Objective and effective

GAIT ANALYSIS
Gait analysis –
An objective method for the analysis of human walking

Instrumented gait analysis is an objective method to assess and study human gait. Gait analysis has been found to be an efficient clinical tool used in diagnostics and treatment of pathological gait. It provides an objective and quantifiable assessment before and after treatments that aim to improve a patient’s gait ability. The biomechanical and neurological aspects of human gait are still not fully understood, so gait research is another important area where instrumented gait analysis is used.

Qualisys offers solutions tailored to be used routinely as a clinical tool, as well as solutions for gait research.

THE QUALISYS MOTION CAPTURE SYSTEM

The core of our products are our motion capture cameras, developed and produced in Sweden for more than 25 years. Combined with specialised software modules, the system offers a complete gait solution that can be used for clinical investigations and research studies, from data capture to analysis and report.

FEATURES

- Scalable solution from 8 to 12+ cameras
- Workflow optimised for seamless preparation, recording and gait report generation
- Synchronised recording of 3D data, video, ground reaction force and EMG
- Supports overlay of video and force/marker data (Oqus 2c only)
- Solutions for research and clinical purposes
- Ready-to-use reports in Microsoft Word and HTML (browser)
- Several biomechanical models implemented
- Highly adaptable for research users

1 See Qualisys.com/integrations for compatible external hardware
GAIT ANALYSIS WORKFLOW

Standard workflow or custom projects? The choice is yours: the PAF Gait Modules guide the user through all steps from preparation to data processing. Alternatively, researcher users can easily define their own marker sets and protocols.

BIOMECHANICAL MODEL

As a gait lab, it is critical to maintain repeatable procedures while being flexible enough to cater the needs of all your clients. This is why our software connects seamlessly with Visual3D by C-Motion, a software being used in hundreds of biomechanics labs worldwide.

REPORT AND FEEDBACK

All PAF Gait Modules come with comprehensive reports – or, as a research user, elect to set up a custom report for your project. Reports typically include joint angles, moments and power as well as other gait parameters such as speed, stride length, cadence and timing information. Alternatively, you can set up the system to provide visual biofeedback in realtime.

Contact Qualisys or your local distributor for planning advice for your lab.

Video overlay helps visualising the position and direction of the ground reaction force vector.
MONITORING CLIENTS

Gait analysis is used in diagnosis and for pre-/post treatment assessments in conditions such as cerebral palsy, stroke, traumatic injuries, spina bifida and Parkinson’s disease.

INTEGRATIONS

Force and EMG data can be recorded and processed together with the motion capture data, and all results can be included within a single report. For compatible external hardware see qualisys.com/integrations.

AVAILABLE SOLUTIONS

Qualisys offers gait solutions for research and clinical users. If you are measuring on patients for the purpose of diagnosis, treatment assessments, or monitoring, the PAF Clinical Gait Module is the right choice. If you are a research user, the other modules presented below are most suitable.

<table>
<thead>
<tr>
<th>Area</th>
<th>PAF module</th>
<th>Class 1m CE marking</th>
<th>Compatible external hardware</th>
<th>Included marker sets</th>
<th>Processing</th>
<th>Report</th>
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</thead>
<tbody>
<tr>
<td>Clinical</td>
<td>Clinical Gait Module</td>
<td>Yes</td>
<td>Selected hardware only</td>
<td>CAST, IOR, Conventional Gait</td>
<td>Visual3D</td>
<td>HTML, Word</td>
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<tr>
<td>Research</td>
<td>Gait Module</td>
<td>No</td>
<td>Any hardware¹</td>
<td>CAST, IOR, Conventional Gait</td>
<td>Visual3D</td>
<td>Word (research report)</td>
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<tr>
<td></td>
<td>PAF open licence</td>
<td>No</td>
<td>Any hardware¹</td>
<td>None</td>
<td>Visual3D, MATLAB, custom software</td>
<td>None</td>
</tr>
</tbody>
</table>

¹ Any hardware compatible with Miqus/Oqus cameras & QTM

REFERENCES


FURTHER INFORMATION

Clinical gait: qualisys.com/applications/clinical-gait/
Gait research: qualisys.com/applications/gait-rehab/