

2009 Research Days Abstract Form – Department of Ophthalmology – UNIFESP/EPM

2. SCIENTIFIC SECTION PREFERENCE (REQUIRED): EF

Review the Scientific Section Descriptions. Select and enter the two-letter Code for the one (1) Section best suited to review your abstract.

3. PRESENTATION PREFERENCE (REQUIRED) Check one:

- Paper
- Poster
- FAST Paper

4. The signature of the First (Presenting) Author (REQUIRED) acting as the authorized agent for all authors, hereby certifies that any research reported was conducted in compliance with the Declaration of Helsinki and the 'UNIFESP Ethical Committee'

Eric Pinheiro de Andrade

Scientific Section Descriptions (two-letter code):

- (BE) OCULAR BIOENGINEERING
- (CO) CORNEA AND EXTERNAL DISEASE
- (CA) CATARACT
- (EF) ELECTROPHYSIOLOGY**
- (EP) EPIDEMIOLOGY
- (EX) EXPERIMENTAL SURGERY
- (GL) GLAUCOMA
- (LA) LABORATORY
- (LS) LACRIMAL SYSTEM
- (LV) LOW VISION
- (NO) NEURO-OPHTHALMOLOGY
- (OR) ORBIT
- (PL) OCULAR PLASTIC SURGERY
- (PH) PHARMACOLOGY
- (RE) RETINA AND VITREOUS
- (RS) REFRACTIVE SURGERY
- (RX) REFRACTION-CONTACT LENSES
- (ST) STRABISMUS
- (TR) TRAUMA
- (TU) TUMORS AND PATHOLOGY
- (UV) UVEITIS
- (US) OCULAR ULTRASOUND

Deadline: Oct 12, 2009

FORMAT:
Abstract should contain:

Title
Author, Co-authors (maximum 6),
Purpose, Methods, Results,
Conclusion.

Poster guidelines:
ARVO Abstract Book (1.10 x 1.70m)

51. FIRST (PRESENTING) AUTHOR (REQUIRED):

Must be the author listed first in abstract body.

- () R1 () R2 () R3 () PIBIC
- (X) PG0 () PG1 () Fellow () Technician

Last Name: Andrade

First Name: Eric

Middle: Pinheiro

Service (Sector): Electrophysiology (EF)

CEP Number: 0503/08

5. ABSTRACT (REQUIRED):

AMBLYOPIA DIAGNOSED BY GRATING AND OPTOTYPE ACUITY: A COMPARATIVE STUDY

Andrade EP, Sacai PY, Pereira JM, Berezovsky A, Salomão SR

Purpose: Amblyopia, or "lazy eye", often develops when unequal refractive power (anisometropia) or misalignment of the visual axis (strabismus) of the two eyes interferes with focused and balanced binocular vision early in development. This leads to a condition in which information from the affected eye is not processed properly because of binocular competition leading to reduced visual acuity. Interocular best-corrected visual acuity difference without any underlying organic lesion is the main parameter for amblyopia clinical diagnosis. Our purpose is to compare the ability to diagnose amblyopia of two different types of visual tasks – grating and optotype acuity.

Methods: This study was submitted and approved by UNIFESP Committee on Ethics in Research (0503/08). Sweep visually evoked potentials and a retro-illuminated ETDRS chart were used to measure monocular grating and optotype acuity, respectively. A group of 10 patients (6 females) with amblyopia (7 with strabismus and 3 anisometropics), aging from 5 to 14 years (mean 8.8±2.7 years), without other ocular or cerebral disease was tested. Interocular acuity differences (IAD) were determined in logMAR.

Results: Optotype acuity ranged from 0.0 to 0.3 logMAR (mean 0.07±0.11 logMAR, median 0.0 logMAR) in the fellow eye and from 0.28 to 1.20 logMAR (mean 0.60±0.26 logMAR, median 0.57 logMAR) in the amblyopic eye. Grating acuity was comparable with optotype acuity in the fellow eye, ranging from 0.06 to 0.21 logMAR (mean 0.09±0.05 logMAR, median 0.08 logMAR). A significantly better grating acuity was found in the fellow eye (mean 0.41±0.3 logMAR, median 0.31 logMAR) when compared with optotype acuity (paired t-test; p=0.001886). Substantially larger IADs (paired t-test; p= 0.000109) were detected by optotype acuity (mean 0.53±0.29 logMAR, median 0.48 logMAR) when compared to grating acuity (mean 0.32±0.30 logMAR, median 0.20 logMAR).

Conclusions: In this small cohort of patients, amblyopia detected by grating acuity was underestimated when compared to the clinical gold-standard optotype acuity. These results corroborate previous findings that amblyopia causes deeper functional deficits in more complex visual tasks such as optotype acuity. Moderate amblyopia might be misdiagnosed by grating acuity reflecting a poor sensitivity and high specificity of this test.

Keywords: electrophysiology; clinical; visual acuity; amblyopia.