New Omnicycletm Elite
The Next Generation Omnicycletm
Introducing the Omnicycle™ Elite

- **CLINICAL OPPORTUNITY:**
  Scientific literature shows that therapeutic exercise can help improve recovery of function.

- **CLINICAL CHALLENGE:**
  Therapeutic exercise can be difficult for many geriatric or post-acute patients due to challenges with strength, coordination and/or motivation.

- **ACP SOLUTION:**
  The Omnicycle™ Elite’s “Smart-Assist” technology senses the patient’s physical limitations and provides “motor-assisted” training to facilitate therapeutic exercise. The system’s UE & LE Biofeedback engages, motivates and guides patients for improved participation and performance.
Clinical Practice Benefits

- The Omnicycle™ Elite is the most advanced therapy cycle technology available
- Serves a broader range of patients & conditions than traditional exercise cycles providing improved patient care, expanded therapy services and new treatment opportunities
- UE & LE ergometer with “Motor-assist” and “biofeedback capabilities accommodates patients with physical limitations who are unable to use traditional exercise equipment
  - Designed for the complex needs of post acute and geriatric patients
  - Earlier therapeutic exercise intervention than traditional cycle systems
- Therapeutic exercise is undergoing increased scrutiny by payers. The objective data provided by the OC Elite enhances skilled services and therapist documentation, enhancing clinical outcomes and reducing the risk of denial of payment.
- Introduces Group Therapy opportunities (with 2 or more Elite units)
  - Accommodates post-acute patients and others w/ physical limitations that might not ordinarily be able to participate in Group Therapy activities/exercises
  - Clinically meaningful exercise with “skilled” orientation
  - Easier set-up and scheduling for therapists
  - One Bluetooth Printer serves multiple cycles and produces objective documentation data
Clinical Advantages

• Ability to customize and adapt for geriatric-prevalent conditions (muscle asymmetry, contractures, etc.) which promote clinical compliance

• “Therapist – Patient Friendly” easy-to-use design and features

• Patients are motivated to use the cycle, which extends throughout their rehab program – they look forward to their daily exercise!

• Pre-set protocols for:
  - Neuro Rehabilitation*
  - Orthopedic Rehabilitation*
  - Cardio-Pulmonary Rehabilitation*

• Patients can easily progress from “assisted” to fully-active exercise

• The system can operate in three modes:
  - Constant speed with adaptive load (Isokinetic)
  - Constant power with variable speed (Isotonic)
  - Heart rate targeted load

* PENS cycling estim can be used in conjunction with any of the above protocols
What are the Primary Clinical Applications?

Neurological Rehabilitation:
• Designed to increase neural drive and motor timing performance. “Active-assisted” reciprocal movement with cycling, biofeedback and PENS helps retrain movement in preparation for active walking and functional activity

Orthopedic Rehabilitation:
• Post-surgical and post-joint replacement TKA, THA, Shoulder, UE to reduce muscle inhibition and restore strength, power, endurance and functional performance

Cardio-pulmonary Rehabilitation:
• Focuses on the development of cardio-pulmonary conditioning, muscle strength, power, endurance – “active-assisted” cycling and PENS promotes these goals
Patient Treatment Opportunities

- Debility and/or disuse muscle atrophy
- Post-stroke
- MS
- Nerve injury
- Parkinson’s (especially upper extremity)
- Post-operative joint replacement TKA, THA, Shoulder, UE
- COPD
- Patients too weak or unbalanced to use a regular cycle
Technology Highlights

• “Motor-Assist” UE & LE ergometer system with “Passive,” “Active,” and “Active-Assist” exercise modes – automatically shifts between these modes to accommodate patient’s capabilities

• Interactive Biofeedback and large color display screen engages/motivates patients mentally & physically to improve exercise participation and performance

• Specifically designed for the complex needs of geriatric and post acute patients
  - Designed for neuro, ortho, cardio and muscle strengthening
  - Wheelchair access - eliminates transfers
  - Multiple hand attachments & tool-free, adjustable pedal length (lower Extremity) is key for post-surgical and neuro applications
  - Integrated ear & chest heart monitors
  - Voice activated “stop” feature

• Works seamlessly with ACP PENS cycling protocols to support neuromuscular re-education

• “Training Summary” is produced at end of training session and is printable via Bluetooth printer
Technology Highlights

Large Color “Touch Screen” Monitor

- Large Color Touchscreen Display for easy operation of programs and protocols.
- Interactive Biomechanics System engages patients mentally and physically for improved participation and recovery of function.
- Height adjustable upper extremity exercise mechanism.
- Adjustable pedal length/radius & automated foot positioning.
- Powerful 200 watt motor for durability and reliability.

Wireless Bluetooth Printer to track and document patient progress.

Assisted, active-assisted, & active exercise modes adjust automatically to accommodate varying patient participation.

Heart monitor and voice activated “Stop”.

Multiple hand attachments for different patient positioning needs.

Upper extremity horizontal adjustment.

Neoprene padded calf supports.

Designed for aging adults, with wheelchair access and “anti-tip” protection.

Compact and easy-to-move design - ideal for small areas.
Therex Through the Continuum of Care

The Omnicycle™ Elite addresses a broader spectrum of patients and conditions than traditional “resistance” cycling systems.

- Supports post-acute exercise, even with partial motor control and significant muscle inhibition - all the way through to active resistance training.
- PENS and Biofeedback options improve neuro, muscular and functional re-education.
“Motor-Assisted” Training Modes

“Assisted” Training Mode
- Increase circulation
- Increase ROM
- Reduce spasticity
- Reduce swelling
- Increase bladder/bowel function
- Neuro re-ed – PENS before and/or during cycling

“Active-Assisted” Training Mode
- Increase motivation (biofeedback), neuro re-ed
- Build symmetry
- Increase coordination (secondary benefit)
- Increase endurance and function – PENS during cycling

“Active” Training Mode
- Increase power, strength and function – PENS during cycling
- Increase cardio-pulmonary performance
Therapist Survey

Clinician Survey Results

- 100% felt the Omnicycle™ would favorably impact the facilities overall rehab program if installed full-time
- 90% indicated the cycle was easy for the clinical staff and patients to use
- 32% felt the rehabilitation cycle had brought new patients to rehab
- 100% felt the Omnicycle™ worked well from a seated patient position
- 95% would recommend the cycle for their facility
- 44% of patients used the Omnicycle™ in “Neuro” setting
- 19% used the “Cardio” setting
- 13% utilized the “Ortho” program
- (24% made no selection)

“Patients enjoy the cycle and look forward to using it. The activity report is helpful too - for the therapist and patients. Most patients are motivated to increase their activity Level and performance”

- Therapist at Omnicycle™ equipped Facility
Therapist Feedback

- Patients are able to tolerate increased exercise time on Omnicycle™ vs. traditional exercise cycles
- Therapists are able to more easily and objectively document patient progress to support clinically appropriate exercise progression
- The Omnicycle’s™ ability to automatically shift between “assistive” and “active” motion assists residents suffering from arthritis and immobility on one side following CVA
- The “Training Summary” Report enables therapists to easily document an increase in patient performance
- Allows neurological patients to use biofeedback to promote symmetry with lower extremities
- Supports residents who would not normally be able to perform upper extremity ROM exercise, either actively with increased endurance, or consistently for passive stretching – Patients benefited greatly from the “active-assist” to “passive” ROM option – particularly for stroke patients
- Patients are very motivated to use the cycle; extends throughout their rehab program – “love it”
- Very easy for the therapists to use – “therapist friendly”

“We found that the Omnicycle™ is very appropriate and helpful to geriatric patients. The Passive and Active Assist options alone made the Omnicycle™ a valuable tool to support patient progression. The Omnicycle™ has made a big difference with our lower level residents and those with decreased alertness.

- Director of Rehab at an Omnicycle™ equipped facility
Omnicycle™ Elite – New Model Features

- Enlarged LCD Color Screen
- Touch Screen Technology
- Exercise Program Displayed on Home Screen
- Improved Tilt Screen Mechanism
- Smaller Upper Extremity Housing
- Upper Extremity Biofeedback
- Wireless Bluetooth Printer
- Redesigned Height Adjustment Mechanism
- Easily Removable Calf Support with Folding Arm
- Tool-free Adjustable Pedal Crank
- Neoprene Padded Calf Supports
- Straight-Line Bike Handles
- Anti-Tip Straps
- Option of Turning Off the Voice Deactivation Feature
LCD Color Touch Screen Display

- **Large Color Touchscreen Monitor**
  - Easier to operate than conventional “push-button” monitors
  - Advanced display technology enables screen graphics and patient performance to be viewed from multiple angles
  - Larger screen area provides better visibility and makes biofeedback graphics more engaging for aging adults
Upper Extremity Biofeedback

- Simple graphics guide exercise performance based on adjustable parameters
- Easy to understand images motivate patients
Anti-Tip Restraint Straps

- Self-contained
- Works with wheelchairs (all types) and chairs alike
- Fast and easy to set-up and remove
Wireless Bluetooth Printer

- Printer provides cash-register receipt size “Training Summary” report
- Fast and easy touch screen commands provide seamless operation
- Printer may be used with multiple Omnicycle
- Operates on Rechargeable batteries
- 30 foot Range
The Value of Resistance Strength Exercising with the Frail Elderly is significant:

- Two to threefold increase in strength (100% to 150% increase)
- Gait speed improved by 48%
- TUG test time decreased by 23%

**Appropriate Candidates:**

- Not acutely ill
- Able to follow simple commands
- Ability to follow biofeedback display (if used)
- Post-surgical sub acute
- Not suffering from:
  - Recent stroke
  - Unstable cardiovascular disease
  - Uncontrolled chronic conditions
  - Not having fracture or myocardial infarct in last three months

“The relative benefits of strength training even among the frail elderly, should be emphasized because the known hazards of immobility and falls seem to outweigh the potential risk of muscle strengthening interventions in this population.”
**Patient Case Studies**

*Benefit:* Ability to tolerate an increased amount of time on cycle vs. traditional bike. The ability of the cycle to switch back and forth between passive and active motion assists resident suffering from arthritis. The summary report enables therapist to easily document an increase in patient performance.

*Example:* Mr. C on November 1st tolerated 15 minute session, with only 7% activity of active resistance. On November 29th, performed at 78% activity of active resistance. Mr. C is a patient that is difficult to document progress on due to cognitive limitations; this progression was included in progress notes to justify therapy treatments.
Patient Case Studies

**Benefit:** Ability for neurological patients to use biofeedback to promote symmetry with lower extremities.

**Example:** An outpatient, Mr. R, who is s/p CVA for over 5 years, was able to exercise on the bike for 10 minutes. On November 1st, 56% of the time was spent performing active resistance; Of that 56%, Mr. R used his left, affected lower extremity 38% of time, with 62% of the work being performed by the right lower extremity. On November 15th, after 3 treatments using the cycle, Mr. R improved to 80% of total activity, with an increase of his affected, left side to 49% and right to 51%. The cycle assisted Mr. R with promoting symmetrical, reciprocal gait pattern to promote amb with a decreased energy expenditure and with an increase in balance. Improving his balance enabled him to remain in an assisted living facility-delivering long-term placement with an improved quality-of-life.
Patient Case Studies

**Benefit:** Objectively document progression, allowing a longer length of service. The summary report at the session’s end provided key documentation info including:

- Total percentage of work done actively by the patient (documented the progression of percentages in the summary report)
- Calculated total work of right vs. left lower extremity, with an ultimate 50%-50% goal to promote equal, symmetrical use of the lower extremities (document objective percentages and relate to symmetrical gait quality).

**Example:** Mr. T. is 53 with severely right-side affected CVA, initially demonstrating zero active movement of his right lower extremity with painful spasms. Initial weight bearing and neurological techniques demonstrated only trace return of hip strength with continued painful spasms of the right leg. He was unable to bear equal weight between his lower extremities with standing, unable to advance his right leg to take a step, and unable to bear weight during right unilateral stance to advance his left leg. Mr. T. performed 15 minutes on the bike, 5 times per week, using the biofeedback neurological setting. During initial treatments, Mr. T experienced 5 spasms during the 15 minute treatments for the upper extremities, to 0 spasms consistently after approximately 7 treatments. With the lower extremity setting, he was able to achieve not only less spasms, but was able to achieve at least a 3-5 strength in his hip which enabled him to advance his right leg during gait. He is now able to walk with assist, independently advancing his right leg and able to bear weight through his right during unilateral stance. Though he is not independent with his walking, he was able to make further gains as compared to traditional therapy options. He now has improved weight-bearing and improved quality-of-life with ability to walk with assist.
**Benefit:** Increased treatment time leading to higher RUG levels.

**Example:** Mr. N was very resistive to therapy. While on two disciplines, it was difficult reaching a Very High RUG level. Because the bike provided the visual biofeedback and would transfer between passive and active movement, Mr. N was able to tolerate higher therapy treatment minutes. The visual feedback setting sparked his interest in using the bike. In addition, Mr. N experienced less pain in his knee because of the passive action of the bike, which enabled him to improve on his ambulation distance-reflecting that progression in his notes, further justifying continued therapy.