

**REMOTE REGISTRATION OF EEG AND CORE BODY TEMPERATURE IN MARMOSET MONKEYS**

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A number of studies of non-human primates require the extended or continuous collection of physiological data. For welfare and scientific reasons restraining of the animals, their handling and invasive procedures should be restricted to a minimum. The only approach that fulfills these conditions is the remote collection using autonomous devices that transmit the collected data wirelessly. The overall objective of this study was the validation of technologies for remote monitoring systems that enable accurate measurement physiological parameters such as core body temperature (CBT), EEG and actimetry in unrestrained marmoset monkeys. This procedure represents a significant refinement and improvement for longitudinal studies in this species. All experiments were conducted in accordance with the European and German regulations on animal welfare. For registration of CBT we used the implantable REMO 200 transmitter (Remo Technologies, Salisbury, UK). This system is suitable for long term use and allows to monitor simultaneously a group of subjects in the home cage and requires no modifications of the enclosure. For wireless EEG registrations and actimetry in group-housed animals we adapted the Neurologger (NewBehavior, Zurich, Switzerland) for measurements in marmoset monkeys. Results show that marmosets have clear diurnal alterations in CBT and exhibit sleep cycles with stages alternating between non-REM and REM sleep. In conclusion, the combination of two innovative technical approaches allows measuring CBT, EEG and activity in multiple subjects simultaneously, improving the quality of results with significant improvements in welfare and reductions in number of required subjects.

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