Burma Vision: Remote, Portable “Lenscrafters”

Robert W. Arnold, MD
the Alaska Blind Child Discovery
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Audience Questions

• How many have done remote eye missions?

• Consider your most remote:
  • Are there local eye doctors within 50Km?
  • Is there local optical dispensary within 50K?
  • Are there cell phones?

• Can postal deliver to patient’s location?
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Remote Alaska Vision

Mail back spectacles
Karen State, Burma

100,000 need glasses

Hyperopic against-the-rule
Astigmatism

Backpacks
The Eyes Have It  More than a billion people in the developing world need glasses. But opticians aren’t exactly on every black in sub-Saharan Africa. In some places the ratio is one to one million residents. Pondering this problem, Oxford University physics professor Joshua Silver came up with a brilliantly simple solution: a pair of eyeglasses, currently costing about $19, that the wearer can adjust. Silicone oil is injected into a gap between two sheets of plastic until the lens provides sharp vision (right). The inventor’s field research shows the correction can be better than that of prefab glasses sold at a store.

As director of the new nonprofit Centre for Vision in the Developing World, Silver envisions a billion pairs on needy eyes by 2020. So far, 30,000 pairs are in use in Africa and Eastern Europe, two-thirds distributed through U.S. military aid programs.

The glasses look a bit geeky, but there are few complaints. Silver recalls the first recipient, in Ghana in 1996: a tailor in his 30s whose faltering close vision made it nearly impossible to thread a needle. The tailor adjusted the glasses, threaded the needle on his machine, and began sewing rapidly. “I will not forget that moment,” says Silver, “until I entirely lose my memory.” —Marc Silver

Correct Yourself
Adaptive eyeglasses can be adjusted for close or distance vision.

1. Adjust dial to inject or remove oil, changing the shape of the lens to sharpen vision.
2. Sit with stopper, then remove tube and spring.

This man in a remote Tibetan village received his adaptive glasses in 2005.
New self-adjustable glasses

CVDW has developed self-adjustable glasses which the wearer can adjust until they see clearly. These glasses are based on a fluid-filled lens technology that is similar to that used in the Adspecs, the original self-adjustable, fluid-filled glasses developed by Professor Joshua Silver.

While the Adspecs were designed for use by adults, the Child Vision glasses have been developed specifically for use by young people aged from 12-18. These glasses are small, light and attractive, and have been designed to withstand hard use in challenging environments. They have also been designed to enable mass-manufacturing to keep the cost of production as low as possible.

Perhaps the most important question is: do they work? Several recently published studies (which can be read here and here) have demonstrated that the process of self-refraction with the Adspecs can produce very good visual outcomes in teenagers when compared to the best possible techniques in developed countries.

We will be undertaking clinical trials of the Child Vision glasses in 2014 in order to demonstrate their efficacy. After that, the next step will be pilot deployments in schools in developing world countries in order to test distribution models, followed by wider deployment of the glasses through partner organisations and government.
Trufocus Reader

Dr. Stephen Kurtin
$700
Recycled Lions Club

Simple Spheres
Only

cylinder recycled
bifocal add recycled
What about Atypicals?
concept - design
spheres

spero-cylinder
Burma Vision Kit:
  Notebook pages with 38mm lenses
  retinoscope
  skiascopy racks
  custom 38mm frames
  Instruction manual
  cyanoacrylate glue
Assembled by Youth Group
Photoscreen

Normal

Refer for Exam
Retinoscopy / Skiascopy
Cylinder power and axis
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Teaching Materials
Teaching Materials

CONVEX

CONCAVE

ASTIGMATIC

20 cm

50 cm

The nearer focal line from the stronger cylinder power aligns with the PLUS axis

+2+3×90

1/5 m

1/2 m
Cylinder Axis

180 degrees

Right Eye

North

North-East

East

West

Right Eye

Lens Axis

Cylinder Axis
Kit in Burma
27 Medics in Karen State, Burma
Portable Spectacles

www.BurmaVision.com
Thank You

“Dtah Bluh” (Karen)