

## Main Features

- Wrist-worn light-weight activity monitor for ambulatory monitoring
- Recording of physical activity by means of an accelerometer
- Data transfer to a PC via a reader for analysis with custom activity and sleep analysis software
- Records for up to 44 days with a 1 minute epoch
- Versions available for measuring activity plus other parameters such as light and subjective scoring
- All recorded data is fully exportable

## Applications

- Physical activity intervention studies
- Circadian rhythm research
- Detection of sleep disorders
- Numerous other applications



**The Actiwatch** is a wrist-mounted device which detects and logs movement intensity and duration. The data is stored in the watch and can be downloaded to a PC for analysis. As such, it is a convenient tool for the ambulatory recording of either limb activity or general physical activity for clinical use and for research purposes.

### Physical Activity

The activity plots coupled with specialised software serve to quantify the intensity and duration of daily physical activity as an indicator of a particular lifestyle or to monitor the effects on mobility of a medical condition as well as the efficacy of treatment for that condition.

### Sleep

The Actiwatch is also useful for screening patients with suspected sleep disorders before resorting to tests in a sleep clinic.

Sleep analysis software serves to analyse sleep/wake patterns and to calculate the sleep onset latency, sleep efficiency and sleep fragmentation. Separate software is available for detecting Periodic Limb Movements in Sleep (PLMS).

### Validation

The Actiwatch has been validated against polysomnography, the 'gold standard' for use in sleep studies<sup>1, 2</sup> and it has been used extensively for other applications. A full bibliography of papers published using the Actiwatch is available on our website.

### Fields of Applications

The Actiwatch is in use in the fields of physical activity monitoring, sleep, respiratory medicine, paediatrics, psychiatry, health psychology, pain, Alzheimer's & Parkinson's research, geriatric medicine, dermatology and urology.

### Bibliography

**1. Kushida C, Chang A, Gadkary C, Guilleminault C, Carrillo O, Dement W.**

Comparison of actigraphic, polysomnographic, and subjective assessment of sleep parameters in sleep-disordered patients. *Sleep Medicine 2 (2001) 389-396*

**2. Kevin So, Pat Buckley, T. Michael Adamson, and Rosemary S. C. Horne**

Actigraphy correctly predicts sleep behavior in infants who are younger than six months, when compared with polysomnography. *Pediatric Research, Vol. 58, No. 4, 2005, 761-765*

### Technical Specification

Weight:	16 grams
Battery life:	180 days
Battery type:	CR 2025
Memory:	64 KB
Splash-proof:	Yes
Warranty:	2 years
Size (mm):	37x29x10
Epoch Range:	2s-15min
PC Analysis:	Windows® XP/Vista Windows®7

Epoch length	2 sec	5 sec	10 sec
Recording time	36 hours	90 hours	7 days
Epoch length	15 sec	30 sec	1 min
Recording time	11.5 days	22.5 days	44 days

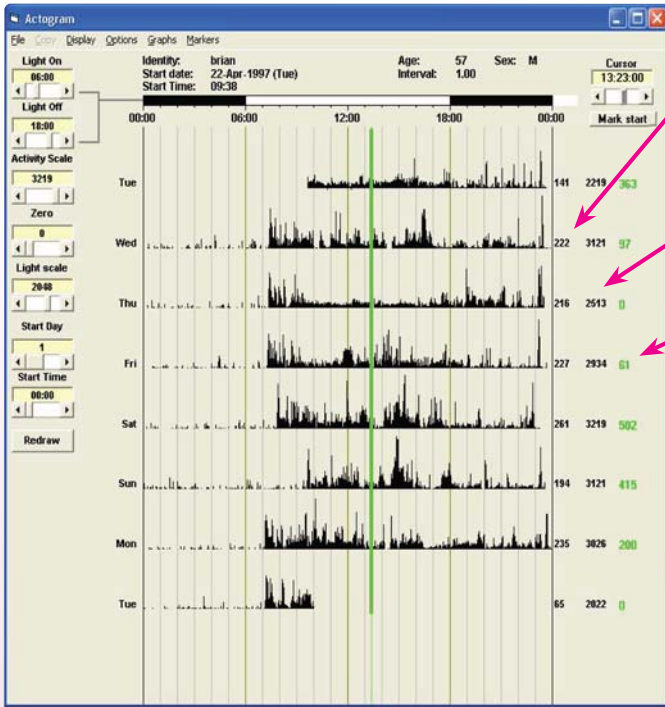
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**Activity Measurement**

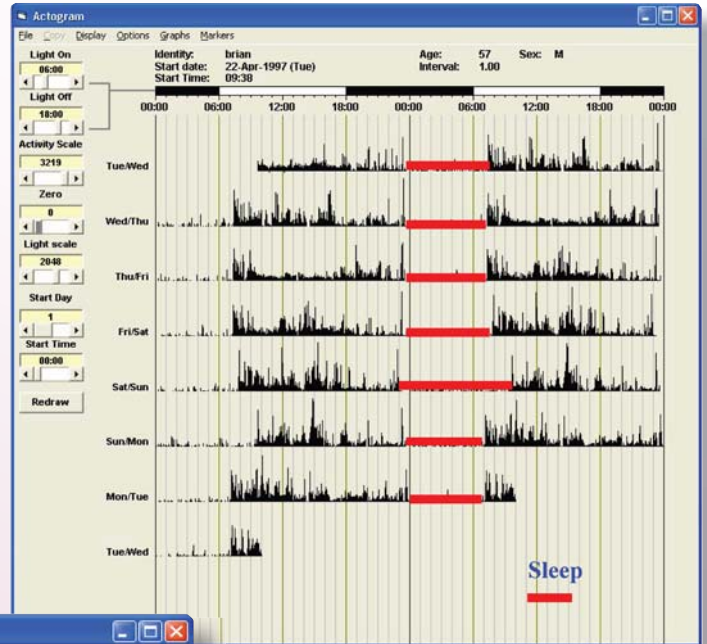


Average Activity

Peak Activity

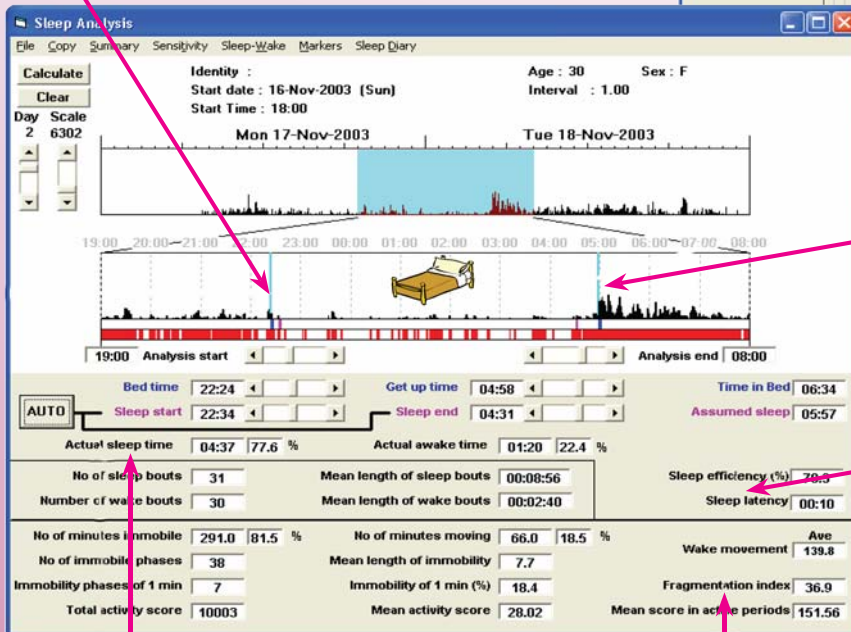
Activity at Cursor

**Circadian Rhythm Analysis**



Bed Time Marker

**Sleep Analysis**



Get-up Marker

Sleep latency  
Bed Time - Sleep time

**Actual Sleep Time**

Assumed Sleep - Actual Wake Time

**Fragmentation Index**

No. of minutes % + Immobility of 1 min %