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**ACTISENS: MOTION SENSING
AND CLASSIFICATION
PHYSICAL ACTIVITY ASSESSMENT**

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ActiSENS is a motion sensor that continuously measures its wearer's physical activity. The sensor classifies all body movements into six types, awards the user a certain number of points for each and calculates a score, thus providing an objective measure of the user's activity levels. This small wearable device was developed to motivate children and adults to take more exercise.

How ActiSENS Works

A triaxial accelerometer and an altimeter are housed in a small case worn on the belt. The device detects its wearer's movements throughout the day and assigns them to one of these six categories: resting (e.g. in a seated or lying position), walking, running, cycling as well as climbing and descending stairs. Each type of movement earns the user a specific number of points: Running generates higher scores than cycling, which in turn yields more points than walking and so forth. No points are awarded for sitting or riding an elevator. The sensor continuously adds up the points collected during the day, and the more frequent and intense a user's physical activity, the more points they will accumulate. In this way, the sensor provides the user with a reliable assessment of their physical activity.

The user's activity score for the day is continuously updated and shown on an integrated LED display. A Bluetooth module makes it convenient to transmit the collected data to a personal computer, where it can be analyzed in more detail and a monthly overview, for example, can be displayed.

Application Areas

ActiSENS was created to encourage its user to become more physically active. Lack of physical activity contributes to conditions such as obesity, hypertension and diabetes. In addition to its motivational effect, however, ActiSENS is a valuable tool for scientific research, aiding treatment monitoring and optimization by supplying important data. By systematically monitoring agreed exercise programs, physicians can better assess how a patient's health can be improved through regular physical activity and whether treatment failure is due to non-adherence to the program.