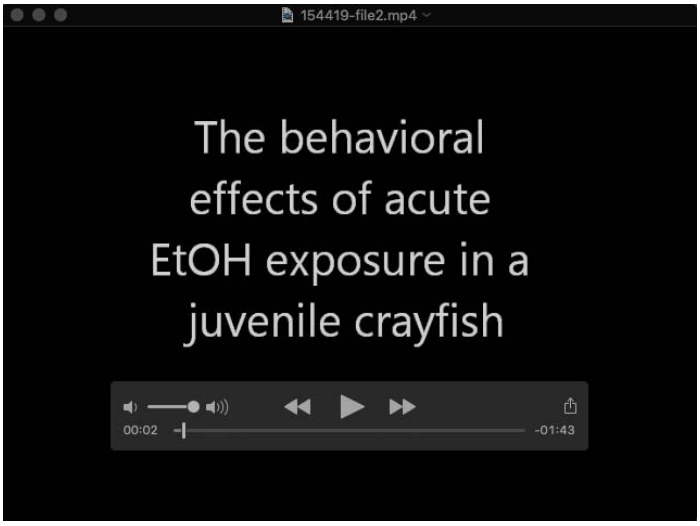

Movie 1

The video shows the behavioral changes experienced by a juvenile crayfish after exposure to 1 M EtOH in the water surrounding it. An initial period of hyperexcitability is followed by incoordination and sedation. The animal was not disturbed during filming.

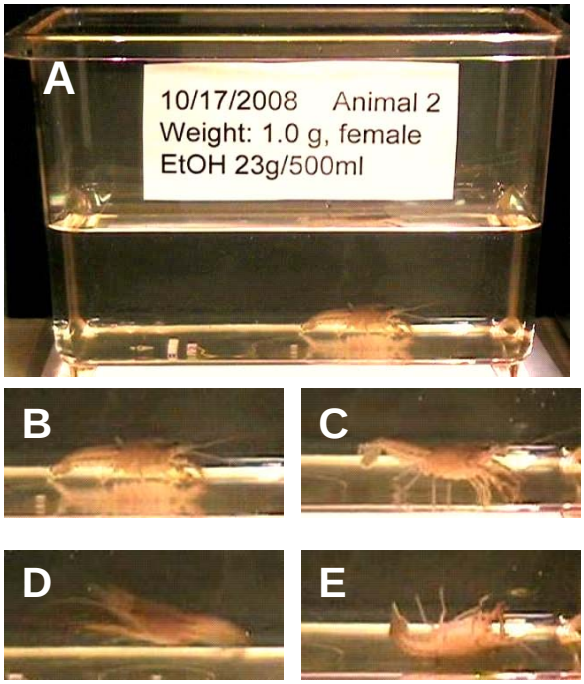

Fig. S1: Discrete behavioral changes exhibited by juvenile crayfish after EtOH exposure. A) A single juvenile crayfish was taken form a communal tank, submersed into a 1 M EtOH bath (23 g EtOH mixed in 500 mL water), and filmed with a video camera (Video S1). B) The animal shows normal behavior and no signs of intoxication. C) After 15 min in EtOH, the animal produces an elevated posture. Walking legs are extended and both thorax and abdomen are elevated. D) 10 minutes later, the animal displays spontaneous tail-flipping. E) After 40 minutes, the animal shows a supine position and is unable to immediately right itself. It still moves legs and other appendages.

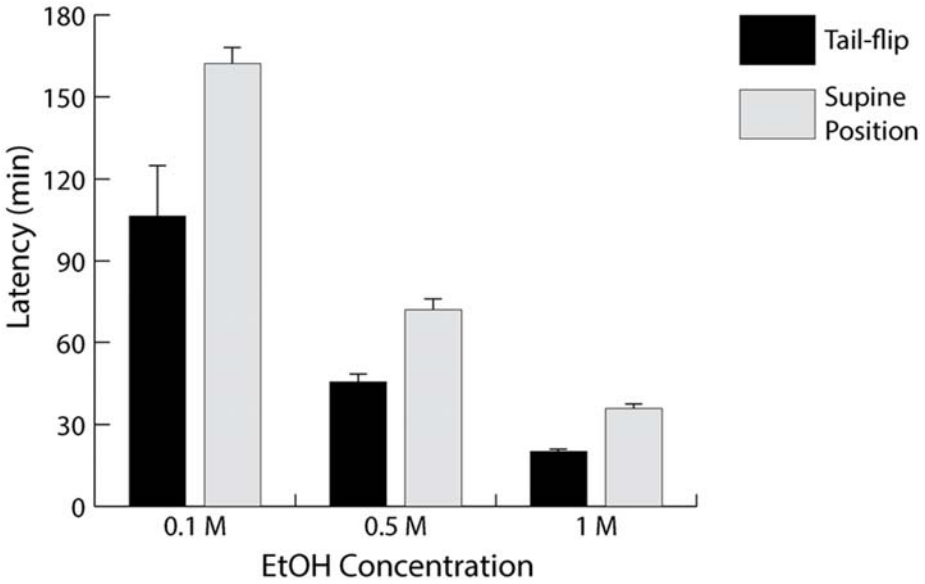

Fig. S2: Behavioral sensitivity of juvenile crayfish to EtOH exposure is dose-dependent. Exposed to either 0.1 M (N=15), 0.5 M (N=16), or 1 M (N=24) EtOH dissolved in the water surrounding them, crayfish exhibit discrete behaviors that are never observed in the absence of EtOH. The first occurrence of both tail-flipping and supine position (the animal fell on its back) were measured in minutes (mean±s.e.m) following EtOH exposure.

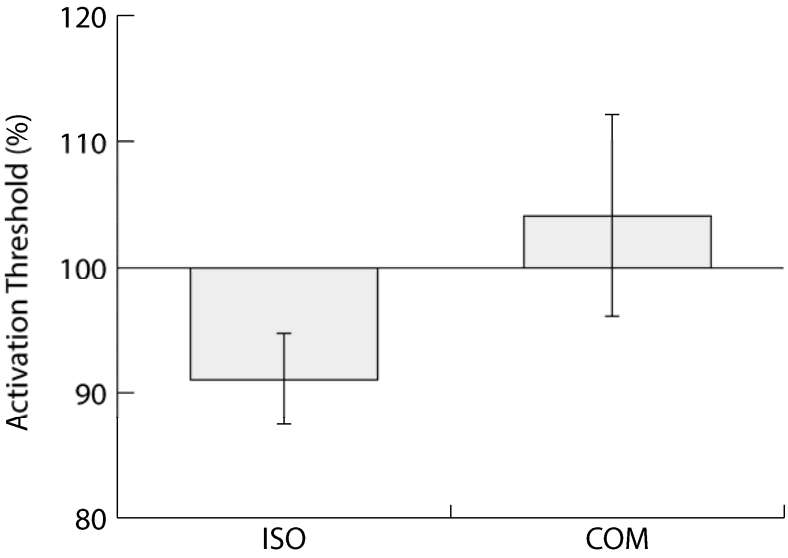

Fig. S3: LG circuit excitability increases slightly in ISOs after repeated stimulation with implanted electrodes. ISO (N=11) and COM (N=11) animals were implanted with stimulating electrodes and immersed in water. Voltage required to activate LG tail-flip (inter-stimulus interval: 2 min) was normalized as a percent of the baseline value. Activation threshold for the last 10 min in water is shown for ISOs and COMs (mean±s.e.m).

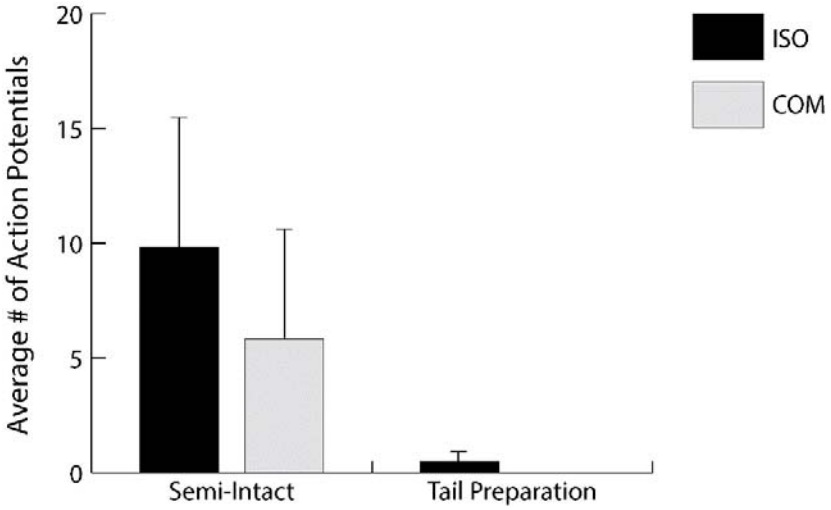

Fig. S4: LG sensitivity during saline exposure increases more in semi-intact preparations compared to tail preparations and is generally higher in ISOs. Semi-intact and tail preparations were exposed to 60 minutes of saline and the average numbers of action potentials (mean±s.e.m) were measured for ISOs (semi-intact: N=6, tail: N=4) and COMs (semi-intact: N=6, tail: N=4).