CHAPTER 12

Biofeedback in the Treatment of the Stress Response

The purpose of this chapter is to provide a basic introduction to biofeedback in general, and as it relates to the treatment of the stress response.

Biofeedback may be conceptualized as a procedure in which data regarding an individual's biological activity are collected, processed, and conveyed back to him, so that ultimately he can modify that activity. It is the construction of a "feedback loop" which may be envisioned as in Figure 26.

Feedback loops exist in almost all functions of the human body, from the rate-modifying feedback loops concerned with the most elementary biochemical reactions to the most complex human endeavors. Information regarding the result of any event is necessary at some level, if it is to be modified in any but random fashion.

Thus, the concept underlying biofeedback is an elementary one in all biology, yet one which has not yet been widely put to use in the therapeutic sciences. In the traditional medical model, the patient presents a physiological disturbance, and data regarding his physiological functioning are collected by the clinician, who draws conclusions and institutes appropriate therapy, the patient playing a passive role. This interaction as visualized below represents an
indirect closed loop of information, starting and ending with the patient, and including information-gathering devices, the clinician and therapeutic devices.

As can be seen from a comparison of Figures 26 and 27, the principle on which biofeedback is based involves the active participation of the patient in the modification of his condition.

Consider the case of a function like breathing, in which, when one turns one’s attention to it, one is aware of it, but which continues without conscious awareness. The question of awareness, of course, does not even enter into the picture in terms of visceral autonomic responses generally. It is as if there are priorities for the human brain, with many functions carried out at subcortical levels—especially those that must be maintained in an ongoing fashion, such as heartbeat and biochemical reactions. Although this may be the most efficient way for an organism to function, it keeps it from being able to monitor many of its autonomic functions consciously, and thus consciously change them. This is what biofeedback provides for the individual—the potential to exert some control over autonomic biological activity.

Given the appropriate information, as in biofeedback, it is being increasingly found that man can learn to change bodily functions