Fine scale measurements of the blind spot borders

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Introduction

The blind spot is both a nuisance and a necessity for seeing, since it represents the position at which the optic nerve leaves the retina. Although the blind spots presence and position (approximately 15 degree in the lateral periphery) have been studied, the precise way in which vision transients into blindness is to date unknown. A chief challenge to a precise mapping of this transition is the inevitable wandering of the human fovea even during careful fixation. As the fovea moves, a stimulus at a constant position in space will at times fall onto the functioning retina and sometimes into the blind spot. Hence mapping results will be spatially smeared. We measured the nasal and temporal blind spot border along the horizontal meridian under retinal stabilization.



Approximate position of the human blind spot from the literature. To try it, fixate at the white cross in the task section, cover your left eye and vary the distance to the poster (approx 2 meters). Observe Map on the right.



Optic disc and vessels (right) and fovea (left) illustrated by an ophthalmoscopic image.

Methods















Vision at the blind spot border does not end abruptly but rather a narrow border region exists with reduced visibility.

 Average nasal onset is at 12.54 (.95) deg and average temporal offset is at 18.55

> The characteristics under investigation, steepness, width and onset exhibit regularities and dependencies.

the larger is its width (r = .591, p = .04)