

Early intervention strategies

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Usual findings

- Convergens, weak or lost
- Difficulties in eye contact and
- Early inteaction

Birth trauma, 3rd nerve palsy> ptosis

Deformation of head after suction cup

Exotropia – Miosis

lesions in 3rd nerve and Ehdinger-Westphal nucleus

Ptosis resolved after 2 weeks.
Loss of convergence, accommodation and sluggish pupil reactions.

After strabismus operation the child looks normal but is severely visually impaired.

Symptoms of impaired vision

at the age of 8 months

- outward squint operated, convergence still poor
- brought objects close to the eyes =

  geometric magnification
- looked at the hair line, not at the eyes =

  central scotoma
- explored carefully with hands and mouth
- recognised people at 18 months of age (voice?)
- moved freely and seemed to know where he is

Dg: Spasticity in all four limbs, especially hands, severely impaired vision, forms and colours.

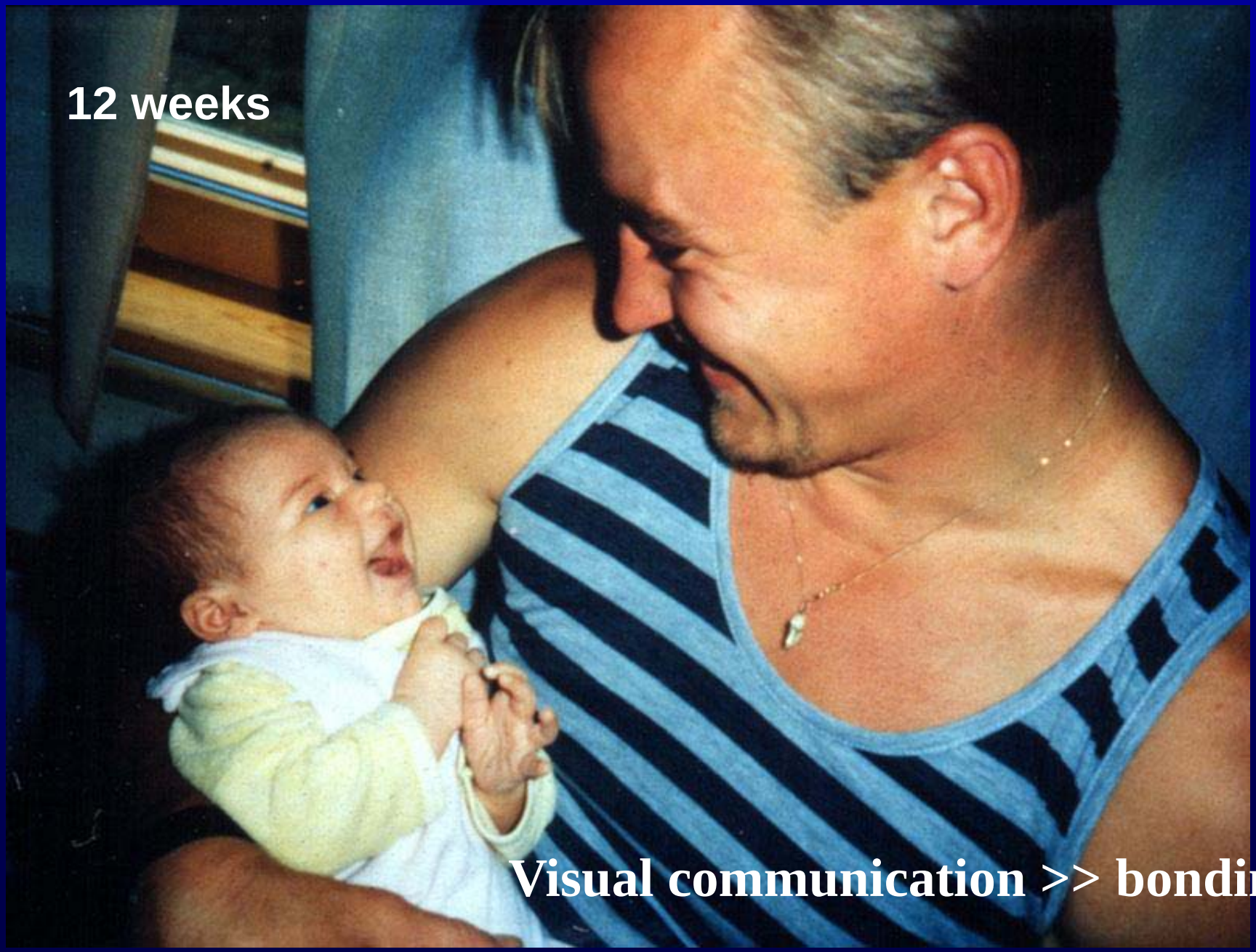
Vision was assessed with Teller Cards only > ”Normal”.

Eye contact
and copying facial expressions

Possible at birth
Should be present at 6 weeks of age
Latest at 8th weeks of age

Communication – at 8 weeks

Communication with both parents
Using both vision and vocalizing, taking turns is important already at this age.


12 weeks
Visual communication >> bonding

Accommodation

can be weak in otherwise normal looking infants

- 4 month old infant
- Dg: Infantile autism?
- ”Avoids eye contact”

Strabismus >>Penalisation+bifocal

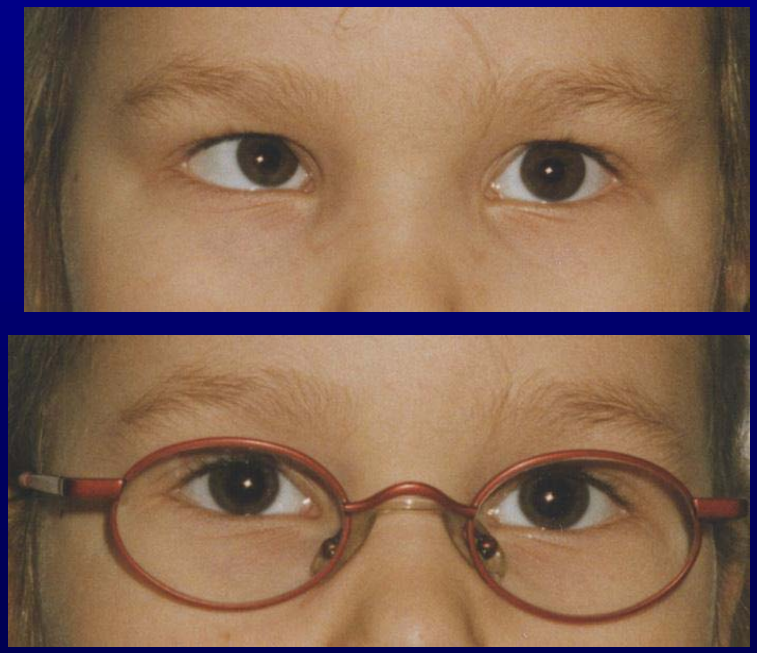
near correction for the right eye = distance penalisation

Late development of accommodation may lead to esotropia at the time when the infant starts to accommodate. Spectacle corrections often supports development of binocularity.

Penalisation+bifocal

Amblyopia did not develop, binocular vision

During the first year



In school age

Infants at risk

Whenever there is a deviation from normal interaction / communication

infant's visual and auditory functions

need to be carefully assessed.

Eye contact, Eye movements, strabismus

Infants with motor problems, Syndromes

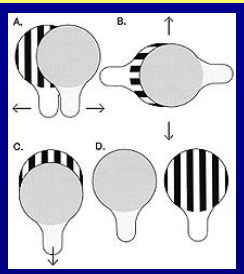
Health care nurses, therapists, paediatricians, ophthalmologists

Clinical examination

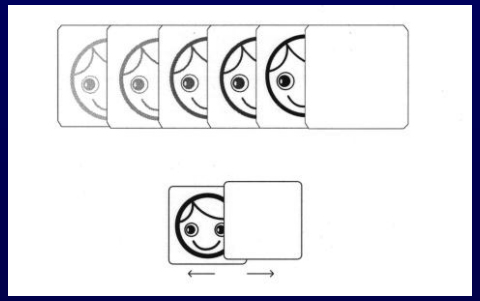
gives the foundation for the assessment of visual functioning

Fixation to penlight, to picture, following, saccades, accommodation, convergence, visual communication, refraction, spectacles

Photo: Miguel G. Alvares, MD Brazil



Detection of gratings



Hiding Heidi test

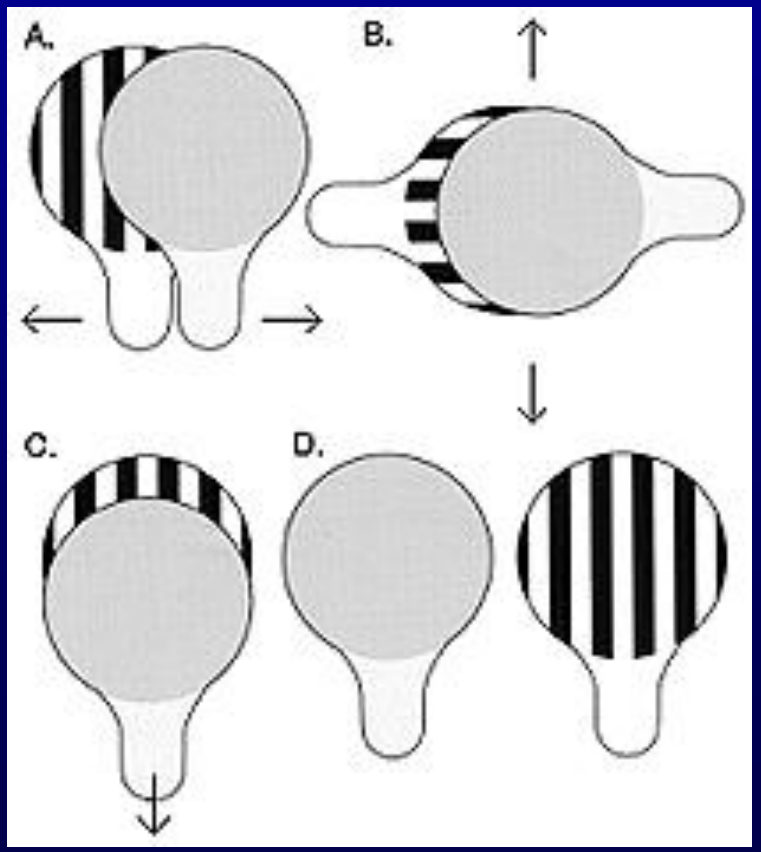
Fixation sticks

Fanz' picture of smiling face (5 cm diameter) is fixated and follwed at 3 moths of age.

Teller Acuity Cards

LEA GRATINGS

symmetric presentation



Contrast sensitivity

Hiding Heidi test

If the infant responds with a social smile,
he must have seen the picture of smiling face,
at low contrast and moving – like the facial
expressions on the face.

Figure-in-motion, Pepi-test

possible often at the age of 4 months

Near correction
Head support

Can be copied @
www.lea-test.fi

PVL
Delayed motor functions

Combined effect of visual and motor disorder delays the development of an infant in all functional areas.

Constricted visual field

Illuminated ball used by child's own therapist.

Fixation

Brief fixation on the middle size picture of face

Accommodation with dynamic retinoscopy

difficult to measure when the infant does not look at

Mother’s face and voice used as the target during dynamic retinoscopy.

Eye contact

when reading lenses give a clear image on the retina

Reaction during assessment of her brother

noises and body language to shows disapproval

Vision in motor training

ten weeks later: improved visual and motor functions

RE: GrA less than in LE > training
as a part of physiotherapy

Impaired vision affects

development of following areas of functioning:

- communication
- interaction
- motor development
- spatial concepts
- orientation in space
- object permanence
- language

Delay in any developmental area needs to be investigated.

Support for poor visual information

Baby Tadoma technique

Early interaction uses
smell, body contact, voice, Tadoma
facial expressions, eye contact

Vision for communication

Vision loss affects

development of following areas of functioning:

- communication
- interaction
- motor development
- spatial concepts
- orientation in space
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Fragile baby

Gentle activation of a baby with hydrocephalus.
Notice the joy during the play therapy.
Comfortable support of posture on the knees of the play therapist (not in a baby sitter).

Low tonus and poor head control

Strong visual stimulus, LEA doll and illuminated picture of face activate control of motor functions.

Head control

Holding the infant

- on the shoulder
- across the thigh
- on small wedge

- Vertical lightbox

Playmat and resonance board

orientation in space, listening skills

Plywood board on 2 inch frame functions as a drum and makes the infant aware of his movements. Echos from the washing basin and the waste basket train listening. Orientation in space supported.

Light coloured surfaces rough, dark surfaces smooth> vision and touch coinside.

”Little room”

made of a brown paper box

Vision, touch, echos,
measuring space with his own body.

I moved!

I moved again, the same thing happened!

Start stimulation without delay, coordination of vision and movement.

Siblings and grandparents training

Early Intervention

requires

Early detection of the disorder

Early treatment of treatable conditions

Assessment of Functioning

Early intervention starts

as soon as a visual impairment is detected

as an integral part of examinations and treatment,

at 0-3 years of age or later, if the damage occurs later.



Early intervention strategies

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Slides will be @ www.lea-test.fi