What Is an Accelerometer (G-Sensor)?

Inas B. - 2026-11-17 - Health & Activity Tracking

An accelerometer is a sensor that measures acceleration, including changes in movement and direction.

In a smartwatch, the accelerometer detects movement along different axes. It can identify changes in motion, such as walking, running, raising an arm or changing position.

The watch processes this information using software algorithms to recognize movement patterns and estimate activity-related measurements.

What information can an accelerometer provide?

Accelerometer data can contribute to:

- Step counting.
- Movement and activity tracking.
- Workout recognition and monitoring.
- Sleep movement detection.
- Other activity-related estimates.

Does an accelerometer measure steps directly?

No. An accelerometer measures acceleration, not individual steps. The smartwatch analyzes patterns in the movement data to estimate when steps have occurred.

Because these estimates depend on movement patterns, certain arm movements or activities may sometimes be interpreted as steps, while some actual steps may not be detected.

Accelerometers are commonly used in wearable devices, smartphones and other electronic equipment to detect movement and orientation changes.