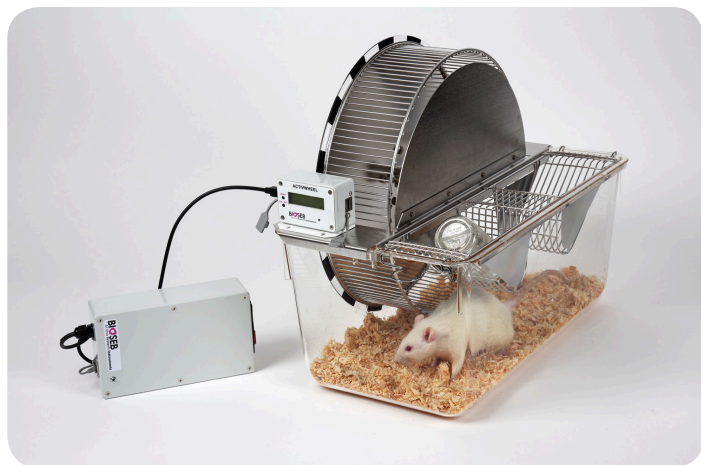


AN EASY WAY TO QUANTIFY RODENTS' SPONTANEOUS ACTIVITY IN THEIR HOME CAGE ENVIRONMENT



The rat version of our Spontaneous Activity Wheel



BIO-ACTIVW: Spontaneous Activity Wheels

INSTRUMENT OVERVIEW

Bioseb's Spontaneous Activity Wheel is **an easy and cost-efficient way to quantify rodents' spontaneous motor activity in their home cage environment**. Separate models are available to accommodate both rat and mouse monitoring.

The system allows you to record parameters pertaining to the **voluntary exercise of animals**, which freely decide upon timing and intensity. Monitoring and recording typically takes place over extended periods of time (several days or weeks) in order to analyze and evaluate differences in behavior and exercising patterns induced by drugs or surgical manipulation. Though the analysis focuses on spontaneous activity, it is highly relevant for long-term studies on alterations of the circadian rhythm.

Measurements include: distance run both directions, average/min/max speed, acceleration, total time in the wheel, and can be displayed in statistical form or sorted by customizable time periods.

HOW DOES IT WORK?

Bioseb's wheels are easy-to-use, time-efficient and reliable. Thanks to the large cage size, a single animal can be housed for several days undisturbed. Animals benefit from free access to a running wheel, and the large diameter allows for comfortable and natural exercise. The height of the wheel is sufficient to accommodate normal cage bedding. A convenient "Pause" option in the recording software allows researchers to clean the cage with minimal data interruption.

Two different setups available :

Stand alone:

Thanks to embedded LCD counter, the distance travelled by the subject over the time is displayed on real-time for each single cage. An economical solution for basic activity monitoring!

Fully-Integrated-monitoring solution:

A straightforward solution for the comprehensive monitoring of up to 64 cages simultaneously. Thanks to the recording software, Bioseb's Activity Wheels monitor and analyze up to 22 parameters automatically!

KEY FEATURES

- Allows monitoring of spontaneous motor activity
- Minimal stress: large living cage, mesh lid, free access to food and water
- Reliable: coding disk, LCD screen counter & IR sensors
- Accurate rotation measurement: records accel. pattern
- Excellent angular resolution (22°) & time resolution (1 s)
- High Material Quality : low wheel rod friction, to ensure natural exercise
- Clever design : only one cable per cage !
- Practical, sturdy design: durable & easy to clean
- Software allows simult. monitoring of up to 64 wheels
- Cost-effective setting: operator independent with fully-integrated system
- Suitable for both rats and mice

TECHNICAL SPECIFICATIONS

Dimensions of Mouse setup BIO-ACTIVW-M	Cage Type II L, made of Polycarbonate Wheel diam 23 cm, Lane width : 7cm, made of Stainless Steel Overall Dimensions (LxWxH) : 37x21x28cm
Dimensions of Rat setup BIO-ACTIVW-R	Cage Type III, made of Polycarbonate Wheel diam 34 cm, Lane width : 9cm, made of Stainless Steel Overall Dimensions (LxWxH) : 49x27x41cm
Angular resolution	22° in both directions
Minimum Analysis Period	10 sec
Power supply	240 / 110 V, 50 / 60 Hz

BIO-ACTIVW: Spontaneous activity wheels for rats and mice



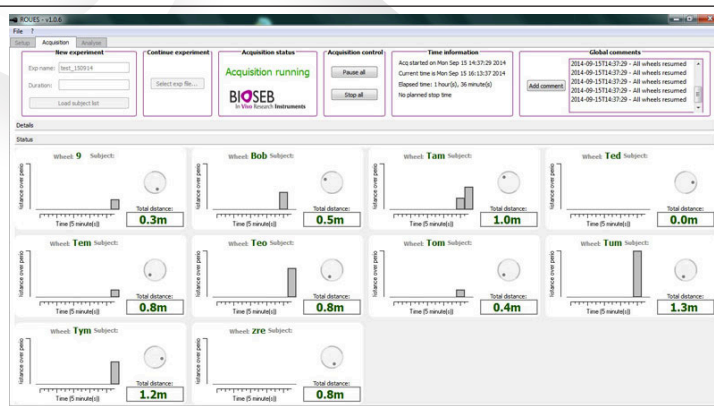
DEDICATED SOFTWARE

For a comprehensive analyze of the subject's activity profile over the entire experiment duration, the recording software BIO-ACTIVW-SOFT allows monitoring of up to 64 wheels, when connected to a single PC. For each individual wheel or group of wheels, the parameters measured are :

- Travelled distance (m or km)
- Speed
- Acceleration m/(min.s)
- Number of exercise events
- Subject's activity duration (s)
- All parameters can be displayed for Clockwise and/or Counterclockwise direction, if necessary

The software has been carefully developed for simple and convenient use :

- One screen displays Activity Monitoring for all wheels
- Suitable for long-term studies : pause recording during cage cleaning!
- Customized setting according to user's needs
- Data can be re-compiled in analytical mode on an adjustable period of 10 s up to 24hr or more
- Data outputs : .csv and .xls



COMPATIBLE WITH THE MAIN CHRONOBIOLOGY SOFTWARE !

DOMAINS OF APPLICATION

- General physical activity
- Motor-function
- Alterations of circadian rhythms
- Indirectly: depression & mood disorders, stress response
- Drug screening
- Phenotyping
- Metabolic Diseases, Obesity, energy-balance
- Cardio-vascular disorders
- Neuromuscular diseases :
Duchenne muscular dystrophy, ALS
- Non-reflexive tests of inflammatory pains
- Behavior/exercise pattern differences induced by drugs or surgical manipulation
- Comparative studies
Forced vs. Spontaneous Exercise
- Recovery after surgery, SCI

and much more...

MAINTENANCE

- Standard cage and coding disk: made of transparent polycarbonate: visual inspection & standard cleaning procedures
- Rotating wheel, supporting rod, and meshed lid: made of stainless steel and dismountable for cleaning
- Counter, with power unit (no risk of data loss due to low battery): easily removable for cleaning and sensor adjustment.



The mice version of our Spontaneous Activity Wheel

HIGHLIGHTED BIBLIOGRAPHY



Peripherally Acting -Opioid Receptor Agonists Attenuate Ongoing Pain-associated Behavior and Spontaneous Neuronal Activity after Nerve Injury in Rats, *Anesthesiology* (2018), V Tiwari, M Anderson et al., DOI: 10.1097/ALN.0000000000002191

Evoked and Ongoing Pain-Like Behaviours in a Rat Model of Paclitaxel-Induced Peripheral Neuropathy, *Pain Research & Management* (2018), LA Griffiths, NA Duggets et al., DOI 10.1155/2018/8217613

ORDERING INFORMATION

Reference	Description
BIO-ACTIVW-M	Wheel for mice with Power unit
BIO-ACTIVW-MA	Additional Wheel for mice
BIO-ACTIVW-SOFT	Data Acquisition Software

Reference	Description
BIO-ACTIVW-R	Wheel for rats with Power unit
BIO-ACTIVW-RA	Additional Wheel for rats

FOR MORE INFORMATION, VISIT OUR WEBSITE: WWW.BIOSEB.COM/WHEELS

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