

- ◆ **Automated assessment of the visual contrast-sensitivity function in the hooded rat**
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The spatial contrast-sensitivity function (CSF) is a sensitive, quantitative behavioural test for assessing spatial visual function that is comparable across species. Rat vision is widely assumed too poor for meaningful psychophysical assessments, and the perceptual characteristics of vision in rats, despite their extensive laboratory use, have been rarely studied. We have developed an automated method for rapid assessment of the hooded rat's CSF using a standard computer monitor for stimulus display and an infrared touch screen as response detector. Sine-wave gratings, varying in contrast and spatial frequency, were presented in a six-alternative forced-choice task;

a rat's nose-poke to the target stimulus resulted in reinforcement (water), and nose-pokes to other locations repeated the trial with a short aversive time-out. Spatial frequencies assessed were in the range of 0.041 to 0.78 cycle deg⁻¹; at each spatial frequency tested, stimulus contrast changed according to a simple adaptive procedure. Psychometric functions were determined by fitting a logistic function to the binary response data with the use of a maximum-likelihood fitting procedure (L O Harvey Jr, 1997 *Spatial Vision* **11** 121–129), and the point of inflection was taken as the threshold. The CSFs obtained had the typical inverse-U shape. Peak sensitivity was 7% Michelson contrast occurring at 0.10 cycle deg⁻¹ and acuity was 1.1 cycles deg⁻¹, similar to previous data. We consider this procedure a valid method for rapid determination of the rat's CSF and a rigorous tool for spatial vision assessment after experimental manipulations of the visual system.