

DETERMINATION OF NORMAL PIG BEHAVIOR USING AN OPEN FIELD BEHAVIORAL TEST

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ABSTRACT

Approximately 2 million people experience a Traumatic Brain Injury (TBI) each year. TBI occurs when an external force injures the brain and can affect learning, memory, motor functions, and behavior depending on the severity of the damage. It is especially detrimental to normal development in young children whose brains are still maturing. Behavioral tests, such as an open field test, can be used to assess both normal and abnormal behaviors in a more translatable large animal pig model. We hypothesize that in an open field test normal piglets will initially exhibit common behaviors such as high exploratory interest and movement but will become habituated to the testing arena over time. Four piglets were used in the open-field test. They were placed into a 12' x 14' arena and observed for 10 minutes twice, seven days apart, to assess their normal open field behaviors such as zones entered, time spent moving, stationary, sniffing/exploring, and trying to escape. As the pigs got used to the arena, they generally entered fewer zones, became less exploratory, less mobile, less anxious, and more stationary. We concluded that these normal piglets spent significantly more time exploring their environment on the first day of testing and overall did not exhibit any unusual behaviors. This data will serve as a comparison to the behavior of piglets with TBI in order to determine the damage extent of the TBI and help us understand what parts of the brain are being affected.