

## Screening and Treating Refractive Amblyopia in Remote Regions

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Background: We have adapted existing and emerging technology to outreach clinics in remote Alaska villages and displaced communities in Eastern Burma since 1995.

Surgical care of cataracts and strabismus is helpful, but more community vision can be gained by addressing refractive error and amblyopia for children in remote regions.

Support Local: It is almost always best to work closely with existing providers of health screening, eye exams, refraction and dispensing spectacles. If communities lack such resources, efforts to travel, visit, provide clinics, educate, supply and dispense are recommended.

Challenges of remote effective eye clinics include travel, transport, language, hostilities, facilities, temperature, humidity, available and consistent electricity and internet.

Pediatric vision screening seeks to find treatable disorders in a timely manner<sup>1</sup> and can be objective (photoscreening, autorefraction, birefringent scanning) and sensory (visual acuity, stereopsis, suppression, color, contrast sensitivity).

Multimodal pediatric vision screening has been applied to remote Alaska villages<sup>2</sup>

Objective screeners used remotely (remote features):

Plusoptix: batteries AA, adjust referral criteria, valid refractions, sturdy

2WIN: charge USB, valid refractions, sturdy

SPOT: require 110V, poor in hot humid, valid refractions

GoCheck Kids: internet or can work remotely, portable, not full refractions

Rebion blinq: fragile, risk of roll or be dropped, no refraction

Retinomax: 110-240V or Lithium Sony, Good refraction with keratometry, monocular

(<https://vimeo.com/pdimd/photoscreeners>)

Visual Acuity:

ABCD free download printable HOTV match<sup>3</sup>: (<https://www.abcd-vision.org/vision-screening/HomeAcuityTest.html>)

Precision Vision Flip-card HOTV pinhole match<sup>4</sup>: (<https://precision-vision.com/products/visual-acuity-reading-charts/letter-symbol/hand-held/abcd-acuity-test-flip-book/>).

EyeMobil VisionKeys: (<https://www.eyemobil.com/products/Vision-Keys-Digital-Visual-Acuity-System-p621908333>)

Portable autostereoscopic, multi-cultural near acuity game<sup>5</sup>.

Confirmatory Exam:

Phoropter Trapeze<sup>6</sup>.

Accommodation Relaxing Skiascopy. With practice, it is possible to quickly refract most children uncovering 93% of cycloplegic hyperopia. Horizontal increasing convex lenses effectively fog the non-retinoscoped eye. Best tolerated by children in the form of fun school bus or airplane<sup>7,8</sup>.

Remote Spectacle Dispensing:

If parcel delivery is an option for patients, then ordered and on-line delivered, sturdy spectacles may be a great option. i.e.: (<https://www.zennioptical.com/b/kids-flexible-glasses-frames>).

Donated spectacles often have sphero-cylinder culled, but if you can retain and catalog pediatric spectacles, then the ABCD ellipsoid method<sup>9</sup> can allow lay persons to dispense the closest visual match to patients (<https://vimeo.com/582375037?share=copy>).

Adjustable Spectacles can provide spherical options even for anisometropia

([https://topconsumer.review/review/adjustable-glasses-reviews/?gad\\_source=1&gbraid=0AAAAAo\\_d86RAVgfbw\\_Po1o-ZljZbM7KTt&gclid=CjwKCAjwqre1BhAqEiwA7g9Qhje4lQ3J8gcJQPX8UvhSVYIMPAPQdfleFOhYYr\\_wDs43DYO5K91tgRoC\\_N8QAvD\\_BwE](https://topconsumer.review/review/adjustable-glasses-reviews/?gad_source=1&gbraid=0AAAAAo_d86RAVgfbw_Po1o-ZljZbM7KTt&gclid=CjwKCAjwqre1BhAqEiwA7g9Qhje4lQ3J8gcJQPX8UvhSVYIMPAPQdfleFOhYYr_wDs43DYO5K91tgRoC_N8QAvD_BwE)).

Custom sphero-cylinder spectacles (<http://www.burmavision.com/BV-Equipment/index.html>)

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[www.ABCD-Vision.com](http://www.ABCD-Vision.com)

[www.BurmaVision.com](http://www.BurmaVision.com)

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