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## Rotarod-Test for Mice

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### ABSTRACT

The Rotarod Test Protocol for Mice assesses their motor coordination and balance. Mice are trained to walk on a rotating rod in a dimly lit environment and then tested for their ability to maintain balance as the rod accelerates from 4 to 40 RPM. The test, repeated thrice with intervals, measures the latency to fall and speed at the fall. This protocol is vital to study neurological disease such as Parkinson disease.

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We use this protocol and it's working

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## Objective

- 1 To assess motor coordination and balance in mice

## Apparatus

- 2
  - A suitable Rotarod system for mice, including a rotating rod with separate lanes and fall sensors (e.g., SD Instruments or Med Associates).
  - Dim red lighting for the test environment - not more than 50lux

## Preparation

- 3
  - Acclimate mice to the test environment and handler before testing.
  - Bring mice in their home cage to the behavioral room at least 1 hour before testing to minimize stress.

## Training

- 4
  - The goal is for mice to be able to walk forward on the rotating rod.
  - Place mice in separate lanes on the rod rotating at 5 RPM, allowing them to walk forward to maintain balance.
  - After 60 seconds on the rod, return mice to their home cage.
  - Clean the Rotarod with diluted ethanol between training rounds.

- Perform a total of three repetitions with a 5-minute interval.
- If a mouse falls off before completing 60 seconds, the round can be repeated, but total rounds should not exceed four.

## Test Procedure

- 5
  - Place mice in separate lanes on a rod starting at 4 RPM.
  - Set the Rotarod to accelerate from 4 to 40 RPM over 300 seconds.
  - The trial begins with the start of acceleration and ends when a mouse falls off the rod.
  - If a mouse clings to the rod and completes a full passive rotation, the timer for that mouse is stopped.
  - Return any fallen mice to their home cage, ensuring minimal disturbance to others still in the trial.
  - A repeat trial is conducted if the mouse passively rotates or falls off within 5 seconds of the trial start.
  - Clean the apparatus with Virkon between trials.
  - Repeat the procedure for a total of three trials with a 10-minute interval between trials.

## Data Analysis

- 6
  - Record and analyze the following parameters
  - Latency to fall.
  - Speed at the time of fall.