DSI Social Housing Solutions

Improving animal welfare is of utmost importance to the preclinical research community. Animal Welfare guidelines\(^1\) and directives\(^2\) recommend social housing whenever possible to benefit overall animal well-being. In addition, research shows that pair-housing can reduce stress artifacts in physiologic data\(^3,4\).

Social species thrive when housed in an environment that mimics their natural environment as closely as possible. DSI offers social housing solutions for research studies involving animals from mice to non-human primates.

Small Animal Social Housing

Social Housing for Studies Requiring Temperature Endpoints

The Anipill system offers temperature data collection, logged or in real-time, from socially housed small animal models. This portable solution collects data automatically and its simple set-up procedure helps you start your studies sooner.

The Anipill system allows for temperature research applications including:
- Infectious diseases
- Vaccine research
- Circadian rhythm

Species commonly monitored with the Anipill implant include mice, rats, guinea pigs, and other small animal models. The Anipill system can accommodate up to 16 animals per monitor and each implant can last up to 12 months, depending on sampling frequency.

*The Anipill system is only approved for sale in the U.S. and Europe.*

Pair Housing in Cardiovascular Studies

The HD-S11 supports pair housing in small animal models where cardiovascular endpoints are needed. Researchers can now simultaneously collect pressure, biopotential, temperature and activity data continuously and in real-time from two small animals in a single cage using PhysioTel HD-S11 implants.

The HD-S11 also allows researchers to conduct study designs such as:
- Behavioral studies
- Chronic stress exposure
- Comparison of drug effects in single vs. pair housed animals
- Acute stress response

Species commonly monitored with the HD-S11 implants include rats, guinea pigs and other small animal models. The battery life of the HD-S11 lasts up to 3 months, depending on which HD-S11 implant is used. In addition, when pair housing animals with the HD-S11 implant, only one receiver is needed per cage.
Pair Housing in Neuroscience Studies

With the 4ET implant, researchers can simultaneously and continuously collect four biopotential signals in numerous combinations to record EEG, EMG, EOG or ECG, in addition to temperature and activity, from two animals in a single cage. Telemetric recording of physiologic data coupled with automated sleep-wake scoring and seizure detection software facilitates the understanding of the following:

- Neurobiological regulation of sleep homeostasis
- Circadian rhythms
- Stress and arousal
- Conditioning
- Emotion and cognition

Pair housing animals with 4ET implants promotes a more natural sleep and behavior pattern, allowing for more natural physiologic data endpoints. Species commonly measured include rats, guinea pigs, and other small animal models. The 4ET is a dual module device, enabling long-term studies (up to 12 months) through a minor subcutaneous telemetry module replacement to extend battery life.

Large Animal Social Housing

Social Housing in Basic Research, Biodefense and Toxicology Studies

The PhysioTel™ Digital large animal telemetry platform was designed with social housing in mind. With solutions for both acute and chronic study designs, this platform includes two series of implants: M series and L series.

M series – One-time use implants that are ideal for acute studies. The smaller implant size allows the PhysioTel Digital technology to expand into a broader range and size of species. Primary applications for M series are toxicology and biological defense studies.

L series – Designed for chronic physiologic monitoring, various implant models are offered to collect combinations of physiologic endpoints. These implants are often used in Safety Pharmacology studies to address core battery requirements in cardiovascular and respiratory applications.

Species commonly monitored with the PhysioTel Digital implants include dogs, primates, swine, rabbits, sheep, horses and cattle. These implants can accommodate up to 16 animals per cage in the U.S. and 12 animals per cage in Europe. The battery life ranges from 35 – 105 days depending on the desired implant.

PhysioTel Digital implants are only approved for sale in North America and Europe.

References