Equine Chiropractic

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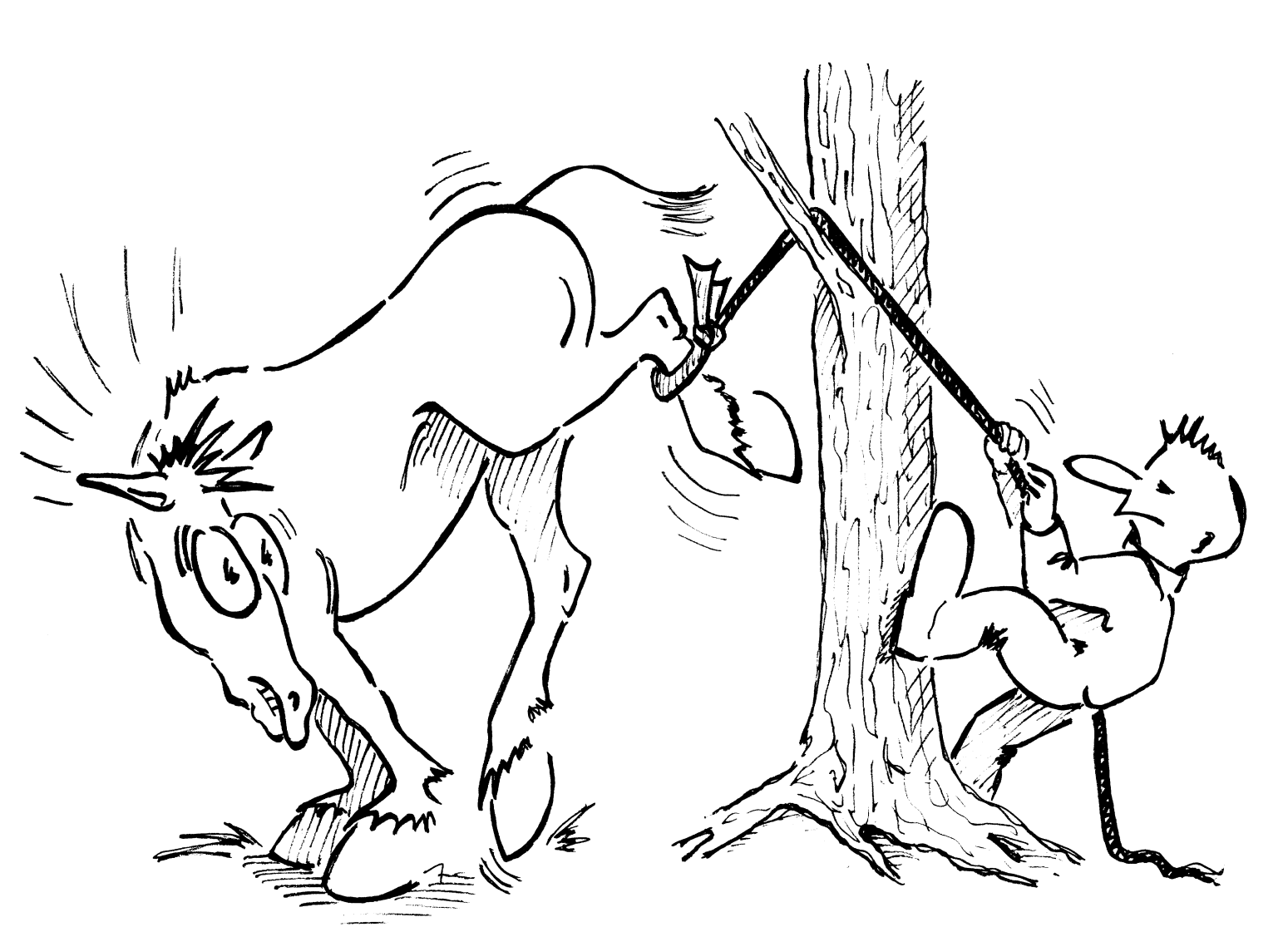
Content of Today's Lecture

- What is Animal Chiropractic?
- What is a Vertebral Subluxation Complex (VSC)?
- What causes VSC's?
- What are the symptoms of VSC's?
- What is a Chiropractic examination and treatment?
- Chiropractic in the Equine practice

Chiropractic???



What Is Animal Chiropractic?

- An integrative medical diagnostic and treatment method based on Functional Neurology.

What Is Animal Chiropractic?

- Focuses on the proper health and movement of all joints in the body, but especially the proper function of the spinal column

Basic Principles of Chiropraktik

- The dysfunction of a single joint can affect the neurological balance of the whole body
- Nerve dysfunction occurs when the structural spine becomes dysfunctional. With improper vertebral joint motion, the function of the nervous system is affected.

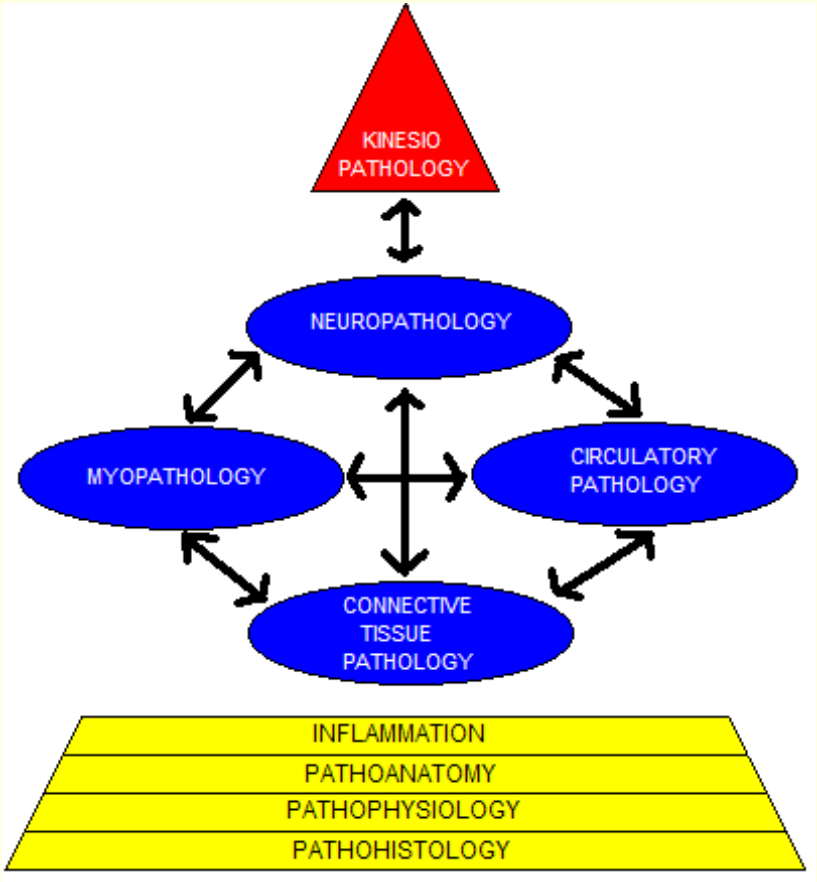
What Is Animal Chiropractic?

- Diagnosis of Vertebral Subluxation Complex, and dysfunctional joints of the spine and extremities.

What is a Vertebral Subluxation Complex ?

Vertebral Subluxation Complex (VSC)

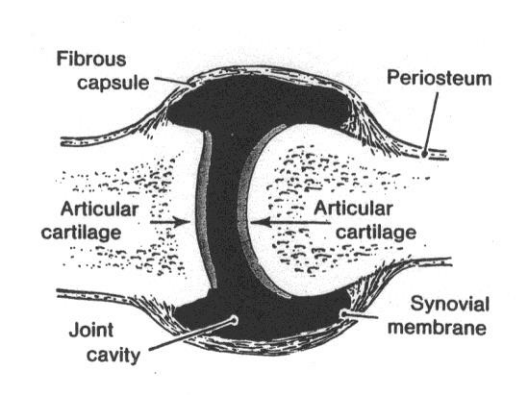
- KINESIOPATHOLOGY
- NEUROPATHOLOGY
- MYOPATHOLOGY
- CONNECTIVE TISSUE PATHOLOGY
- CIRCULATORY PATHOLOGY
- INFLAMMATION
- PATHOANATOMY
- PATHOPHYSIOLOGY
- PATHOHISTOLOGY



The Motion Unit

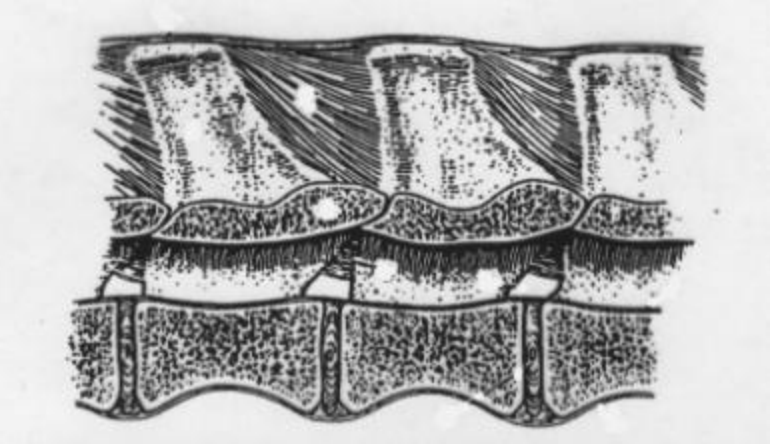
SIMPLE MOTION UNIT

- FUNCTIONAL unit,
- Two adjacent surfaces,
- And all the tissues in between.



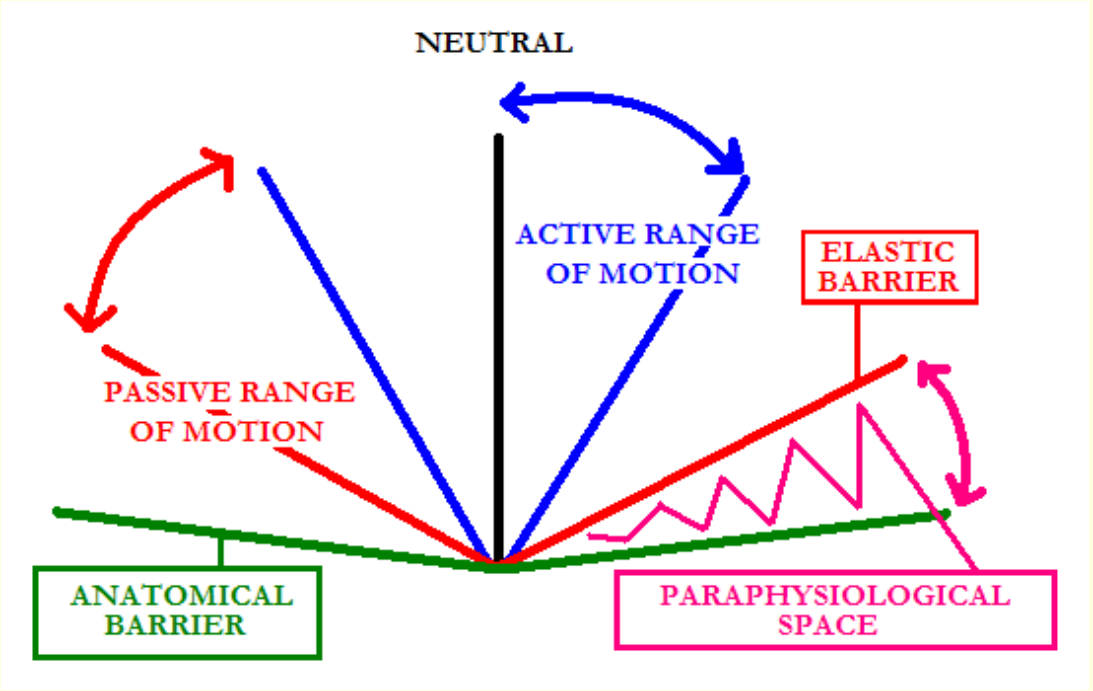
VERTEBRAL MOTION UNIT

- FUNCTIONAL unit,
- Two adjacent vertebrae,
- And all the tissues in between.



Normal Range of Motion (ROM)

- Active ROM
- Passive ROM
- Elastic Barrier
- Paraphysiological Space
- Anatomical Barrier

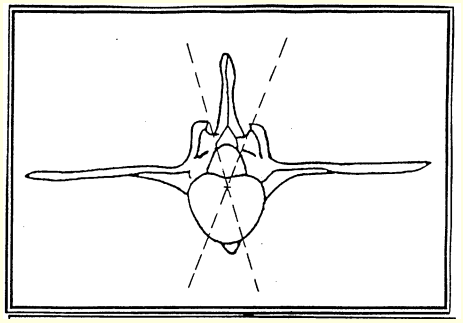


Kinesiopathology

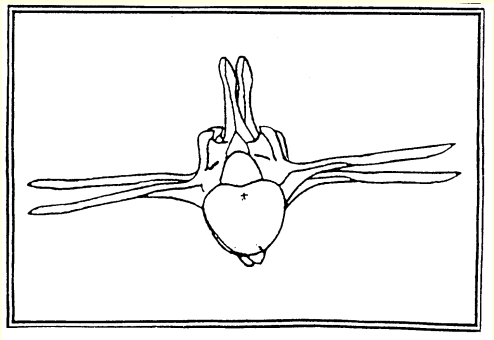
- aberrant range of motion of motion unit
  - Hypermobility
  - Hypomobility

Hypomobility

- Fixation in neutral position



- Fixation outside of the neutral position



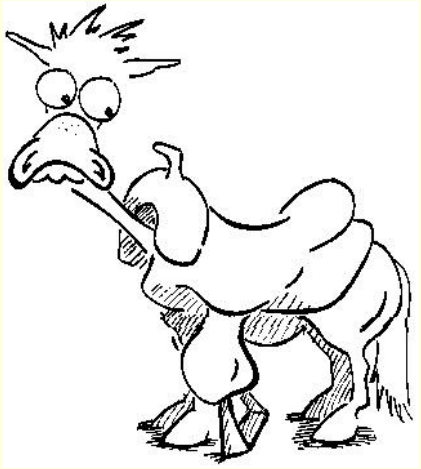
- Decreased range of motion

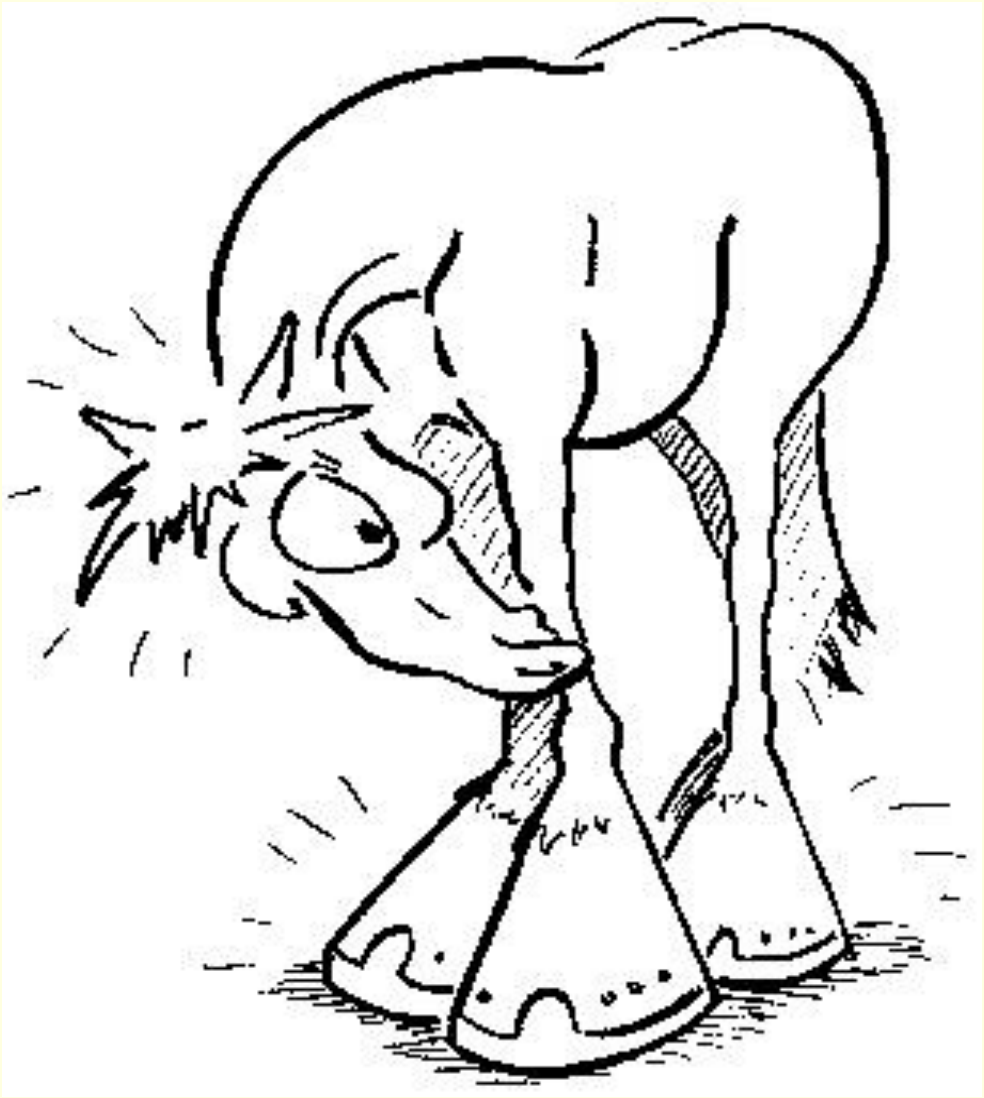
Causes for Kinesiopathology

- Types of Trauma
  - Macrotrauma
    - Acute
    - Generally severe or massive
    - Inflicted in one episode
    - Generally result in immediate lameness conditions

Causes for Kinesiopathology

- Types of Trauma
  - Microtrauma
    - Chronic
    - Repetitive overuse
    - Can result from activities of daily living
    - Typical Biomechanical Lesions





Vertebral Subluxation Complex (VSC)

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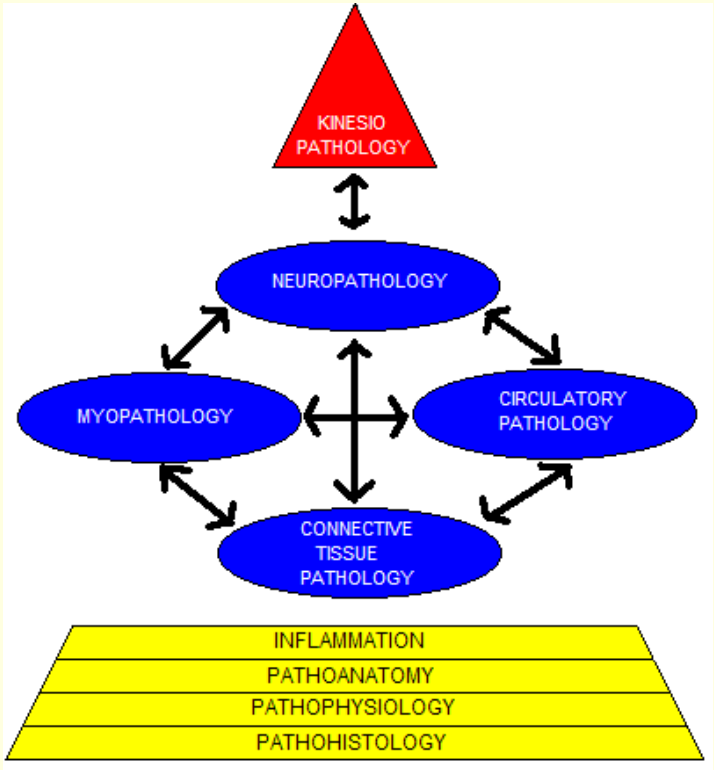
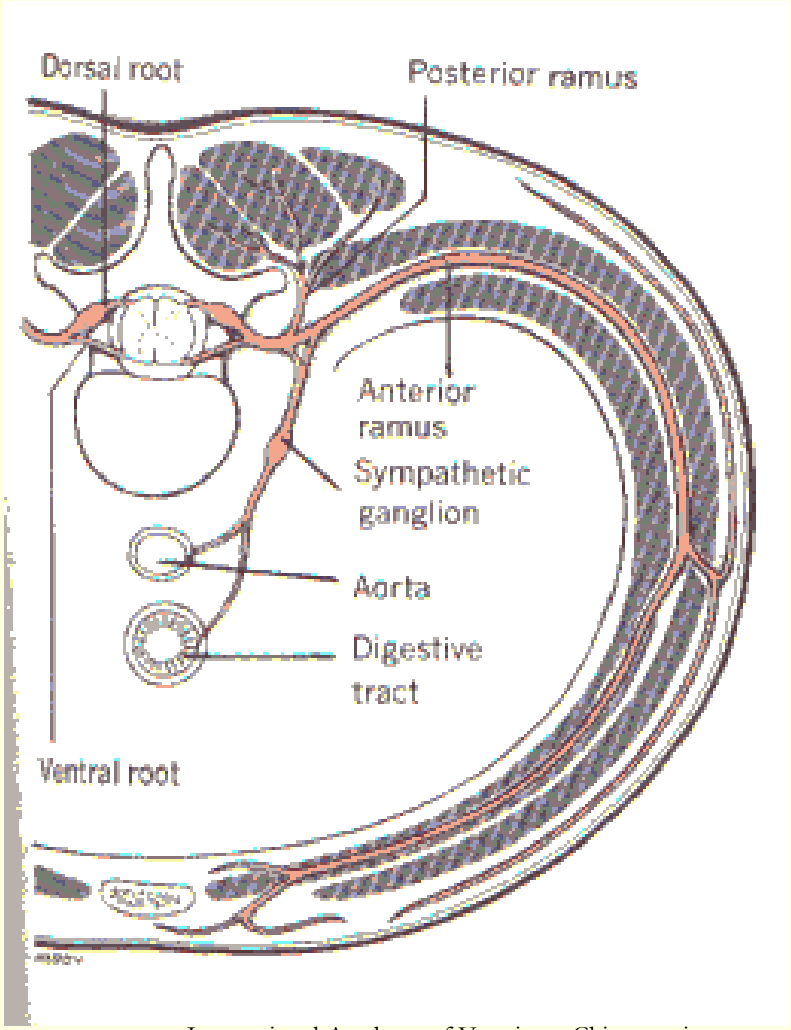
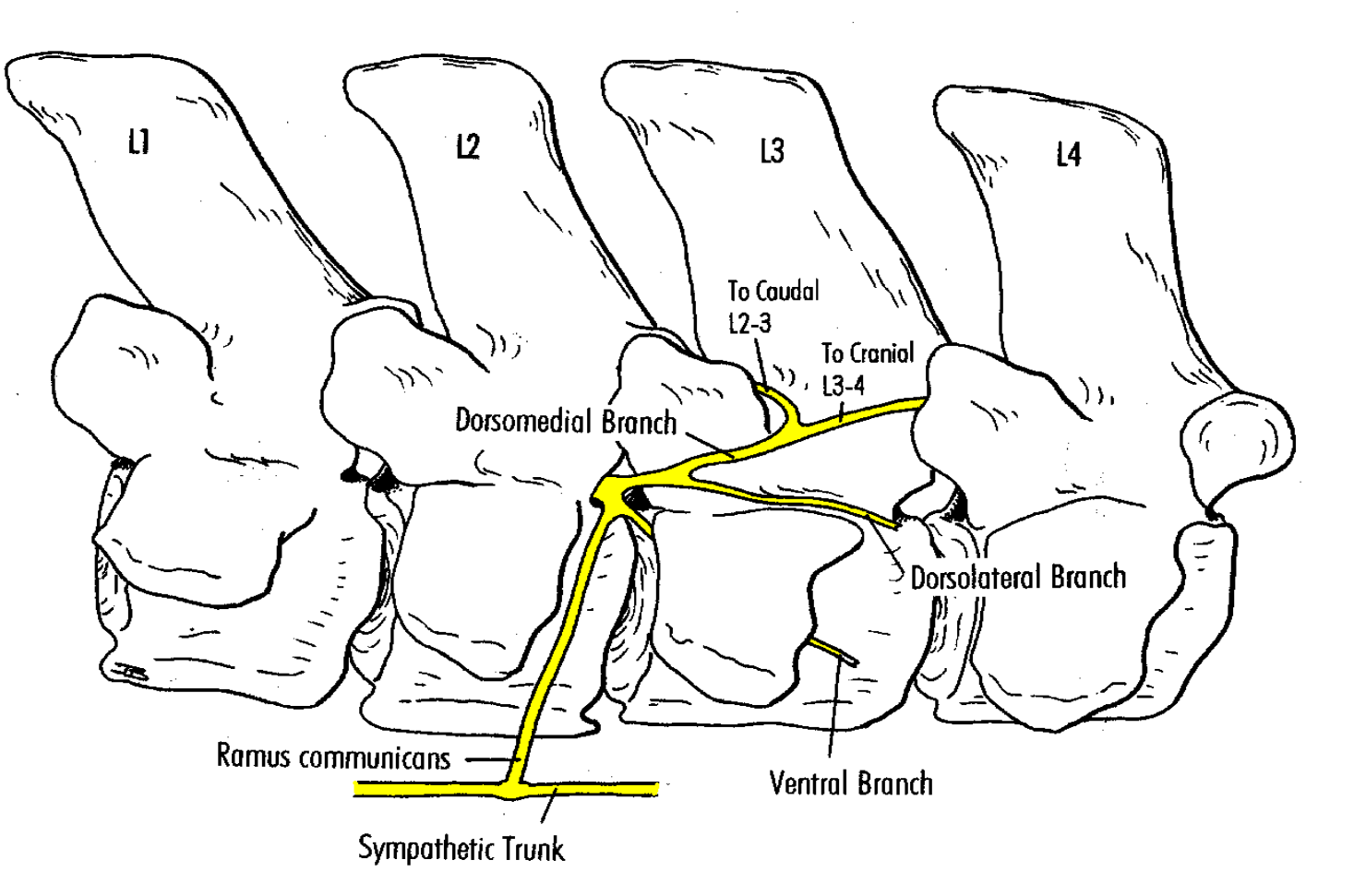


Neuroanatomy



Anatomy


L1
L2
L3
L4
To Caudal
L2-3
To Cranial
L3-4
Dorsomedial Branch
Dorsolateral Branch
Ramus communicans
Ventral Branch
Sympathetic Trunk

Neuropathology I

DIRECT

- Pinched Nerve
- Soft tissue swelling leads to decreased size of intervertebral foramen

increased pressure on spinal nerves

→ (20-50 mm of mercury may result in a loss of as much as 50 % of the neurotransmission of the affected nerve)

Neuropathology II

INDIRECT

- Changed input to mechano receptors
  - 85% of all input to the brain is from mechanoreceptors,
  - 80 % of these mechanoreceptors are in the paraspinal Structures (joint capsels, epaxial musculature, ligaments)

Neuropathology II

INDIRECT

- Increased tension of the Dura
- Alteration to the blood flow

Nerve Compression

- Nerve irritation ⇨ increased transmission of nerve energy
  - Increased muscle tone
  - Formification
  - Increased sudomotor activity (sweat glans)
  - Increased vasomotor aktivity (increased blood flow / heat)

Long Term Nerve Compression

- Decreased metabolism/ axoplasmatic transport
- Nerve degeneration
- Decreased nerve activity
  - Muscleatrophy
  - Decreased sudomotor activity (sweat glands)
  - Decreased vasomotor aktivity (decreased blood flow)
  - Paraesthesis

Vertebral Subluxation Complex (VSC)

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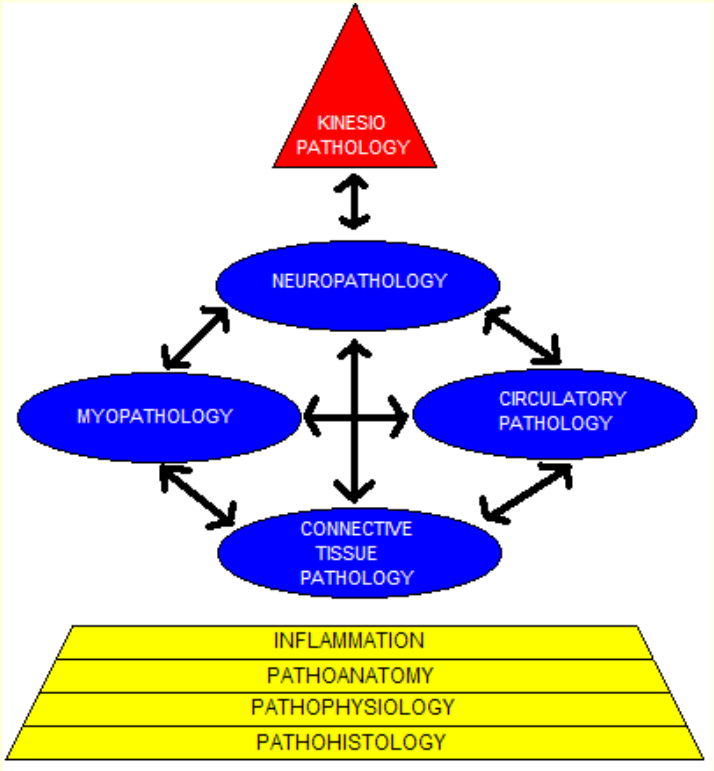


Symptoms of VSC
Muscle Incoordination

- Lack of coordination in gaits, pacing.
- “Lameness” that seems to shift from limb to limb.
- Muscle weakness or atrophy.
- Shortened stride in one or two limbs
- Decreased extension in front or rear
- Tracking
- Stumbling

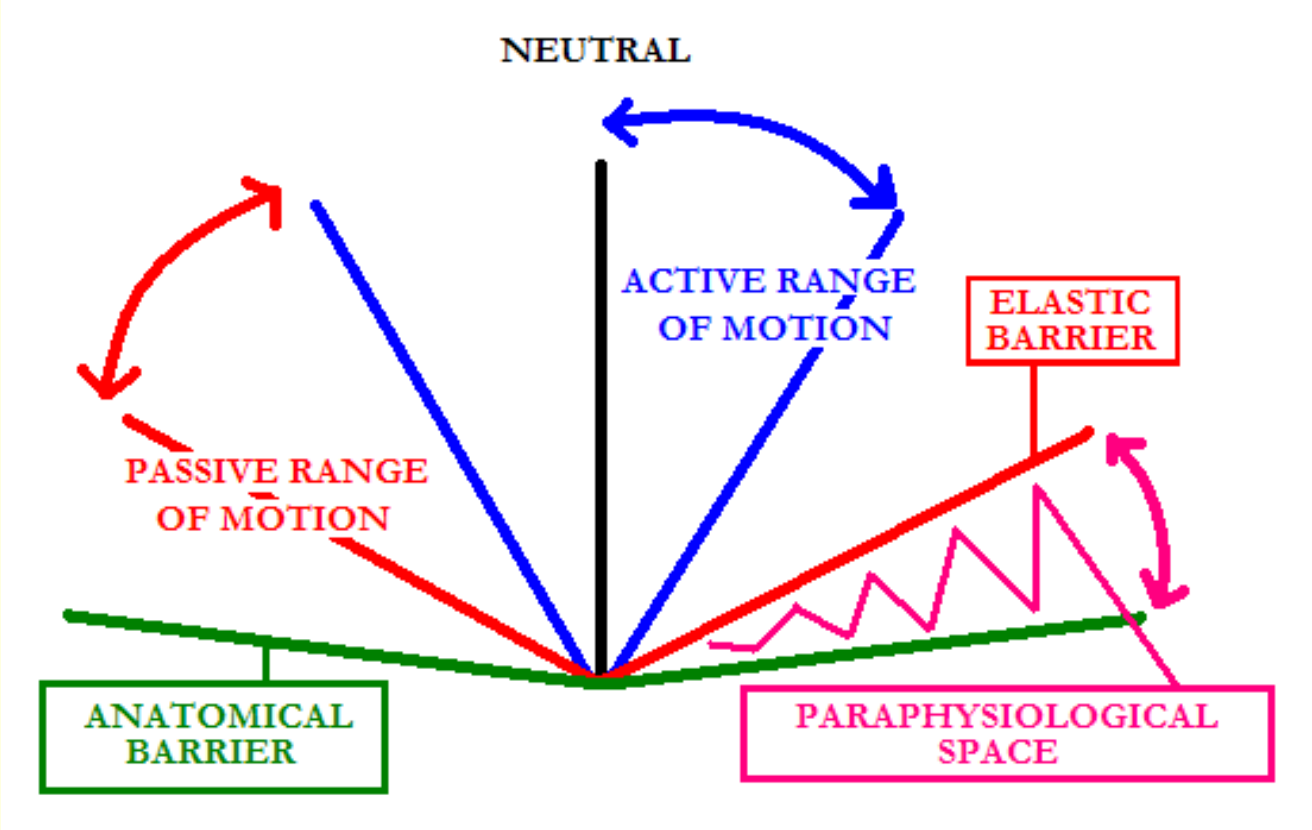
Chiropractic Examination

- Performance history.
- Posture and Gait. (Walk and trot.)
- Surface Palpation. (Coat, temp.,etc.)
- Muscle Palpation. (Spasm, hypo., hyper., or atrophy.)
- Range of Motion /Motion Palpation.
- Minor neurological exam.

Motion Palpation

Motion Palpation is our definitive diagnosis of the vertebral subluxation complex in the animal.

The Motion Unit must be Brought to Tension



Four Basic Principles of Motion Palpation

- In order to assess the end-feel, the motion unit must be brought to tension.
- An accurate line of correction must be used.
- The doctor must have an intimate knowledge of the anatomy of the motion unit.
- The patient must be properly stabilized.

Motion Palpation

Treatment of the VSC
- the chiropractic adjustment

- A trained Animal Chiropractor should make the final diagnosis of the VSC
- Treatment by a competent doctor involves the application, by hand, of an adjustment:
  - A very specific, high velocity, low amplitude, thrust
  - As close as possible to the effected joint
  - Mobilization of the joint without exceeding the anatomical barrier

Chiropractic Adjustment

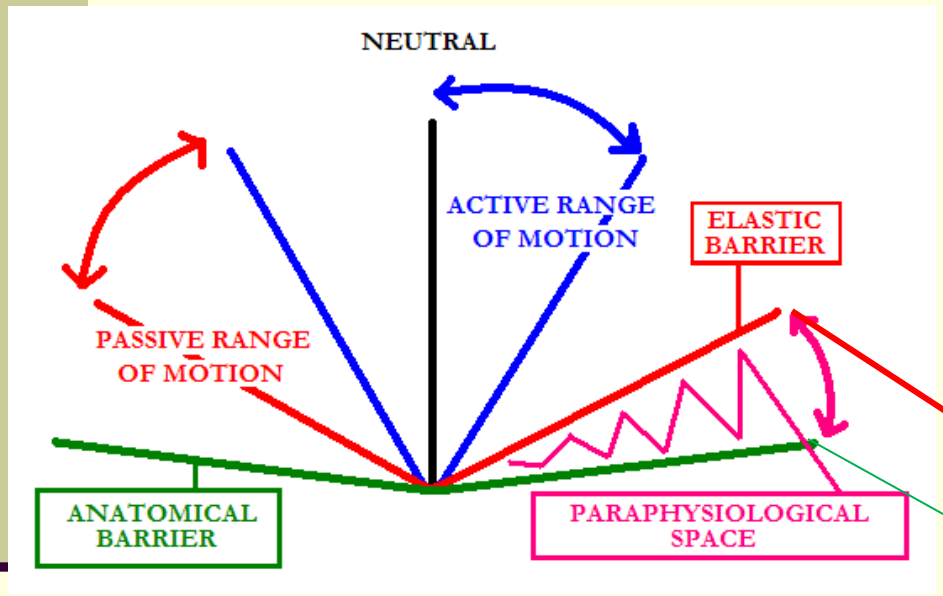
Force =

Mass

x

Velocity

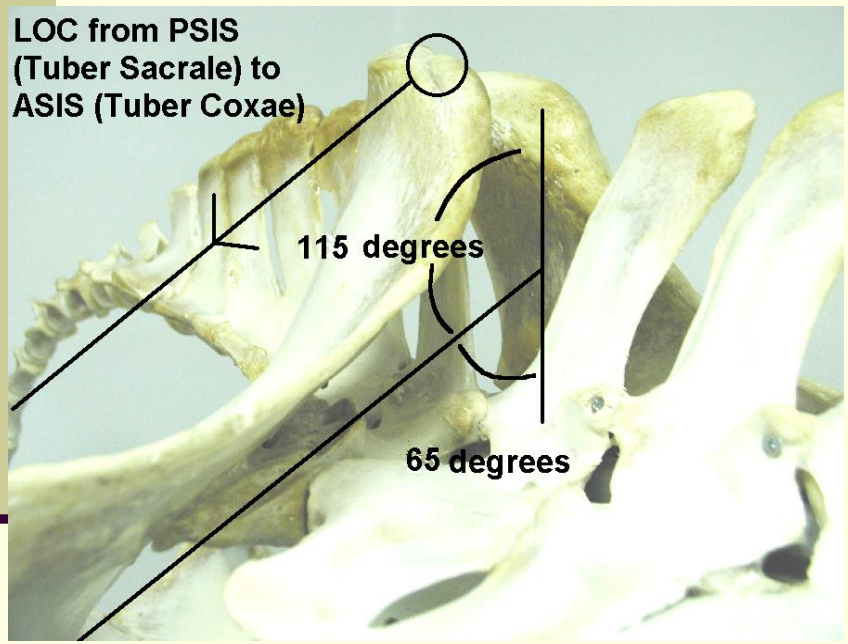
The Chiropractic Adjustment (S.I. Joint)

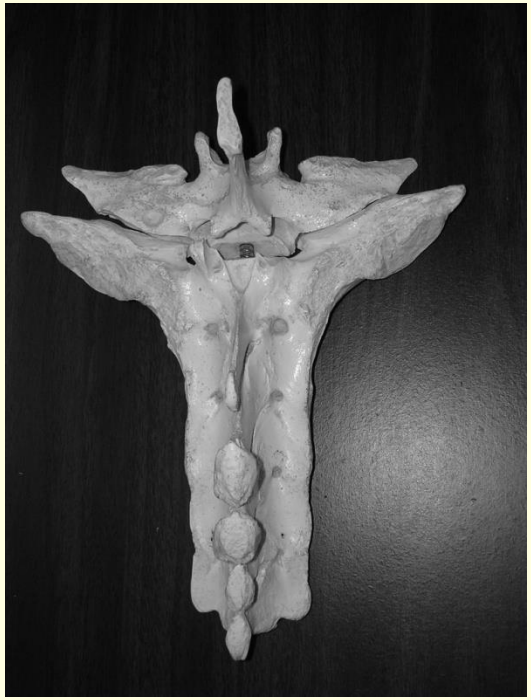


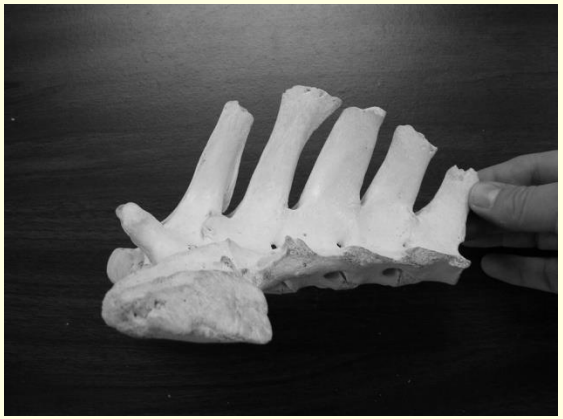
How Many Treatments Are Needed? (Clinical Goals)

- Relief of pain and symptoms.
- Return to full function.
- Promote full healing.
- Reduce the likelihood, severity, and frequency of recurrences.
- Prevent the development of degeneration.
- Increase performance levels.

Example: Treatment Sacroiliac joint





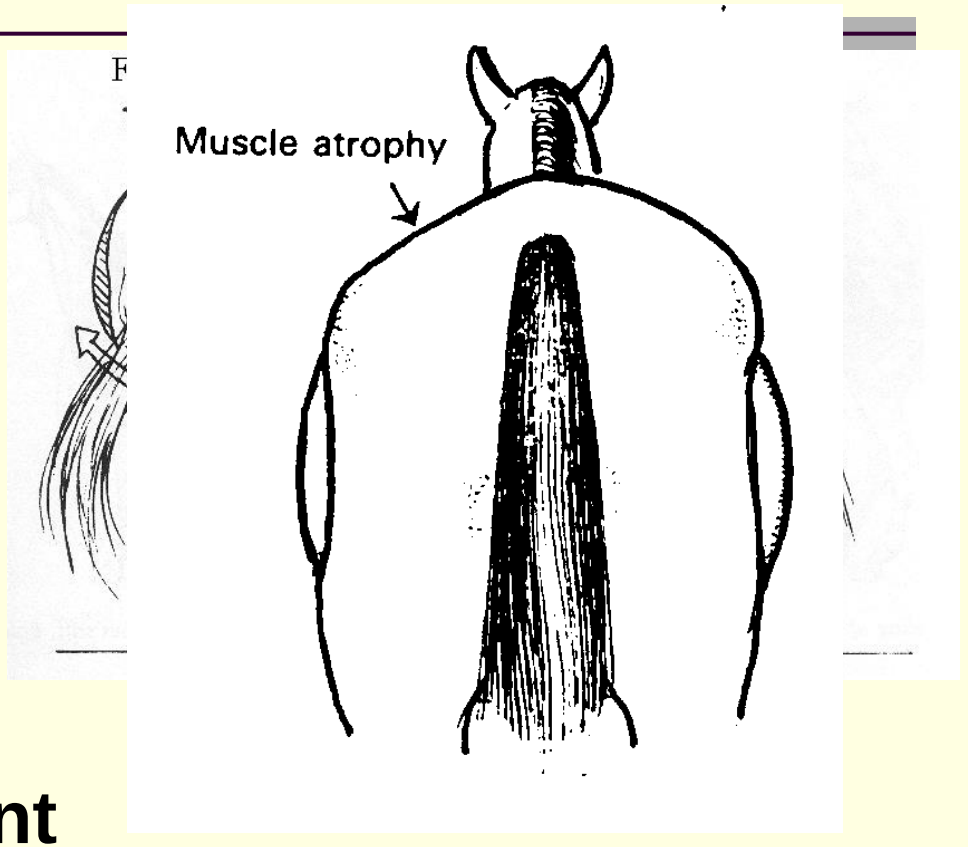


Chiropractic Diagnostic

- **Clinical examination**
- **Gait analysis**
- **Palpation:**

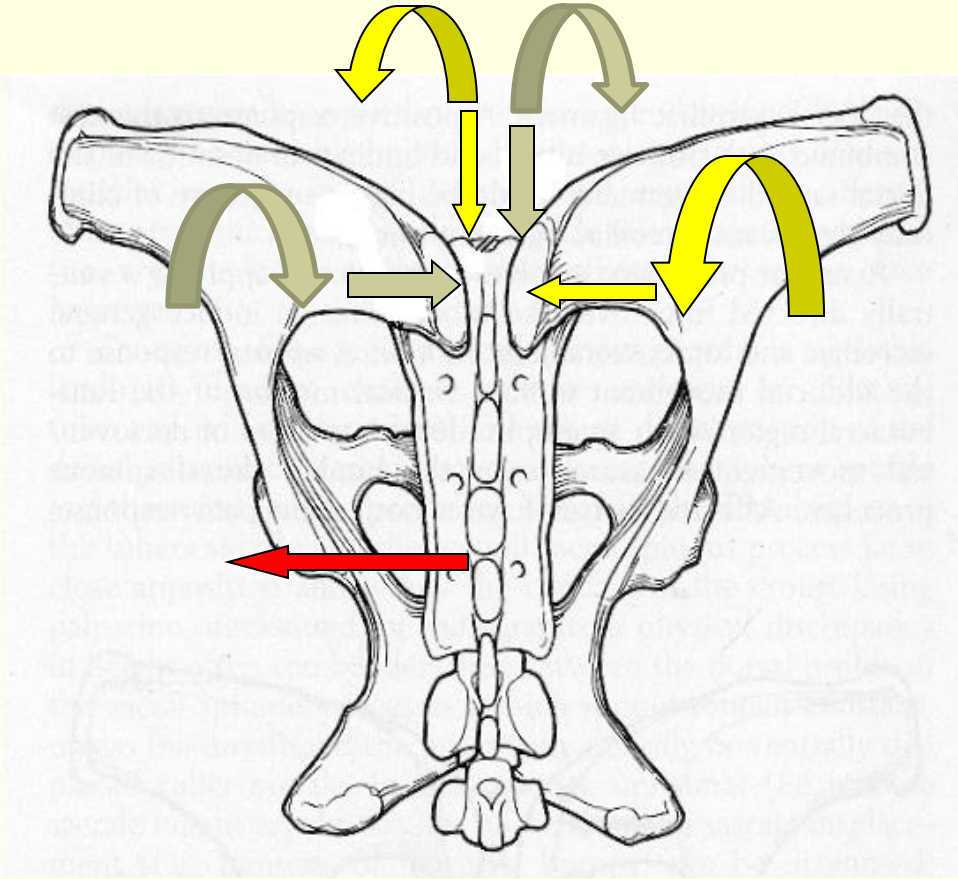
  Examination of joint movement

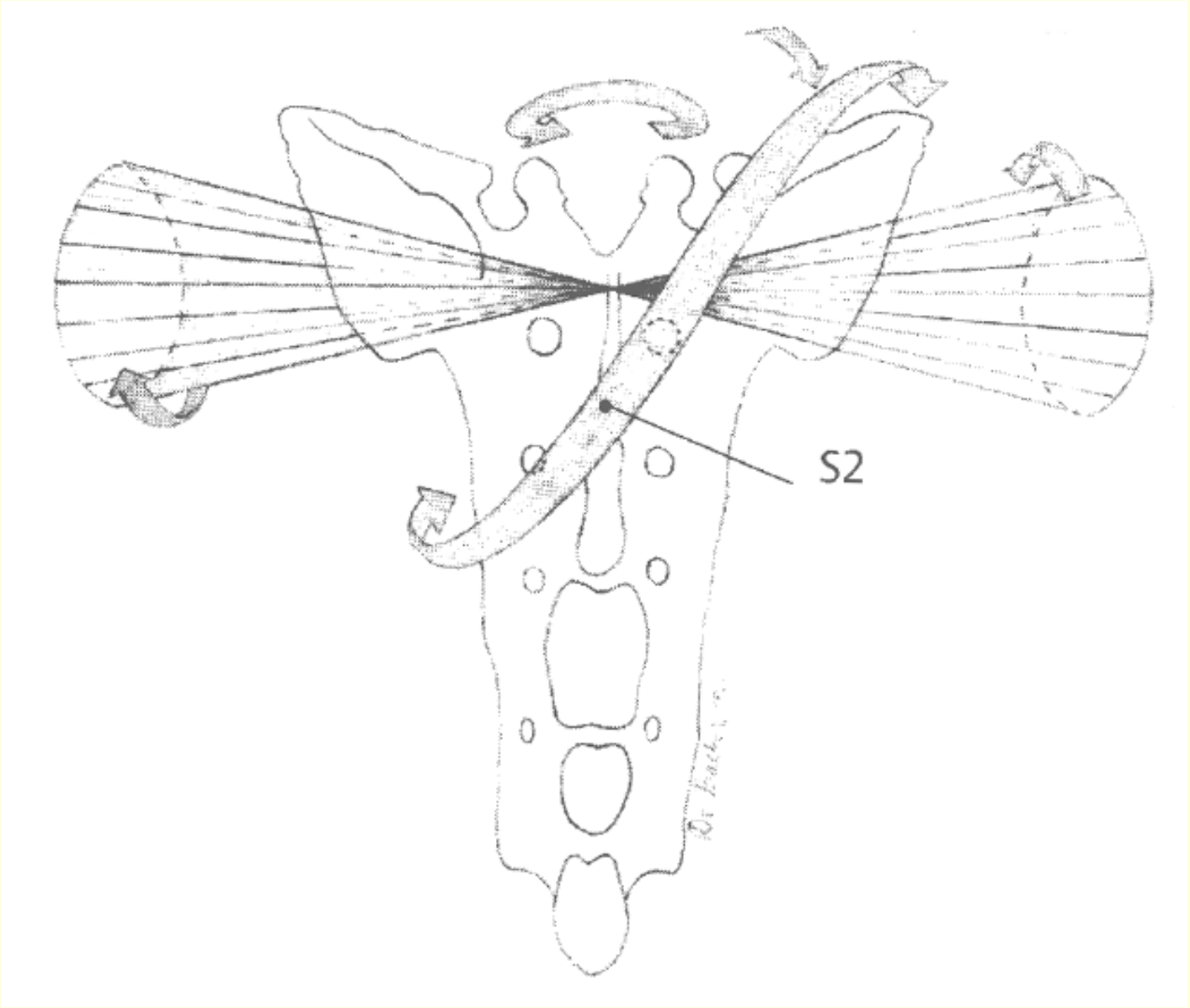
  (Motion Palpation)



Normal Sacroiliac (SI) Joint Biomechanics

1. The Right Tuber Sacrale moves Dorsal Caudal
2. The Right Sacral Base moves Ventral Cranial
3. The Left Sacral Base moves Dorsal Caudal
4. The Left Tuber Sacrale moves Ventral Cranial
5. The Sacral Apex moves Left.




S2

Chiropractic Listings in the Sacroiliac region

- **Dorsal/Caudal Ilium**
  - Movement restricted to ventral and cranial

Chiropractic Listings in the Sacroiliac region

- **Cranial/ventral Ilium**
  - Movement restricted to dorsal and caudal

Chiropractic Listings in the Sacroiliac region

- **Sacral Apex right / left**
  - Movement of sacral apex restricted to right / left

- **Sacral Base dorsal right / left**
  - Movement of sacral base (right or left) restricted to ventral

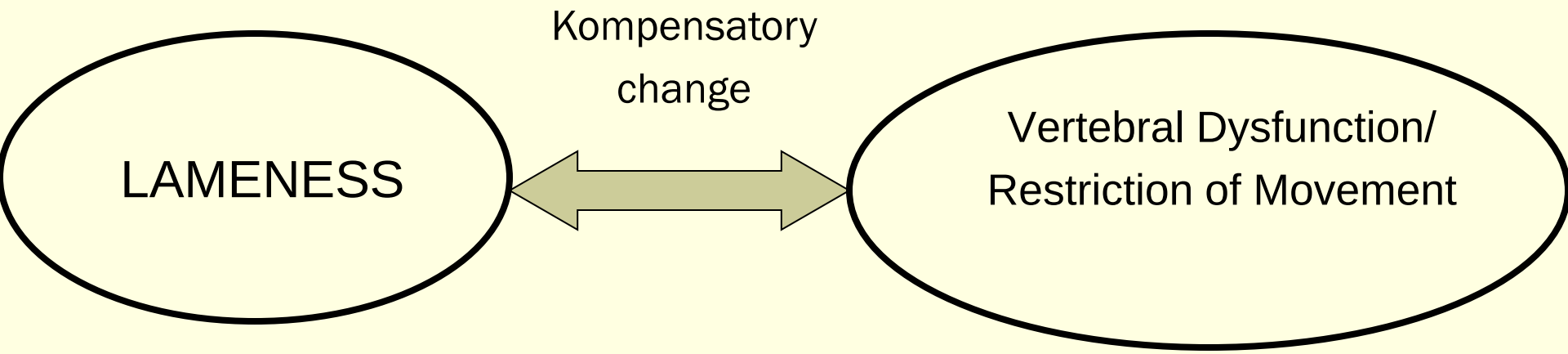
Chiropractic Listings in the Sacroiliac region

- **Right / Left Intertrans joint**
  - Movement of ight or left intertransverse joint restricted to ventral

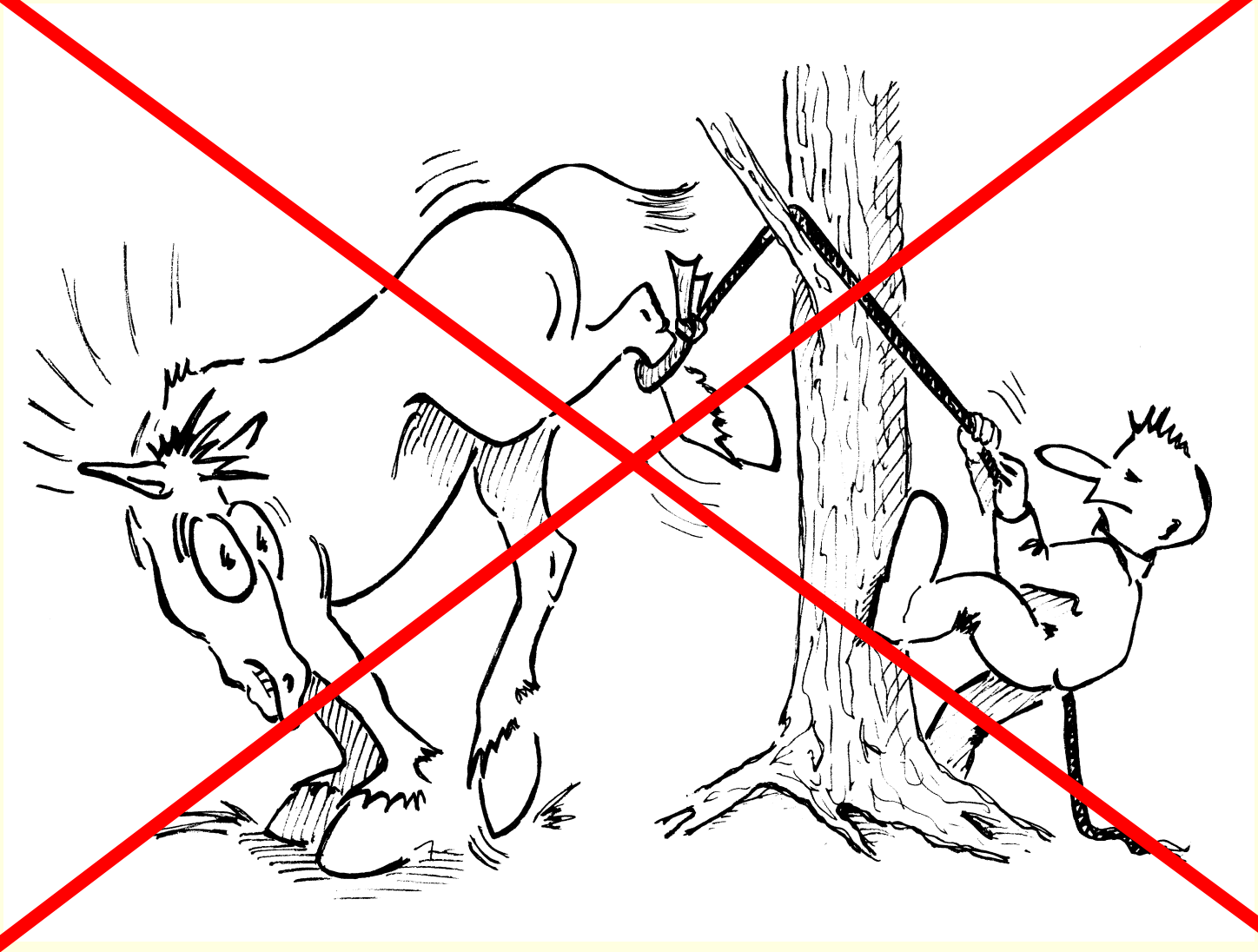
Remember !

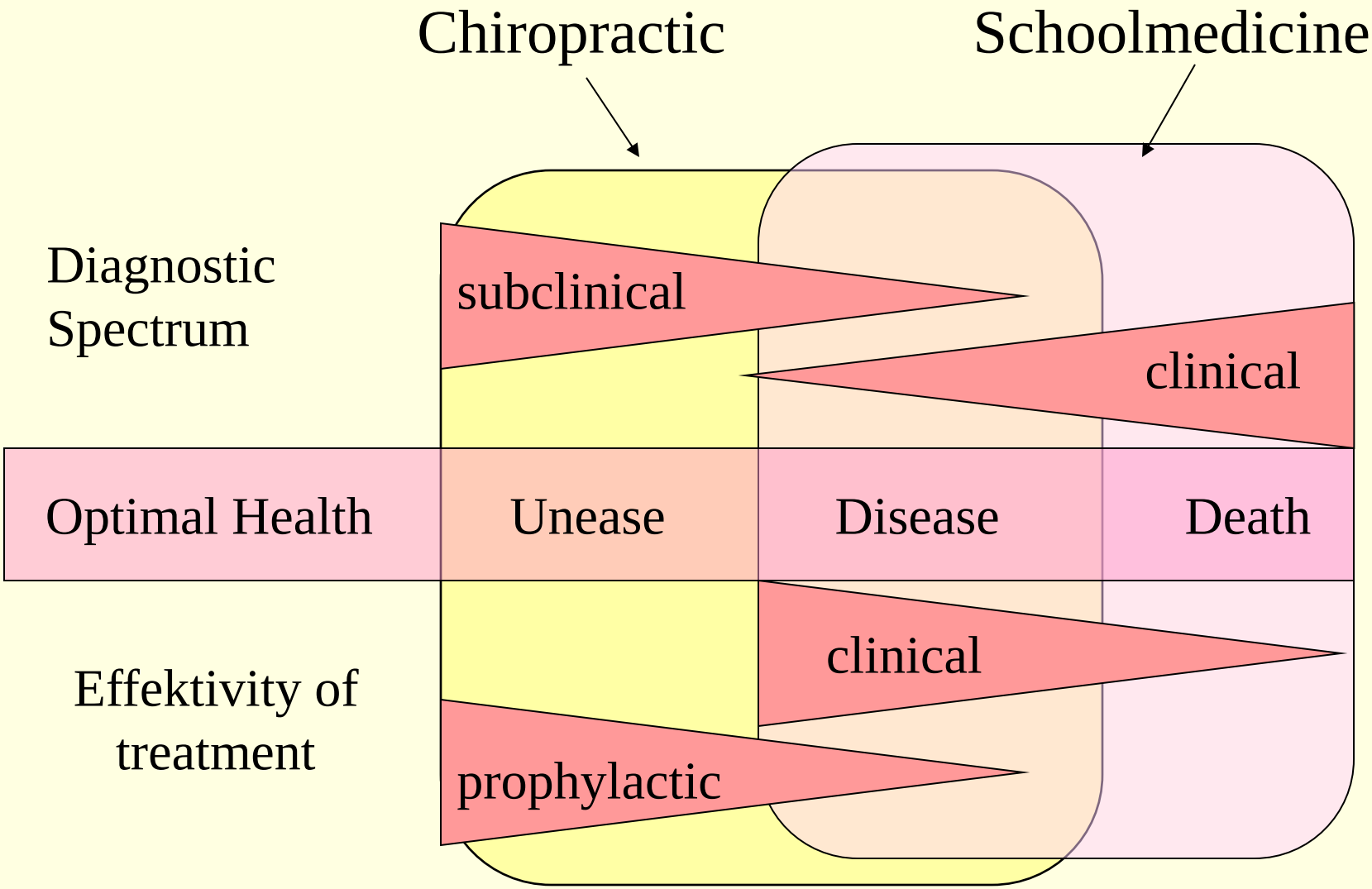
Not every crooked pelvis is restricted in its movement

Lameness,
-Primary or secondary



Chiropractic




Chiropractic
Schoolmedicine
Diagnostic Spectrum
subclinical
clinical
Optimal Health
Unease
Disease
Death
clinical
Effektivity of treatment
prophylactic

Conclusion

- A thorough knowledge of structural anatomy, neurophysiology and biomechanics as well as pathology of the spine and the extremities is required to understand the principles behind chiropractic and to apply its techniques properly