Supplementary Methods

The apparatus used to induce FPI consists of an enclosed box with a carbon dioxide cartridge that delivers a standardized pulse of compressed air to a standing column of fluid in an external tube which is connected to a small burrhole in the rat's skull via an injury cap. The apparatus contains a circuit board and is connected by USB cable to a laptop computer for programming parameters such as pulse pressure and duration. Before induction of FPI in each animal, the device is tested and calibrated to ensure no leaks are present. At the time of FPI, the pressure pulse is triggered using the computer, which causes the device to acquire EKG and respiration data for approximately one minute, after which a pre-charged pneumatic valve opens to pressurize the pneumatic tubing. The valve opens long enough to fully charge the tubing and then opens the pneumatic valve that connects the pressurized tubing to the fluid column, where the pressure pulse continues to the injury cap and is transmitted to the exposed dura. The valve remains open for the selected duration and the plot of pressure applied is acquired so that a record of the pressure curve is available. The data acquired during injury can be saved or discarded. The fluid column is returned to atmospheric pressure after the injury duration has elapsed while EKG and Respiration are continuously acquired for an additional five to six minutes (not recorded for this study).

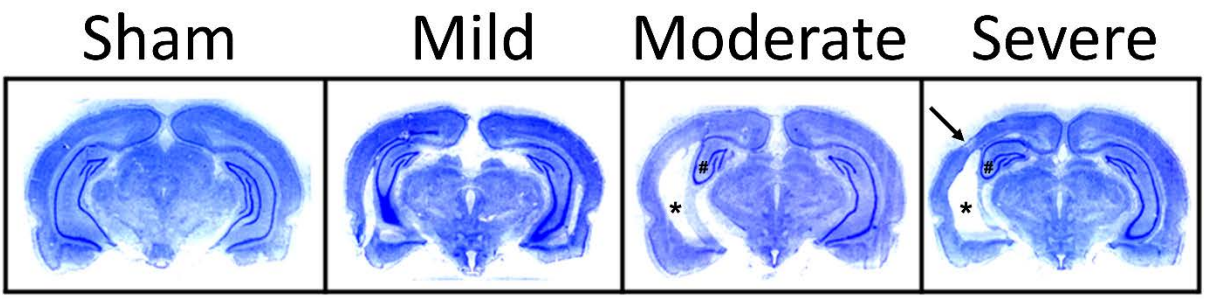

Figure S1. Representative coronal sections Nissl-stained with thionine through the level of the hippocampus in rats with sham, mild, moderate, or severe lateral fluid percussion injury.

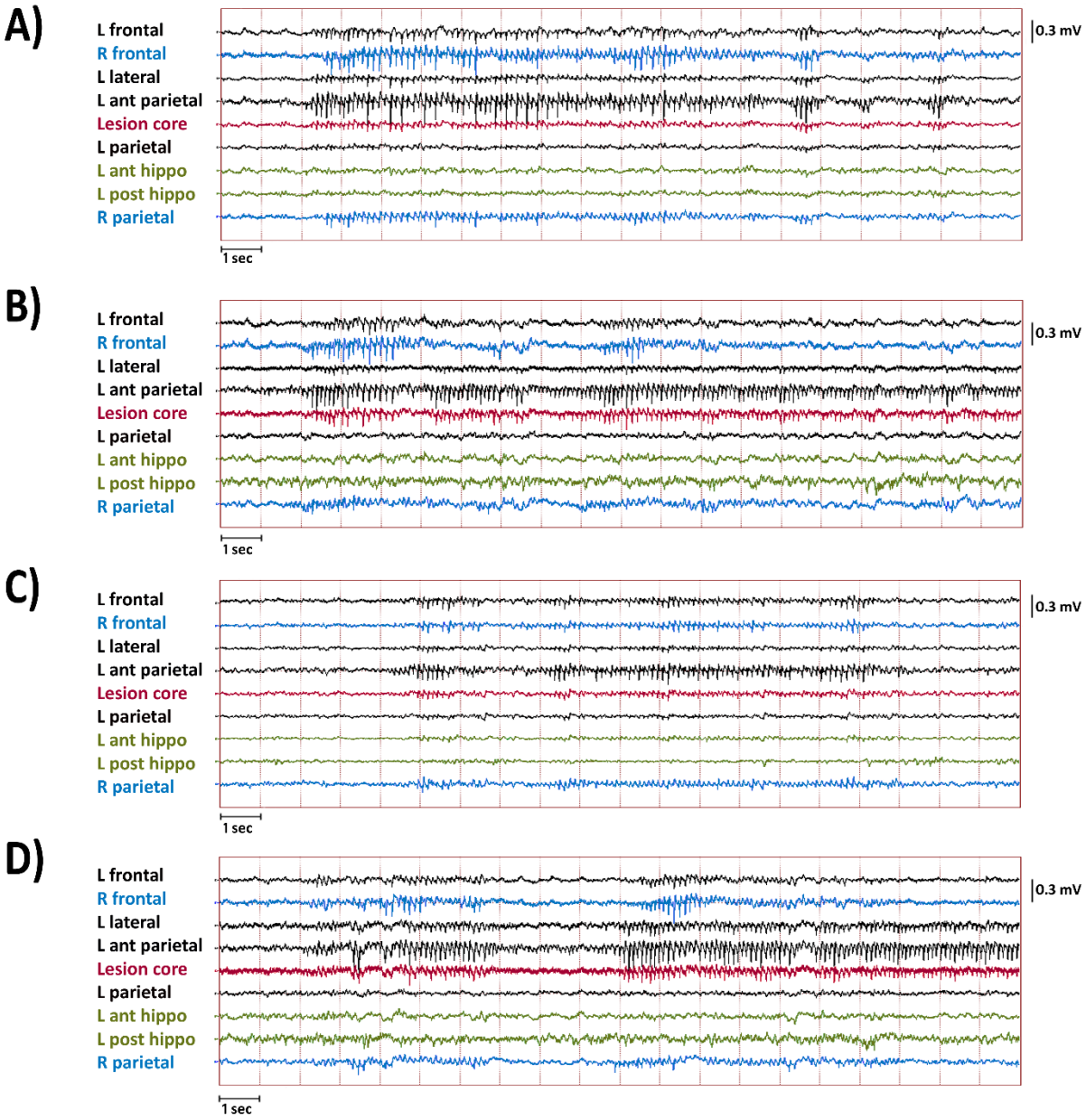

Figure S2. Further examples of focal-onset seizures recorded after lateral fluid percussion injury.