

Accommodation lag under monocular and binocular conditions in symptomatic and asymptomatic emmetropes

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Introduction

With increasing near work frequently we see people complaining about near vision. One of the most important near vision function is eye accommodation so the aim of the study was to evaluate differences between accommodation response for symptomatic and asymptomatic young emmetrope subjects.



Methods

- Open field autorefractometer (Shin-Nippon SRW-5000)
- 20 subjects (24 ± 4 years)
- 3 distances (40 cm, 30 cm and 24 cm)
- Each distance monocular and binocular condition
- One measurement 2 min long (~130 data points)
- Random order
- Dynamic stimulus



Conclusions

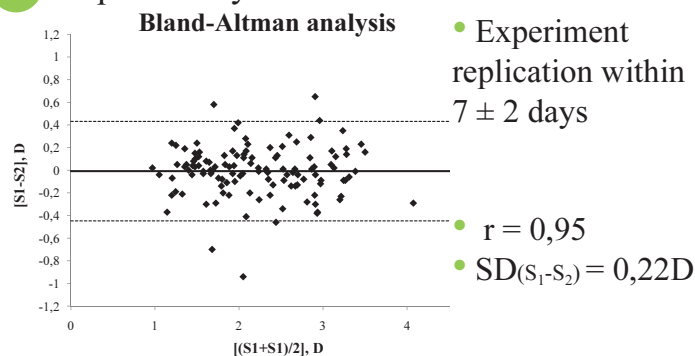
- In binocular condition eye accommodation work more precisely and more stable
- We did not find difference between accommodation lag or SD comparing symptomatic and asymptomatic emmetropes
- Other possible reasons for near work symptoms could be vergence system problems, longer near task (>2 min), ergonomic problems e.t.c.

Acknowledgements

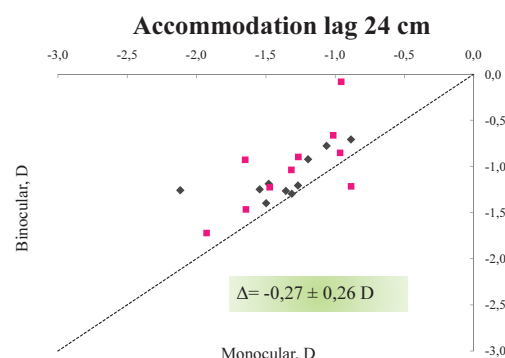
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Results

1. Repeatability

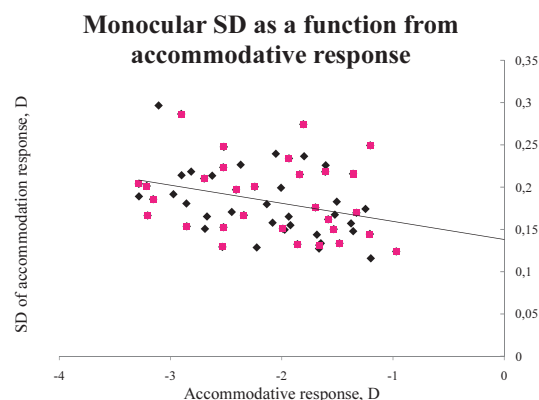


2. Monocular versus binocular : lag



- Accommodation lag binocularly < monocularly ($p < 0,001$)
- Difference (mon-bin) 24 cm > 40cm ($p < 0,01$)
- Symptomatic (■) = asymptomatic (◆) ($p > 0,05$)

3. Monocular versus binocular : SD



- With increased demand, SD also increase ($p < 0,05$)
- SD binocularly < monocularly ($p < 0,001$)
- Symptomatic (■) = asymptomatic (◆) ($p > 0,05$)