



STANDARD OPERATING PROCEDURE

TITLE: Grip Strength

CATEGORY: Behavioral Assay

Introduction

Goal: The grip strength test is a simple test designed to assess motor function and control of the fore and hind paws. The Chatillon (Largo, Florida USA) DFIS-10 digital force gauge, mounted on San Diego Instruments acrylic platform was used. Either hind, fore, or both hind and fore paws can be tested.

Materials

- Subjects – any species of mouse or rat may be used.
- Apparatus –1 Chatillon (Largo, Florida USA) DFIS-10 digital force reader
- Software – None
- Accessories: San Diego Instrument’s acrylic grip strength platform,

Test Settings

- Controlled environment for Light/Dark cycle, Temperature, and Humidity.
- Set the force gauge to measure max peak in Newtons (N)
- Assure the force gauge is securely mounted onto the acrylic platform.

Testing procedures

- Weigh each subject prior to testing
- Bring animals into testing room at least one hour prior to testing
- Gently scoop mouse from testing cage
- Holding it by its tail, gently swing mouse in front of the bars of the force gauge allowing it to grab on.

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- In a continuous motion, gently pull the mouse parallel away from the bar by the tail until the mouse releases the bar.
- The maximum force prior to release of the mouse's paw from the bar is recorded
- After each trial, the apparatus is cleaned with a Virkon solution or alcohol.
- Fore, hind, or both paws can be measured on the same day during consecutive trials by letting the appropriate paws latch onto the gauge
- Allow at least 20 minutes between each trial if testing multiple limbs within the same day

Data Analysis

- Maximum force exerted should be noted in Newtons (N). This should be divided by the body weight to get force/body weight (N/g).