

*A mobility lab
in your pocket*

The system is made of a *user-friendly APP*, a **smartphone**, and a **small wireless sensor**.

mTUG, by means of a single waist-worn sensor, fully instruments the Timed Up and Go (TUG) test. TUG is the standard test used in clinical practice to evaluate mobility, to perform screening protocols, and to assess fall risk and frailty.



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mTUG



A mobility lab in your pocket for fast screening, assessment, and follow up.

Certified

Easy

Mobile



mHT

mHealth Technologies

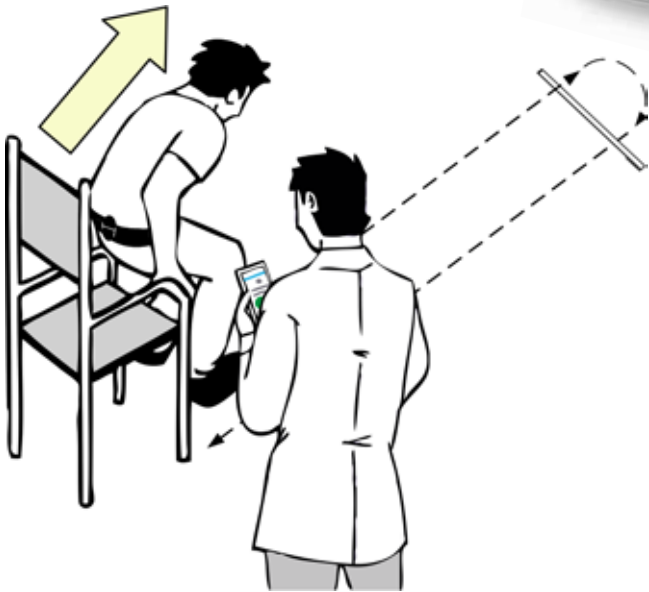
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How was mTUG conceived?

Instrumented versions of the Timed Up and Go test have already been proven to be sensitive to clinically relevant modifications during rehabilitation programs and key to predict fall risk.

mTUG is the result of a long-lasting experience of our team in research and innovation, gained through several European research projects and the participation to a wide network of national and international institutions active in clinical research.

We are aware of the limited amount of time available for functional assessment: during everyday clinical practice, it is paramount to obtain clinically relevant information without effort. **mTUG** was designed accordingly: it requires almost same time and effort required by evaluating the traditional Timed Up and Go test with a stopwatch.



What does mTUG do?

mTUG is a **Medical Device** developed for fast assessments and follow-up evaluations. It embeds fully automatic algorithms for an objective, comprehensive, and detailed assessment of the motor performance during a TUG test.

mTUG automatically:

- segments the constitutive five sections of a Timed Up and Go test: Sit-to-Walk; Walking; 180° Turn, Sitting Turn, and Sitting;
- identifies each foot contact during walking;
- extracts an all-inclusive set of parameters proposed in the literature to fully characterize the motor performance;
- generates ready to print pdf reports describing in detail the motor performance of patients;
- provides charts to compare tests performed at different times
- enables follow up evaluations, pre- vs post-treatment comparisons, and monitoring of motor performance fluctuations.

How it works:

mTUG uses a single inertial sensor wirelessly connected to a smartphone for instrumenting the Timed Up and Go test. The sensor is worn on the lower back by means of an elastic waist belt.

The **mTUG** interface is a smartphone app made of a single connect/start/stop button. **mTUG** automatically detects the start and the end of the test making the TUG objective, repeatable and accurate.

At the end of the assessment, a customizable report is automatically generated and shown on the smartphone.



The report details the motor performance during the TUG test and provides insights into clinically relevant characteristics of mobility during each TUG section such as:

- Duration of each section
- Number of steps, steps duration, gait speed
- Variability of step duration
- Turning angle
- Movement amplitude during transitions
- Smoothness, coordination, and symmetry of gait
- And many more...

mTUG is based on algorithms that have been successfully and intensively tested on elderly and on subjects with pathological conditions such as Parkinson's disease.

mTUG is an extremely easy, quick, and practical mobile solution designed for the everyday clinical practice.

