Healthy Back

Back and Movement – Demonstration at lunchtime
ETH 25.06.2013

Deeply rooted and supple
like a tree in the wind

A user's guide to a happy, healthy back

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We feel our back

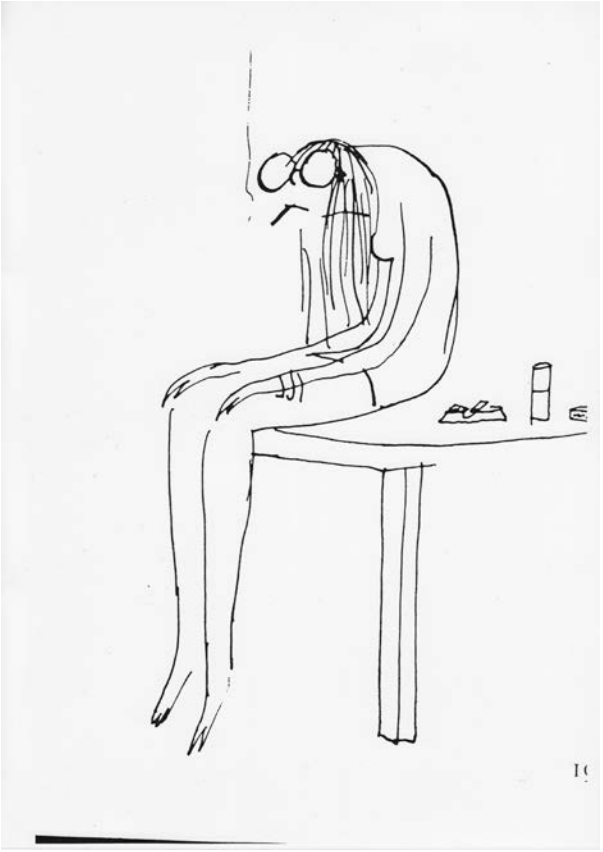
- But mostly when it hurts

In the lower back

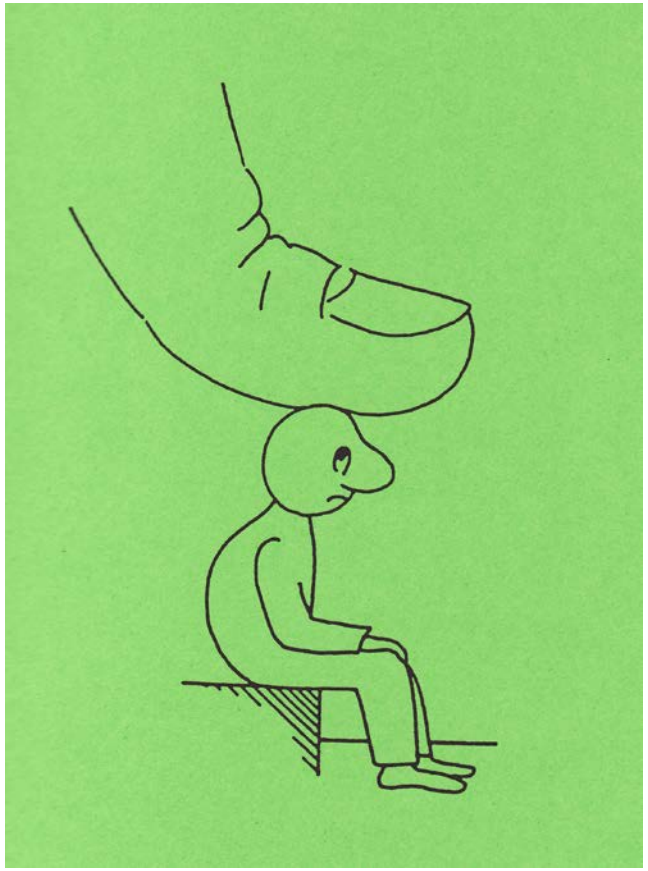
In the neck, cervical region

What are we doing wrong?

Posture as an expression of culture ?

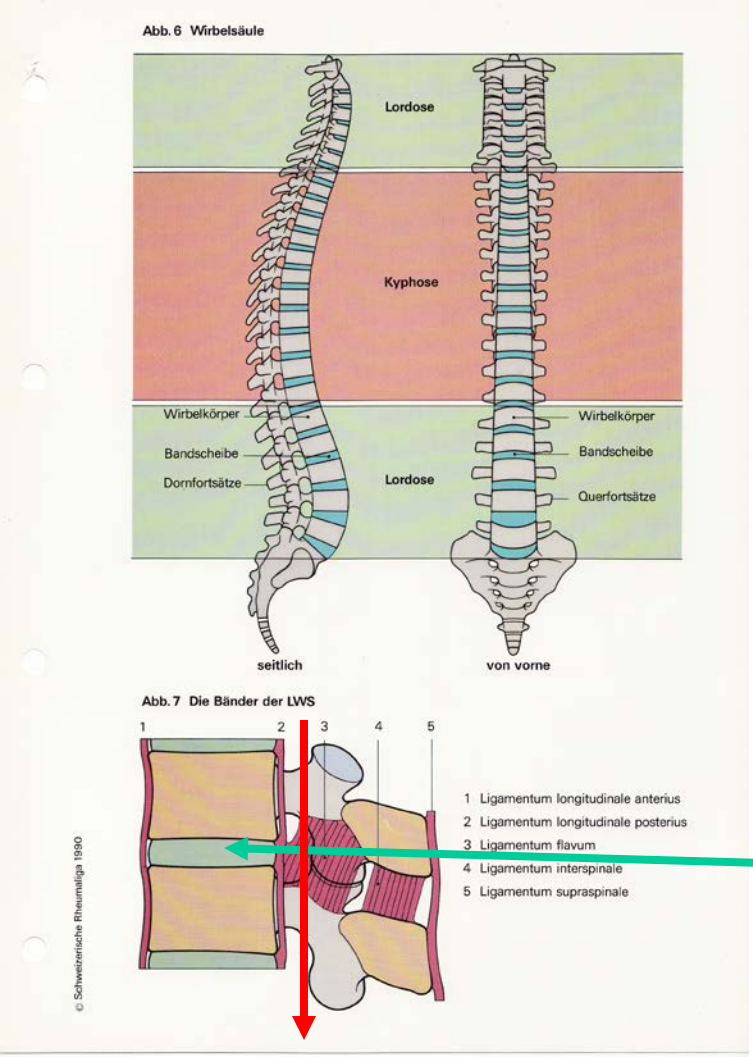


Gravity



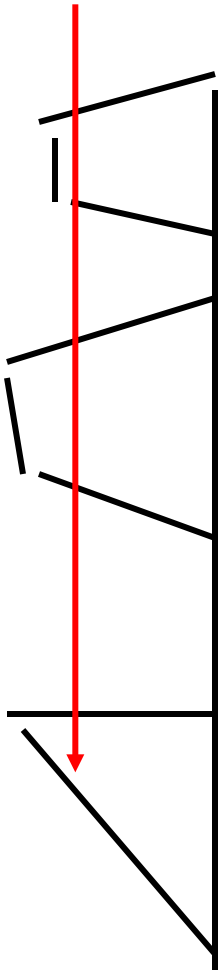
Our enemy or our friend?

Bild: Dr. A. Brügger



- Double-S-Shape
- Sacrum
- 24 Vertebrae
- 5 lumbar vertebrae
- 12 chest or thoracic vertebrae
- 7 cervical vertebrae

- Disc
- Spinalchord and nerve roots

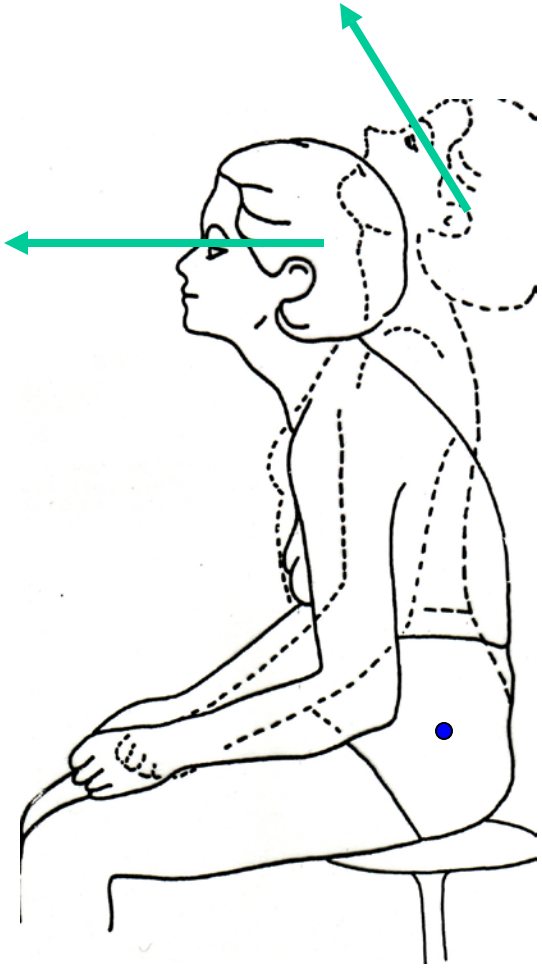


the spine curves backwards, becomes round

The pelvis tilts to the back = >

torsional movement backwards

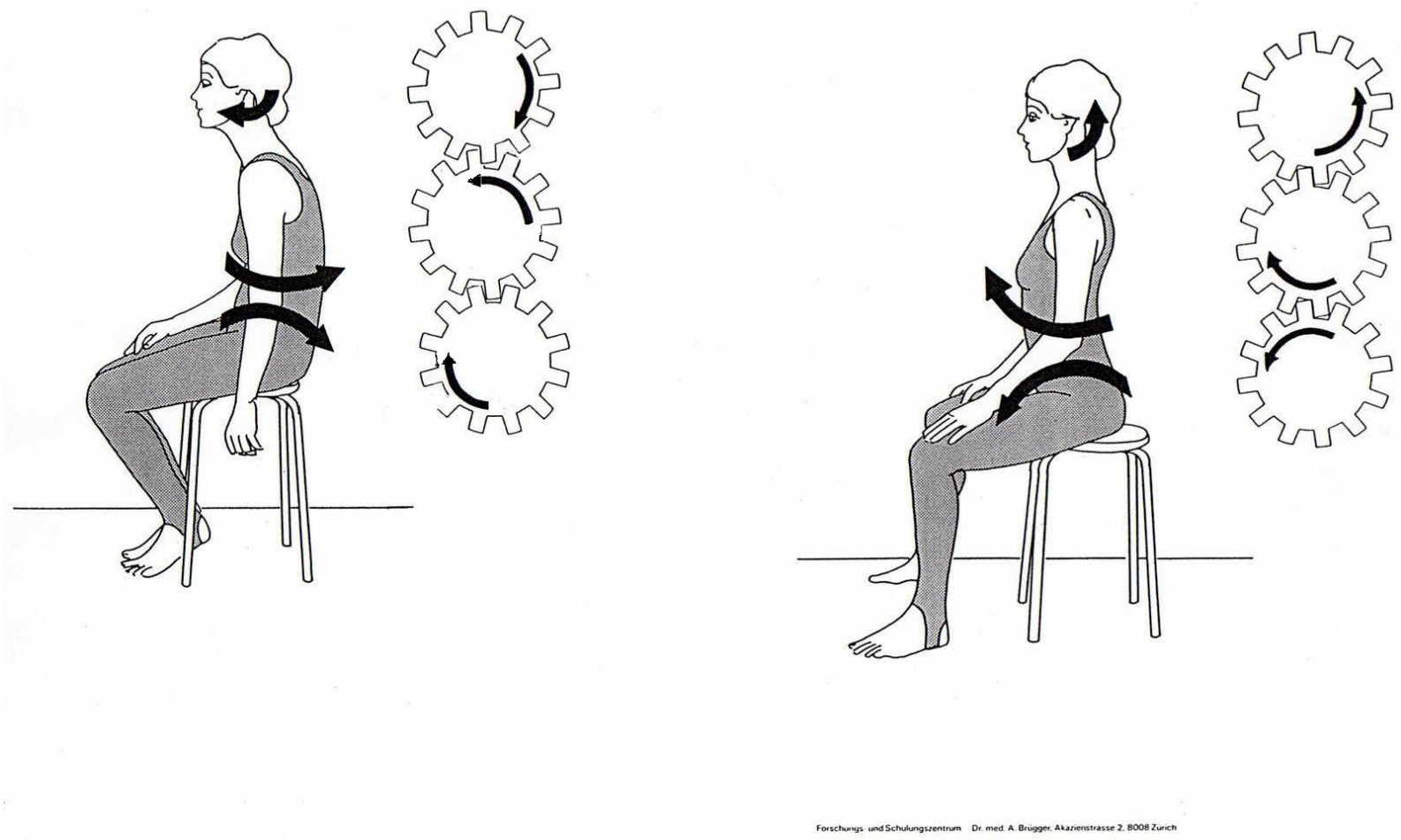
Influence of posture on the position of the head and neck muscles



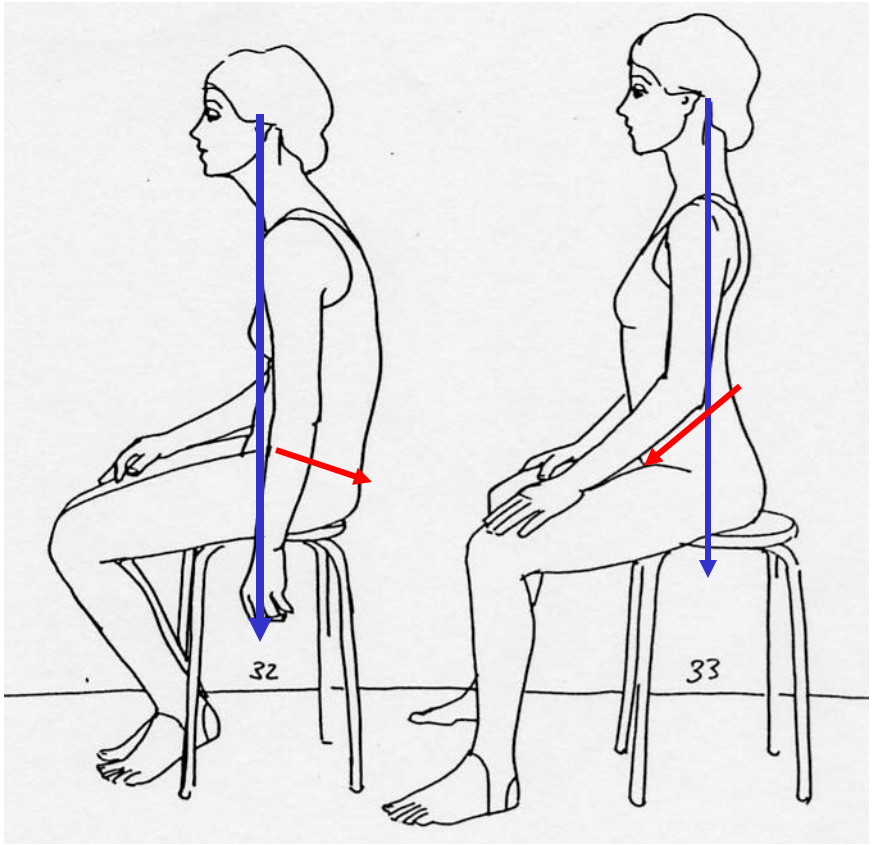
Line of sight

- the neck muscles shorten and continuously work, causing tension

Relationship between pelvis, chest und head movement



Different load on the spine



In a slouch posture

you get an

uneven **compression** on the lower discs

The position of the **pelvis** is the key to a stable upright posture

Sedentary society through computerization

- uneven load on discs, bones, ligaments etc...
- constricted abdomen
- obstructed breathing
- compressed neck
- head and shoulders positioned in front of the body
- muscle imbalance

Form follows Function

Julius Wolff 1891

Load YES, but HOW?

The load should be

- aligned,
- variable and
- well balanced if you need to sit for a long period of time

From where do we move?

where it‘s the easiest

where there is a feeling for movement

=> imbalance

instability and loss of movement control

stiffness

Bad posture & bad habits can lead to:

- uneven weight distribution throughout the musculosceletal system
- instability of certain segments of the vertebrae with loss/disfunction of movement control
- stiffness and restricted mobility in certain segments of the vertebrae
- muscle shortening, muscle weakness and muscle tension

Solutions / What to do?

- sit actively
- tilt pelvis forward
- mobilize stiff joints (thoracic vertebrae and ribs)
- stabilize and strengthen joint instability

  „strengthen your core“
- relax neck & shoulders
- breathe

Ease despite tension

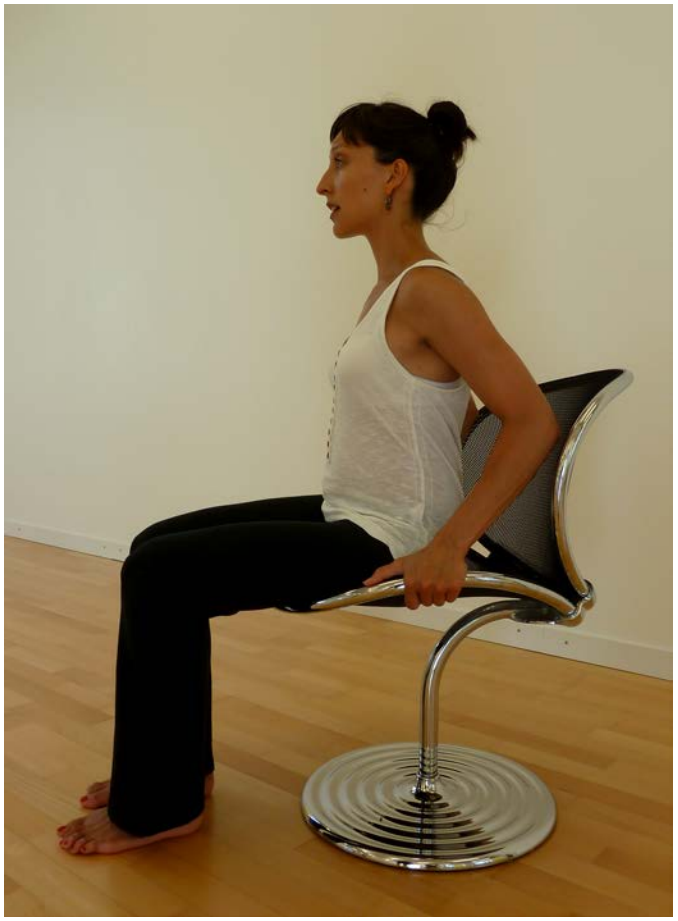
Effortless like the wind

Playful like water

Exercises
at the workplace

„Lift off“

take the weight off your spine



„Carriage seated position“

- place sitting bones on the edge of your chair
- support lower arms/ elbows on your thighs
- tilt your pelvis forward and lengthen your back creating a long spine
- think of arching your back

„Abdominal support“

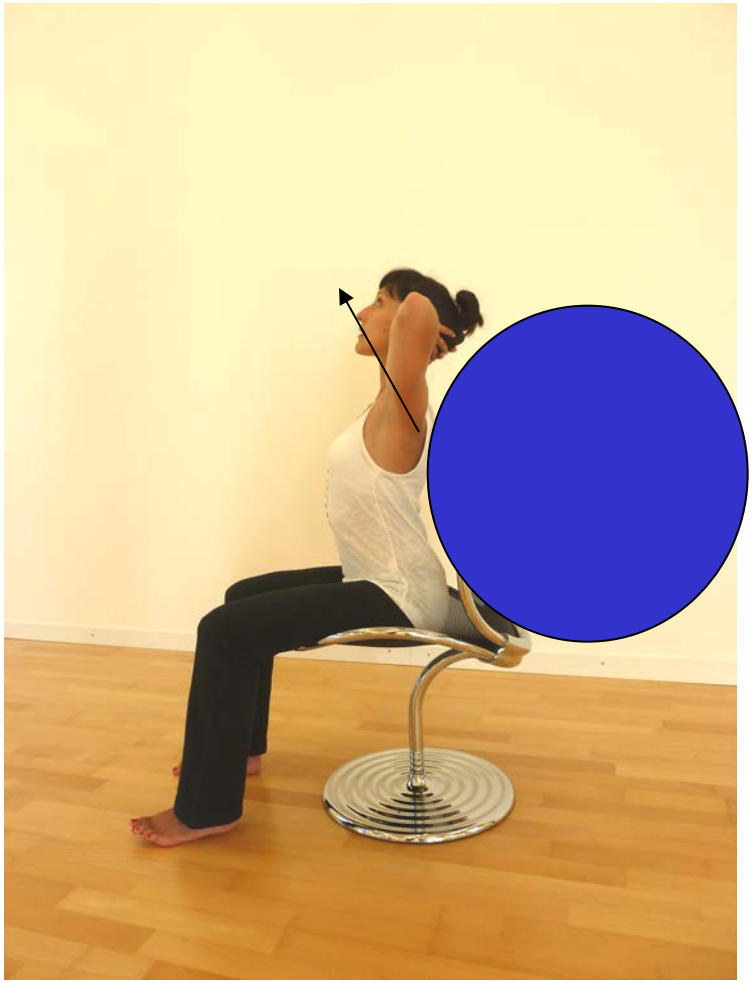
relieves tension along spine & neck

- tilt pelvis forward
- lean your ribcage or upper belly on the edge of a table
- place elbows on the table to support upper body and support the weight of your head in your hands if necessary

Left and right/ „Spine twist“

- sit upright
- lift breastbone up towards ceiling
- turn to one side
- support yourself with one hand on seat and one hand on backrest
- pull shoulder blades down towards „trouser pockets“ keeping them wide apart
- look over shoulder
- breathe in and out in spine twist position

„Lean on a big ball“



- lift your breastbone up towards ceiling
- lengthen and extend your spine upwards – trying to distribute the extension evenly throughout the spine

Shoulder problems

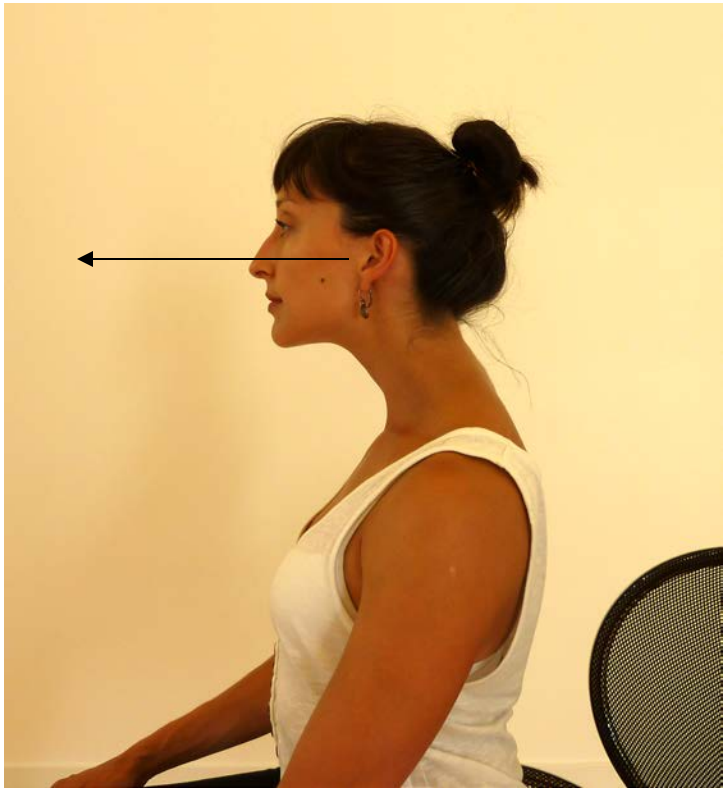
Prior condition for free shoulders:

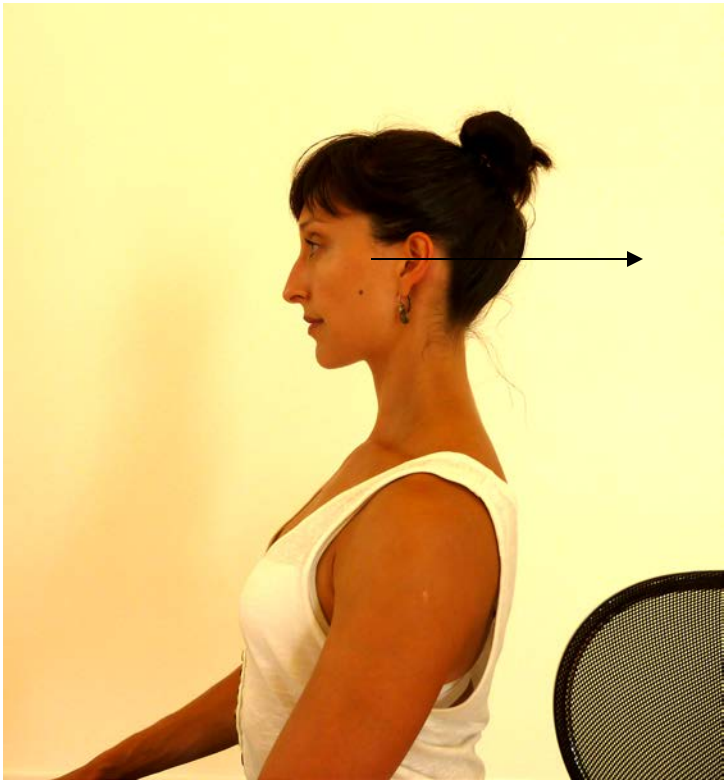
- shoulderblades can only glide back and downwards along your back, when the spine is in a lengthened upright position, respectively when the thoracic vertebrae are „flattened“.
- bad posture results in narrowing the path in the shoulder joint and can cause damages to the rotator cuff of the shoulder joints.

„Coathanger“

Sit upright. Lengthen the tip of your head to the sky.
Breathe in and lift both shoulders towards your ears.
Breathe out and let the shoulders sink slowly, as much as possible towards your trouser pockets.
Feel length and space between earlobes and shoulders
Repeat this exercise several times at a faster speed.

„Pigeon“



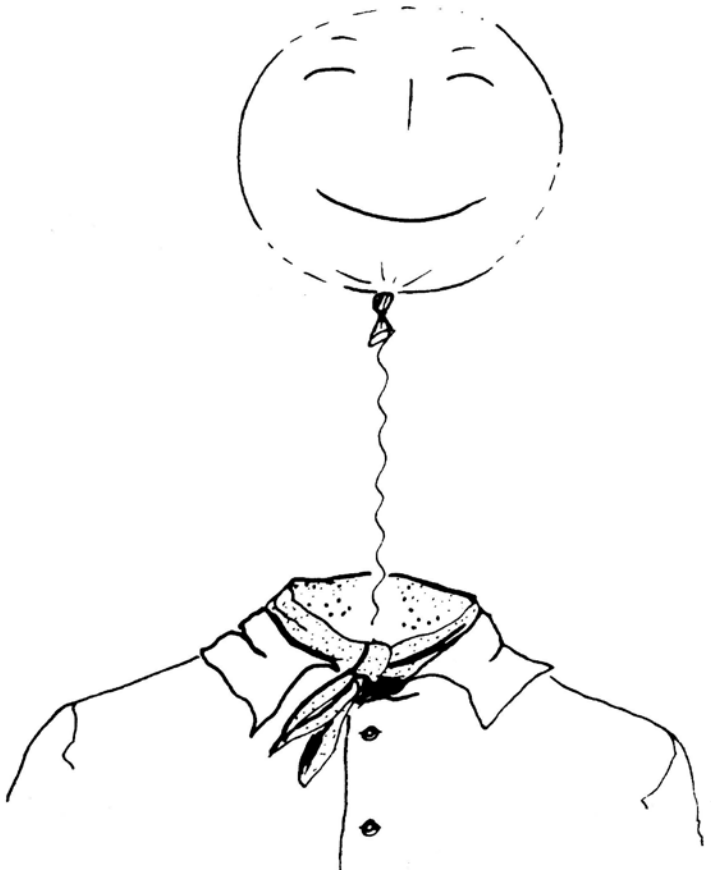


„Pigeon“

- sit upright
- send chin and head forward and back along a horizontal plane (jutting motion)
- chin remains pulled down when moving head back. Think „double chin“!
- eyes and nose move parallel to the ground, don‘t look up
- lengthen the back of your neck and shorten the front of your throat while pulling head back

„Hot air ballon“

light head, free neck



- sit upright, root your sittingbones into the seat and let your feet sink into the floor .
- lengthen and connect the crown of your head to the sky.
- your head is balancing effortlessly on your spine like a hot air ballon.

Bild: Eric Franklin

Different pelvis placement in sitting and standing position

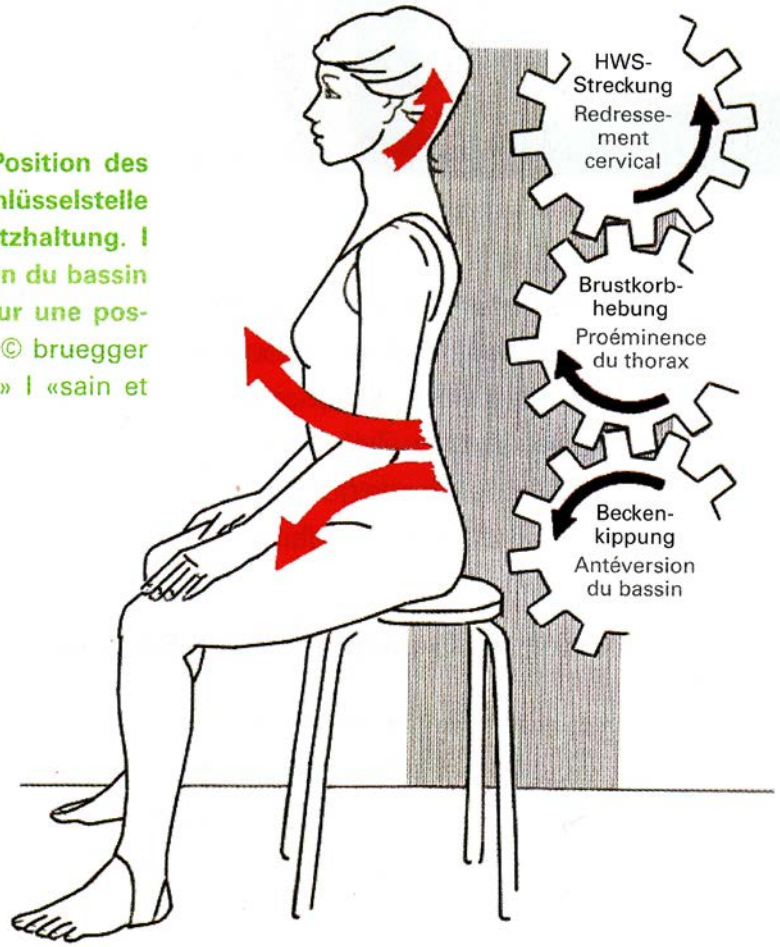


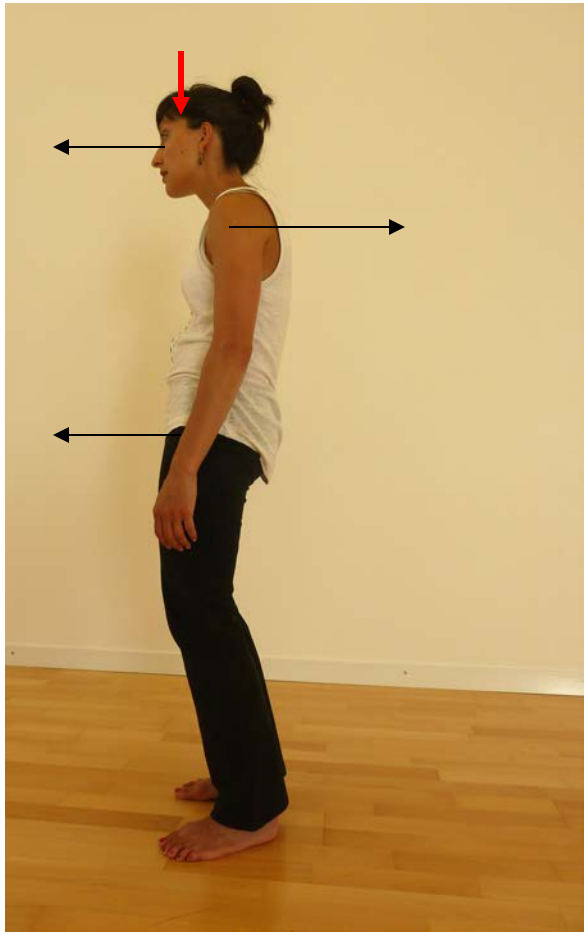
Abbildung 1: Die Position des Beckens ist die Schlüsselstelle für eine stabile Sitzhaltung. I Figure 1: La position du bassin est le point-clé pour une posture assise stable. © bruegger «gesund und aktiv» I «sain et actif»

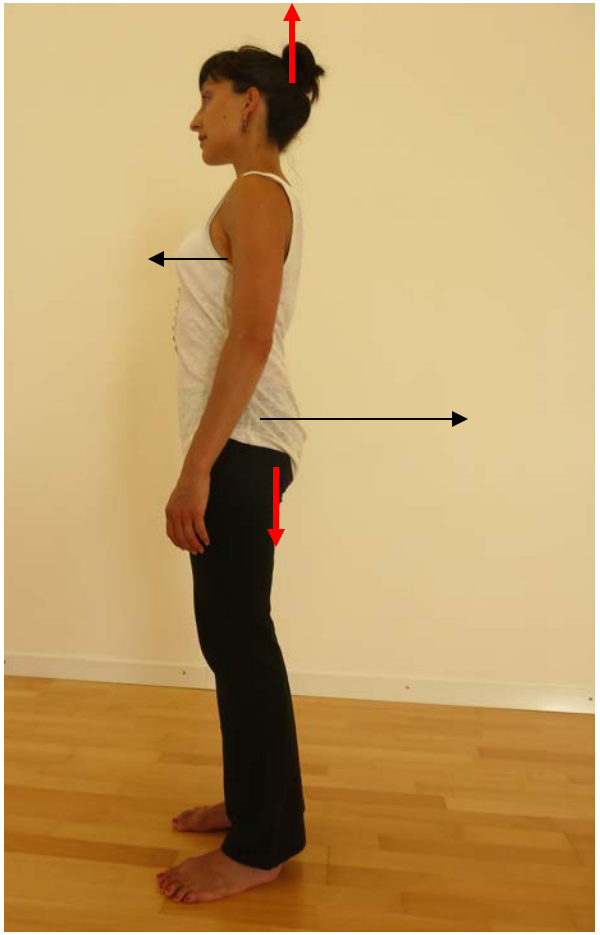
sitting:
tilt your pelvis forward

Bild: Dr. A.Brügger

Standing

wrong and right





standing:

bring your pelvis back over your feet,

keep your back long and let your tailbone sink towards the floor.

Abdominal - balloon

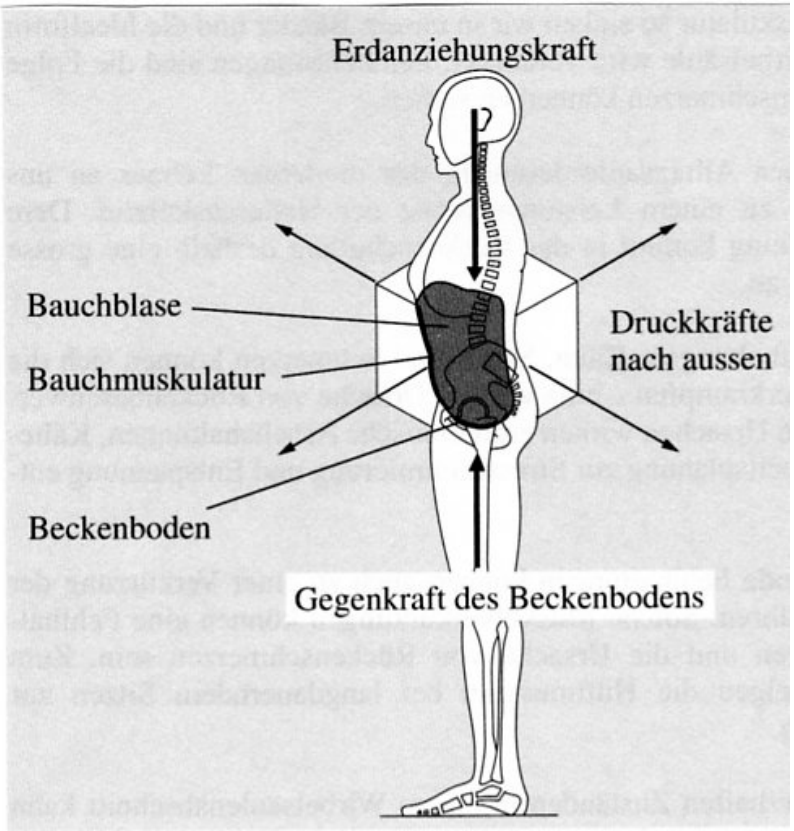


Abb. 10:
Schematische Darstellung der Bauchblasenfunktion

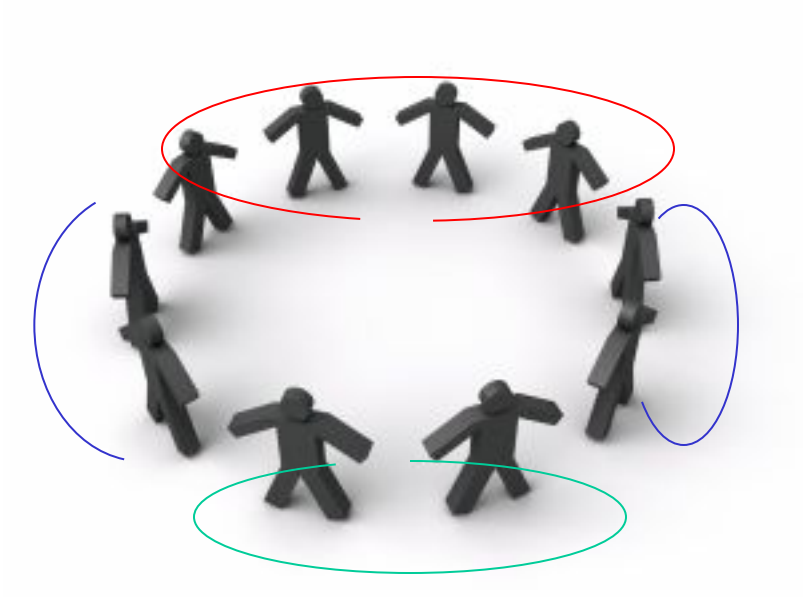
The spine is supported

from the **front** by activating your deep abdominal muscles,

from **down** by engaging your pelvic floor,

and from the **back** through the support of your deep back-muscles

The center of your body
your „core“ as a muscle-chain



front:

deep abs

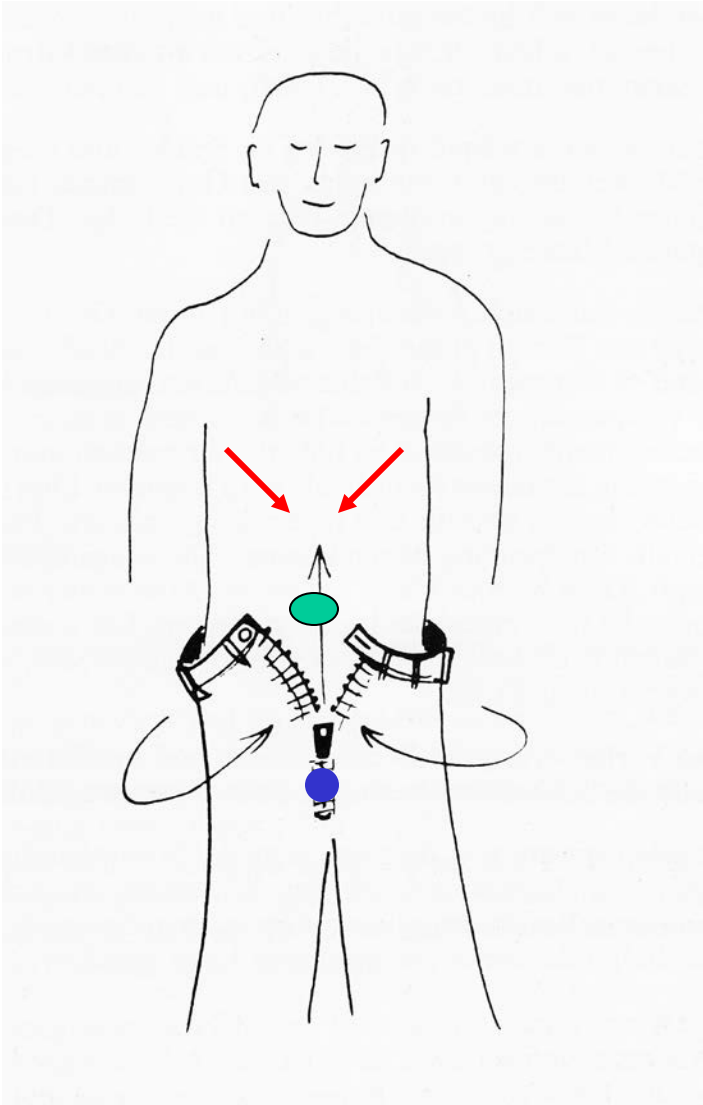
back:

deep backmuscles

side:

Fascia

„Zipper“



Support your center/encourage movement control by:

- Lifting your **pelvic floor**
- Soften your lower **ribs** and bring them together in the direction of your bellybutton
- Let your **bellybutton** sink backwards towards your spine

„Magic wand“

leaning forward

leaning backward

„Magic wand“

strengthen your center

- tilt your upper body forward and backward keeping your back strong. Keep your head over your chest, and your chest over your pelvis in one line like a magic wand
- the movement only takes place in your hipjoints
- when leaning forward you are mostly activating and using your deep back muscles
- when leaning back you are mostly activating und using your deep abdominal muscles

„Pushup“
whole body tension

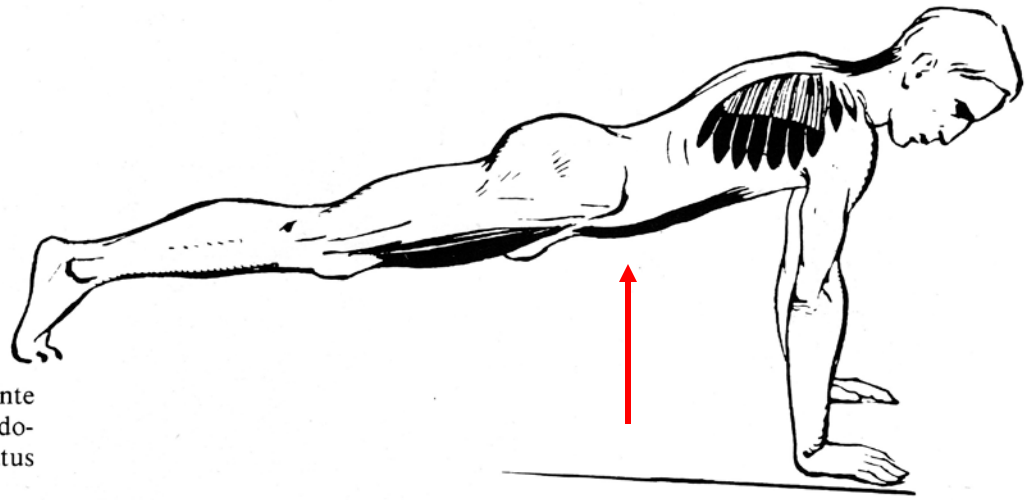


Abb. 4.3—24. Liegestütz. Als gespannte Muskeln sind eingetragen M. rectus abdominis, die Strecker des Knies, der Serratus anterior und Nackenmuskeln.

„Pushup“
whole body tension

This exercise can be done from a

- ***seated*** position using arms to push the upper body away from the edge of a table and from a
- ***standing*** position pushing body away from a wall

→ pull abdominal wall in with a feeling of „naval to spine“

→ keep shoulders wide and guide shoulderblades downwards towards „backpockets“

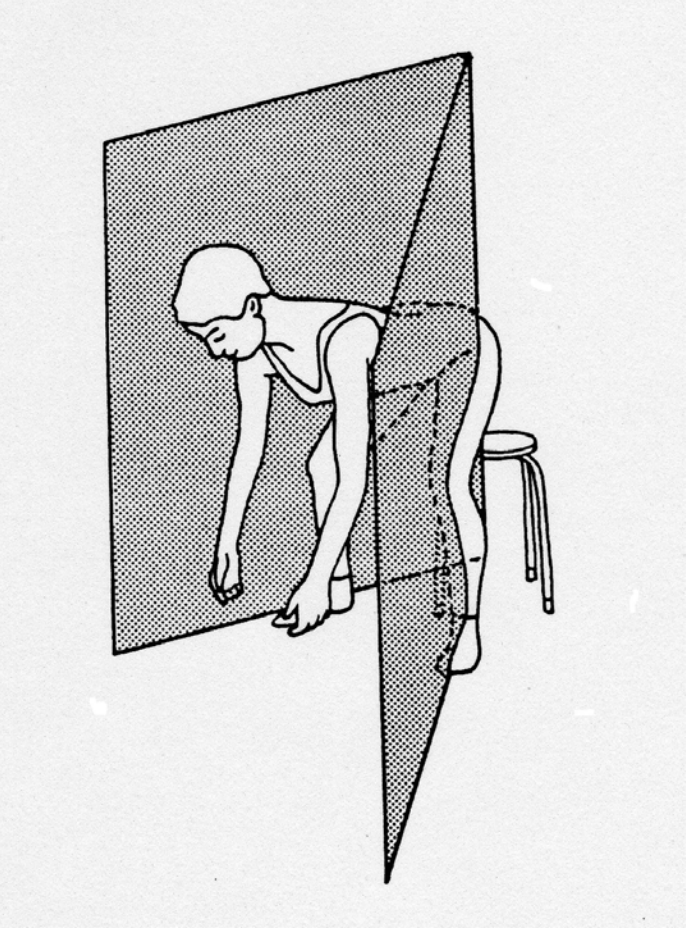
→ lengthen back of your neck

„Relaxed mouse“

„Relaxed mouse“

- bring your outstretched arms in front of your breastbone, thumbs looking downwards
- cross one hand over the other
- left hand pulls right hand to the right ☞count to 10
- right hand pulls left hand to the left
- ☞ count to 10
- do 2-3 repetitions per side

Leg sector



Avoid a combination of movements outside of your leg sector

- when bending forward
- when sitting at workplace
- during standing activities

Emotions & stress can also affect your posture

Bild: Sempé

- there is an interplay between emotions and posture.
- there is a clear link between how you feel and how you „hold“ yourself.

„Owl“

while squeezing and lifting the shoulder muscle with your opposite hand

- turn your head gently away from your shoulder and take a deep breath in.
- bring your head back slowly to the neutral position and breathe out.

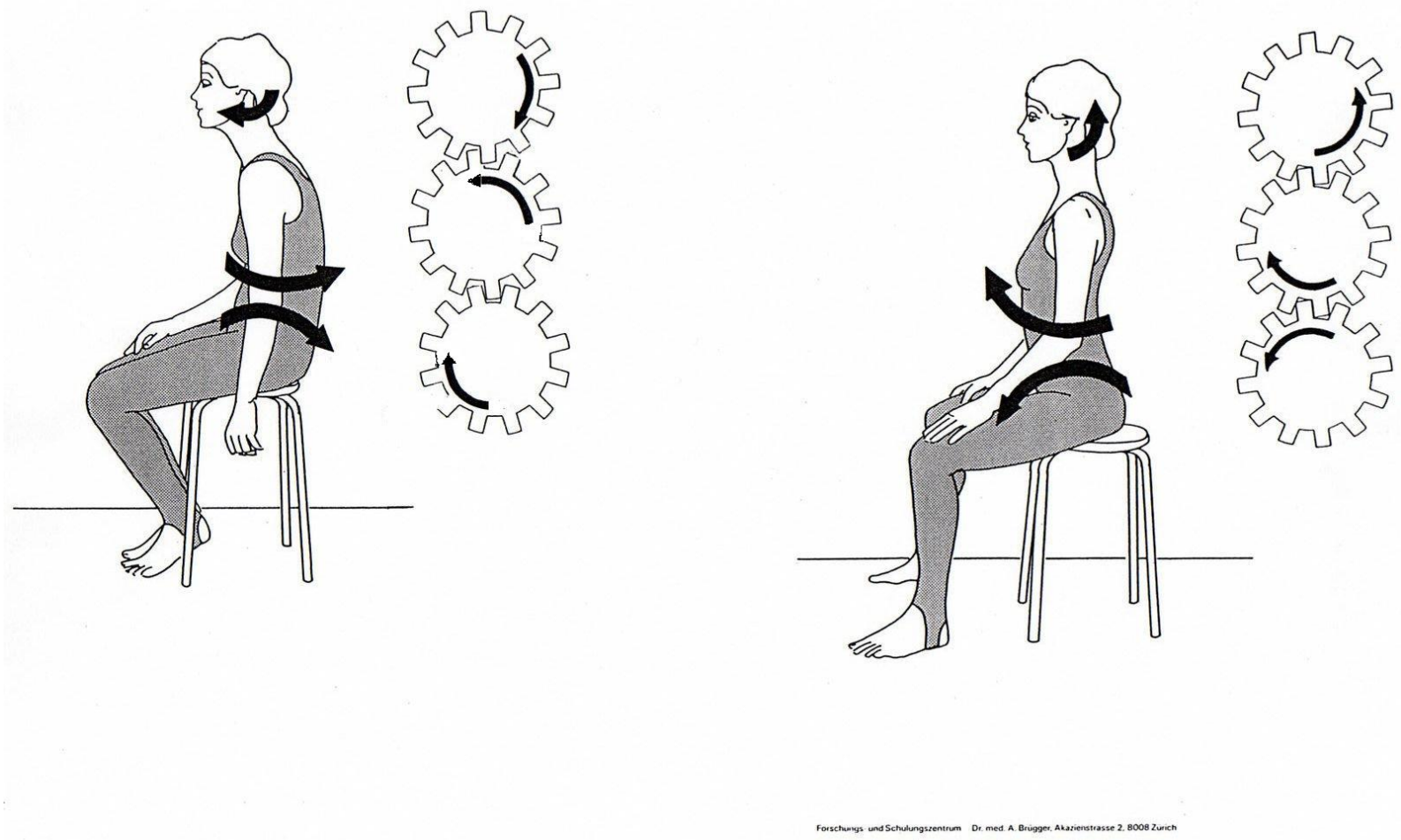
„Owl“

- the owl is an effective relaxation technique that helps you relieve tension in the upper trapezius muscle.
- this exercise releases the shoulder tension that is caused by reading and „hand-eye coordination“ activities such as computer work.

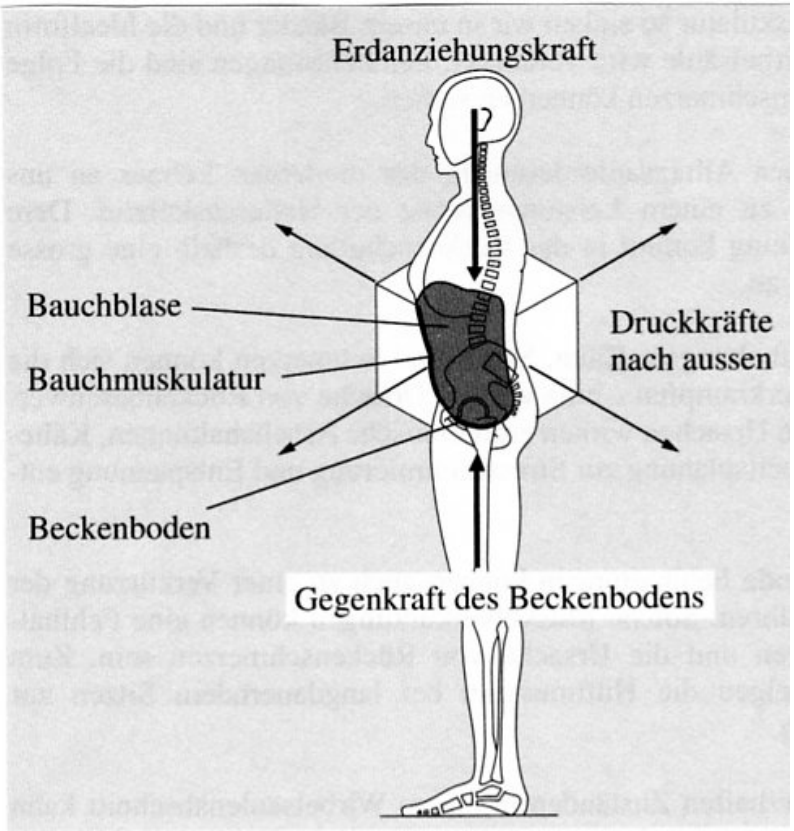
“If you know what you are doing, you can do what you want”

Moshe Feldenkrais Quote

Relationship between pelvis, chest und head movement



Abdominal - balloon



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Bibliography

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