

# Shock Center Protocol

Protocol: Grip

Date: 2/7/17

Originator: JDN

## Before Test:

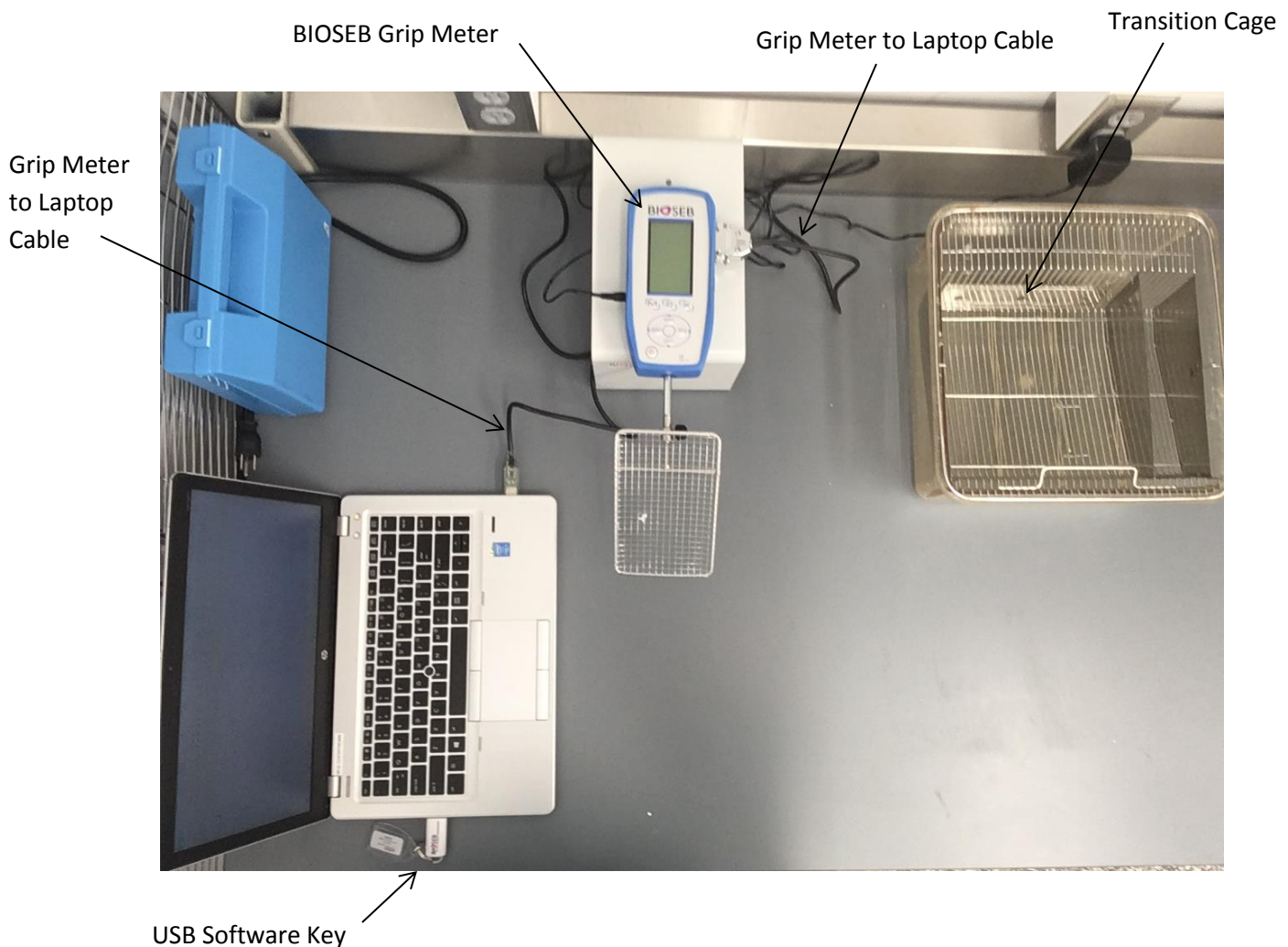
- Open file
- Save and rename file in appropriate folder
- Weigh and label mice – record weights in new file
- Arrange boxes of mice to be tested on rolling cart and move cart adjacent to grip testing area to habituate mice for 1 hour.

## Materials:

- Setup weaning cage with no shavings and w/ lid – Transition Cage

## Setup:

- Attach grid to grip meter using thumb screw
- Set BIOSEB grip meter on a solid table with meter base against a wall for additional stability
- Set laptop beside meter
- Plug USB software key into USB port on the laptop
- Attach cable from Grip Meter to another USB port on laptop computer



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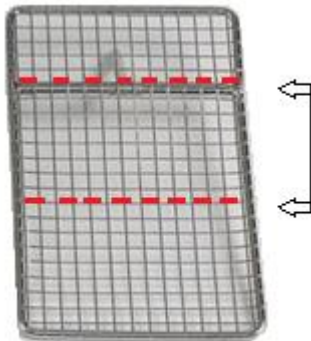
- Turn on grip meter by pressing power button
- Select the MAX button to proceed
- Set up internal memory to store a series of measures by pressing the M button
- Press TDX button to select "STATS"
- Check that the measures/samples value is set to desired samples per mouse ('6' in the 3 forepaw and 3 all paw), the operator is 1, and the unit is in grams (g). To adjust any of these values, press the TDX button and increase or decrease with Up and Down arrows on panel. Press TDX again to store change and X button to save all changes
- At the bottom of the main screen you will see STAT 001/1. The first number (001) represents the trial; the second (1) represents the number of samples within that trial. 001/3 would be the first trial and third sample in a series, or first test mouse on its third test/pull
- Open the BIO-CIS software from the laptop's desktop and select Connect Device (upper left)
- Click OK to accept settings
- Select Start Protocol. The Device drop down should read 'Grip Test.' In the Protocol drop down, select the '3 Forepaw 3 All Paw' protocol
- Click OK and an excel window will open with accompanying Data Acquisition pop-up window

Note: The internal memory will save up to 100 measures, at that point a FULL MEMORY message will appear on the screen. Since there are 6 samples per mouse as in this protocol, then 16 mice can be tested before memory must be dumped and cleared (16 mice \* 6 measures = 96 measures)

## Test:

- Wipe work surface with 70% ethanol so first animal will experience same environment as subsequent animal
- Retrieve first mouse to be tested by gently grabbing mid-tail
- Press ZERO button to tare meter, anything within the +0.0-1.0 range is acceptable since the meter only records the Max Force value
- Gripping mouse gently mid-tail, suspend just above grip grid/bar
- Wait for a slight reaching or grabbing response toward the bar then let the mouse grab grid, gently lower hand holding tail a little bit, and pull back horizontally to the table with a constant force

Note: When using the grid make sure the mouse has grasped somewhere between the middle and T-bar portion of the grid.



- After mouse has released bar/grid, the meter will display the max grip force in grams. Press TDX button to accept and record this value in the internal memory or ZERO again if it was a faulty test (i.e. mouse didn't grip properly)

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- Let mouse rest briefly on table after pull then repeat until all 6 samples for that mouse has been reached.
- Following each accepted test, the STAT x/x values will increase incrementally to help you keep track of trials and samples (For a 3 sample setup with 2 mice: 001/1, 001/2, 001/3, 001/4, 001/5, 001/6, 002/1, 002/2, 002/3 etc.)
- After mouse has been tested, deposit in Transition Cage
- Wipe down table with 70% ethanol to maintain a clean working surface.
  - ! Do not press on, or clean grid while it is attached to the meter !**
- Retrieve next mouse and repeat until 16 mice have been tested.
- Since BIOSEB Grip Meter memory is now nearly full it is necessary to transfer that data into the excel file on the laptop. In the Data Acquisition pop-up window on the laptop, click Read Value. All data from the grip meter's memory will auto populate in the excel file. Make sure that the values being transferred are accurate.
  - Note: For unknown reasons sometimes the transfer does not work properly and a random set of numbers will auto populate into the excel file instead of the values stored in the meter's memory. If this happens, close and reopen the BIOSEB, and select Read Value again.
- In Excel file, enter test subject IDs into Column A to the left of respective data
- 1) Once you are certain that the correct values have been transferred from the meter memory into the excel file, reset/clear the meter's memory
  - a. Press M button.
  - b. Press ZERO button.
  - c. Press M button to erase all data.
  - d. Once reset the STAT value should read 001/1 once more.
- 2) Continue testing the next set of 16 mice until all mice are tested. For each transfer, the excel file should continue entering values in cells where the last value left off; however, this is not always the case. If random variables are transferred instead (see 'Note' above) then delete these inaccurate values, and "save as" the working excel file with your data under a new name. Then close and reopen the BIOSEB program and attempt transferring again. Copy and paste accurately transferred values into your saved working excel file.
- When testing is complete, reset memory and power off meter
- Clean Transition Cage with 70% ethanol between boxes of mice to maintain a clean area
- Remove grid from meter, clean with 70% ethanol, and store beside meter (to prevent any possible damage if meter gets knocked)
- Return mice to PIV
- Clean work area
- From the Microsoft excel window, select File>Save As and save under desired name. Make sure to save file in the Grip Data folder which is located on the Desktop.
  - Note: Do not use Save As feature in the acquisition window; go through Excel instead.
- Organize data for upload using Upload Template where animal body weights are stored.