trained through biofeedback method to use the paralysed muscle.

Basic principle of biofeedback instrumentation



EMG feedback block diagram



→ Biofeedback is a technique in which a variable produced by biological process within the body is measured and compared with a reference value & based on the difference action is taken to bring the variable to the reference value.

→ In the figure, the biofeedback instrument is connected to the patient arm or hand & the muscular/EMG activity is measured through the placement of electrodes on the skin which acts as a transducer which converts the muscular activity due to contraction/relaxation into electrical signals.

→ Then the signal is amplified, compared also filtered out for any noise present on the signal. The error signal is converted into more suitable visual or auditory signal.

→ The output is given as a feedback to the input which act as reference. The obtained output is read either on strip recorder/display or through audio signal resulting in the sounds of crackling in the muscles.

Biofeedback in EMG

* A therapeutic procedure which uses electronic or electromechanical instruments to accurately measure, process and feedback reinforcing information via auditory or visual signals.

* used to help patient develop generate voluntary control of either neuromuscular relaxation or muscle reeducation following injury.

Role of Biofeedback

* Feedback includes information related to the sensation associated with movement itself as well as information related to the result of the action relative to some goal or objective.

* It provides patient with a chance to make correct small changes in performance which are immediately noted & rewarded so that eventually large changes or improvements in performance can be accomplished.