

# ASSESSMENT OF ADULT PIG COGNITION USING AN OPEN FIELD AND OBJECT RECOGNITION TEST

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## ABSTRACT

Behavioral testing allows for the evaluation of learning and memory, and is an integral component for assessing functional deficits in current models of neural injury and disease. Pigs have become a model of interest for neurobehavioral research based on morphologic similarities to the human brain. Studies assessing neurodevelopment in pigs have revealed that they possess sophisticated cognitive abilities, however, further optimization to assess learning and memory capabilities are needed. The present study utilized object recognition testing and open field testing as a means of assessing spontaneous trial-unique memory, and normal/abnormal behaviors, respectively. We hypothesized that object recognition testing would reveal more time spent investigating novel objects than familiar ones, and that when placed in an open field, pigs would demonstrate exploratory behavior. Four male pigs, approximately 5-6 months of age were used. For the open field test, pigs were placed in the arena for 10 minutes and their behavior recorded. At the start of the object recognition test, two similar objects were fixed to opposite corners in the arena, and the pigs were allowed to investigate them for 10 minutes, followed by a 10 minute inter-phase interval, and a 10 minute test trial in which one of the previous objects was replaced with a novel object. All open field and object recognition trials were recorded via overhead camera and analyzed with Ethovision software. These tests provide valuable insight on pig cognition, and will allow efficacy assessments for treatments targeting the improvement of learning, memory, and behavior.