

Supplementary Table S1. Diagnostic criteria for accommodative and non-strabismic binocular dysfunctions.

Dysfunction	Complaints	Diagnostic criteria
Accommodative insufficiency (the patient has difficulty achieving an age-expected accommodative amplitude)	Similar to those associated with presbyopia. Mainly associated with near tasks: blurred near vision, discomfort and eye strain, fatigue and difficulty maintaining attention and concentration during near work.	Fundamental signs: - Reduced AA – at least 2.00 D below the expected minimum value calculated using Hofstetter's formula: $15 - \frac{age}{4}$ and - MAF < 10 cpm (difficulty with the –2.00 D flipper) Complementary signs: - BAF < 10 cpm (difficulty with the –2.00 D flipper) - PRA ≤ 1.25 D - PFV < 12/15/4 Δ – the blur point range at near may be reduced
Ill-sustained accommodation (the patient has difficulty maintaining a defined amount of accommodative response)	Complaints can be similar to those described for accommodative insufficiency; however, they typically appear after a short period of near work (e.g., 5–20 min).	Fundamental sign: - MAF < 10 cpm (difficulty with the –2.00 D flipper) Complementary signs: - BAF < 10 cpm (difficulty with the –2.00 D flipper) - PRA ≤ 1.25 D - PFV < 12/15/4 Δ – the blur point range at near may be reduced
Accommodative infacility (the patient has difficulty rapidly changing the accommodative response)	Transient blurred vision when changing focus from distance to near and vice versa.	Fundamental sign: - MAF < 10 cpm (difficulty with the ±2.00 D flipper) Complementary signs: - BAF < 10 cpm (difficulty with the ±2.00 D flipper) - PRA ≤ 1.25 D - NRA ≤ 1.50 D - PFV < 12/15/4 Δ – the blur point range at near may be reduced - NFV < 9/17/8 Δ – the blur point range at near may be reduced
Accommodative excess (the patient has mild difficulty relaxing accommodation)	Asthenopia and headaches associated with near tasks, and intermittent blurred distance vision, especially at the end of the day.	Fundamental signs: - Signs of pseudomyopia with visual acuity improvement after fogging or - MAF < 10 cpm (difficulty with the +2.00 D flipper) Complementary signs: - BAF < 10 cpm (difficulty with the +2.00 D flipper) - NRA ≤ 1.50 D - NFV < 9/17/8 Δ – the blur point range at near may be reduced

Accommodative spasm (the patient has severe difficulty relaxing accommodation)	Asthenopia and headaches associated with near tasks, and blurred distance vision.	Fundamental signs: • Reduced visual acuity at distance (mimicking myopia) with sluggish adjustment of the vision correction • Reduced visual acuity at near with the best vision correction for distance and • MAF < 10 cpm (difficulty with the +2.00 D flipper) Complementary signs: • BAF < 10 cpm (difficulty with the +2.00 D flipper) • NRA ≤ 1.50 D • NFV < 9/17/8 Δ – the blur point range at near may be reduced
Convergence insufficiency (the patient has difficulty maintaining the required amount of convergence)	Associated with reading and near tasks. May include: asthenopia and headaches, intermittent blurred vision, intermittent diplopia, symptoms worsening at the end of day, burning or tearing of the eyes, difficulty sustaining attention and concentration at near, words appearing to move on the page, sleepiness when reading, decreased reading comprehension over time, slow reading.	Fundamental sign: • Exophoria at near at least 4 Δ greater than exophoria at far Complementary signs: • NPC > 6 cm • AC/A ratio < 2:1 (using the gradient method) • PFV < 12/15/4 Δ (reduced findings in at least one of the three parameters at near) • BAF < 10 cpm (difficulty with the +2.00 D flipper) • NRA ≤ 1.50 D
Convergence excess (the patient has a greater convergence response than required for the viewing distance)	Associated with reading and near tasks. May include: asthenopia and headaches, intermittent blurred vision, intermittent diplopia, symptoms worsening at the end of the day, burning or tearing of the eyes, difficulty sustaining attention and concentration at near, words appearing to move on the page, sleepiness when reading, decreased reading comprehension over time, slow reading.	Fundamental sign: • Esophoria at near is at least 2 Δ greater than esophoria at far Complementary signs: • NFV < 9/17/8 Δ (reduced findings in at least one of the three parameters at near) • AC/A ratio > 6:1 • PRA ≤ 1.25 D • BAF < 10 cpm (difficulty with the –2.00 D flipper)

Abbreviations: AA – accommodative amplitude, MAF – monocular accommodative facility, BAF – binocular accommodative facility, PRA – positive relative accommodation, PFV – positive fusional vergence, NRA – negative relative accommodation, NFV – negative fusional vergence, AC/A – accommodative convergence over accommodation, D – dioptres, cpm – cycles per minute, Δ – prism dioptres, cm – centimetres.