



When the eyes work different from the way we think or When the eyes think different from our brain

by Irmtraud Große-Lindemann

Our thinking influences the movements of our eyes. The movements of our eyes influence our thinking. Most of the time the movements of our eyes is unconscious. However, if these unconscious movements are contradictory to the learning process, this can cause problems. Typical problems with a reading weakness can be:

- reversing "d" and "b" and similar problems
- dancing letters
- leaving out final syllables

With people showing these problems it has proven time and again that their dominant line of sight is from right to left, and not, as it would be important for German writing, from left to right.

Our eye has only one point with which it has a sharp vision. This means to see a word sharply the eye makes small movements (saccadic movements), which examine the words.

If the dominant line of sight is from right to left, so the eyes read the word "ein" (engl. "a") from right to left and therefore the child reads "nie" (engl. never). Only on the level of the cerebral cortex, by relating it to familiar things, the child creates a sensible word out of the letter chaos. This is not only time consuming and means that the child reads slowly but also a source of mistakes.

In order to find out if problems with the follow movements of the eyes from left to right are at hand, I make the child follow an object with its eyes.

1. follow movement of the eye from right to left => test => switched on
2. follow movement of the eye from left to right => test => switched off

If this is the case, I know that the child has difficulties to follow the letters of German writing correctly. The causes of this are as many as there are children.

In Neuro Meridian Kinesthetics (NMK) we look for the brain area corresponding with the activated stressor.

In the following, I want to describe a series of brain areas which could have a relation to the stressor "follow movement of eyes from right to left".

Before we use any of the mentioned NMK brain formats we always gain access to the brain. For this please look at my presentation: "Facts told by the brain".

I assume that kinesiological balances create a track which is then exercised at home, in order to prevent the stress issue from reappearing. I gain the information which exercise is appropriate from the brain area blocked in connection with the follow movement of the eye. Therefore I present, after quoting the brain area, a) the information gained from this brain area and b) what this information might mean for the child's daily life.

1. CV 22 – St 11 M. sphincter pupillae or GV 14 – St 13 M. dilatator pupillae

- a) The adjustment of the pupil causes stress in relation to the eye movement.
- b) Does the reading performance depend on the lighting? => find other lighting
Is the black and white contrast of the writing too stark? => put a coloured foil on the paper or use coloured glasses.

2. CV 22 – St 13 – M. ciliare

- a) The ability to focus on near and far objects is blocked with the eye movement.
- b) Carry out exercises in focusing (e.g. trombone). Follow a moving object which changes from being close to being distant.

3. CV 22 – CV 8 – St 23 (K 16 respectively) Belly Brain

- a) If the parasympathetic nervous system switches off in connection with eye movement, then the movement activates the stress system of the body.

- b) Follow through all single stages of the eye movement, because we can suspect that a certain eye position activates old traumata.

4. GV 25 – CV 5 Corpus mamillare, spatial orientation

- a) The system, responsible for spatial orientation, is blocked when the eyes follow an object from left to right.
b) Games that strengthen the body image of the child. Experience space with eyes open and closed.

5. GV 25 – CV 21 Nc. suprachiasmaticus, sleep-wake rhythm

- a) This nucleus is related to light perception (also to the perception of spiritual light). It sets the rhythm of our biological clock. It partly determines our eating and drinking behaviour. A blockade of this area can lead to fatigue.
b) If this brain area is blocked in connection with eye movements, the child needs an alternative to eye movement training for support. For example, detecting thinking patterns that are related to joy of life or practicing a fixed rhythm of sleep. It may also tell us that the child is lacking daylight because of sitting too long in front of a screen.

6. Various areas of crossings, e.g. GV 22 – St 13

- a) This affects the cooperation of the right and left eye, of the right and left cerebral cortex, the harmony of yin and yang.
b) This brain area may tell us that gender roles in the family should be strengthened in counselling with the parents. It may also simply tell us that the exercises of cross-crawl or lazy eight should be integrated into daily routine.

7. Various areas of basal ganglia

For example: GV 19 – Gb 4 – Gb 14 Substantia nigra => Colliculus superior

or: GV 19 – Gb 7 – St 19, Nc rubber => N. oculomotorius

- a) The basal ganglia are related to activation and inhibition, to a flowing movement, to beginning and ending things, to motivation and apathy.
b) Exercise flowing movements of gross motoric activities. Find activities where the child can bring in its strength fluently. Cross-crawl and at the same time follow an object with eyes.

8. Various areas of the thalamus

For example GV 18 – TW 8 – SI 11 Corpus geniculatum laterale => visual cortex

or: GV 18 CS 1 sensation of spatial position

- a) Depending on the thalamus area that switches off in connection with eye movements, we are told

which perception channel has difficulties in cooperating with eye movements.

- b) Activate this perception channel while the eyes follow an object. For example, standing on one leg and doing the lazy eight with the eyes.

9. Various areas of the cerebellum

For example: GV 16 – CV 20 – CV 20 visual aspects of the vestibulocerebellum

- a) This brain area tells us that eye movements disturb our vestibular system responsible for the sense of balance.

- b) Balance exercises, with simultaneous eye movements and eyes closed.

or: GV 16 – CV 22 – St 1

- a) The neocerebellum is related to the storage of movement plans. Also the application of eye movements is governed by experience and practice.

- b) Exercise eye movements from left to right while simultaneously rubbing the brain buttons or holding the "eye points".

Put an arrow which points from left to right below the letters and thus support eye movements from left to right.

10. Gb 11 – BI 3 – CV 23 Ncc vestibulares

- a) The sense of balance and the eyes are cooperating closely. If this brain area is switched off in relation to eye movements, it is a hint for an underdeveloped vestibuloocular reflex, and at the same for underdeveloped positioning and balancing reactions.

- b) It can be appropriate to integrate even earlier infantile reflexes (see Sally Goddard, "A teacher's window into the child's mind"), before continuing work with eye movements.

In the following I only want to list a few other brain areas which often switch off when I activate the issue eye movement without elaborating on the information they provide.

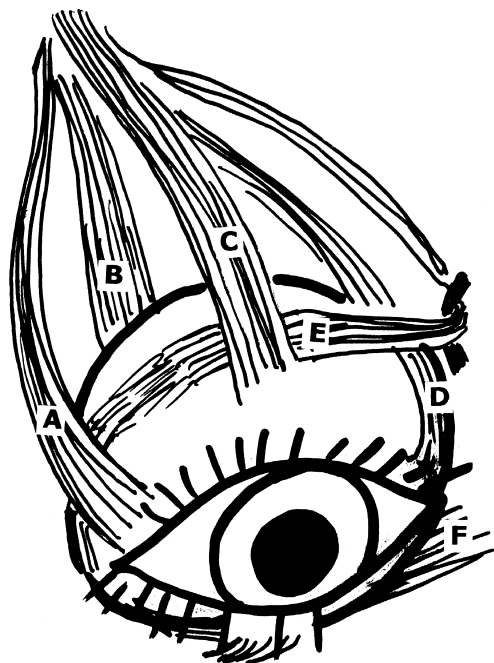
11. Large areas of the cerebrum are responsible for vision

- St 13 – Ki 17-26; area 6ab; turning of the head
- St 13 – St 12-22; area 5 and 7; spatial abilities; right-left differentiation
- St 13 – St 26 Gyrus supramarginalis
- St 13 – SI 11-15, area 18 and 19; secondary and tertiary visual cortex, sight movement, letter recognition
- St 13 – SI 9-15; area 17; primary visual cortex

12. Different areas of brain nerves

- GB 2 – Liv 2 – BI 14 Chiasma opticum, crossing of the visual nerve
- GB 2 – Liv 2 – BI 41 Corpus geniculatum laterale
- GB 2 – Liv 3 – TW 13 motor part of N. oculomotorius

- GB 2 – Liv 3 – Bl 18 sensoric part of N. oculomotorius
- GB 2 – Liv 4 N. trochlearis
- GB 2 – Liv 6 N. abducens
- GB 2 – Liv 7 – St 11 M. orbicularis oculi



Movements of the right eye

- A** Musculus rectus lateralis: outward rotation
- B** Musculus rectus inferior: lowering
- C** Musculus rectus superior: raising
- D** Musculus rectus medialis: inward rotation
- E** Musculus obliquus superior: outward rotation and lowering
- F** Musculus obliquus inferior: outward rotation and raising

13. Various areas of hippocampus

- TW 18 – CV 12 spatial relations
- TW 18 – Sp 21 spatial orientation
- TW 18 – GB 7 visual range of perception
- TW 18 – GB 10 memory for series of letters

14. Various areas of brain stem

- GB 11 – Bl 2 1/3 Formatio reticularis and their differentiation
- GB 11 – Bl 3 – Bl 1 Nc. Edinger-Westphal
- GB 11 – Bl 3 – Bl 2 Nc. n. oculomotorius
- GB 11 – Bl 3 – TW 23 Nc. n. trochlearis
- GB 11 – Bl 3 – Gb 1 Nc. n. abducentis
- GB 11 – Bl 3 – Bl 8 Colliculus superior

It would be beyond the scope of this presentation, if I gave a more differentiated picture of accessing eye movement nuclei, which is possible with NMK brain for-

– mats. As I have stated in the beginning, the brain areas which may switch off with the follow movements of eyes are as manifold as the children themselves. In this presentation I have only mentioned the areas of a higher grade which are directly related to follow movements of eyes.

Practice has shown that most of the time only one aspect of focusing is important for the child. This aspect provides an essential clue to how the child can practice the stress-free eye movement and which assistance it can use if reversals reoccur in daily practice. The favourite, dominant line of sight remains from right to left. However, the child can learn to use the line of sight from the left to the right without stress. Here it is important to know the concrete brain area which has difficulties with this line of sight, so that the child can balance it any time.

Irmtraud Große-Lindemann: Starting my professional career as mathematical-technical assistant I changed to therapeutic pedagogy in 1972, became a teacher at a school for special-needs children and worked there till 1992. Afterwards I worked as speech therapist in a home for mentally disabled children and in my own practice. In 1992 I began to further develop Richard Utt's "AP And The Brain", out of which I developed the method Neuro Meridian Kinesthetics which still experiences additions. Since 1995 I work as a non-medical practitioner and a learning counsellor.

Irmtraud Große-Lindemann

Waldring 77
48565 Steinfurt-Borghorst
Tel.: 02552-996565
Fax: 02552-996566