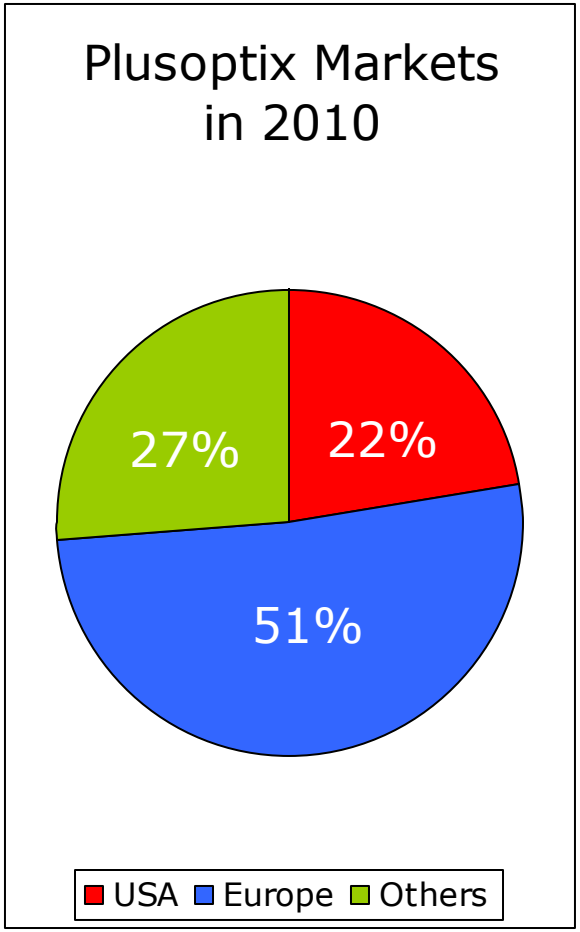
Who is Plusoptix?



2001 Company is founded

2006 1st generation Vision Screeners

2007 US subsidiary

2008 2nd generation Vision Screeners

2009 Latin American subsidiary

2010 3rd generation Vision Screeners

2010 Distribution partners in 50 countries

Market leader in Vision Screening devices

Seminar "rules"

- If you hear something questionable, ask a question!
- If you hear something remarkable, take a note!
- Don't waste your time copying slides, they will be available at the Forum web page

Vision Screening Program Planning

- Who is already vision screening?
- What do you expect from this seminar?

Why is vision screening important?

- We gather 80% of all information through the eyes
- We need to see in order to
  - learn at school
  - perform in sports and
  - be safe in traffic
- We need both eyes for many jobs (e.g police man, truck driver, brick layer)

To detect vision disorders

Why do we screen children?

- Children need to learn how to see
- Refraction is changing as eye ball grows
- Children don’t tell about a vision disorder
  - Vision disorders don't hurt
  - They think their limited vision is normal
- Parents can't tell about a vision disorder
  - There are no symptoms
- Vision disorders may lead to Amblyopia

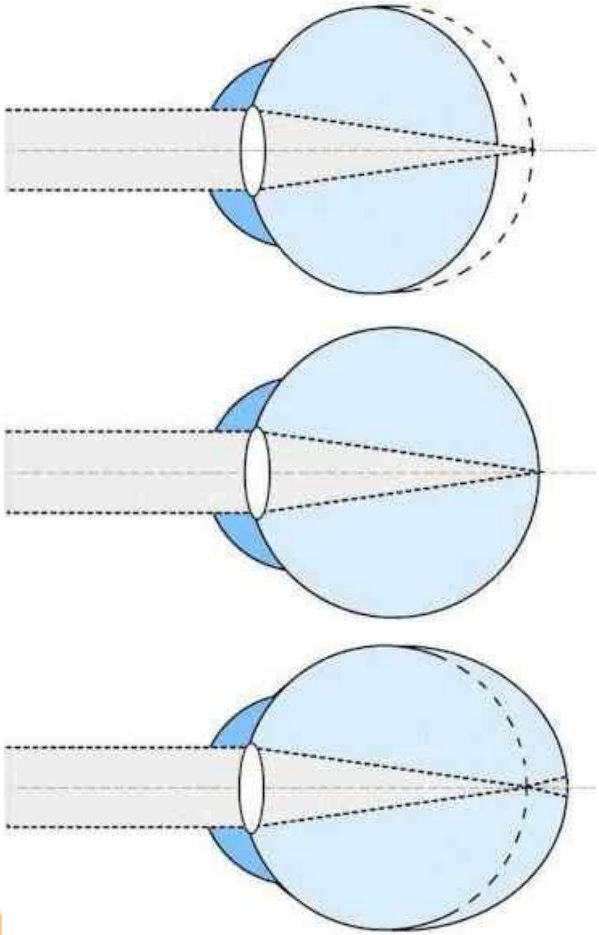
Children don't know about their vision disorder

How do children learn to see?

- Vision is a joint effort of
  - the eyes
  - the optical nerves
  - the brain
- The optical nerves need to be trained during the first years of life

By training, just like walking and talking

What happens when the eye ball grows?



- At birth the eyeball is short and new born are farsighted, normally
- The eyeball grows with ageing and farsightedness disappears
- If eyeball keeps growing a child turns short sighted

Refractive error can occur during growth

What is Amblyopia (i.e. lazy eye)?

- Amblyopia results from vision disorders:
  - Refractive error
  - Strabismus (crossed eyes)
  - Eye diseases
- Amblyopia can not be treated with glasses or contacts
- Amblyopia may lead to blindness in one eye
- Risk to become blind in both eyes is 3x higher

Only children are at risk to develop Amblyopia

How can we prevent Amblyopia?

- The earlier vision disorders are detected, the better Amblyopia can be prevented
- Because there are no obvious symptoms, every child needs to be screened
- Annual vision screening using age appropriate test is considered to be the best way to prevent Amblyopia

Early detection and treatment of vision disorders produces better visual outcomes

How many children have vision disorders?

According to the National Eye Institute:

Prevalence of Ambylopia and vision disorders in US pre-schoolers is high:

- Amblyopia 2-5%
- Significant refractive error 10-15%
- Strabismus 3-4%
- Eyes diseases
  (not investigated in this study)

Vision disorders are the most prevalent handicapping condition in childhood

Is Vision Screening all we can do?

- pass
- refer
  - Not confirmed by follow-up exam (i.e. false-positive-referrals)
  - Confirmed by follow-up exam
    - Don't receive treatment
    - Receive treatment

Successful vision screening = screening + follow-up + treatment

Summary

- Children are at risk to develop Amblyopia
- Amblyopia is a life long vision impairment
- Children can be screened with age appropriate test only
- Children's eyes develop as they grow and therefore vision screening needs to be repeated annually
- Referred children need to be followed-up

Vision Screening is a program, not an event

Challenges to vision screening

- Funding the program
- Assuring doctors support
- Defining a vision screening program
  - Screening test to be used
  - Documentation needed
- Identifying vision screening locations
- Obtaining a parent consent form
- Training volunteers
- Follow-up on referrals

Vision Screening in Missouri

- Tamara Oberbeck

Vision Screening in Missouri

- The Missouri Lions vision screening program is unique for having:
  - Full time vision screening program manager
  - Full and part time vision screening technicians
  - Full time follow-up specialist

Vision Screening in Alaska

- PDG Lion John Regan

Vision Screening in Alaska

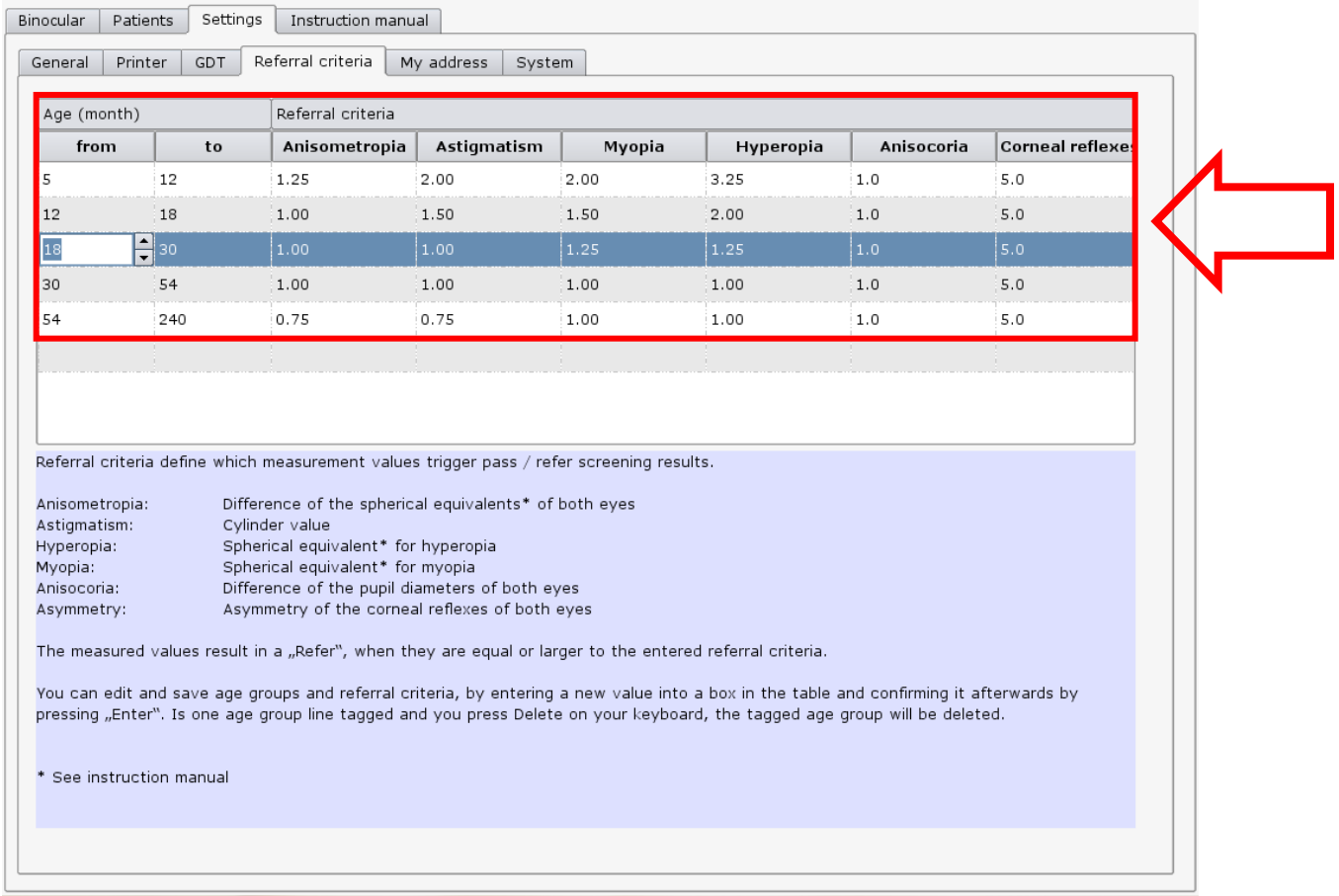
- Innovative medical advisor
- Vision screenings are performed at Lions Club level
- Uses 34 Plusoptix Vision Screeners

How do I perform a measurement?

Which measurements are taken?

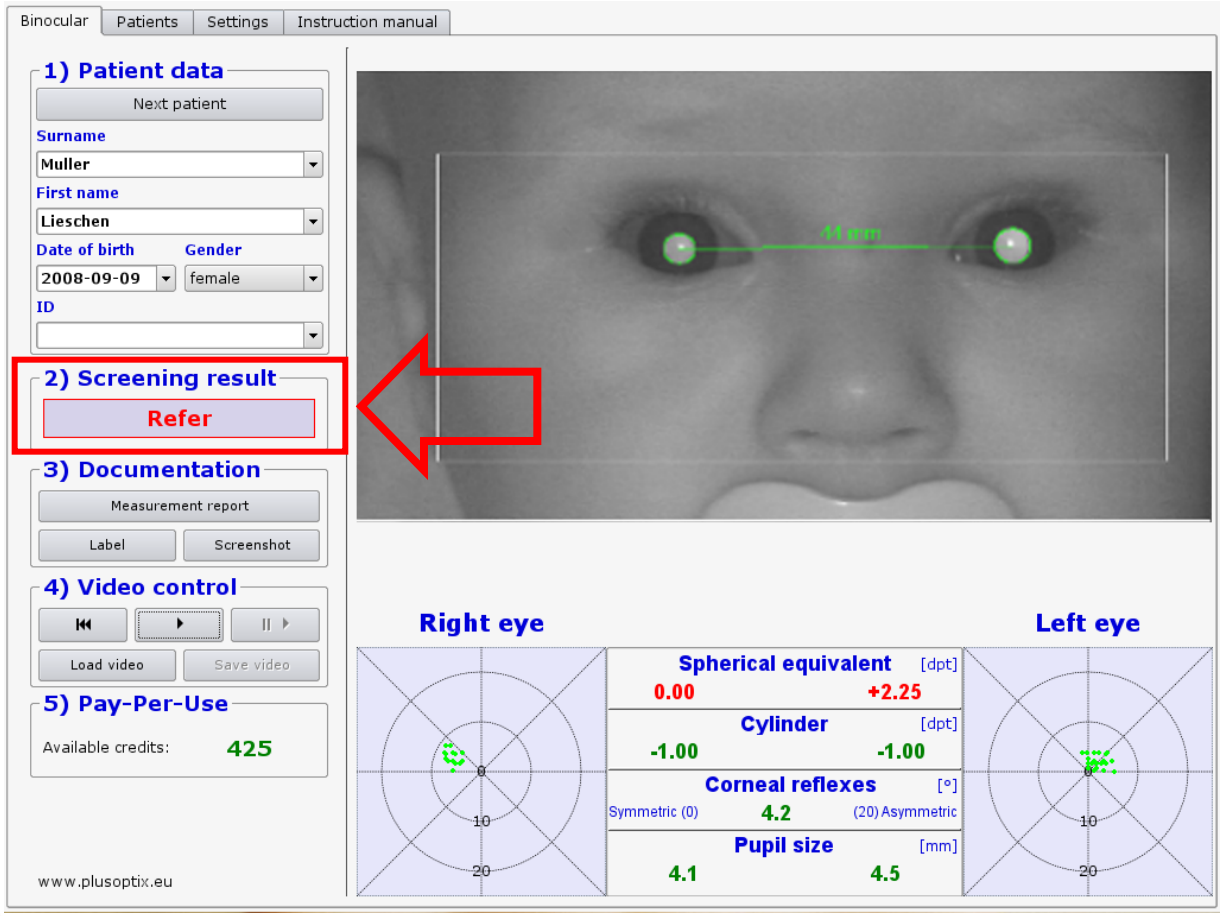
Spherical equivalent, Cylinder, Corneal reflexes and Pupil sizes are measured

What are referral criteria?



Referral criteria are age depending thresholds that measurements are compared to

What is a screening result?



A "pass" or "refer" screening result is displayed immediately

What is a measurement report?

You are able to edit the advertisement column!

Where do I get more information?

- USA & Canada (office in Atlanta/Georgia)
  Cindy McDowell
  c.mcdowell@plusoptix.com

- Latin America (office in Bogota/Colombia)
  Fernando Conde
  f.conde@plusoptix.com

- Other countries (office in Nuernberg/Germany)
  Christian Schmidt
  c.schmidt@plusoptix.com

Visit us at our booth

How compares Plusoptix to MTI?

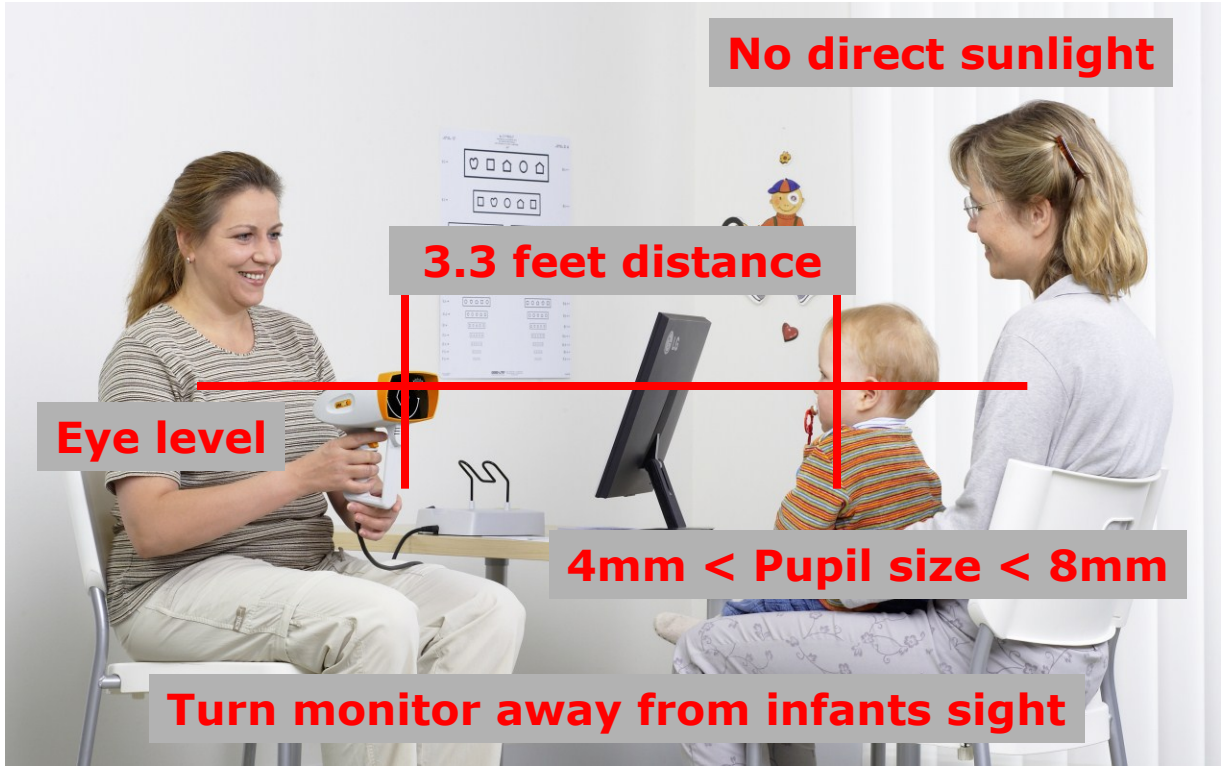
	Screening result = pass	Screening result = refer	
Infant has a vision disorder	**0.275%** (i.e. false-negative-rate = 1.1%)	**24.725%** (i.e. sensitivity = 98.9%)	**25%** prevalence of vision disorder
Infant has no vision disorder	**72.075%** (i.e. specificity = 96.1%)	**2.925%** (i.e. false-positive-rate = 3.9%)	**75%** number of healthy infants
	72.35% number of "passed" infants	**27.65%** number of "referred" infants	**100%** total number of infants

Sensitivity: How many of all infants with a vision disorder are referred?
Here: 20%/25% = 80%

How compares Plusoptix to MTI?

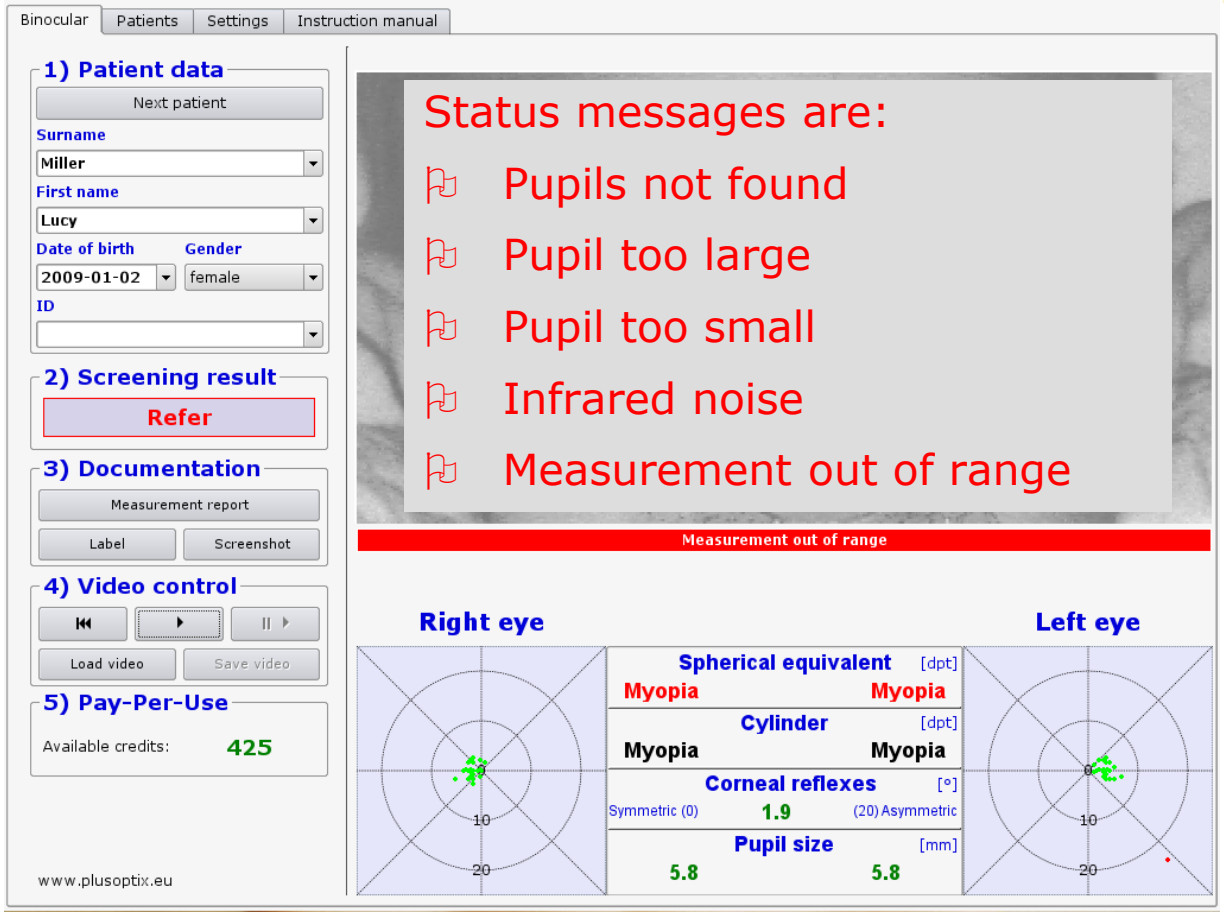
	Screening result = pass	Screening result = refer	
Infant has a vision disorder	false-negative-rate Pluso: 1.1% MTI: 16.4%	Sensitivity Pluso: 98.9% MTI: 83.6%	prevalence of vision disorder
Infant has no vision disorder	Specificity Pluso: 96.1% MTI: 90.5	false-positive-rate Pluso: 3.9% MTI: 9.5%	number of healthy infants
	Total number of "passed" infants	Total number of "referred" infants	total number of infants

What do I need to pay attention to?



Avoid distractions,
both eyes need to align to camera

What are status messages?



Status messages help you identify the reason of an inconclusive screening result

What's the meaning of referral criteria?

- **Anisometropia**
  compares refraction of both eyes
- **Astigmatism**
  checks corneal curvature
- **Myopia**
  checks nearsightedness
- **Hyperopia**
  checks farsightedness
- **Anisocoria**
  compares pupil sizes of both eyes
- **Corneal reflexes**
  checks symmetric eye aligment

What are documentation options?

- plusoptiX S09 can be connected to an EMR system to import patient data and export readings automatically
- plusoptiX S09 can be connected to printers for paper record documents
- Three printouts are available
  - Self adhesive label (readings only)
  - Screenshot (readings and picture)
  - Measurement report (giveaway for parents)

All printouts can be saved as PDF-files, too