Biometrics Ltd

ELINK

BRINGING EXERCISE &
EVALUATION TOGETHER

E-LINK

EVALUATION AND EXERCISE SYSTEMS

E-LINK

For over 20 years **E-LINK** has been used by thousands of clinicians around the world, setting the standard for computerized evaluation and activity (game) based exercise in a wide variety of clinical settings - from hand therapy through to stroke and neuro rehabilitation.

- A clinical computerized system that brings precise evaluation and innovative exercise together in a unique design for both the upper and lower extremities
- Precision instrumentation and computerized documentation for evaluating grip and pinch strength, joint ROM, force applied during MMT and weight-bearing balance
- A range of devices for innovative exercise of the upper and lower extremities from a flicker of muscular activity to balance training with gradable computer-based Activities
- Software that generates progress reports, comprehensive documentation, including impairment calculations and data that can be easily exported for statistical analysis

E-LINK is a comprehensive range of modules using state of the art electronic devices for clinical measurements. Combined with sensors and gradable computer-based activities for exercise, **E-LINK** brings great therapeutic benefit and enjoyment to patients of all ages from pediatric units to those in elderly care. The variety of the **E-LINK** modules, along with a choice of interfaces to the computer, allows the clinician to configure a system that best meets the evaluation and documentation needs of the clinic as well as providing multiple options for therapeutic exercise of patients.

E-LINK is available with both wireless and wired options for interfacing **E-LINK** instruments to the computer. The latest generation of robust wireless communications gives greater portability and ease of use for the clinician and freedom of movement for the patient, making **E-LINK** ideal for using by the bedside, in a clinic or community setting.

E-LINK	Wireless	Wired
Upper Limb Exerciser	✓	✓
Exercise Kit	✓	✓
Hand Kit	✓	✓
Dual–Axis ForcePlate System		✓
Single-Axis ForcePlate System		✓
Single ForcePlate	✓	✓
Range of Motion Kit	✓	✓
MyoMeter	✓	✓
Upper Extremity Evaluation Software	✓	✓
Upper Extremity Impairment Software	✓	✓
Lower Extremity Evaluation and Impairment Software	✓	✓

For more information:
www.biometricsltd.com/wireless

CONTENTS

ICON KEY: Wireless | Wired | Evaluation | Exercise | Upper Extremity | Lower Extremity

Full E-LINK product information is available by visiting our website: www.biometricsltd.com/rehab

CLINICAL APPLICATIONS

E-LINK uses novel applications of computer-based activities with precision electronic devices bringing therapeutic exercise and clinical evaluation together. Over the years **E-LINK** has benefitted hundreds of thousands of patients worldwide throughout the diverse areas of rehabilitation. **E-LINK** is the ideal supportive resource for clinicians caring for patients of all ages in many clinical areas.

More information, including case studies and published resources can be found on our website at: www.biometricsltd.com/clinical-applications and www.biometricsltd.com/publications/elink

E-LINK – PRECISE EVALUATION AND INNOVATIVE EXERCISE

Hand Therapy

Widely used by hand specialists, E-LINK offers a comprehensive evaluation and exercise system covering the many complex issues that arise in hand therapy. The E-LINK Dynamometer, Pinchmeter, MyoMeter and Goniometers are accurate, sensitive devices, registering as little as 0.1kg/lb strength measurements and 1° incremental ROM reading. Formal evaluation can therefore commence very early and be closely monitored throughout the full rehabilitation process. E-LINK is invaluable in analyzing progress over time as well as generating full comprehensive reports, including automatic impairment calculations. Data can be readily exported for audits, research purposes and patient files. E-LINK provides exciting Activities (games) that are highly gradable to ensure functional upper extremity exercise throughout the full rehabilitation process. This encourages muscle strengthening and restoration of normal movement patterns.

For more information: www.biometricsltd.com/hand-therapy

Medical Evaluation

In an era seeking evidence-based practice, E-LINK provides clinicians with precise, standardized devices for efficiently evaluating grip strength, pinch strength, joint range of motion, force applied during MMT and weight-bearing balance. E-LINK software readily generates progress reports and comprehensive documentation for medical examinations, including impairment calculations for both the upper and lower extremities. The comprehensive impairment report provides the summary values as well as detailed charts and text showing how the values were calculated.

For more information: www.biometricsltd.com/medical-eval

Occupational Therapy

Occupational therapists generally address upper extremity dysfunction and difficulties in activities of daily living. E-LINK is an invaluable resource providing devices, not only for precise evaluation, but also for innovative, highly motivational, functional exercise using computer-based games. Specialized E-LINK sensors permit exercise to begin from where there is only a flicker of muscular activity with or without any visible joint movement.

Other E-LINK modules encourage progressive focused exercise against gravity, with gradable resistance, for grip and pinch strengthening goals. E-LINK helps strengthen the upper limb to preserve the shoulder, arm and hand function so that the patient can maintain activities necessary for everyday living.

For more information: www.biometricsltd.com/occupational-therapy

Physiotherapy/ Physical Therapy

PT is a key component of the rehabilitation process and clinicians typically focus on lower extremity function, muscle strengthening and mobility. E-LINK is most helpful where there is need to quantify and monitor the effectiveness of treatments for the lower extremity, particularly in relation to assessing joint range of motion, force applied during MMT and evaluating weight-bearing balance. E-LINK Goniometers, MyoMeter and ForcePlates offer speedy, accurate data collection and can easily generate progress reports. Other E-LINK modules include unique surface EMG sensors for exercise with immediate biofeedback and sensors for exercising joints against gravity, both quick and easy to set up in busy clinical environments. E-LINK ForcePlates also provide balance training for both the lower and upper extremities, encouraging normal movement patterns and muscle strengthening whilst addressing proprioception, motor control and balance.

For more information: www.biometricsltd.com/physio-therapy

Pinchmeter in use for exercise

Dual-Axis ForcePlates in use for pediatric rehabilitation

Stroke and Neuro Rehabilitation

Evidence suggests that an early emphasis on exercise for the stroke patient is essential for promoting a good recovery. E-LINK, used even in the acute phase, enables exercise and thus recovery to begin. The Myo-EX sensor detects very small flickers of muscular activity. Surface EMG provides immediate biofeedback to the patient through the visual movement of objects on the computer screen, maximizing the patient's motivation to exercise. Other E-LINK devices and computer-based Activities provide progressive, gradable, functional exercise for both the upper and lower extremities throughout the full process of rehabilitation. E-LINK encourages muscle strengthening and restoration of normal movement patterns. The Activities help address various cognitive and perceptual issues. Grip strength, pinch strength, and weight-bearing balance are essential functional elements in achieving many activities of daily living. These may be closely monitored using the accurate E-LINK devices. E-LINK is a valuable resource for clinicians seeking optimal recovery outcomes for stroke and neuro patients in their care.

For more information: www.biometricsltd.com/stroke and www.biometricsltd.com/neuro

Spinal Cord Injuries Rehabilitation

Spinal cord injury can be devastating and rehabilitation for these patients has an increasingly important role, especially as it is long term in many cases. For over 20 years E-LINK has been a key resource for clinicians who need to quantify and monitor the effectiveness of treatment. Precision devices enable the speedy evaluation of grip and pinch strength, joint range of motion, force applied during MMT and weight-bearing balance, monitoring progress over time.

Various E-LINK devices enable exercise for the upper and lower extremities that is totally patient focused, encouraging normal movement patterns and muscle strengthening whilst also addressing proprioception, motor control and balance. Documented results can be meaningfully discussed with the patient and family addressing functional goals.

For more information: www.biometricsltd.com/spinal

Pediatric Rehabilitation

Rehabilitation for children is approached a little differently as play is fundamental to their learning and development. E-LINK provides the ideal answer for clinicians by using various devices combined with gradable computerized Activities for innovative exercise. Most importantly, the exercise is based on the child's individual measurements. Thus ensuring specific therapeutic goals are achievable whilst the child remains motivated by the fun element of the Activities. For the pediatric clinician E-LINK is the ideal solution, not only for encouraging children to play, but by combining the exercise with precise evaluation, progress may be closely monitored for each individual child.

For more information: www.biometricsltd.com/pediatrics

EXERCISE KITS / M800 / M600

The **E-LINK** Exercise Kits consist of Myo-EX and AngleX sensors that are exclusively designed for innovative computer-based exercise. Used in a wide variety of clinical settings, from hand therapy to stroke and neuro rehabilitation, the Exercise Kit gives direct biofeedback to the patient and is the ideal tool for undertaking progressive exercise throughout the rehabilitation process.

M800 Wireless Exercise Kit

Myo-EX

In early rehabilitation, exercise can begin where there is very little or even no visible joint movement using the unique **Myo-EX** with innovative computerized Activities for muscle re-education. Using surface EMG, the sensor detects very small flickers of muscular activity and provides immediate biofeedback through the visual movement of objects in the various Activities.
The visual stimulus helps the patient understand when they are activating the muscle and encourages them to focus on normal movement patterns rather than recruiting unnecessary compensatory ones. **Myo-EX** thus provides a high degree of motivation to exercise and can be utilized throughout each stage of the rehabilitation process.

Myo-EX is ideal for focused exercise of the wrist, elbow, knee, ankle and shoulder muscles. It can even be used with certain facial muscles.

The precision **Myo-EX** sensors are designed to give superb signal quality and can detect as little as 3-4 microvolts of muscle electrical activity (EMG). Full scale reaches up to 3000 microvolts for use with larger deltoid, bicep or quad muscles.

AngleX

AngleX is ideal for all areas of rehabilitation. The sensor is simply attached close to the joint needing exercise and responds to active movement against gravity. Combined with **E-LINK** Activities, **AngleX** provides focused exercise for everything from small DIP joints through to larger body joints of both the upper and lower extremities.

- The small **AngleX** is used for individual finger, thumb and wrist exercise. It is lightweight, perfect for finger exercise where there is real need to minimise stress on the joints – ideal for patients with rheumatoid arthritis.
- The large **AngleX** is used for neck, back, forearm, elbow, shoulder, hip, knee and ankle exercise
- Focusing on joint exercise, **AngleX** encourages normal movement patterns whilst discouraging compensatory ones

The **AngleX** sensor is efficiently applied, using the medical-grade double-sided tape close to the joint to be exercised. Ideal for busy therapy group sessions.

Wireless Myo-EX

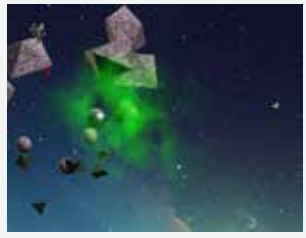
Wireless Large AngleX

Wireless Small AngleX

The large AngleX from the M800 Exercise Kit communicates wirelessly to the computer and also functions as the power source for the small AngleX sensor

M600 Wired Exercise Kit

When exercising very small muscles, such as in hand therapy, the smaller design of the slim, oval **Myo-EX** GX3 sensor (part of the **M600** Wired Exercise Kit) may be the solution. The **M600** Exercise Kit also includes the wired AngleX sensors.



E-LINK Activities are graded to suit patient needs and therapy goals while incorporating an element of fun into each therapy session, thus maximizing the patient's motivation to exercise. With a choice of many Activities, exercising from gross end range of movement through to finer controlled movement is possible.

A percentage score and Activity distribution graphs are generated at the end of exercise. This allows for further objective analysis for discussion with the patient as a motivation opportunity and re-assessment of therapy goals.

For more information:
www.biometricsltd.com/exercise-kit

Exercise Kit M800

Wireless

Wireless Myo-EX GX5 Sensor
Wireless AngleX NC5/NC6 Sensor

The M800 wireless Exercise Kit requires a DG1 Dongle as the interface to the computer.

For more information:
www.biometricsltd.com/m800

Exercise Kit M600

Wired

Wired Myo-EX GX3/GX4 Sensor
Wired AngleX NC3/NC4 Sensor

The M600 wired Exercise Kit requires the X4 InterX Unit as the interface to the computer.

For more information:
www.biometricsltd.com/m600

HAND KIT / H500

The **E-LINK** Dynamometer and Pinchmeter are designed for accuracy, ease of use and quick data collection. Sensitive enough to record even very small measurements, the Hand Kit is ideal for clinical evaluation as well as therapeutic exercise.

Using the Hand Kit, standardized assessments of grip and pinch strength can commence at a very early stage and continue to be regularly monitored with progress reports throughout the rehabilitation process. This can help in evaluating the effectiveness of therapy undertaken, and may be utilized as definitive clinical outcome measures. The data may be easily exported for audit and research purposes.

Both the Dynamometer and Pinchmeter register forces as low as 0.1kg/lb to a maximum of 90kg (200lbs) for the Dynamometer and 22kg (50lbs) for the Pinchmeter.

E-LINK Hand Kit software contains the following and includes tests that cannot be undertaken with a manual device:

Standard Peak Force Grip Test

- Three measurements can be quickly entered for each hand position as required. The software automatically calculates the average grip and the coefficient of variation percentage as an indication of the measurement consistency. A force distribution graph is displayed for the five positions.

Standard Peak Force Pinch Test

- This test can be taken for the key (lateral), three jaw (tri-pod) and tip to tip positions. Three trials per position can be recorded and the software automatically calculates the average Pinch measurement and the co-efficient of variation percentage as an indication of the measurement consistency. Single measurements of Thumb to Digit Opposition can also be entered for each digit.

Sustained Grip Test

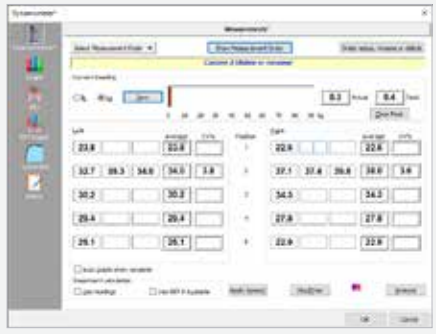
- This test measures force over time for a 5, 10, 15 or 30 second interval. Peak force, time to reach peak force, average to peak ratio percentage (sustainability) and fatigue rate are automatically calculated and immediately displayed. The current graph can be compared with a prior test to analyze progress.

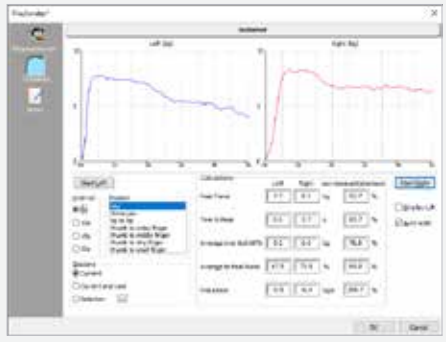
Sustained Pinch Test

- This test measures force over time for a 5, 10, 15 or 30 second interval. Peak force, time to reach peak force, average to peak ratio percentage (sustainability) and fatigue rate are automatically calculated and immediately displayed. The current graph can be compared with a prior test to analyze progress.

Rapid Exchange Grip Test

- Undertaken for the detection of sub-maximal effort, this test is easily performed and documents the grip force applied for eight tests of each hand with a 1, 1.5 or 2 second interval set timing. The results are displayed in both graph and table form for immediate analysis.





Progress Reports

- Progress Reports can be readily generated covering a maximum of 10 tests and the data is displayed in both graph and table format. Automatic calculations show the percentage of change from one session to another, the percentage of change from the first test. These reports are ideal as an immediate clicnical outcome measure and for discharge summaries.

Left: Pinchmeter in Key position.

Right: Dynamometer in use for pediatric hand therapy

Another major benefit is that the Dynamometer and Pinchmeter may be used with the **E-LINK** Activities for unique isometric grip and pinch exercises which can begin immediately following assessment.

As opposed to traditional zero to peak force exercises, the range of force may be graded, setting the minimum and maximum, to meet the patient's functional goals. Force ranges for exercise are set in 0.1 increments with a maximum load of 90 Kg (200 lbs) for grip and 22 Kg (50 lbs) for pinch. The movement of the objects in the E-LINK Activities is controlled by the application and relaxation of isometric grip or pinch within the set parameters. The various activities provide purposeful activity, isometric strengthening, motor learning and control.

The range of force settings and activities allow multiple exercise options such as:

- Zero to peak force exercise, taking the patient from full relaxation to maximum, including the option to hold at peak force
- Exercise within patient limitations, setting the minimum at greater than zero, causing the patient to sustain the pinch or grip and control the force application and relaxation
- Setting the force range very low allows controlled purposeful activity while minimizing joint loading. This is useful for patients with arthritis and other situations where low force on the joints is desirable
- Patients with spasticity can work on controlled relaxation within therapist-defined ranges
- By varying the range of force and time, the patient's rehabilitation can be oriented to specific job or ADL goals

For more information:
www.biometricsltd.com/hand-kit

Interface Options

Wireless

Requires a DG1 Dongle and an AD1 Adaptor. We recommend using two AD1 Adaptors for maximum efficiency and ease of use.

Wired

Requires an X4 InterX Unit.

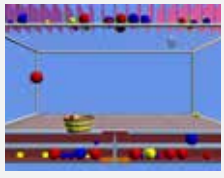
UPPER LIMB EXERCISER / E4000

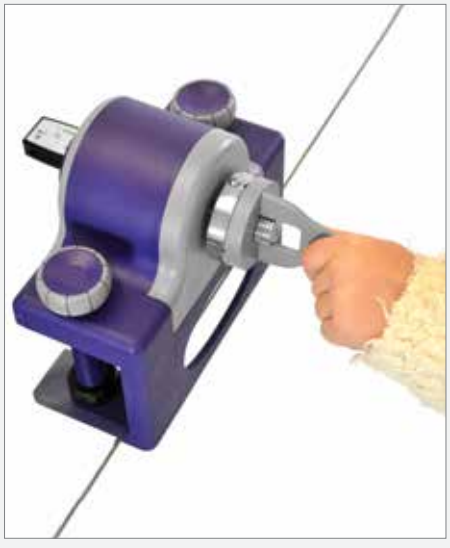
The **E-LINK** Upper Limb Exerciser is an ideal tool of choice for repetitive active exercise using various inter-changeable tool handles for functional movement. The Upper Limb Exerciser accommodates gradable resistance to the active movement for muscle strengthening goals and work-hardening exercise.

The Upper Limb Exerciser facilitates active and active resistive exercise for the wrist, forearm, elbow, and shoulder.

- Various tool handles accommodate wrist flexion/extension, ulnar/radial deviation, forearm pronation/supination, elbow flexion/extension, shoulder adduction/abduction, flexion/extension and internal/external rotation
- Baseline measurements of the patient's comfortable ROM are recorded and automatically entered in the Activities chosen for exercise
- The range can be set to as little as 2° ROM enabling exercise for patients with very little active movement and gradually graded over time to full range of motion – for example, ideal for patients recently having had a plaster cast removed
- Resistance can be adjusted and graded according to patient needs for muscle strengthening exercise throughout the rehabilitation process
- Quick to set up and simple to use, the Upper Limb Exerciser is ideal for an individual patient session or as part of group therapy sessions
- The Upper Limb Exerciser is perfectly placed for upper extremity therapy

For more information:
www.biometricsltd.com/upper-limb-exerciser





Interface Options

Wireless

Requires a DG1 Dongle and an AD1 Adaptor.

Wired

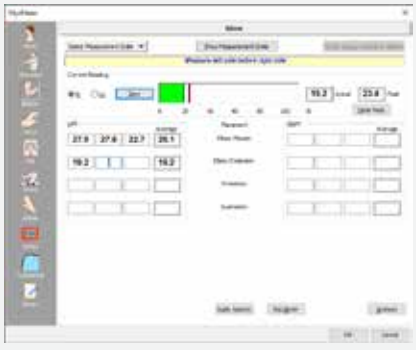
Requires an X4 InterX Unit.

MYOMETER / M550

The **E-LINK** MyoMeter quantifies the force applied during Manual Muscle Testing (MMT) and helps clinicians evaluate performance over time.

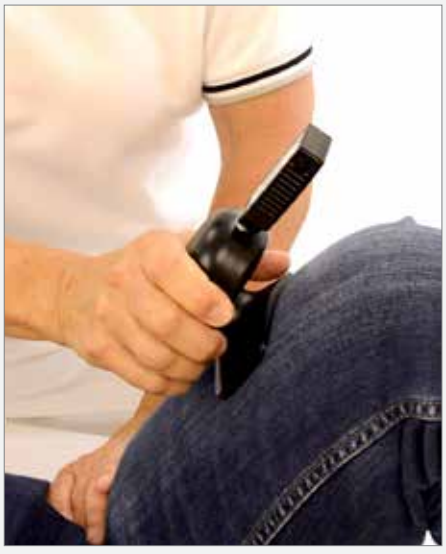
This is a procedure for the evaluation of the function and strength of individual muscles and muscle groups based on the effective performance of a movement in relation to the forces of gravity and manual resistance.

Held by the clinician with the curved anvil placed against the body part to be tested. The limb is stabilized and held in the desired starting position. The patient is instructed to hold the limb in position and resist the force applied by the clinician. The clinician applies force gradually until the limb is depressed. The force required to move the limb is referred to as the 'breaking force' and the measurement is recorded in the software.



- The MyoMeter accurately registers force from 0.1 - 50kg/110lb, measuring in 0.1 increments
- E-LINK software includes Standard Peak Force and Sustained Force tests
- Individual screens document test results for the neck, shoulder, elbow, hip, knee and ankle
- Reports analyzing progress over time are easily generated
- Data is readily exported for audit or research purposes
- The E-LINK MyoMeter is the perfect clinical tool when strength testing is undertaken for the upper and lower extremities

For more information:
www.biometricsltd.com/elink-myometer



Interface Options

Wireless

Requires a DG1 Dongle and an AD1 Adaptor.

Wired

Requires an X4 InterX Unit.

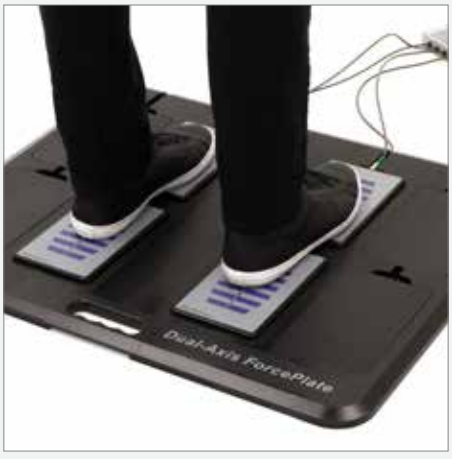
FORCEPLATES / DFP4 / DFP2 / FP3

E-LINK ForcePlates – for precise evaluation & innovative exercise.

The distinctive portability and modularity of **E-LINK** ForcePlates enables use in many clinical areas, from stroke and neuro rehabilitation to hand therapy. Four ForcePlates are ideal for weight-bearing balance evaluation and exercise and a single ForcePlate will accept the lightest touch of a finger.

Four ForcePlates – DFP4 Dual Axis Weight-Bearing Evaluation and Exercise Kit

Assessment of weight bearing stability and balance can be a major challenge for the clinician. The DFP4 provides the solution by scientifically quantifying the symmetrical weight distribution of the patient in both anterior-posterior (front/back) and medial-lateral (left/right) axes simultaneously, thus accurately and objectively assessing the patient's ability to maintain postural stability on a static surface.

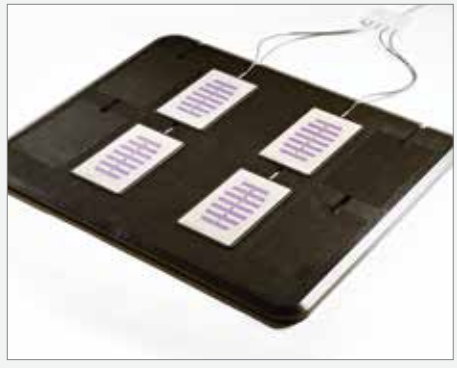


Results from the sustained balance test are displayed both in text and graph format for immediate feedback and analysis. Up to 10 tests can be compared simultaneously for progress reporting over time and may be used as an outcome measure.

The BaseFrame accommodates different stance widths, and foot position is standardized, thus reducing variability for both evaluation and exercise.

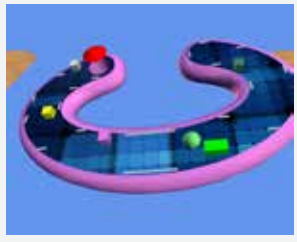
Balance training is another major benefit of the DFP4 and feedback from the balance assessment helps determine where exercise needs to be focused. Baseline measurements of the patient's comfortable range of sway are quickly taken and automatically entered into the software for use with innovative Activities (interactive exercise). The patient controls objects in the game by balancing and loading/unloading the weight distributed over the ForcePlates.

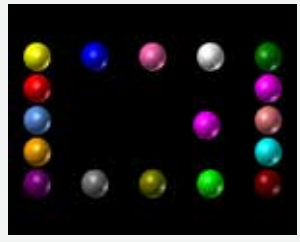
Activities offer many options for grading the game to suit both the physical and cognitive state of the patient, thereby ensuring that therapeutic goals are achievable for each individual. Some activities encourage the patient to work to the end range of movement (for example loading crates onto a ship), others work to various points throughout the range, (for example matching colors) as well as sustaining balance for a determined length of time throughout the range (for example placing pieces in a jigsaw).

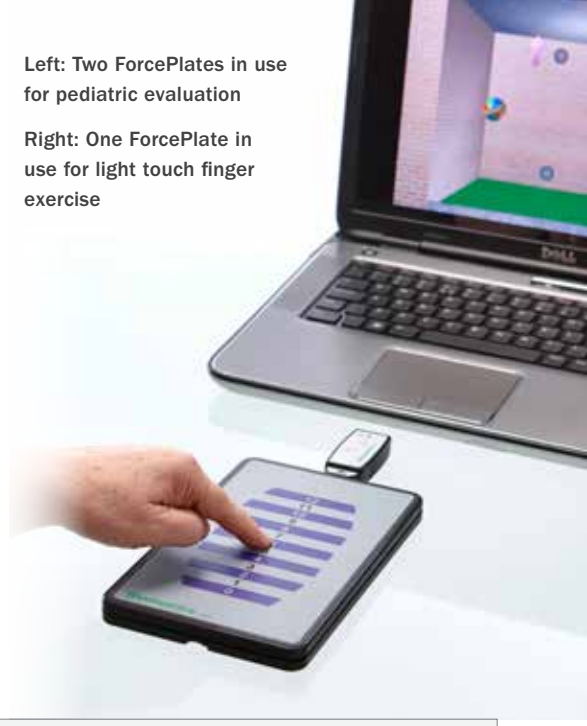


The balance training session is therefore totally focused for the individual patient and helps address neuromuscular re-education and balance co-ordination as well as contributing a fun, motivational element into each therapy session. Exercise graphs are generated for each session and form part of the report which provides opportunity to discuss progress direct with the patient.

For additional flexibility the ForcePlates can be removed from the BaseFrame and used with other everyday equipment to achieve functional goals (each ForcePlate accepts a load of 100kg). With the modular design of four ForcePlates, the DFP4 also has the benefit of using two or one of the ForcePlates giving all the options of the DFP2 and single FP3 configurations.





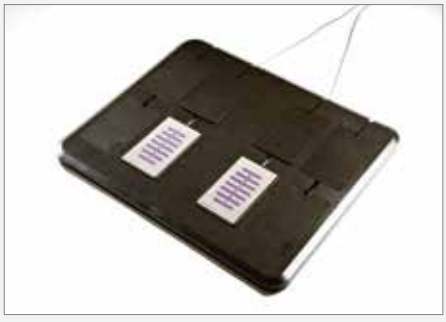


Left: Two ForcePlates in use for pediatric evaluation

Right: One ForcePlate in use for light touch finger exercise

Two ForcePlates – DFP2 Single Axis Weight-Bearing Evaluation and Exercise Kit

Two ForcePlates may be used with the BaseFrame for evaluation of medial-lateral (left/right) balance or for unilateral anterior-posterior (front/ back). When removed from the BaseFrame, two ForcePlates can be used for seated balance assessment and exercise or for bilateral upper limb exercise and training.



One ForcePlate – for Weight-Bearing Exercise

One ForcePlate can be used for weight bearing exercise from as little as the touch of one finger (0.1kg/lb) through to full weight bearing on one limb. One ForcePlate is ideal for light pressure/ short duration exercise in pain management programmes through to full weight loading for strengthening joints and encouraging specific movement patterns. Graphs are generated, enabling the clinician to assess results and grade further exercise sessions to meet therapeutic objectives.

E-LINK ForcePlates are ideal to use within a wide range of clinical settings for patients of all ages:

- For stroke and neuro rehabilitation. The real- time display gives immediate biofeedback and enables neuromuscular retraining to improve balance control and endurance. Can also aid vestibular retraining for gaze and eye co-ordination
- For amputee and post- surgical hip, knee and ankle patients. The Activities promote steady and flexible movement through weight shifting and strengthening of specific joints
- For spinal cord injury patients. The ForcePlates can be used for seated balance and trunk exercise, to promote flexibility and control as well as for standing balance assessment and exercise
- For CRPS patients. Exercise can be graded for desensitization therapy in pain management programmes
- For patients at risk of falls. The **E-LINK** ForcePlates promote repetitive, purposeful activity (for example stepping stance) to improve muscle strength and control in preparation for walking

For more information:
www.biometricsltd.com/fp3-forceplates

Multiple ForcePlate Systems

Wired

Requires an X4 InterX Unit.

Single ForcePlate FP3 for Exercise

Wireless

Wireless option requires a DG1 Dongle and an AD1 Adaptor.

Wired

Wired option requires an X4 InterX Unit.

RANGE OF MOTION KIT / R500

The **E-LINK** range of motion Goniometers are precise electronic devices, designed for quick and accurate data collection.

An invaluable asset for busy clinics and for individual patients needing a quick assessment to minimize discomfort from the pain associated with lengthy evaluations.

The Goniometer is simply placed over a joint, at the single click of a button, data is recorded in 1° increments. Measurements are clearly displayed and recorded automatically in the software following a sequence that can be set to the user's preference.

The small Goniometer is used for the hand to measure ROM for the fingers and thumb.

The large Goniometer is used for the wrist, forearm, elbow, shoulder, hip, knee and ankle.

Using the **E-LINK** wireless Adaptor with the Goniometer is particularly beneficial as it enables measurements to be taken even when the patient is a fair distance from the computer screen.

E-LINK software records:

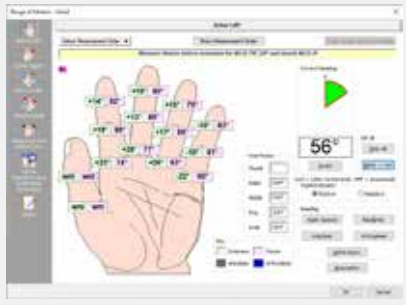
- Active and passive ROM
- Amputations, ankyloses or arthrodesis
- Neutral zero method of measurement

Data can be readily exported for audit and research purposes.

Progress reports are easily generated by the **E-LINK** software and can be displayed in both graph and table format – giving the patient immediate visual feedback, valuable for discharge summaries or as a ROM outcome measure.

E-LINK Goniometers – ideal for clinicians needing fast, accurate ROM evaluation

For more information:
www.biometricsltd.com/range-of-motion-kit



Interface Options

Wireless

Requires a DG1 Dongle and an AD1 Adaptor. We recommend using two AD1 Adaptors for maximum efficiency and ease of use.

Wired

Requires an X4 InterX Unit

EVALUATION AND IMPAIRMENT SOFTWARE / ESW / ICSW / LSW

E-LINK software incorporates several modules for collecting data in a standardized format, so that comprehensive reports can be systematically brought together for the clinician in a time efficient manner.

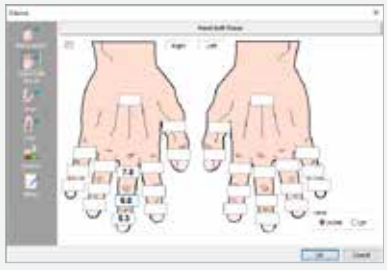
Reports include automatic impairment calculations that can be used for both clinical and medico-legal applications.

Upper Extremity Evaluation Software ESW

This module contains tests to document manually-collected data for the upper extremity in a standardized format. The test sequence lists all available tests in the system and permits the user to set up several sequences of tests to be considered for a determined clinical protocol. The user can then move through each screen in a standardized manner and enter the appropriate data where applicable.

Test screens include:

Amputation Coverage/Cosmesis Sensation Tests	Outcome Measures Activities of Daily Living Pain
Manual Muscle Test Edema Provocative Diagnostic Tests	Dexterity Tests Other Tests



For more information:
www.biometricsltd.com/esw

ESW – an ideal module for hand therapy that complements E-LINK hand and ROM kits

Impairment Calculation Software ICSW

E-LINK contains all the tests needed to calculate impairment for the upper extremity based on the American Medical Association Guides to the Evaluation of Permanent Impairment (revised 4th and 5th editions). All these tests are listed in the test sequence screen and marked with an * asterisk for easy recognition.

To obtain a full and effective upper extremity impairment rating this module is used in conjunction with the **E-LINK** Dynamometer, Pinchmeter, Goniometers and the ESW upper extremity evaluation software. Extra screens included in this module include those needed to document peripheral nerve disorders and vascular disorders.

As the tests are undertaken, the impairment rating is automatically calculated saving substantial time for the clinician (when compared to manual data collection) whilst also preventing calculation errors. The result can be viewed immediately and a full report provides summary values, detailed charts, and text confirming how the summary values were calculated including the AMA Guides table and page references. There is an option for selecting the uninvolved side as the normal values for calculation of ROM and strength impairments.

For more information:
www.biometricsltd.com/icsw

ICSW – dramatically speeds up processing data for clinicians concerned with medical examinations

Lower Extremity Evaluation and Impairment Calculation Software LSW

Similar to the evaluation software for the upper extremity, this module standardizes data collection for the lower extremity and the impairment calculation is also included. Data collection is enhanced when **E-LINK** goniometers are used with this module.

Test screens include:

Amputation Edema Manual Muscle Test Arthroplasty Ligamentous Instability	Muscle Atrophy Arthritis Synovial Hypertrophy Subluxation and Dislocation Crepitus
Osteomyelitis Gait Derangement Causalgia Limb Length Discrepancy Skin Loss	CRPS Vascular Disorders Diagnosis-based Impairment Calculation

For more information:
www.biometricsltd.com/lsw

LSW – offers clinicians a wide-ranging assessment tool for the lower extremity

INTERFACE OPTIONS AND SYSTEMS

Biometrics Ltd is proud of the longevity of **E-LINK**, with thousands of hospitals worldwide continuing to effectively use **E-LINK** to benefit patients for 20 years or more. Our commitment to support existing customers is evident - current versions of **E-LINK** software are fully backwards compatible with hardware manufactured as far back as 1995.

The new wireless components are designed to work alongside existing **E-LINK** hardware as well as functioning as fully independent wireless systems.

Wireless Kit 3 (WK3)

SYSTEM CONFIGURATIONS WITH WIRELESS ELEMENTS

Wireless Interface Packages

- **WK0** - Wireless Dongle (DG1), Battery Charger (CA1) (no AD1 Adaptor) used with M800
- **WK1** - 1 Wireless Adaptor (AD1), Wireless Dongle (DG1), Battery Charger (CA1),
- **WK2** - 2 Wireless Adaptors (AD1), Wireless Dongle (DG1), Battery Charger (CA1)
- **WK3** - 3 Wireless Adaptors (AD1), Wireless Dongle (DG1), Battery Charger (CA1)

EP20M System

One complete E-LINK system for upper and lower extremity rehabilitation

- Typically used in therapy units and educational facilities for hand therapy through to stroke and neuro rehabilitation
- Suitable for pediatric units through to elderly care
- Contains all **E-LINK** evaluation and exercise components and can be used as one workstation or two

EP21 System

Ideal system for hand rehabilitation in all clinical areas

- Precise grip and pinch evaluation including standard, sustained and RET tests
- Accurate, speedy hand ROM measurements
- Various **E-LINK** devices facilitate exercise from a flicker of muscle activity – for example, with muscle transfers – through to full work-hardening resistive exercise

EP24M System

Comprehensive system that is widely used for stroke and neuro rehabilitation

- Supports progressive, gradable exercise for the upper and lower extremities, neck and back
- Provides weight-bearing balance evaluation combined with innovative exercise
- Accommodates grip and pinch assessment and motivating exercise

Interface Unit Combination Options

- Multiple wireless and wired interfaces to the computer may be used simultaneously, with the wireless dongle and adaptors able to communicate with the **E-LINK** software at the same time as the older serial port and USB style **E-LINK** interfaces.
- Multiple wireless and wired interfaces can be used in the same clinical environment on multiple computers to allow evaluation and/or exercise of several patients at the same time to maximize efficiency and benefit to the patients.

For more information: www.biometricsltd.com/elink-options

	Systems with Wireless Elements			Systems with Wired Elements	
	EP20M	EP21	EP24M	EP40	EP11
WK3	✓	✓	✓		
X4	✓		✓	✓	✓
E4000	✓	✓	✓		✓
M600					✓
M800	✓	✓	✓		
H500	✓	✓	✓		✓
FP3		✓			✓
DFP2[1]					
DFP4[2]	✓		✓	✓	
M550	✓		✓		
R500	✓	✓			✓
ESW	✓	✓			✓
ICSW	✓				
LSW	✓				

✓ = included [1] The DFP2 contains 2 x FP3 ForcePlates and can also be used as a single FP3 [2] The DFP4 contains 4 x FP3 ForcePlates and can also be used as a DFP2 or as a single FP3

SYSTEM CONFIGURATIONS WITH WIRED ELEMENTS

EP40 System

This system is used widely from orthopedic settings, for sports injuries through to stroke and neuro rehabilitation.

- Primarily provides weight-bearing standing balance evaluation and exercise
- Designed to accurately and objectively assess a patient's ability to maintain postural stability on a static surface
- Measures fluctuations in the weight distributed over the ForcePlates
- Results are displayed both in text and graph format for immediate feedback and analysis
- Evaluates progress over time as an outcome measure
- Through the innovative integration of computer based Activities the ForcePlates can also be used for interactive exercise
- Help towards muscle strengthening, neuromuscular re-education and balance co-ordination
- For additional flexibility the ForcePlates can be removed from the BaseFrame and used with other equipment – gym ball, wobble board, wheelchair
- Also accommodate evaluation and weight bearing exercise of the upper extremities and for seated balance
- A single ForcePlate can be used for weight bearing exercise from as little as the touch of one finger through to full weight bearing on one limb
- Ideal for light touch/short duration exercise in pain management programmes through to full weight loading for strengthening joints and encouraging specific movement patterns

EP11 System

The EP11 has the same uses and benefits as the EP21 but with the wired X4 InterX unit as the interface to the computer instead of a wireless interface.
Contains the wired M600 Exercise Kit instead of the M800 wireless Exercise Kit.

For more information:
www.biometricsltd.com/elink-systems

Biometrics' products are used worldwide in a variety of clinical settings including:

- Physical Therapy
- Lower Extremity Rehabilitation
- Orthopedics
- Sports Medicine
- Independent Medical Evaluations
- Research
- Private Practices
- General Rehabilitation
- Neuro Rehabilitation
- Spinal Injury Units
- Stroke Rehab Units
- Care of the Elderly
- Nursing Homes
- Occupational Therapy
- Upper Extremity Rehabilitation
- Hand Clinics
- Pediatrics
- Burns & Plastics
- Educational Facilities

Minimum Computer Requirements:

Please contact us for the most current computer specifications or visit our website:

www.biometricsltd.com/compt-specs

Data Export

E-LINK incorporates a powerful export function with selectable parameters to quickly define the export criteria. Single or multiple patient data is exported as an ASCII file which can be easily imported into other applications for statistical analysis – ideal for audit and research studies.

Documentation and Progress Reporting

E-LINK generates comprehensive documentation for both evaluation and exercise modules. Progress reports are included for grip, pinch, ROM, force applied for MMT and weight-bearing balance which may be utilized for outcome measures.

All systems covered by this brochure have been independently certified to International/European/British Medical Electrical Safety Standards IEC 60601-1:2005 + A1:2012, EN 60601-1:2006 + A1:2013, BS EN 60601-1:2006 + A1:2013 and conform to the European Medical Device Regulation 2017/745.

Biometrics Ltd is registered as a Medical Device Manufacturer and the E-LINK product range is listed with the USA FDA as well as with regulatory agencies in many other countries around the world.

Please contact us to discuss your specific requirements or to be referred to your local Biometrics Ltd distributor.

All the enclosed information is correct at the time of printing. Biometrics Ltd reserves the right to amend any specifications without notice.

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