

Your **portable lab** for
assessment and training



Performance assessment and training approach

We assess and train **movement** in a comprehensive way, based on **objective data**





Why choosing Microgate's systems

SCIENTIFIC VALIDITY

- Optojump Next: Quoted in over 1500 publications
- Witty: cited in over 500 publications
- Brain HQ: 250 publications

OBJECTIVE ASSESSMENT

- Data sharing/reporting
- Training load measurement and monitoring
- Injury risk prevention

FLEXIBILITY

- Different configuration types
- Scalability
- Indoor and outdoor
- Integration of different tools

TRANSPORTABILITY

COST-EFFECTIVENESS

EASE OF USE



Mobility

Flexibility is an important quality for an active subject as it contributes to physical well-being by increasing the flow of blood and oxygen throughout the body, maintaining correct posture, economizing movements, improving sports performance, developing strength, and preventing muscle-tendon-joint injuries.

The **Gyko** inertial sensor can be used very simply and quickly to monitor joint flexibility and dynamic ROM over time. It provides not only the **angle** measurement, but also information on the **fluidity** and **speed** of the movement performed.



Stability

For a person to be able to control their own stability, they must physically understand and manage their body, allowing them to move more safely and precisely. For the athlete, this translates into optimised performance, reducing the risk of injury.

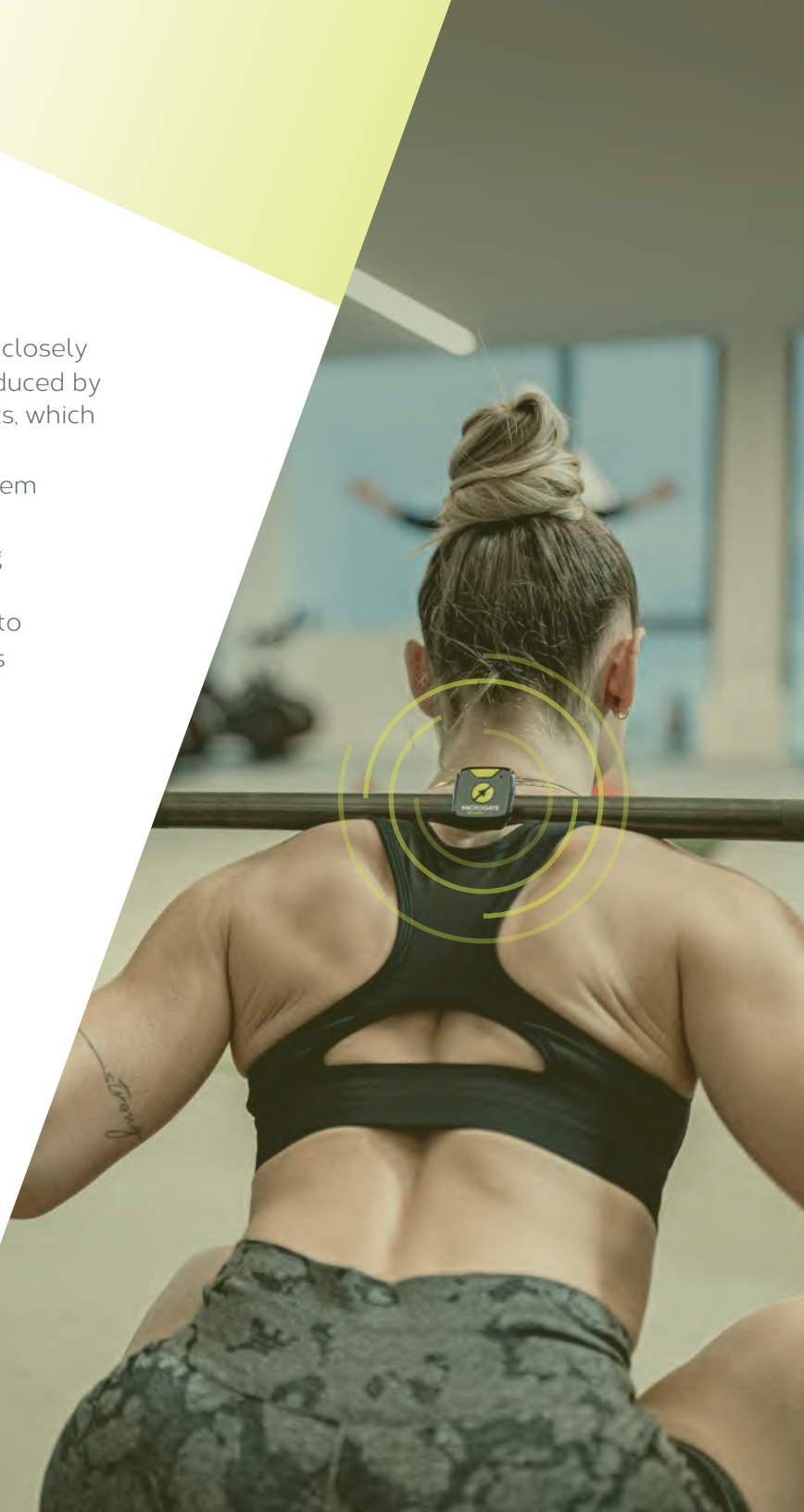
Sway analysis protocols are very useful to assess and monitor the level of control and **postural strategies** over time. **Gyko** is able to measure the performance of such tests, with objective and comparable values, without interfering with the subject's capabilities. The system can be applied anywhere on the body to better targeting the evaluation.



Strength

In the sports field, the concept of strength is closely linked to that of power. In fact, the force produced by the muscles results in movement of the joints, which takes place in a certain period of time.

Applied directly on the weight, the **Gyko** system makes it possible to both record the performance and work with the athlete using **biofeedback** (in terms of **power** and **velocity**). In field work, jump tests are commonly used to analyse leg power capacity. **Optojump Next** is recognized as a Gold Standard instruments for measuring **flight times, contact times** and space **displacement**.





Movement

Every sport is related to very specific motor gestures, development of strength in a coordinated way at precise angles. Alongside the more classical analysis of general skills (mobility, stability, strength) it becomes necessary to evaluate complex and **sport-specific movement** in its various aspects. Dynamic monitoring can be performed during typical activities such as walking, running, jumping, change of directions. In this case **Optojump Next, Witty** and **Gyko** provide useful parameters to quantify performance, identify different behaviours and possible **compensations** in place. Measurements from the different systems are automatically synchronized.



Cognitive training

Competing in sports requires a huge amount of time, effort and physical capacity. An increasing number of studies suggest that cognitive training in sports can also play a decisive role in improving performance.

Cognitive sports training is evolving: it aims to improve the capabilities of a person through brain stimulation, acting on cerebral plasticity and increasing the number of neural connections.

Thanks to the collaboration with Prof. Michael Merzenich (one of the foremost researchers of neuroplasticity) and Posit Science, Microgate developed **Witty SEM**, a scientific-validated cognitive training system. The proposed exercises are fun, engaging and adapted to the individual user. They are designed to provide useful and meaningful training for each subject in different areas, mainly related to **attention** and **cognitive speed**.



OPTO JUMP NEXT

Optojump Next is an optical detection system composed of a transmitting bar and a receiving bar. A light mat is created on the ground with a maximum width of 6 meters and a space resolution of approximately 1 cm. The acquisition time is one thousandth of a second. The system can measure space and time parameters related to walking, running, jumping, etc., allowing an objective approach to the motor assessment course, which is essential in training. In addition to offering flexible configuration from 1 to 100 metres, Optojump Next can be integrated with GYKO and WITTY for a more comprehensive overview.



OBJECTIVE ASSESSMENT

QUICKLY IDENTIFY variability, postural problems and asymmetries by reading data and observing videos

DEVELOP CUSTOMISED TRAINING AND REHABILITATION PROGRAMS distinguished on the basis of test results

PERIODICALLY MONITOR training results and efficacy

MOTIVATE the athlete by providing tangible evidence of progress made



GYKOPRO

GykoPro is a triaxial inertial system with a time resolution of one thousandth of a second. At the operational level, it allows real-time assessment of flexibility, balance control, and strength and power development. When used in conjunction with Optojump Next, the data from the latter will be automatically supplemented by the data recorded by GYKO.



ASSESS AND MEASURE the subject's balance in different situations and/or on different surfaces

MONITOR exercise intensity with real-time visual biofeedback

TRACK AND REPORT the subject's recovery throughout rehabilitation

IN CONJUNCTION WITH OPTOJUMP NEXT integrate ground-level information with torso kinematics for a summary of dynamism, stability and coordination

QUANTIFY single-joint flexibility or muscle strength developed using loads

WITTYPRO

TIMING FAMILY



Its extreme simplicity and flexibility coupled with its excellent reliability means that the Witty system is certainly one of the most commonly used timing products in sports training. The photocells can be configured as single or "dual beam" and can be combined with a WittySem for more agility-related workouts. The timer, on the other hand, can work safely in the field in any weather condition (light, rain, cold,...).

MEASURE your sprint and acceleration abilities
PERIODICALLY MONITOR training results and efficacy
CUSTOMIZE tests based on the individual needs
MOTIVATE the athlete with real time results displayed on the WittyTab



WITTYPRO SEM

Motor-cognitive training: A “smart traffic light” composed of a 7x5 multi-colour LED matrix that can handle different symbols and colours. Thanks to collaboration with PositScience, Microgate is now able to offer targeted workouts that stimulates basic cognitive functions. More than 200 scientific publications show that these exercises can stimulate brain plasticity, allowing to modify and physically optimise its structure and function.



COGNITION IN MOTION the combination of physical and brain training

ADAPTIVE TRAINING of cognitive abilities (attention, brain speed,...)

MONITOR and **OPTIMIZE** physical and cognitive efficiency

TAILORED TRAINING for every single focus

MOTIVATE with fun and engaging exercises

High Performance Training Devices. Made in Italy, since 1989.

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