

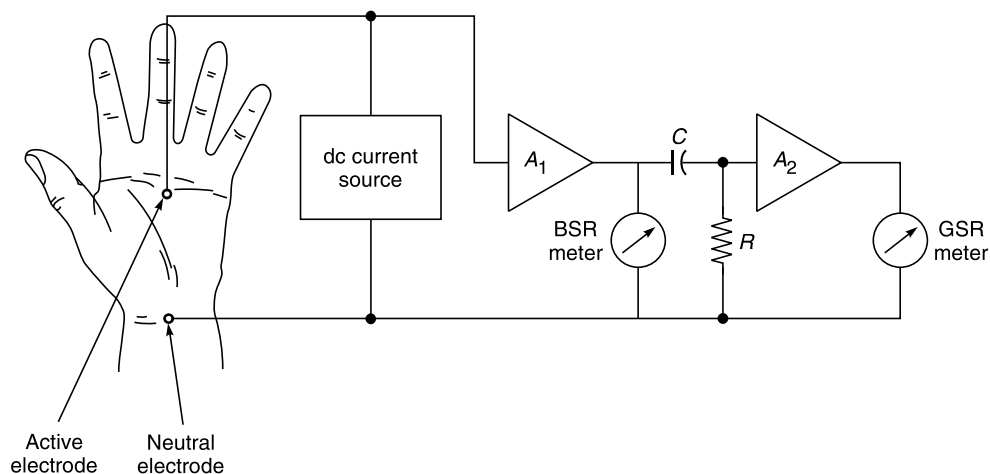
biofeedback is a means for gaining control of the body processes to create a specially required psychological state so as to increase relaxation, relieve pain and develop healthier and more comfortable life patterns. The technique involves the measurement of a variable produced by the body process and compares it with a reference value. Based on the difference between the measured and reference value, action is taken to bring the variable to the reference value.

It may be noted that biofeedback is not a treatment. Rather, biofeedback training is an educational process for learning specialized mind/body skills. Through practice, one learns to recognize physiological responses and to control them rather than having them control us. The objective of biofeedback training is to gain self-regulatory skills which help to adjust the activity in various systems to optimal levels.

Many different physiological processes have been evaluated for possible control by biofeedback methods. However, the following four neural functions are commonly employed:

- Emotions or Electrodermal Activity (Galvanic skin response measurements)
- Muscle tension or EMG (Electromyograph measurements)
- Temperature/sympathetic pattern (Thermistor readings)
- Pulse (Heart rate monitoring)

Electrodermal activity is measured in two ways: BSR (basal skin response) and GSR (galvanic skin response) is a measure of the average activity of the sweat glands and is a measure of the phasic activity (the high and low points) of these glands. BSR gives the baseline value of the skin resistance whereas GSR is due to the activity of the sweat glands. The GSR is measured most conveniently at the palms of the hand, where the body has the highest concentration of sweat glands. The measurement is made using a dc current source. Silver-silver electrodes are used to measure and record the BSR and GSR. Figure 5.18 shows the arrangement for measuring these parameters. The BSR output is connected to an RC network with a time constant of 3 to 5 seconds which enables the measurement of GSR as a change of the skin resistance.



➤ **Fig. 5.18** Block diagram for measurement and record of Basal Skin Resistance (BSR) and Galvanic Skin Response (GSR)