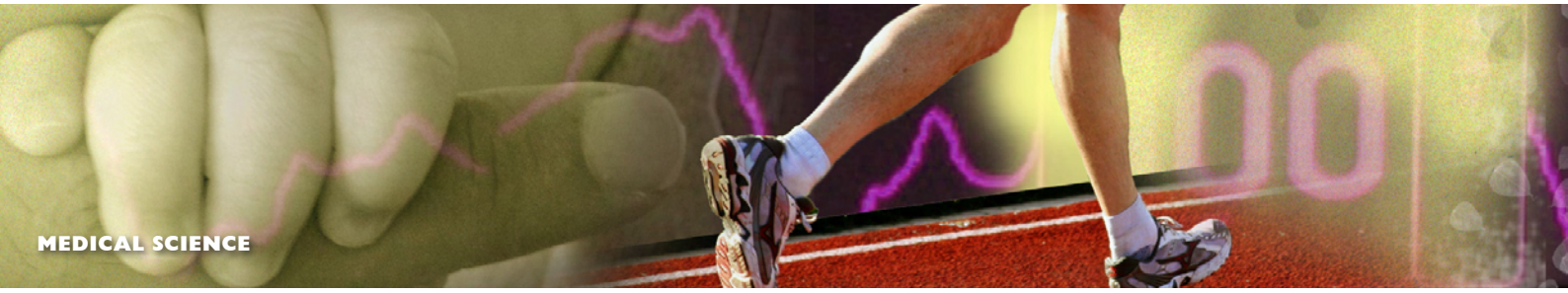
QUALISYS
Motion Capture Systems



Gait analysis

an objective method for the analysis of walking patterns

The human gait has traditionally been studied subjectively through visual observations. By combining advanced measurement technology and biomechanical modeling, human gait can now be objectively done. Gait analysis research and development is an ongoing activity, with new models and methods continually evolving. Today, physiotherapists, orthopedists and neurologists all use gait analysis to evaluate a patient's status, treatment and rehabilitation.

KEY FEATURES

- Flexible analysis functionality
- Suitable for both research and clinical purposes
- Integrated report builder
- Plug-in architecture
- User-defined calculations
- Objective data with high precision
- Integrated motion, force and muscle analysis
- Several biomechanical models implemented
- Integrated tools for custom-defined analysis

Application Note

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EXAMPLE OF STUDIES

- Pre- and post surgery assessment and evaluation
- Effects of training and rehabilitation
- Evaluation of various care equipment
- Testing and evaluation of orthoses, prostheses and artificial limbs
- Studies on functional disabilities caused by stroke, Parkinson's disease or other neuromuscular disorders
- Stair walking
- Posture and balance studies

REFERENCES

- University College Salford, Salford, U.K.
- University of Surrey, School of Mechanical and Materials Engineering, Surrey, U.K.
- University of Massachusetts, Biomechanics Laboratory, Amherst, USA
- St. Jozef Instituut, Department of Rehabilitation, Antwerpen, BELGIUM
- G.A.I.T. – Gait Analysis in Trondheim, NORWAY

THE QUALISYS MOTION CAPTURE SYSTEM

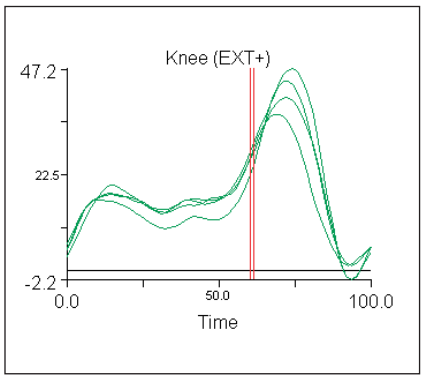
Qualisys offers an end-user gait analysis product that can be used for clinical, as well as research studies. Users can choose to run standard protocols or develop their own methods and routines. All components, both hardware and software, are designed to give the user a complete package – from data capture to analysis.

METHODS AND CALCULATIONS

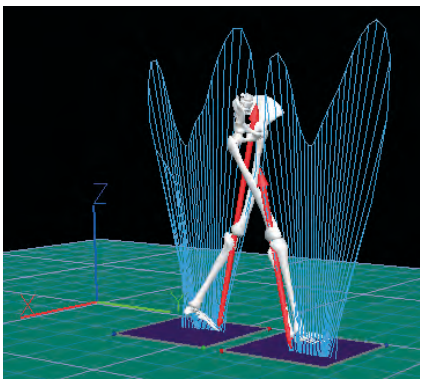
Users can define their own marker configuration or use an already implemented standard setup such as Helen Hayes or 6DOF (Six Degrees of Freedom). Once the marker setup is defined, kinematic and kinetic calculations can be performed and standard parameters such as joint angles, moments and power can be reported. Other typical gait parameters are speed, stride length, step length and time, stance and swing phase.

REPORTING AND VISUALIZATION

One of the system's key functions are the presentation of the parameters. The results can be saved and reported in standard or customized graph layouts. Comparisons can be made between different patients and groups. Several different visualization alternatives may be chosen from. The motion data can be applied to skeletons, mannequins or user-defined animations.



Right knee angle in saggital plane.


Visualization of motion data.

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