



# Intercom

duke university medical center

VOLUME 22, NUMBER 39

OCTOBER 17, 1975

DURHAM, NORTH CAROLINA

## Clinical Biofeedback Lab Established To Relieve Pain

By William Erwin

Day after day for a year, a woman executive from Charlotte had headaches. She underwent extensive testing, but found no relief. Her temples throbbed; she felt as if a steel band were tightening around her skull.

Now, with the help of biofeedback training, she's learned how to stop a headache as soon as it starts.

Relief came so quickly that the patient "couldn't believe it," according to Dr. Redford B. Williams, director of the new Clinical Biofeedback Laboratory here. The lab opened in September.

At a recent meeting of the American Psychiatric Association, Williams reported how the woman from Charlotte and 15 other patients responded to biofeedback training.

The patients suffered from anxiety or headaches. A 51-year-old woman was afraid of flying; a 32-year-old secretary became upset whenever her boss would yell at her; a 27-year-old woman feared her son would fall down a flight of stairs.

Biofeedback helped seven of the patients, Williams said. The Charlottean learned to relax the taut scalp and forehead muscles that were causing her headaches. The 51-year-old can fly now without fear. The secretary is calmer at work. The mother was no longer obsessed about her son's falling.

With the other nine patients,

biofeedback alone didn't help. But it wasn't a waste of time, Williams said. In six cases, the technique pointed up psychiatric problems, some of which the patients and their doctors weren't aware of before.

What is biofeedback? It's a way a person can monitor — and learn to control — certain body functions, Williams said in an interview.

"Imagine putting a golf ball," he said. "After each putt, you adjust your swing until you get the ball in the hole. You'll never learn to putt if you can't see whether the ball goes to the left of the hole or to the right."

Biofeedback training works much the same way. Instead of learning how to putt, a person can learn how to control his heartbeat or muscle tension.

A computer in the Duke lab converts these body functions into a visual image on a TV-like oscilloscope screen. If the patient's muscles are tense, for instance, an orange dot bobs to the top of the screen. If his muscles are loose, the dot sinks to the bottom of the screen.

By keeping the dot near the bottom of the screen, the patient can learn to relax, even though he may not know exactly what he's doing.

Eventually, the person learns to relax even while thinking of the situation he fears, Williams said.

The woman from Charlotte, he explained, felt anxious at work. When she envisioned herself in the office, the tension in her forehead muscles shot up 88 per cent above normal. But after biofeedback sessions, she was able to imagine the same scene and at the same time reduce her muscle tension 40 per cent below normal.

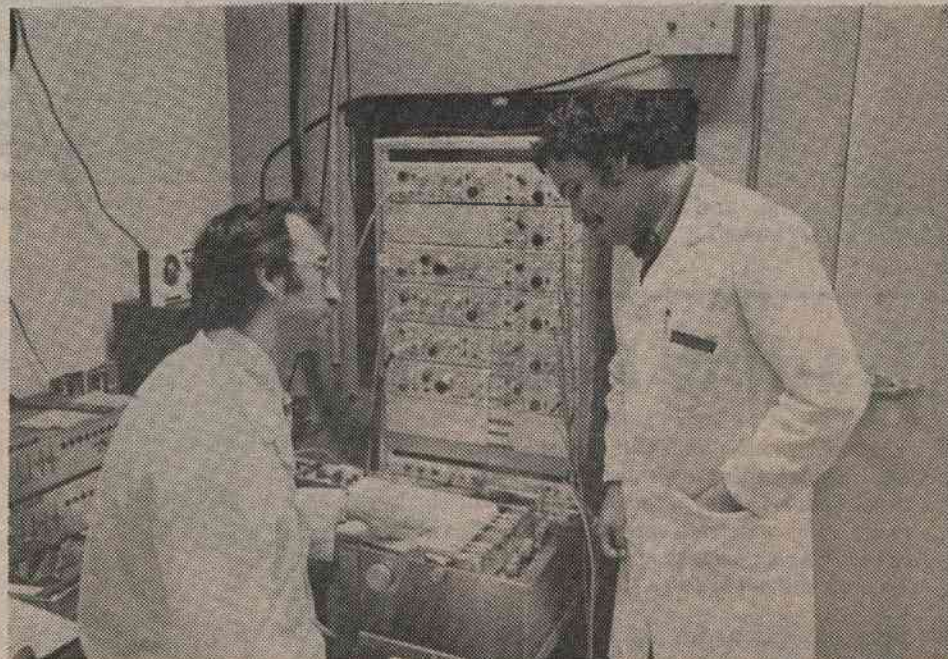
"Her case is not at all untypical," he said.

Williams and his research team of Guillermo Bernal and Matt Jackson have used biofeedback experimentally for the past two and a half years. They've treated patients not only with tension headaches and anxiety, but also with mild cases of paralysis.

The paralyzed patients learned to tense their muscles and strengthen them by keeping the orange dot near the top of the screen rather than near the bottom.

Now that the Biofeedback Laboratory has opened, the Duke team will expand its research program. Studies planned will test biofeedback against migraine headaches and lower back pain. In another experiment, the scientists will try to modify personality traits that might bring on hypertension and heart disease. Williams also will offer instruction in biofeedback therapy.

"We want to serve as a resource to anyone who wants to learn more about these techniques," he said.



MARKINGS—Dr. Redford B. Williams, director of Duke's new Clinical Biofeedback Laboratory, and Guillermo Bernal, a clinical fellow in psychiatry, watch wavy lines on a polygraph machine to see whether a biofeedback patient is learning how to relax. (Photo by William Erwin)



GREETING CARDS AVAILABLE—As the holiday season approaches, the medical center library is again offering for sale United Nations Children's Fund greeting cards in a variety of styles and sizes. Many of the cards were designed by children, and the painting above is one of them. Boxes of 10 cards, ranging in price from \$2.25 to \$3, are available at the library's administrative offices. They may be seen on display in the old Trent Room which is at the rear of the library. All proceeds from the sale of the cards and the wall and date book calendars also being sold will go toward UNICEF projects around the world. These projects are directed toward meeting the nutritional and medical needs of children in developing countries without regard to race, religion, sex or politics.

## Professors Host Meeting Here

More than two hundred dentists, social workers, physicians, speech pathologists, rehabilitation counselors, nurses, hearing specialists and other allied health personnel from the southeastern U.S. are gathering here today, for the Seventh Annual Duke Symposium on Oral-Facial Anomalies.

The day-long event, which is being held in the hospital Amphitheater beginning at 9 a.m., will feature discussions on malformations of the mouth and face and their treatment.

The symposium is being sponsored by the divisions of medical speech pathology, orthodontics and plastic, maxillofacial-oral surgery. Members of the Cleft Lip and Palate Team here and other faculty members from the sponsoring divisions are on the program.

Dr. Frank Popovich, professor of orthodontics and director of the Burlington Growth Centre at the University of Toronto in Canada, will be the special guest lecturer. The research group he heads is

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