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Abstract

Rodent behavior under near-infrared illumination

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Observation of rodent behavior is a widely used tool for determining the effects of environment, genetic manipulations, and drug effects. In this study computer vision techniques were used to non-invasively examine and compare the effects of near-infrared illumination (NIR) on behavior under 880nm and 940nm near-infrared illumination (NIR) versus under "visible" white light (wavelengths 450-750nm). Effects examined include locomotion, thigmotaxis, travel velocity, and specific behaviors such as grooming, sitting and sleeping, stretch/attend. Subjects were 6 experimentally naïve Sprague-Dawley rats housed in a reversed 12-hour light-dark cycle. Trials were run in the daytime, during the rats' dark cycle. Overall locomotion decreased under "visible" illumination and an increase in sleeping was noted.