

Biofeedback: Plain as the Nose on Your Face

Steven N. Broder, M.S.1-

Biofeedback refers to the process of detecting ongoing physical activity and immediately presenting this information to an individual in order that the activity may be controlled or altered. In recent years, biofeedback has been utilized in a wide variety of both common and less well-known disorders including migraine and tension headaches (Budzynski, Stoyva, Adler, and Mullaney, 1973; Wickramasekera, 1973), Raynaud's disease (Sappington, Fiorito, and Bretony, 1979; Sedlacek, 1979), fecal incontinence (Engel, Nikoomanesh, and Schuster, 1974), bruxism (Cannistraci, 1977), spasmodic torticollis (Cleeland, 1973), hyperhidrosis (Harris and Sieveking, 1979), and diabetes mellitus (Fowler, Budzynski, and Vandenberg, 1976). In a clever procedure, Peper and Robertson (1976) employed bathroom scales to provide stroke patients with feedback of their weight distribution. The patients used the scales to teach themselves how to shift their weight between knees and hands in learning to crawl and from feet to buttocks to a chair in the act of sitting down.

Clinical Fellow in Psychology. Department of Psychiatry, Massachusetts General Hospital and Harvard Medical School, Boston.

This article is based on a portion of a paper read at the American Academy of Orthomolecular Therapists Conference, "Leisure, Stress and Diet," Middle Tennessee State University, Murfreesboro Tn Nov 3-4

1978.

One of the reactions that I have experienced when reading of a new application of biofeedback is the inventor's sigh, "That's so simple. Why didn't I think of that?" After all, once the basic physiology is understood, the principles of feedback and operant conditioning may be applied. I had some insight into my question about a year ago as I perused a medical advice column in the newspaper. One man wrote of an embarrassing problem: The blood vessels on the surface of his nose often were dilated and he appeared to possess a red nose. He had been to several doctors without success. The medical columnist reported being somewhat stymied and suggested several possible medications and the possibility of surgery.

It was not this response that caught my attention, however. I realized that I had read a column by the same man several months previously which presented an overview of biofeedback concepts and procedures. Included in this was the utilization of thermal biofeedback to monitor peripheral skin temperature through surface blood flow. I wondered now why the physician did not suggest the possibility of utilizing temperature feedback with the thermostat (heat sensor) attached to the man's nose as he attempted to lower his skin temperature and thus direct the blood away from the surface.

The purpose of this story is not to declare that health professionals do not consider all treatments or even to suggest a new application of biofeedback. Rather it indicates that biofeedback represents a shift in treatment perspectives. It is a new paradigm and, as such, a radical departure from traditional views. Thus it will take time and experience to be able to see in this light. (One never knows, however. After the talk in which I originally presented these ideas, a psychologist working in a prison system approached me and described an inmate with a similar "red nose problem." It so happened that the prison had recently acquired biofeedback equipment, including a thermal unit, and my suggestion was to be put to the test!)

Biofeedback may be understood as one component in a self-control approach towards health and sickness. Increasingly we are finding out that patients are both eager and able to assume more responsibility for themselves and their treatment (Lecker, 1979; Osmond, Mullaly, and Bisbee, 1978). Biofeedback aids people in taking an active role in managing their own lives.

A self-control approach is, in turn, a part of the larger philosophy of a holistic view of the person (McCaldon, 1979). Such a view seeks to understand the person as a unique individual, influenced by biological, psychological, nutritional, social, historical, and other factors; an individual who acts upon the world and thus shapes the nature of his or her environment. Fuller (1977) has commented that if there is psychosomatic illness there should exist psychosomatic health. Patients are often told "Go relax" or "Take it easy." Yet it is often such an inability that is responsible for much distress. Biofeedback offers a direct method of learning how to reduce stress and relax oneself.

A holistic view of biofeedback also implies that patients are not just hooked up to machines and told to have a go at it. The proper use of biofeedback training always takes place in the context of a therapeutic relationship. Careful assessment and history, respect for characterological style (Bradley and Anchor, 1979), and rapport and trust-building

are intrinsic to the approach.

Lazarus (1975) and Meichenbaum (1976) have stressed the importance of the patient's cognitions and self-statements at all stages of treatment, from initial motivation to transfer of training.

Jacob Bronowski, in his classic volume **Science and Human Values**, noted that the characteristic invention of the Industrial Revolution was the power machine which does the routine work of the human muscle. He added that the characteristic invention of the second Industrial Revolution of the 1950's was the control mechanism which does the routine work of the human brain. I would like to add the biofeedback apparatus to Bronowski's list as indicative of another revolution - one in which machines and control mechanisms will be used as aids in helping human beings do their own routine work; that is, the control and regulation of various organismic functions, integrating both mind and muscle in the reduction of stress.

REFERENCES

- BRADLEY, C.S. and ANCHOR, K.N.: Biofeedback Training Procedures for Different Neurotic Character Styles. *American Journal of Clinical Biofeedback*, 1:61-64,1978.
- BRONOWSKI, J.: *Science and Human Values*. Harper and Row, New York, 1956.
- BUDZYNSKI, T.H., STOYVA, J.M., ADLER, C.S. and MULLANEY, D.J.: EMG Biofeedback and Tension Headache: A Controlled Outcome Study. *Psychosomatic Medicine*, 35:484-498,1973.
- CANNISTRACI, A.J.: Biofeedback - The Treatment of Stress Induced Muscle Activity, in Gelb, H. (Ed.): *Clinical Management of Head, Neck, and TMJ Pain and Dysfunction*. W.B. Saunders, Philadelphia, 1977.
- CLEELAND, C.S.: Behavioral Techniques in Modification of Spasmodic Torticollis. *Neurology*, 23:1241-1247,1973.
- ENGEL, B.T., NIKOOMANESH, P. and SCHUSTER, M.M.: Operant Conditioning of Rectosphincteric Responses in the Treatment of Fecal Incontinence. *New England Journal of Medicine*, 290:646-649,1974.
- FOWLER, J.E., BUDZYNSKI, T.H. and VANDENBERGH, R.L.: Effects of EMG Biofeedback Relaxation Program on the Control of Diabetes. *Biofeedback and Self-Regulation*, 1:105-112,1976.
- FULLER, G.D.: *Biofeedback: Methods and Procedures in Clinical Practice*. Biofeedback Press, San Francisco, 1977.
- HARRIS, J. and SIEVEKING, N.: Case Study in Hyperhidrosis. *American Journal of Clinical Biofeedback*, 2:31,1979.
- American Psychologist 30:553-561,1975.
- LECKER, S.: Biofeedback in Clinical Practice. *Psychiatric Opinion*, 16: 25-26,1979.
- MCCALDON, R.: Holistic Concepts in Psychiatry. *Journal of Orthomolecular Psychiatry*, 8:22-29; 1979.

MEICHENBAUM, D.: Cognitive Factors in Biofeedback Therapy. *Biofeedback and Self-Regulation*, 1:201-216,1976.

OSMOND, H., MULLALY, R. and BISBEE, C.C.: The Medical Model and the Responsible Patient. *Hospital and Community Psychiatry*, 29: 522-524,1978.

PEPER, E. and ROBERTSON, J.A.: Biofeedback Use of Common Objects -The Bathroom Scale in Physical Therapy. *Biofeedback and Self-Regulation*, 1:237-240,1976.

SAPPINGTON, J.T., FIORITO, E.M. and BRETONY, K.A.: Biofeedback as Therapy in Raynaud's Disease. *Biofeedback and Self-Regulation*, 4: 155-169,1979.

SEDLACEK, K.: Biofeedback for Raynaud's Disease. *Psychosomatics*, 20: 535-541,1979.

WICKRAMASEKERA, I.E.: Temperature Feedback for the Control of Migraine. *Journal of Behavior Therapy and Experimental Psychiatry*, 4:343-345,1973.