

Coding your body –
Which software to use to
improve your hardware set up.

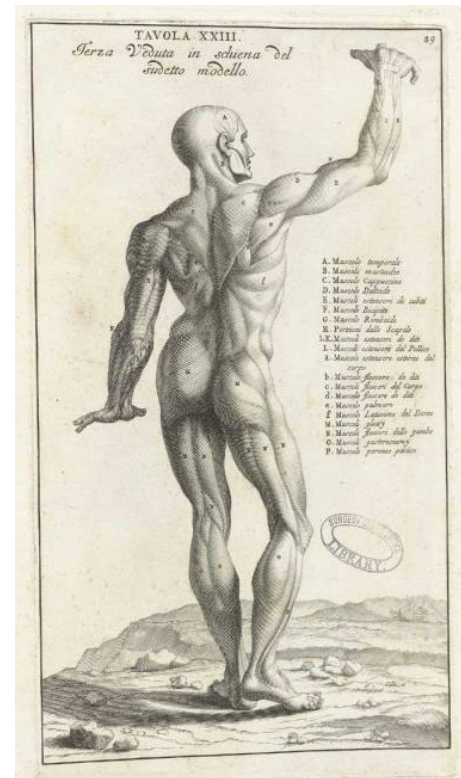
Sophie Hiltner – Physical therapist & BA of social sciences
Twitter: SophieHiltner

Content

- Hardware – tissues with memory effect
- Software – they fire together they wire together
- Posture – how sitting influences your body
- Pain in the back – major bugs
- Examples – Patients I've treated
- Prevention – How to actually code

Hardware

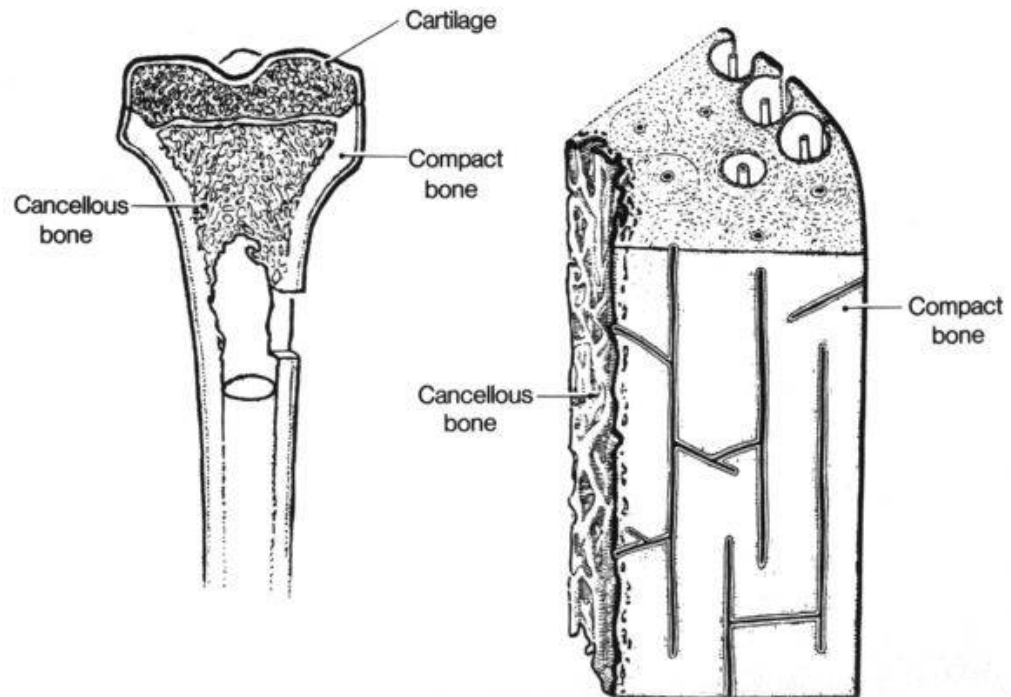
- Bones
- Connective tissue
- Muscles and tendons
- CPU



Bones

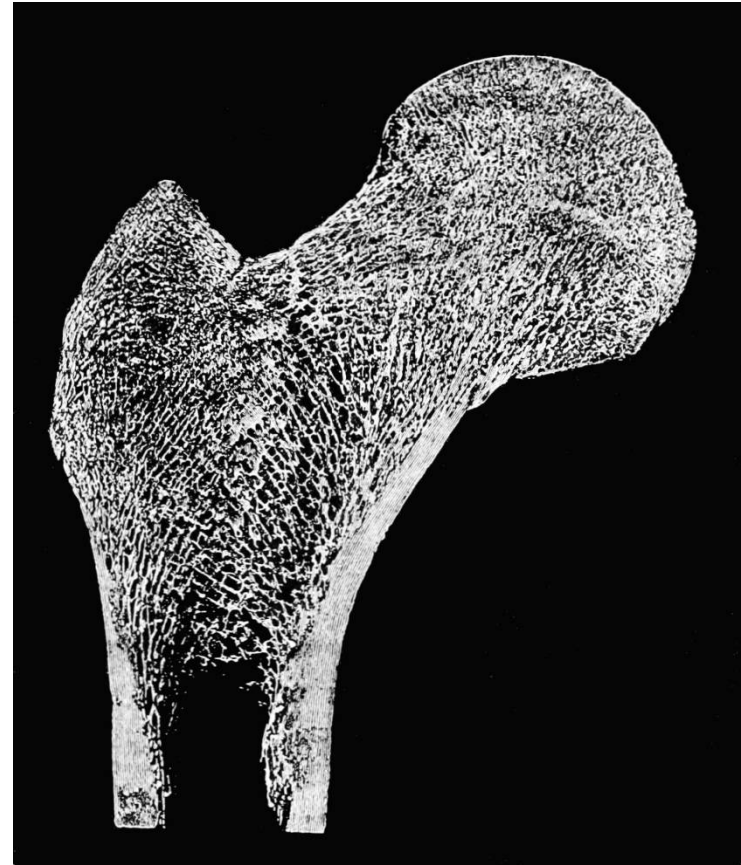
- Hard compact bone and cartilage
- Soft core: Trabecula and bone marrow
- Turnover rate 6-12 weeks
- Passive structure

Interior Bone Structure



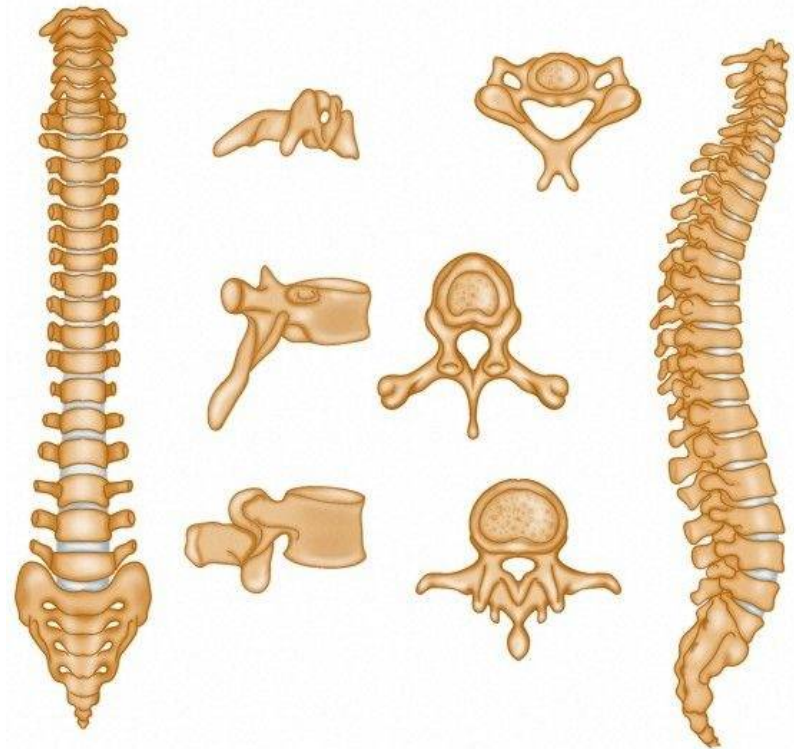
Bones – Memory

- Trebecula = trajectory
- Constantly constructed and destructed
- Pressure and tension from muscles and gravity



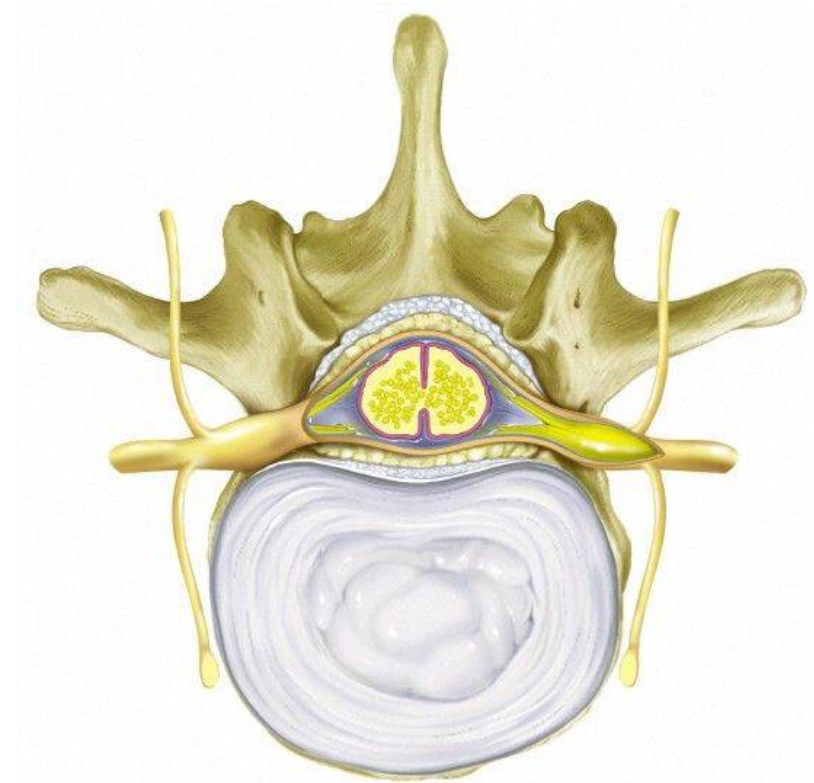
Bones of the back

- Different designs for different tasks
- Spinal canal from broad to narrow
- Movement patterns
- Common problems:
 - Neck
 - Lumbar



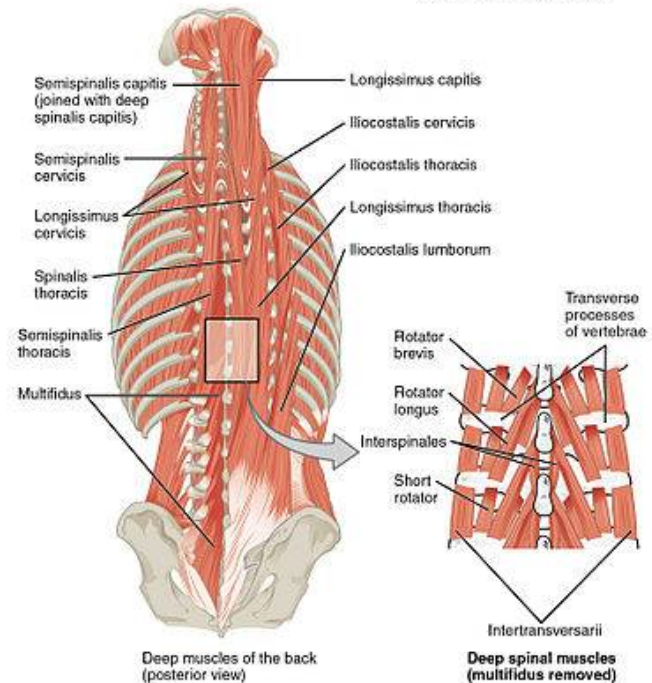
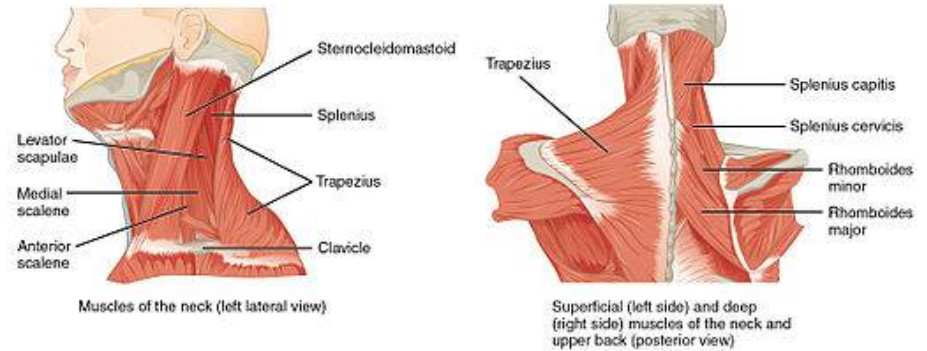
Connective Tissue

- Intervertebral discs, ligaments and tendons
- Turnover rate: 300-500 days!
- Intervertebral discs:
 - Strong fibre ring
 - Soft gelatinous core
- Small space for nerves



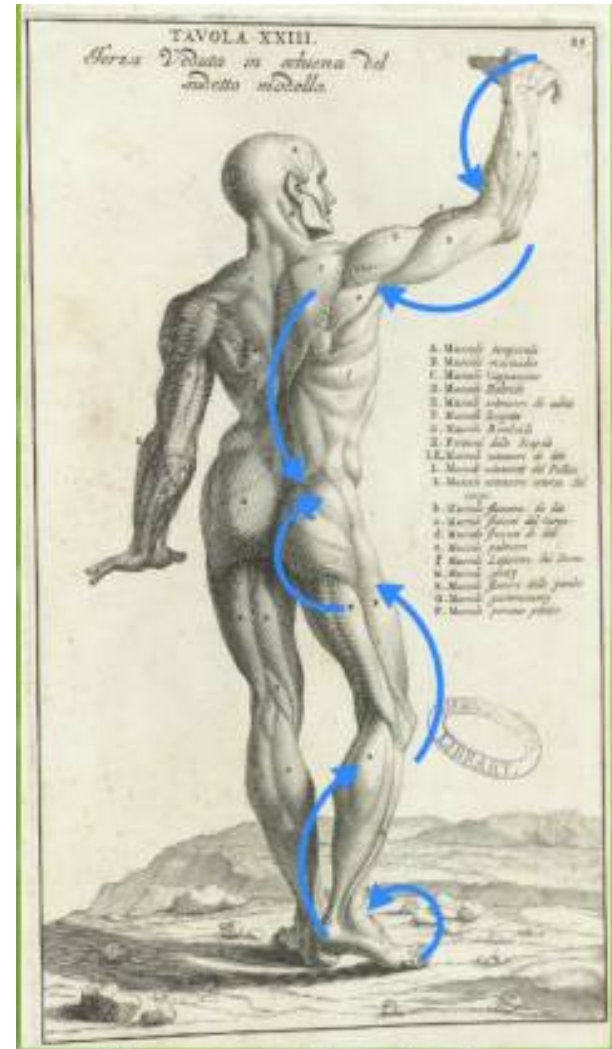
Muscles and Tendons

- Long muscles:
 - Outer layer
 - Movement
- Short muscles:
 - Close to joints
 - Stabilization
- Turnover rate muscles:
 - 3-5 days (soreness)
 - 2-6 weeks (torn muscle)
- ***Active structure!***



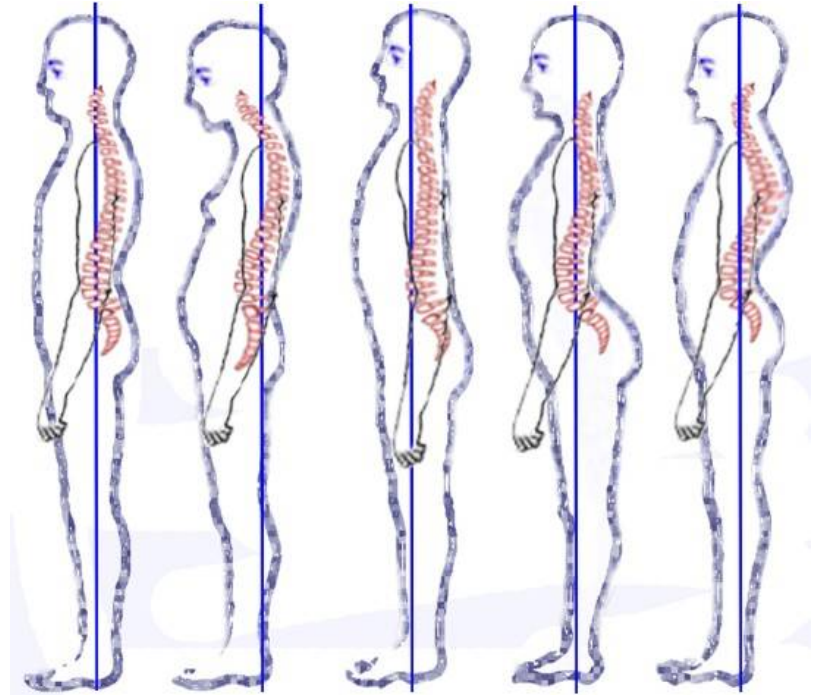
Muscles – Memory

- Muscle slings
- Agonists – Antagonists
- Spinal reflex
- David and Goliath – the short one wins
- Myogelosis



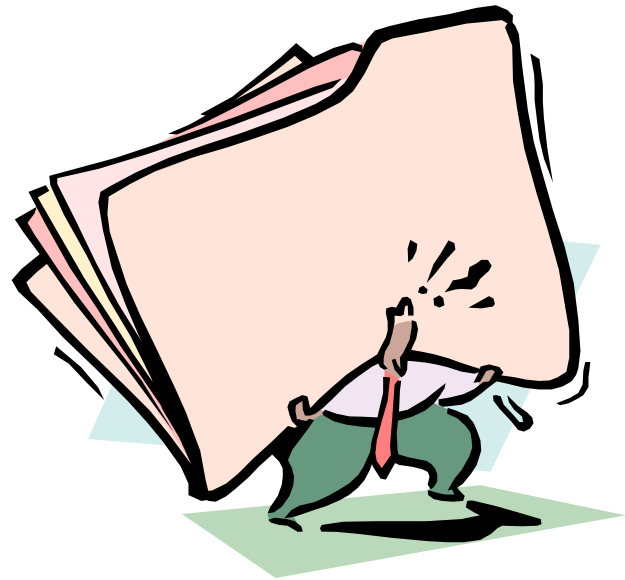
CPU – Your Brain

- Posture = biology + habits + awareness
- They fire together → they wire together



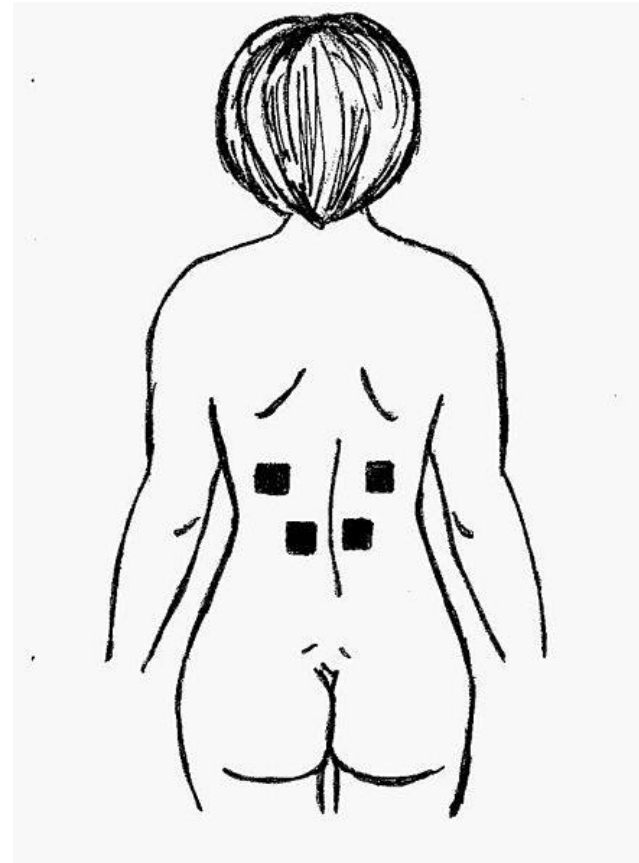
Backpain

- Chronic vs. Acute
- Financial means...
- Consequences for your body can be a desaster



Backpain

- Most common illness in Germany
- Most sickdays due to backpain
- Serious incidence rarely happen without announcement!



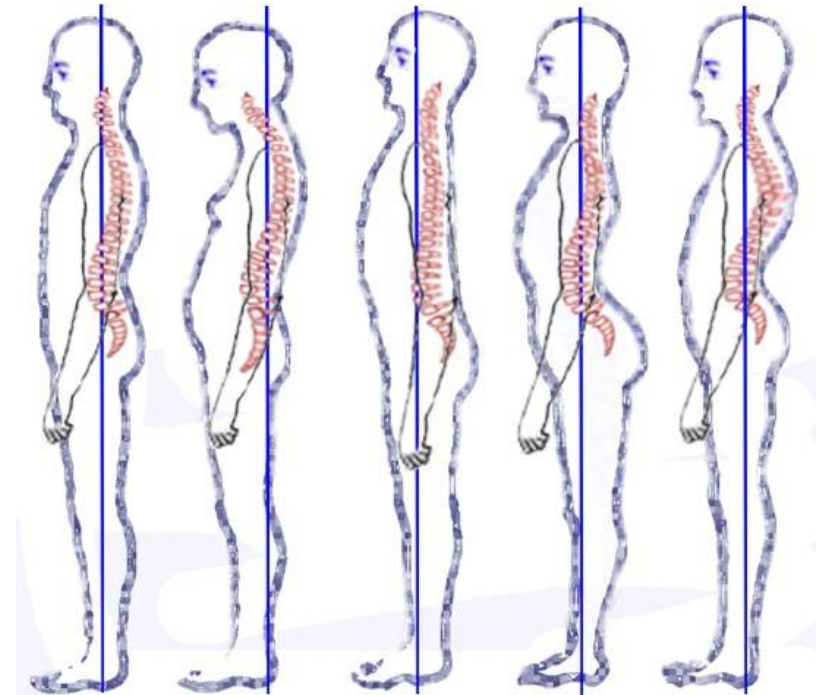
Basic treatment structure

- Diagnosis – provoking pain
- Stretching and detoning shortened muscle
- Awareness raising for optimized posture
- Activating stabilizing muscles
- Repeat posture and body awareness over and over



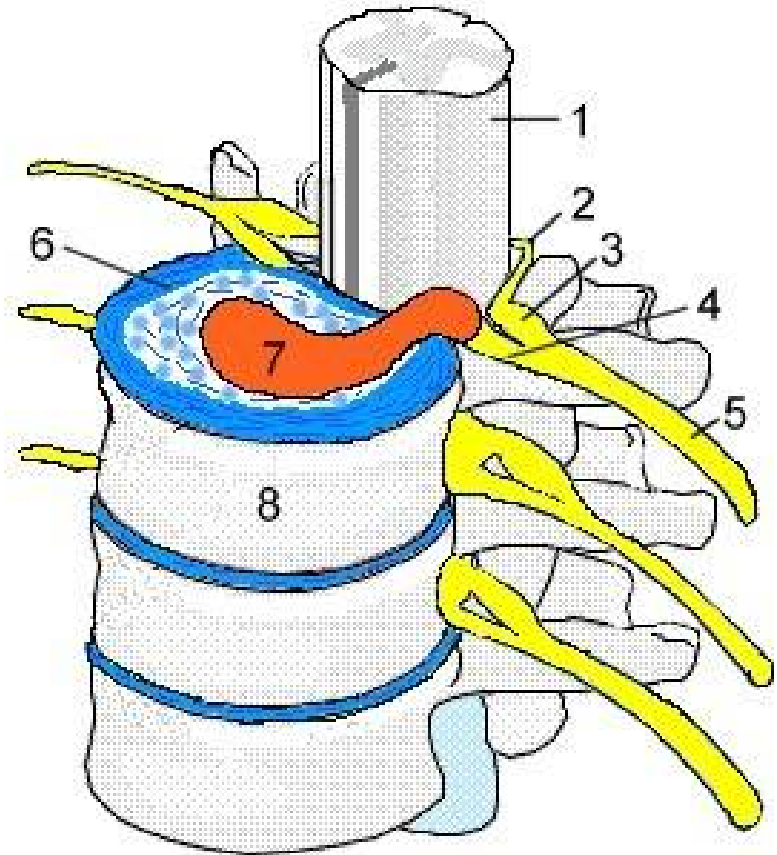
Examples

- Former patients
- Desk job workers
- 9-10 hours sitting/5 days a week (incl. transportation, excluding overtime)
- These examples are individuals and though might show „typical“ symptoms are not a strict rule!



Stefan

- Acute herniated disc
- Especially pain in the morning, during day better
- Th: relaxation and heat treatment, small movements in pain free range



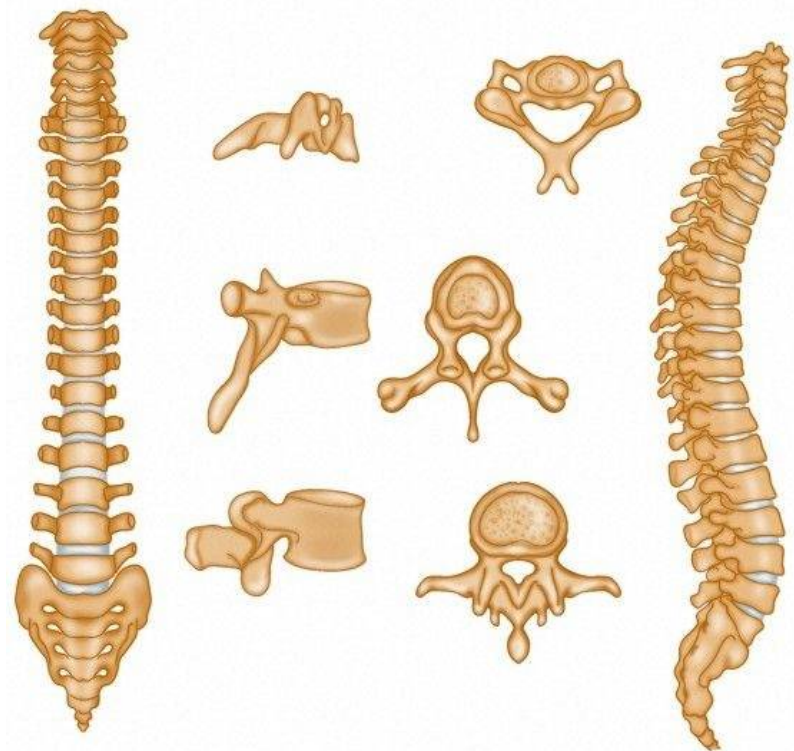
Stefan

- X-Ray



Angela

- Came for massages of the upper back
- Mentioned a tingling sensation and numbness in right foot
- CT results confirmed spinal canal stenosis and osteophytes right
- Th: body and posture awareness ↑, stabilizing muscles ↑, weight ↓



Rudi

- Symptoms: tingling and numbness in fingers 4&5
- Little movement C7/Th1
- Oedema basis of neck
- Th: Heat treatment, detoning measures, specific activation of stabilizing muscles



Gertrude

- Mouse-Arm-Syndrome
- Shoulder pain for over 1 year
- Muscles and tendons front of shoulder: short
- Th: mobilization through the pain – ripping the shortened fibres



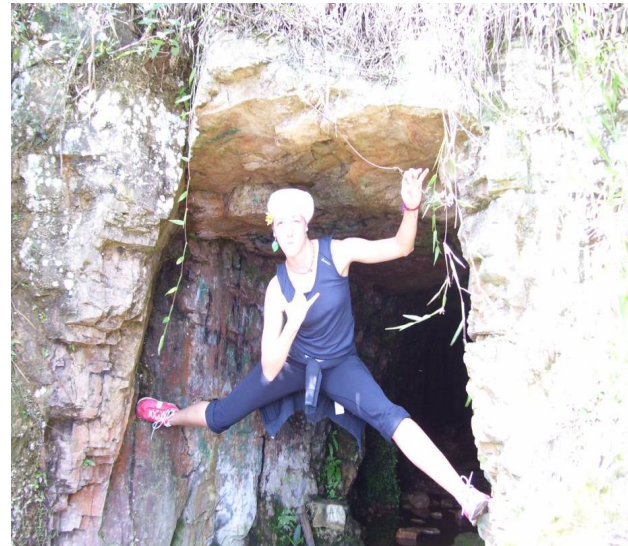
David

- Unspecific back pain
- Asymmetrically defined muscles
- Chronic pain around left shoulder blade
- And acute pain in upper back und neck
- Th: Heat treatment and posture, posture and posture in addition to sport in leisure time



Coding your body

- Activate your active hardware
- Align your back and optimize workplace
- Pay attention to your bodies needs: food, drink, bathroom breaks, movement, touch



Good news – Bad news

- ✓ Your choice!
 - ✓ You will feel a difference!
 - ✓ 1 Minute prevention = 1 hour of rehabilitation
- You need a good teacher!
 - You need patience!
 - If it is easy, you are most likely doing it wrong.
 - Repetition, repetition, repetition.....

Take home ideas

- Stretch out spine against wall or floor
- Push back against wall or floor
- Little reminder to raise awareness of bodies needs
- Swimming backstroke
- Rock climbing



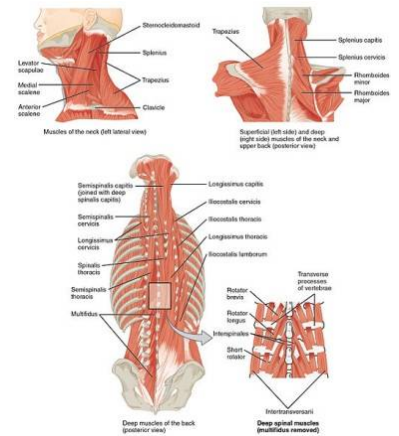
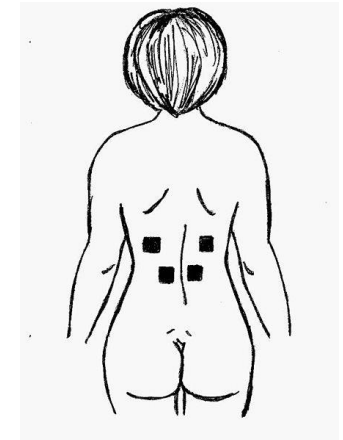
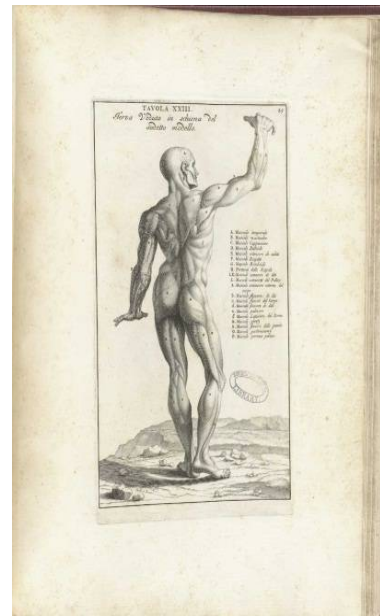
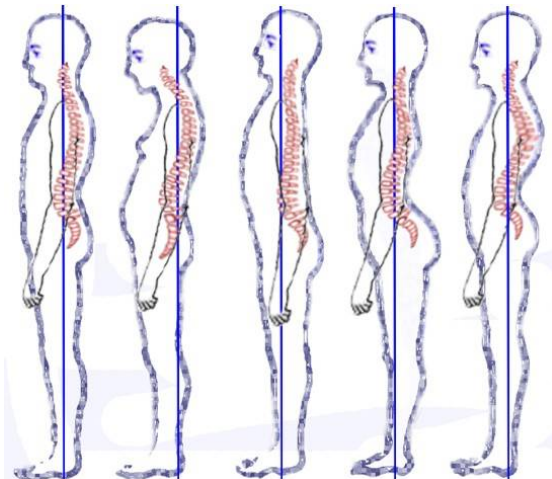
Thank you.

Don't kill the messenger.

Workshop with basic excercises and massage techniques at 13:30pm Hall 14

Source - Wikicommons

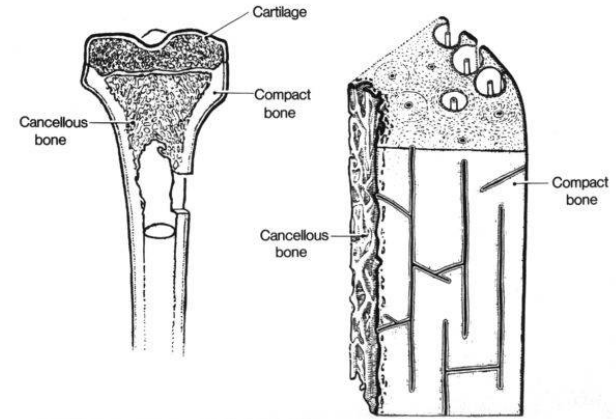
- Bernadino Genga
- Ru:User:V-Ugnivenko
- OpenStax College
- Axion GmbH



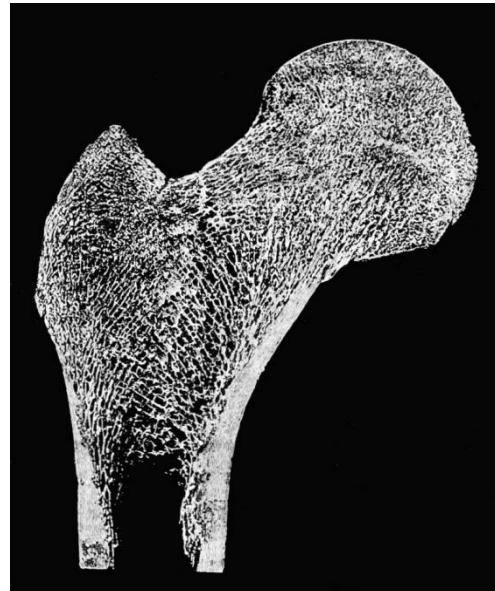
Sources

- Image from DocCheck Alexandra Schritz

Interior Bone Structure

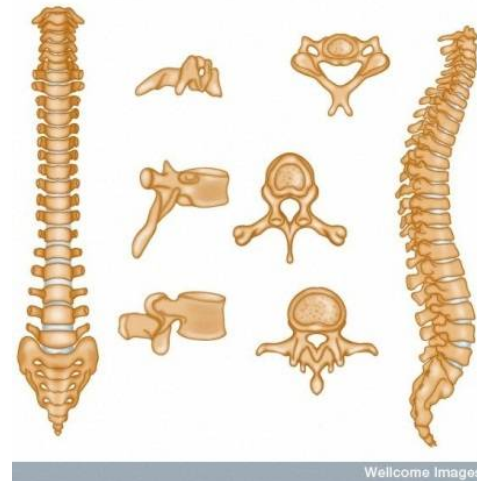
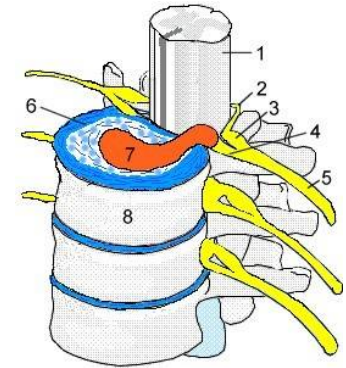
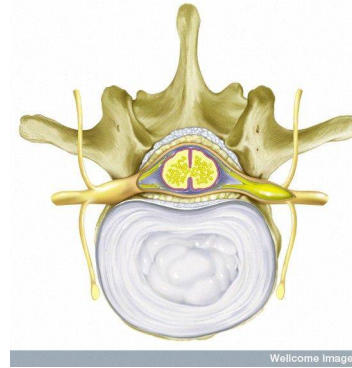


- Image from Popular Science Monthly Volume 42



Sources

- Images from DocCheck
Bettina Beutler



Coding your body – Questions?

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