



# Products At Work

EQUIPPED FOR ACTION

## Extinguishing Pain on Treadmills

### ORBITER's Over-Air Running Surface Helps Patients Run Pain-Free

Michael J. Mullin, ATC, PTA

**P**AIN IS OFTEN A SMOKE SIGNAL that indicates injury. People fear it and will avoid activities that cause pain, even during rehabilitation. That's why therapists need to choose equipment that can help, not heed, progress.

The ORBITER Treadmill promotes this kind of progress. Unlike traditional treadmills, the ORBITER has a suspended-over-air running surface, which helps eliminate the pain associated with injury. It reduces shock because there's no hard deck to stress joints.

This suspended surface allowed one professional ski racer to get back on the slopes after undergoing articular cartilage slurry transplant surgery on her knee.

Ordinarily, she would have not been able to train on the ground or on a treadmill because of shock attenuation. But she could with the ORBITER, which is manufactured by the Capitola, Calif.-based ORBITER Co.

After four months of light workouts, gait training, cardiovascular/Fartlek training (which incorporates bouts of changes of intensity of training during one workout session), hill walking, proprioceptive work and graded load transmission, she was able to train for her next ski competition, which she won.

#### Getting on Their Feet

This suspended design also encourages proper muscle firing patterns, which are essential for normal gait, by reducing shock onto the skeletal structures, thus allowing soft tissue to contract properly.

Because the pain is reduced, therapists can identify abnormalities such as compensation during

walking or running gait in the ankle, knee or hip.

Most incidents of antalgia are due to the ballistic force of heel strike that cause discomfort and subsequent alterations of normal movement patterns. Once this component is eliminated, the true pathology can be addressed.

This feature helped one runner who underwent anterior cruciate reconstruction. When trying to run on the ground, she experienced pain.

This discomfort caused her to have poor mechanics. However when running on the ORBITER, the patient's adaptive patterns were eliminated, and her gluteal weakness became more apparent.

The slight give of the belt also allows patients to use the smaller intrinsic muscles of the foot and lower leg, which help improve stabilization and proprioception of the entire lower extremity.



ORBITER's suspended-over-air surface reduces shock on patients' joints.

In addition to working these muscles and reducing shock, patients who use ORBITER also get an added benefit: a challenging cardiovascular workout. The trampoline-like surface of the deck promotes more oxygen uptake than ordinary treadmills, according to a study in the *Journal of Cardiopulmonary Rehabilitation*.<sup>1</sup> And patients who haven't been able to run in years enjoy getting a cardiovascular workout.

This cardiovascular workout helped keep a 36-year-old runner in shape after she broke her leg and sustained a dislocated ankle fracture in a car accident.

For 10 years, Jane\* walked with an antalgic gait and could walk only a few blocks at a time.

But with the aid of ORBITER's low-impact surface, she walked without limping and didn't experience any pain. She returned to a pain-free, smooth gait for the majority of the day. She even began running on the ORBITER so she wouldn't miss out on one of her favorite hobbies.

ORBITER has helped many patients do the things they enjoy take a stroll in the park or power walk with friends. By eliminating the shock of ordinary treadmills, ORBITER gets them back on their feet without the searing blaze of pain. ■

\*Not real name

#### Reference

1. Williams, J. S., Hone, L., & Carter, R. (1992). Oxygen Cost and Heart Rate Response During Treadmill Walking on Soft Platform Belt. *Journal of Cardiopulmonary Rehabilitation*, 12(2), 413-417.

Michael J. Mullin, ATC, PTA, is coordinator of rehabilitation services at The Stone Clinic, San Francisco.