Concussion  
Feeling dizzy, disoriented, having attention or memory problems, and nursing a headache – these are   
typical symptoms of a mild traumatic brain injury (TBI), commonly referred to as a concussion.  
Approximately 1.6 and 3.8 million sports-related TBIs are estimated to occur each year.  
Results of TBI research and expert opinions of medical personnel agree that for a window of time while   
the brain is healing, a single concussion can leave the brain vulnerable to more devastating outcomes   
due to a second impact.  
Rodent models are often created to mimic human conditions in a controlled, experimental way.  
Young (adolescent, n = 18) and aged (over 1 year, n = 18) male mice were included in the study (N=36).  
Each group received either no concussions, a single concussion on the first day only, or a concussion on   
each of the four days.  
Following a one week recovery period, mice learned to find an escape box in the Barnes circular maze   
using visual cues, a cognitive mapping task for memory formation that requires a properly functioning   
hippocampus. The Barnes maze consists of 40 evenly spaced holes around the perimeter of an elevated   
circular platform. Only one of the holes leads to an escape box. Three bright (500 Watt) lights   
positioned above the maze were used as a mild aversive stimulus to motivate the mice to seek out and   
enter the escape box. Lower latencies (time to find the box) indicate better performance in the maze.