



Orthopedic Physical Therapy Use of Seated Elliptical

As the older adult population continues growing, and as greater emphasis is placed on the importance of exercise, physical therapists are treating more individuals for health conditions or rehabilitation after injuries or surgery, helping restore functionality and performance.

Among the newest and most versatile tools is the xRide[®] seated elliptical from Octane Fitness. An entirely new exercise category, the xRide delivers cardiovascular and resistance training workouts to all levels of exercisers up to elite athletes. **Physical and occupational therapists have quickly recognized the value and effectiveness of the xRide in many therapeutic applications.**

xRide examined

The seated elliptical offers **total-body, low-impact cardiovascular workouts, with muscular endurance resistance training, in a supported, seated position.** PowerStroke™ technology encompasses a longer range of motion for the lower extremities (an elliptical shape, versus a circular path of recumbent bikes), thereby engaging the gluteals more. And the **elliptical motion can be forward or reverse** for greater variety.

The adjustable seat is set at a 45-degree angle, which helps **open the hip flexors and torso** for more comfort and less stress on the lower back. Furthermore, individuals can utilize leverage from the seat, combined with increased upper- or lower-body workloads, for targeted muscular endurance conditioning.

Additionally, exercisers on the xRide can **work the entire body or isolate the upper or lower body only**, according to specific needs and goals.

A university study has shown that healthy xRide users demonstrate 343% more activity in the gluteals, produce 22% more mechanical power and burn 23% more calories than when using a recumbent bike at the same perceived exertion level.

Therapeutic applications

Orthopedic & Sport Rehabilitation (OSR), a physical therapy clinic with locations near Minneapolis/St. Paul, Minn., reports several reasons why it prefers the xRide over other recumbent bikes and seated steppers:

- **Smoother range of motion with less impact**
- **Increased range of motion (ROM) in the hips and knees**
- **Ability to perform reverse motion**
- **Proper leg press biomechanics to reduce patellofemoral stress (knee over ankle)**

- **Foot pedals facilitate pushing through heels for greater gluteal activation**
- **Seat height and tilt adjustability**
- **Easy entry and exit with higher seat position**

With these biomechanical and ergonomic advantages, the xRide seated elliptical is utilized for a variety of conditions, including:

- ❑ **Hip Replacement**
 - Achieve increased ROM but can still limit hip flexion to 90 degrees with seat position (most surgeons limit flexion to 90 degrees for 8-10 weeks)
 - Able to sit on machine safely due to higher seat position
- ❑ **Hip Surgery (labral repairs, femoral acetabular impingement)**
 - Achieve increased ROM with less pressure on joint
 - Increased gluteal activity versus hip flexor with emphasis on pushing through heel
- ❑ **Knee Arthritis/Post-surgery**
 - Increased ROM with PowerStroke enables greater strengthening
 - Proper knee angle to reduce patellofemoral stress
 - Less overall stress versus standing elliptical
- ❑ **Lower Back Pain/Lower Back Arthritis/Disc Herniation**
 - Multiple seat positions allow patients to optimize comfort
 - Allows for core stability training due to increased hip ROM and combined upper extremity motion
 - Able to perform cardio in a supported, lumbar neutral position (disc issues)
 - Allows increased ROM in lower extremities

❑ **Stroke/Brain Injury**

- o Provides safe position for exercise
- o Smooth motion
- o Able to sit on machine due to high seat position

❑ **Shoulder/Scapular/Elbow Issues**

- o Can isolate push/pull activities without impinging rotator cuff with exercises below shoulder height

❑ **Overweight/Diabetic**

- o Reclining seat enables individuals to perform exercises with open position
- o Stable foot platforms accommodate patients with neuropathy
- o Increased caloric expenditure with PowerStroke and combined upper extremity motion

Conclusion

Designed for cardiovascular and muscular endurance training, the xRide seated elliptical offers healthy exercisers, as well as those with physical limitations due to injury, surgery or health conditions, the opportunity to improve fitness and restore function.

REFERENCES

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Schapman, John, Rita Moravec, and Andrew Bjorklund, Seated Elliptical and Recumbent Comparison, Human Performance Laboratory, St. Cloud St. University, St. Cloud, MN, May 2007.

Stier, Nate, MPT, ATR. Practical experience since 2007 as co-founder of Orthopedic & Sport Rehabilitation, Chanhassen and Eden Prairie, Minn.; former Director of Rehabilitation and Assistant Athletic Trainer for NFL's Minnesota Vikings.

For more information, contact Octane Fitness at www.octanefitness.com or 888-OCTANE-4.