

AN EASY AND NON PAIN-INDUCING SOLUTION FOR ASSESSING THE LEVEL OF DISCOMFORT IN AN INJURED PAW



The rat model (BIO-SWB-R)



SWB: Incapacitance, Static Weight Bearing

INSTRUMENT OVERVIEW

While healthy, animals distribute their weight equally on both hind paws. A “unilateral hind paw tissue injury” results in a difference in weight bearing, which is measured with a lower weight applied by the injured paw. The ratio of weight distribution between the injured and non-injured paw is a natural measurement of the level of discomfort, thus of spontaneous pain, in inflammatory or nerve injury models.

Without nociceptive stimuli, and by continuously measuring the independent weight borne by each rear paw of a rodent under minimal stress, Bioseb’s Static Weight Bearing Incapacitance Test allows the objective measurement of spontaneous pain by assessing the animal’s postural equilibrium.

Beside a more ethical approach, the Incapacitance test is opening research fields which are not available when using traditional methods as the Randall & Selitto test, which is based on external stimuli to measure nociceptive thresholds and pain sensitivity.

HOW DOES IT WORK?

During the test, the rodent is placed into an size-adjustable holder. Comfortably maintained while his hind paws rest on two separated sensor plates, the animal habituates and naturally adjust its posture to its degree of pain by adapting its weight distribution on both rear paws.

Using the remote foot-switch, the operator starts the test hands-free, and launches the averaging calculation. The averaged value of the weight applied on each sensor is displayed on the brand new touch-screen console, which now shows the real-time weighing curve for left and right paw, over the test period. Thanks to its 1000 Hz sampling frequency, Bioseb’s SWB can assess extremely fast postural changes over the test period, without compromising its precise accuracy.

A unique feature of Bioseb’s SWB allows the user to repeat the measurement at will, displays and stores in the internal memory each individual test result. The Mean, standard deviation and variation are calculated by the statistical module. No PC is required during the experiment, but the data can be sent to the optional BIO-CIS software via the integrated RS-232 interface.

KEY FEATURES

- Objective measurement of spontaneous pain
- Non pain-inducing method to measure discomfort
- Easy, fast & accurate: no restraint requirements
- Real-time display: curve & average weight for each paw
- Tactile screen: user-friendly menu navigation and setup
- Stand-alone instrument
- Minimal animal-operator interaction : instrumented platform and control unit separated by a 1-meter cable
- Footswitch to tare scales and start the test remotely
- 2 adjustable holders available: 1 for mice, 1 for rats

TECHNICAL SPECIFICATIONS

Measuring range	0-2000g for Mouse or Rat
Resolution	0, 2g
Accuracy	0.1% of full Scale
Test duration	User-defined : from 1 to 99 seconds
Display	Average value for each paw and respective curves
Output	RS232 for BIO-CIS software
Internal memory	Up to 2000 measures
Animals	Rats, mice (Other animals : contact us)
Platform Dimensions	200 x 100 x 40 mm - without restrainer
Operation	Battery operated (6 to 8 hours) and/or on the mains

SWB: Static Weight Bearing - Incapacitance Test



DEDICATED SOFTWARE

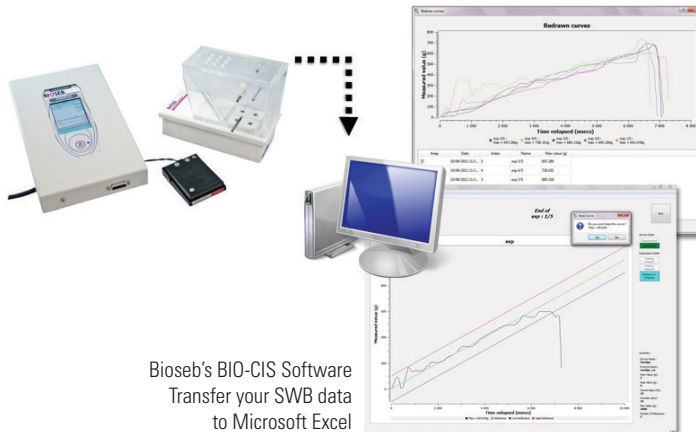
The Instrument has **an internal memory of up to 2000 tests**.

Those values are available for **transfer to a PC** thanks to the optional BIO-CIS software which collects and transfers the data acquired via the Static Weight Bearing Test into a Microsoft Excel spreadsheet, allowing you to apply advanced statistical calculations for your research.

To use our Data Transfer function, simply connect the USB/RS232 cable supplied with the device : this operation can be done at the end of your batch of experiment, as a **stand-alone equipment**.

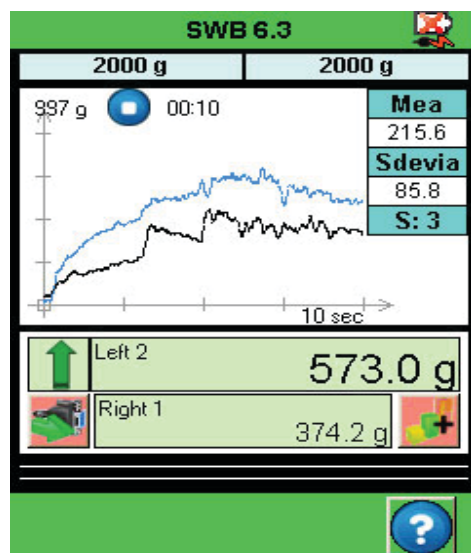
Easy to set up, this software interface uses the full power of MS Excel functions, to let you create statistical tables and graphics.

Save your time and avoid transcription errors !



Bioseb's BIO-CIS Software
Transfer your SWB data
to Microsoft Excel

UNIQUE FEATURES: TOUCH SCREEN, CURVES DISPLAY



DOMAINS OF APPLICATION

- Osteo-arthritis
- Neuropathy
- Inflammation models (CFA)
- Peripheral nerve injury models,
- Nerve or tissue injury
- Incision recovery
- Carrageenin
- Cartilage degeneration
- Mechanical hyperalgesia models
- Bone cancer pain models

and much more...

Now with a brand new touch-screen console!

- Displays the real-time weighing curves for left and right paw as well as the statistic: mean value and standard deviation
- Tactile screen: user-friendly menu navigation and setup

HIGHLIGHTED BIBLIOGRAPHY Exhaustive list on our website



Face-to-face comparison of the predictive validity of two models of neuropathic pain in the rat: analgesic activity of pregabalin, tramadol and duloxetine, *Eur. J. Pharmacol.* (2014), Le Cudennec C.. et al, DOI: 10.1016/j.ejphar.2014.04.003

Pre-emptive, early, and delayed alendronate treatment in a rat model of knee osteoarthritis: effect on subchondral trabecular bone microarchitecture and cartilage degradation of the tibia, bone/cartilage turnover, and joint discomfort, *Osteoarthritis Cartilage.* (2013), Mohan G et al, DOI: 10.1016/j.joca.2013.06.020

GABAergic pathway in a rat model of chronic neuropathic pain: Modulation after intrathecal transplantation of a human neuronal cell line, *Neuroscience Research* (2011), Vaysse L et al, DOI: 10.1016/j.neures.2010.10.006

Long-Term Pain Vulnerability After Surgery in Rats: Prevention by Nefopam, an Analgesic with Antihyperalgesic Properties, *Anesthesia and analgesia* (2009), Laboureyas E et al, DOI:10.1213/ane.0b013e3181aa956b

ORDERING INFORMATION

Reference	Description
BIO-SWB-M	For mice
BIO-SWB-R	For rats

Reference	Description
BIO-CIS	Optional Bio-CIS software
BIO-SWB-MR	Spare restrainer for mice
BIO-SWB-RR	Spare restrainer for rats

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

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