ABSTRACT

Considering the decision process, orbitofrontal cortex (OFC) has been appreciated for roles related to subjective value. However, improper disengagement of learning and implementation within tasks has under-valuated the role of idling states. I developed a task that teaches wise knowledge to be tested on later days. Mice can keep their choices across days, while sleep deprivation (SD) before the test biased choices away from wise decisions. OFC activity manipulations showed that not only that pre-test idling state is decisive for wise choices, but also the post-training idling state if perturbed could trigger a remote negative bias away from rationality. In vivo calcium imaging from freely moving animals permitted extraction of features representing high-performance. I also tracked neural correlations representing this high-performance thru idling states. Together, I established a task that detaches learning from implementation, thus granted us access for the origins of logical computing within idling states.