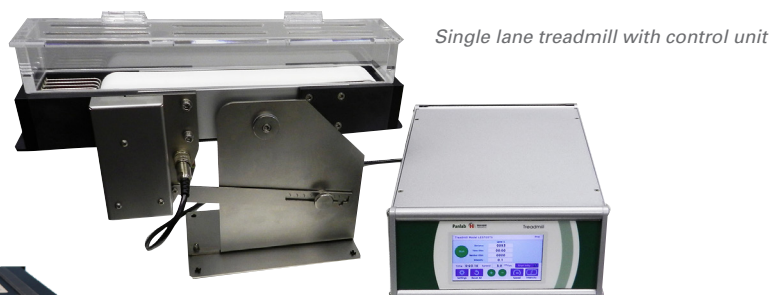


TREADMILL AND TELEMETRY

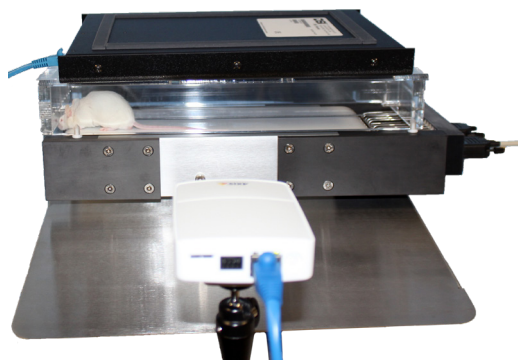
Combine telemetry with your forced exercise model.

Forced exercise using treadmills is commonly used by researchers to assess acute and chronic adaptation to exercise in particular genetic models and/or disease states.

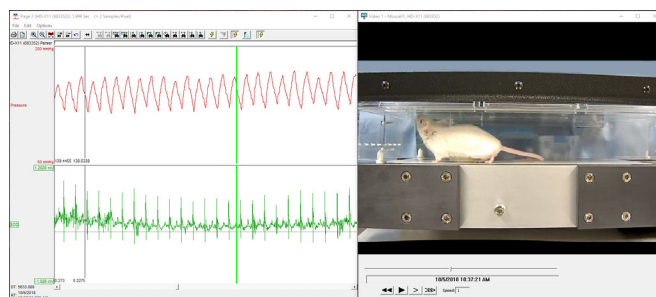
SOLUTIONS



Single lane treadmill with control unit



Mouse treadmill with telemetry receiver and video camera



Real time blood pressure, electrocardiogram, and integrated video

The treadmills can also be used to investigate physical exhaustion as well as to assess motor and locomotion post-recovery from injuries. Treadmill events, such as foot shock, can be acquired by DSI's Ponemah software via the Signal Interface solution for synchronized recording of physiologic signals from implantable telemetry. This set-up can be used in combination with the OxyletPro gas analyser, air flow unit and Metabolism software for the concomitant evaluation of respiratory metabolism (VO_2max).

APPLICATIONS

Forced Exercise
Fatigue & Exhaustion
Cardiovascular Research
Obesity
Diabetes

FUNCTIONS & PARAMETERS

- Heart Rate, Blood Pressure, ECG
- EEG, EMG, Sleep
- Respiratory Rate
- Blood Glucose
- Body Temperature
- Activity
- Distance, Speed
- Foot Shock Counts
- Respiratory Metabolism (VO_2max)

COMBINATION BENEFITS

Studies are enhanced by integrating telemetry to measure cardiovascular endpoints, leading to a better understanding of the full response on the cardiovascular system, making it possible to observe in real time the physiological changes related with respiratory metabolism and performance during exercise.

Selected References:

Contribution of Social Isolation, Restraint, and Hindlimb Unloading to Changes in Hemodynamic Parameters and Motion Activity in Rats
<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0039923>

Perfusion Pressure Is a Critical Determinant of the Intratumoral Extravasation of Oncolytic Viruses <https://www.sciencedirect.com/science/article/pii/S1525001616303367>

Exercise Training Attenuates the Development of Cardiac Autonomic Dysfunction in Diabetic Rats <http://iv.iiarjournals.org/content/32/6/1433.full>

Changes in Heart Rate and Its Regulation by the Autonomic Nervous System Do Not Differ Between Forced and Voluntary Exercise in Mice
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6055008/>

Dantrolene, a therapeutic agent for malignant hyperthermia, inhibits catecholaminergic polymorphic ventricular tachycardia in a RyR2(R2474S/+) knock-in mouse model. <https://www.ncbi.nlm.nih.gov/pubmed/20944434>