



Beth Israel Deaconess Medical Center

A Harvard Medical School Teaching Affiliate



Welcome Relief for Low Back Pain

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Introduction

"It's a miracle. I feel like a whole new person," raves 61-year old Kathleen Ross about what some believe to be a remarkably effective form of therapy for low back pain called vertebral axial decompression, or VAX-D. "I was in such pain from a chronic slipped vertebra that I couldn't bear to sit. Then lying down was the only way to relieve the pain. I was afraid I'd be this way for the rest of my life."

For years people like Kathleen, who suffer from chronic and acute low back pain, have relied on conventional therapies that included bed rest, manipulation, pain medication, and, in the most severe cases, surgery. Now an increasing number of patients are being referred by their physicians and surgeons to VAX-D therapy.

VAX-D is a noninvasive treatment that is said to work by alternately stretching and relaxing the lower spine, gently "distracting" the lumbar vertebrae and decompressing the intervertebral discs. In most cases, patients find they can now move more and get long-lasting relief from the crippling pain that comes with a variety of lower back problems.

Causes of Low Back Pain

Vertebral axial decompression (VAX-D) is a noninvasive treatment that is said to work by alternately stretching and relaxing the lower spine, gently "distracting" the lumbar vertebrae and decompressing the intervertebral discs. Low back pain is common in western culture, yet according to the North America Spine Society, the relationship between structural defect and pain is not always understood.

Mechanical back pain can come from inflammation caused by injury or irritation, a bulging or herniated disc, or simply the degeneration of discs that comes with aging. Compressive pain occurs when the spinal nerve roots are pinched or the blood supply to the nerve roots is cut off. In both cases pain can be aggravated by activities that increase "axial loading" such as sitting, standing, or lifting. Sometimes too much pressure from overexertion is the problem. Sometimes too little pressure from inactivity is to blame.

VAX-D is said to relieve the pressure between discs and decompress the nucleus within the disc in a controlled manner, which could cause healing to occur in a number of ways. The treatment is increasingly being recommended as front-line therapy in cases of herniated disc, degenerative disc, slipped vertebra, sciatica, posterior facet problems, and spinal nerve disorders, as well as for post-surgical patients who continue to suffer from "failed back syndrome."

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The VAX-D Table

The VAX-D Therapeutic Table was invented by Dr. Allan Dyer, the former Deputy Minister of Health of Ontario, Canada, and was approved by the FDA for use in the United States in 1994. At present, over 180 clinics offer VAX-D therapy throughout the US, and in Canada, Puerto Rico, Mexico and Australia.

The equipment consists of a mechanically controlled two-part table and a logic control system operated by a technician who constantly monitors and records the therapy cycles. Dr. J. Robert Wootton, a Florida-based physician and one of the earliest practitioners of VAX-D therapy in the United States, explains the procedure. "The patient lies face down on the extendable table, the upper body resting over the stationary portion, holding on to adjustable handgrips that can be released at any time for safety. The patient wears a specially fitted pelvic harness, which is attached to a 'tensionometer' at the foot of the table.

"As the table separates hydraulically, the harness gently pulls the lumbar spine downward, decompressing the vertebrae and the intervertebral discs. A typical half-hour session consists of fifteen (15) alternating cycles of distraction and relaxation, lasting 1 minute each. In most cases, the desired results are achieved within 20-30 daily sessions."

The amount of "pull" varies for each patient, depending on the degree of *distraction* necessary to treat the condition. In the beginning, and during relaxation cycles, the tensionometer maintains 20 pounds of pressure. Then it increases to between 65 and 85 pounds during decompression. A paper graph connected to the machine prints out a continuous record of the intradiscal pressure.

Interestingly, many professional athletes use the VAX-D table, set at 55 pounds of pressure, as a pre-exercise warm-up, according to Dr. Wootton. "The nerves in the lower back supply the legs, so if you take the pressure off the nerves to the legs, you have more power."

The Vacuum Effect

As tension is continuously applied to the harness, the pressure within the discs reaches a threshold at which it changes from a positive to a negative level, indicating decompression, or a vacuum. The precise control provided by the VAX-D table enables the therapist to determine the exact pull required to achieve optimal decompression. Many patients report instant reduction of pain during the session, as well as afterward.

The vacuum effect that is created inside the discs has "far-reaching therapeutic implications," according to Dr. Frank Tilaro, medical director for the Advanced Spinal Institute in Ogden, Utah, and director of clinical research for VAX-D Medical Technologies. "Prior to the introduction of VAX-D, a non-surgical method for disc decompression was unavailable. In numerous studies, conventional traction has never demonstrated a reduction of intradiscal pressure to negative ranges. On the contrary, many traction devices actually caused an increase due to reflex muscle

spasm." The two-part VAX-D table is designed to apply discrete progressive tension to the lumbar spine, without creating reflex muscle contractions in the upper vertebrae.

Dr. Wootton further explains the multiple effects of high-level decompression within the discs. "The powerful negative pressure from the vacuum draws back the herniated disc into its proper orientation, draws nutrient-rich spinal fluid into the disc, and stimulates repair cells, effectively mending the disc." Wootton adds, "VAX-D is the most promising non-surgical medical treatment for lumbar pain to be developed in many years."

Not everyone, however, is a candidate for VAX-D therapy. Contraindications include infection, degenerative arthritis, tumors, osteoporosis, fractures, or any condition that compromises the integrity of the spinal column. Prospective patients should be evaluated by a therapist or physician prior to therapy, and routine spinal X-rays should be taken. A CT scan or MRI may also be necessary to rule out any contraindications. To date, no serious side effects have been reported with VAX-D Therapy.

Long-Term Effects

According to clinical results gathered over the last 4 years, the vast majority of patients experience some degree of recovery with VAX-D therapy, and of those the majority remain in remission. (Some experts caution, however, that no well-designed trials have demonstrated the efficacy of this treatment.) Some patients choose to return for maintenance visits or to enhance the protective benefits of this treatment.

Although the safety and efficacy of VAX-D are said to be high, and the cost is relatively low (approximately 1/12 the cost of surgery), many insurance companies have yet to cover the procedure. This is changing, as VAX-D becomes more widely known.

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