A Method to Measure Perceptual Thresholds

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SUMMARY

UCLA researchers in the Department of Psychology have developed a method to accurately measure a patient's perceptual (visual, auditory, etc.) threshold unaffected by patient response bias.

BACKGROUND

There are more than 200,000 cases of glaucoma in the US every year. Computerized threshold perimetry is the gold standard for visual field testing, a necessary part of glaucoma patient management. The SITA (Swedish Interactive Threshold Algorithms) uses a spot light that is presented somewhere in the visual field and the participant needs to respond whether or not the light has been seen to diagnose and determine glaucoma progression.Although quick and easy, there are no "catch" trials (when no light is presented), resulting in participant biased results.Namely, a participant may be unconsciously inclined to respond, correctly, "light seen," even if they have not seen the spot light.). There is a need for a short and easy test that excludes participant bias.

INNOVATION

UCLA researchers have devised a method to measure a patient's perception with high accuracy and speed utilizing Signal Detection Theory.This design minimizes participant biases and offers a method to more accurately measure people's ability to see in the visual field. The method can also be applied to auditory tests for people of all ages, to accurately determine the ability to hear in the entire range of temporal frequencies (an ability that changes as people age).The current method used in major hospitals suffers similar problems as perimetry.

APPLICATIONS

- Glaucoma monitoring
- Hearing loss test
- Visual field test

ADVANTAGES

- High accuracy
- Fast
- Facile

STATE OF DEVELOPMENT

The method has been tested in perimetry.

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OTHER INFORMATION

KEYWORDS

visual field test, glaucoma monitoring, hearing loss, signal detection theory

CATEGORIZED AS

- **Medical**
  - Diagnostics
  - Disease: Ophthalmology and Optometry

RELATED CASES

2019-853-0

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