



SD.01. Memory for time of training modulates performance on place conditioning task in marmoset

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Introduction: In rodents, the expression of a reward-conditioned place preference (CPP) is regulated in a circadian pattern such that the preference is exhibited strongly at the circadian time of prior training but not at other circadian times. Because each animal is trained only at a single circadian phase, the concept of time as a context cue is derived from a rhythmic internal state rather than learned explicitly from the external cues. We now report that the same “time memory” is expressed following context conditioning in the common marmoset (*Callithrix jacchus*). **Methods:** Animals were trained at a specific time to discriminate between an unpaired context and a context paired with food reward. Marmosets were then tested for preference at circadian times that were either the same or different from the training time, morning and afternoon groups. **Results:** Pre-exposure sessions for both the morning and afternoon groups demonstrated that there was no pre-existing preference or bias for either of the two chambers. Following conditioning, a preference for the rewarded context developed but was present only in the animals tested at the same time of training. This preference is indicated by both a lower latency to make the first contact, and higher frequency of interactions with the rewarded context. The combination of the two measures, frequency of interactions with the context and latency to make the first contact with each context, reveals that the food rewards used here were clearly rewarding and can condition a place preference in marmosets. **Conclusion:** The results show that time of day learning can be generalized to this new world primate implying that a similar circadian mechanism might regulate craving for reward in diverse mammals including human beings.

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