Product Brochure

www.fcesoftware.com
(734) 904-1895

Our primary focus is to assist doctors and therapists in evaluating the functional capacity of individuals by developing, selling and supporting FCE hardware and software.

While the Arcon FCE system uses state-of-the-art, automated evaluation tools, it is important to remember that the key to every FCE system is the ***software*** used to collect and summarize data.

We guarantee our FCE software to be:

* Easy to use.
* Widely accepted by insurance companies, physicians and other referral sources.
* Easy to store and edit all data.
* Helpful with drop down menus describing protocols, system calibration and set-up.
* Complete FCE reports which load into Microsoft Word with pictures and summary.

The Arcon FCE software represents 20 years of development and refinement. Its performance is error free and is undisputedly the best clinical tool you can use in your practice today.

We have the largest customer base of 1,000 clinics nationwide using our functional capacity evaluation software and testing systems.

Our functional capacity evaluation software and testing protocols have been designed with the help of Physical Therapists, Occupational Therapists, Exercise Physiologists, Kinesiologists and Doctors of Physical Medicine.

The Arcon functional capacity evaluation results are accepted by disability evaluators and insurance companies as an industry standard.

The Arcon system includes:

* Computerized hand and pinch dynamometers.
* Electronic goniometer.
* Dual range of motion inclinometers.
* Isometric testing unit (ISTU).
* Carpal tunnel testing attachment.
* Computerized heart rate monitor.

Testing protocols includes:

* Dynamic lifting.
* Isometric testing for upper and lower extremities and back.
* Range of motion testing.
* Dexterity testing.
* Endurance testing.
* Activities of daily living.

ARCON FCE Data Collection System

The ARCON system has been an effective tool assisting health care providers with data collection for more than 20 years. This system ensures a high quality functional evaluation through the integration of three critical components. These components include the tools, the protocol itself and a competent trained evaluator. Each of these components is interrelated tothe others. Each has areas that may be at risk for a legal challenge unless strategies are in place to proactively manage these areas.

The Tools: The ARCON evaluation system is a standardized method for data collection. It is in no way designed to replace the clinical competency of the professional performing the evaluation. It is simply a tool to streamline the cumbersome and time consuming aspects of testing, such as data collection and report generation, so that the evaluator can focus on the assessment itself. The system allows for real time evaluation of force, or range produced over time, with corresponding heart rates.

The ARCON system substantially reduces data acquisition, transcription and calculation errors. Each instrument generates an analog signal, which is then converted to digital form and transmitted to the computer, resulting in a high degree of accuracy. The static load cell can measure force with an accuracy of 1 lb. or 1% with a maximum 1000 lbs. load. The hand dynamometer has a 1lb. or 1% accuracy with a maximum load of 200 lbs. The pinch dynamometer has a 0.5 lb or 1% accuracy with a maximum load of 75 lbs. Both the digital goniometer and the inclinometers have a 1-degree accuracy rating.

This highly desirable accuracy is meaningless unless the equipment is properly calibrated. The ARCON system has several internal checks to ensure that calibration will occur at least on a monthly basis and will provide a warning to the evaluator to recalibrate if the values for the static testing, hand grip or pinch grip are unusually high values. With most manual systems, calibration of tools is done less frequently.

The Protocol: The protocol was developed after an extensive literature review by a multi-disciplinary team of professionals including physicians, physical and occupational therapists, exercise physiologists, kinesiologists, athletic trainers, nurse case managers and vocational professionals. The protocol is designed to be a comprehensive assessment of the client's functional abilities. A typical evaluation takes approximately 4 hours. The evaluation itself is comprised of a variety of components, which have independent and interrelated value in determining a clients safe functional ability over the course of an 8-hour day. Such components include;

Intake Interview: The intake interview is an opportunity for the evaluator to describe the functional evaluation procedure and to identify expectations through the use of an informed consent document. It is also an opportunity to develop a rapport with the client and allay any fears associated with functional testing. During this component of testing the client has an opportunity to tell his or her story. Often times this is the first opportunity that the client has had to describe the injury or illness process fully and how it has impacted both work, family, ADL and leisure activities. The evaluator is able to collect the client's perception of current capabilities and compare those to demonstrated functional abilities observed later on during the evaluation. The evaluator is also able to measure tolerance for sustained sitting during this time.

Musculoskeletal Screen: Each client undergoes both a general screen of functional movement as well as a diagnostic specific assessment of deficit areas. Range of motion, strength, stability, palpatation, sensation and any other diagnosis specific testing is performed to provide a benchmark for functional abilities. Loss of range of motion in the spine, for example, may limit some functional movements. These will be correlated with demonstrated functional abilities performed later on in the evaluation for consistency. The screen confirms diagnostic criteria, ensures that the client is safe to proceed with more physically demanding portions of the exam and identifies specific deficits. Also during this component of the evaluation, grip and pinch strength data is collected. This data is compared to normative standards for population norms based on gender and age. This data also is used as a component of reliability and validity determination.

Strength Testing: Lifting capacity is measured both statically and dynamically. Static testing, while has limited direct functional application, is highly standardized and is a good basis for comparison. Dynamic lifting is performed utilizing the PILE (Progress Iso-inertial Lifting Evaluation) and has application for frequent levels of work. Heart rates are measured simultaneously during both static and dynamic lifting, providing the evaluator with physiological feedback of the impact of these functional tasks and as a consistency check. Lifting abilities are compared to the Department of Labor defined categories for material handling abilities.

Functional Abilities: The ARCON protocol uses a criterion referenced system based on the Methods-Time-Measurement of the Industrial Standard. The Industrial Standard is the time it takes an average worker of both genders between 18-65, with average skill to perform a task throughout an average 8-hour day with appropriate allowances without undue stress or fatigue. This system of determining functional abilities over an 8-hour day is based in extensive research that was first published in the 1940.s. Other functional evaluation models incorporate

clinical observation of a functional task over an arbitrary standard of repetitions or time. The client's demonstrated functional performance is then rated based on the evaluator's clinical judgment. While these factors are also incorporated into Method-Time- Measurement testing, each of the functional activities also has a specific criterion that can be used to directly compare this client's performance to those currently performing these tasks in the workplace today. This feature is singularly unique to the ARCON protocol.

Cardiovascular Assessment: A key component to extrapolating performance over an 8-hour workday is that individual's aerobic capacity. There have been numerous studies that suggest that a worker can sustain work at 33% of his/her maximum aerobic capacity over an 8-hour day. In addition, heart rates that are less than 65% of maximum predicted heart rate are also consistent with an 8 hour workday. There are many tools that can be utilized to determine maximum predicted aerobic capacity using a sub-maximal testing protocol. When not medically contraindicated, the Canadian Aerobic Fitness Test, which is a step test, can be used to quickly and safely assess aerobic capacity. Since a significant number of clients have been off of work for extended periods of time, it is vital to assess the level of de-conditioning to reduce the risk of re-injury and correlate strength abilities with endurance capabilities.

Functional Disability Factors: Probably the most frequently requested and controversial of all the FCE components are the assessments related to maximum effort determination and subjective reports of symptoms that are inconsistent or exaggerated when compared to objective evidence. As with all the other components, these factors are determined based on the interrelationship of all the testing parameters and not simply a single test. Observed behaviors are compared and contrasted to the client's perception of abilities and self reported symptomology. The ARCON system automatically and instantaneously calculates up to 70 reliability measures. In addition other factors such as heart rate changes, quality and speed of movement patterns, accessory muscle recruitment, force curve analysis and temperature, skin and color changes are also analyzed and recorded. These are then compared to the client's deficits that are specifically related to the disabling condition. Distraction techniques, such as those employed with Waddell's non-organic signs and Horizontal Strength Changes, as well as the rapid exchange grip are also incorporated into the testing protocol. Many clinicians also add the results of standardized pen and paper tests such as the Duke Pain Inventory and other similar screening tools. Each ARCON system comes equipped with instructions for each task as well as verbal cues that is available during the testing. In addition, a short video is also available through the help screen to demonstrate to the evaluator and the client the correct method for task performance. Each individual component of the ARCON protocol is well supported with peer reviewed literature.

Competent Trained Evaluator: Ultimately, the results of the functional evaluation hinge on the correct performance and interpretation of the testing protocol. Each ARCON evaluator is a highly trained clinical professional. These professionals may come from a variety of different backgrounds and include Physicians, Physical and Occupational Therapists, Exercise

Physiologists, Kinesiologists and Athletic Trainers. Each evaluator attends extensive training (8 hours) in the technical operation of the equipment. As an additional quality assurance check, each ARCON evaluation undergoes three levels of quality over read. This includes a technical review to ensure testing was performed to protocol standards, a clinical over read to ensure that the report answers referral questions and data supports the evaluator's conclusions and a final over read as an umbrella to ensure that nothing was missed. Evaluators also have a technical support and quality review staff available to assist them with any questions before, during and after the evaluation.

Computerized Tools and Protocols

Isometric Lift

Dymamic Lift

Arcon FCE System

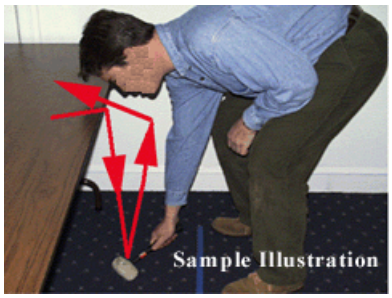
Isometric Grip & Pinch

Dual Range of Motion

Goniometery

Wireless Heart

Hand and Finger Dexterity

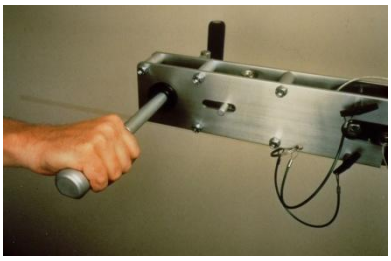


MTM Protocols

Isometric Torque Attachment

Isometric Tools

Isometric Steering

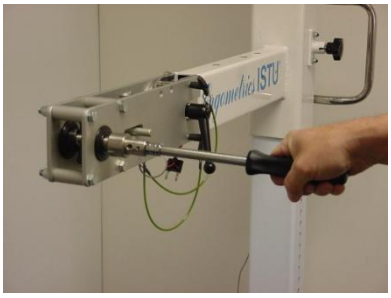


Isometric Flexion

Isometric Pronation

Isometric Ulnar

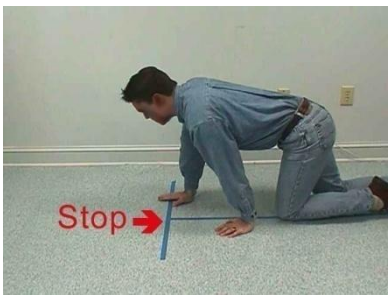
Isometric Key



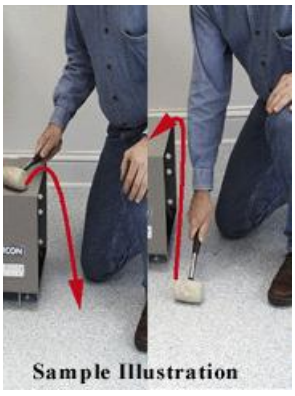
Isometric Screw Driver

Isometric Rachet

MTM Carry



MTM Crawl



MTM Kneel

Sample print-out of two page summary (full report with graphs can be up to 38 pages)

	Your Evaluation Center Your Street, Your City,	

August 1, 1999

Ms. Edna Benoiter
Big Giant Insurance Co.
100 Giant Way
New York, NY 10012

RE: Sample Patient (12345678) **[Evaluated: 7-25-2009]**

PURPOSE OF ASSESSMENT

Patient has completed course of physical therapy for Lumbar Sprain/Strain. Treating therapist has released patient for work. Need to determine if he can return to his own job, and what restrictions might apply.

RELIABILITY AND CONSISTENCY OF EFFORT

The results of this evaluation suggest that Mr. Patient gave a reliable effort, with 68 of 70 consistency measures within expected limits.

FUNCTIONAL ABILITIES

Patient's demonstrated abilities meet specified job demands in the following categories: Walk, Carry - 11 Lb, Carry - 21 Lb, Carry - 51 Lb, Push Cart - 41 Lb, Pull Cart - 41 Lb, Balance, Stoop, Crouch, Kneel, Climb Stairs, Reach to Front, Reach Side/Across, Reach with Weight, Handling, Bi-Manual Handling, Fingering, Bi-Manual Fingering, Feeling, Eye-Hand-Foot, Tool Use, Stand/Sit, Sitting, Standing.

FUNCTIONAL LIMITATIONS

Patient is unable to meet job demands in the following categories: Mid Lift, Low Lift, Full Lift.

CONCLUSIONS

Patient can return to work with modified duties. Limited to medium lifting category until re-evaluation is performed in six weeks.

Sincerely,

Harvey Mudd, PT

Functional Abilities Summary

Mr. Patient's demonstrated abilities in this evaluation (FCE) are summarized below. A value of **n/a** indicates the activity was not included in the evaluation. If job demands were provided with this evaluation, functional abilities are compared to the corresponding job demand level. FCE performance below job demand is shown as a **Yes** in the deficit column, while mixed performance (both above and below the job demand level) is shown as **?** indicating a possible deficit.

Activities Rated by Strength Level						
Activity	**FCE Performance** (PDC Category)	**Equivalent Strength Level**			**Job Demand** (PDC Category)	**Deficit**
		Occasional 0 to 2.6 hours/day	**Frequent** 2.7 to 5.3 hours/day	**Constant** 5.4 to 8 hours/day		
Low Lift (floor to knuckle)	**Medium**	21 - 50 lb	11 - 25 lb	1 - 10 lb	**Very Heavy**	**Yes**
Mid Lift (knuckle to shoulder)	**Medium**	21 - 50 lb	11 - 25 lb	1 - 10 lb	**Very Heavy**	**Yes**
High Lift (shoulder and above)	n/a					
Full Lift (floor to shoulder)	n/a					
Carry	**Very Heavy**	over 100 lb	over 50 lb	over 20 lb	**Heavy**	**No**
Push (static)	**Heavy**	51 - 100 lb	26 - 50 lb	11 - 20 lb	**Medium**	**No**
Pull (static)	**Medium**	21 - 50 lb	11 - 25 lb	1 - 10 lb		
Overall Strength Category	n/a					

Activities Rated by Frequency and Duration						
Activity	**FCE Performance**				**Job Demand**	**Deficit**
Walk	**Constant**				**Constant**	**No**
Climb Stairs	**Constant**				**Occasional**	**No**
Balance	**Constant**				**Frequent**	**No**
Stoop	**Frequent**				**Occasional**	**No**
Kneel	**Constant**				**Occasional**	**No**
Crouch	**Frequent**				**Occasional**	**No**
Crawl	**Constant**				**Not Required**	**No**
Reach (front)	Left: **Constant**		Right: **Constant**		**Frequent**	**No**
Reach (side)	Left: **Constant**		Right: **Constant**		**Frequent**	**No**
Handling	Left: **Constant**	Right: **Constant**	Both: **Constant**		**Frequent**	**No**
Fingering	Left: **Constant**	Right: **Constant**	Both: **Constant**		**Frequent**	**No**
Feeling	**Constant**				**Frequent**	**No**
Eye-hand-foot	**Constant**				**Frequent**	**No**
Sitting	**Frequent**				**Frequent**	**No**
Standing	**Frequent**				**Frequent**	**No**
Push Cart	**Constant**				**Frequent**	**No**
Pull Cart	**Frequent**				**Occasional**	**No**
Other Activities						
Grip/Grasping Strength (Dynamometer Position 2)	Left: **83.8 lb**		Right: **94.8 lb**			**low**
Cardiovascular Fitness	**Above average**					