

Deep-Brain Stimulation Sparks a Patient's Memory

TORONTO, Jan. 30 -- Vivid memories from 30 years earlier suddenly flooded back to a 50-year-old obese patient who was undergoing deep-brain stimulation of the hypothalamus to suppress appetite, researchers here reported.

Unexpectedly, three weeks of deep-brain stimulation significantly improved the patient's memory on verbal and spatial associative tests, reported Andres M. Lozano, M.D., Ph.D., of Toronto Western Hospital, and colleagues online in the *Annals of Neurology*.

This single-patient case study suggested a potential new application for deep-brain stimulation in patients with disorders such as early Alzheimer's disease, Dr. Lozano said.

Action Points

Explain to patients who ask that deep-brain stimulation sends an electrical current into a localized area of the brain.

Caution patients that deep-brain stimulation has been used successfully in patients with Parkinson's disease, but any benefits for those with Alzheimer's disease or other memory disorders are speculative.

It tells us about the circuitry of memory," he said. "It tells us that the circuits can be modified by the application of electrical current. One could then envisage that it might be possible to stimulate these same circuits in patients who have memory disorders to try to enhance memory function."

Deep-brain stimulation has most commonly been used in the motor cortex to improve motor function of patients with Parkinson's disease and other movement disorders.

Stimulation of the hypothalamus has also been used to treat cluster headaches and even aggressiveness, while animal models have shown it can influence feeding behavior as well.

Because of the potential effect on appetite, the researchers offered hypothalamic deep-brain stimulation to the 50-year-old man with a body mass index of 55.1 kg/m².

"He refused gastric bypass and bariatric surgery feeling that he would continue eating excessively despite these interventions," the researchers said.

The patient had comorbid type II diabetes, hypertension, and obstructive sleep apnea but had failed treatment for obesity including diets, psychological interventions, group therapies, and medications.

Hypothalamic lesion surgery had been used to treat obesity, "but we felt that the safety and reversibility of deep-brain stimulation offered a significant advantage," Dr. Lozano and colleagues said.

The researchers implanted four electrodes on each side of the ventral hypothalamus under local anesthesia without sedation.

When they stimulated the first electrode in the operating room to identify potential sites to suppress appetite, the patient reported suddenly feeling what he described as "d

He experienced being in a park with friends as a young man at around age 20. As an observer to the scene, he described color, people wearing identifiable clothes, and hearing talking, although he could not decipher the words.

With increasing intensity of stimulation from 3.0 V to 5.0 V, he described more vivid details. But higher stimulation at certain contacts produced an unpleasant warm feeling followed by facial hyperemia and sweating but no changes in vital signs.

The same occurred during blinded, sequential successive stimulation of four other individual electrodes.

Two months after hospital discharge, the implanted electrode stimulation generator was turned on and the patient again reported experiencing vivid memories of a nature and content that remained similar for electrodes on right and left sides independent of the contact or stimulation parameters used.

Chronic stimulation was left on at a setting that did not spark memory, behavioral, sensory, or autonomic effects.

Three weeks later, a comprehensive neuropsychological assessment showed significant improvements in scores on the California Verbal Learning Test and Spatial Associative Learning test compared with baseline.

The patients classified more of his responses on the memory tests as "remembered" when the stimulation was on than when it was off (70% versus 43%).

"The lack of global improvements across the various tests speaks against a non-specific enhancement in memory as a consequence of practice, learning, or increased attention or motivation with stimulation," the researchers said.

Brain imaging showed significantly increased activity in ipsilateral mesial temporal lobe structures, predominantly in the hippocampus and parahippocampal gyrus region.

However, no consistent effects on hunger were found during the operation and afterward only moderate benefits were seen for appetite suppression with no long-term weight loss.

Based on the findings, Dr. Lozano said his group has launched a pilot study of hypothalamic deep-brain stimulation in patients with early Alzheimer's disease.

He cautioned, though, that it's not clear whether the memory effects will be reproducible in other patients.

"We have to keep in mind that it's a single case report," Dr. Lozano said. "It is for now a very interesting observation, and we'll have to see whether it translates to other patients."

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"Oh, brave new world!". The implications of this are chilling. Most of the tools Mankind has developed have edges that cut both ways. An implanted device for appetite control? How good: no chemical side effects, no dangerous surgery. An implanted device for pain induction, controlled distantly by someone else? The schizophrenics wildest psychosis come true: alien commands to perform repugnant deeds, irresistible demands to work long hours, a new way to effect perfect bondage and control of felons.... the list goes on. We, as the cutting edge of the medical-ethically aware, are morally compelled to consider the consequences of our research before we leap: more and more in today's world, the "Law of Unintended Consequences" has it's way.

Safe and effective weight loss

You had the experience of weight loss failure? Or are there plans to lose weight? Find effective and safe weight loss method can help your weight loss scheme is successful. (You want to learn to eat with the drug pass the Department of Health medicine); safe and effective weight control method, the following 6:00, it is very important, we must accomplish the following:

First, we eat so that we truly effective and reassuring slimming products

Most of the slimming products to attract consumers, the commercials will be how much time commitment by the number of the burden. This reduction of the slimming products are water, and you can lose weight fast. But not by the fat, so will quickly rebound! ! Part of the weight loss drug can also burn fat, but fat control, it is not a fundamental weight loss! And fat-burning, fat-soluble toxins will be taken to the blood, thus systemic circulation to the various organs, caused various diseases! Can not lose weight, but the body

Therefore, we should use the slimming product is not only burn fat, and can control fat, sugar-containing anti-lipid formulations, remove toxic elements, herbal formula! This slimming products results will not be too fast, (not like other slimming products for 10 days by the number of the burden), but it will not rebound, no side effects!

Second, setting a reasonable weight-loss goal

In the weight of each stage, the establishment of specific, concrete, achievable targets, would be more helpful. Set short-term goals to reduce 5

Third, diet control

Weight loss should be a balanced diet for weight loss principles, in the six major types of adequate food intake and low calorie foods with low calorie cooking methods (steam, water, cold, brine, roasted), you must To meet closely with the dietician, it can grasp food.

Fourth, appropriate exercise

Develop plans for their own campaigns and gradual increase slowly exercise, the best choice of aerobic exercise, 12 minutes can be more stable and sustainable movement, and intensity of the largest number of heart rate (220 - age) 80 per cent, about 130 heartbeats under about because aerobic exercise can burn fat and reduce weight, such as jogging, trotted away swimming. At least three times per week campaign, each more than 30 minutes.

5, behavioural change and lifestyle change

That diet and life skills to change the eating habits of obesity and lifestyle; detailed records must be through diet diary, this is the most important change in living habits of a work, because without a record, often overlooked some trivial living habits, and these habits are often unable to drop weight is the main cause. For example, some of the automatic habit of eating behavior, Bianchi popcorn while watching the movie, which is often the habit of obesity. Often it is just a time to eat a habitual action, which is a normal behavior, so that we may not be enjoy and nutrition and rely on the daily diet records, excessive eating and can be found in the high-risk .

6, confidence and support

Lose confidence and perseverance is the most important success factors, family, friends and weight loss support groups can help weight loss, weight loss breakthrough psychological and physical barriers. Because weight control, mean changing living habits, which always needs of the common good friends and family members help make the biggest changes in living habits help.

So friends lose weight understand the motives, with safe and effective weight-loss program, you will return to the past in the build and health.

So you save to campaign time. However, we still suggest you if I may, one day of the campaign 30 minutes is healthy!

If you are doing in the pre-desk, put your elbows on the desk top, with your elbows, and the pressure forced the desktop, your focus on the abdomen above, maintaining about 10 seconds, do five back!

Sitting in a chair on your hands and then seize Zuozhi side chairs with pressed chairs, next to the hands on the edge of the side of the chair, is forced downward pressure for 10 seconds. Do five back. This could be the tightening of abdominal muscles, and the lumbar muscle.

According to your two hands chairs, sitting in a chair, not moving upper body, knees bending rotation of elevation, put aside. Around to the foot of the back, and do three rounds. A rotation back to about 10 feet.

In the chair you put your hands out, using your fingertips each other hooks, arm extended to both sides. Then, the pull force, and then shake you around the waist. But this can be thin waist, and beautify your shoulder curves?

About the Author

From www.medpagetoday.com:

The better you can adhere to this plan, the better you chances of having a successful weight loss and reaching.

Motivation is the key to successful weight loss, learn to improve motivation to develop health, fitness.

Real clients and the weight loss programs that have helped them lose fat, weight, and inches successfully. Learn what it takes and how to do it for you.

Such is the case with weight gain and the inability to harness our appetite. Good luck on your weight loss plan! Sincerely,. Diet Nanny.

LiveAwesome is where the experts reveal their secrets for lasting weight loss, self motivation, longevity.

We believe you will develop a deeper motivation for weight loss success when you understand basic principles in physiology, movement, fat

metabolism.

When dieting, weight loss motivation can be a bit elusive. The constant cycle of putting on weight, losing weight, putting on weight and losing. The book Lightening Up will teach you weight loss via knowledge. This weight loss program shares lightening up via lists of what to eat to lose weight.

Source: <http://www.productsherbal.com>