

# HR Mat™

## High-Resolution Barefoot Analysis

EASILY CAPTURE DATA FROM SMALL CHILDREN OR SUBJECTS WITH SEVERE FOOT PATHOLOGIES



HR Mat is ideal for performing a detailed analysis of pediatric foot function and gait. Low profile minimizes gait alterations and risk of tripping.

The HR Mat™ is a high-resolution mat system used for capturing barefoot plantar pressure to provide accurate and reliable information for studying foot function or analyzing gait. Collect data from multiple footsteps for an in-depth gait analysis or measure static pressure for evaluating asymmetries or foot function. With a thin platform (0.57 cm/ 0.225 in) the risk of gait alternations or tripping is reduced. The HR Mat is...

**Research validated and peer accepted** – used by leading researchers around the world for foot function analysis.

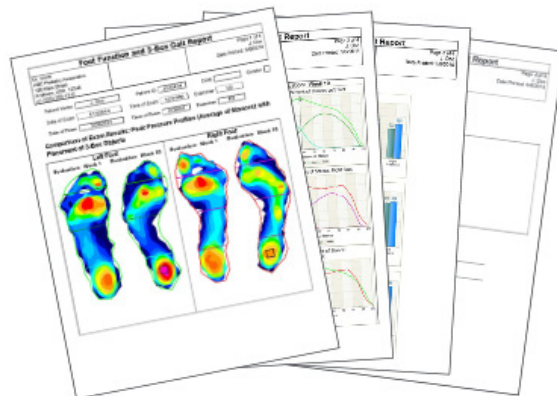
**Tekscan's highest spatial resolution mat system** – with the same resolution as the F-Scan® system, the HR Mat accurately profiles anatomical locations on the plantar surface.

**Accurate and consistent data** – calibrate the system specifically to meet your needs. There is no need to send the system back for calibration.

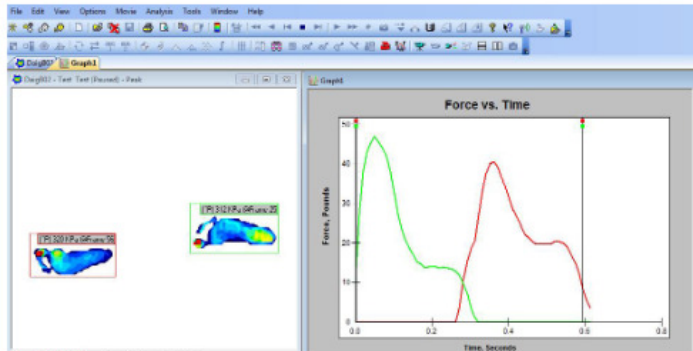
**Compatible with gait lab technology** – the system synchronizes with force plates and other gait lab technologies like EMG and motion capture, as well as other Tekscan systems.

**Light-weight and portable** – easily transported system can be used in or out of the lab.

Save time in post data collection through automated analysis and reporting included in the upcoming software release. The new software release for the HR Mat will be dedicated solely to the mat systems for focused data collection with exciting new features, like report generation at the push of a button. Automated 3-Box analysis, which segments the foot into three key regions: heel, metatarsal and total foot, generates tables for temporal gait parameters, force vs. time parameters and foot function parameters. Evaluate peak pressure with automated analysis that produces a table with information on pressure time integral, peak pressure gradient and the amount of time the pressure threshold has been exceeded. Get immediate feedback with real-time force vs. time curves. Software will be available in both Clinical and Research versions.



View the plantar pressure profile of the foot to reveal high-pressure areas, analyze the center of force trajectory or identify asymmetries between left and right feet. Export data for import into a spreadsheet for further analyses.



The *HR Mat* has the high spatial resolution of 4 sensels™ / cm<sup>2</sup> (25 sensels / in<sup>2</sup>).

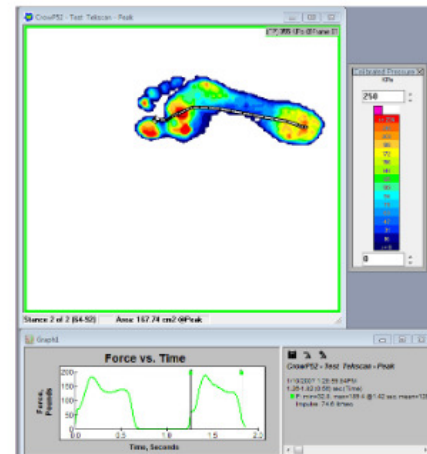
Capture data from a single step, multiple steps or a standing pressure assessments.

Graphs display the force vs. time curves for left and right feet for easy comparison.

Analyze center of force trajectory for any potential deviations.

Display data in 2D or 3D.

Identify areas of high pressure with a color-coded legend.



High-resolution, advanced floor mat designed to capture plantar pressure & forces for both adults and small children.

### HR Mat™ – High Resolution

Platform Dimensions	61.26 x 58.72 cm (24.12 x 23.12 in)
Active Sensing Area	48.8 x 44.7 cm (19.2 x 17.6 in)
Sensor Resolution	3.9 sensels/cm <sup>2</sup> (25 sensels/ in <sup>2</sup> )
Thickness	0.6 cm (0.2 in)
Scan Rates	185 Hz
Ideal Application	<ul style="list-style-type: none"> <li>Evaluating plantar pressure</li> <li>Static &amp; dynamic balance assessments</li> <li>Gait analysis</li> <li>Ideal for use with small children due to the higher resolution</li> </ul>
Software Options	<p>Choice of one of the following software:</p> <ul style="list-style-type: none"> <li>FootMat Software for Researchers</li> <li>FootMat Software for Clinicians</li> <li>SportsAT</li> </ul> <p>Add-ons:</p> <ul style="list-style-type: none"> <li>Sway Analysis Module (SAM)</li> <li>Video Synchronization</li> </ul>



### FootMat™ Software for Clinicians

#### Software for Foot Function & Gait Analysis

FootMat software provides reliable pressure data to objectively evaluate dynamic foot function and gait. Perform a complete foot function analysis by capturing static and dynamic pressure data. FootMat software can...

##### Educate patients about foot function and pathologies

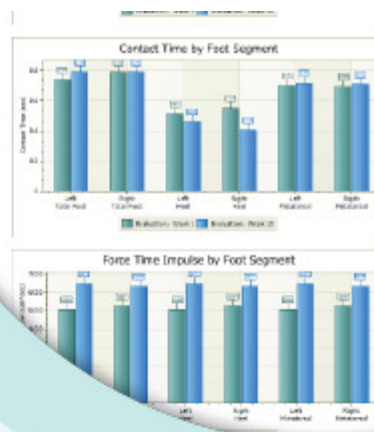
- Easily demonstrate problem areas and communicate treatment options to patients

##### Set your practice apart

- Reduce the number of repeat visits with effective treatments

##### Provide objective and accurate information

- Analyze data on biomechanics and high pressure areas



Automated reporting easily demonstrates the effect of treatment

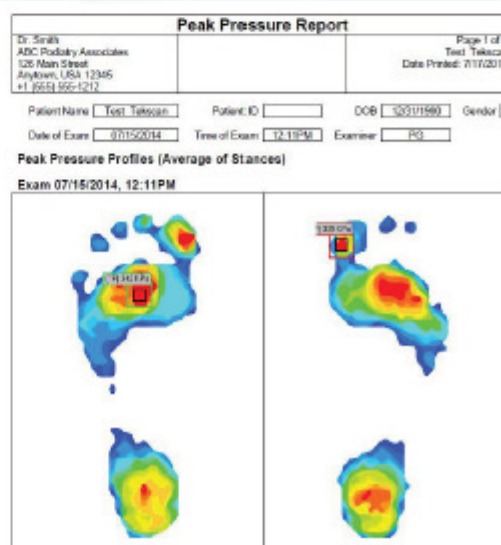
### Save Time Analyzing Data & Writing Reports

**Automated 3-Box Analysis** – segments the foot into three key regions: heel, metatarsal and total foot for a more complete biomechanical foot function analysis.

- Evaluate force vs. time graphs for each segment
- Visually compare pre-/post-treatment effects with pressure profiles, graphs and charts
- Foot function table displays contact times, loading and off-loading rates and center of force (CoF) velocity

### Automated Peak Pressure Analysis

- Automatically identifies and quantifies peak pressure location
- Quickly screen patients for high pressure areas to develop an off-loading plan
- Automatically calculates Peak Pressure Gradient (PPG), which is emerging as a way to assess the risk of ulcer formation
- Evaluate the pressure profiles to determine high-pressure areas, easily identified by color-coding
- View deviations in the Center of Force (CoF) trajectory
- Instant viewing of left/right and medial/lateral weight distribution





## FootMat™

Software for Researchers

### Foot Function & Gait Analysis Software

FootMat Software for Researchers provides accurate and reliable pressure data for studying foot function and gait. Perform a complete foot function analysis by capturing static pressure data or multiple footsteps with dynamic pressure data for gait analysis. Advantages of FootMat software are...

#### Research validated and peer accepted system

- Used by leading researchers around the world for foot function analysis

#### Unrestricted data analysis

- Export data into a variety of file formats (ASCII, Excel, MATLAB)

#### Accurate and consistent data

- Calibrate the systems specifically to meet your needs, there is no need to send the systems back to the factory for calibration

#### Compatible with gait lab technology

- The system synchronizes with force plates, and other gait lab technologies such as EMG and motion capture, in addition to other Tekscan systems

### Optimize Data Analysis

#### Automated 3-Box Analysis

- Segments the foot into three key regions: heel, metatarsal and total foot
- Isolate the heel and forefoot pivot for more detailed information on foot function and gait
- Graphs display force vs. time curves for left and right feet, as well as for each foot segment for easy comparison
- Force vs. time table with heel/metatarsal crossing times and the locations of the peaks and troughs

#### Automated Peak Pressure Analysis

- Identifies and quantifies peak plantar pressure area for each foot
- Calculates Peak Pressure Gradient (PPG) which is a potential predictor of ulcer development

Force (Pounds/sec)	0.74	0.79	-0
Force (Pounds/sec)	803.1	740.8	6
Force Slope (Pounds/sec)	-1035.1	-1140.4	10
Deviation (centimeters)	-0.2 to 0.9	-0.7 to 1.2	0.5
OF Excursion Index (%)	11%	19%	-1
1st Peak (sec)	0.21	0.24	-0
Trough (sec)	0.34	0.34	-0
2nd Peak (sec)	0.49	0.55	-0
Gait Curve 2-Peak Force Diff (Pounds)	6.9	6.9	-4
Heel-Metatarsal Curves Crossing (sec)	0.03	-0.02	0
Heel Contact Time (sec)	0.54	0.56	-0
Heel Maximum Force (%BW)	44%	47%	-1
Maximum Force (Pounds)	78.7	84.0	-3
OF Time (sec)	0.12	0.16	-0
Force Slope (Pounds/sec)	433.5	697.0	-24
Force Slope (Pounds/sec)	-305.6	-307.8	2
Force (sec)	0.60	0.59	0
Force (%BW)	20%	25%	-1
Force	35.2	44.7	-4
Force	0.28	0.28	-0