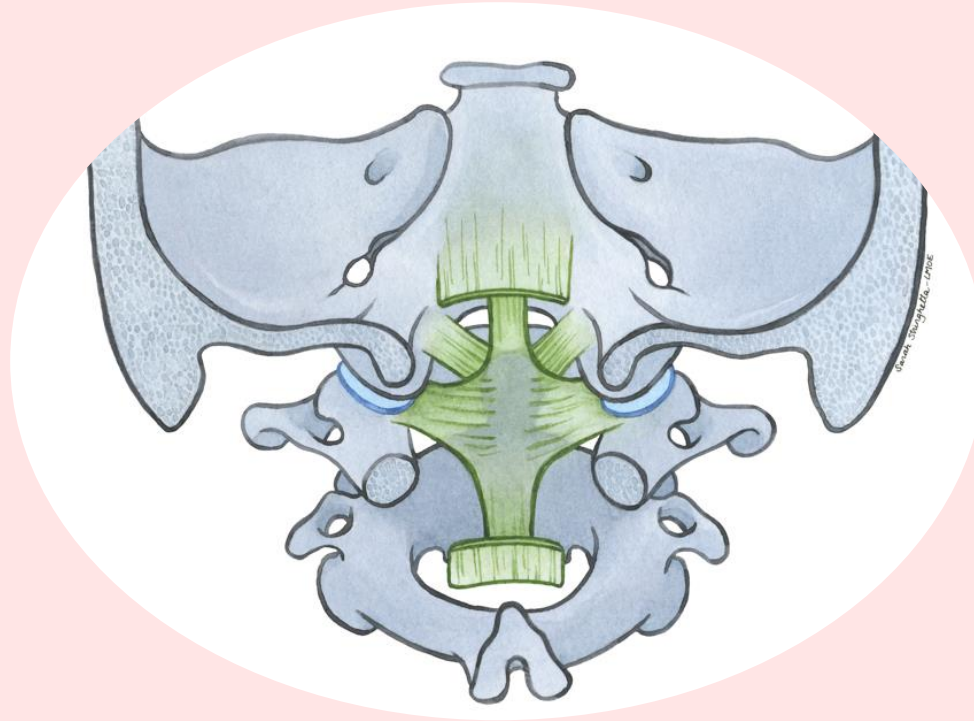


# THE C0-C1-C2 JUNCTION



## Workshop OSD Congress 2023

Realisation : Eric Prat DO

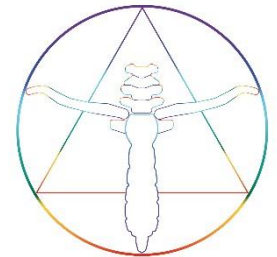
Illustrations: Benoit Caillé DO, Sarah Stringhetta and others

Photos: Bernard Belisme and others

# INTRODUCTION

## to Osteopathic Mechanical Link

LMO - Méthode P.CHAUFFOUR & E.PRAT ®



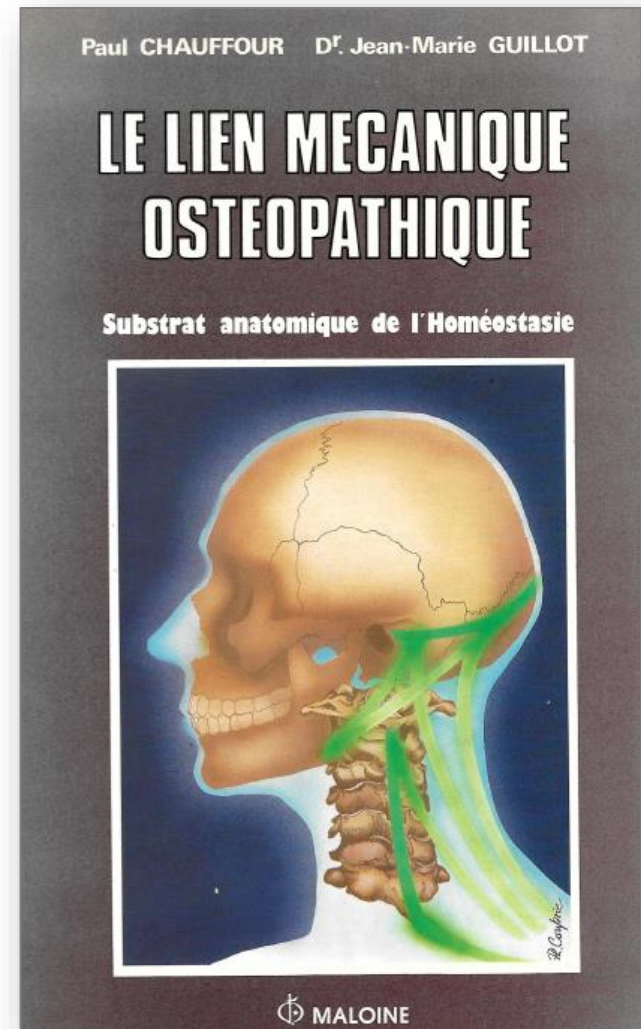


Paul Chauffour DO

# 1. Origin

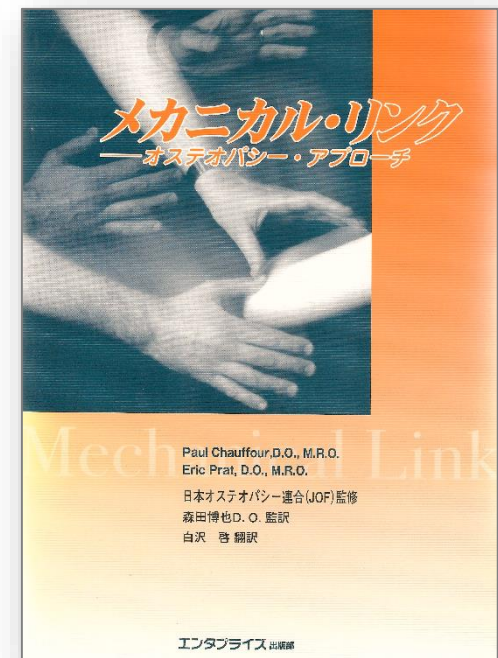
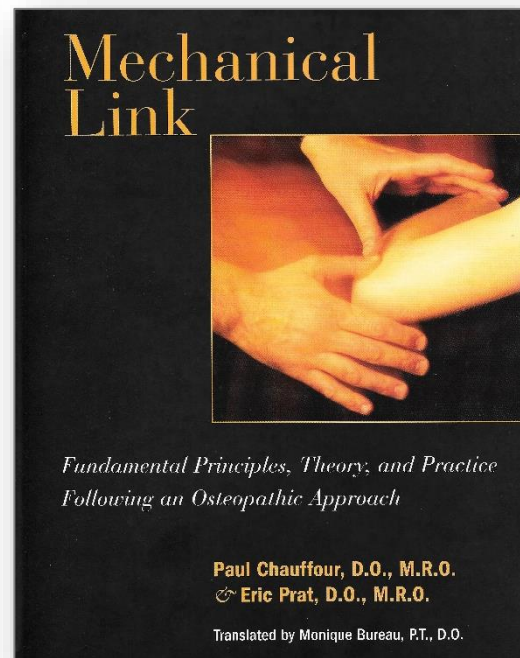
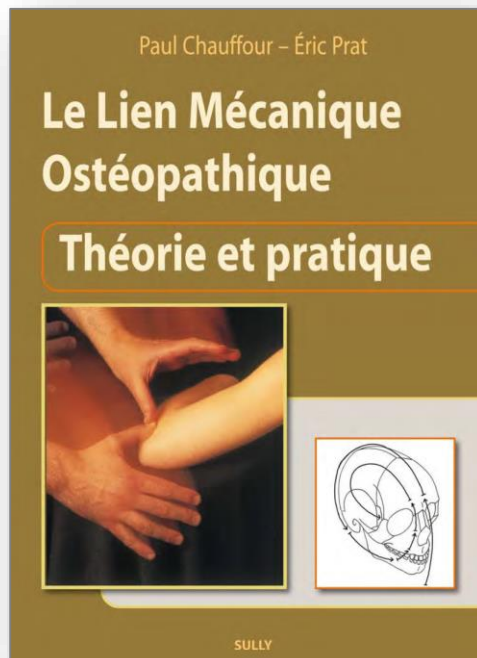
The Osteopathic Mechanical Link (OML) is a diagnostic and treatment method developed by Paul Chauffour in the 1970's.

The association of 4 original techniques – The cutaneous depression, the tension test, the inhibitory balance test and the recoil – allows him to completely revisit classical osteopathy.



## 2. Development

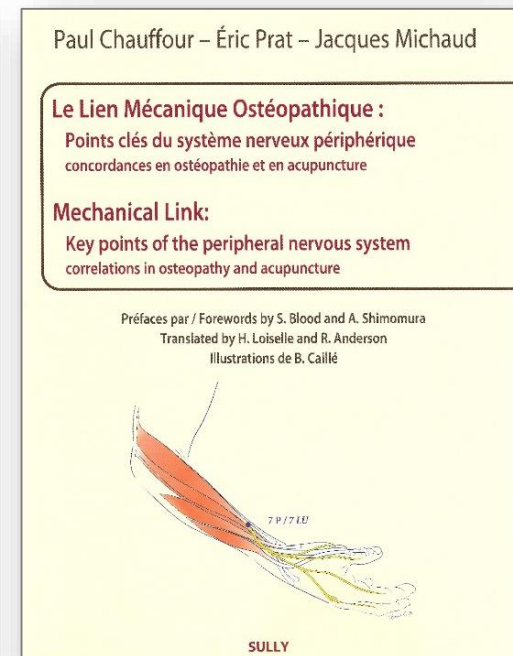
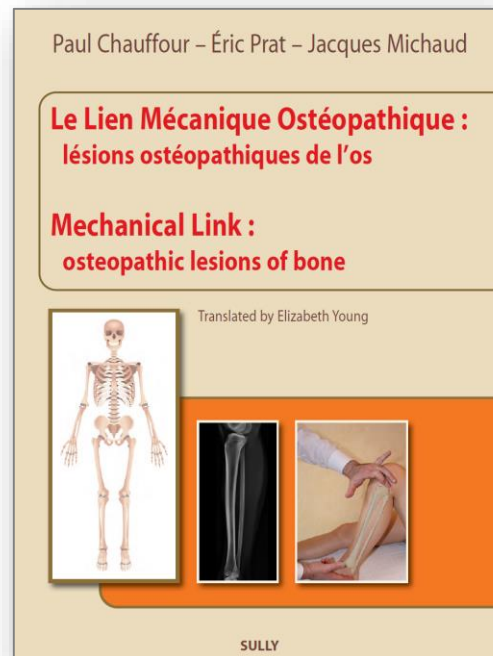
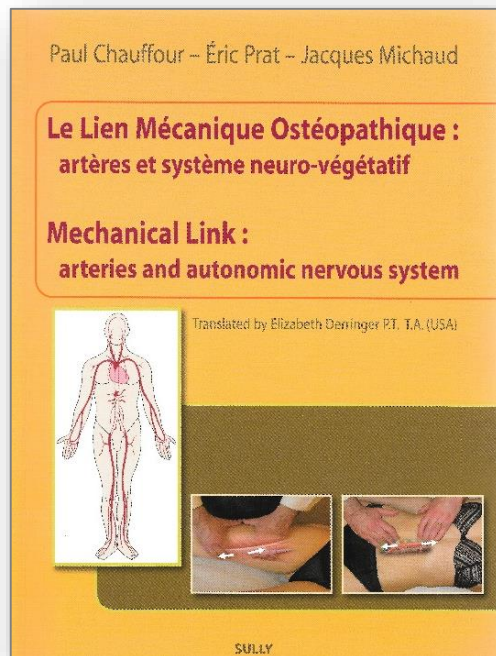
Paul Chauffour and Eric Prat, from 1990 to 2005, work together on the evolution and teaching of Mechanical Link throughout the world. They introduce new fields of application in osteopathy: filum terminal, intraosseous lines of force, articular diastases, arteries, etc.



## 2. Development

From 2005 to today, several osteopaths also have actively participated in the progression of Mechanical Link.

Paul Chauffour, Eric Prat and Jacques Michaud have published textbooks on the bony system, the vascular system and the nervous system.



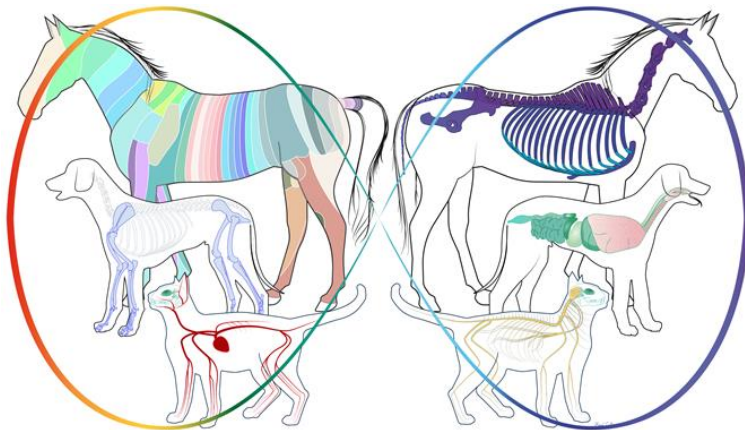
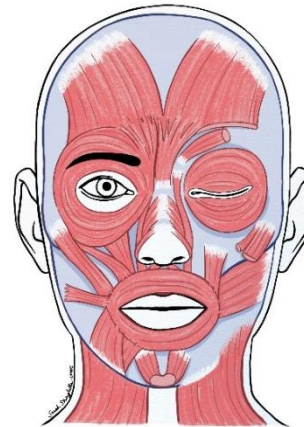
# 3. Transmission

With more and more practionners through the world, Mechanical Link, Africa and Asia open up to LMO teaching.



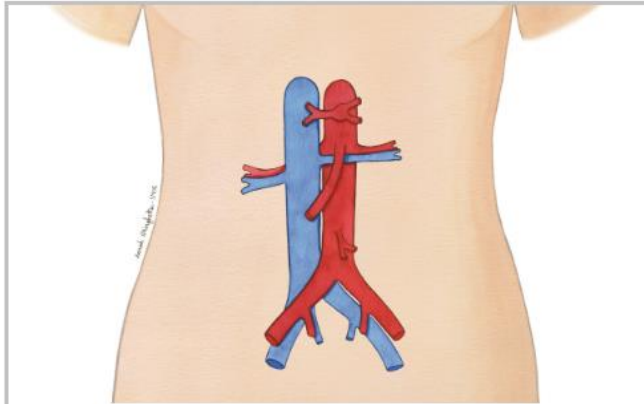
## 4. Evolution and prospects

The LMO continues its research with new fields of application, in animal osteopathy, somatoemotional facial tensions, etc.





## 5. Blog



### Osteopathische Behandlung von vaskulären Kompressionssyndromen im Bauchbereich

21.11.2022

Während Still der Arterienregel stets große Bedeutung beimaß, richte ...

## Neueste Artikel



### OSTEOPATHISCHE RAUCHSTOPP-BEHANDLUNG Rasch und einfach mit rauchen aufhören dank LMO

22.02.2022

Es gibt mittlerweile eine Vielzahl an mehr oder weniger effektiven Meth ...

With more articles in English or French

# Mechanical Link in the osteopathic world



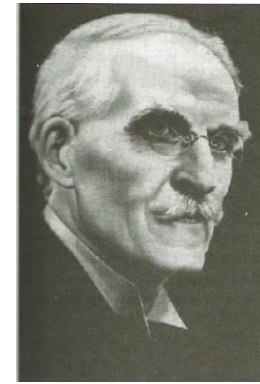
**WG Sutherland**  
Functional tissue  
osteopathy  
Global vision



**AT Still**



**Mechanical Link**  
Gentle structural  
tissue osteopathy  
Global vision  
Analytical treatment



**JM Littlejohn**  
Structural articular  
osteopathy  
Analytical treatment



# Mechanical Link in the osteopathic world

## **Mechanical Link is osteopathy!**

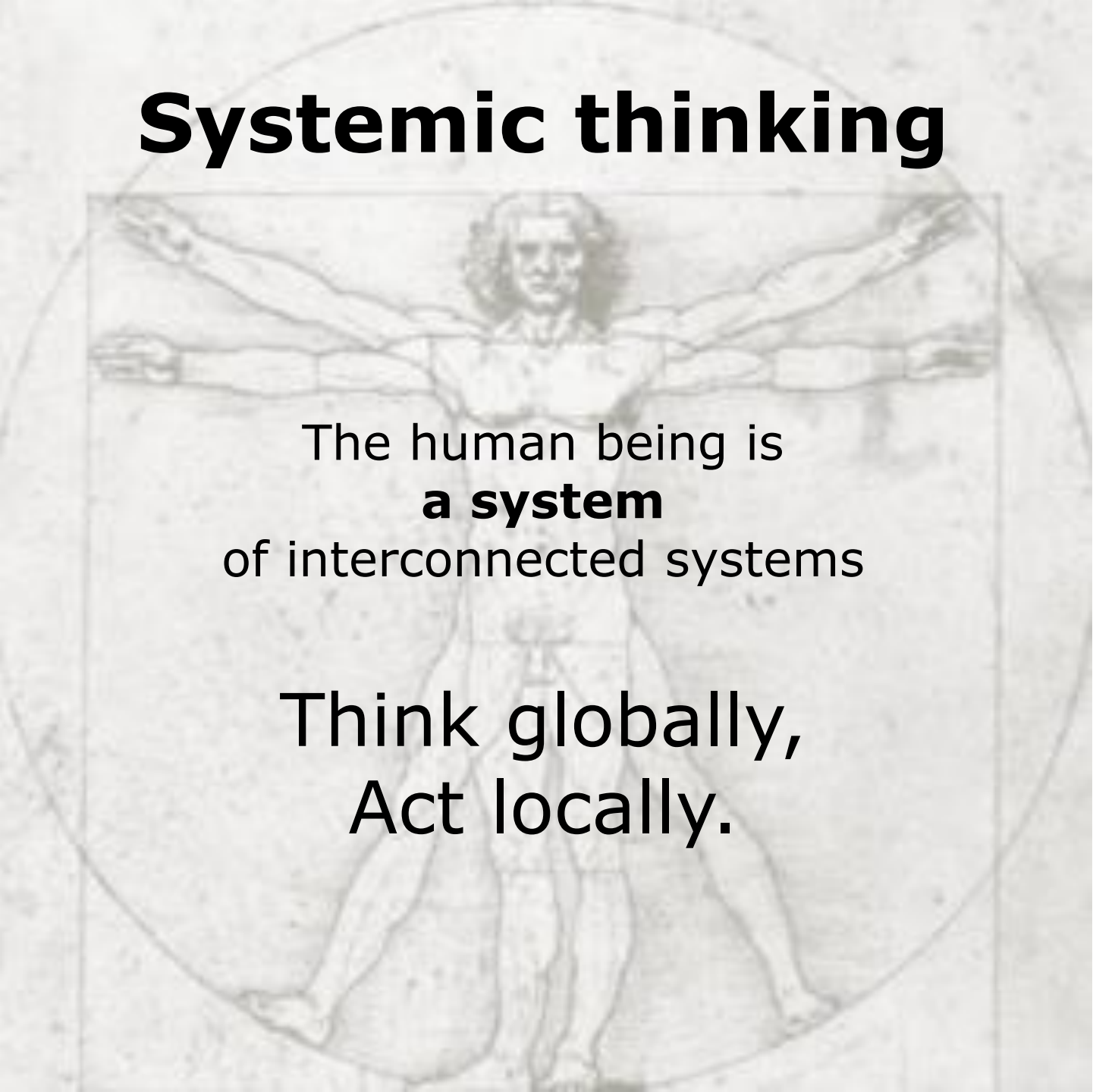
Mechanical Link is based on fundamental osteopathic concepts: find the lesion, treat it and leave it alone; releasing the structure to normalise function; the rule of the artery...

Mechanical Link is a simple tissue-based approach that works for all practitioners.

Mechanical Link bypasses the opposition between structural and functional.

One can use Mechanical Link on its own or combine it with other osteopathic techniques.

# Systemic thinking

The background of the slide features a faint, light-colored version of Leonardo da Vinci's Vitruvian Man drawing. The figure is centered, with arms and legs extended to touch the boundaries of a square and a circle. The drawing is rendered in a sketchy, line-art style.

The human being is  
**a system**  
of interconnected systems

Think globally,  
Act locally.

# The concept of simplicity

The background of the slide is a faded, light gray version of Leonardo da Vinci's Vitruvian Man drawing. The figure is centered, with arms and legs extended to touch the boundaries of a square and a circle.

The human being is  
**a complex system**  
of interconnected systems

Simplifying principles  
to treat  
complicated patterns

# The Mechanical Link method

## Three essential concepts

- The total lesion
- The primary lesion
- The specific treatment

## Three original techniques

- The tension test
- The inhibitory balance test
- The recoil

# The Mechanical Link method

Is the answer to **3 important questions** concerning the osteopathic treatment :

- **Where** to begin the treatment ?
- **How** to proceed with the treatment ?
- **When** to end an osteopathic treatment ?

# The advantages of Mechanical Link

- ❑ **An osteopathic diagnosis and treatment that is clear, reproducible** and covering all possible reasons for consultation.
- ❑ **An approach that patients appreciate** because it is efficient and comfortable.
- ❑ **A method that does not exhaust the practitioner** while allowing him to progress technically by the repetition of tests.



# The advantages of Mechanical Link

- ❑ **A precise osteopathic diagnosis** as a result of a checklist of tests covering every possible and conceivable lesion pattern.
- ❑ **A customised treatment protocol** which is always different from one patient to another and from one consultation to another.

# The advantages of Mechanical Link

- ▣ **Taking into account osteopathic lesions that are not widely acknowledged**

Intra-osseous lines of force, articular diastasis and ligamentous lesions, epiphyseal lines, disc herniation, filum terminale, osteopathic lesion of the artery, key points of the peripheral nervous system, encephalon, scars and fixation of the dermis, external gynecological as well as coccyx and perineal approach, etc.

# The advantages of Mechanical Link

- ❑ **A supple and open method** that may easily be integrated to your current osteopathic practice and to other approaches: energetic, acupuncture, somatoemotional approach, posturology, etc.
- ❑ **A proven method** with over 30 years of clinical experience and hundreds of practitioners worldwide.

# The advantages of Mechanical Link

## □ **Effective solutions in daily osteopathic practice**

Back pain and neuralgia (disc herniation), scoliosis, dysmorphosis associated to growth, sport trauma, adjunct to orthodontic treatment, restless leg syndrome, carpal tunnel, migraines, sinusitis, concussion, hiatal hernia, digestive issues, cystitis, infertility, pregnancy, neonates, bedwetting, treatment to quit smoking, vascular issues, geriatrics, etc.

# Concept 1

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## THE TOTAL LESION

- ❑ **The total lesion** corresponds to **all the osteopathic lesions** presented by a patient.
- ❑ This total lesion is more than the simple sum of all lesions. It reveals in a palpable way the entire history of the patient, a history embedded in the tissues of the body and upon which the symptomatology, expressed or not, depends
- ❑ *We look at the body in health as meaning perfection and harmony, not in one part, but **in the whole.***

*AT Still—Philosophy and Mechanical Principles of Osteopathy*

- ❑ We voluntarily use the precise term **osteopathic lesion** rather than the more conventional term, somatic dysfunction.
- ❑ The osteopathic lesion is an anatomical-pathological reality, i.e. an injury, a **modification of connective tissue** following a **scarring** process: inflammation, fibrosis, sclerosis.
- ❑ We may look at the lesion/dysfunction couple as **fire** and **smoke**

## □ **Smoke**

manifestation of the fire, dysfunction



## □ **Fire**

lesion of the structure: inflammation and fibrosis



There is no **smoke** without **fire**



Any dysfunction is caused by an osteopathic lesion, local or remote.

# □ The tension test

The tension test is a gentle osteopathic way of **appreciating the tissue elasticity** of a particular segment of the body

It is simple but must be precise.

It may be applied using pressure, traction, circumduction, torsion...

or a combination of several of these parameters.

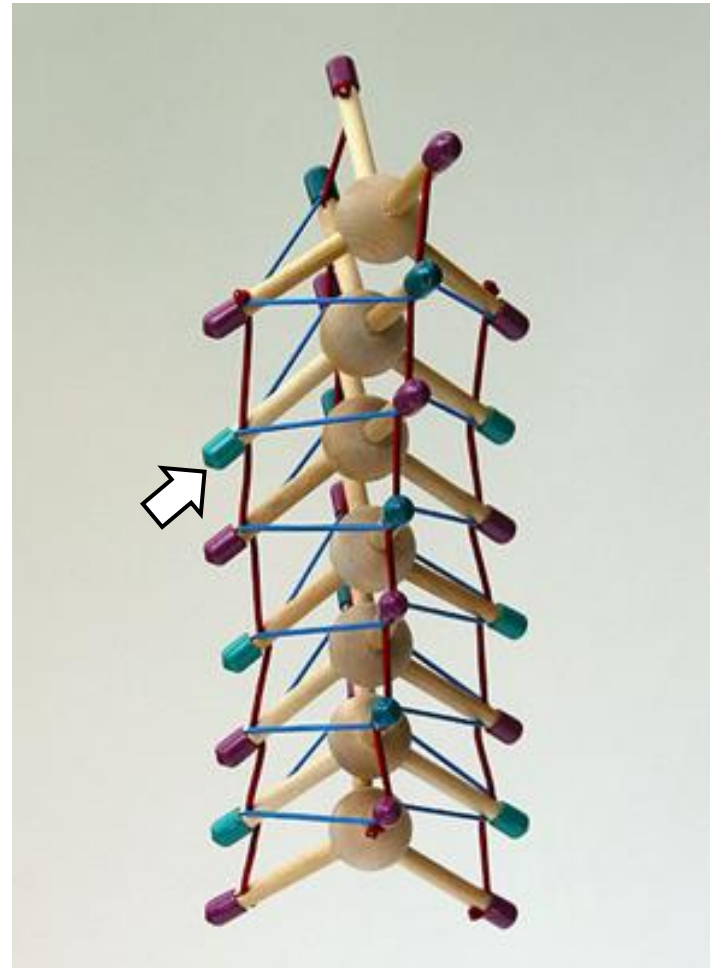
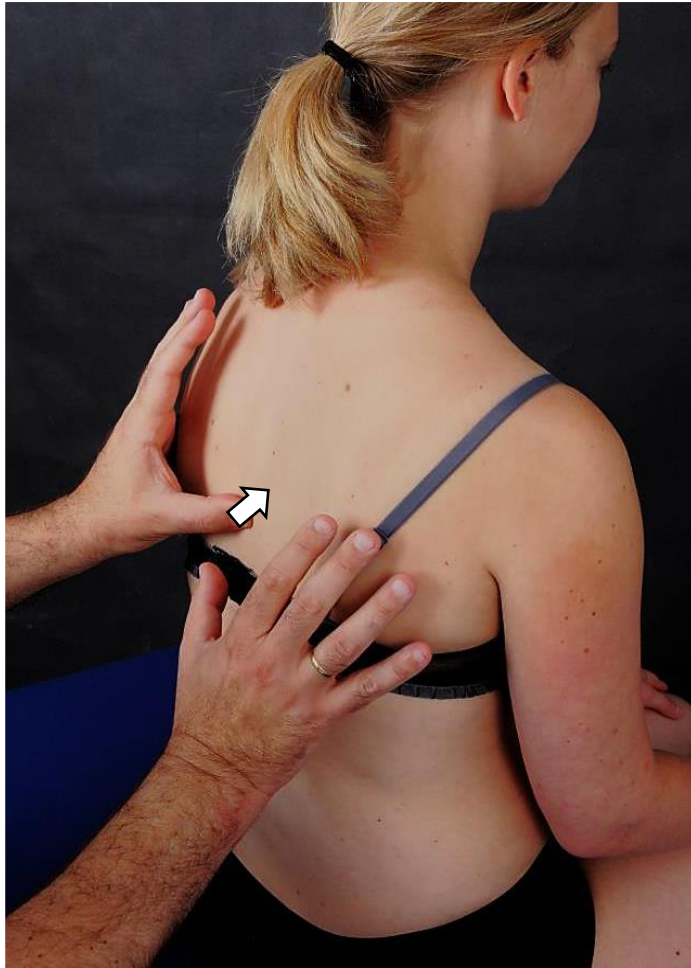
# □ The tension test

When applying the tension test, **3 possible responses** are felt by the hand:

- 1) tissue suppleness and elasticity is evidence of a free structure (negative test)
- 2) moderate resistance (passive lesion)
- 3) clear and marked tissue resistance is a sign of true osteopathic lesion (positive test).

# Tension test of a vertebral segment through pressure along the axis of the spinous process.

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The tension tests are:

- precise
- objective
- reliable
- reproducible

Three theses have proven the reliability and reproducibility of the Mechanical Link diagnostic tension tests.

## **RELIABILITÄTSSTUDIE ÜBER DIE BEFUNDERHEBUNG DER WIRBELSÄULE NACH DER METHODE DER LIEN MÉCANIQUE OSTÉOPATHIQUE**

Master Thesis zur Erlangung des Grade "Master of Science" in Osteopathie an der Donau Universität Krems – Zentrum für chin. Medizin & Komplementärmedizin.

***By Claudia Hafen-Bardella, 10.2009***

## **RELIABILITÄTSSTUDIE DES BEFUNDS NACH DEM MECHANICAL LINK**

Reliabilitätsstudie über die Befunderhebung der Knochen und Gelenke der Extremitäten nach der Methode des Mechanical Link

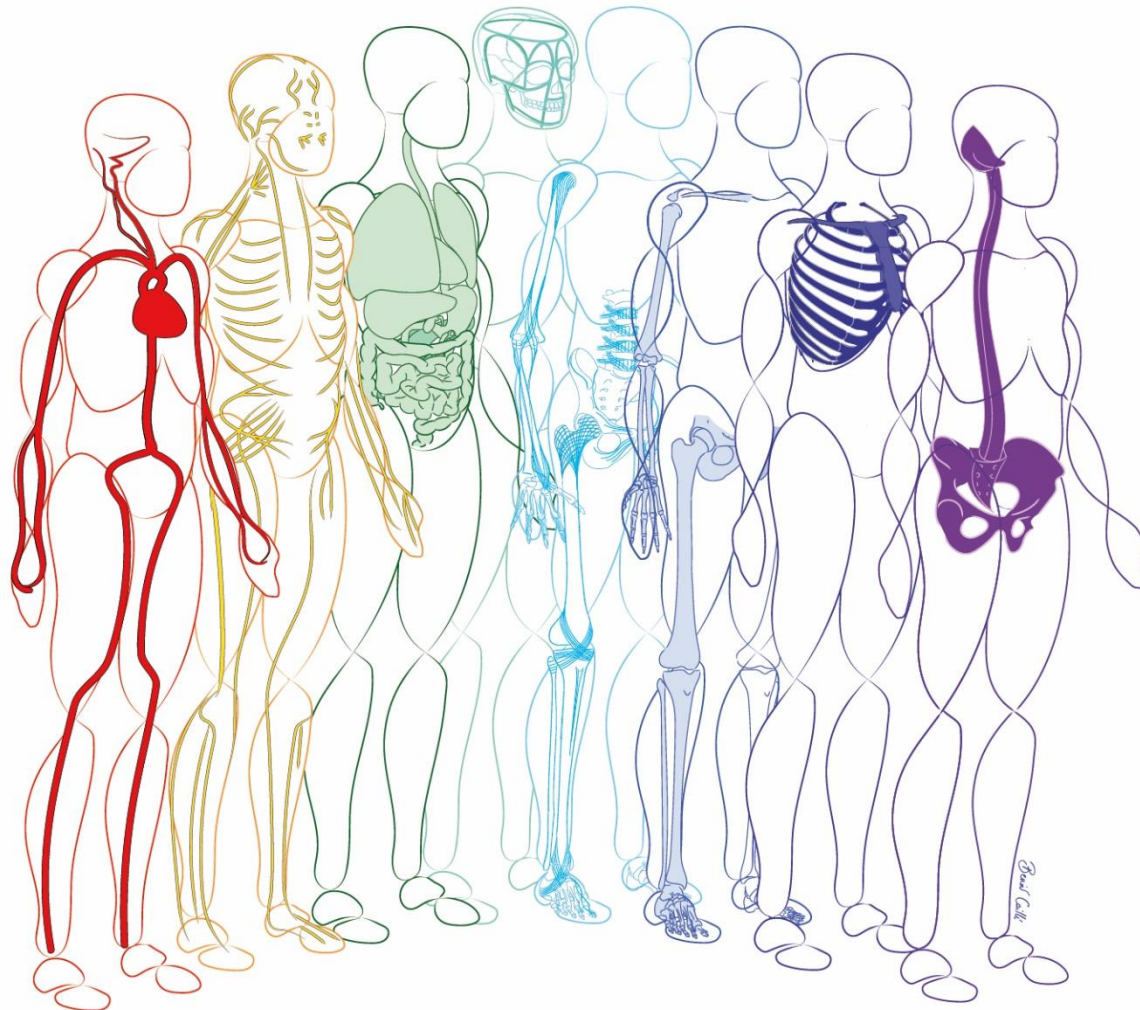
***By Gina Hafen, 01.2018***

## **FOLLOW-UP-STUDIE EINER RELIABILITÄTSSTUDIE NACH DEM MECHANICAL LINK**

Follow-up-Studie über die Reliabilität der Befunderhebung der Wirbelsäule nach der Methode des Mechanical Link

***By Laura Kühn, 01.2018***

# 8 functional units



With these tension tests we systematically assess the patient through **8 functional units**.

- ❑ 1. The occipito-vertebro-pelvic axis
- ❑ 2. The thorax
- ❑ 3. The articular periphery
- ❑ 4. The lines of force
- ❑ 5. The cranium
- ❑ 6. The viscera
- ❑ 7. The vascular system
- ❑ 8. The nervous system and the dermis



# Concept 2

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## **THE PRIMARY LESION**

- ❑ **The primary lesion** is not necessarily the lesion that is the oldest (first lesion) or the most manifest (symptomatic lesion) but the one that presents **the greatest degree of tissue resistance**
- ❑ Concept of **prioritisation**.
- ❑ The osteopathic lesions will be classified into **secondary, dominant** (the greatest restriction within a functional unit) and **primary** (the greatest of all dominant lesions).

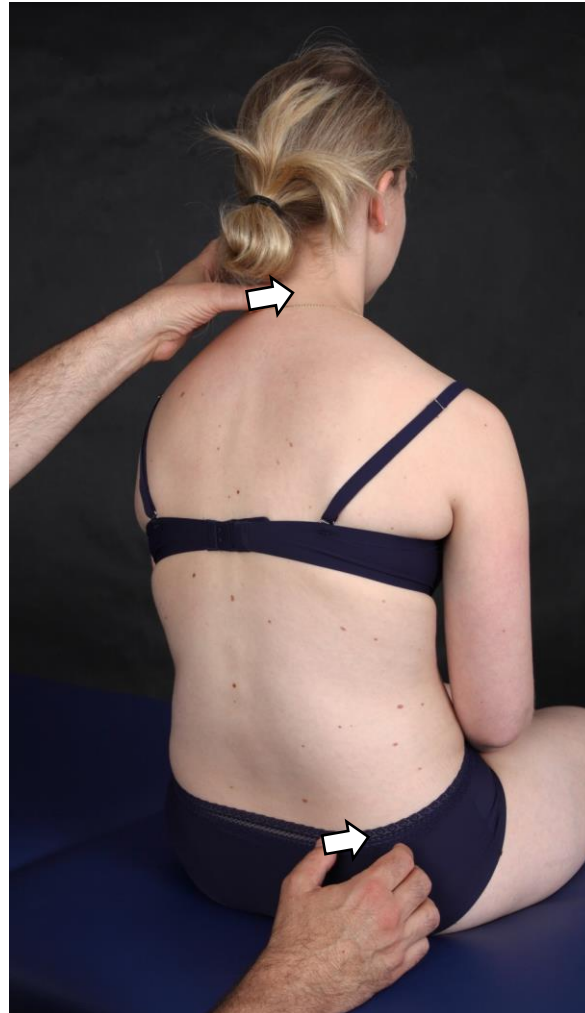
## □ **The inhibitory balance test**

The inhibitory balance test consists in **comparing two osteopathic lesions** in order to define which of the two proves to be most important.

To this end, the practitioner **applies light and simultaneous tension to both fixations**. A curious phenomenon then occurs: one of the two lesions releases whereas, conversely, the other resists.

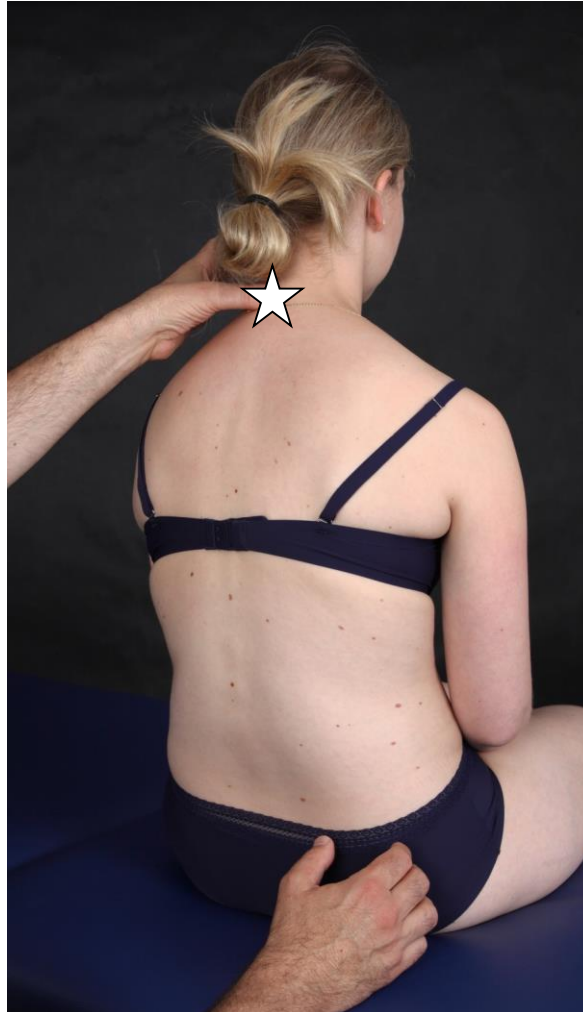
# Inhibitory balance test between C7 and the right ilium.

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# Inhibitory balance test between C7 and the right ilium.

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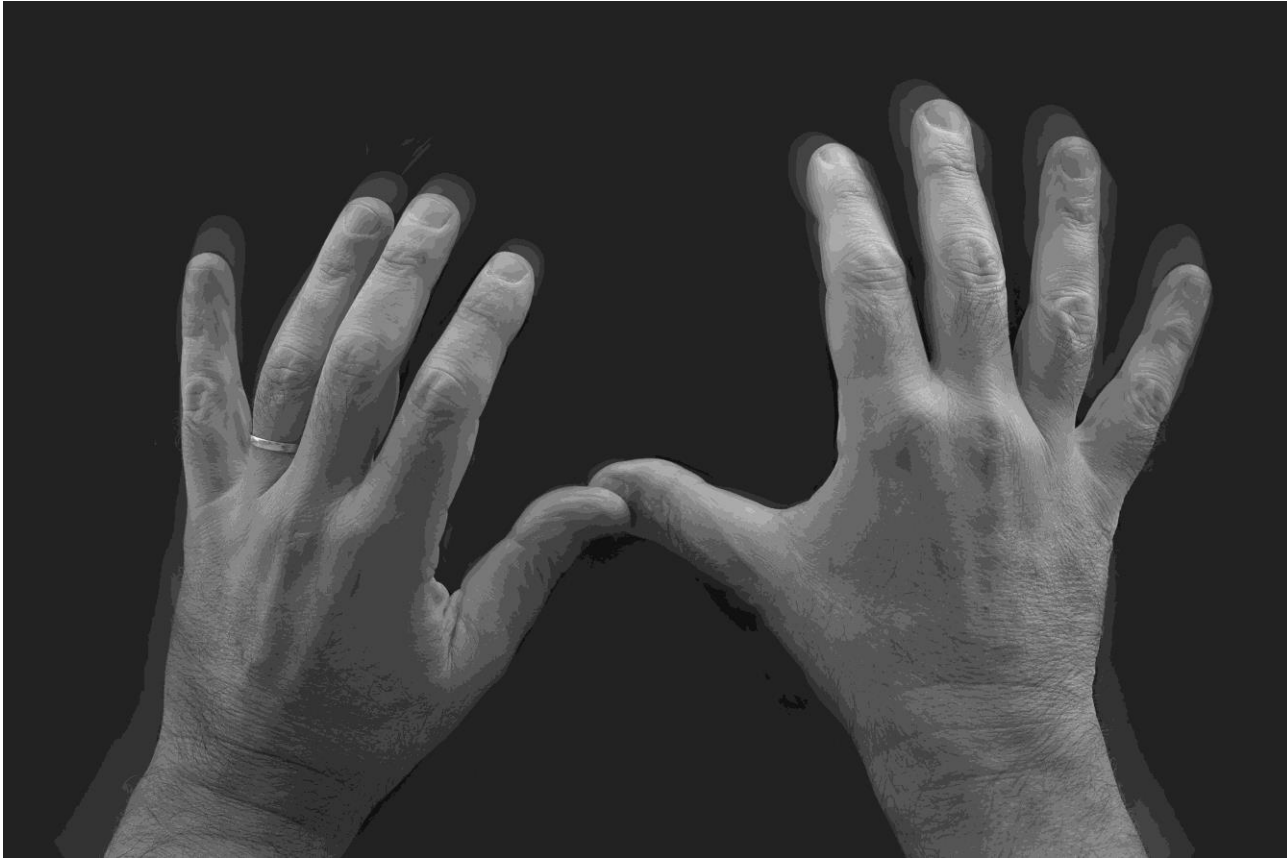
- ❑ Any osteopathic lesion may be balanced with any other osteopathic lesion.
- ❑ The osteopathic lesion presenting the most resistance on examining a functional unit is **the dominant lesion**.
- ❑ The most resistant lesion on general examination of the entire body is **the primary lesion**.

# Concept 3

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## **THE SPECIFIC TREATMENT**

# Recoil



*The French touch !*



# Recoil

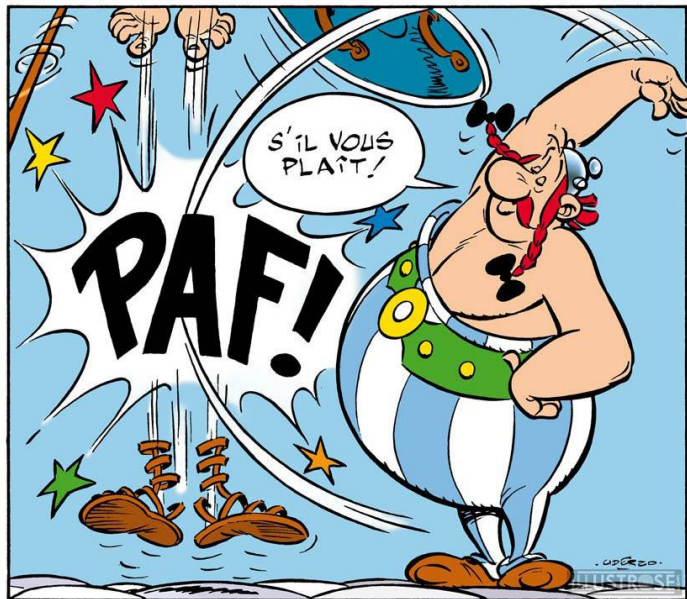


*Releasing an osteopathic lesion by applying a very short manual impulse to the barrier !*

# □ The recoil

- Recoil means rebound, rapid withdrawal.
- The recoil technique is little known and the term is not even listed in the Glossary of Osteopathic Terminology, published by the American Association of Colleges of Osteopathic Medicine (AACOM), that defines all osteopathic techniques.
- We know that A.T. Still occasionally used a technique whose description would correspond to the recoil, and this technique was occasionally used by a few of his successors (A. Becker, R. Miller) but was ultimately forgotten.

The recoil developed by Paul Chauffour circa 1977-1979 is at the onset an adaptation of the *toggle-recoil* of chiropractors and the *thrust technique* of osteopaths.



Thrust



Recoil

# □ The recoil

This method is a DIRECT ACTION technique that goes up against the restriction or engages the tightness of specific tissues and then rapidly releases the built-up elastic force causing a recoil that reflexively releases the dysfunction.

It is also an old Osteopathic technique that has recently been revitalized.

It is a gentle technique that is used with anatomic precision to treat dysfunctions in muscle, bone, arteries, veins, nerves, and the various connective tissues.

*Steve Paulus DO*

# The 3 steps of the recoil

## **1) Applying tension**

Stacking of tissue resistance to find the maximal point of blockage (barrier).

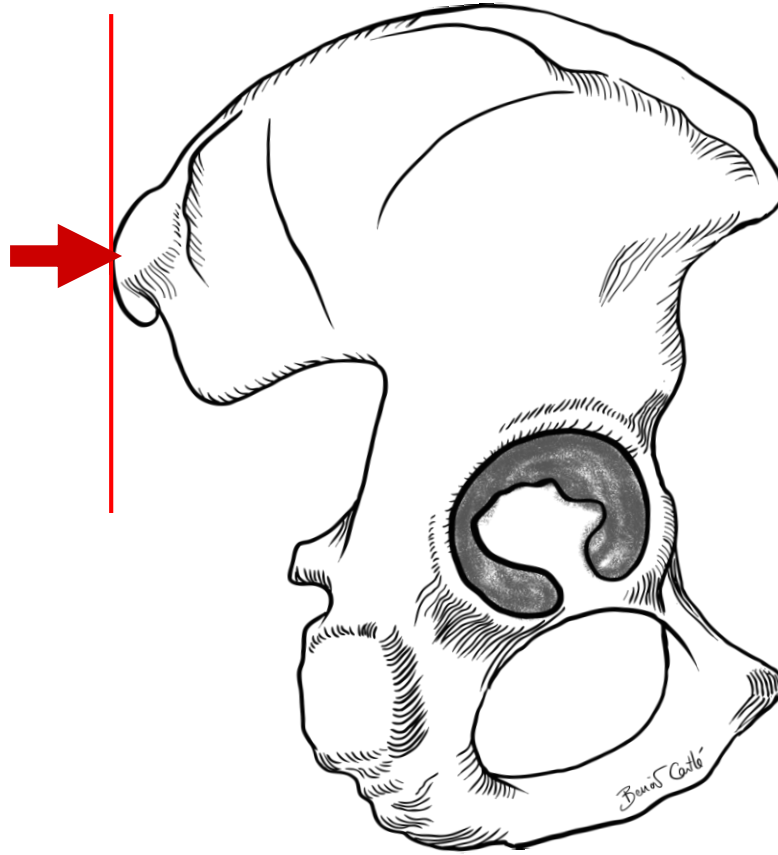
## **2) Impulse**

Extremely rapid and dynamic impulse against the barrier (without pushing it) to « break » the lesion.

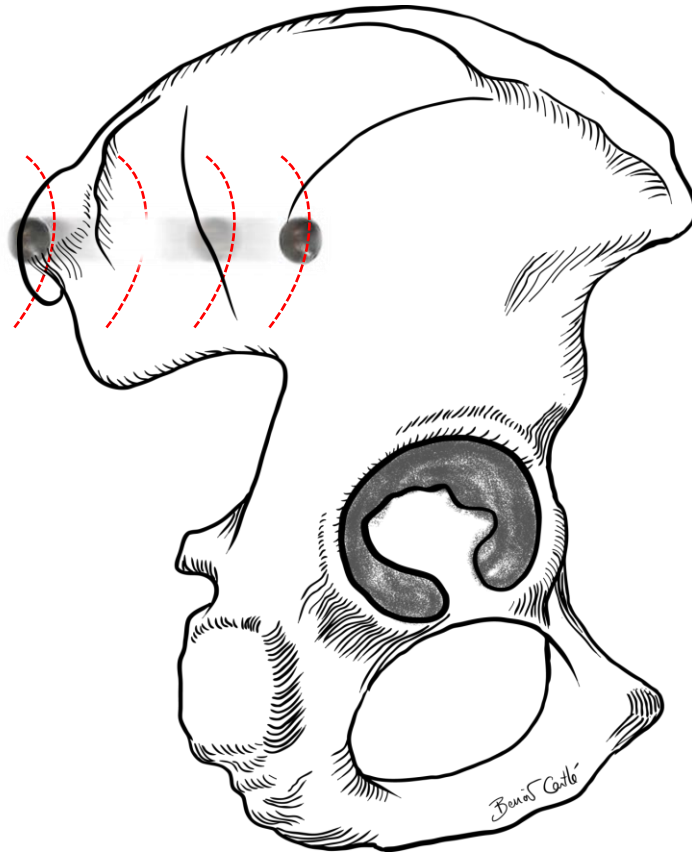
## **3) Withdrawal**

The hands withdraw immediately to let the « shockwave » (vibration) produced by the impulse go through...

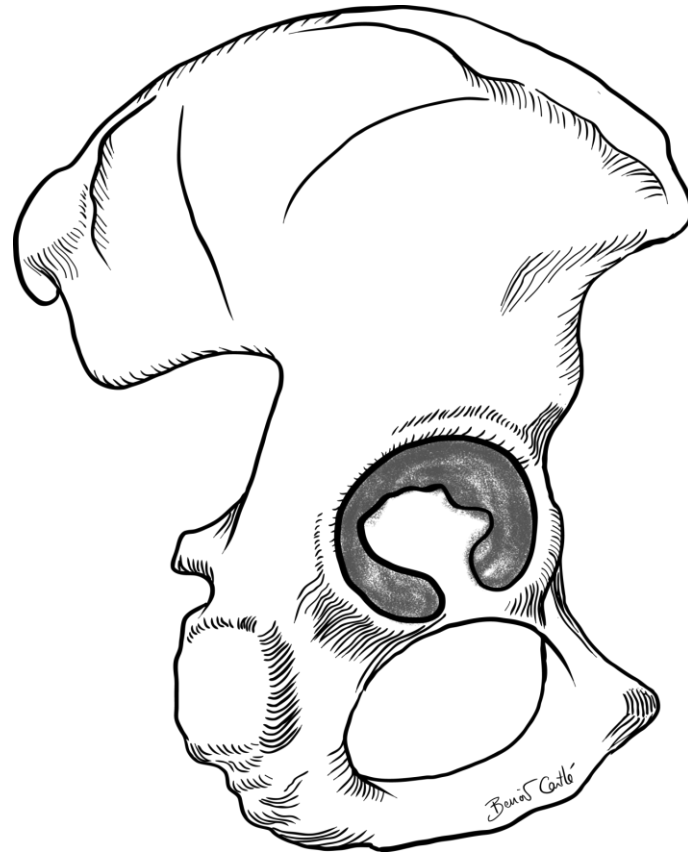
# 1) Applying tension



## 2) ...impulse



### 3) withdrawal.





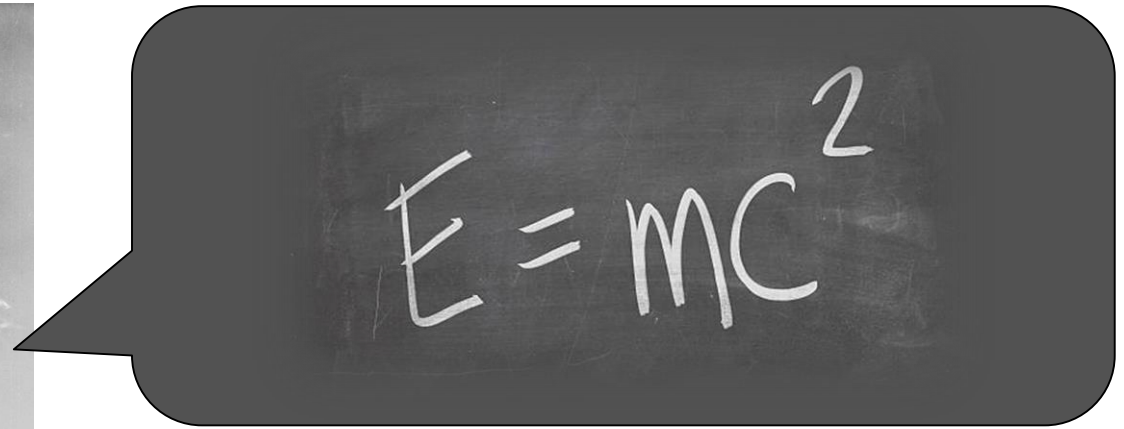
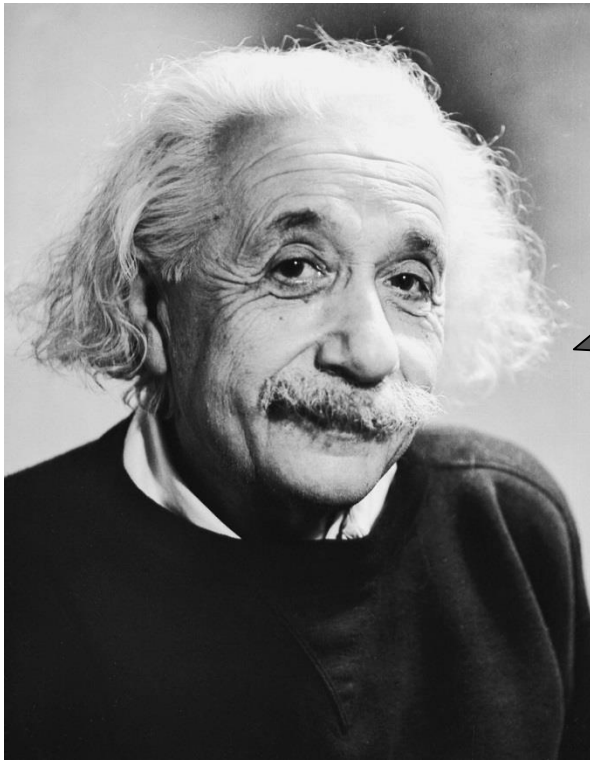


*Find it,  
fix it,  
and leave it alone.*

***Find it*** corresponds to **applying tension**

***Fix it*** corresponds to the **impulse**

***Leave it alone*** corresponds to the **withdrawal**



The application of tension must be precise  
The impulse is very quick, dynamic ( $E=mc^2$ )  
The withdrawal lets the vibration through

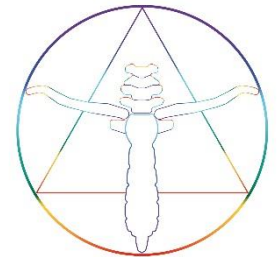
# Neurological effect

- **Golgi tendon organs:** respond to the applied tension
- **Ruffini corpuscles :** respond to pressure
- **Paccini corpuscles :** sensitive to acceleration and deceleration and vibration
- **Meissner corpuscles:** sensitive to dynamism vibrotactile
- **Merckel discs:** sensitive to static balance

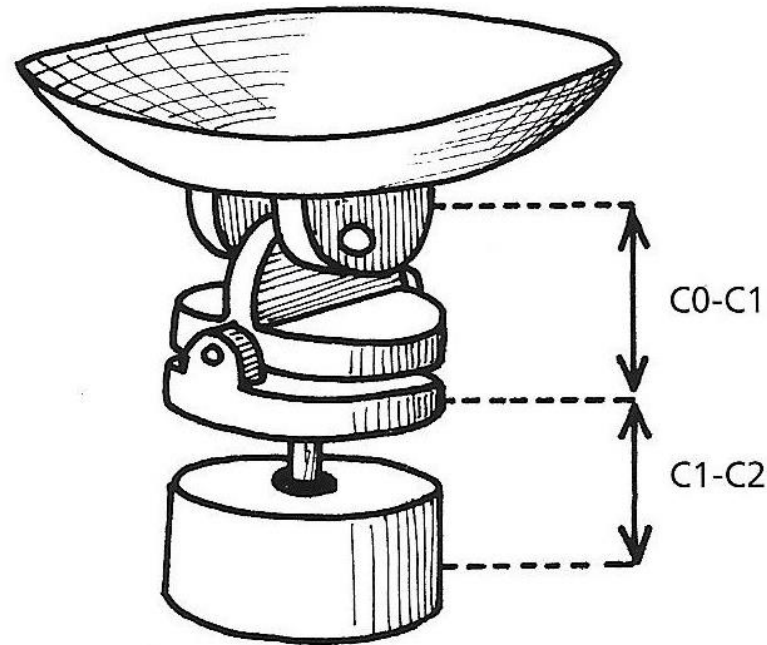
# KEY POINTS OF THE C0-C1-C2 JUNCTION

## Osteopathic Mechanical Link diagnosis and treatment

LMO - Méthode P.CHAUFFOUR & E.PRAT ®

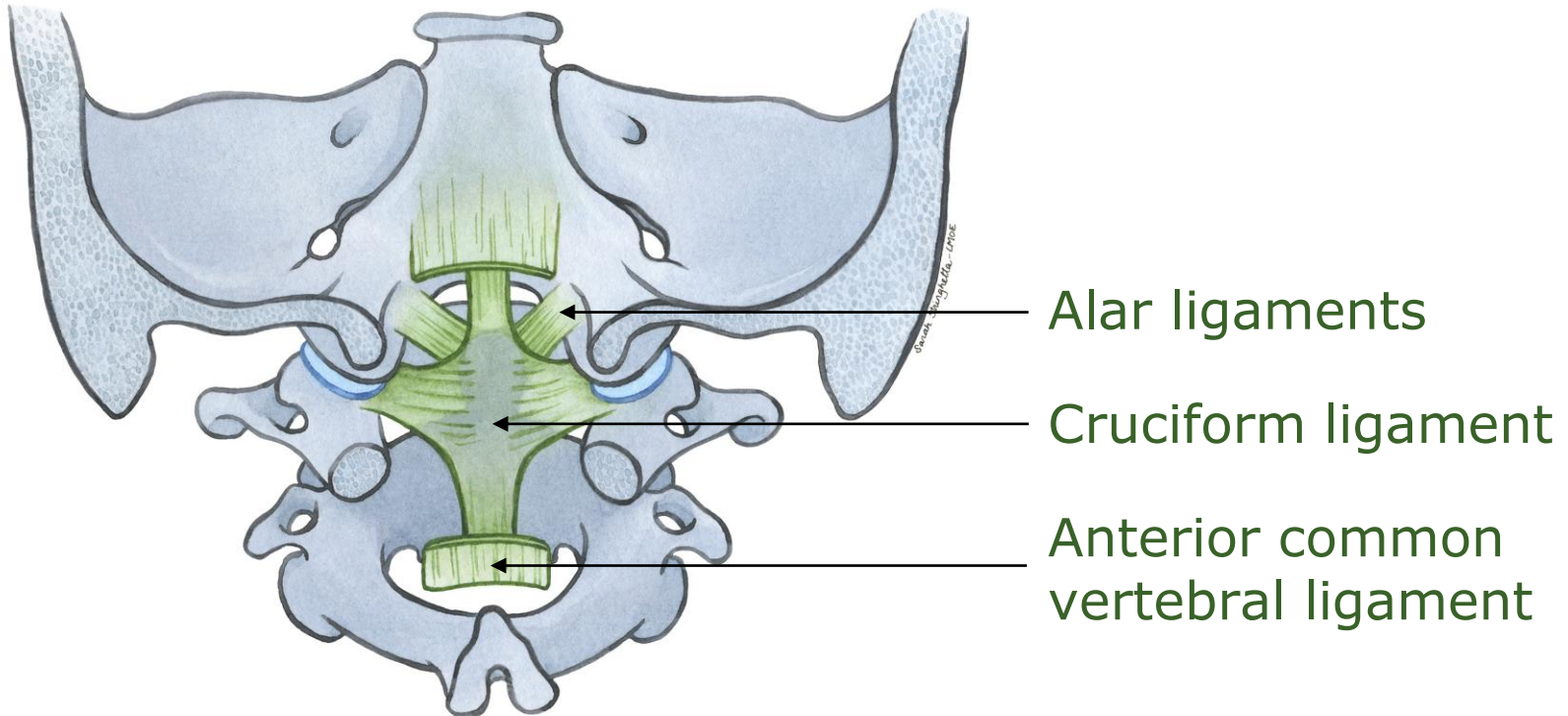


# The cranio-cervical junction

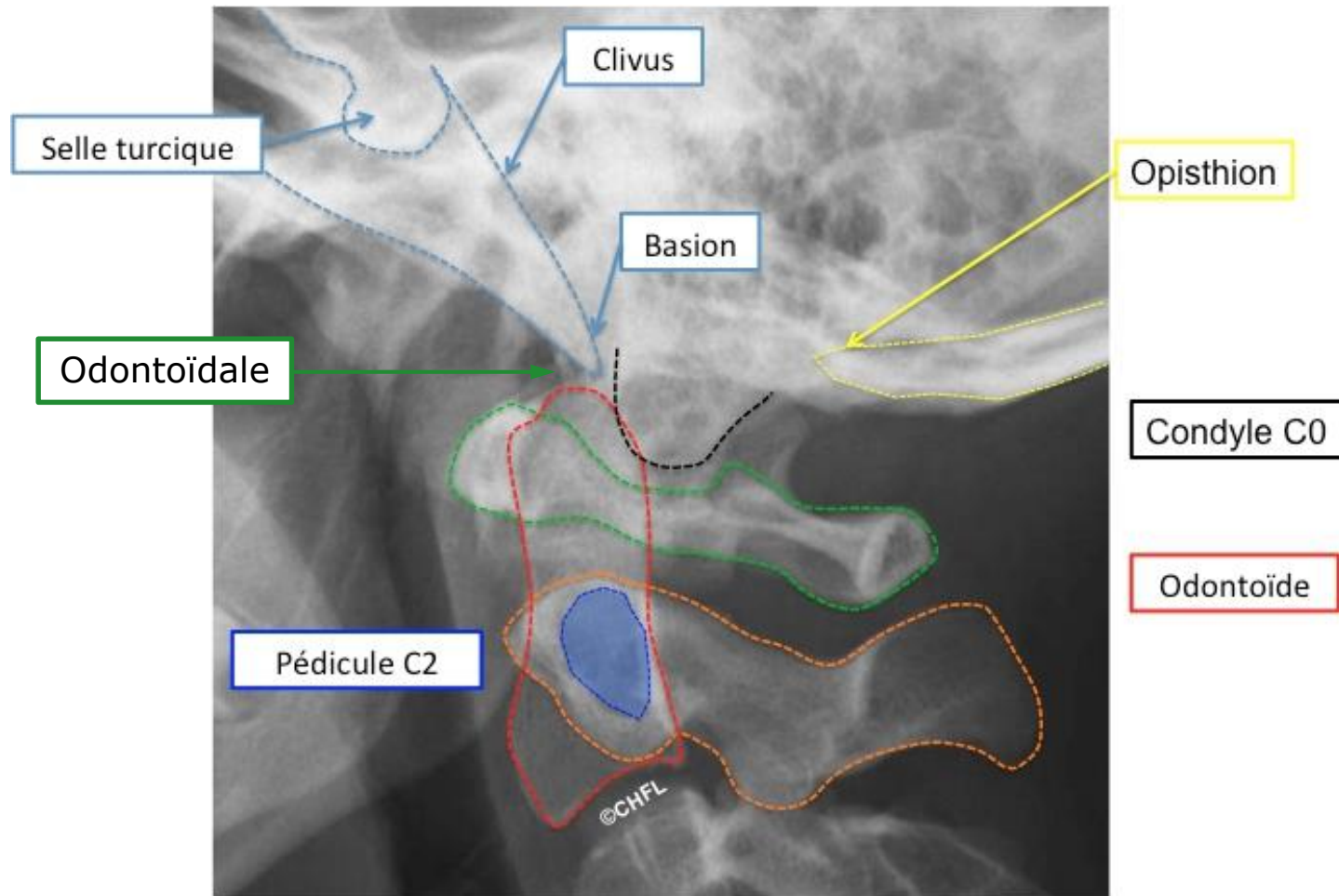


Articular mechanism with 2 joints  
allowing the head to remain in a stable position  
despite the oscillations of the spine

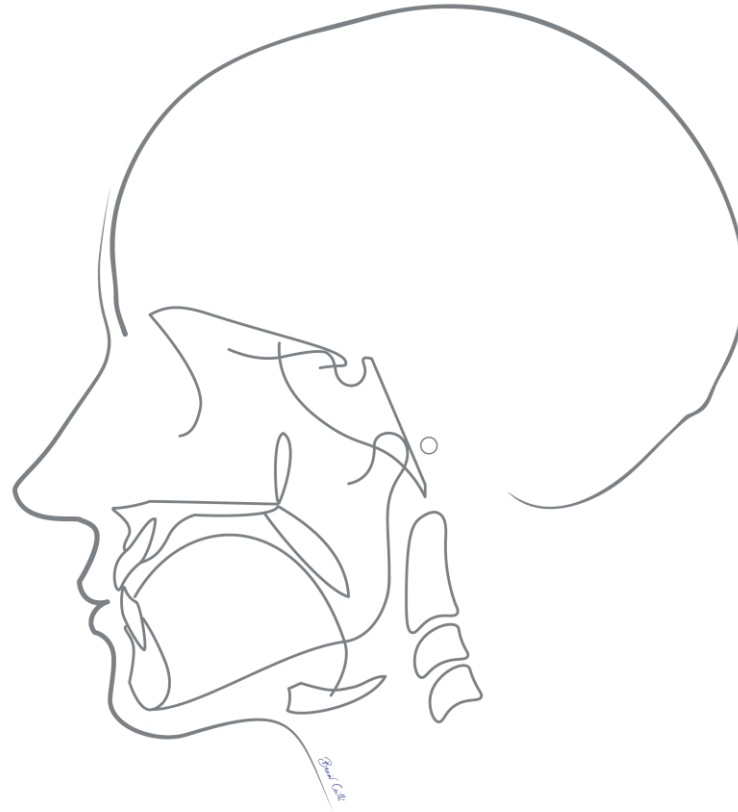
# The cranio-cervical junction



# The cranio-cervical junction

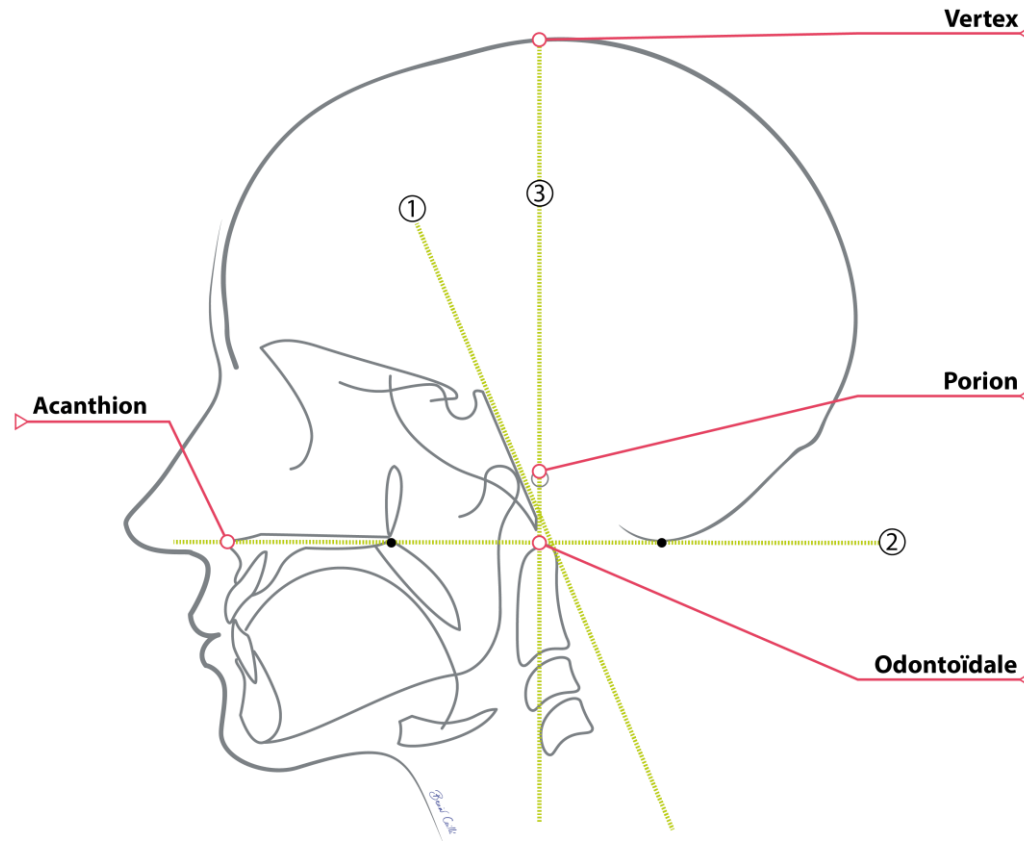


# The secret point !?

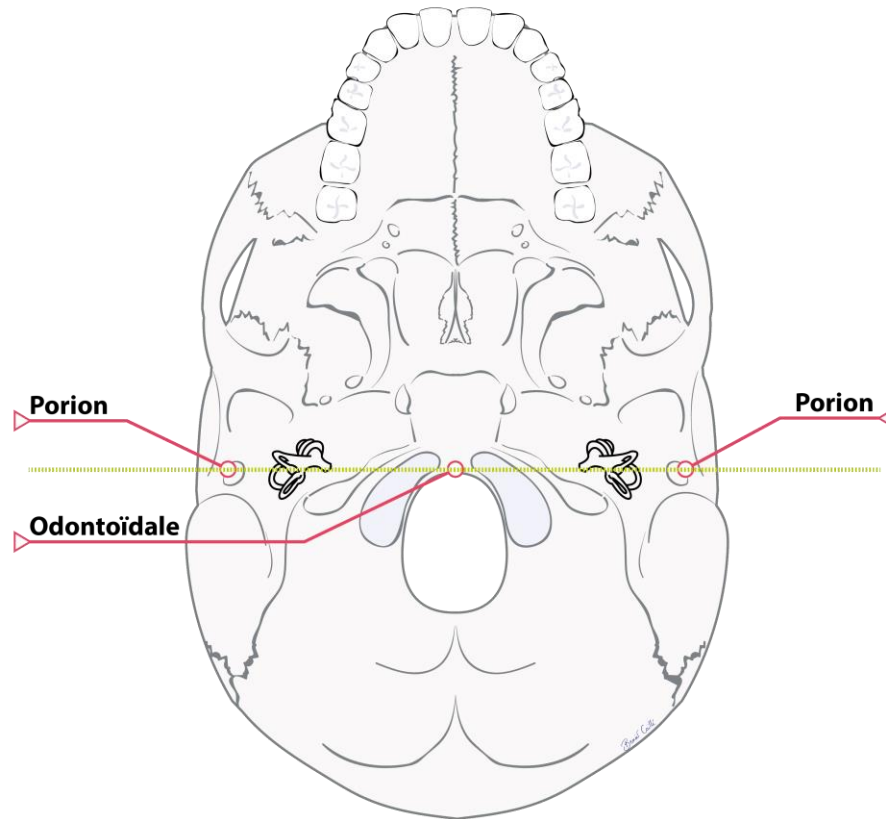




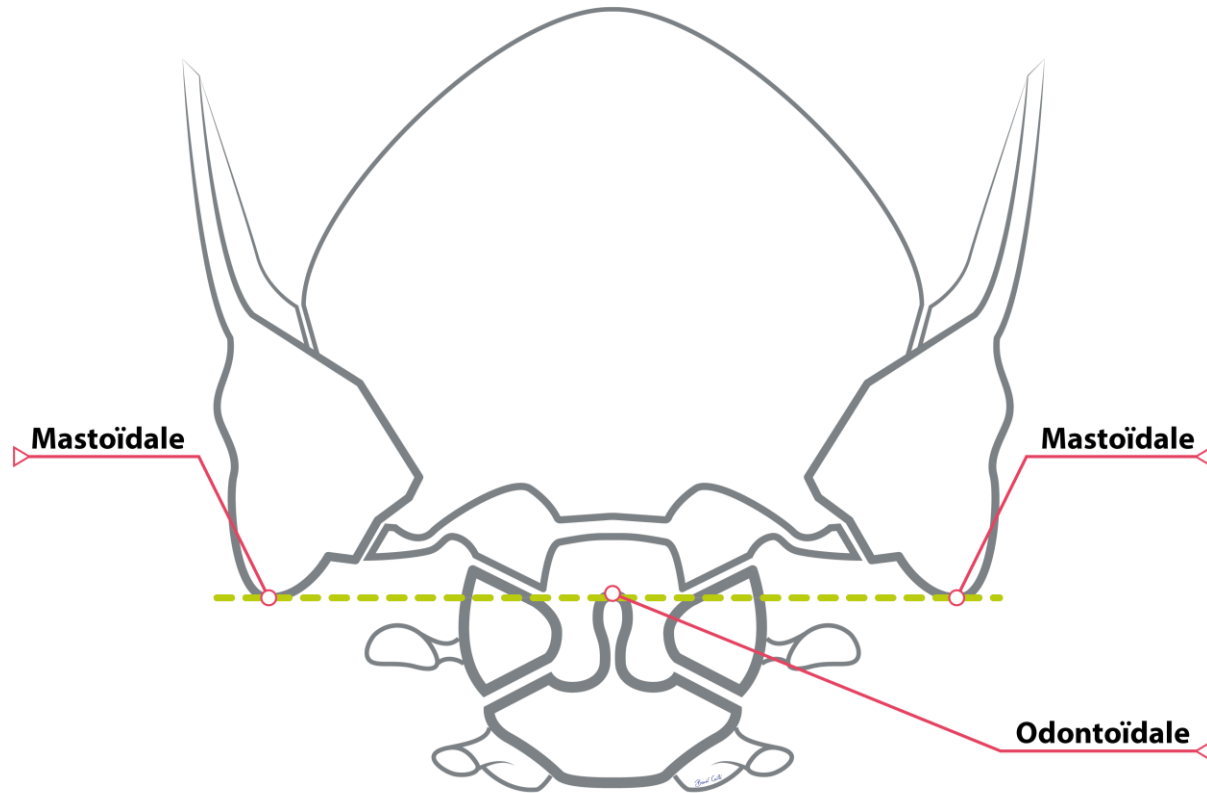
# The odontoid point



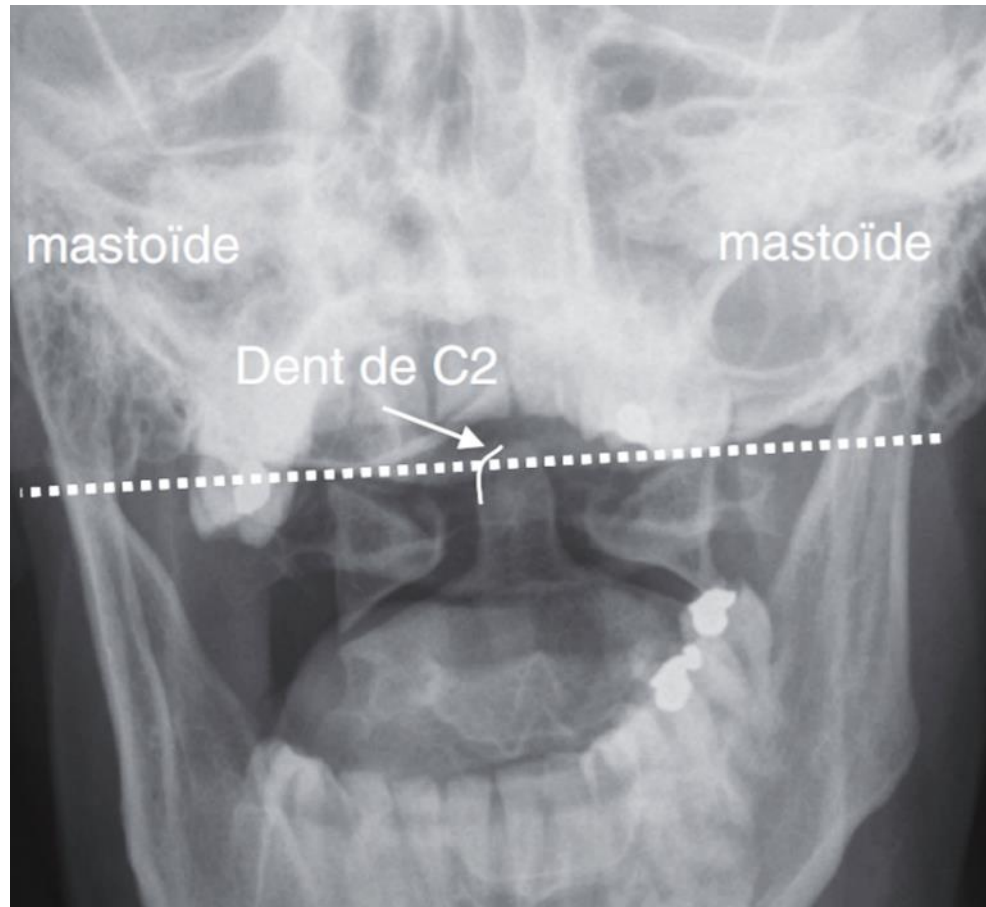
# The odontoid point



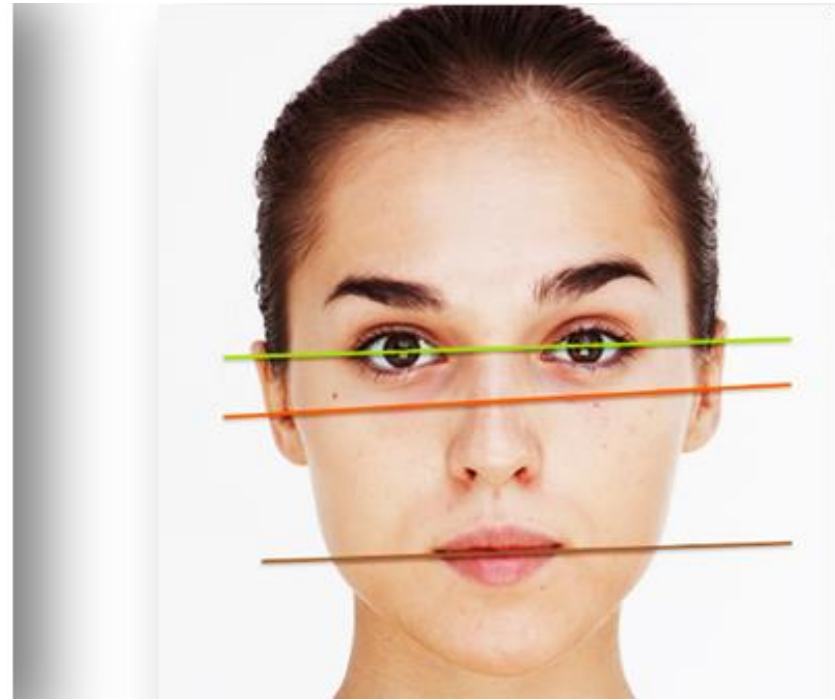
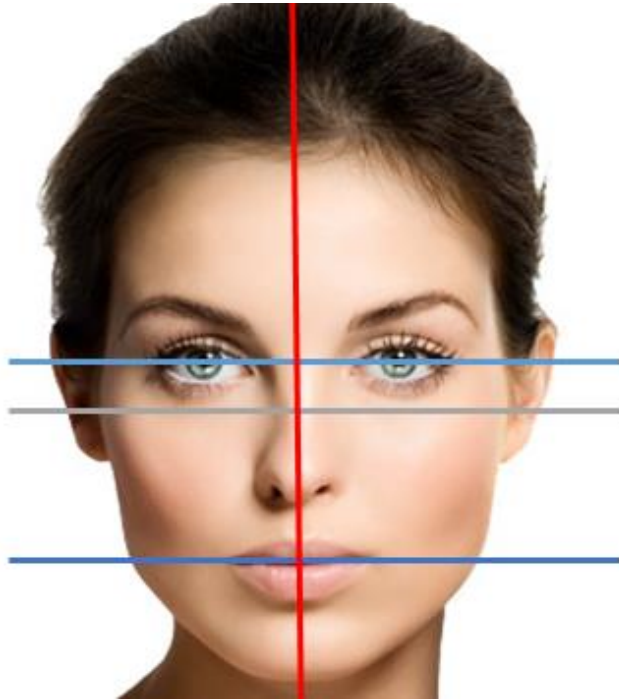
# The odontoid point



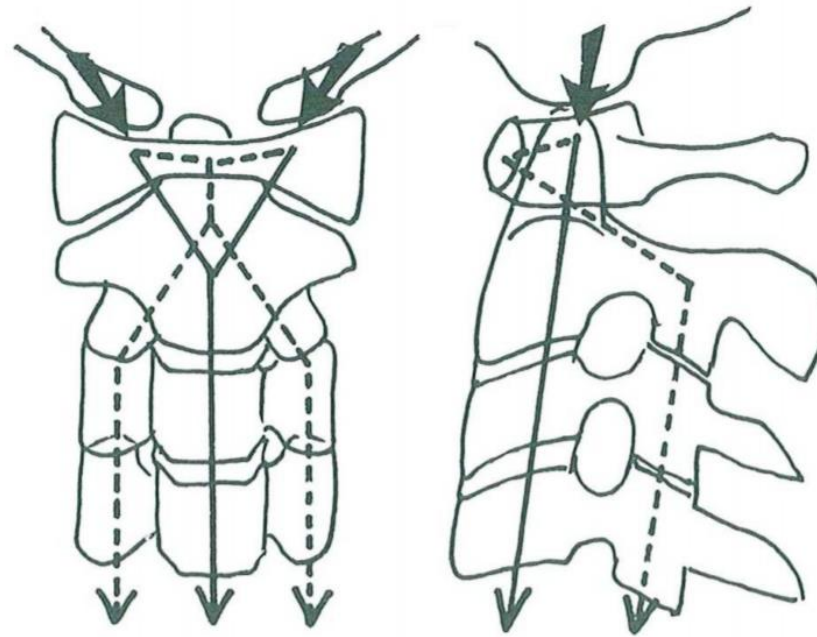
# The bimastoid line



# The bimastoid line

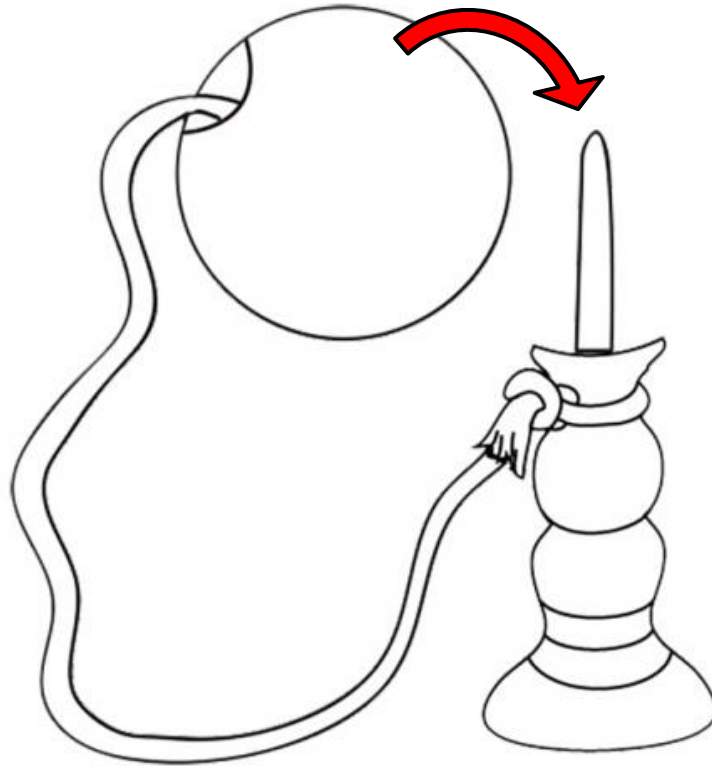


# The line of force of the odontoid



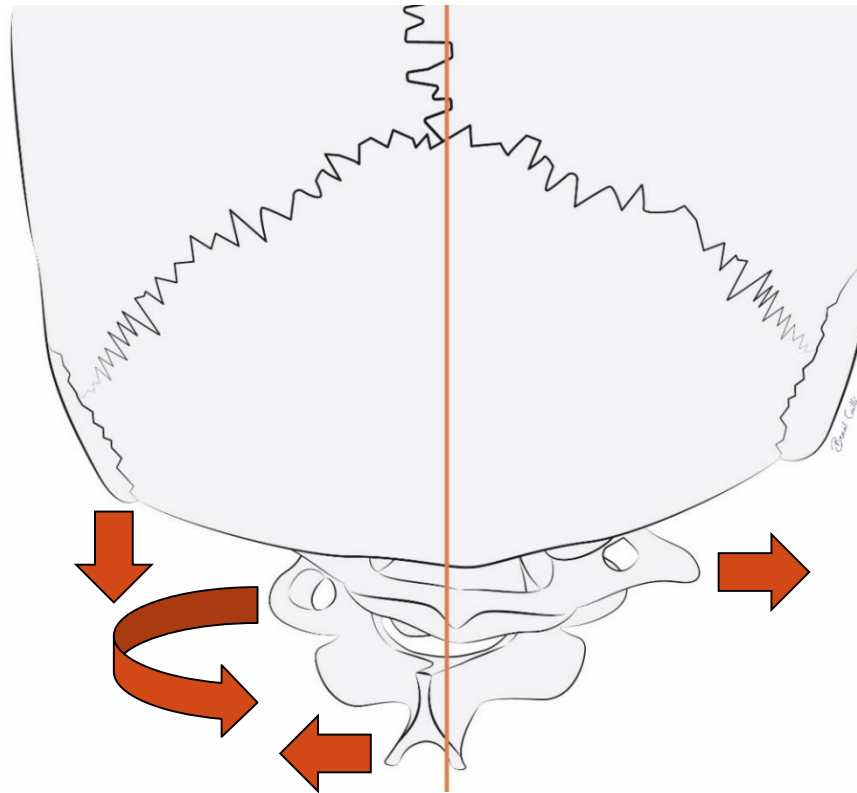
The odontoid is not only a rotation axis but also a supporting bone.

# TESTS OF THE C0-C2 JUNCTION



*Goal: To correctly position the skull  
in relation to the odontoid*

# A typical lesion pattern of scoliosis



Inducing a postural imbalance with vertebral curvatures  
right thoracic and left lumbar scoliosis



# A typical lesion pattern of scoliosis



Left mastoid down, right mastoid up  
C1 in right rotation and right translation  
C0-C2 left

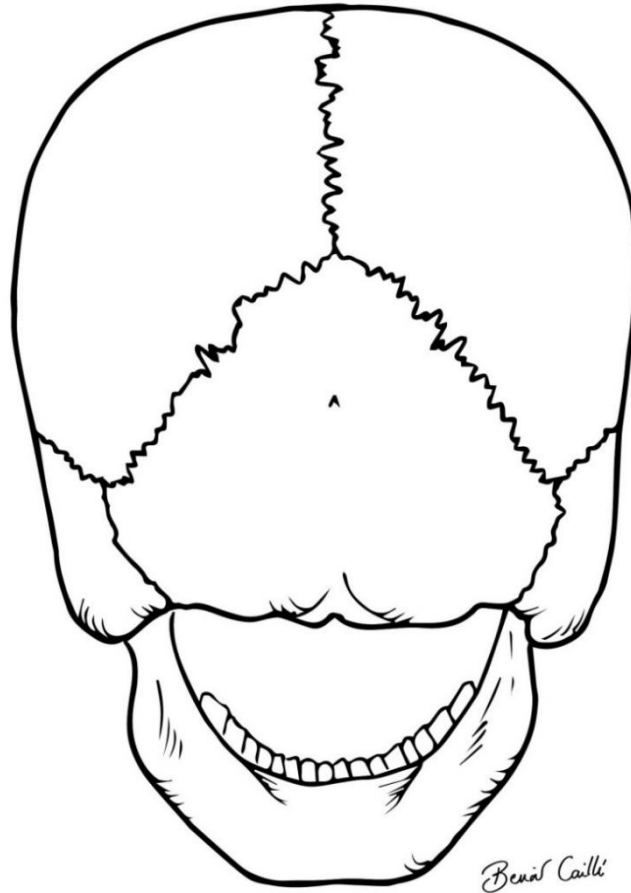
# 1<sup>st</sup> SEQUENCE

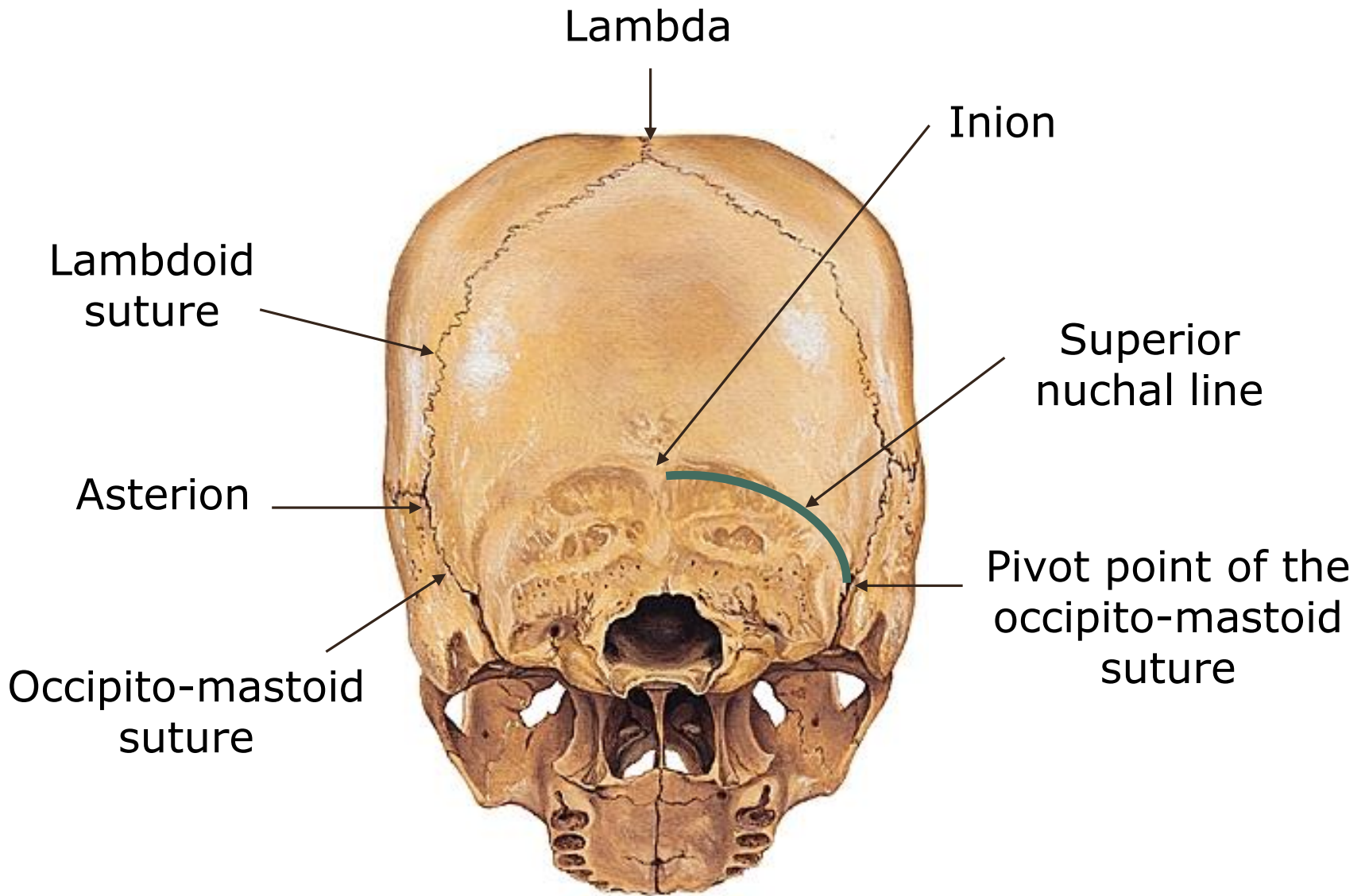
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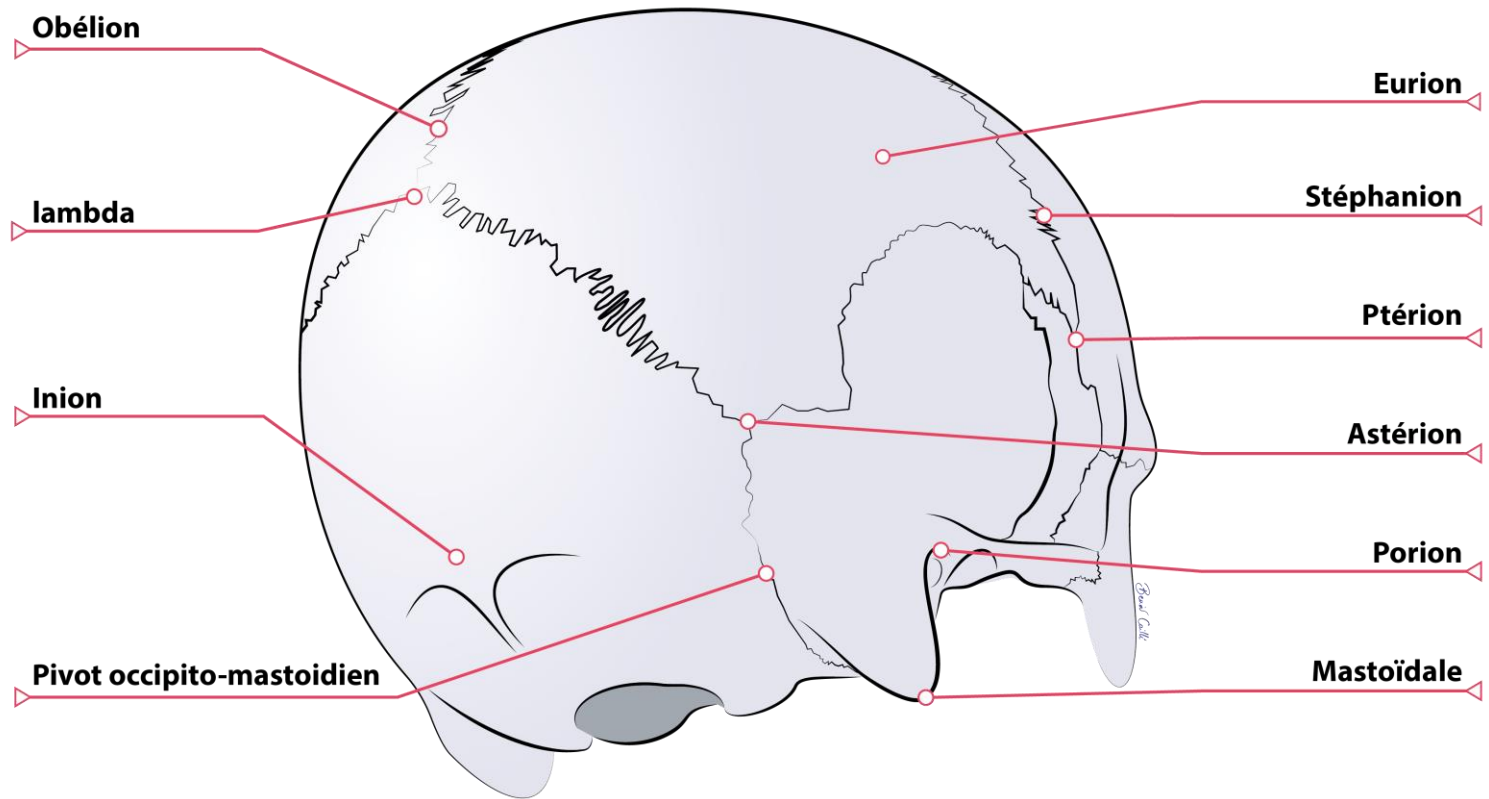
*Patient seated,  
practitioner standing behind the patient.*

# Occiput

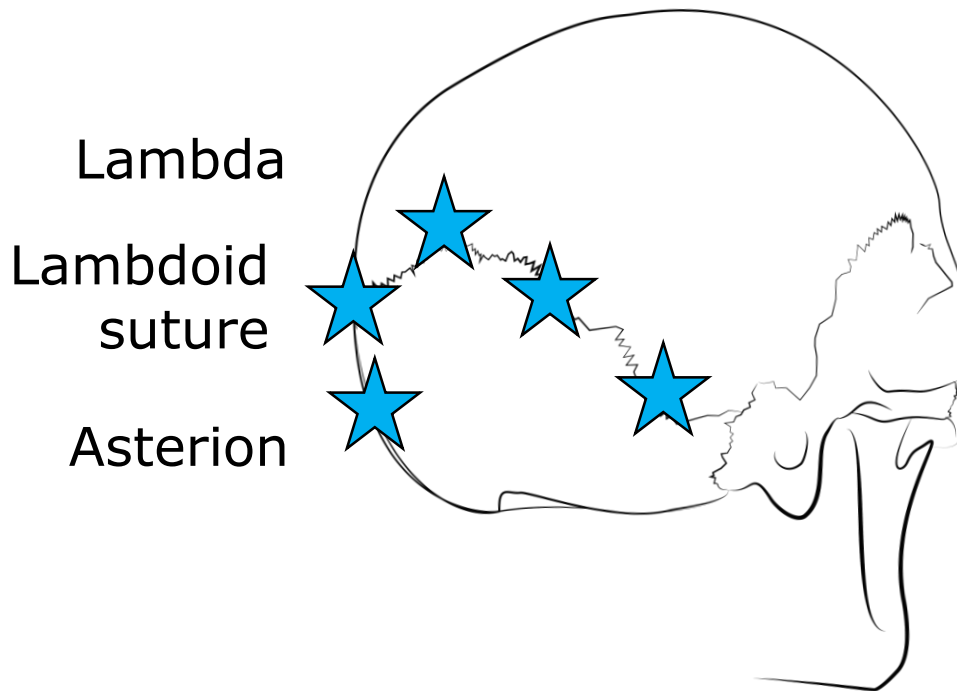




# Craniometric points



# GLOBAL TEST OF LAMBDOID SUTURE



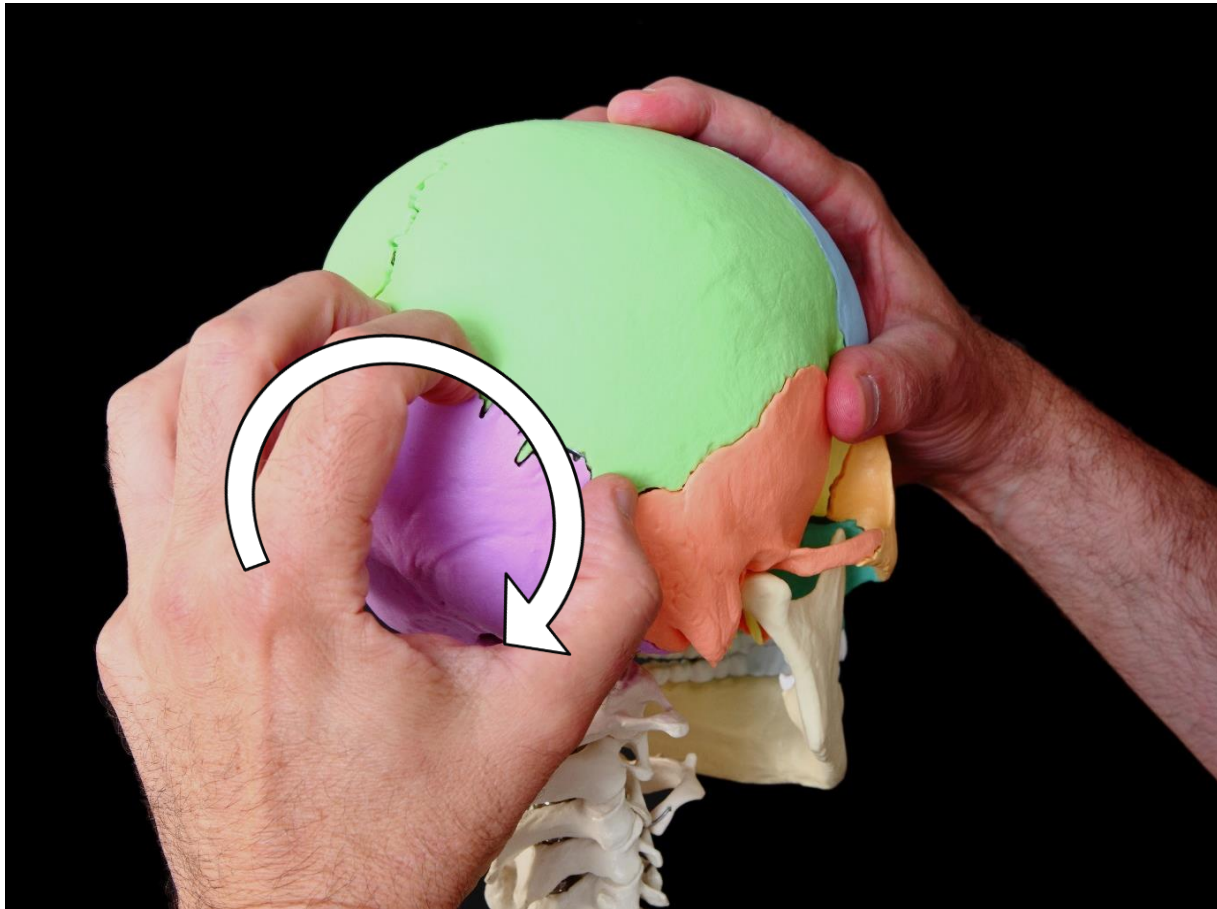
*Five finger hold: 3<sup>rd</sup> finger on lambda  
2<sup>nd</sup> and 4<sup>th</sup> fingers on lambdoid suture  
thumb and 5<sup>th</sup> finger on asterion*

# GLOBAL TEST OF LAMBDOID SUTURE



*Five finger hold: 3<sup>rd</sup> finger on lambda  
2<sup>nd</sup> and 4<sup>th</sup> fingers on lambdoid suture  
thumb and 5<sup>th</sup> finger on asterion*

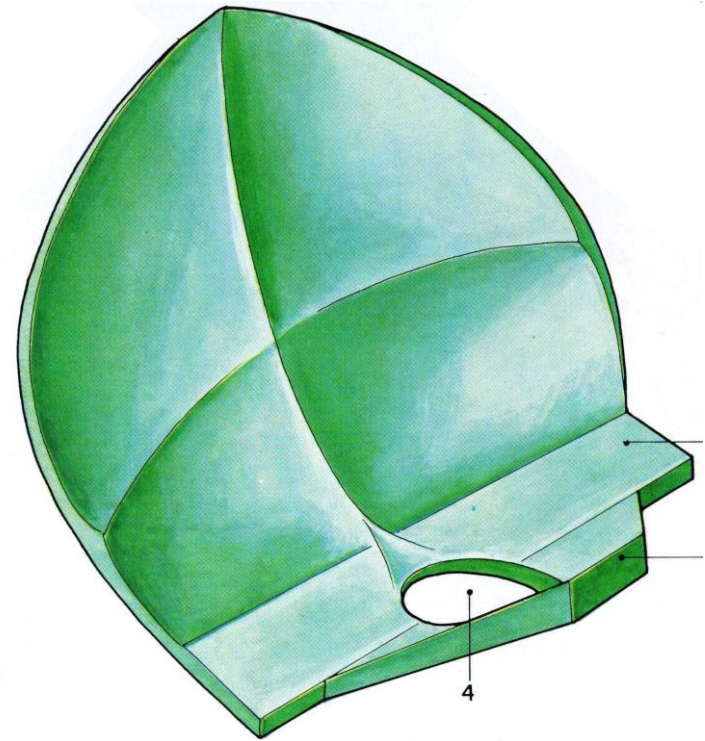
# GLOBAL TEST OF LAMBDOID SUTURE



*Test in pressure and circumduction*



# The cross-ribbed vault



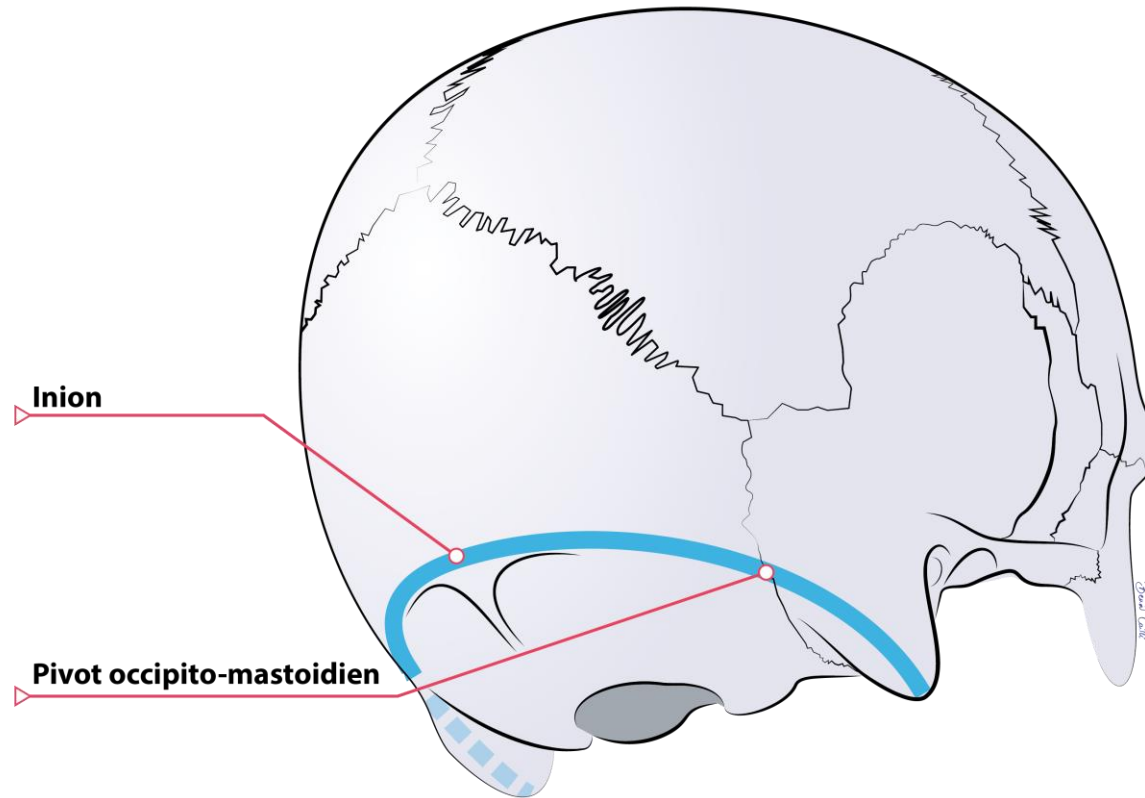
# The cross-ribbed vault

It forms the occipital vault.

It has a **keystone**, the external occipital protuberance, which unites the arches.

The external occipital protuberance corresponds to the craniometric point *Inion*.

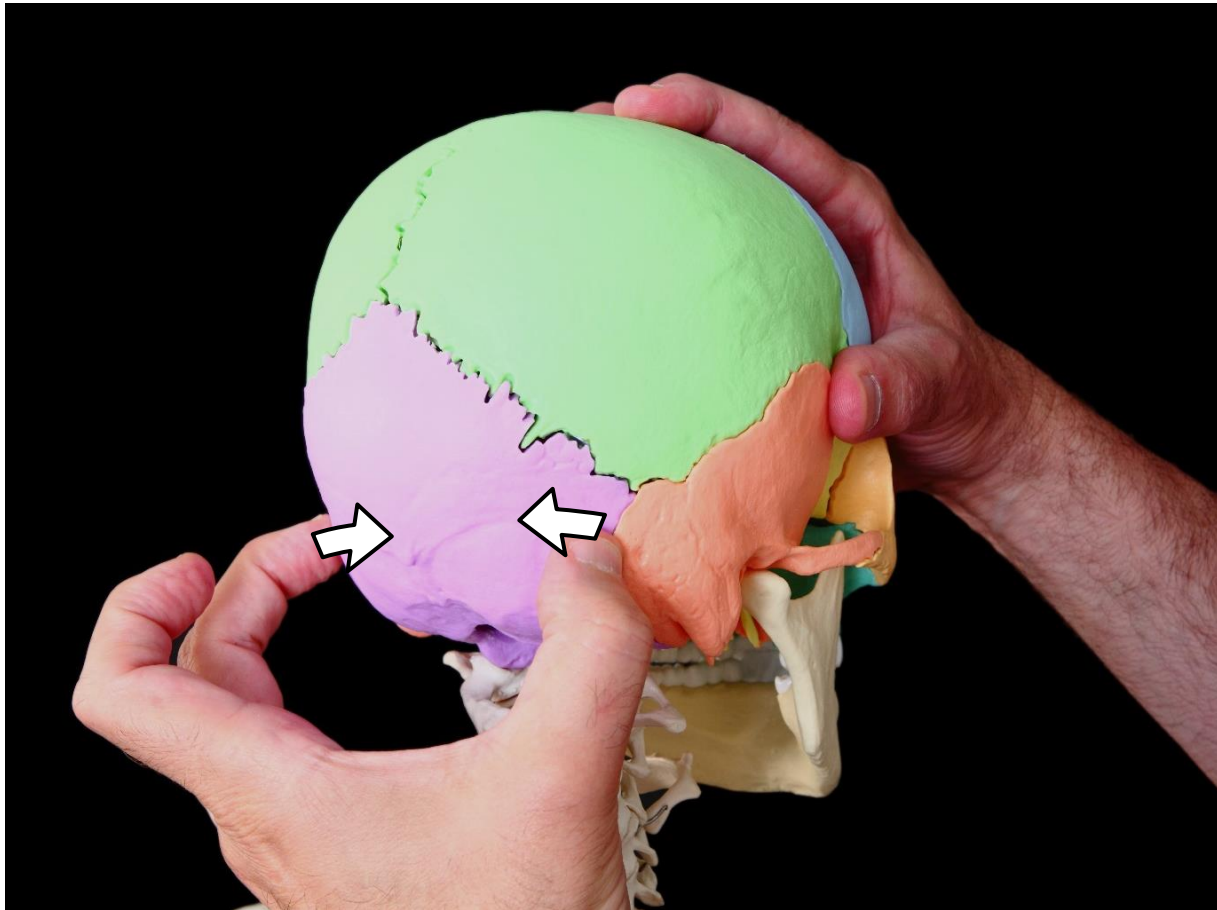
# Posterior arch





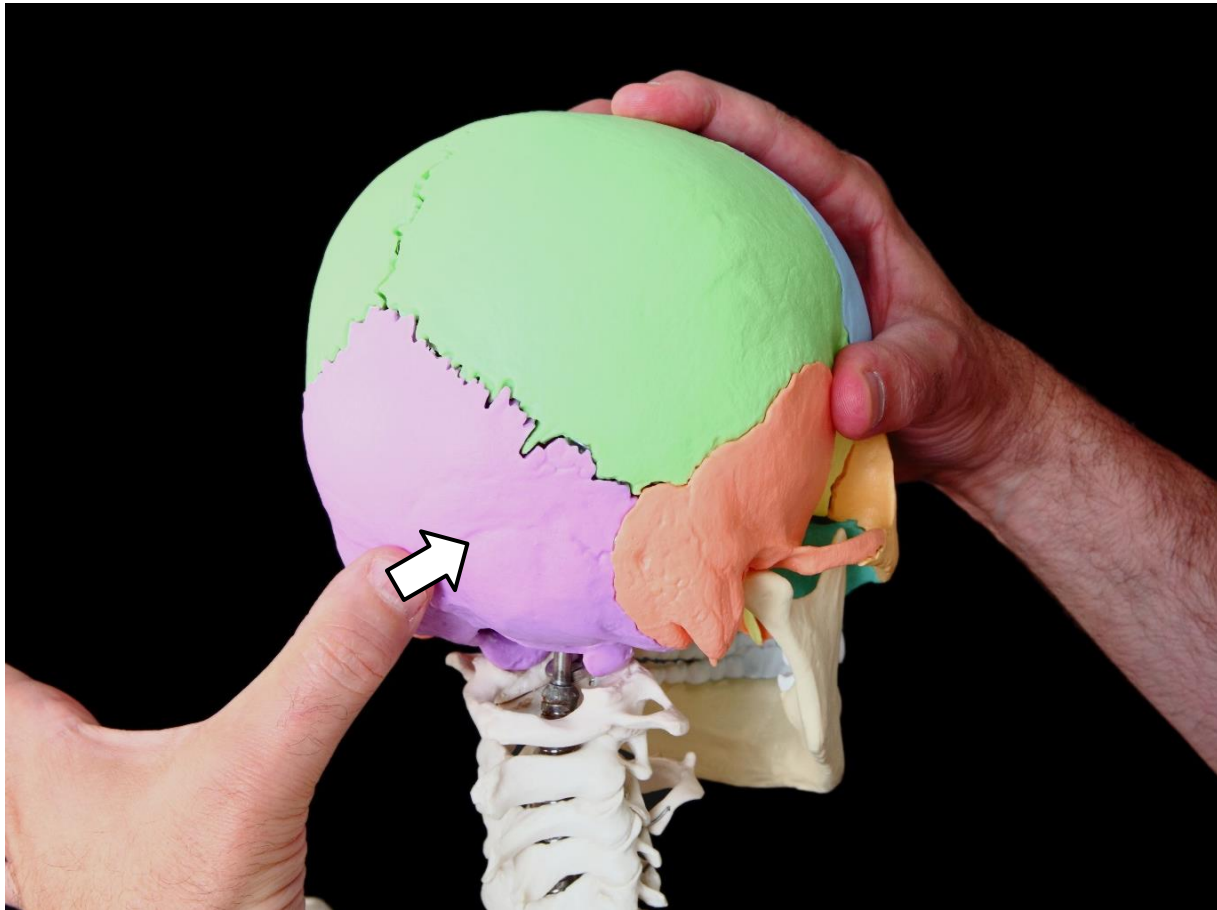


# TEST OF THE POSTERIOR ARCH



*Contact extremities of the superior nuchal line  
Transversal compression test*

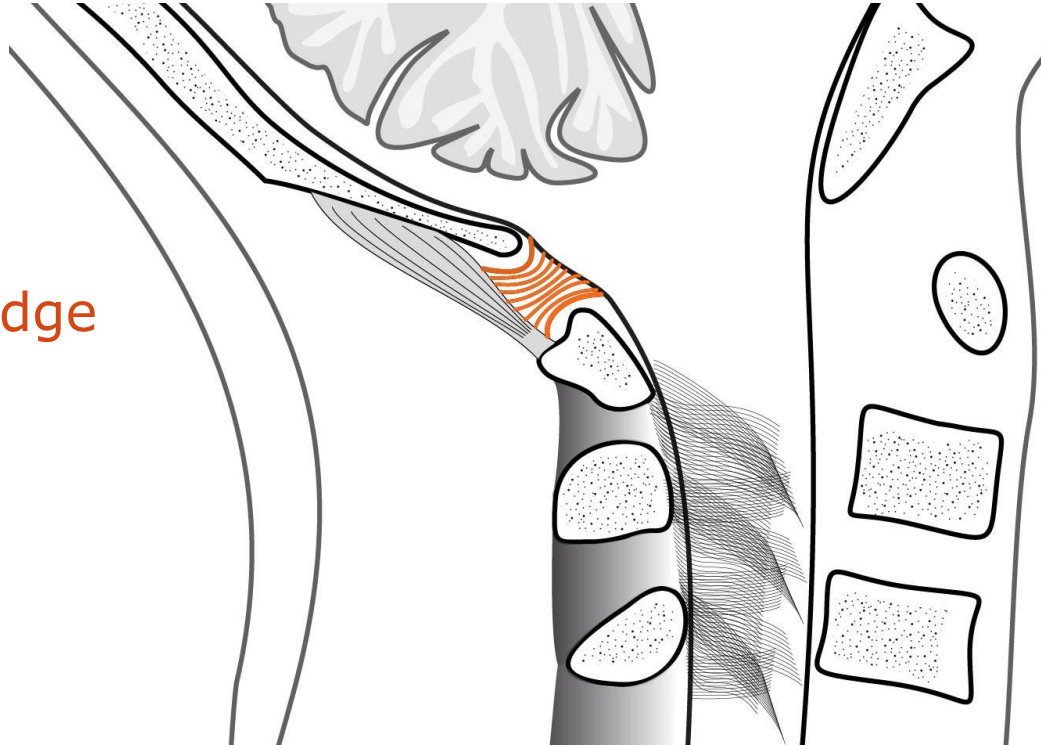
# TEST OF THE INION



*Contact inion  
Test with pressure and circumduction*

# Spinal dura-mater

Myodural bridge

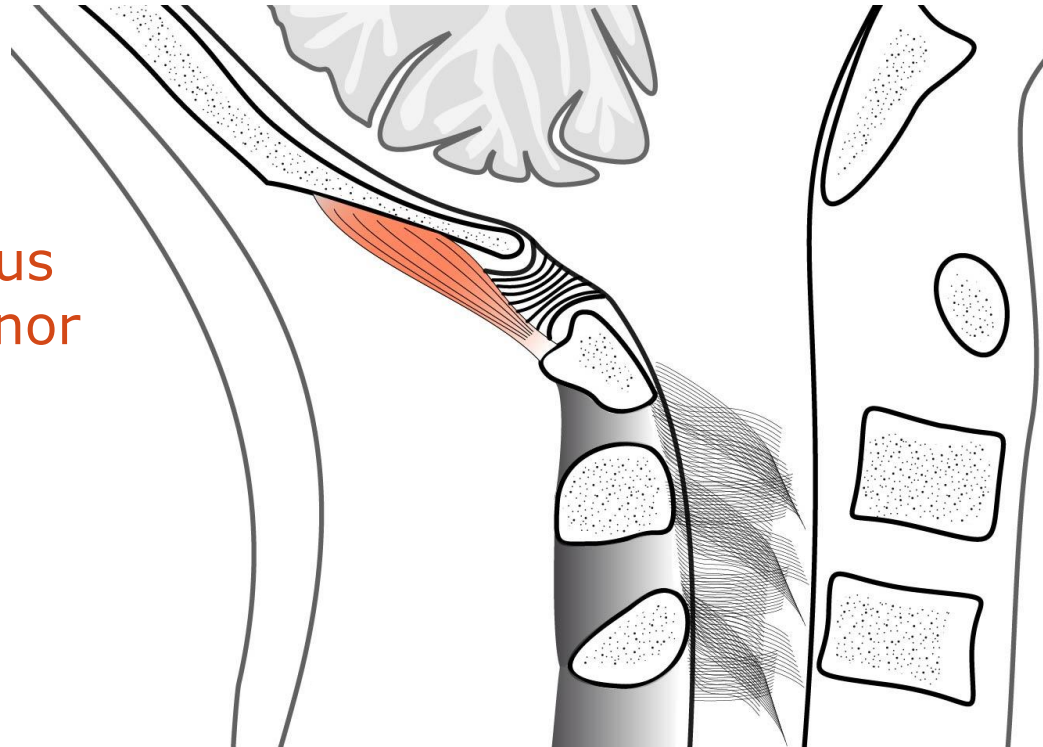


*From R. Lalauze-Pol, le crâne du nouveau-né  
Le crâne en ostéopathie, André Ratio. Dessin, Benoit Caillé*



# Spinal dura-mater

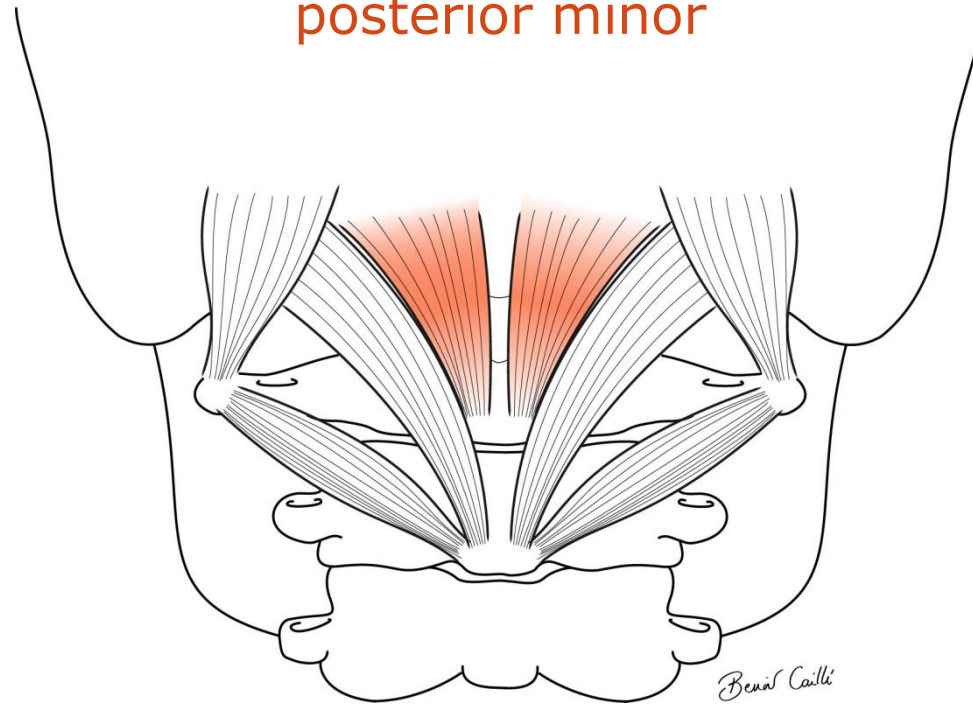
Rectus capitus  
posterior minor



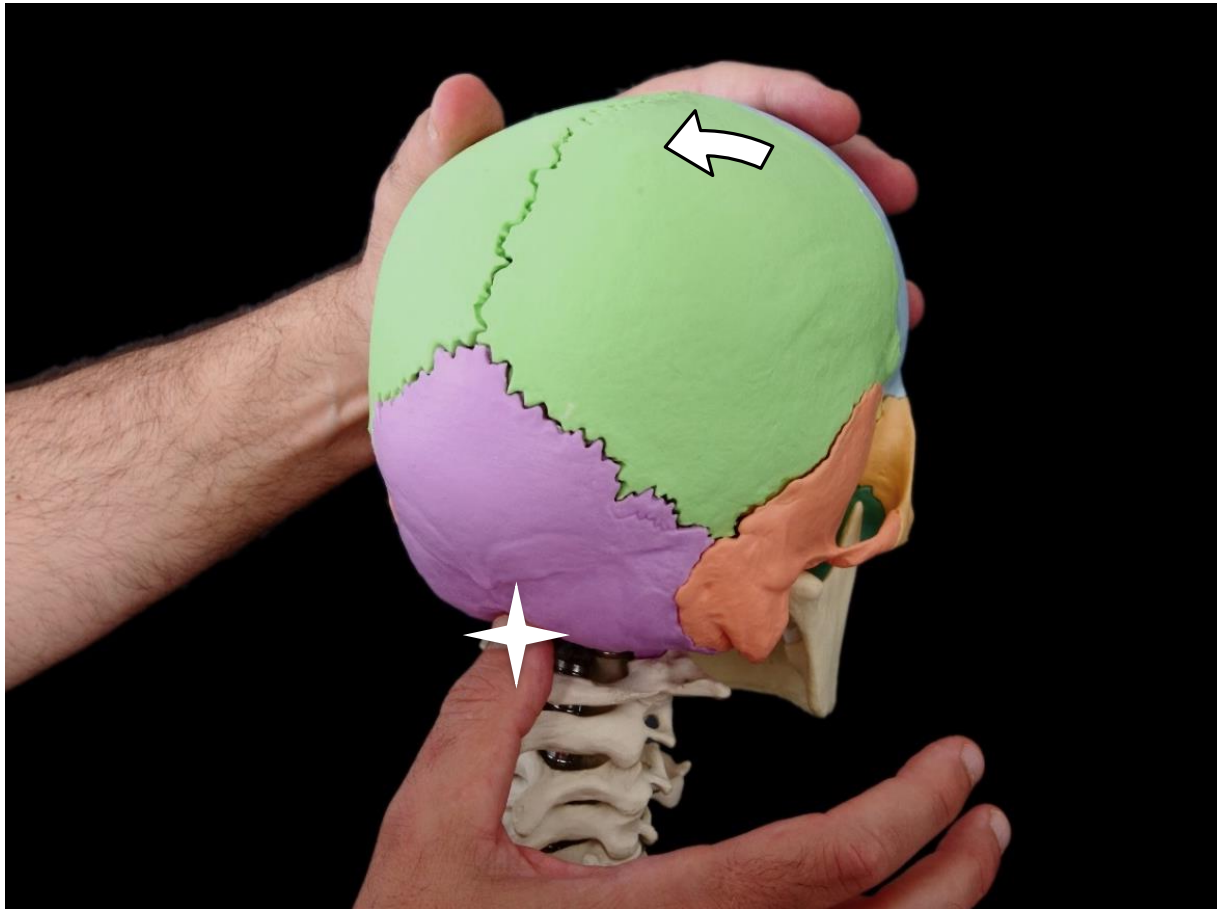
*From R. Lalauze-Pol, le crâne du nouveau-né  
Le crâne en ostéopathie, André Ratio. Dessin, Benoit Caillé*

# Spinal dura-mater

Rectus capitus  
posterior minor

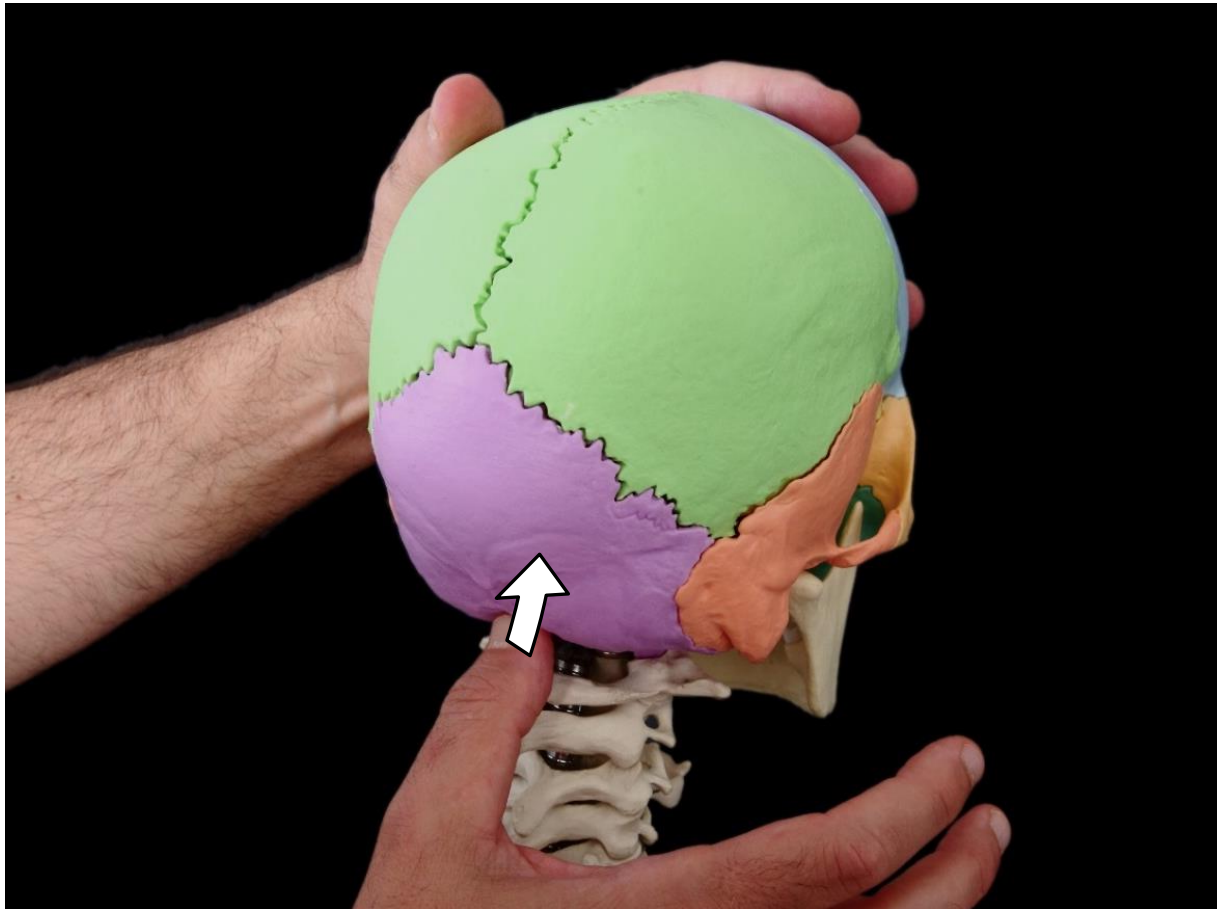


# TEST OF THE SPINAL DURA MATER



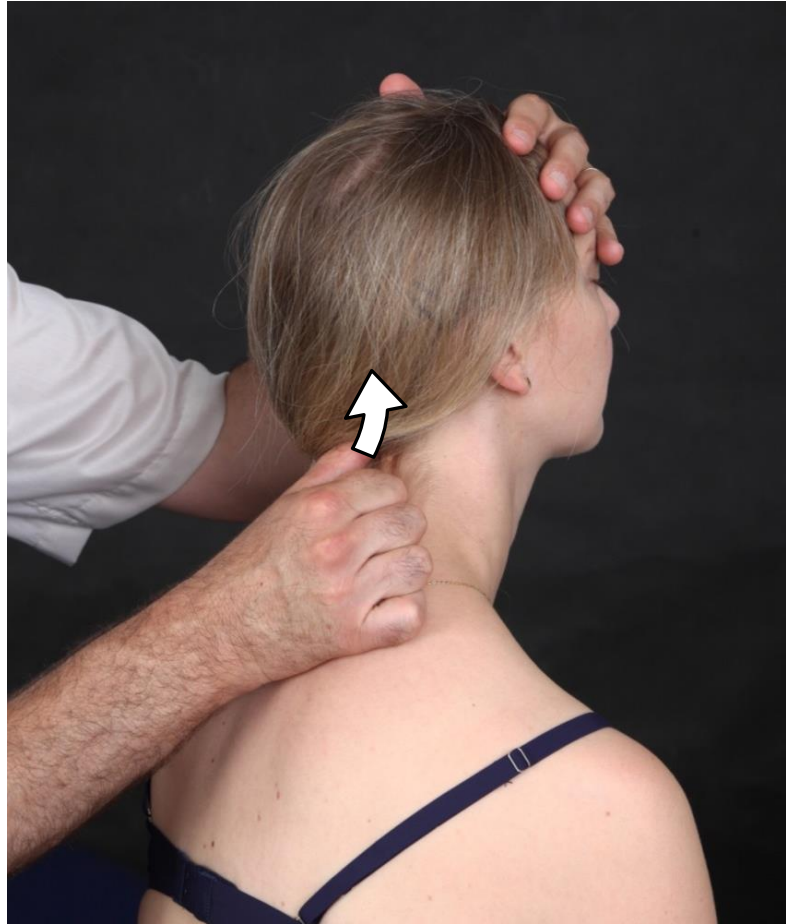
*Contact: close to the foramen magnum  
Head passively extended*

# TEST OF THE SPINAL DURA MATER



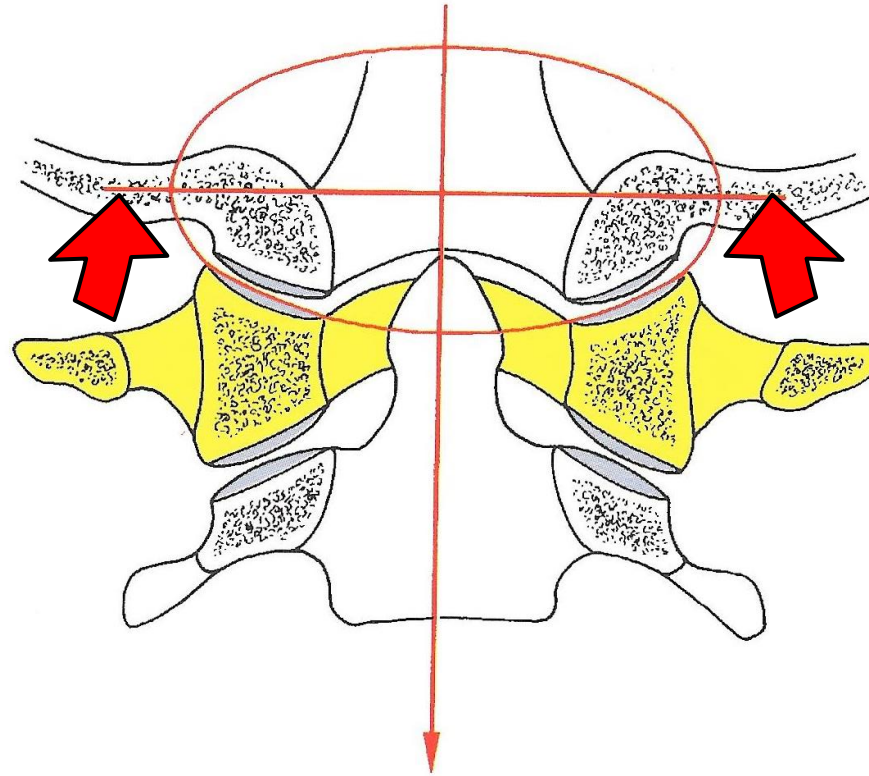
*Test: lift with cranial traction*

# TEST OF THE SPINAL DURA MATER



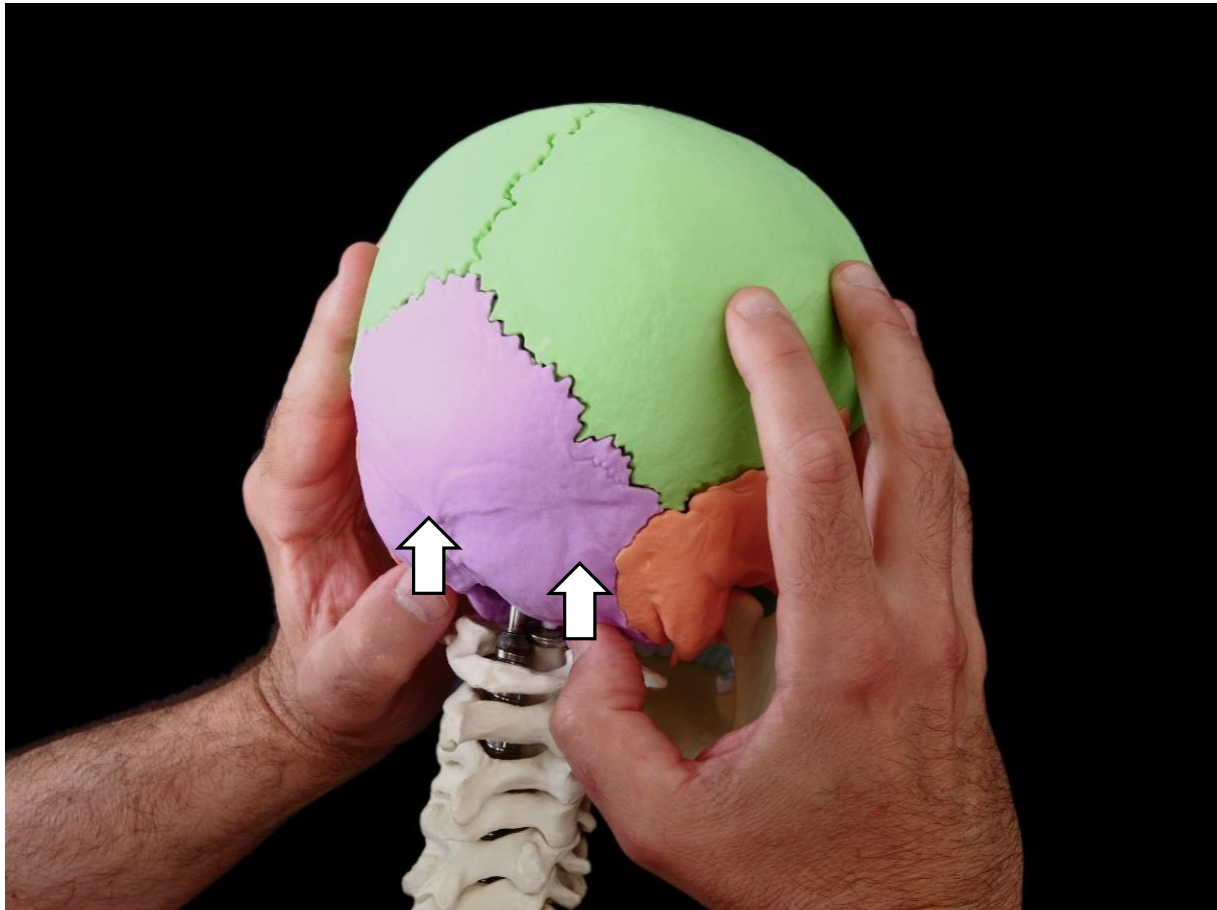
*Test: lift with cranial traction*

# Occiput-Atlas articulation



*Contact: thumbs under the occiput, facing C0-C1*  
*Test: cranial traction*

# GLOBAL TEST OF OCCIPUT-ATLAS



*Contact: thumbs under the occiput, facing C0-C1*  
*Test: cranial traction*

# GLOBAL TEST OF OCCIPUT-ATLAS

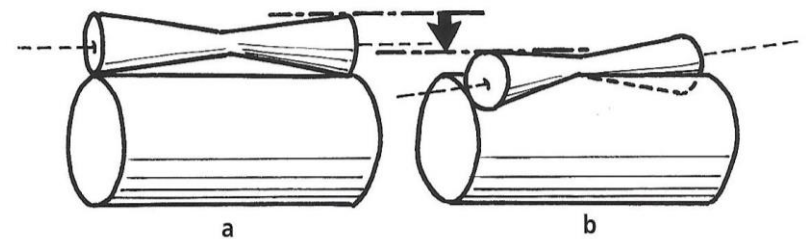
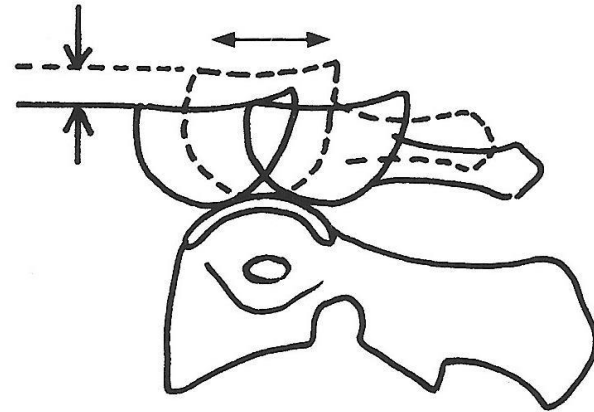
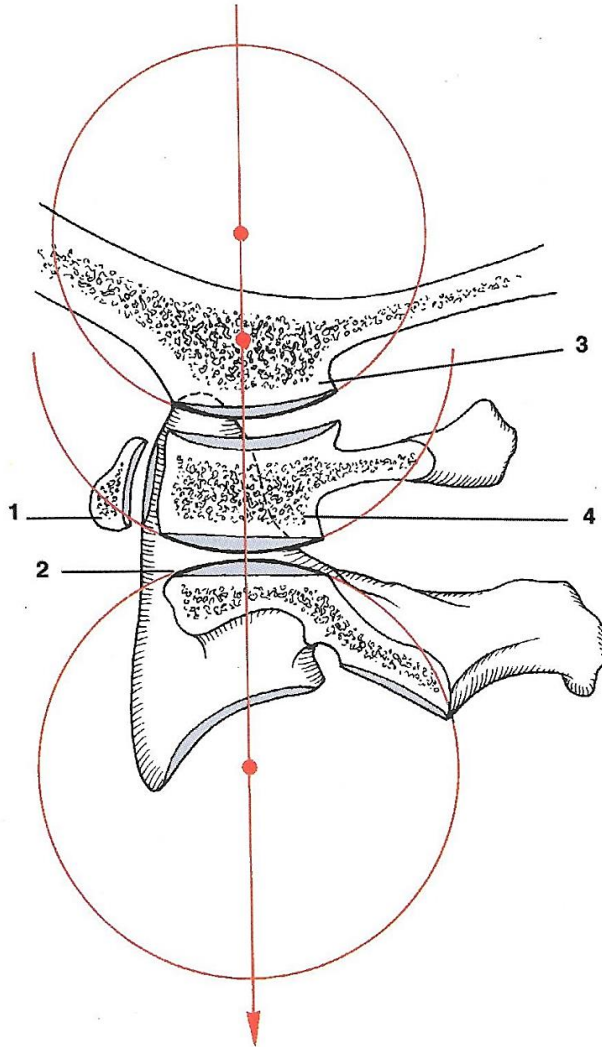


*Contact: thumbs under the occiput, facing C0-C1*  
*Test: cranial traction*

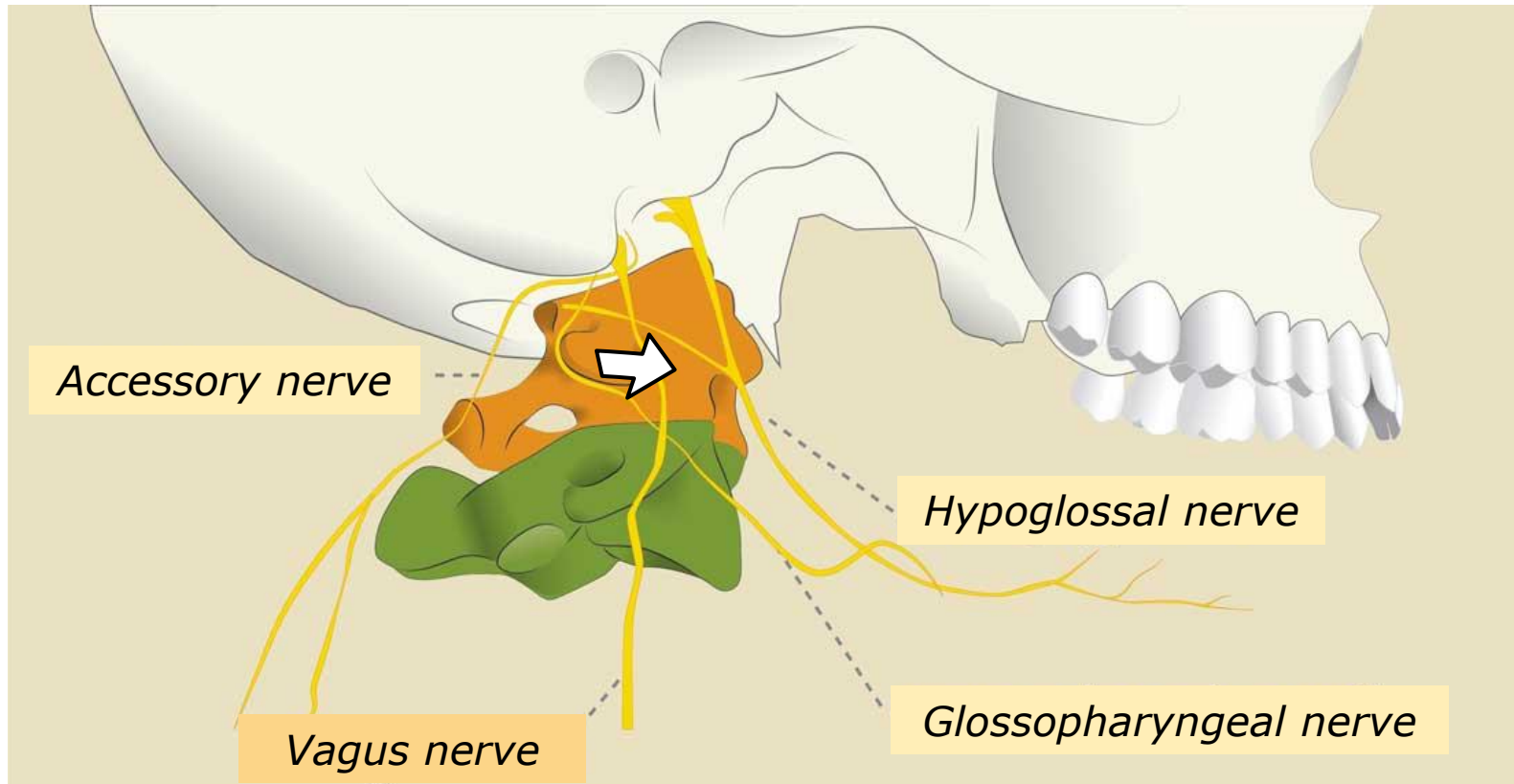




# Atlas-Axis Articulatio

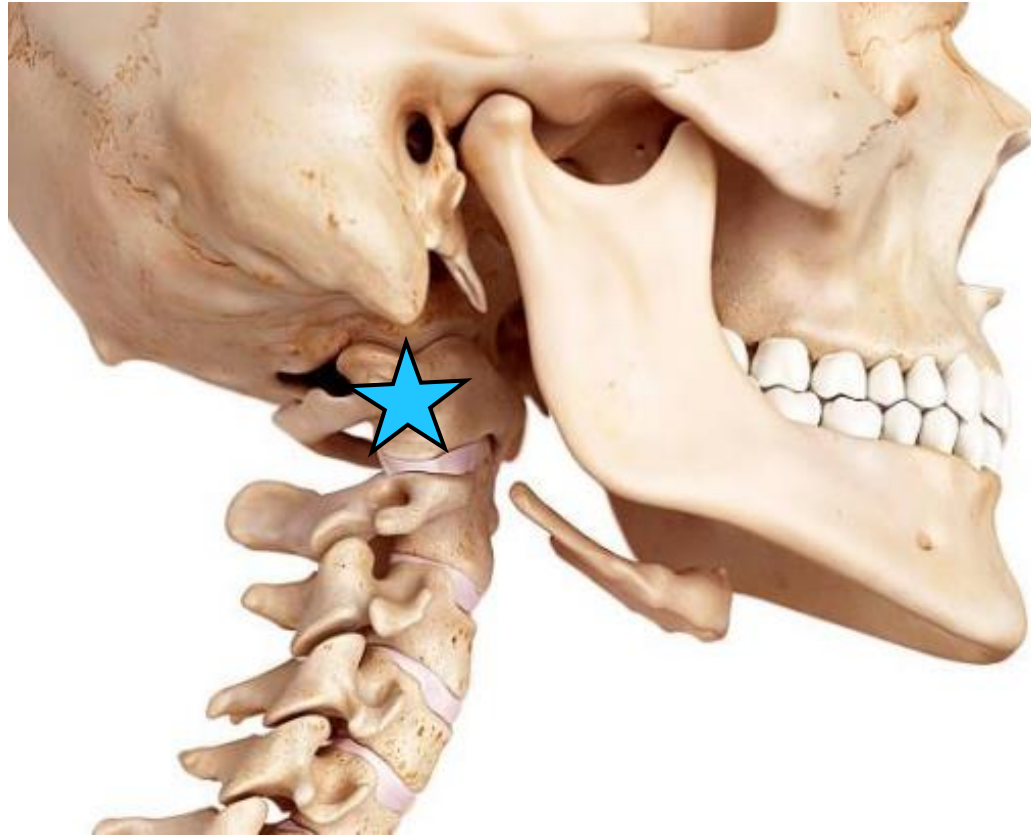


# Neural relationships of C1



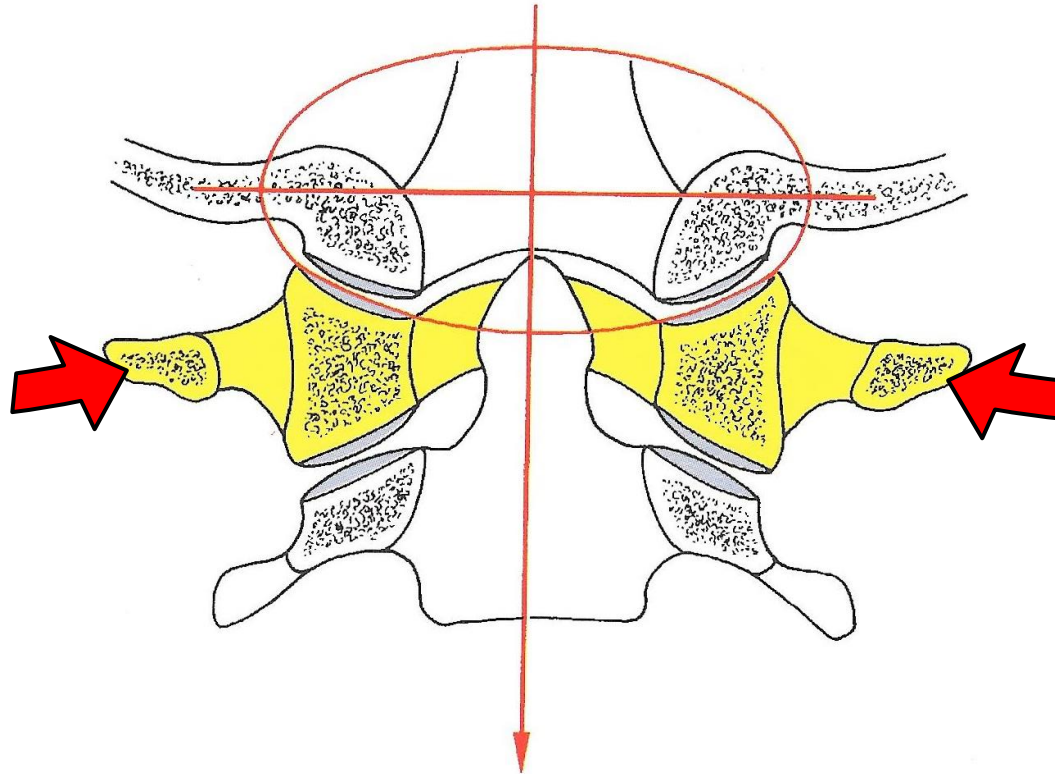
*An anterior lesion of C1  
can quite easily affect the vagus nerve*

# Position of C1



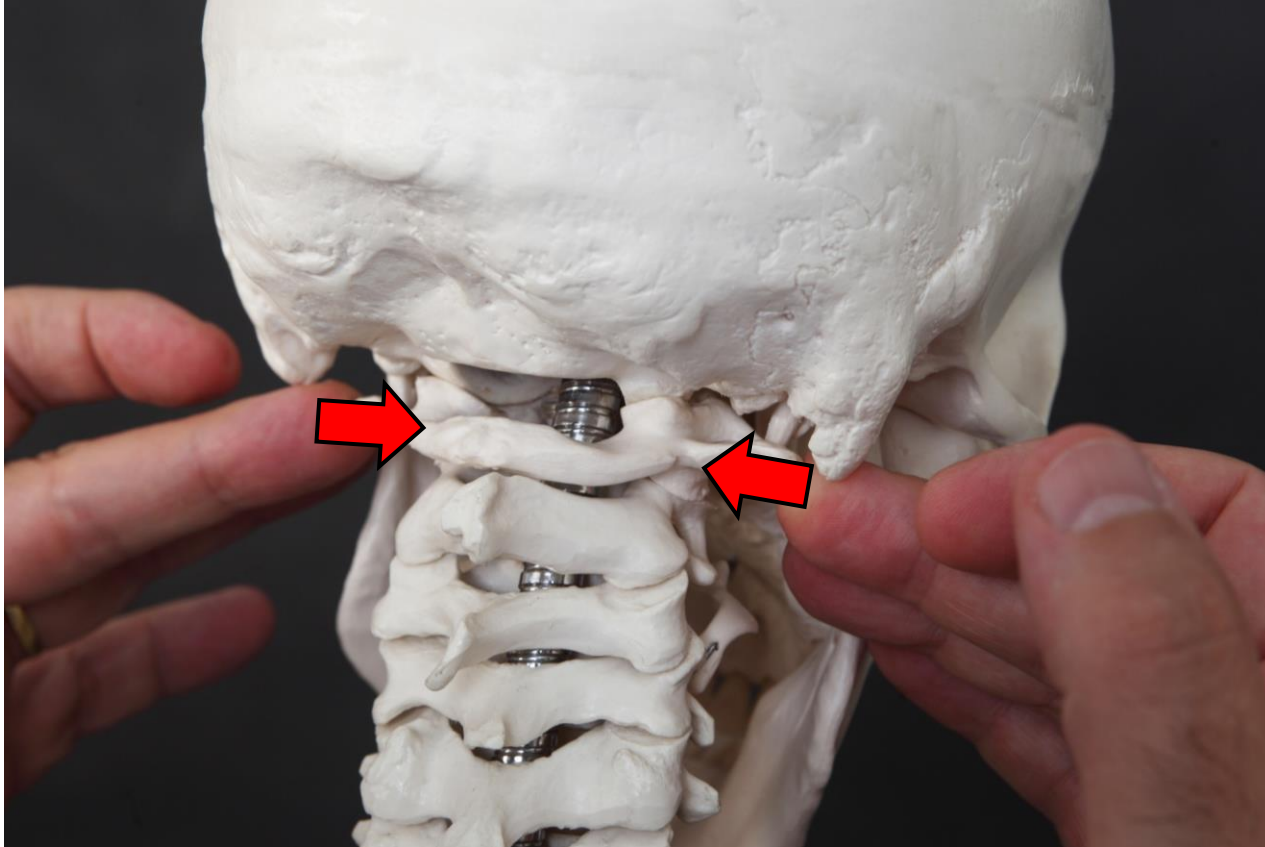
*Finding the transverse process of C1  
just under the tip of the mastoid*

# Atlas



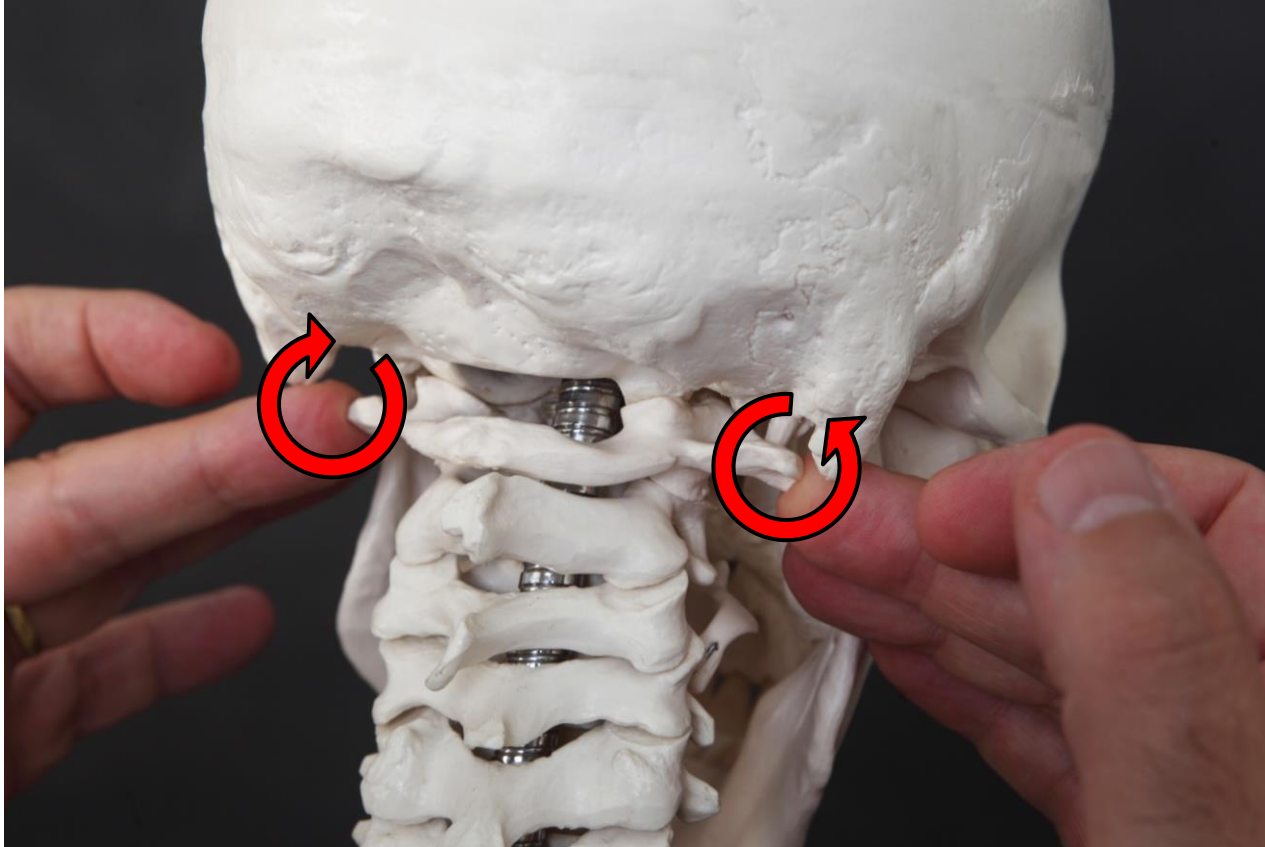
*Contact: transverse process of C1*  
*Test: pressure and circumduction*

# TEST LINE OF FORCE OF ATLAS



*Contact: transverse process of C1*  
*Test: transversal compression*

# ARTICULAR TEST OF ATLAS-AXIS



*Contact: transverse process of C1*  
*Test: circumduction (pedaling)*

# ARTICULAR TEST OF ATLAS-AXIS



*Contact: transverse process of C1*  
*Test: compression*

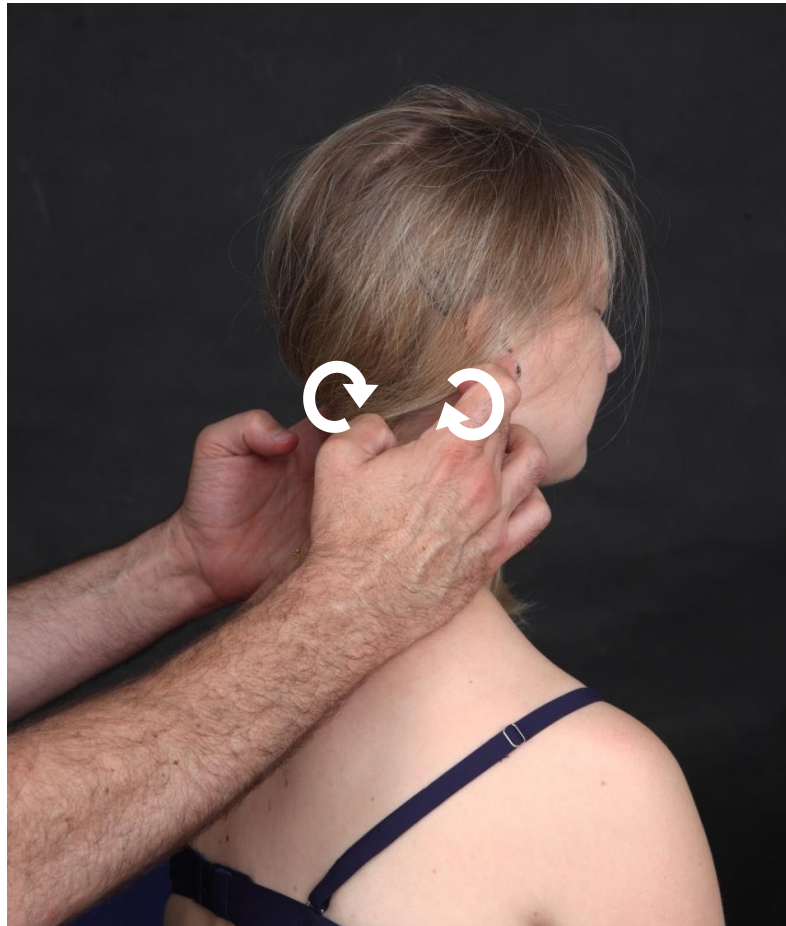


# ARTICULAR TEST OF ATLAS-AXIS



*Contact: transverse process of C1  
Test: circumduction (pedaling)*

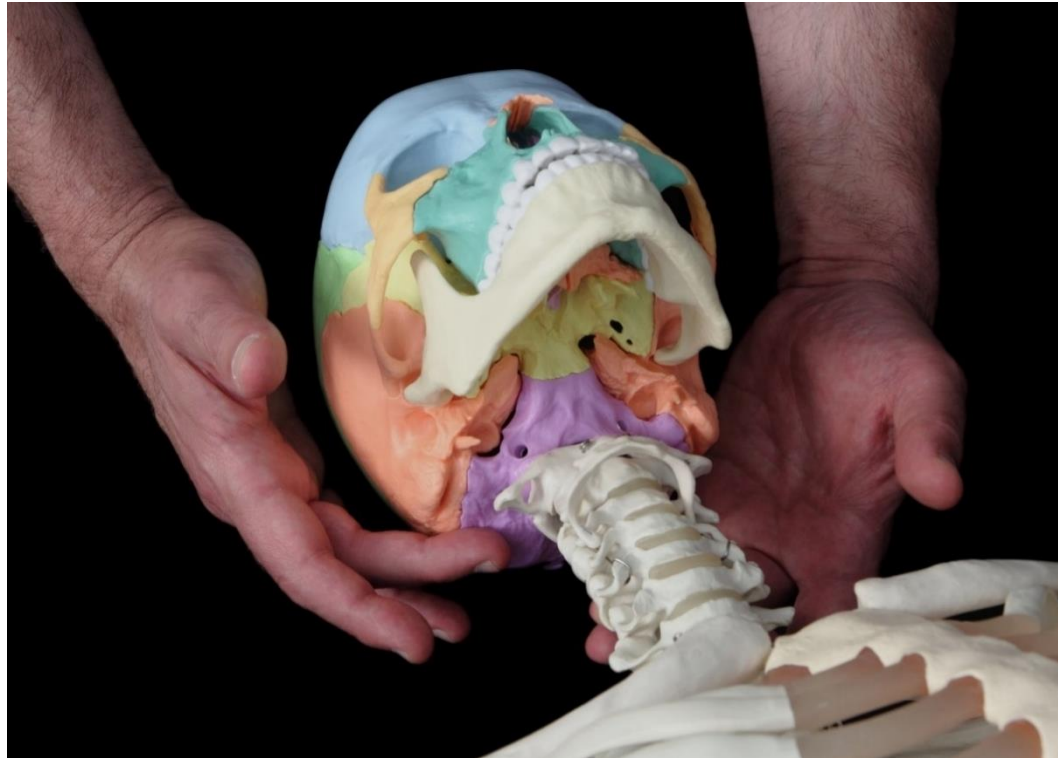
# GLOBAL TEST OF ATLAS-AXIS



*Test: pressure and circumduction*

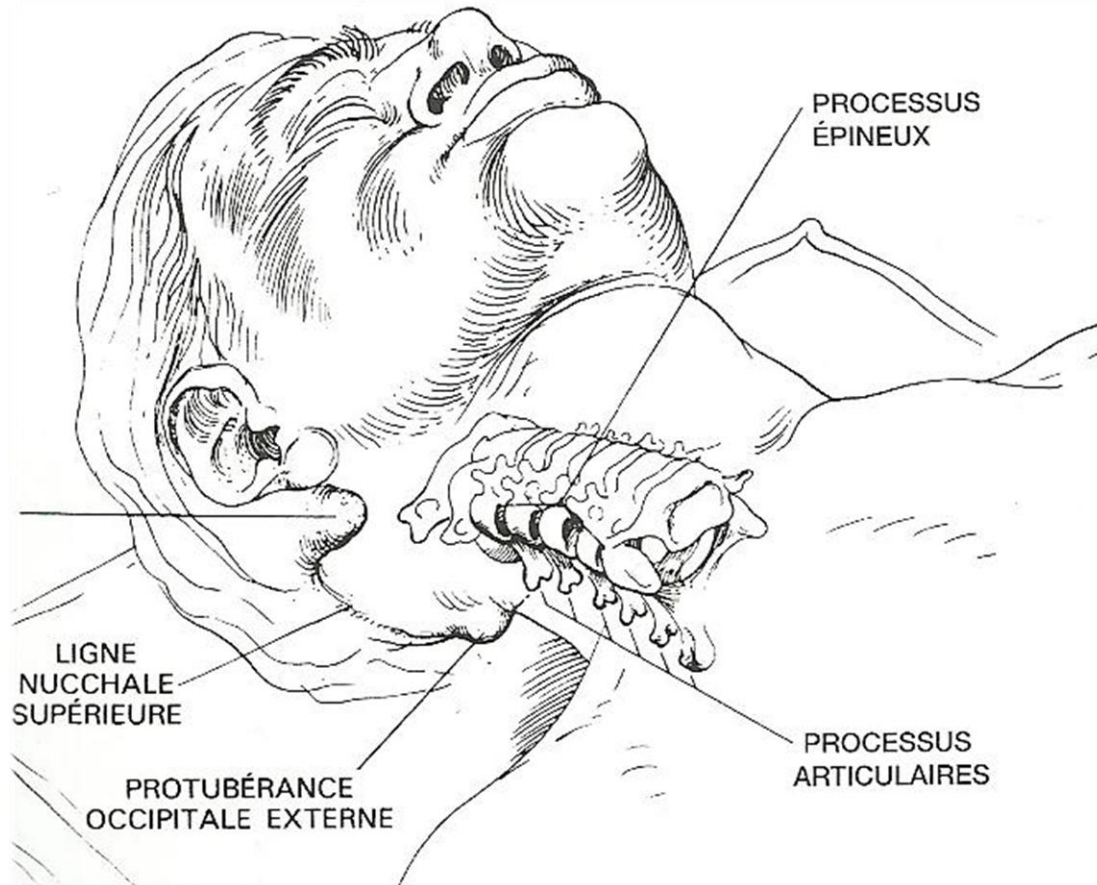
# 2<sup>nd</sup> SEQUENCE

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*Patient supine lying,  
practitioner standing at his head.*

# TESTS CRANIO-CERVICAL JOINT

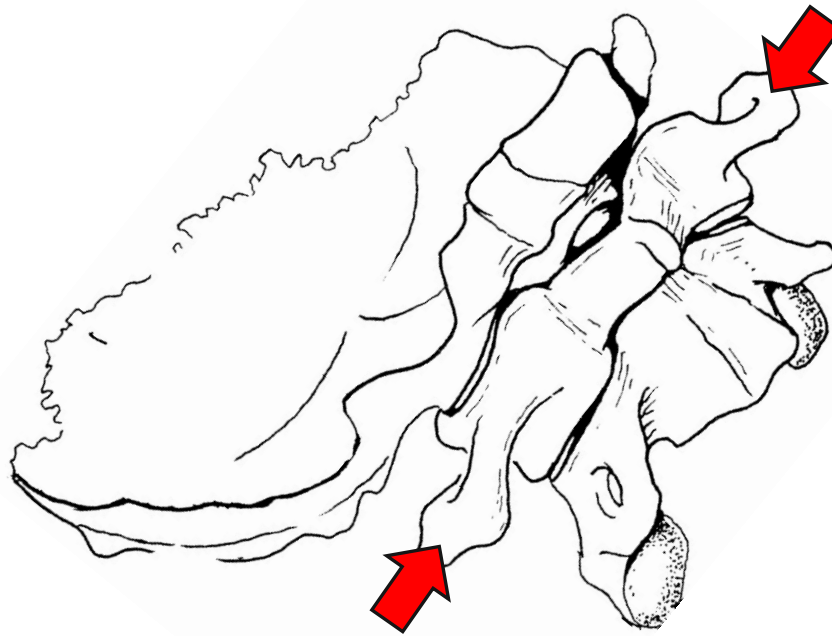


# GLOBAL TEST ATLAS (C1)



*Contact: thumb on each transverse extremity*

# GLOBAL TEST ATLAS (C1)



*1. Test in compression (intra-osseous line of force)*



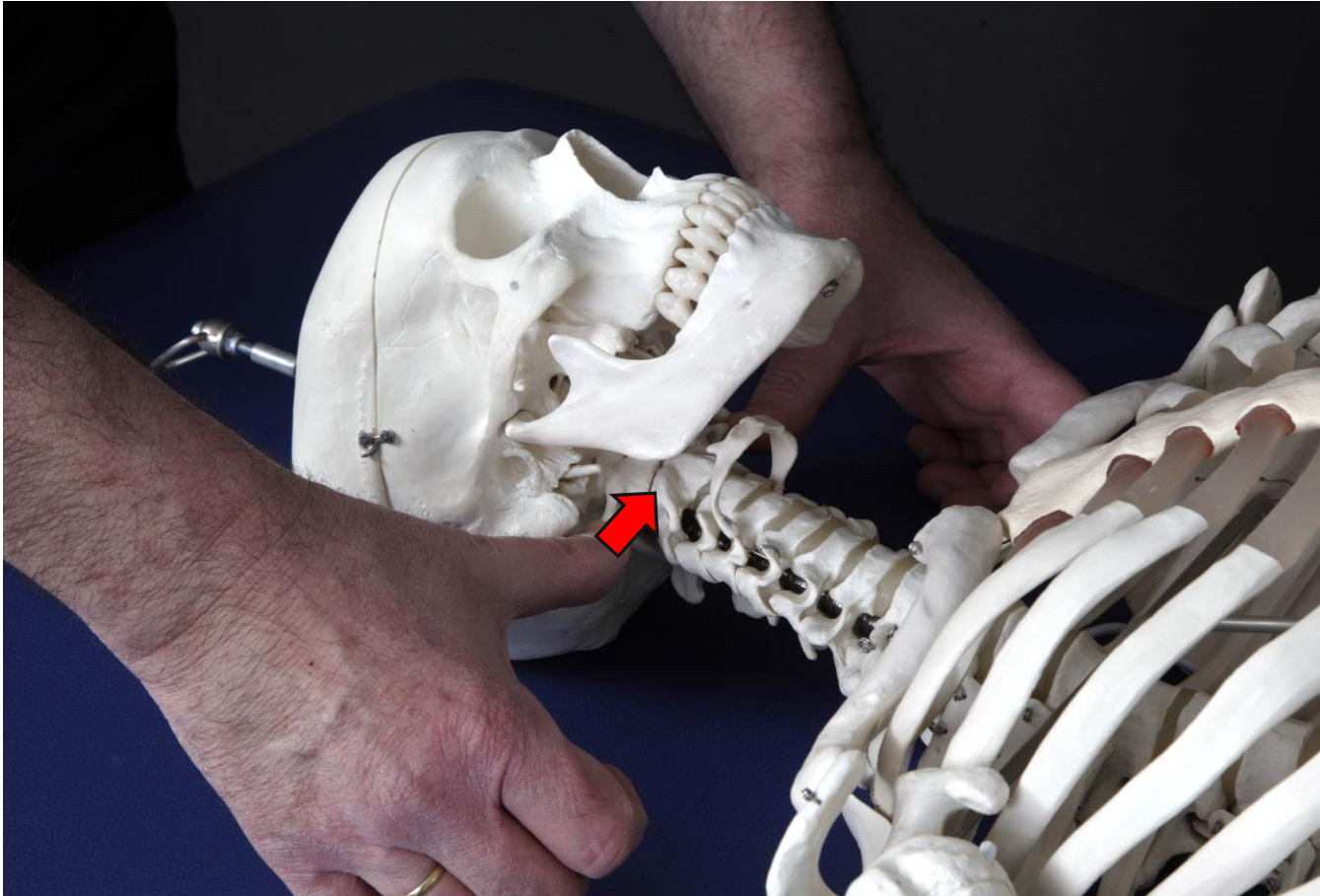
# *Analytical tests of C1*



*Test in left and right translations*

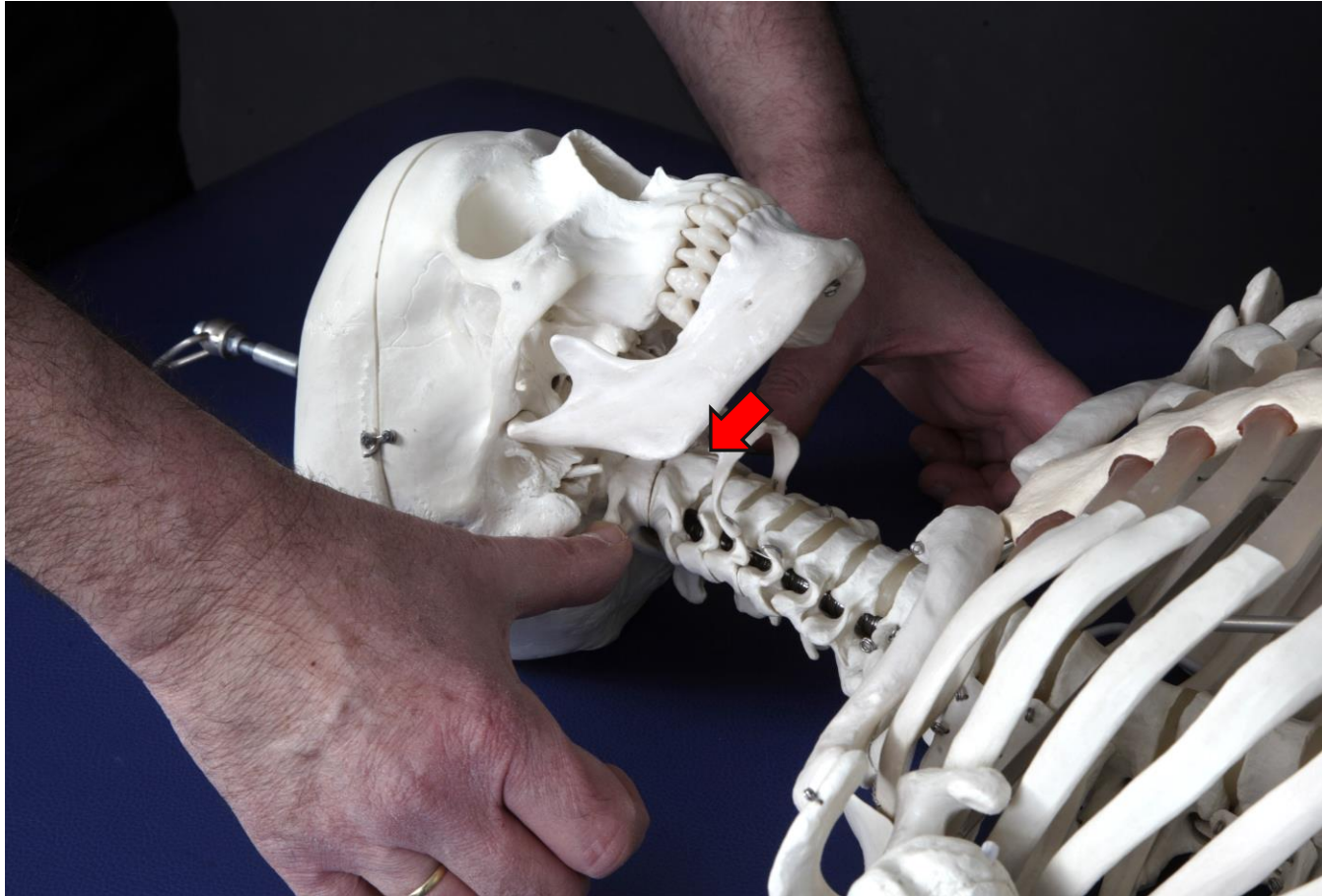


# *Analytical tests of C1*



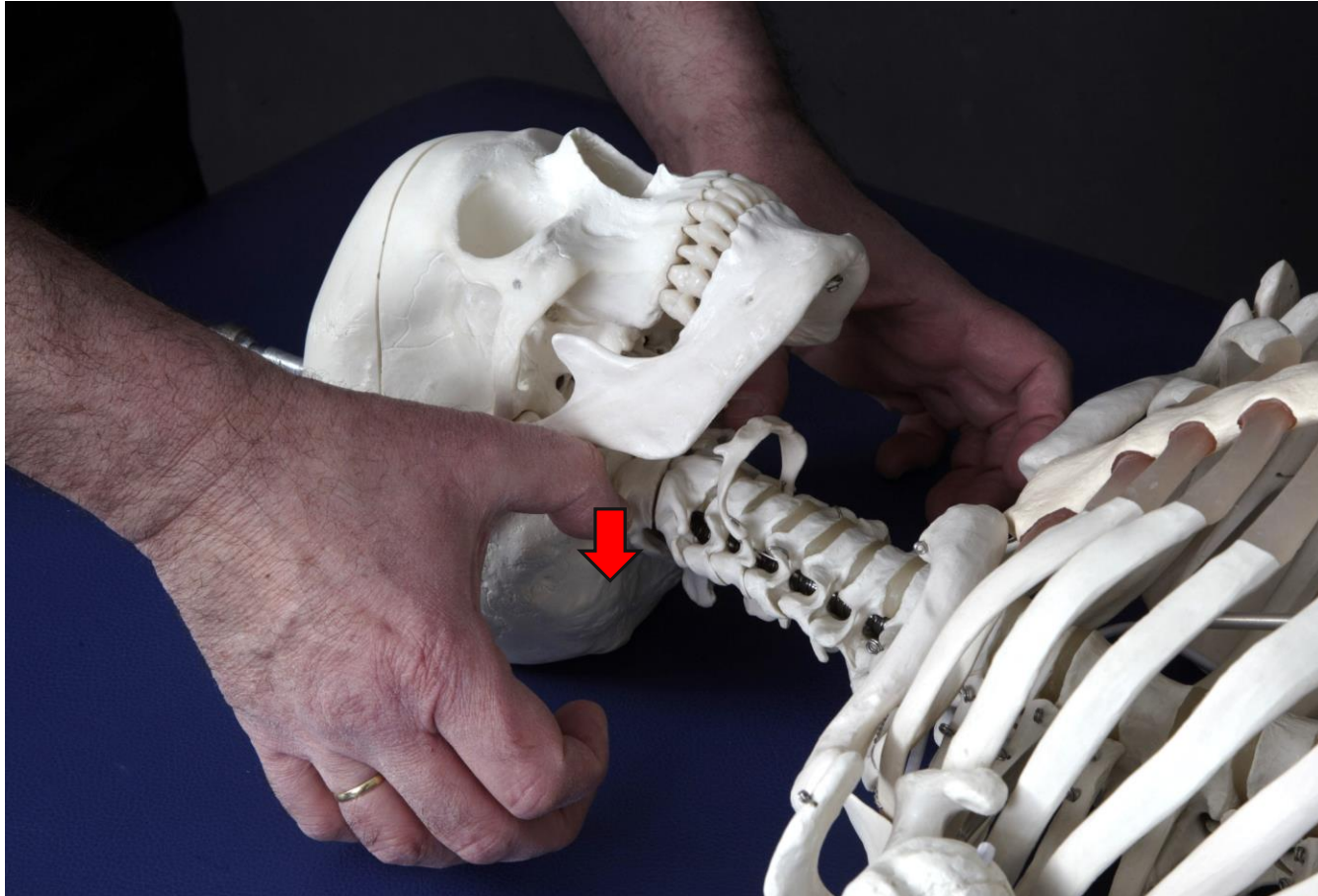
*Test in left and right translations*

# *Analytical tests of C1*



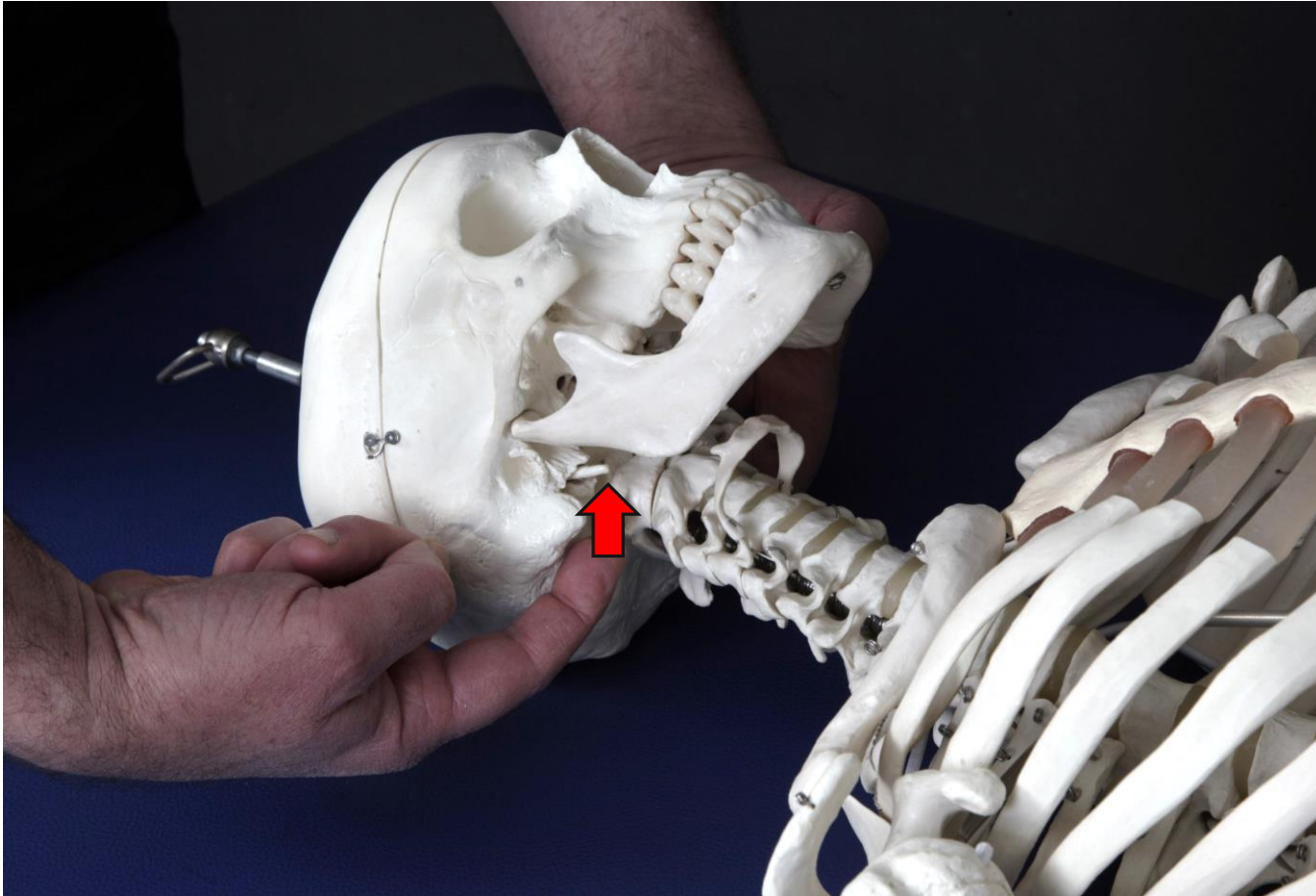
*Test in left and right translations*

# *Analytical tests of C1*



*Test in left and right rotations  
from anterior to posterior*

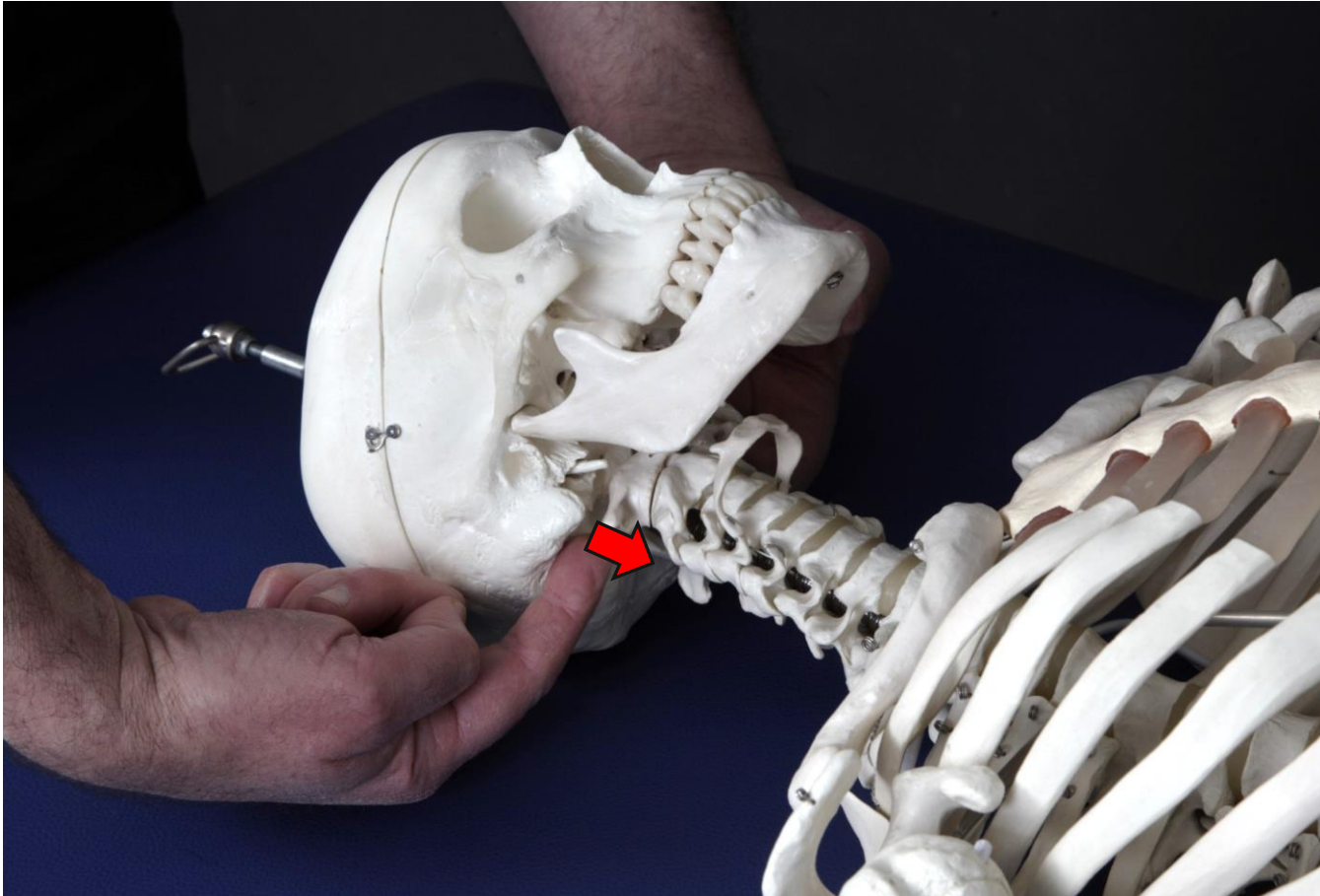
# *Analytical tests of C1*



*Test in left and right rotations  
from posterior to anterior*



# *Analytical tests of C1*



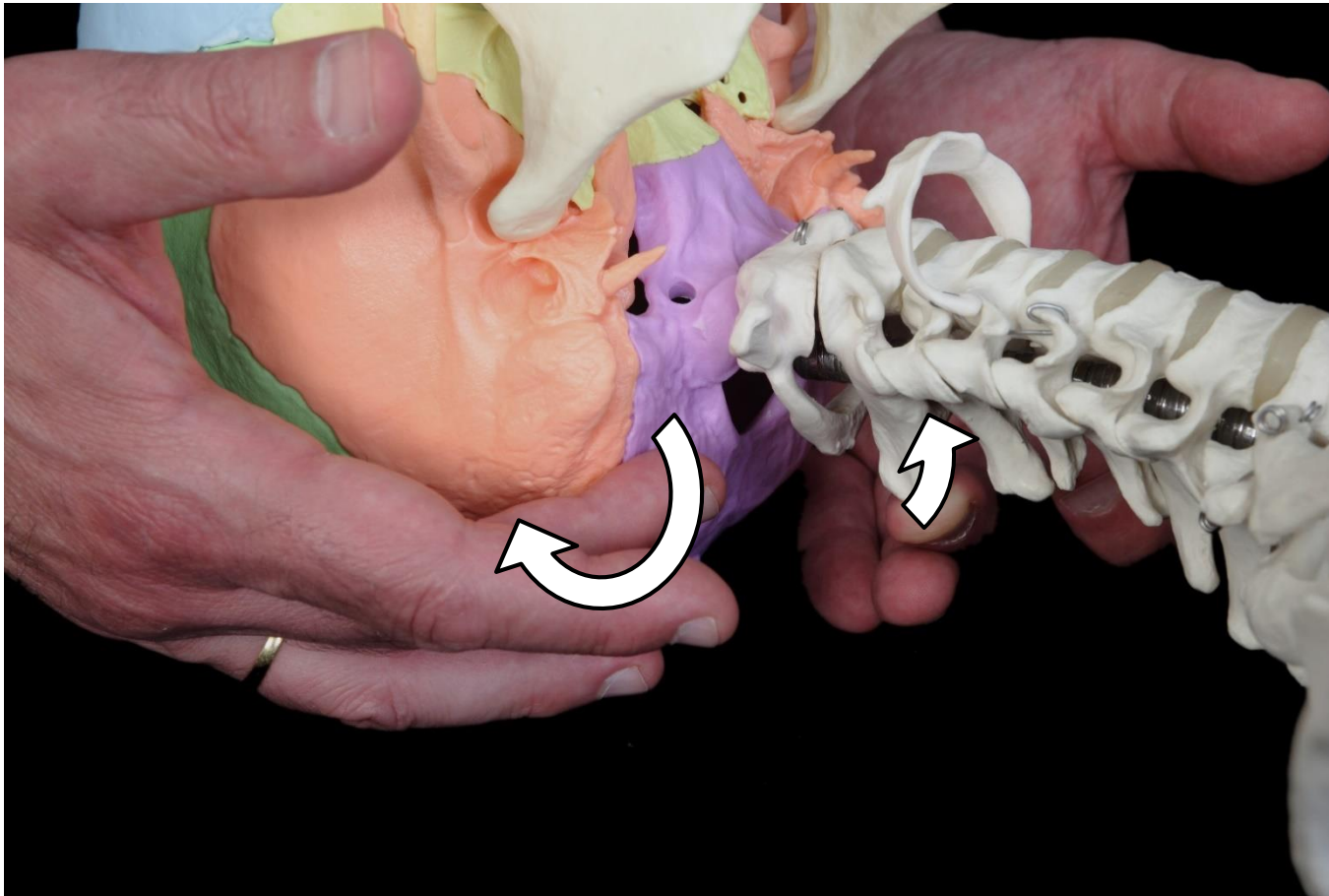
*Test in left and right sidebending  
from superior to inferior*

## GLOBAL TEST OCCIPUT-AXIS (C0-C2)



*Contacts: occiput and spinous process of C2*

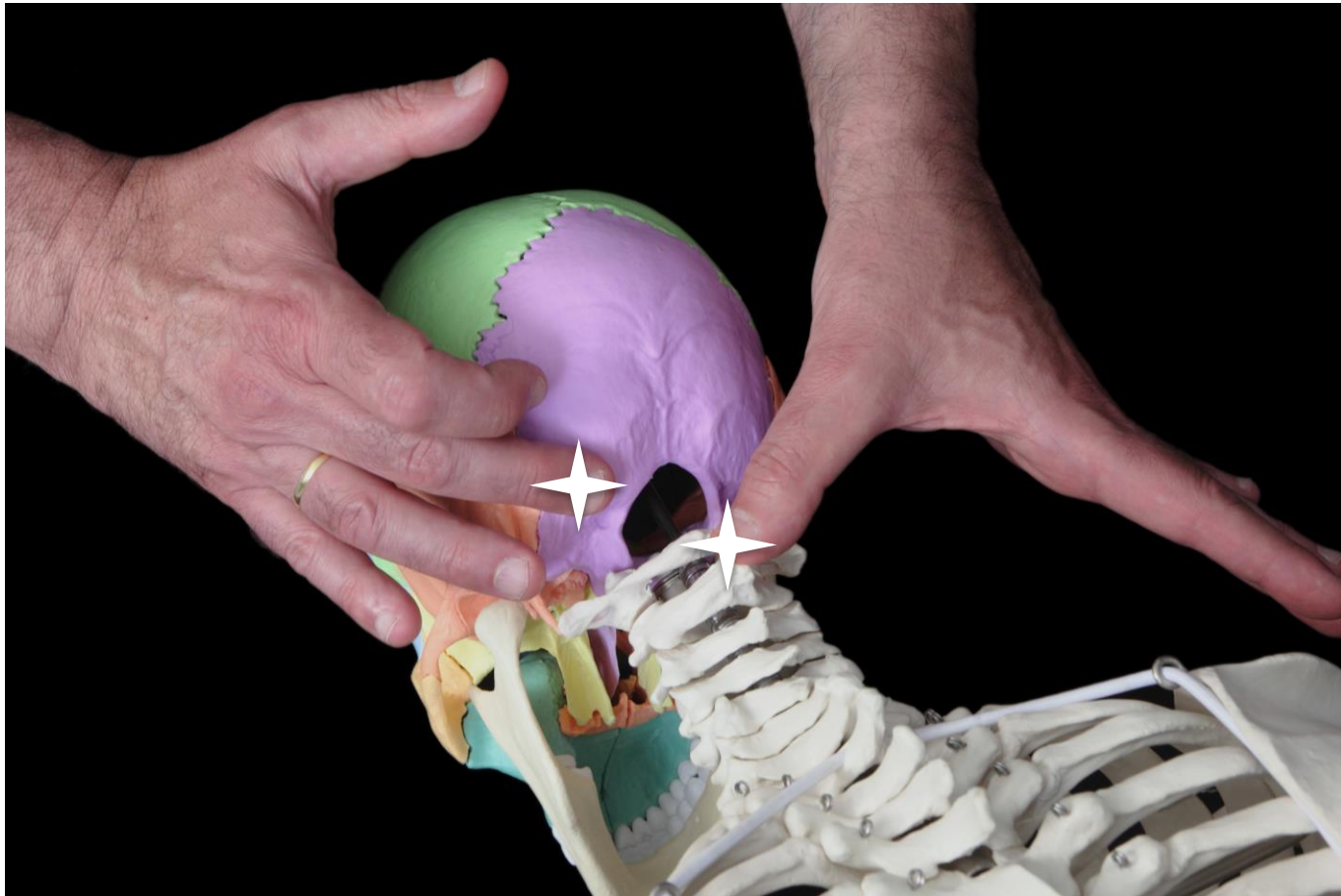
# TEST CRANIO-CERVICAL JOINT (C0-C2)



*Contacts: occiput and spinous process of C2*  
*Test : traction/circumduction*

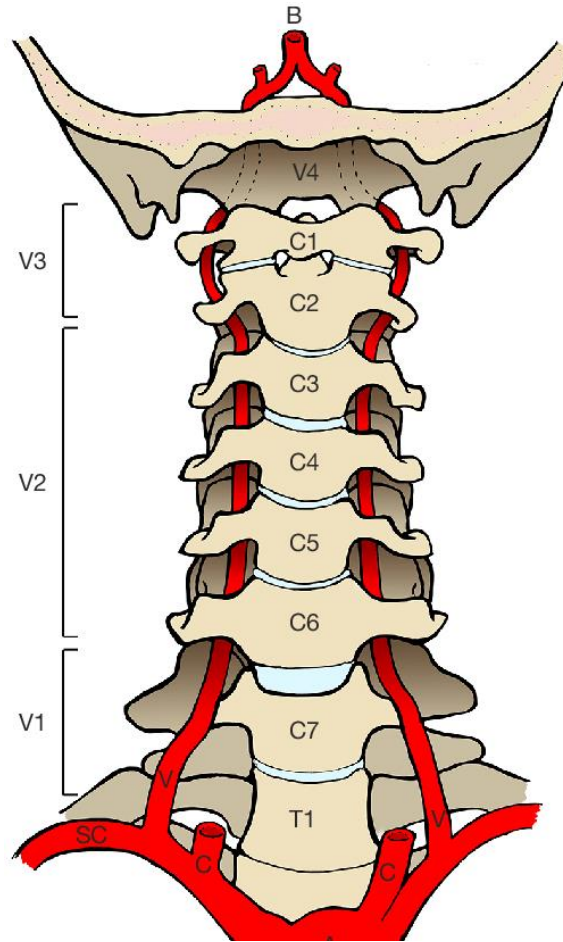


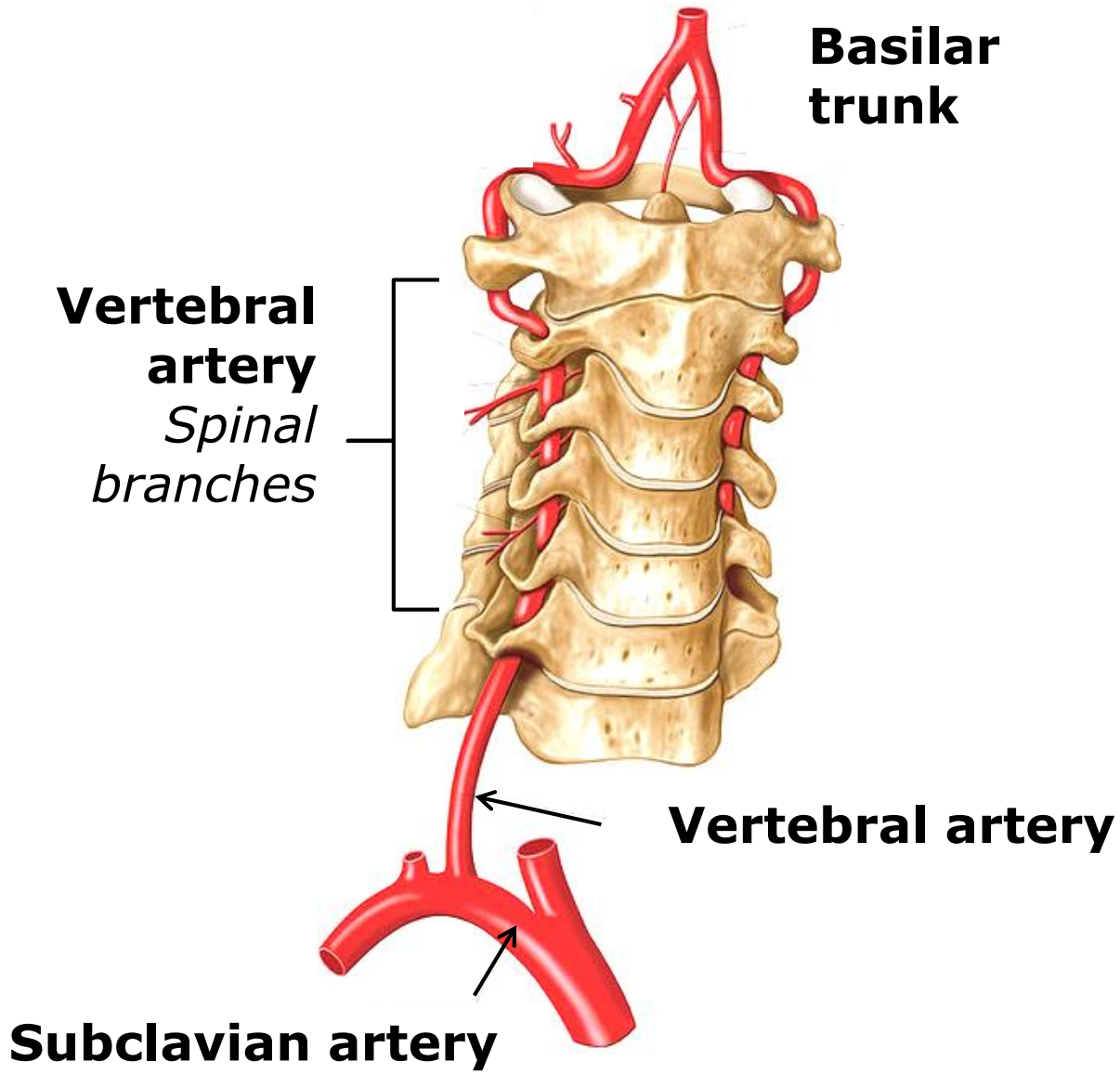
# TEST AND TREATMENT IN PROCUBITUS



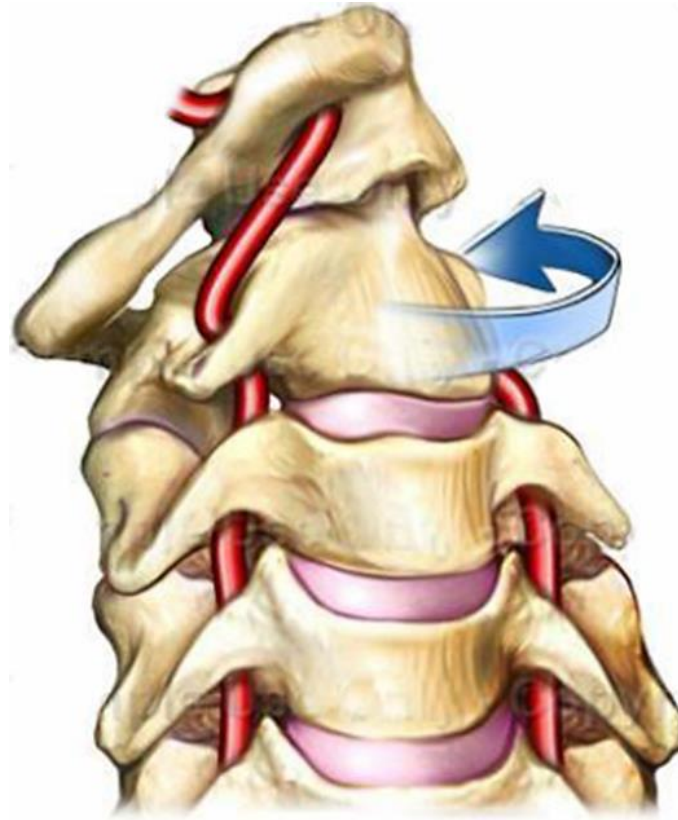
*Combined treatment  
between inferior occipital protuberance and C2*

# Vertebral artery



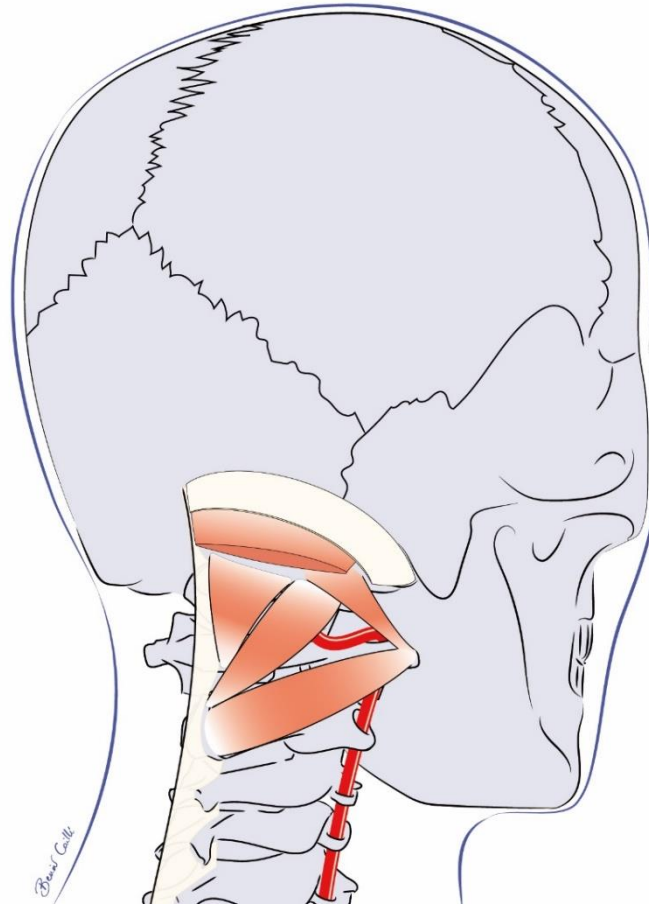


# Vertebral artery

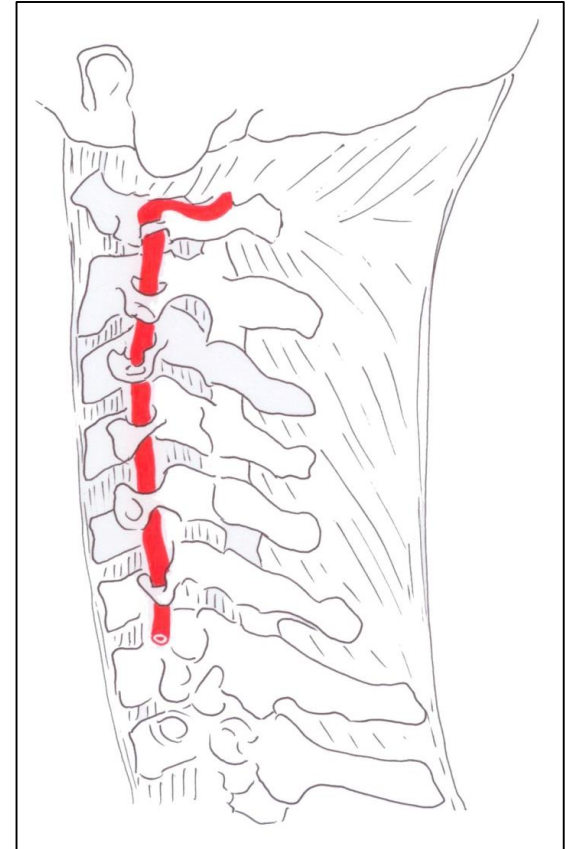


Relative contraindication to manipulation of C1!

# Vertebral artery



# TEST VERTEBRAL ARTERY



*Contact: subclavian artery / suboccipital triangle  
Test: longitudinal traction and circumduction*

