

# S4

## INTRODUCING THE **NEW** BIODEX SYSTEM 4

Still the fastest way to identify, treat and document  
the physical impairments that cause functional limitations.



**DISTINGUISH YOURSELF**

S4... the only choice for the people who know the difference.

*Get the full story at [www.biodex.com/S4](http://www.biodex.com/S4)*

# BIODEX

[www.biodex.com](http://www.biodex.com)

**1-800-224-6339**

Int'l 631-924-9000

# Distinguish Yourself...



*S4 offers virtually unlimited functional patterns to help you treat and document a wider patient*

# Biodex S4

The most popular and advanced dynamometer in the world  
just got better and easier to use.



Over 25 years have passed since Biodex introduced the world's first multi-mode computerized robotic dynamometer.

That event and subsequent "firsts" have made the Biodex dynamometer the choice of the most distinguished clinics and research facilities around the world.

Sports and orthopedic medicine, pediatric medicine, neurorehabilitation, older adult medicine, industrial medicine, and researchers depend on Biodex to provide consistent, accurate objective data. Objective data that provides the best outcome for their patients... objective data that supports their research... objective data that separates their facility from the rest.

Our 200 employees strive to keep Biodex at the forefront of innovation, effectiveness, efficiency and reliability. That's why so many world class facilities depend on Biodex.

The **New** System 4

- **New** advanced dynamometer technology for greater performance
- **Redesigned** seat accommodates athlete to pediatric applications
- **New** software interface, no other system is faster or easier to use
- **New** software features include:
  - End by % of fatigue - in Biofeedback, an exercise bout can be completed when the work for a repetition has dropped below a threshold (such as percentage of work)
  - **Rehabilitation Progress Report** that plots strength, pain, ROM and other defined measurements  
...and much more
- **New** touch-screen... see it, select it, adjust it... - it's that simple
- **New** simplified patient positioning with on-screen audio and visual aids
- **Reduced** floor space
- **Improved** Work Simulation exercises
- **Wider Range of Normative Data** athlete to pediatric
- **Expanded** after-sale support, installation and continuing education programs

*S4... the only choice for those who know the difference*



*t base than any other system.*

...pioneering breakthroughs in neuromuscular testing and rehabilitation technologies.

### Combine the art and science of rehabilitation

The Biodex System 4 continues to offer pioneering breakthroughs in neuromuscular testing and rehabilitation technology. Biodex assessments of physical impairments provide patients a fast, effective, documented return to function. The Biodex System 4 is unusually sensitive to your patient's limits. Progressive and interactive features keep you in complete control. Dynamic and static muscle loading environments provide unlimited combinations of technique and application.

### Isokinetic Resistance Mode

- The Isokinetic Resistance mode for testing and rehabilitation is totally accommodating throughout the entire range of motion. Biodex's unique impact-free acceleration and deceleration eliminates joint trauma, allowing patients to exercise and be tested at more functional speeds. Resistance continuously matches effort, accommodating to variations in patient force output due to weakness, pain or fatigue at specific points in the individual's range of motion.
- Research, along with over 25 years of clinical application, has demonstrated that isokinetic resistance is a safe, objective means to quantify physical impairments with a high correlation to function. Isokinetic testing is the standard for muscle and joint assessment.
- Applied torque response ensures that the patient's limb velocity increases or decreases in proportion to the torque applied during acceleration and deceleration, enabling neuromuscular control measurements.
- Choose concentric and eccentric contractions to perform isolated plyometric exercises.

- Concentric torque up to 500 ft-lb (680 Nm) and eccentric torque up to 400 ft-lb (542 Nm) accommodates the demands of high performance athletes and sports medicine researchers.

### Reactive Eccentric Mode

- The Reactive Eccentric mode for submaximal neuromuscular re-education in the early phases of rehabilitation
- The System 4 responds only to the patient's force output. To initiate movement, the patient must produce and maintain a pre-determined minimum amount of force. This loads the muscles surrounding the joint, producing a pre-load, thus stabilizing and protecting the joint.
- Eccentric torque up to 400 ft-lb (542 Nm)

### Passive Motion Mode

- The Passive Motion mode is a multi-function modality. Unique control properties allow for early intervention in all patients throughout all phases of rehabilitation.
- Passive speeds can be set as low as .25 degrees per second and as fast as 300 degrees per second.
- **Proprioception** -Very slow speeds allow for overcoming the natural stretch reflex. Ideal for proprioceptive testing. Active joint position testing stimulates joint and muscle receptors and provides a functional assessment of afferent pathways. System 4 software includes specific protocols for active and passive joint repositioning.

## SIX PHASES OF REHABILITATION

### 1. Healing Constraints and Proving Need

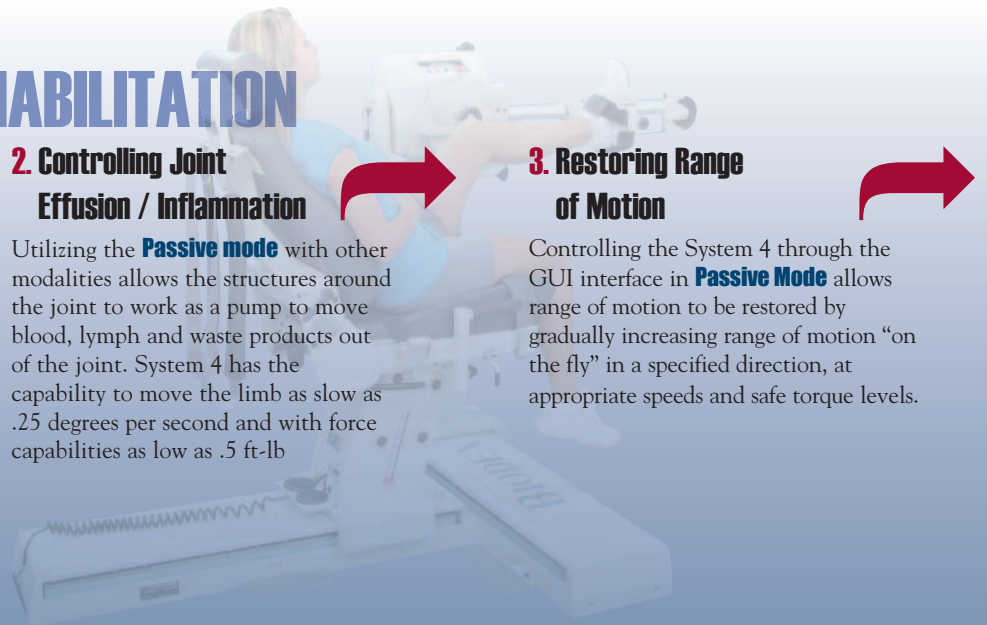
In **Passive Mode**, gentle range of motion exercise can facilitate the healing process and restore normal range of motion necessary for function. **Isometric mode** allows safe, comfortable strengthening and testing at specified angles that are safe for both your pre-operative and post-operative patients.

### 2. Controlling Joint Effusion / Inflammation

Utilizing the **Passive mode** with other modalities allows the structures around the joint to work as a pump to move blood, lymph and waste products out of the joint. System 4 has the capability to move the limb as slow as .25 degrees per second and with force capabilities as low as .5 ft-lb

### 3. Restoring Range of Motion

Controlling the System 4 through the GUI interface in **Passive Mode** allows range of motion to be restored by gradually increasing range of motion "on the fly" in a specified direction, at appropriate speeds and safe torque levels.



# Advanced Technology

**Based on accepted science, backed by independent studies, supported by clinical protocols and normative data**

- Torque limits can be set as low as .5 ft-lb (.7 Nm). If a torque limit is exceeded during an eccentric contraction, the System stops. Once the patient's torque output drops below the prescribed limit, movement is allowed. This unique capability allows patients to work safely at definitively prescribed sub-maximal force levels while combining isometric, concentric and eccentric contractions for:
  - developing strength
  - decreasing joint effusion
  - increasing range of motion
- Higher speeds in passive mode are ideal for active assistive exercise.

## Isometric mode

- The Isometric mode is commonly used pre- and post-operatively or when pain associated with motion is a factor. Isometric contractions effectively develop strength and decrease joint effusion while avoiding painful points in the range of motion.
- Biodex software automates the rehab process with automated multiple angle isometric protocols. Work the agonist, antagonist or both muscles at specified joint angles.

## Isotonic Mode

- The Isotonic mode allows velocity to vary while providing inertia-free constant force and concentric or eccentric muscular contractions.
- Higher performance:
  - Isotonic force to as low as .5 ft-lb (.7 Nm) = 6 inch pound; and as high as 400 ft-lb (542 Nm)

- Allows for functional task simulation when using work simulation tools, e.g., turning a doorknob.
- Because the force is selected, the Isotonic mode also provides protective pre-loading of the joint prior to movement.
- Ideal for work simulation. Constant force muscle loading is considered functional, as natural activities normally involve moving a constant weight object at varying velocities.

Enjoy complete freedom in planning the mode and level of clinician interaction that works best for each patient. Touch screen controls give clinicians the hands-on ability to adjust torque, speed, range of motion and other clinical parameters in real time. The Biodex System 4 also allows clinicians the option to select automated test and exercise sessions. Any sequence of modes can be employed automatically by linking protocols.

## Customized Motor Control

- The optional **Researcher's Tool kit Software** allows researchers to customize motor control, movement tracking and data analysis.

## Demonstrated Accuracy, Reliability, Safety and Durability.

- Biodex dynamometers offer a level of performance, accuracy and safety that remains unmatched. Every step of the rehabilitation cycle yields consistent and repeatable results. Biodex dynamometers mark the highest correlation coefficients for performance repeatability, another reason so many clinicians and researchers put their trust in Biodex.

### 4. Restoring Strength and Proving Progress

Isometric, active assistive, sub maximal concentric and submaximal eccentric contractions are early strengthening techniques that are available to the System 4 user. More progressive maximal concentric, eccentric contractions are available in **Isokinetic, Isotonic, Passive and Reactive Eccentric modes**. All of these modes are also suitable for testing and delineating a documentable progression of muscular strength, endurance and joint position sense.



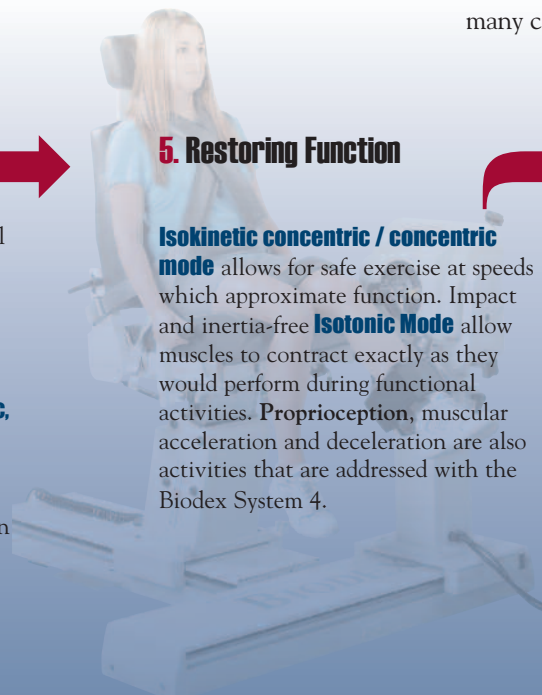
### 5. Restoring Function

**Isokinetic concentric / concentric mode** allows for safe exercise at speeds which approximate function. Impact and inertia-free **Isotonic Mode** allow muscles to contract exactly as they would perform during functional activities. **Proprioception**, muscular acceleration and deceleration are also activities that are addressed with the Biodex System 4.



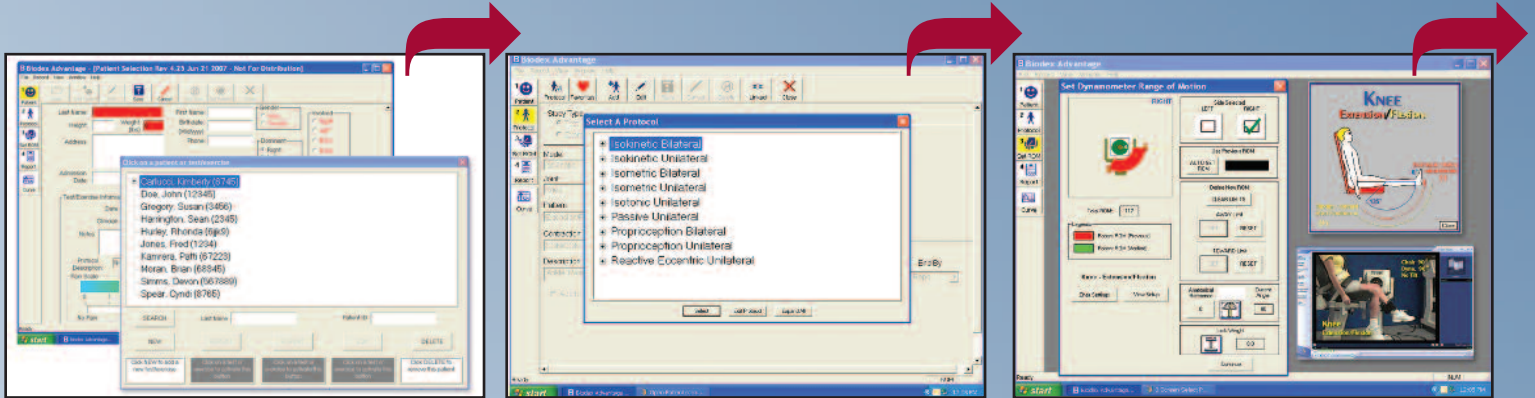
### 6. Proving Outcome

**All five modes** can objectively assess isolated joint muscular strength and neuromuscular control.



# Advantage Software™ ...

...communicate need, progress and outcome clearly and accurately.



#1: Find or add a patient.

#2: Select or create a test or rehabilitation protocol.

#3: Set the Range of Motion - need help?  
Simply refer to the on-demand audio and visual aids.

## INTRODUCING ADVANTAGE SOFTWARE 4.0

Advantage Software™ 4.0 is the most comprehensive, easy-to-use, feature-rich software that has ever been released for human performance testing and rehabilitation. Software that is intelligent and intuitive; software that mirrors the way you think and work.

Advantage Software™ helps motivate patients with on-screen charts and graphics that track performance and encourage compliance with the rehabilitation plan. Powerful curve analysis allows you to conduct even more complex neuromuscular evaluations. With Advantage Software™ you can be confident that every step of the rehabilitation plan is captured and documented.

## COMMUNICATE NEED, PROGRESS AND OUTCOME

Biodex objective data helps you communicate need, progress and outcome clearly and accurately. Graphic reports and narrative letters compare patient status to normative data. On-screen editing helps communicate the information in simple terms for patients, referring physicians and third-party payers.

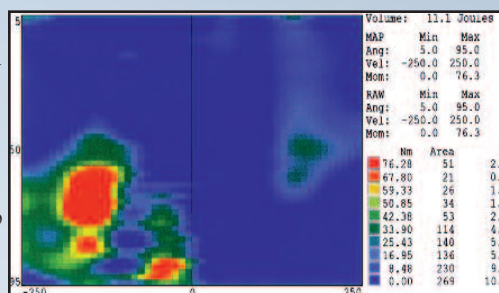
## FAST AND EASY TO USE

What's the best piece of equipment? The one that's used the most. System 4 makes a point of being easy to use for all skill levels, bringing the clinical advantages of this technology to every application. The new system interface makes the System 4 easier than ever to use. Now moving from treatment to analysis and report generation is just a click away.

- New Touch Screen for quick, easy operation. *See it, select it, adjust it. It's that simple.*
- Easy-to-follow on-screen wizards guide the inexperienced user through the software while the Windows®-based application remains flexible for the advanced user.
- Innovative, on-demand audio and visual aids demonstrate exercise and test patterns – so there is no forgetting how to set up!
- Only Advantage Software 4.0 features the new, easy to understand, **Rehabilitation Progress Report**. This on-screen chart and printable report tracks Pain, Range-of-Motion and Strength throughout the rehabilitation protocol.

## ISOMAP

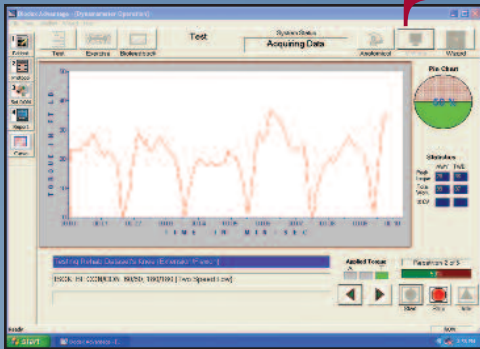
- The Biodex system's ability to collect the entire spectrum of the patient's neuromuscular performance means that more advanced clinical users can take advantage of the optional **Isomap** feature. Isomap is a graphical depiction and quantitative analysis of strength that includes all measures of force, velocity and range of motion. The map allows the clinician to easily examine regional impairments of neuromuscular performance. The information in turn is used to design a rehabilitation treatment specific to the impairment.



*DIFFERENCE MAP Involved quadriceps shows significant eccentric deficiencies (red areas) beginning at 60° ROM to 80°ROM (flexion) and between 120°/sec. and 200°/sec.*

# Simple, Logical, Intuitive

No other system is faster or easier to use



#4: Test or rehabilitate the patient.

YOUR LETTERHEAD

January 10, 2008

Dr. Jones  
123 Hospital Road  
Biodex City, UT 5575

Dear Dr. Jones,

As requested, please find a Biodex isometric evaluation for Joe Smith. The test was administered on 1/5/2008. The uninvolved knee was tested first followed by the involved knee.

The results of the test reveal significant strength deficits in the involved knee as compared to the uninvolved knee.

The involved knee exhibited work capabilities below the work capabilities of the uninvolved knee.

Range of motion for the involved knee was below normal limits.

Reference: the coefficient of variance: the reliability of the patient's test performance was acceptable.

It is my opinion that the patient is making excellent progress and should continue therapy for 6 weeks.

Sincerely,  
John Doe PT

YOUR LETTERHEAD

**Graphical Evaluation**

Name: Susan Gregory	Gender: Female	DOB: 05/07/1939	Weighting: None	Notes: Extension/Flexion
ID: 248	Involved: Both	Product: Biodex Advantage	Model: Biodex	Consultation: 04/08/08
Exam Date: 01/05/08	Referral: Knee	Diagnosis: KNEE	ICD: No Clearly Extremity	
HE: 200.0	Age: 68			
Height: Female				

**EXTENSION**

Strength: 65%

ROM: 100%

**FLEXION**

Strength: 28%

ROM: 43%

**EXTENSION**

Strength: 100%

ROM: 100%

**FLEXION**

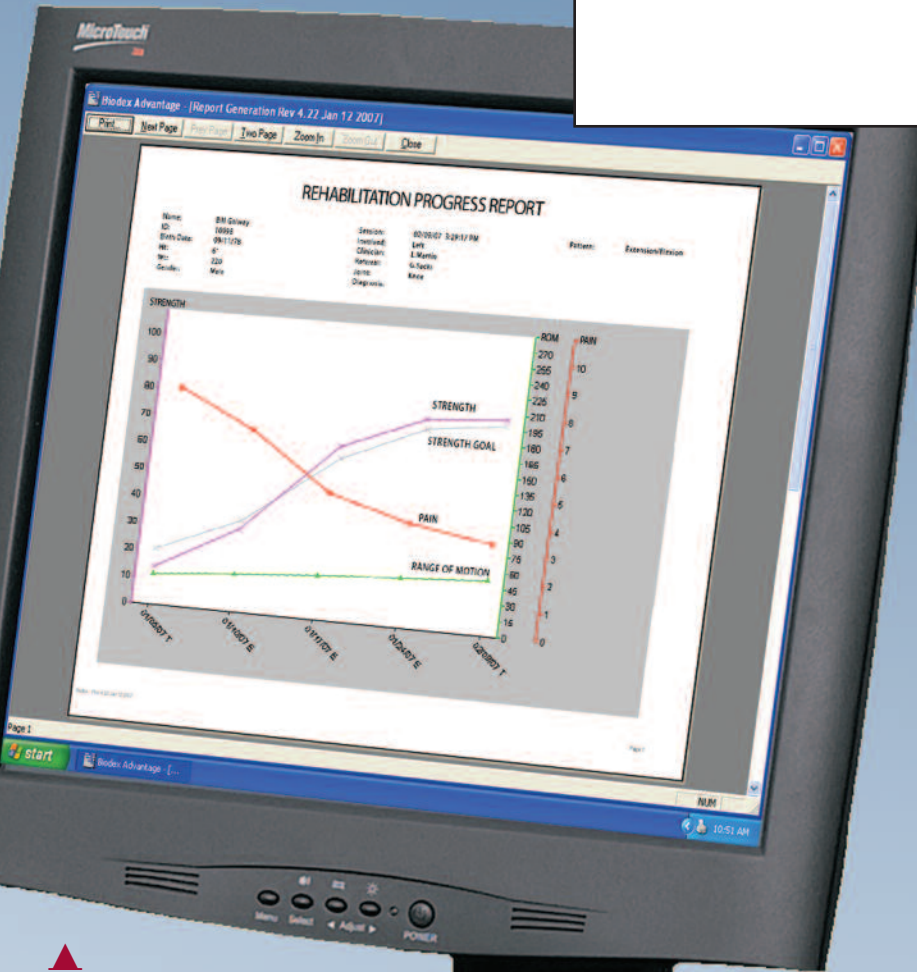
Strength: 62%

ROM: 100%

**Comments:**

The patient's strength and range of motion are significantly improved compared to the uninvolved knee. The patient is making excellent progress and should continue therapy for 6 weeks.

#5: Print Reports.



## Rehabilitation Progress Report

This report presents important measures of patient performance over a time period in a simple, easy to understand format. System 4 is the cornerstone of an *evidence based rehabilitation* program; strength, range of motion, pain and up to four other parameters, not necessarily from the System 4, can be entered to present status and progress. For example you can enter and track balance results, joint laxity measurements and/or gait results along with strength and range of motion measures.

The **Rehabilitation Progress Report** is stored for easy reference and can be printed for availability to referring physicians and third party payers.

**New** Touch Screen graphic user interface for quick, easy operation.

*New software makes the system more responsive, easier to use and faster to setup.*



## EVIDENCE-BASED CLINICAL PROTOCOLS

Biodex combines science with practical application to present a series of **Evidence-based Clinical Protocols** to help you better understand and utilize your Biodex System.

## SPORTS AND ORTHOPEDIC MEDICINE



Whether your orthopedic and Sports Medicine practice is allowed only limited visits or you have the luxury of managing a complete recovery, Biodex is the tool that adapts to every

environment. Evidence-based clinical protocols combine science with practical application to ensure that you provide the best outcomes.

- Shoulder Dysfunction
- Knee Osteoarthritis
- Lateral Ankle Sprains
- Patellofemoral Dysfunction
- Anterior Cruciate Ligament

Other capabilities include pre-season screening, injury prevention and athletic performance enhancement.

*Note: Additional Biodex based sports medicine protocols are available at [www.cincinnati-sportsmed.com](http://www.cincinnati-sportsmed.com)*

## PEDIATRIC MEDICINE



The Biodex Multi-Joint System has been used to test and treat children worldwide. Isokinetic muscle testing helps clinicians by providing objective data for neuromuscular control and strength. Pediatric attachments and age-based normative data are available.

*Note: Pediatric Normative Data is available at [www.biodex.com/S4](http://www.biodex.com/S4)*

## NEUROREHABILITATION



The Biodex program for neurorehabilitation helps patients build strength, endurance and coordination. Spasticity management includes objective quantification at specific contraction velocities. The passive mode is used for repetitive exercise. The eccentric mode is especially useful for controlled strengthening.

*Note: The evidence-based clinical protocol for movement disorder is available for a multitude of pathologies. Visit [www.biodex.com/S4](http://www.biodex.com/S4)*

## WHAT WE HEAR FROM OUR USERS:

### From **Hospitals** we hear...

We just traded in our old Biodex System that served us well. We see a lot of shoulders, knees and total hips. The Biodex gives us a standardized rehab intervention. The new unit is much easier to setup and use; the staff loves it. Importantly, we were able to move our old database from the previous system into the new System 4.

### From **Universities** we hear...

In our university, we have a PT program, a ATC program, an Ex Phys program, and a new researcher with a grant - we chose the Biodex (S4) because we needed a safe "rock solid" purchase... our programs, research and reputation depended on it. Nothing else has come along to replace the objective neuromuscular quantification that a Biodex system provides.



# Versatility, Marketability

Affordable solutions for orthopedic, sport, pediatric, industrial, neurological and older adult patients

To stay competitive in today's dynamic physical medicine marketplace, you need to be adaptable. To be adaptable, you need equipment that can keep pace with progressive thinking and innovative therapies. You need dependable, versatile tools that give you the means to take on new challenges and extend capabilities. You need a device that can be used to test and rehabilitate patients ranging from the most frail to world class, elite athletes. **You need the Biodex System 4.**

## INDUSTRIAL MEDICINE

## OLDER ADULT

## RESEARCH



The Biodex Multi-Joint System has been used in over 1,000 published studies. Unique capabilities include:



### Analog Signal Access Interface

This optional feature provides real time analog voltage representations of torque, position and velocity from the dynamometer.

### Customized Motor Control

The "Researcher's Tool Kit" provides the advanced investigator direct access to the embedded dynamometer system not otherwise available via the application software. The core of the Tool Kit is an extension to the System 4 firmware that exposes the motor controls to an external interface designed by the researcher.

### Curve Analysis

Curve analysis allows the user to conduct complete neuromuscular evaluation.

Note: Learn more about the Researcher's Tool Kit and the Analog Signal Access Interface at [www.biodex.com/S4](http://www.biodex.com/S4)

By employing the optional Work Simulation, Lift and Back Attachments, the System 4 can perform:

- pre-placement testing
- functional capacity evaluation
- work hardening

*"Obtaining defensible, objective, reliable and valid data are critical components when performing physical capability strength tests to industry. The Biodex Isokinetic System provides, the quality control we need to satisfactorily provide new hire and return-to-work evaluations."*

Tom Gilliam, PH.D

Industrial Physical Capability Services, Inc. (IPCS)

The Biodex Fall Risk Assessment & Conditioning Program has been employed by leading clinics for over ten years. It's the only fall program that incorporates a complete array of objective tests. Strength is a critical factor for a rapid response to a balance disturbance. Isokinetic testing will identify weakness; exercise will improve ankle and leg strength.

Note: Fall Program Protocols are available at [www.biodex.com/S4](http://www.biodex.com/S4)

## From Private Practices we hear...

We bought the System 4 to give our practice a competitive edge over competition. Referring physicians like the fact that we use standardized protocols and provide objective data. For patients with limited visits, the objective data is useful in convincing them to enter our post-insurance sports training program. We also provide pre-season screening for local schools. That program gives us two benefits: players become familiar with the clinic, and if we identify muscle imbalance, they can also enter our sport training program. To expand our practice, the Biodex System will be used in a new industrial medicine program and other older adult program.

## From Athletic Trainers we hear...

After an injury the Biodex is a truly valuable rehab tool, speeding recovery and return to function. Without it - we are guessing. We have athletes that want to play. We require as much information as possible to make an informed decision. Only the Biodex can objectify their status and allow me to confidently return the player to action.

# S4 PRO

*"The Clinical Advantage"*

## SUPERIOR TESTING, TRAINING & TREATMENT P

*Biodex... the world leader in neuromuscular evaluation & therapeutic exercise*

*You don't have to be a Pro to be treated like one... The Biodex Multi-Joint System is the new technology used in elite clubs and most elite professional athletes around the world!*

- New York Giants
- Dallas Cowboys
- San Francisco 49ers
- Arizona Dolphins
- New York Jets
- New York Mets
- Denver Broncos
- Indianapolis Colts
- Florida Marlins
- New Orleans Saints
- Toronto Blue Jays
- Washington Capitals
- Philadelphia Phillies
- Los Angeles Dodgers
- Chicago Bears
- Montreal Expos
- Cleveland Indians
- Kansas City Royals
- Detroit Tigers
- California Angels
- Los Angeles Lakers
- St. Louis Cardinals
- Chicago White Sox
- Atlanta Braves
- Seattle Mariners
- Philadelphia Eagles
- Pittsburgh Pirates
- Kansas City Chiefs
- Pittsburgh Steelers
- Carolina Panthers
- Jacksonville Jaguars
- Tampa Bay Lightning
- Los Angeles Clippers
- Orlando Magic
- Washington Wizards
- Atlanta Falcons
- Texas Rangers
- Houston Rockets

*Most stars of the premier positions who depend on the Biodex Multi-Joint System*

<p><b>KNEE</b> EXTENSION/FLEXION</p>   <p><b>ANKLE</b> DORSIFLEXION/PLANTAR FLEXION</p>  	<p><b>ANKLE</b> PLANTAR FLEXION</p>  	<p><b>CLOSED CHAIN</b> KNEE ANGLE OR EXTENSION/FLEXION</p>  	
<p><b>SHOULDER</b> EXTERNAL ROTATION/INTERNAL ROTATION</p>  	<p><b>SHOULDER</b> INTERNAL EXTENSION</p>  	<p><b>SHOULDER</b> MEDIAL ROTATION</p>  	<p><b>SHOULDER</b> EXTERNAL ROTATION</p>  
<p><b>ELBOW</b> EXTENSION/FLEXION</p>  	<p><b>WRIST</b> EXTENSION/FLEXION</p>  	<p><b>WRIST</b> RADIAL ULNAR DEVIATION</p>  	<p><b>FOREARM</b> SUPINATED PRONATED</p>  
<p><b>HIP</b> FLEXION/EXTENSION</p>  	<p><b>HIP</b> ADDUCTION/ABDUCTION</p>  	<p><b>ATTACHMENTS</b></p>      	

While you can perform an unlimited number of isolated patterns addressing the shoulder, knee, hip, ankle, wrist and elbow, the chart above shows just some of the more common patterns and applications possible with the Biodex System 4. For more details or additional suggested positions refer to your User Manual, visit [www.biodex.com/system4](http://www.biodex.com/system4) or contact our Clinical Education Department at 800-224-6339. (In NY and International, call 631-924-9000) or Email: [clinical@biodex.com](mailto:clinical@biodex.com)

# BIODEX SYSTEM 4 PRO

Biodex Medical Systems, Inc. 20 Kessy Road, Sheepshead Bay, New York, NY 11565-4761, Tel: 800-224-6339 (In NY and International, call 631-924-9000), Fax: 631-924-9118, Email: [clinical@biodex.com](mailto:clinical@biodex.com), [www.biodex.com](http://www.biodex.com)



Biodex Pattern/Position Posters for the S4 Pro and the S4 Quick-Set are included with each system to both act as a visual aid to the clinician and an educational poster to the patient. To see each pattern in detail visit [www.biodex.com/S4](http://www.biodex.com/S4).

Note: While the patterns and positions possible with the System 4 are virtually unlimited, the patterns shown here are some of the most commonly used patterns possible with the Biodex S4. For more information visit [www.biodex.com/S4](http://www.biodex.com/S4).

# Unmatched Testing, Training and Treatment

**More than biomechanically correct, System 4 attachments are part of an integrated system designed to make set-up faster and easier**

If you are an experienced Biodex clinician, you will find System 4 even easier to use than previous systems; if you are new to Biodex, the expanded array of on-demand audio and visual aids, color-coded set-up icons and full color positioning posters make set-up and positioning easy to learn.

The on-demand audio and visual aids take you step-by-step through each attachment set-up, the new four-color poster acts as a reminder just a quick glance away and the color-coded positioning markers help to make set-up simple.

To ensure that each clinician fully understands how to use the Biodex System every Biodex user receives extensive installation and training by a certified Biodex trainer. Follow-up training is available from the Biodex support staff and Biodex University Workshops.

*Patient set-up is as easy as 1-2-3... GO!*



**STEP #1** Adjust chair and dynamometer.



**STEP #2** Set Range of Motion.



**STEP #3** Select mode... GO!

*...optional attachments increase your capabilities.*



• Work Simulation Tools



• Closed Kinetic Chain Attachment



• Lift Simulation Attachment



• Dual Position Back Extension/Flexion Attachment

*S4 offers virtually unlimited functional patterns to help you treat and document a wider patient base than any other system.*

# Education

## **Biodex is your long-term partner in the development of positive outcomes.**

*Biodex education programs ensure that clinicians remain aware of current developments and that the equipment is used correctly.*

### **Installation**

Biodex Systems are installed by a certified application specialist and include a one-day in-service training program. Step-by-step hands-on training will show you how to use and maximize your Biodex equipment to help you meet your specific demands.



*System 4 PRO*

### **CONTINUING EDUCATION**



In addition, Biodex provides on-going Application Training Workshops, scheduled throughout the year around the country and the world. These full day workshops include practical hands-on hardware and software training and are useful for both beginner and intermediate users.



*Balance System SD*

### **ONLINE TRAINING**

Biodex also offers online “one-on-one” training via interactive conference technology, making it even more convenient to stay up-to-date.

For more information contact our Clinical Education Department or visit us at [www.biodex.com/clined](http://www.biodex.com/clined)



*Offset Unweighing System*

### **SERVICE**

Biodex phone support and on-site field service allow you to concentrate on treating patients, not your equipment. Biodex Service is the most comprehensive program in the field of physical medicine.

For upcoming workshops, visit us on the web at [www.biodex.com](http://www.biodex.com)

### **HAVE A QUESTION?**

Visit our new message board at [www.biodex.com](http://www.biodex.com)



*Gait Trainer 2*

*Biodex stays with you every step of the way with training, workshops, software support and superior service.*

# For a Healthier Tomorrow

## MEETING THE CHALLENGE

Some professions are by nature more dynamic than others, and the field of physical medicine is no exception. Shifting trends in medicine, legislation and advancing technology continue to challenge the modern clinic with issues it cannot ignore.

- Biodex keeps your clinic competitive... with the latest innovations in effective rehabilitation; tools and protocols that heal patients and attract referrals.
- Biodex helps prove your effectiveness... with objective data that documents need, progress and outcome to referrals, patients and third-party payers.
- Biodex expands your capabilities... from orthopedics to industrial medicine, from pediatrics to older adults. Biodex provides versatility and adaptability all in one, ultra-expandable system.
- Biodex helps you boost patient throughput... it's easier and faster to setup, test and treat with than any other system.
- Biodex ensures that you are clinically correct... with clinical research partners and protocols, your practice will be second to none.
- Biodex prepares you for new payment trends... getting patients better, faster. Even with flat rate or restricted time; it provides fast, effective care to help you prosper in a heavily regulated reimbursement environment.
- Biodex means unlimited growth... Biodex means business.



Call us at 1-800-224-6339 (Int'l 631-924-9000),  
or visit us at [www.biodex.com](http://www.biodex.com),  
to take advantage of the "Clinical Advantage"™ today.

*"Biodex boosts your profitability, even under  
the most stringent payment systems."*



Adjustable contoured seat back

Fully padded adjustable seat for safe comfortable patient positioning

Greater dynamometer performance: Provides 33% more eccentric torque, now up to 400 ft-lb (542 Nm). Force capability as low as .5ft-lb (.7 Nm) and velocities as slow as 0.25 deg/sec.

Network ready software - Convenient database management for multi-site and hospital applications, new expanded reports and added features to make S4 easier to use.

Touch-Screen monitor can be positioned for easy patient viewing

Padded adjustable patient restraints

17" Flat Panel Touch Screen with Graphical User Interface (GUI) provides a versatile platform for future feature capabilities.

Easy adjustability

Patient safety shut-off

New compact design cart with large flat working surface

Convenient Pause/Resume Button

Totally redesigned seat and seat lift to handle patients up to 430 lb (195 kg)

Color-coded positioning guides

On-board color printer

Easy to install attachments

Higher performance electronics with scalable output options and a sampling rate up to 2000 Hz using analog signal interface for improved research applications and overall versatility.

Accepts tower PC configurations, which allows for expanded computer options, as evolving technology may demand.

Adjustable seat height

Locking wheels

Adjustable seat position

# Specifications

Exactly what you need, when you need it... nothing less - guaranteed



## SYSTEM 4 PRO

*Patient Positioning System with motorized seat height, front-to back chair adjustment, fully assisted dynamometer height adjustment, and side-to-side adjustment*

## S4 PRO

System 4 PRO features: Touch screen interface for quick, easy multi-mode operation; isokinetic, isometric, isotonic, reactive eccentric and passive

- Concentric speed up to 500 deg/sec
- Eccentric speed up to 300 deg/sec
- Concentric torque up to 500 ft-lb (680 Nm)
- Eccentric torque up to 400 ft-lb (542 Nm)
- Passive speed as low as .25 deg/sec
- Passive torque as low as .5 ft-lb
- Isotonic torque as low as .5 ft-lb

Clinical Data Station:

- Processor: Pentium 4 2.8 GHz
- 512 MB RAM
- 80 GB Hard Drive
- 48x CDRW
- Windows XP Operating System
- Biodex Advantage Software
- LCD Flat Panel Touch Screen Color Monitor with integrated speakers
- Color Printer

Attachments:

- Attachments for ankle, knee, shoulder, elbow, wrist and hip
- Attachment cart
- Calibration kit
- Manuals and wall chart
- 64 square feet operating space (6 square meters)

Approvals:

ETL and cETL listed to UL 60601-1, CAN/CSA C22.2 No.: 601-1-M90 and EN60601-1, CE conformity to M.D.D. 93/42/EEC\*

\*When sold complete with computer, monitor and printer.



## Options to S4 Pro

- Dual Position Back Extension/Flexion Attachment
- Lift Simulation Attachment
- Closed Kinetic Chain Attachment
- Work Simulation Tools
- Anti-Shear Attachments
- Pediatric Attachments
- Wide Seat
- Analog Signal Access Interface
- Pediatric Attachments
- Research Tool Kit



## SYSTEM 4 QUICK-SET

*Patient Positioning System with fixed seat height, fully assisted dynamometer height adjustment, front-to back chair adjustment.*

## S4 QUICK-SET

System 4 QUICK-SET features: Touch screen interface for quick, easy multi-mode operation; isokinetic, isometric, isotonic, reactive eccentric and passive

- Concentric speed up to 500 deg/sec
- Eccentric speed up to 300 deg/sec
- Concentric torque up to 500 ft-lb (680 Nm)
- Eccentric torque up to 400 ft-lb (542 Nm)
- Passive speed as low as .25 deg/sec
- Passive torque as low as .5 ft-lb
- Isotonic torque as low as .5 ft-lb

Clinical Data Station:

- Processor: Pentium 4 2.8 GHz
- 512 MB RAM
- 80 GB Hard Drive
- 48x CDRW
- Windows XP Operating System
- Biodex Advantage Software
- LCD Flat Panel Touch Screen Color Monitor with integrated speakers
- Color Printer

Attachments:

- Attachments for ankle, knee, shoulder, elbow, and wrist
- Attachment cart
- Calibration kit
- Manuals and wall chart
- 32 square feet operating space (3 square meters)

Approvals:

ETL and cETL listed to UL 60601-1, CAN/CSA C22.2 No.: 601-1-M90 and EN60601-1, CE conformity to M.D.D. 93/42/EEC\*

\*When sold complete with computer, monitor and printer.



## Options to S4 Quick-Set

- Dual Position Back Extension/Flexion Attachment
- Lift Simulation Attachment
- Closed Kinetic Chain Attachment
- Work Simulation Tools
- Hip Attachment
- Anti-Shear Attachments
- Pediatric Attachments
- Wide Seat
- Analog Signal Access Interface
- Research Tool Kit



Certified Quality Management System

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*Los Angeles Angels*  
*Toronto Blue Jays*  
*Washington Capitals*  
*Philadelphia Phillies*  
*Los Angeles Dodgers*  
*Chicago Bears*  
*New York Mets*  
*Cleveland Browns*  
*Kansas City Royals*  
*San Diego Chargers*  
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*Just some of the over 4,000 Biodex dynamometers in use around the world.*

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 University of Alabama  
 Baylor Medical Center  
 Appalachian Rehabilitation  
 Shriners Hospital for Children  
 North Hills Orthopedic  
 Keller Army Hospital  
 Virginia Polytech Institute  
 University of Kansas  
 University of Notre Dame  
 S.O.A.R. Physical Therapy  
 Institute of Dallas for Ergonomics  
 University of Southern California  
 Children's Hospital of Wisconsin  
 University of Chicago Hospitals  
 Missouri State University  
 University of Evansville  
 Spaulding Rehabilitation Hospital  
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 Arkansas State University  
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 Michigan State University  
 West Point  
 Ohio Orthopedic Center of Excellence  
 Mt. Sinai Hospital  
 Athens Regional Medical Center  
 Florida State University  
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 Atlanta Sports Medicine Institute  
 University of Hawaii  
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 University of Vermont  
 St. Jude's Children's Hospital  
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 DeQueen Regional Medical Center  
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 St. Barnabas Medical Center  
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University of Tulsa  
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Biodex Medical Systems, Inc.

20 Ramsay Road, Shirley, New York, 11967-4704

Tel: 800-224-6339 (Int'l 631-924-9000),

Fax: 631-924-9338 Email: sales@biodex.com, www.biodex.com

