

## **Biofeedback: Fad or Medicine?**

Biofeedback has a long history. As early as in 1930 the doctor and researcher Edmund Jacobson trained people how to relax by electrically measuring and repeatedly informing them on their momentary muscle tension. Using this routine, Jacobson developed today's most effective relaxation technic named "progressive muscle relaxation". Of course, in those days nobody thought of labelling what had been done as "biofeedback"; that came much later.

The next stepping stone for biofeedback was in the 1960's, as two profound scientific discoveries using this method were made. On the one hand it was found, that humans could learn to consciously activate single nerve fibres if supplied with moment to moment information about the activity of that nerve fibre. This is a quite remarkable skill, recalling that there are thousands of nerve fibres we constantly use without having any detailed knowledge of them. The second discovery was that animals, given appropriate feedback, could learn to increase and decrease their heart rate and even their digestive functions.

These findings stimulated a remarkable variety of applications, with the ultimate goal of curing all diseases by consciously controlling the aversive bodily functions. This is when the term biofeedback - meaning "feedback of biological functions" came into being. Biofeedback was not only seen as the road to universal health, it was also thought of as a method to alter the state of mind, which was nothing unusual to try in the late 60's and early 70's. "Alpha-feedback" became the hit of those days, feeding back the electrical brain activity (which can be measured and monitored by averagely sophisticated machines) to gain a calm and relaxed state of mind.

I regret to say that many of the projects of those days were a failure. Biofeedback did not stand up to the hopes people were giving the method and the initial enthusiasm vanished. Biofeedback went back to the laboratories to undergo serious scientific scrutiny. Since then a number of applications have been established, that stand up to today's medical requirements. And a new generation of biofeedback equipment has come about, that provides precise and psychologically relevant feedback.

Now, what is modern biofeedback-therapy like? Usually, the basis of treatment is relaxation. Patients rest in a comfortable chair and are instructed in the art of how to relax. A common way to do this is by developing a slow, abdominal breathing pattern. This is usually achieved by on-line feedback of breath, which is displayed on the screen of a computer or made audible by a computer-aided synthesiser. After general relaxation has been mastered in something like 3-5 office sessions, feedback is given directly of the physiological system responsible for the problem. In dealing with chronic headache, for example, one would monitor the muscle-

tension of the forehead and display it simultaneously on a screen. In this way, the patient can learn to re-educate the maladapted system so the body regains again a normal and healthy way of functioning. Therapy as described usually does not exceed 10 to 15 office-sessions, which is, for chronic diseases like headache, migraine or low back pain, a remarkably short amount of time.

As mentioned above, biofeedback can deal with a series of chronic diseases which are in some way or other related to stress. These are tension headache, migraine, low back pain, high blood pressure, muscle-tension, nervousness and anxiety, just to name some. But apart from these more medical applications, biofeedback is also a way to deal with stress before the body reacts in an unwanted way. The method permits one to learn & train deep relaxation and to develop the "wisdom of the body", two invaluable skills in mastering stress.

So, in summing up, biofeedback has gone it's way from a fad of mental enlightenment to a useful instrument in medicine and psychology. In Vienna, Biofeedback-treatment is supplied by some hospitals like the "Allgemeine Krankenhaus der Stadt Wien" and by a few private institutes like the "Institut für Biofeedback und Gesundheitspsychologie".

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