

Hydra-Fitness: An International Contributor to the Health Industry

by Gurudain Khalsa

Sometimes, great ideas come from unexpected sources. In 1967, high school coach Jerry Brentham watched one of his students narrowly escape injury training on weight-stack equipment. The near-miss stuck in Brentham's mind, and he began to think of ways exercise equipment could avoid athlete injury. He subsequently designed and patented the first Hydra-Fitness equipment, using a hydraulic system that increased resistance as the speed of motion increased. In 1974, Brentham founded the company he called Hydra-Fitness. From its small beginnings in rural Belton, Texas, where the company is still headquartered, Hydra-Fitness has grown into an international contributor to the health industry.

Last month when Olympic athletes gathered in Seoul for the Summer Olympics, Hydra-Fitness equipment was there for them. Mizuno, the giant Japanese sporting goods conglomerate, set up the Olympic Village Training Center to provide a complete training and rehabilitation center at the games. Mizuno equipped the center with Hydra-Fitness equipment, and Hydra-Fitness staffed the center with American physical therapists and athletic trainees.

But Hydra-Fitness is not just for athletes. A growing number of chiropractors are using Hydra-Fitness for their patients' therapeutic needs. The technical knowledge of how the body works has increased dramatically in the past decade. Hydra-Fitness is the first breakthrough in what some chiropractors think will be the conditioning equipment of the new century.

Austin, Texas, chiropractor Ken White says sports related injuries account for a large part of his practice. He has had Hydra-Fitness equipment in his clinic for the last five years.

"We use it because of its excellent rehabilitation capabilities," White says. "The range of strengthening is virtually unlimited because of the hydraulic system."

The equipment adjusts the resistance to the user's motion, so that strength gains continue even as the person fatigues. The hydraulic system resists against both directions of movement, so workouts take less time and don't cause next-morning muscle soreness. Hydra-Fitness doesn't rely on gravity, so there are no injuries from falling weights or handles.

The resistance level is dialed in as the user sits in the

machine. Regardless of how much resistance is dialed in, the system increases the resistance as the user increases the speed of the movement, and decreases it as the movement slows down. Even the slowest movement meets resistance, providing maximum benefit.

"I have the OmniTron Knee Plus by Hydra-Fitness in my clinic," explains Richard Jones, a chiropractor in Madison, Alabama. "I'd say has on big advantage over any type of weight equipment for one basic reason. The pressure is immediately taken off the patient as soon as the patient quits pushing against it."

"There is no destructive force against the patient as there would be with the eccentric force of typical weight machines."

This variable resistance factor develops a functional isokinetic exercise mode, which is accommodating to both force and velocity. Since this more closely simulates the way the body works in nature, as opposed to fixed velocity, therapists consider it the ideal form of exercise. Most isotonic contractions are limited by the weight that can be moved through the weakest angle of the joint. Since there are usually ranges of strong and weak joint angles, the degree of load at the strongest joint angle is dramatically restricted if the movement is performed through the entire range of motion.

"Hydra-Fitness promotes joint stability and strength," says Ken White.

The major advantage of a system which provides "accommodating resistance" is that the muscle is able to generate more external force, and the system is able to provide more resistance.

Chiropractors who formerly handled only the rehabilitation end of the training are now finding they can use their Hydra-Fitness equipment to play a bigger role in preventative medicine and cardiovascular conditioning of their patients.

Portland, Oregon, chiropractor Brian Bussanich says he is very prejudiced toward hydraulic resistance equipment.

"The major advantage is that you can treat a healthy or injured person on the same equipment," Bussanich says. "There's no delayed muscle soreness and no risk of injury or damage to the original injury."

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Among the growing number of athletes leaving weight training to use Hydra-Fitness exclusively are the Dallas Cowboys who use Hydra-Fitness OmniTron - the company's hightech computerized testing machines that double as work out equipment - to measure muscle function in players before the season starts and to rebuild injured limbs back up to pre-season levels of power. Even Cowboys' coach Tom Landry keeps a Total Power machine at home. Mike Singletary of the Chicago Bears, the 1986 NFL defensive player of the year, trains on Hydra-Fitness. So do all-pro running back Craig James of the New England Patriots, and Bruce Matison of the Buffalo Bills, not to mention soccer star Tatu, the New York Islanders and a raft of Olympic athletes from a variety of sports.

Hydra-Fitness can be used by everyone from pre-

school children to the elderly. For the elderly, Hydra-Fitness equipment represents an excellent means for fitness, because it allows anyone at any age to begin exercising at their own level of fitness.

It's as effective for general fitness as it is for physiotherapy. And because it's so easy and safe to use, patients don't require extensive supervision during their workout, which gives the practitioner more flexibility in dealing with patient load.

Richard Jones points out his patients can begin rehabilitation sooner after an injury.

"Early stages of rehabilitation require minimal resistance. If there is any evidence of a problem during these stages, the patient can stop immediately, relieving all pressure," Jones explains. "Therefore, rehabilitation can begin earlier with Hydra-Fitness than any other type of weight machine."

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Subjects perform the test continuously until their efficiency drops below a programmed threshold (due to fatigue). A record of the protocol, number of repetitions achieved, maximum range of motion, and work performed is printed at the end of the test. This work is part of a

program to establish standards of testing for pre-employment screening of firemen.

For more information contact: Computer Methods (formerly Physio Systems), 4450 Enterprise St. Suite 101, Fremont, CA 94538