

# spinoFLEX

## Product CATALOG

2007

*Rehabilitation  
Fitness  
& Mobility*



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 **Advanced  
Fitness  
Components**

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Dear Friends,

# A LETTER FROM THE CEO:

With our new product line and the addition of the Theracentric upgrade, 2006 has been a very eventful year for Advanced Fitness Components. The commercial PXD line features new lightweight models that are ideal for gait training and body weight supported treadmill training. The Theracentric attachment has been developed through the input of therapists throughout the country to suit their needs. This type of equipment is becoming increasingly popular due to the effectiveness and safety it brings to patients and therapists alike.

For almost 10 years now, AFC has been working hard to understand and provide solutions for the needs of people in search of rehabilitation as well as therapists in search of better rehabilitation equipment.

Our mission is to provide state-of-the-art equipment at an affordable price so that everyone can enjoy the benefits of top quality rehabilitation equipment, enabling them to improve their quality of life. The promise I make to you is to provide the most beneficial equipment to help you achieve and maintain a healthy lifestyle, faster.

Very Sincerely,

**Bala R. Vatti**  
**President and CEO,**  
**Advanced Fitness Components**



*ABOUT ADVANCED  
FITNESS  
COMPONENTS*

Advanced Fitness Components manufactures revolutionary fitness and rehabilitation equipment addressing the specific needs of back pain sufferers; post-trauma, post-surgical, and children's rehab, seniors, those suffering from arthritis, those with impaired mobility, and those in need of safety and support during therapy. Covered by a U.S. patent, with patents or patents pending worldwide, we offer a product unique to the healthcare and fitness industries.



## SUPPORT SYSTEM PACKAGES

Specifications	PXD150	PXD200	PXD300	PXD350	PXD400	PXD500
Height (Inches) Customizable	76	86	95	95	95	95
Width (Inches)	40	40	40	40	40	40
Length (Inches)						
User weight capacity (Pounds)	200	250	400	400	400	400
Lifting capacity (Pounds)	50	150	250	250	250	250
Power supply	110VAC	110VAC	110VAC	110VAC	110VAC	110VAC
Product net weight (Pounds)	160	200	220	240	260	260
Vertical Power drive package	✓	✓	✓	✓	✓	✓
Horizontal power drive package						✓
Crossbar				✓	✓	✓
Armrest with removable grips	✓	✓	✓	✓	✓	✓
Adjustable Handgrips with joints (pair)			✓	✓	✓	✓
Adult Harness (small, medium or large sizes)					✓	✓
Harness hanger assembly rigid						✓
Attachment Extenders (pair)					✓	✓
Theracentric Upgrade				✓	✓	✓
Harness hanger assembly flexible					✓	✓
Precision bearing lockable casters - 2 pair	✓	✓	✓	✓	✓	✓
Auxiliary Joints				✓	✓	✓

The SpinoFLEX is constructed from heavy duty, rust free, aluminum and is built to last. Motorized, power-driven, vertical adjustments allow for a wide range of supportive techniques for patients of all ages and needs. Intuitive controls make it a user-friendly and effective therapeutic physical fitness device. Easy adjustment of speed and direction controlled by a single knob allows for safe and precise positioning of the patient for enhanced therapies. A single SpinoFLEX fills a multitude of patient rehabilitation and fitness conditions without the need for additional costly equipment.



# spinoFLEX

## MODELS

### PXD150/200



The PXD150 and 200 models are ideally suited for chronic back pain, joint stiffness or pain, the elderly, or even someone who simply wants to exercise while doing work. Features include precision bearing lockable casters, the armrest platform with removable grips, and the vertical power drive package. The appeal of these two models is in their simplicity. They are designed to be lightweight for easy mobility and at 76 and 86 inches in height respectively, the PXD150 and 200 models fit almost any clinical settings with low ceiling clearance.

*“The SpinoFLEX offers a multitude of features that allow patients to recover more quickly and more safely.” Patricia Wells, OT*

\*Images may differ from model description



# PXD300



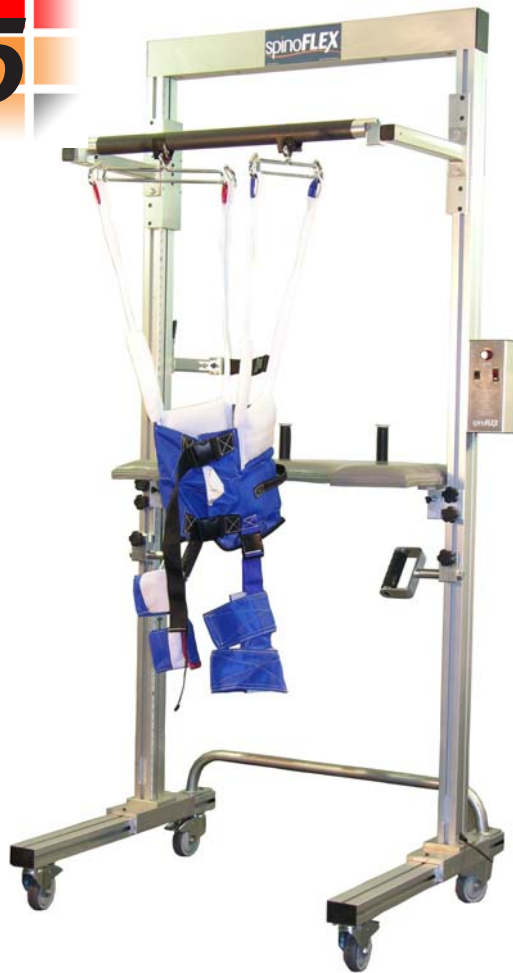
The PXD300 and PXD350 are performance models for physical therapy. Both models are equipped with a vertical drive package with a stronger motor and increased lift capacity, an armrest with removable grips, adjustable handgrips and precision bearing lockable casters. For users with additional support needs, such as post-surgical or post-injury patients, the PDX300 is the perfect choice. At 95 inches, it will accommodate users of almost any size. The handgrips, which can be independently adjusted for height, provide a support system that allows the user to unload even more weight from their lower extremities. Post-stroke patients also find the grips easy to grasp and provide for comfortable and safe support.



# PXD350

The PXD350 is a gait-trainer with superior functionality at an entry-level price. The PXD350 is the first model to offer our new Theracentric upgrade. The Theracentric upgrade is a direct result of physical therapist feedback throughout the US and allows for unobstructed, enhanced gait training. The crossbar attachment, also included in this package, offers patients yet another way to support themselves during therapy. Being fully supported makes patients feel comfortable and safe enough to freely participate in their rehabilitation. This patient security translates into increased patient confidence, higher compliance and quicker healing times.





## PXD400

The PXD400 model gives ultimate support to those patients who require it. With its included harness support system and Theracentric upgrade, those patients with severely limiting disability in their lower extremities can begin gait training regimens allowing them to walk, often for the first time. The included harness attachment, when used with the flexible harness hanger, offers a four point support system which easily enables wheelchair or bed sit-to-stand maneuvers to be done safely and effortlessly. The included attachment extenders and auxiliary joints allow for the crossbar and platform to be used along with the harness, providing more support during gait training. This full featured SpinoFLEX model creates an environment for the user that is safe, simple, and effective.



## PXD500

AFC's flagship product, the PXD500 is the premier lift and support device. This package includes every attachment offered with the SpinoFLEX as well as your choice of harness and harness attachment (one harness and harness attachment per order). The horizontal power-drive package moves the vertical frame even if the casters are locked in place, which is ideal for fine adjustments while the user is on the SpinoFLEX or if the SpinoFLEX is being used in conjunction with a treadmill.

# spinoFLEX



## ATTACHMENTS



## PLATFORM

The ergonomically designed armrest platform can be used for both unweighting and back pain therapy. The Platform takes pressure off the spine and lower extremities for pain free conditioning by allowing the user to offload up to 100 percent of his or her upper body weight onto the armrest platform, putting the spine in a decompressed state. The Platform attachment is ideal for foot, ankle, knee and hip rehabilitation. The platform attachment is a standard attachment on all SpinoFLEX models.





## CROSSBAR

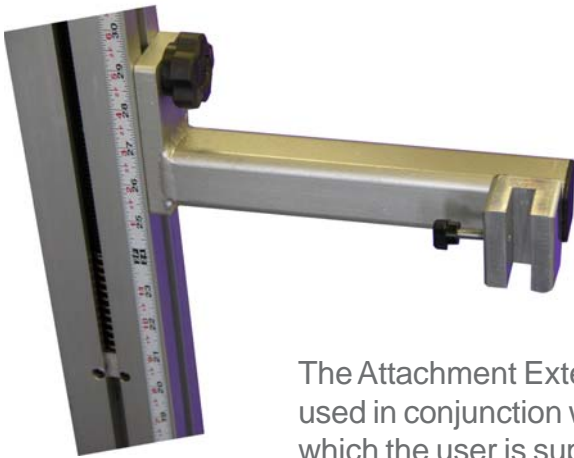
The Crossbar facilitates comfortable above shoulder and below waist level support. It also provides a natural offloading mechanism during patient support. The Crossbar can also be installed using the attachment extenders to be used as a unit control aid for the therapist so they can push or pull the SpinoFLEX as needed. In addition, the Crossbar can be used as a harness hanger.



## HANDGRIPS

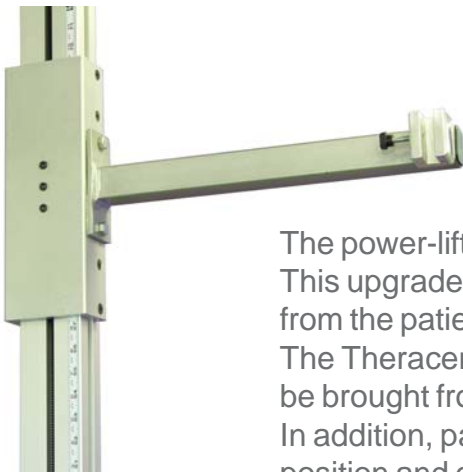
The Handgrips are easily adjustable to fit the needs of any patient. The Handgrips can be adjusted vertically, horizontally, and rotated to accommodate any user. In addition, the Handgrips can be reversed to face the outside of the SpinoFLEX allowing the therapist to help maneuver the SpinoFLEX during a patient's gait training.





## ATTACHMENT EXTENDERS

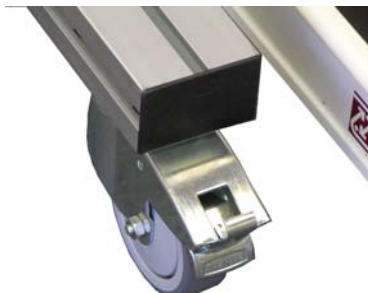
The Attachment Extenders allow for the crossbar or armrest platform to be used in conjunction with a harness system. This creates an environment in which the user is supported in more than one way, increasing flexibility, safety and efficacy.



## THERACENTRIC UPGRADE

The power-lifting Theracentric upgrade enables enhanced gait training. This upgrade puts the vertical columns of the SpinoFLEX at an offset from the patient so the therapist has unobstructed access to the patient. The Theracentric upgrade is ideal for use as a patient lift. Patients can be brought from sitting in a wheelchair to a standing position effortlessly. In addition, patients sitting in bed can also be brought to a standing position and can perform daily weight-bearing exercises, which can help progress the patient to gait training, all in one machine, while keeping the patient safe.

## CASTERS



The addition of quality, precision bearing, lockable Casters makes the SpinoFLEX easy to maneuver throughout any home or clinical setting. It also enables the SpinoFLEX to move freely across a floor during gait training. Casters are a standard attachment on all SpinoFLEX models.

# HARNESSES

AFC provides two types of harnesses. Both offer maximum support for those patients who require it. Our harness systems facilitate balance, gait training and low impact exercises. They are also valuable in sit to stand maneuvers. The added support of a harness reassures patients in their therapy increasing compliance, participation and overall quality of health.



Both harnesses provide moderated pelvic rotation which is useful in improving stabilizer muscle function. The harness on the left provides support from between the legs while the harness on the right supports the patient by holding each leg individually and securing around the torso.

## HARNESSES HANGER ASSEMBLIES



Harness hanger assemblies provide four points of attachment that better stabilizes the patient within the harness. The added stabilization decreases swaying and gives more support to those patients who need it.

The rigid hanger assembly is designed for patients who require maximum stationary support.

The flexible hanger assembly allows for a degree of vertical movement with each step, which is useful in partial body weight supported treadmill training.



## PHYSICAL THERAPY

**STRETCHING & STRENGTHENING:** The SpinoFLEX facilitates a variety of exercises including walking, running, range-of-motion, stretching and strengthening, and fitness cross-training due to a multitude of attachments with high degree of adjustability.

**COST-EFFECTIVE AND SPACE-SAVING:** The SpinoFLEX precludes the need for additional equipment and is a cost-effective solution that streamlines operations and enhances patients' success rates.

**INCREASED EFFICIENCY:** The SpinoFLEX increases efficiency by allowing the healthcare professional to work with other patients when SpinoFLEX is in use without compromising patient safety or comfort.

**FALL PREVENTION** The SpinoFLEX protects patients from falling during therapy. Through its increased safety and support mechanisms, it helps people stay on track with their therapy programs.

**INJURY PREVENTION** The SpinoFLEX prevents injuries to the therapists due to lifting excessive patient weight or leaning forward while supporting the patients. Required postures can be completely done by the SpinoFLEX so the therapists can focus on the treatment without being distracted by the burden of carrying patients or their safety

**EASE OF USE** Power adjustment controls quickly and easily adapt the SpinoFLEX according to patients' individual rehab programs, physical condition, age and height - from children to the elderly.

**USEFUL FOR ALL STAGES OF RECOVERY** The SpinoFLEX helps treat patients during all stages of their recovery due to its ergonomic attachments as they graduate from one phase to the next.

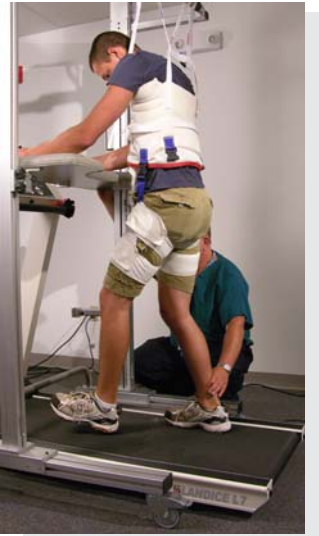
**ADAPTABILITY:** The SpinoFLEX is adaptable to a variety of clinical environments while providing flexibility for individual needs. Adaptable upper body support mechanisms of the SpinoFLEX helps treat patients of several demographics including the elderly, children, back pain sufferers, post-surgical and post-injury patients.

**EARLIER PARTICIPATION & INCREASED PATIENT SATISFACTION** The SpinoFLEX promotes a pain free rehabilitation environment for effective healing and helps motivate patients from quitting therapy early due to discomfort or pain. The SpinoFLEX enables earlier post-surgical ambulatory conditioning for many back and lower body injuries, providing patients with comfortable non-traumatic walking and running exercise that increases satisfaction with their rehabilitation program. The SpinoFLEX helps take pressure off the nerve root so that patients can start neuromuscular reeducation earlier and complete rehabilitation programs without quitting too soon due to excess discomfort or pain.

**PHYSICAL THERAPY FOR THE ELDERLY** Research suggests that much of the decline of one's body functions once attributed to aging is actually due to long term inactivity. Research has conclusively demonstrated that vigorous physical activity has been linked to increased longevity and combating serious depression in older people. Exercise is very beneficial in slowing and even reversing the effects of ageing

The SpinoFLEX helps the elderly by providing comfortable support and safety and to relieve the fear of falling. Seniors can walk or run naturally while choosing the support device that provides the most comfort and relief from nerve pressure damage, spinal fractures, poor posture and unprotected bones, joints and soft tissue structures. The SpinoFLEX provides support for seniors in a way that is easy to use while they exercise. This translates to an increased motivation to continue regular exercise and thus improved quality of life. In addition, recent research suggests that unweighted exercise may actually be better than standard exercise for the elderly and shows an accelerated rate of improvements.

# GAIT TRAINING WITH THE THERACENTRIC ATTACHMENT



The Theracentric upgrade makes the patient more accessible to the therapist during enhanced gait training, partial body weight supported treadmill training and other therapeutic exercises

Safety is a primary concern when performing gait training. That is why the SpinoFLEX with the Theracentric upgrade is a valued choice among therapists. The patients feels safe in the SpinoFLEX and have the ability to actively support themselves or be passively supported, or both, all without any therapist intervention

## UNWEIGHTING & PARTIAL BODY WEIGHT SUPPORTED TREADMILL TRAINING . . .

Individuals who cannot support their entire body weight tend to lead a more sedentary lifestyle which leads to further health complications later in life and can reduce motivation for rehabilitation.

The latest advancement in physical therapy for people who cannot support their own body weight is Unweighting Therapy. This form of therapy allows for a percentage of an individuals body weight to be essentially “removed” during therapy. Once the user is unweighted, he or she is able to perform gait training or other weight-bearing therapies with less pain and fatigue, thus leading to more motion-repetitions and faster recovery. In addition, unweighted therapy provides increased safety for the patient and reduces the risk of work-related injury for the therapist.



*“Partially supported treadmill training helps survivors learn to walk again although neither their legs nor upper body can support them. Therapists hope this will rewire the brain so survivors can eventually make these movements on their own.”*

*Excerpt from the article “A Rehab Revolution,” Stroke Connection Magazine.*



# SUPPORTING RESEARCH



“The task-specific approach to treadmill training exemplifies a basic principle of motor learning: a skill can be improved with practice and repetition. Thus, for an individual to improve his or her gait, training must be directed at the specific gait parameters in question: stride length, speed, cadence, etc. Treadmill training and Body Weight Supported Treadmill Training are means by which this can be accomplished.”

BioMechanics  
August 2004

Treadmill training improves function in Parkinson's patients  
The changing rehabilitation model posits the possibility of neural recovery through task-specific therapy. By: Beth Fisher et. al.

“Supported Treadmill Ambulation Training intervention is a promising technique for acute stroke rehabilitation”

Journal of Rehabilitation Research and Development  
Vol. 38 No. 2, March/April 2001

A comparison of regular rehabilitation and regular rehabilitation with supported treadmill ambulation training for acute stroke patients  
By: Inácio Teixeira da Cunha Filho et. al.

“These results show that biotechnological advances of spinal decompression reveal promising results for the future of effective management of patients with disc herniation and degenerative disc diseases.”

Spinal Decompression: By Thomas A. Gionis, MD, JD, MBA, MHA, FICS, FRCS, and Eric Groteke, DC, CChC

“(spinal decompression therapy) is a nonsurgical treatment for low-back pain and pain in the leg, neck or arm that works by reducing loading of the spine. Researchers note that many adults suffer from excessive spinal loading, which is problematic because it promotes premature degeneration of intervertebral discs and leads to a tendency for repeated injury of the disc annulus.

Without good osmotic diffusion of collagen precursors (i.e. disk nutrition), avascular disc nutrition will not occur and that makes healing in the disc segment an iffy proposition... diffusion is helped by lowering intradiscal pressures, precisely what spinal decompression therapy accomplishes.”

The Benefits of Spinal Decompression by Rich Smith

“One such study looking at patients with herniated and degenerative disc disease found that 86% of 219 subjects who completed decompression therapy reported immediate disappearance of symptoms, while 84% of the total remained pain-free for 3 months afterward; 92% of the cohort showed varying degrees of physical improvement—those gains were locked in for the vast majority of them 90 days after treatment.”

Kankaanpaa, M., et al: The Efficacy of Active Rehabilitation in Chronic Low Back Pain, Spine, 24(10):1034-1042, 1992.

”This case report is the first to report fall reduction, improved gait, and improved balance following physical therapy for a person with PSP.(through the use of supported treadmill training”

Physical Therapy Volume 82 · Number 5 · May 2002  
Supported Treadmill Training for Gait and Balance in a Patient With Progressive Supranuclear Palsy By: Suteerawattananon et. al.

“Subjects with greater gait impairments benefited the most from training with Body Weight Support, as did the older patients with stroke.”

Arch Phys Med Rehabil 2003  
Oct;84(10):1458-65.  
Optimal outcomes obtained with body-weight support combined with treadmill training in stroke subjects.  
By: Barbeau H , Visintin M .

“This novel gait training strategy provides a dynamic and integrative approach for the treatment of gait dysfunction”

Stroke  
1998;29:1122-1128.  
A New Approach to Retrain Gait in Stroke Patients Through Body Weight Support and Treadmill Stimulation  
By: Martha Visintin et. al.

“Treadmill training could therefore become an adjunctive tool to regain walking ability in a shorter period of time.”

Stroke  
1995;26:976-981  
Treadmill Training With Partial Body Weight Support Compared With Physiotherapy in Nonambulatory Hemiparetic Patients  
By: S. Hesse, MD et. al.

“lumbar extension exercise is beneficial for strengthening the lumbar extensors and results in decreased pain and improved perceptions of physical and psychosocial functioning in chronic back pain patients.”

Lumbar Strengthening in Chronic Low Back Pain Patients: Sherry V. Risch, PhD,\* Nancy K. Norvell, PhD,† Michael L. Pollock, PhD,\* Edward D. Risch, MD, † Howard Langer, RPT,† Michael Fulton, MD,\* James E. Graves, PhD,\* and Scott H. Leggett, MS\*

For further research please visit our website  
[www.SpinoFLEX.com](http://www.SpinoFLEX.com) and click on the research link.

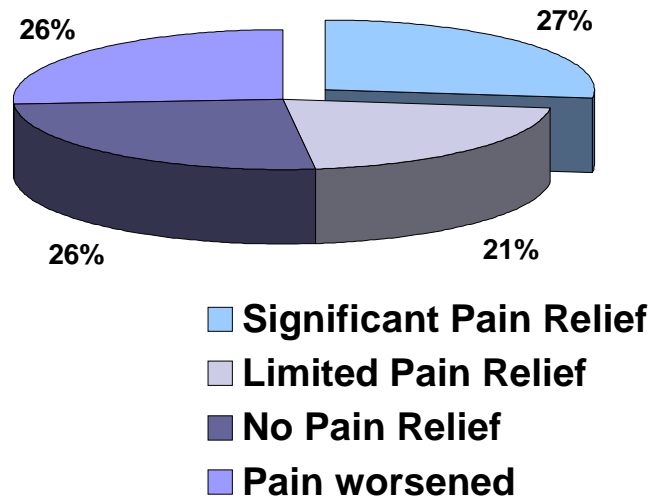
# BACK PAIN

**ACCORDING** to the National Institutes of Health, lower back pain is one of the most significant health problems facing Americans today. Seventy to eighty-five percent of all people have back pain at some time in their life and back pain is the most frequent cause of limited activity in people younger than 45 years old.

In a Spine-Health.com pole, back pain patients were asked to rate the effectiveness of their physical therapy. 52% of back pain sufferers indicated that there was either no pain relief or their pain increased after therapy.

The SpinoFLEX improves these odds significantly by uniting the therapeutic benefits of many well established practices into one easy to use piece of therapeutic equipment. The following treatments are applied simultaneously to maximize their therapeutic potential.

## THE EFFECTIVENESS OF BACK PAIN PHYSICAL THERAPY



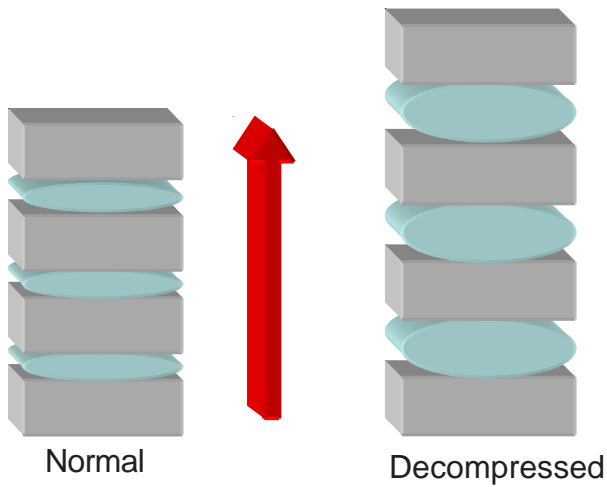
**EXTENSION:** Professionals often prescribe a regimen of exercises that include repeated passive extension of the spine in both the prone lying and standing positions resulting in a bending of the spine posteriorly. This is a successful back pain treatment and prevention method for many people suffering from disc problems and other sources of lower back pain.

By leaning forward at the hips using the upper body support mechanisms of the SpinoFLEX, the user naturally and comfortably puts the spine in an extension posture. This is much more comfortable than extension exercises on a floor or while free standing. Users have complete control of the posture and weight bearing load distribution. The SpinoFLEX facilitates complete range of motion at the hip level and hence the users back can be positioned horizontal, straight up, or anywhere in between, providing the users with the most effective pain relieving postures. The SpinoFLEX also facilitates flexion if needed.

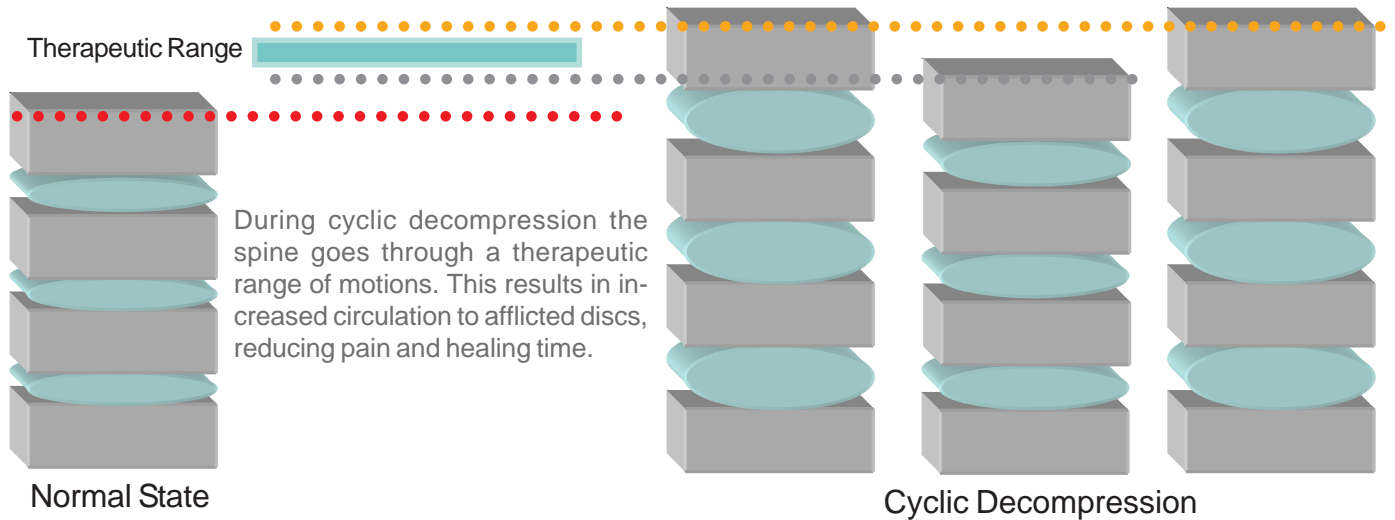
**STRESS ELIMINATION:** In addition to supporting corrective postures, the stress on the intervertebral discs caused by the weight of the upper body on the lumbar spine is dissipated by placing the weight of the upper body comfortably and naturally onto the support mechanisms of the SpinoFLEX. Also the SpinoFLEX provides safe and comfortable low/no impact exercise and prevents damage to the spinal disc, avoiding spinal fractures.

**VARIETY:** Experts advise against repetitive exercise and suggest that properly varied exercise is invaluable to spine health. SpinoFLEX adds variety to exercise, reduces boredom and improves health and quality of life.

Typical back pain treatment may involve one of these therapies at a time; however the SpinoFLEX provides all of these therapies at the same time and hence causes immediate pain relief and quick recovery time. The SpinoFLEX is also very affordable even to smaller clinics and individuals.



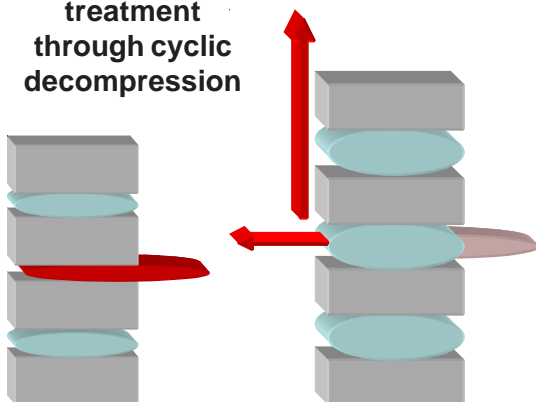
**STATIC DECOMPRESSION:** Since the disc is an avascular structure, it does not receive fresh blood and oxygen with every beat of the heart. It relies on diffusion caused by the repeated stretching motion and decompression of the spine to replenish its oxygen and nutrient supply. Increased decompression of the discs increases circulation to the discs and in turn increases the rate at which damaged discs heal. By counteracting the forces of gravity, the SpinoFLEX produces gentle stretching of the spine as well as decompression of the intervertebral discs in a natural and effective way.



During cyclic decompression the spine goes through a therapeutic range of motions. This results in increased circulation to afflicted discs, reducing pain and healing time.

**CYCLIC DECOMPRESSION:** The upper body support mechanism of the SpinoFLEX not only facilitates corrective posture and stress elimination as well as static decompression but also resists free downward movement of the upper body while walking. Because of this resistance, a gentle downward pull at the lumbar spine is created with every step. This repetitive downward pull massages the intervertebral discs, relieving pain immediately and increasing circulation which enhances overall spine health.

**Herniated disc treatment through cyclic decompression**



*"In normal gravity conditions, joint cartilages undergo cyclic compression and decompression with use. During compression, fluid is squeezed out into the joint cavity where it picks up oxygen and nutrients and releases wastes. During decompression, the refreshed fluid is reabsorbed into the viscous cartilage matrix."*

Space Medicine and Life Sciences Research Center  
By: Douglas F. Paulsen, Ph.D.

Cyclic Decompression creates a negative pressure which allows a herniated disc back into place, effectively restoring it to its original position in a pain-free way without the need for surgical intervention.



# spinoFLEX

Rehabilitation

**Perfect for:** *Fitness*

*& Mobility*

*Back Pain  
Joint Pain  
Arthritis  
Knee Replacements  
Foot and Ankle Injuries  
Spinal Cord Injuries  
Stroke & Brain injury rehab  
Post-surgical rehab  
Cerebral Palsy  
Disability  
Gait training  
Cardio Workouts  
Stretching and Strengthening  
Balance & Coordination*

**Comfort  
Support  
Balance  
Safety  
Adaptable  
Versatile  
Affordable  
Award Winning**

 **Advanced  
Fitness  
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