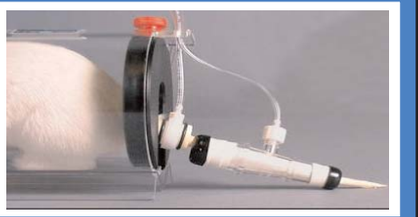
# how it WORKS

## Measuring Blood Pressure without Surgery

**Problem:** **Obtaining reliable systolic and diastolic blood pressure measurements in mice and rats without surgical intervention.**

**Solution:** **Non-invasively measure accurate and consistent blood pressure using a specially designed Volume Pressure Recording (VPR) Sensor and occlusion cuff on the animal's tail.**



**VPR technology has a 99% correlation to telemetry and invasive blood pressure measurements.**

**Six-channel system.**

The CODA™ non-invasive blood pressure system utilizes a proprietary, patent-pending Volume Pressure Recording (VPR) technology to accurately and consistently measure the systolic and diastolic blood pressure. The system also measures the mean blood pressure and heart rate. VPR is the next generation of tail-cuff blood pressure technology. The VPR tail-cuff method is clinically validated and provides 99% correlation with telemetry and invasive blood pressure measurements. The VPR sensor incorporates a specially designed differential pressure transducer that measures the systolic and diastolic blood pressure by determining the blood volume in the tail.

By relying on tail blood volume and not just the first appearance of a pulse, the VPR tail-cuff method addresses the unreliability pitfall of the older type, light-based tail-cuff sensors (photoplethysmography-PPG). Light-based tail-cuff sensors induce animal stress by requiring the animal's tail to be fixated and overheating the animal to generate a detectable pulse signal. In addition, light sensors have difficulty measuring the blood pressure of dark-skinned animals such as black C57BL6 mice.

The rise in demand for high-throughput, longitudinal studies in mice and rats requires non-invasive blood pressure systems to produce accurate and consistent data on multiple animals, simultaneously. The CODA non-invasive blood pressure systems are fully automated and can simultaneously measure up to eight animals. The CODA software is intuitive, easy to use, and includes a tutorial program for user training. The numerical blood pressure values and the blood pressure signals are displayed in real time on the computer monitor. The experimental data files can be efficiently exported to spreadsheet software programs.

The CODA system is designed for use in both awake and anesthetized animals. The VPR tail-cuff technology is clinically validated by independent comparison studies and published in numerous journals. Major universities and biotech and pharmaceutical companies use the CODA non-invasive blood pressure system in a wide variety of clinical research such as cardiovascular disease, phenotyping, atherosclerosis, asthma, liver disease, diabetes, sepsis, cancer research, obesity, and much more.

**For more information on the CODA system, please call (888) 572-8887, or visit www.kentscientific.com.**

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