AMC

Atlanta, Ga. Mar. 23, 2018

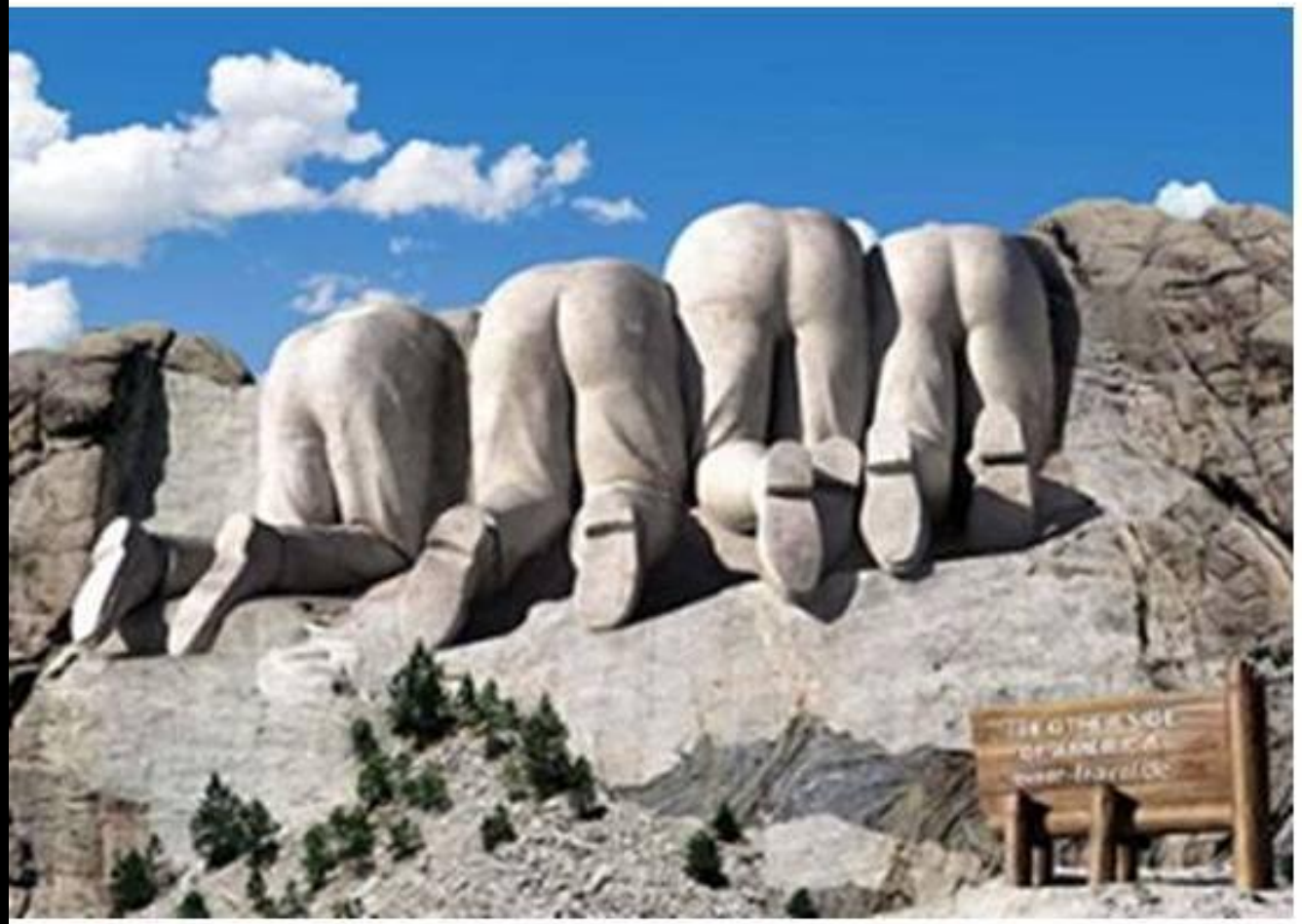
Robert Kessinger, DC, DABCI, DACBN

KCUCS Upper Cervical Technique

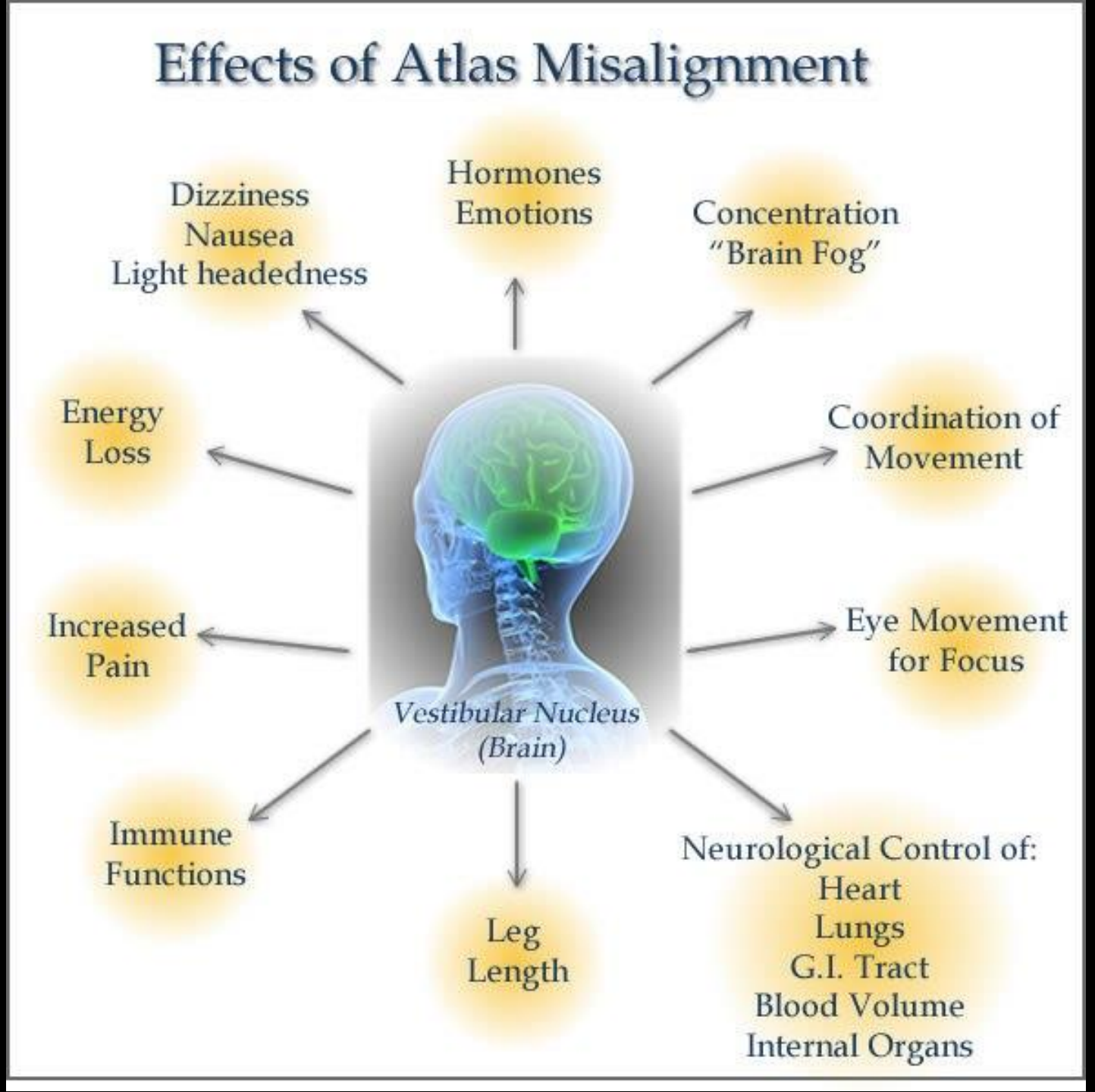

DAVID GRAY


0
20
40
60
80
-20
-40
120
°C
°F

You know, there are some things that you just never think of ..... like Mt. Rush-more from the Canadian side.



Effects of Atlas Misalignment



Catch the Wave

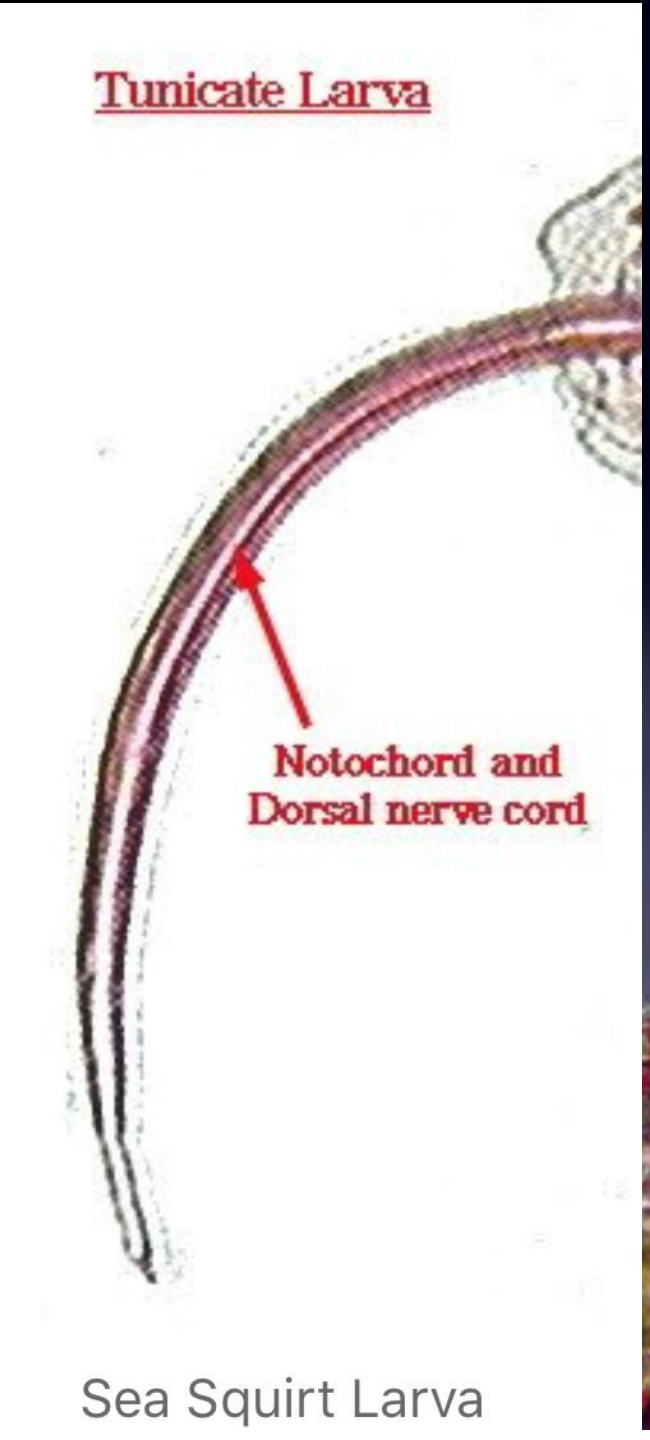
“Who can anchor to an unanchored mind”

-BJ Palmer

Everyone needs written goals


When Writing
The Story Of
Your Life,
Don't Let
Anyone Else
Hold The Pen

The Developing Brain



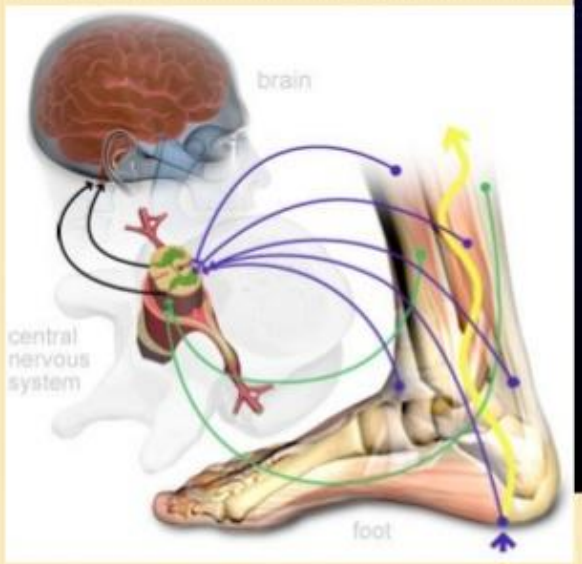
Sea Squirt Larva

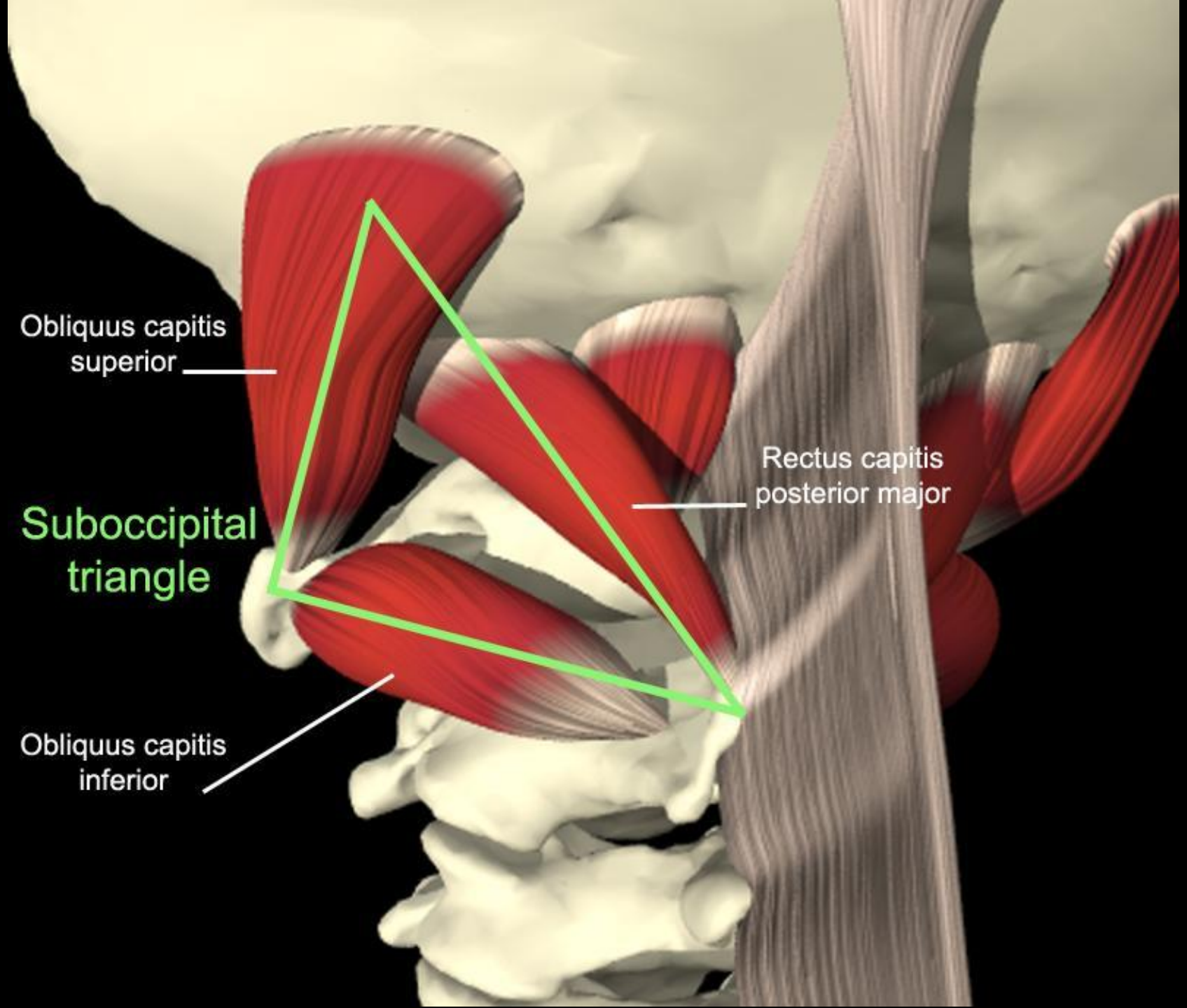
“I move therefore I am”

Postural Muscles Feed the Cerebellum

Postural Muscles = Proprioception

1. Dorsal columns
2. Cerebellum
3. Vestibular ocular syst.




Obliquus capitis superior
Suboccipital triangle
Obliquus capitis inferior
Rectus capitis posterior major

Quantitative Study of Muscle Spindles in Suboccipital Muscles of Human Foetuses ORIGINAL ARTICLE Neurology India, 49, December 2001: 355-359

Infant MRIs Show Autism Linked to Increased Cerebrospinal Fluid. Neuroscience news, Mar 6, 2017, UNC Health Care

- *Summary: Children diagnosed with autism at the age of two had substantially greater amounts of extra axial cerebrospinal fluid at 6 and 12 months. Additionally, the level of increased CSF at 6 months could be correlated with the severity of autism symptoms displayed at 2 years, a new study reports.*

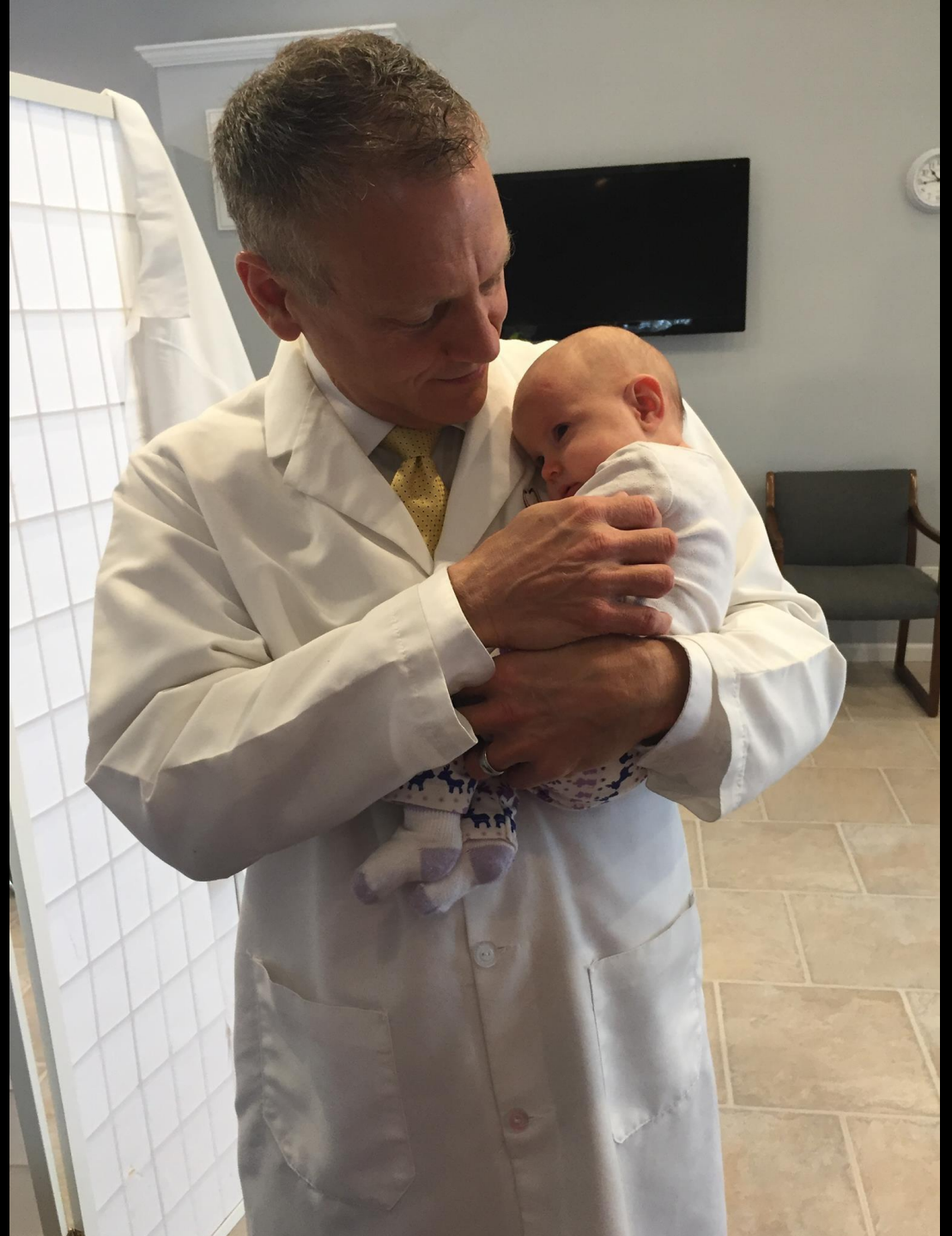
Infant MRIs Show Autism Linked to Increased Cerebrospinal Fluid. Neuroscience news, Mar 6, 2017, UNC Health Care

"We know that CSF is very important for brain health, and our data suggest that in this large subset of kids, the fluid is not flowing properly," said Mark Shen, PhD, CIDD postdoctoral fellow and first author of the study.

“I DON’T KNOW WHY MY KIDS ARE ALWAYS SICK”

STARTER PACK

H. Beidermann, “Kinematic imbalances due to suboccipital strain in newborns”. Journal of manual medicine (No. 6) 1992, pp 151-156.

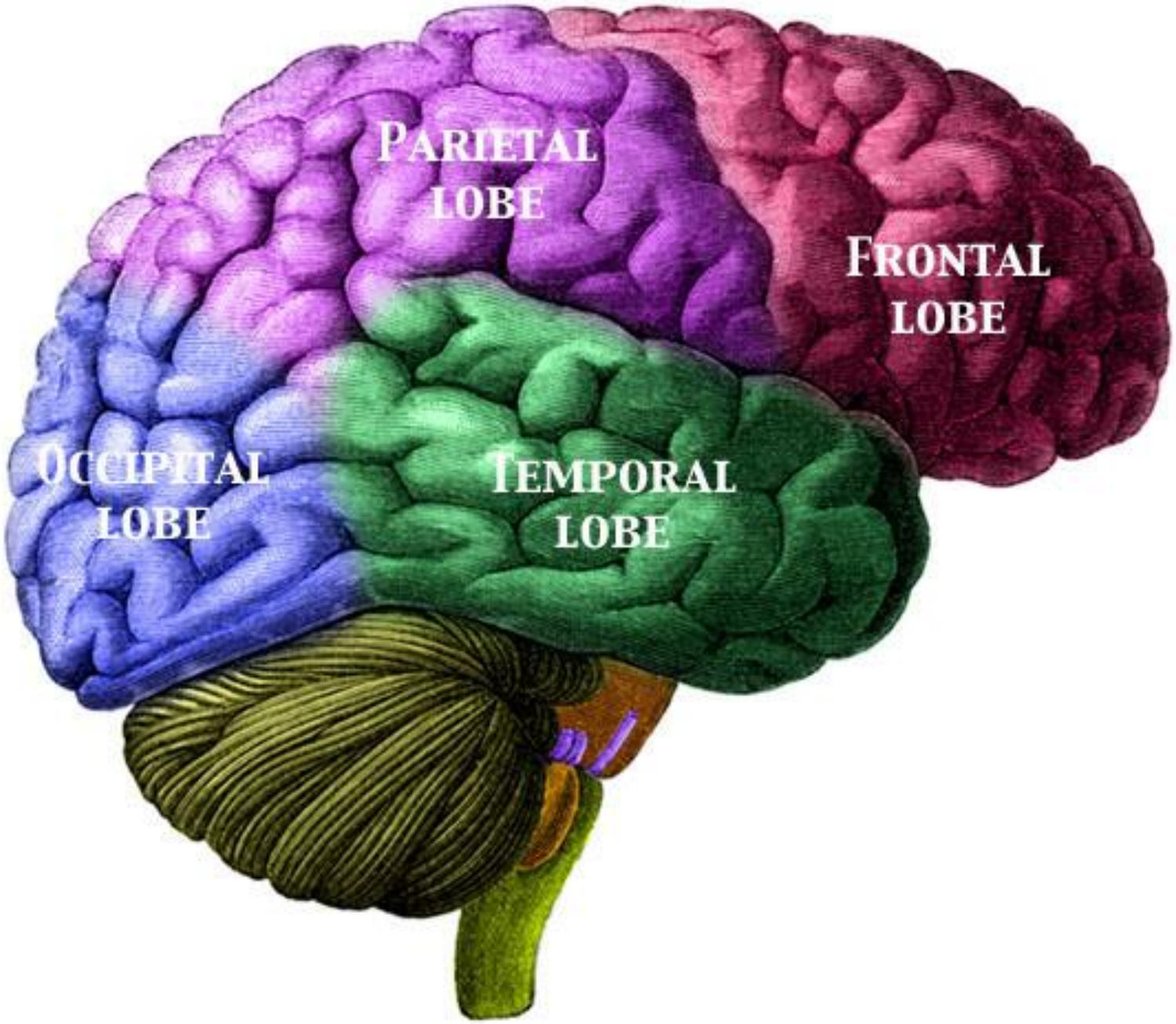


Case Study – 3 week old fussy all the time and constantly spits up

Case Study – 7 y/o male ADHD

Pre Check Babinski Reflex Present

Post Check Babinski Reflex Absent


PARIETAL LOBE
FRONTAL LOBE
OCCIPITAL LOBE
TEMPORAL LOBE

Motor Systems

- Cerebellum
- Basal Ganglia

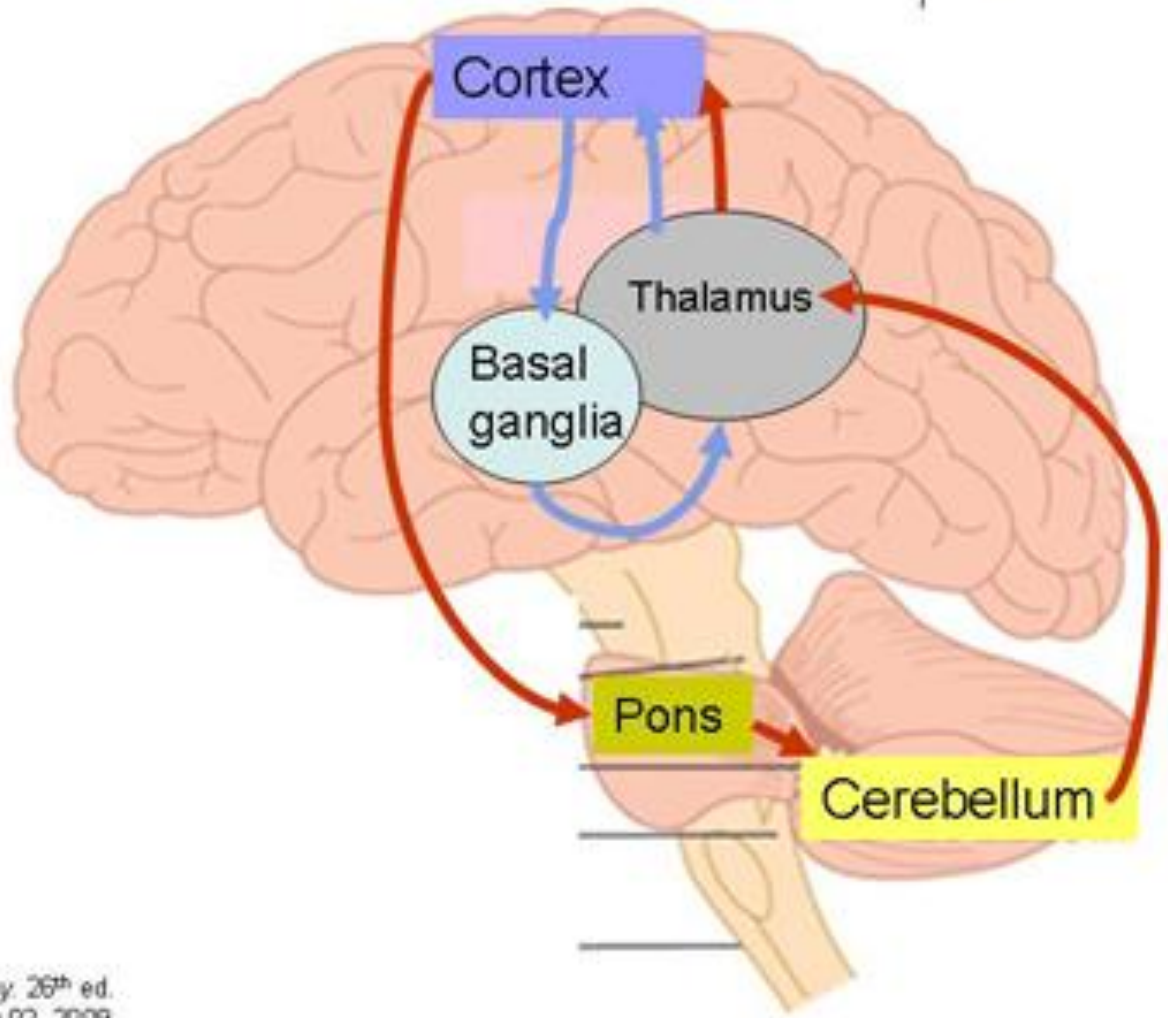


Figure 16-12. In: Waxman SG. *Clinical Neuroanatomy*. 26th ed. http://www.accessmedicine.com. Accessed November 02, 2009.

Altered Central Integration of Dual Somatosensory Input After Cervical Spine Manipulation.

JMPT 33(3):178-88 · March 2010

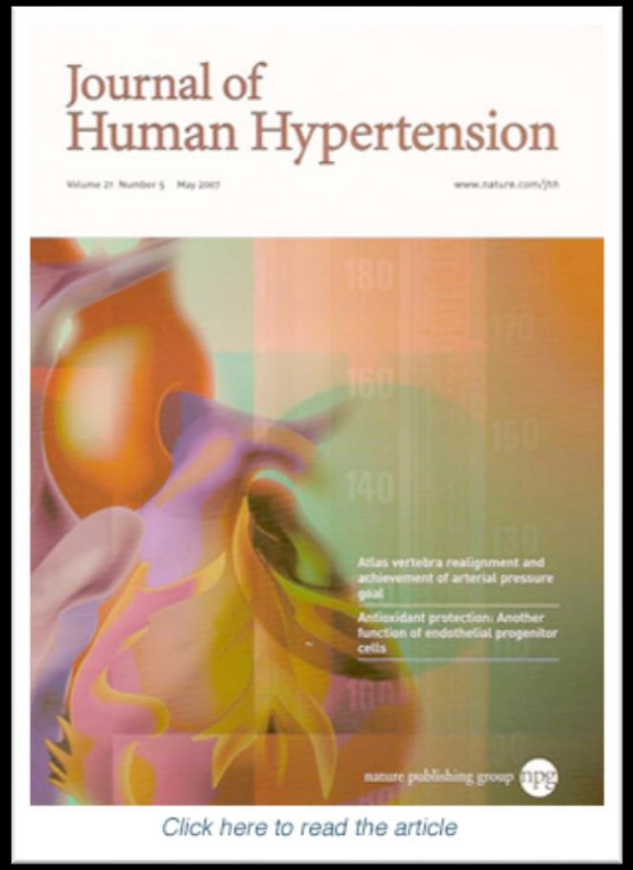
- This study suggest that cervical spine manipulation may alter cortical integration of dual somatosensory input. These findings may help elucidate the mechanisms responsible for effective pain relief and restoration of functional ability documented after spinal manipulation treatment.

Manipulation of Dysfunctional Spinal Joints Affects Sensorimotor Integration in the Prefrontal Cortex: A Brain Source Localization Study. Neural Plast. published online 2016 Mar 7 Lilac D, et al

- *Conclusion*. A single session of spinal manipulation of dysfunctional segments in subclinical pain patients alters somatosensory processing at the cortical level, particularly within the prefrontal cortex.

Murphy, B.: The role of spinal manipulation in addressing disordered sensorimotor integration and altered motor control. Journal of Electromyography and Kinesiology 22(5), 768-776

Bakris G., Dickholtz M. Sr, et al. Atlas vertebrae realignment and achievement of arterial pressure goal in hypertensive patients: a pilot study.



Click here to read the article

J. of Human Hypertension,

May 2007, 21(5): 347-52.

"Anatomical abnormalities of the cervical spine at the level of the Atlas vertebra are associated with relative ischaemia of the brainstem circulation and increased blood pressure (BP)"

NUCCA Technique/hypertension pilot study: a Brief history. - Marshall Dickholtz Sr., DC

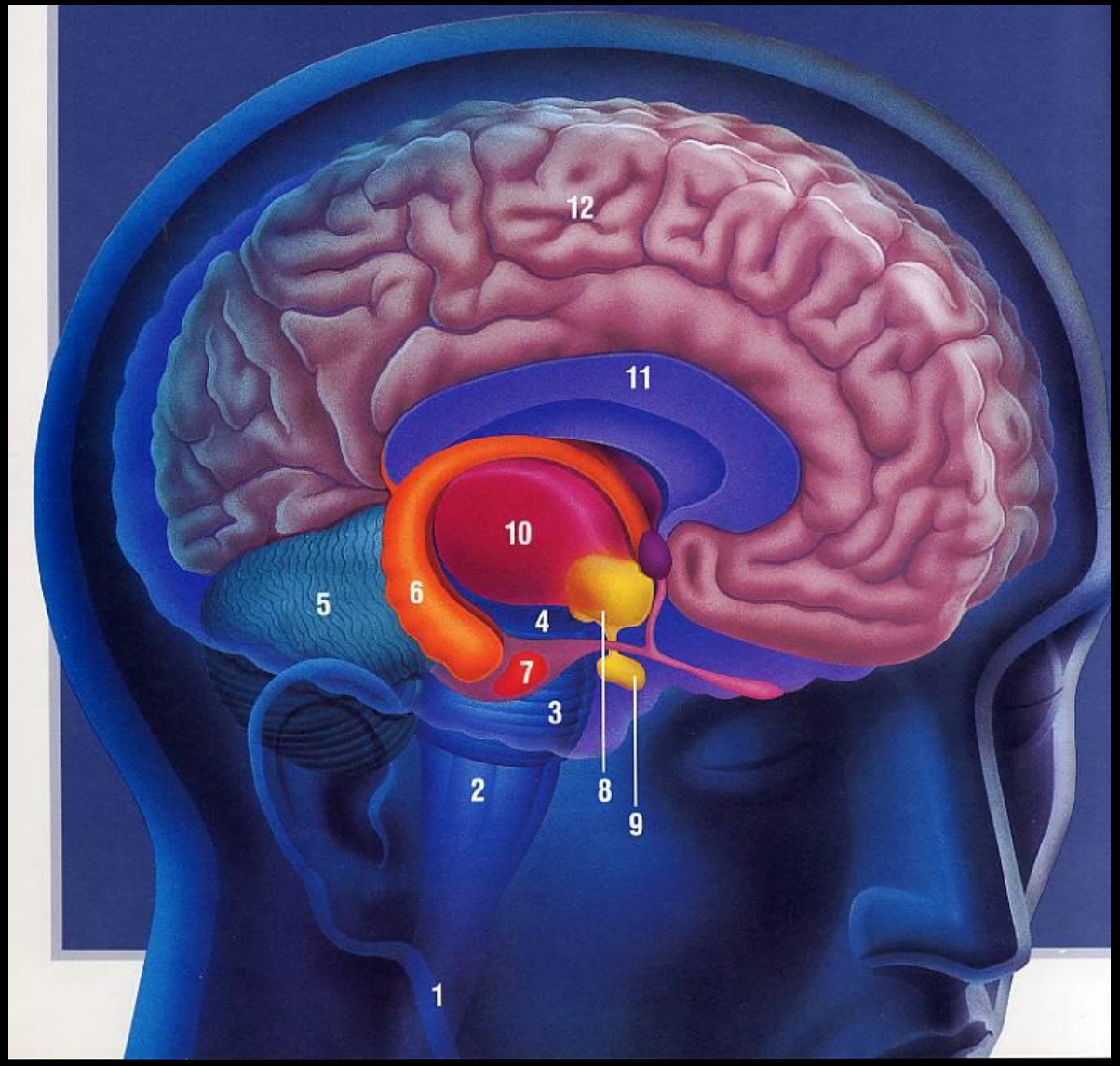
THE IDEA

The beginnings of the hypertension study can be traced back to 1968 when Bruce Bell, a medical doctor in Barrington, Illinois, first discovered the effectiveness of adjustments on several of his patients by my use of the National Upper Cervical Chiropractic Association protocol (NUCCA technique). Over the next 25 years, Dr. Bell referred more than six thousand patients to my Chicago office. In time, Dr. Bell realized that 32 of the problems seen in his referred patients that were successfully addressed by the upper cervical procedure, were autonomic in nature. One of these problems was hypertension.

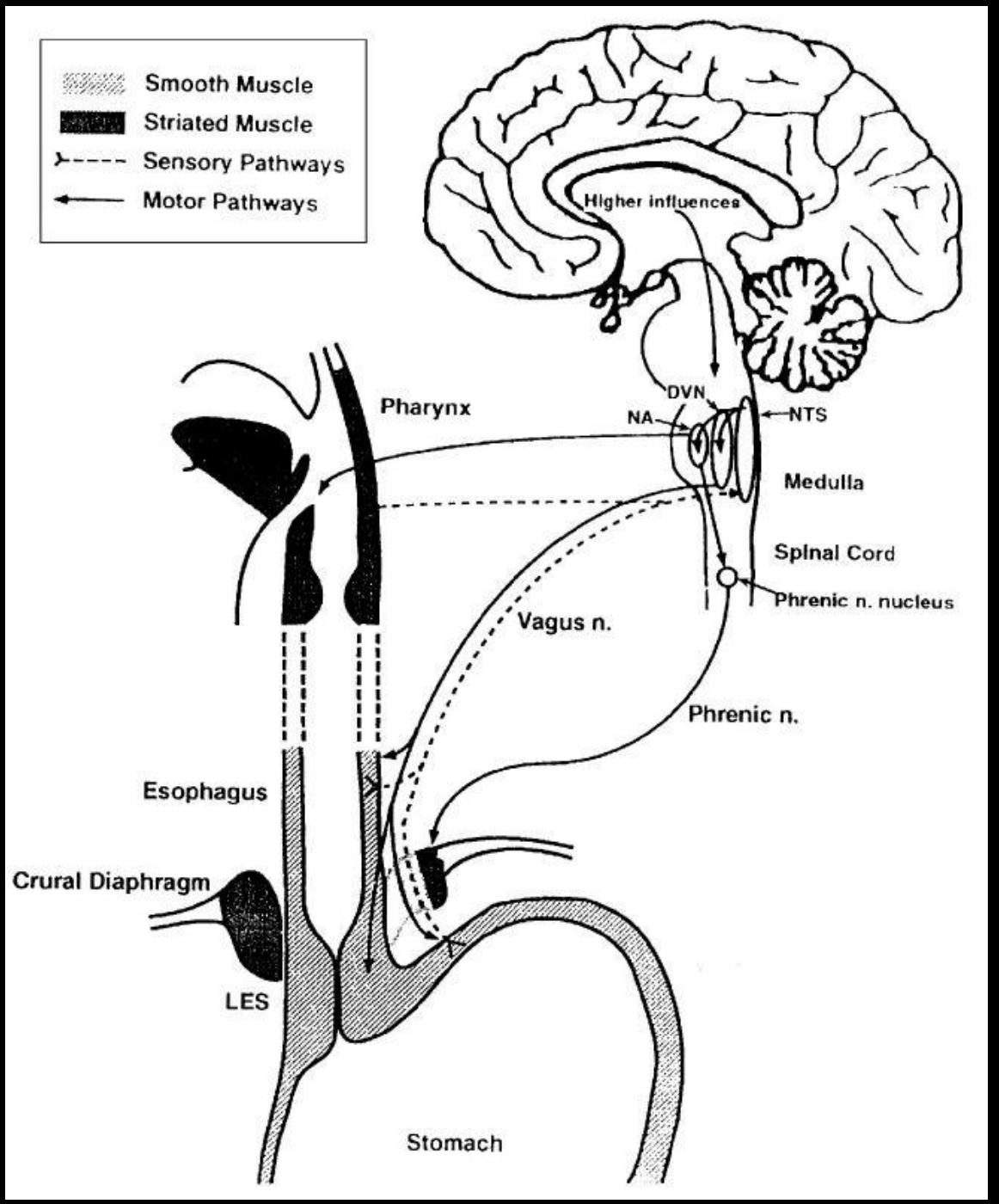
Autonomic Nervous System

The Big three

1. Nervous System
2. Immune System
3. Endocrine System

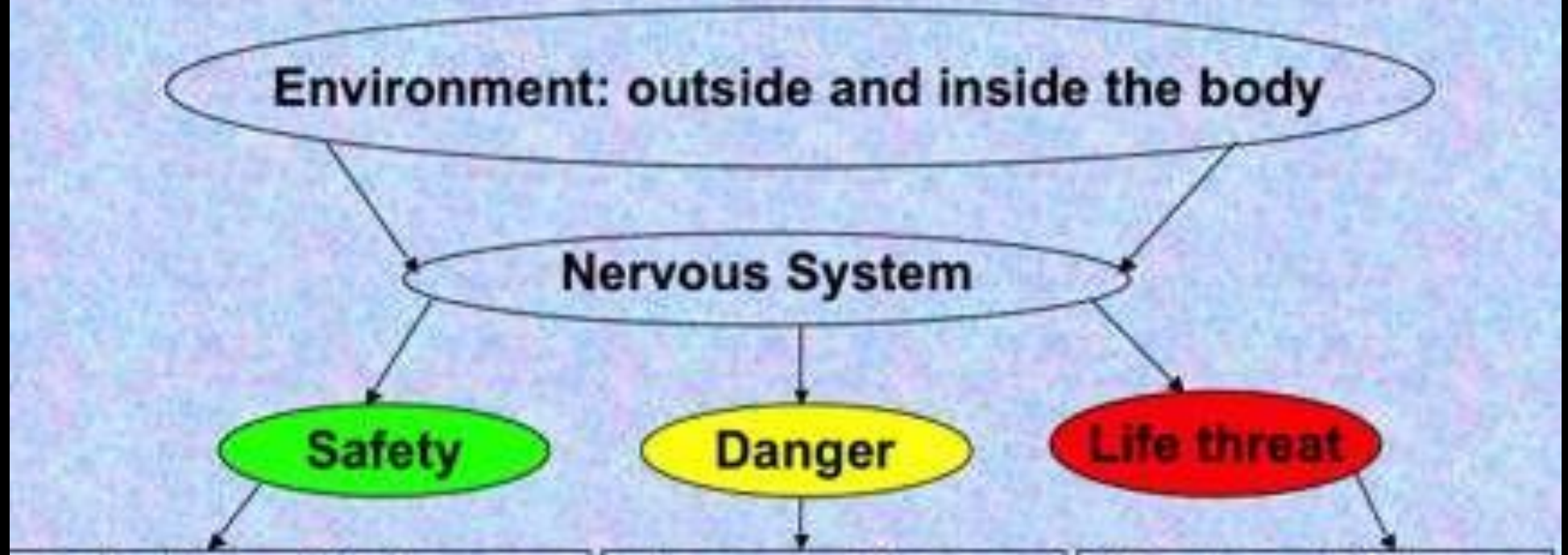


Polyvagal Theory


Smooth Muscle
Striated Muscle
Sensory Pathways
Motor Pathways
Higher influences
DVN
NA
NTS
Pharynx
Medulla
Spinal Cord
Phrenic n. nucleus
Vagus n.
Phrenic n.
Esophagus
Crural Diaphragm
LES
Stomach

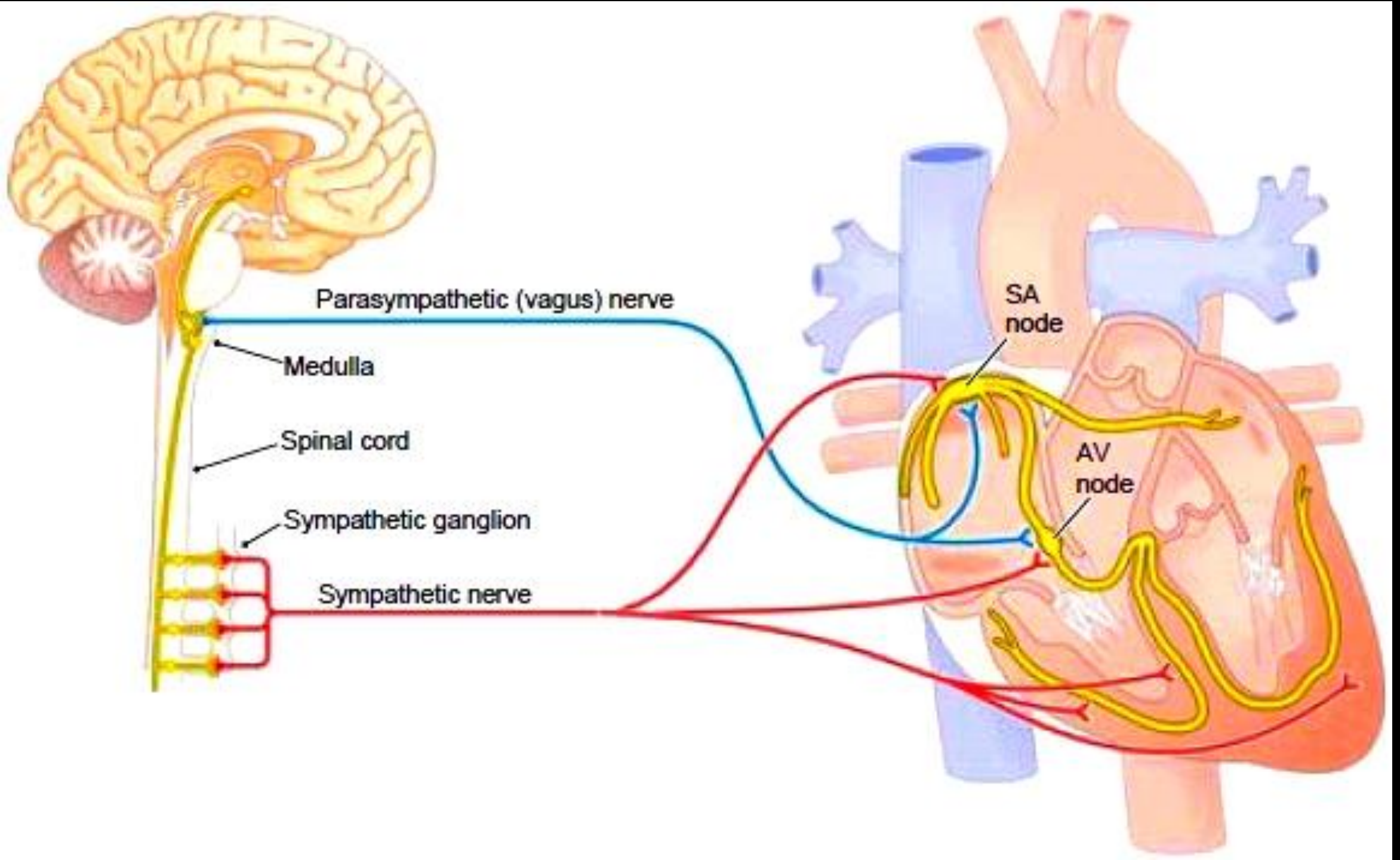
Porges' View of the ANS

The metaphor of safety



Wheatley-Crosbie, adapted from Porges, 2006

Heart rate variability analysis

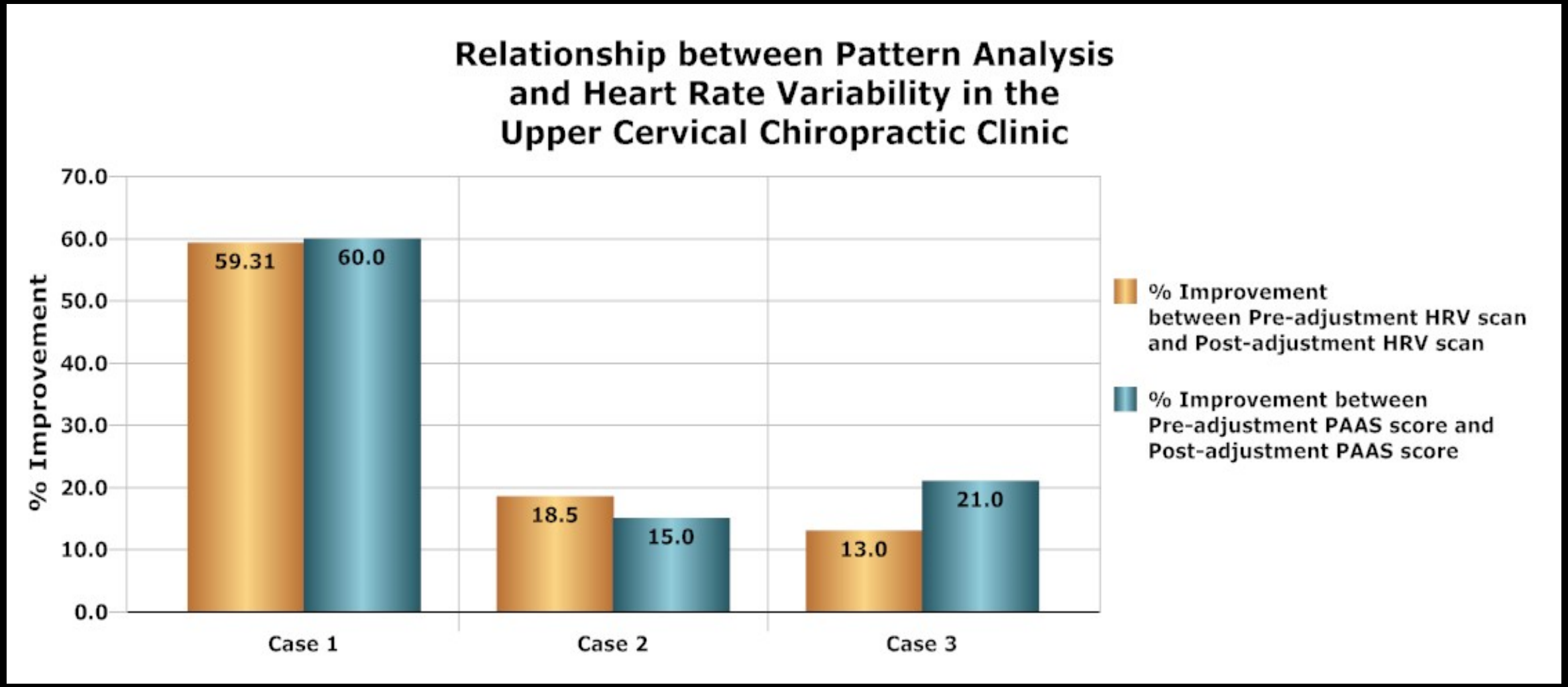

Parasympathetic (vagus) nerve
Medulla
Spinal cord
Sympathetic ganglion
Sympathetic nerve
SA node
AV node

The Relationship between Pattern Analysis and Heart Rate Variability is Explored in an Upper Cervical Chiropractic Clinic

Robert C Kessinger DC[1], Michael F. Anderson, DC,[2] Jarod W Adlington, DC[3]

Conclusion: In these three cases there appears to be a correlation between the improvements in bilateral skin temperature pattern analysis and heart rate variability following an upper cervical chiropractic technique. It is feasible that upper cervical chiropractic care can have a positive effect on the autonomic nerve system and there may be a connection between pattern reduction and improved heart rate variability. Further study is recommended.

Correlation seen between increase in autonomic activity index & pattern reduction



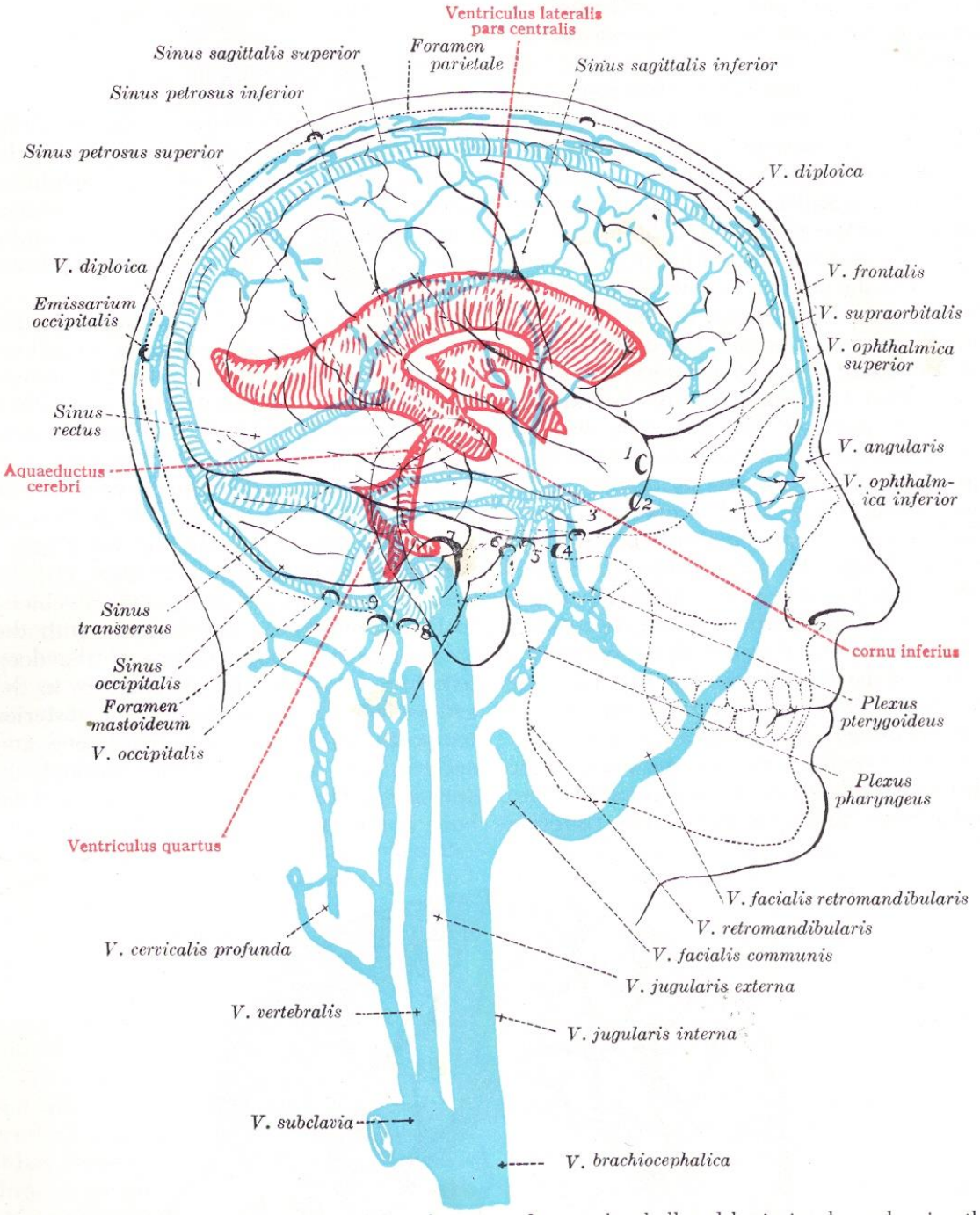
Sustained Improvement of Heart Rate Variability in Patients Undergoing a Program of Chiropractic Care: A Retrospective Case Series Chiropractic Journal of Australia 2018; 45 (4): 338–358

- **Conclusion:** Patients receiving continuous chiropractic care to correct vertebral subluxation demonstrated a sustained improvement in heart rate variability (HRV). This novel finding objectively demonstrates long-term change consistent with improved neurophysiological regulation, adaptability and resilience in patients undergoing chiropractic care, and suggests the utility of chiropractic care for outcomes greater than only musculoskeletal improvements.

Gravity Stress has a Powerful Impact on Brain Health

Weight of the average brain is 1500 grams. With normal CSF flow, the feel-like weight is 50 grams.

CSF serves many purposes which includes keeping the brain buoyant


Ventriculus lateralis pars centralis
Sinus sagittalis superior
Foramen parietale
Sinus sagittalis inferior
Sinus petrosus inferior
Sinus petrosus superior
V. diploica
V. diploica
Emissarium occipitalis
V. frontalis
V. supraorbitalis
V. ophthalmica superior
Sinus rectus
V. angularis
Aquaeductus cerebri
V. ophthalmica inferior
cornu inferius
Sinus transversus
Sinus occipitalis
Foramen mastoideum
V. occipitalis
Plexus pterygoideus
Plexus pharyngeus
Ventriculus quartus
V. facialis retromandibularis
V. retromandibularis
V. facialis communis
V. cervicalis profunda
V. jugularis externa
V. vertebralis
V. jugularis interna
V. subclavia
V. brachiocephalica

Neurology Research International
Volume 2015 (2015), Article ID 794829, 20 pages
http://dx.doi.org/10.1155/2015/794829

Review Article

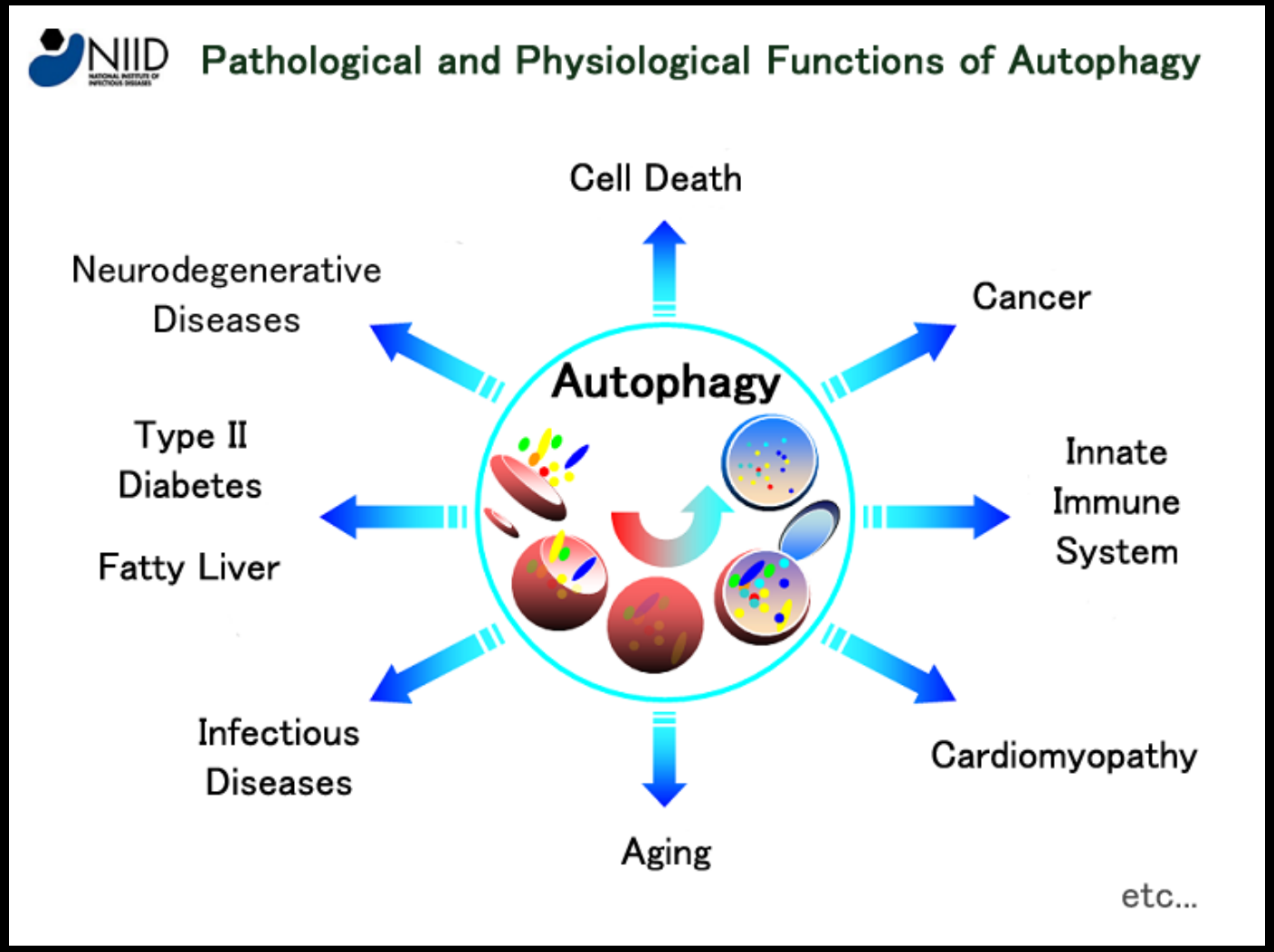
The Role of the Craniocervical Junction in Craniospinal Hydrodynamics and Neurodegenerative Conditions

Michael F. Flanagan[1,2]

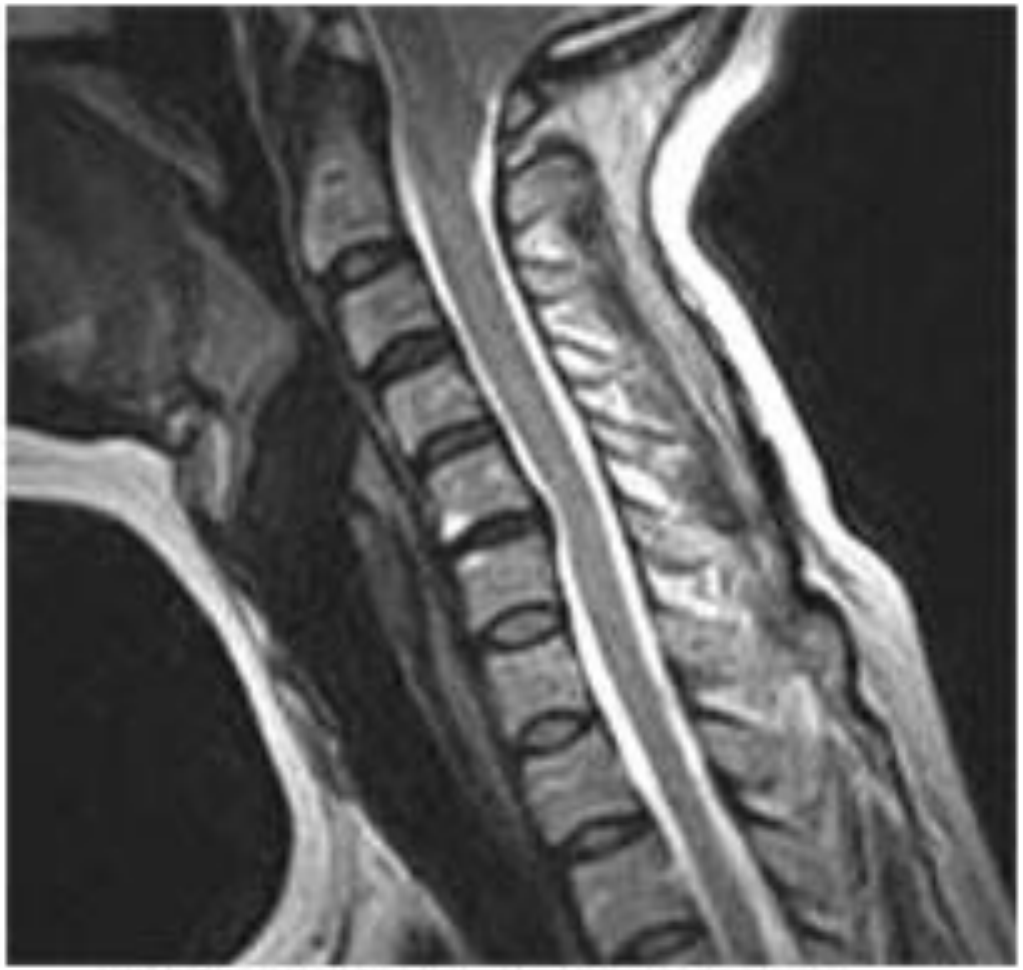
Abstract

The craniocervical junction (CCJ) is a potential choke point for craniospinal hydrodynamics and may play a causative or contributory role in the pathogenesis and progression of neurodegenerative diseases such as Alzheimer's disease, Parkinson's disease, MS, and ALS, as well as many other neurological conditions including hydrocephalus, idiopathic intracranial hypertension, migraines, seizures, silent-strokes, affective disorders, schizophrenia, and psychosis. The purpose of this paper is to provide an overview of the critical role of the CCJ in craniospinal hydrodynamics and to stimulate further research that may lead to new approaches for the prevention and treatment of the above neurodegenerative and neurological conditions.

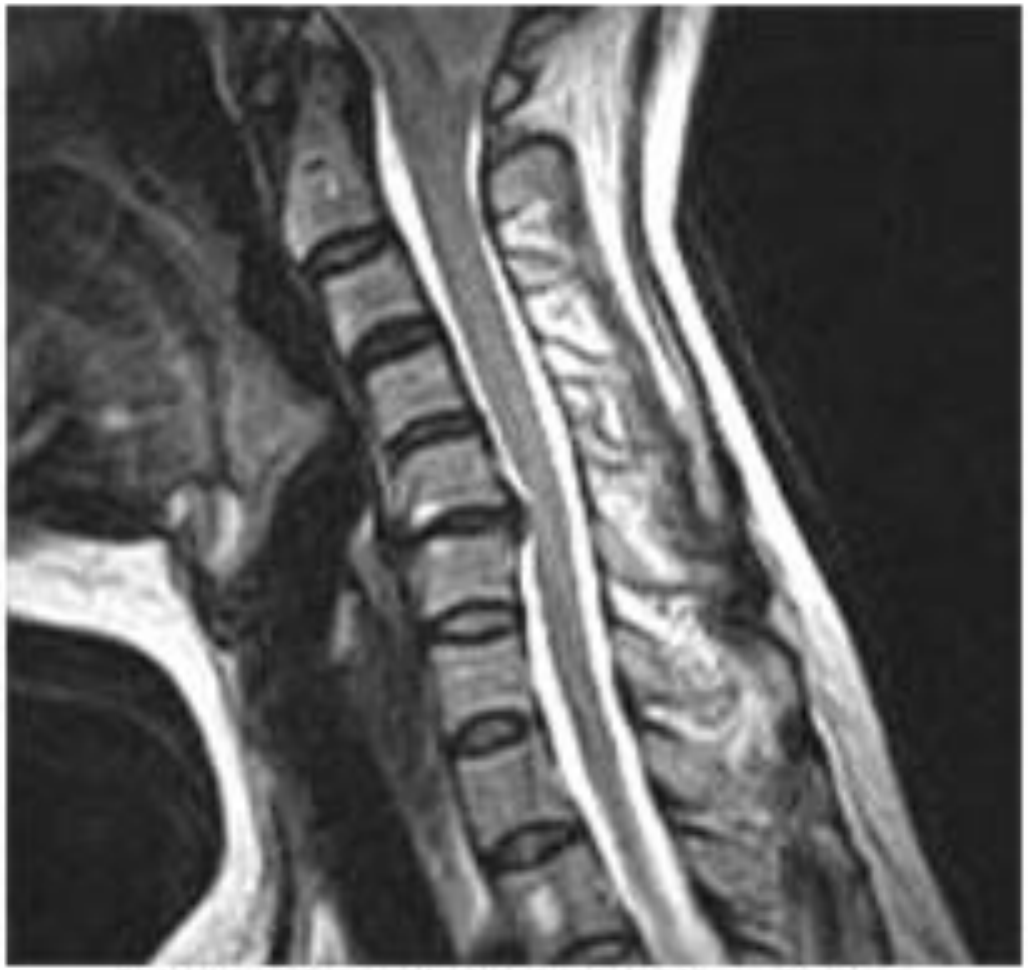
Autophagy and the Glymphatics



Upright MRI has revolutionized Upper Cervical Chiropractic work.

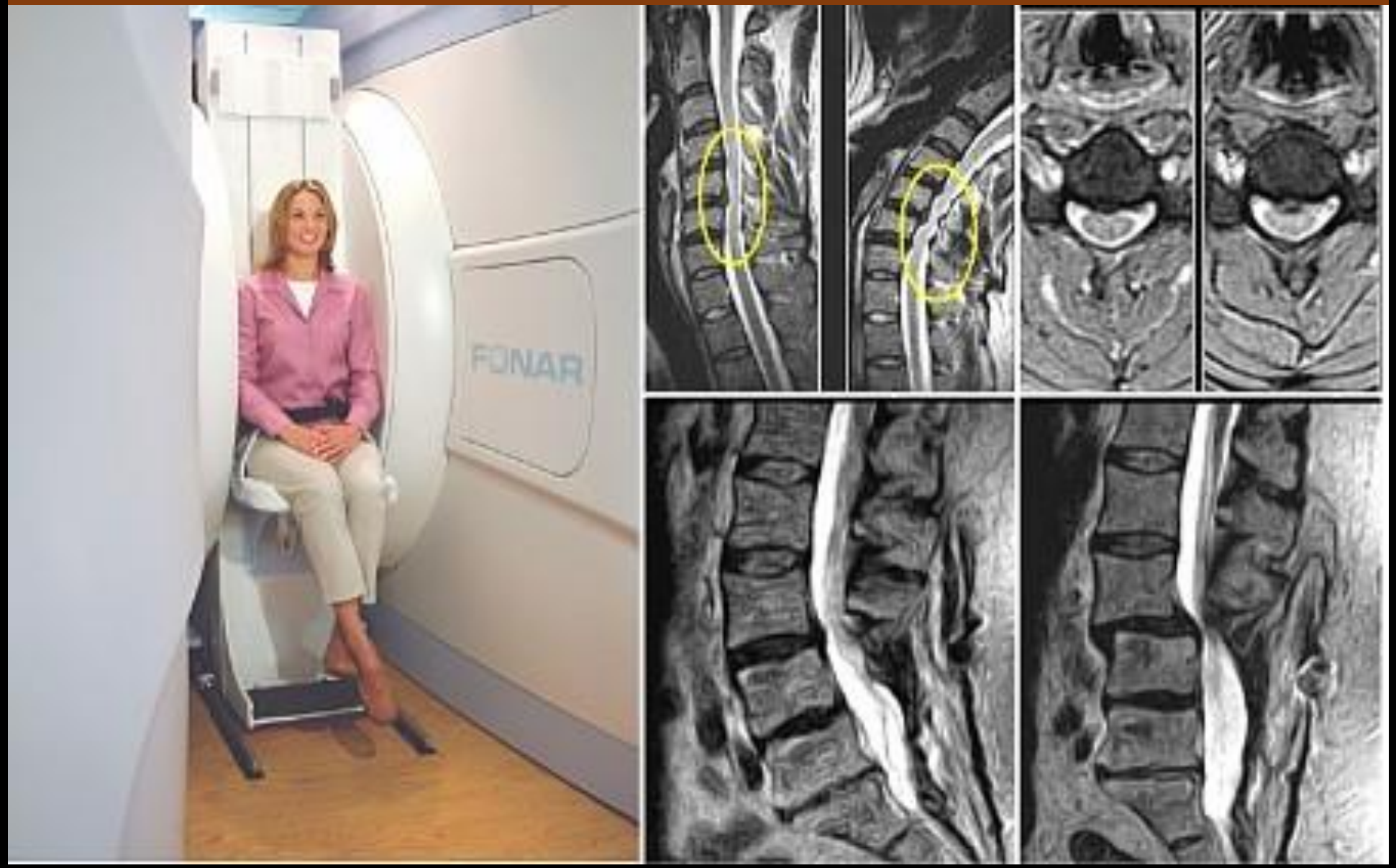


Traditional MRI (On Back)



Upright MRI (Load on Spine)

Fonar upright mri



Observations at the Craniocervical Junction Using Upright MRI

As published by the International Chiropractors Association
By Dr. Julie Mayer Hunt, DC, FCCJP, DICCP

http://www.icachoice.com/april2017-ica/index.html

Abstract

The Craniocervical Junction (CCJ) is the most complex joint region in the body. The CCJ is a collective term that refers to the occiput (posterior skull base), Atlas, Axis and supporting ligaments. It is a transitional zone between a mobile cranium and a relatively rigid spinal column. It encloses the soft tissue of the brainstem at the cervicomedullary junction (medulla, brainstem and spinal cord). It is critical to fully understand the neurology, biomechanics, soft tissue integrity including ligaments[7], blood flow, and cerebral spinal fluid flow at the junction between the brain and the body.[3] Magnetic Resonance Imaging (MRI) of the CCJ provides additional insights to be considered when evaluating care or treatment for this region. Performing imaging in an upright posture compared to recumbent can reveal significantly different parameters. The purpose of this paper is to illustrate observations on CCJ imaging utilizing upright MRI.

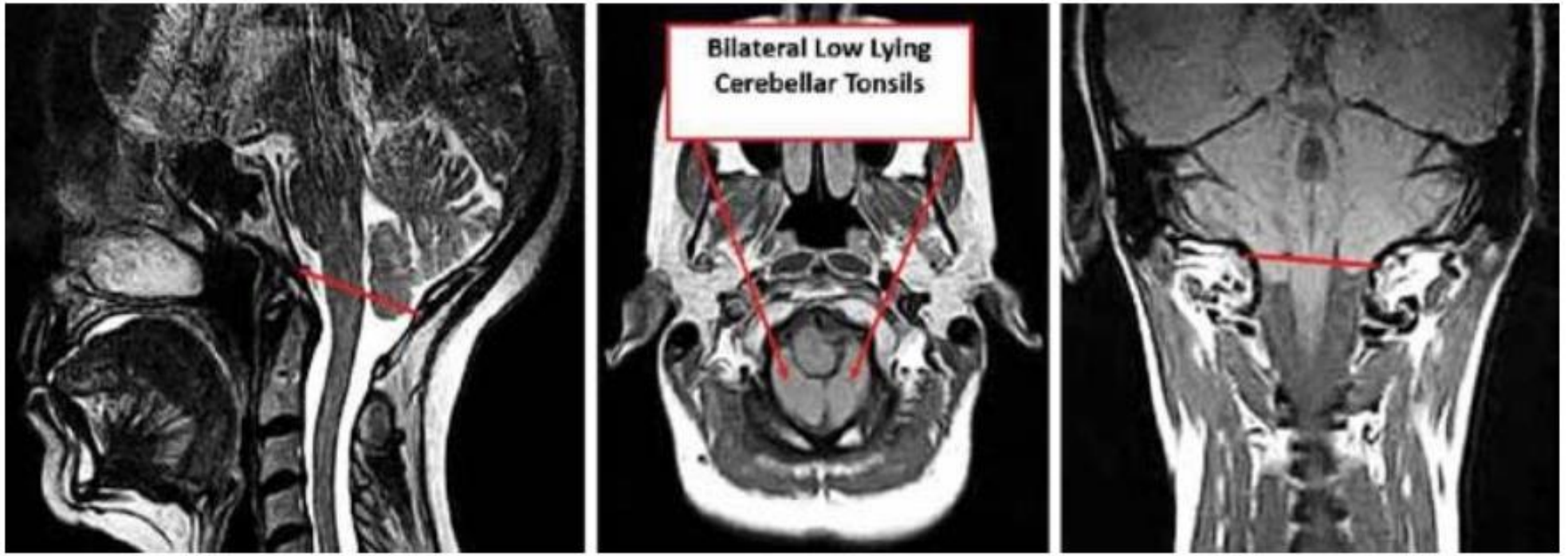


Figure 6 Upright Cervical Spine MRI Imaging

Atlas Rotation Observations: When Atlas rotates, it is plausible anatomically that the transverse process can abut the internal jugular vein. Figure 7 depicts two examples of Atlas rotation misalignment. The red line highlights the rotation. The yellow arrow points to an internal jugular which appears to have been compressed by the misaligned Atlas. This compression can potentially affect venous outflow from the brain causing backup of venous metabolic waste blood in the brain which is suggested in neurodegenerative brain diseases. Also note the oblong shape of the spinal canal which plausibly can suggest dentate ligament attachment tension at the brainstem.[8,9]

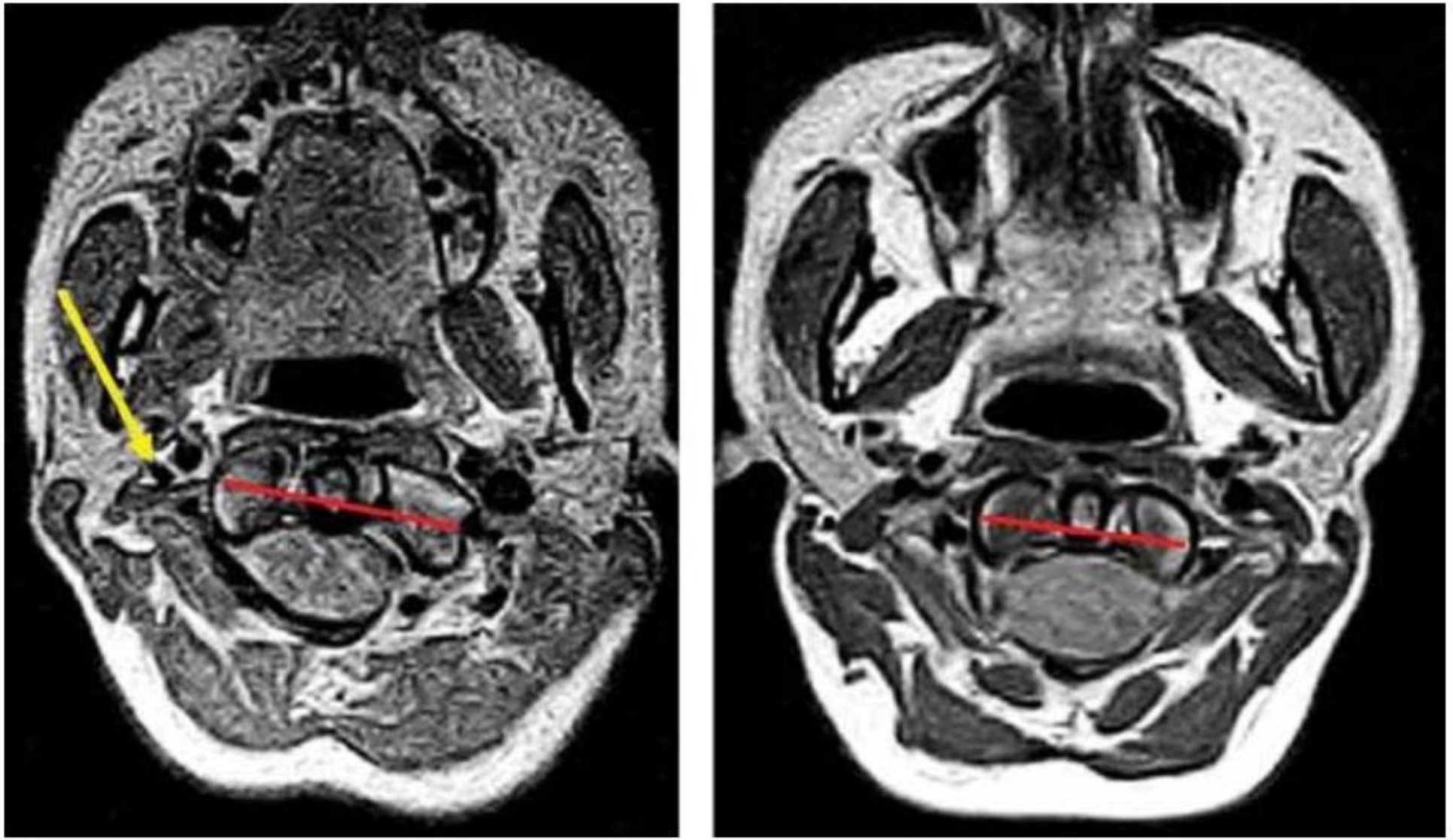


Figure 7 Atlas Rotation Misalignment

C2 (Axis) rotation can be observed on CCJ MRI. Figure 8 provides several examples of Axial Rotational misalignment. The standard cervical spine MRI misses this segment because the slices start at the C2/C3

disc. When one considers the vertebral artery pathway, illustrated in Figure 9, the axial misalignment can plausibly correlate with vertebral artery insufficiency and also the misalignments can affect dentate ligament tension of the spinal cord.[8,9]

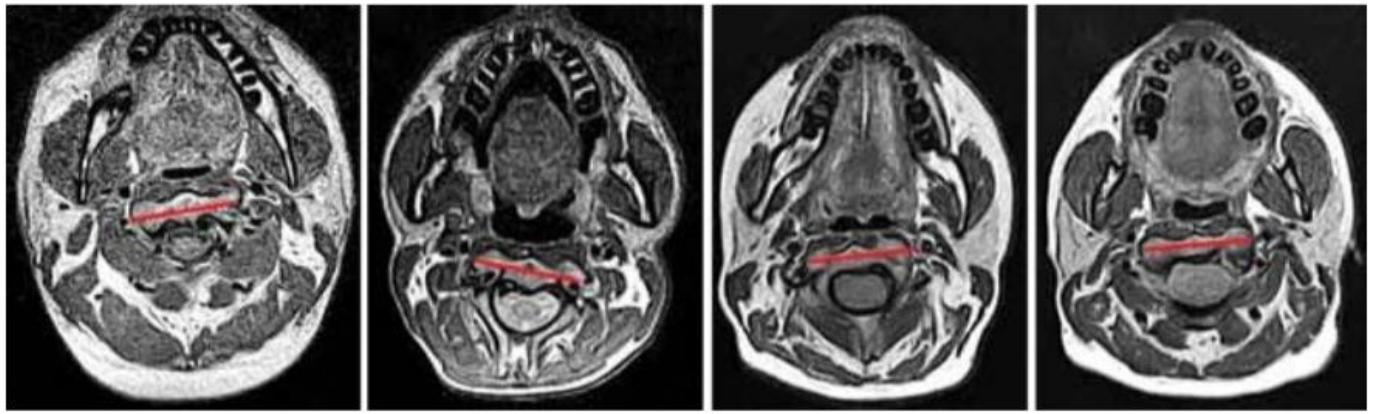


Figure 8 Axis Rotational Misalignment

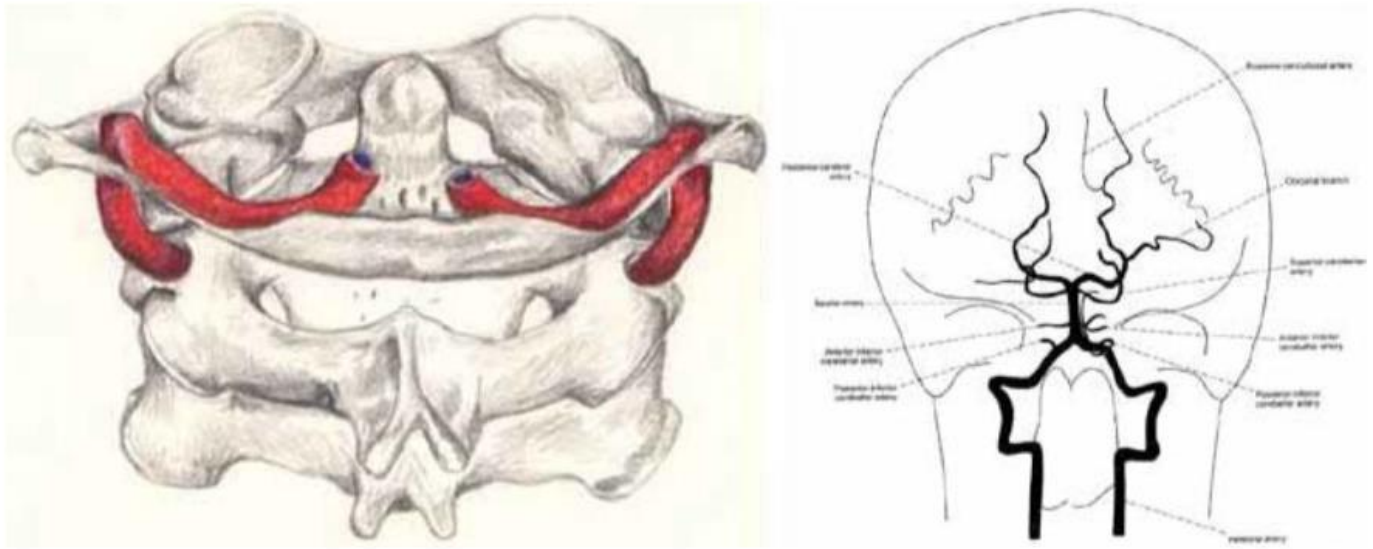


Figure 9 Vertebral Artery Pathways

C1 misalignment can be observed in the sagittal view with respect to the occipital condyles and the Atlas lateral mass position. Figure 10 (A) suggest anterior misalignment of the Atlas lateral mass with respect to the occipital condyle. Figure 10 (B) depicts a normal positioning of the C0/C1 articulation.[1]

Figure 2 Sagittal Atlas Misalignment (A – left), Normal Alignment B – right)

Discussion

Observations that can be made through upright MRI have the potential to clearly objectify spinal misalignment (Subluxation) and clarify patient care needs. The CCJ is a vulnerable region and merits special consideration for care and treatment. There are many parameters for studying the CCJ through MRI which can range from CSF and blood flow impedance, ligamentous laxity and or insufficiency, and Cerebellar Tonsular Ectopia as well as Chiari involvement.[1]

In 2012 the Glymphatic system was postulated [10] with regards to lymphatic drainage and brain health. The Lymphatic system that was discovered in the brain is dependent on CSF flow. The CSF flow, when obstructed, appears to have negative plausible effects on brain health. Therefore having the CCJ aligned contributes to non-obstructed flow of CSF and should contribute to improved brain health.

Conclusion

Trauma continues to be a major player in the disruption of the CCJ integrity. Falls, motor vehicle crashes, sports injuries and other traumas affecting the head and neck relationship throughout our lives play into the ability of the CCJ to facilitate the brain/body connection. All patients deserve an appropriate evaluation of the CCJ for optimal brain health parameters and brain/body for our health. There is much more that needs to be studied and understood to optimize brain health. The upright MRI imaging is a platform that potentially could allow Neurology, Neuroradiology and other medical specialties to work together with board certified Chiropractic CCJ procedure specialists to benefit patients and families. Understanding the complexities of the CCJ should compel all health practitioners to study further and understand how to optimize the function of the most complex joint region of the body.

Acknowledgements

The author wishes to extend sincere appreciation to Dr. Scott Rosa, DC, B.C.A.O., Rock Hill NY, a pioneer in advanced imaging of the CCJ for his mentoring and the opportunities to participate in observing CCJ imaging at the Capital Upright Imaging Center, Latham NY.

Observations at the Craniocervical Junction Using Upright MRI

As published by the International Chiropractors Association
By Dr. Julie Mayer Hunt, DC, FCCJP, DICCP

http://www.icachoice.com/april2017-ica/index.html

References ----------►

Additionally, Dr. Richard Leverone , DC, DACBR has provided invaluable insights into CCJ MRI imaging interpretation.

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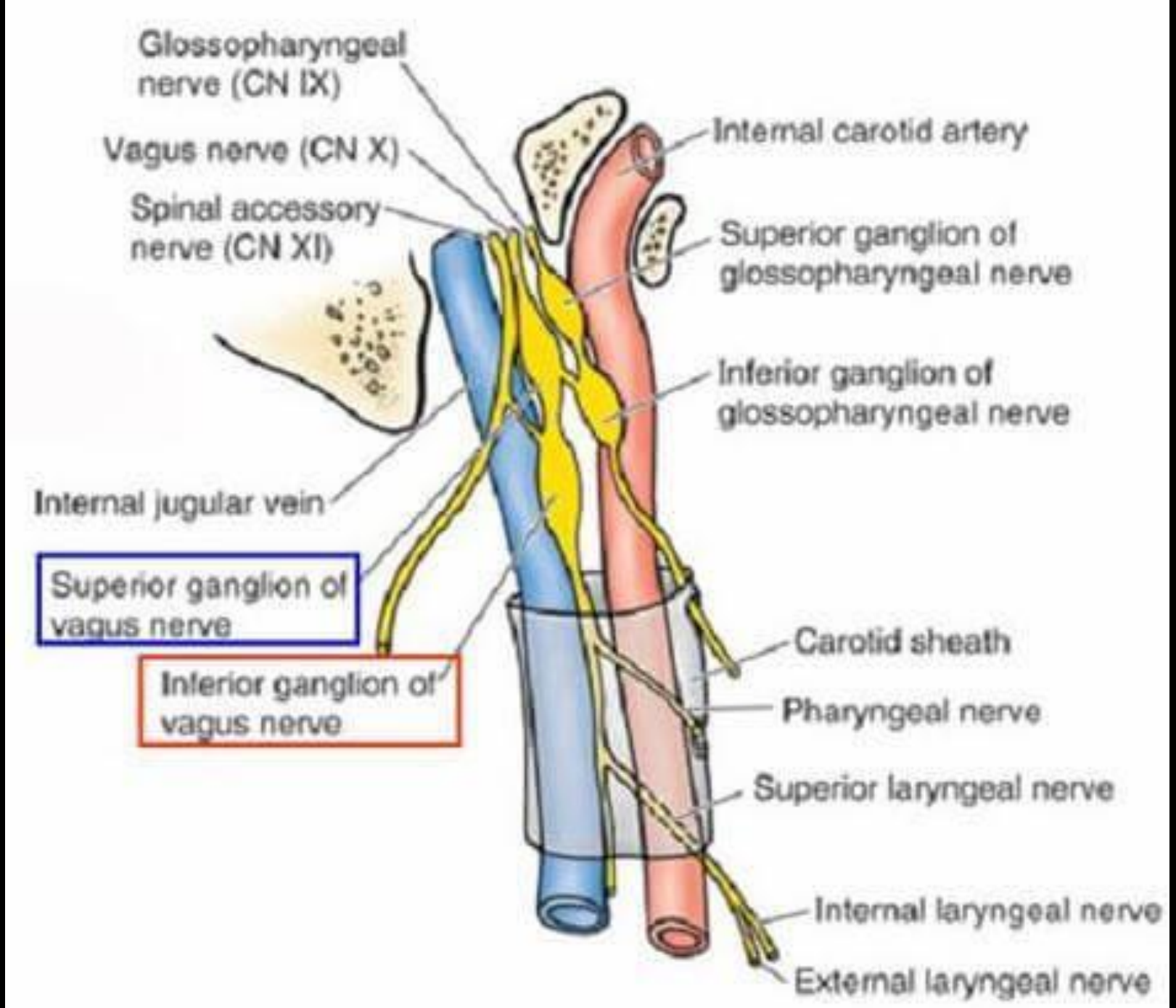
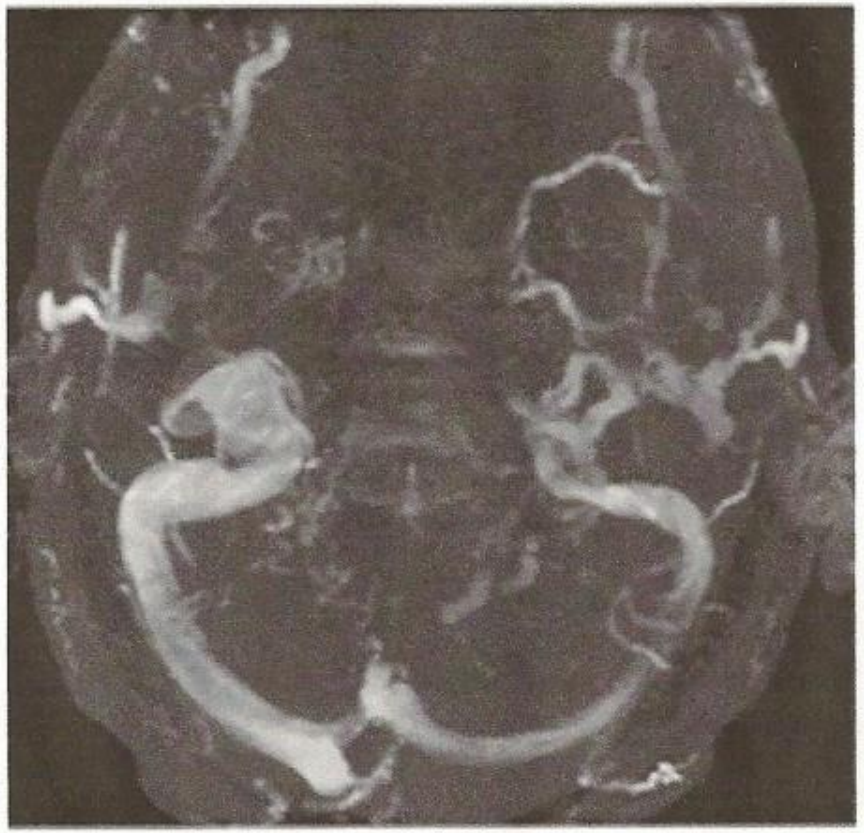
Can the Nervous System Be Hacked?

By MICHAEL BEHARMAY 23, 2014 NYT

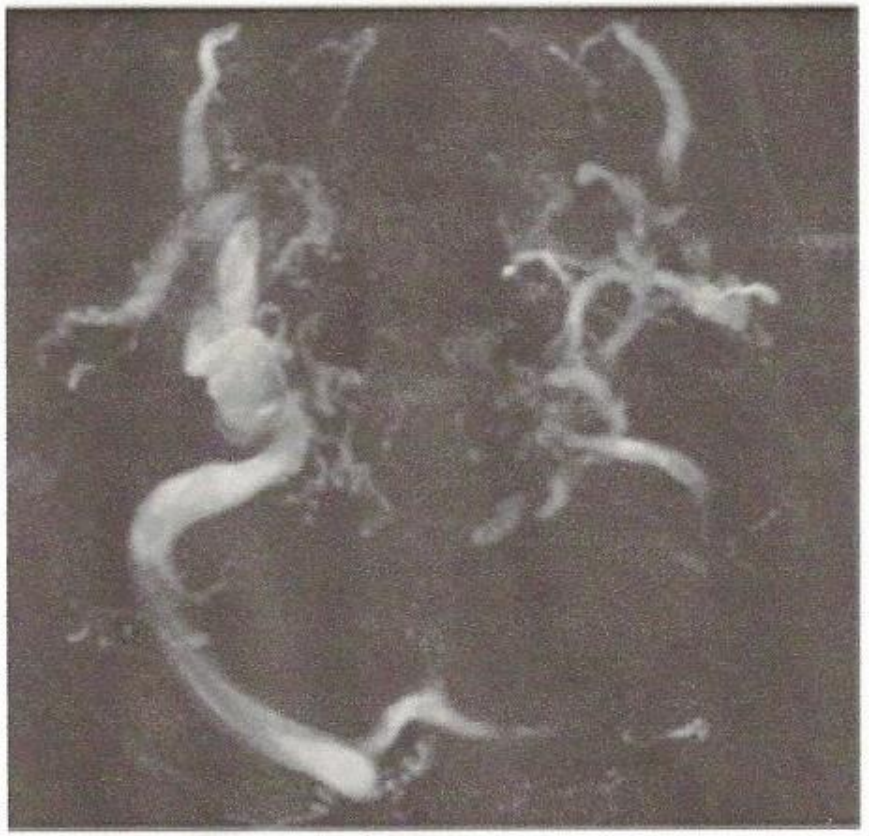
Interview with Kevin Tracey


Glossopharyngeal nerve (CN IX)
Vagus nerve (CN X)
Spinal accessory nerve (CN XI)
Internal jugular vein
Superior ganglion of vagus nerve
Inferior ganglion of vagus nerve
Internal carotid artery
Superior ganglion of glossopharyngeal nerve
Inferior ganglion of glossopharyngeal nerve
Carotid sheath
Pharyngeal nerve
Superior laryngeal nerve
Internal laryngeal nerve
External laryngeal nerve

MIP Images of Venous Drainage
Internal Jugular Vein MR Image
Migraine Case Study Using NUCCA Intervention
(funded by the Atlas Research Foundation, Barrington, IL)



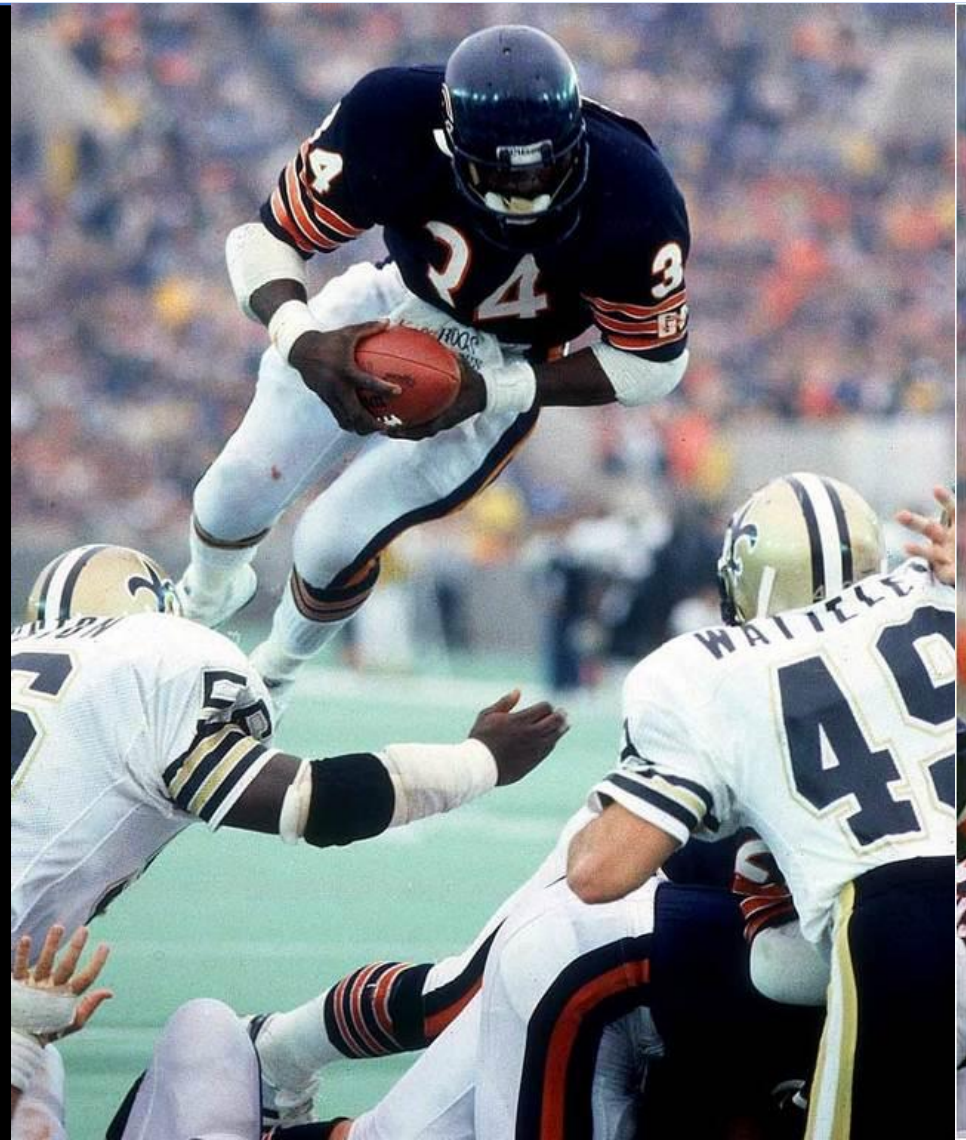
Pre Atlas Correction

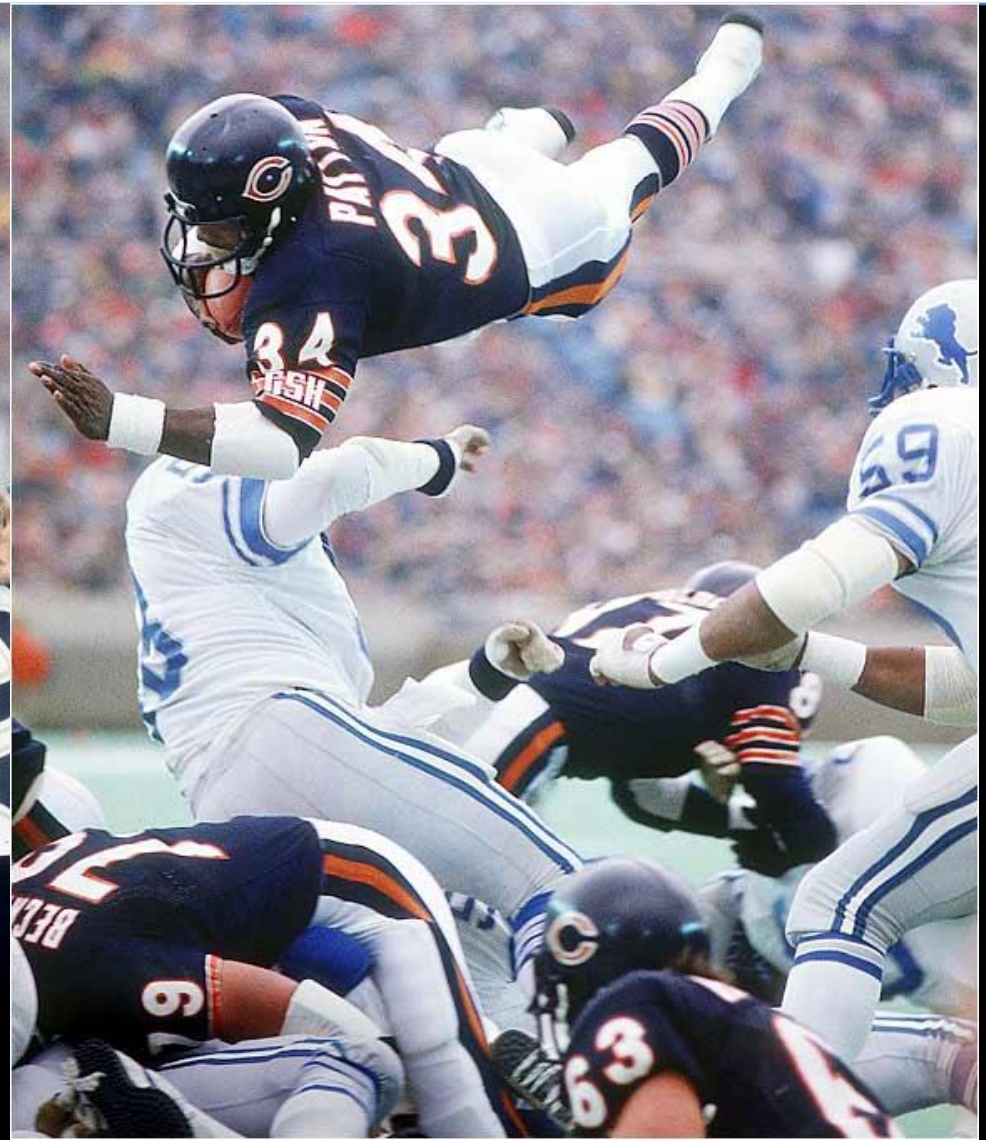


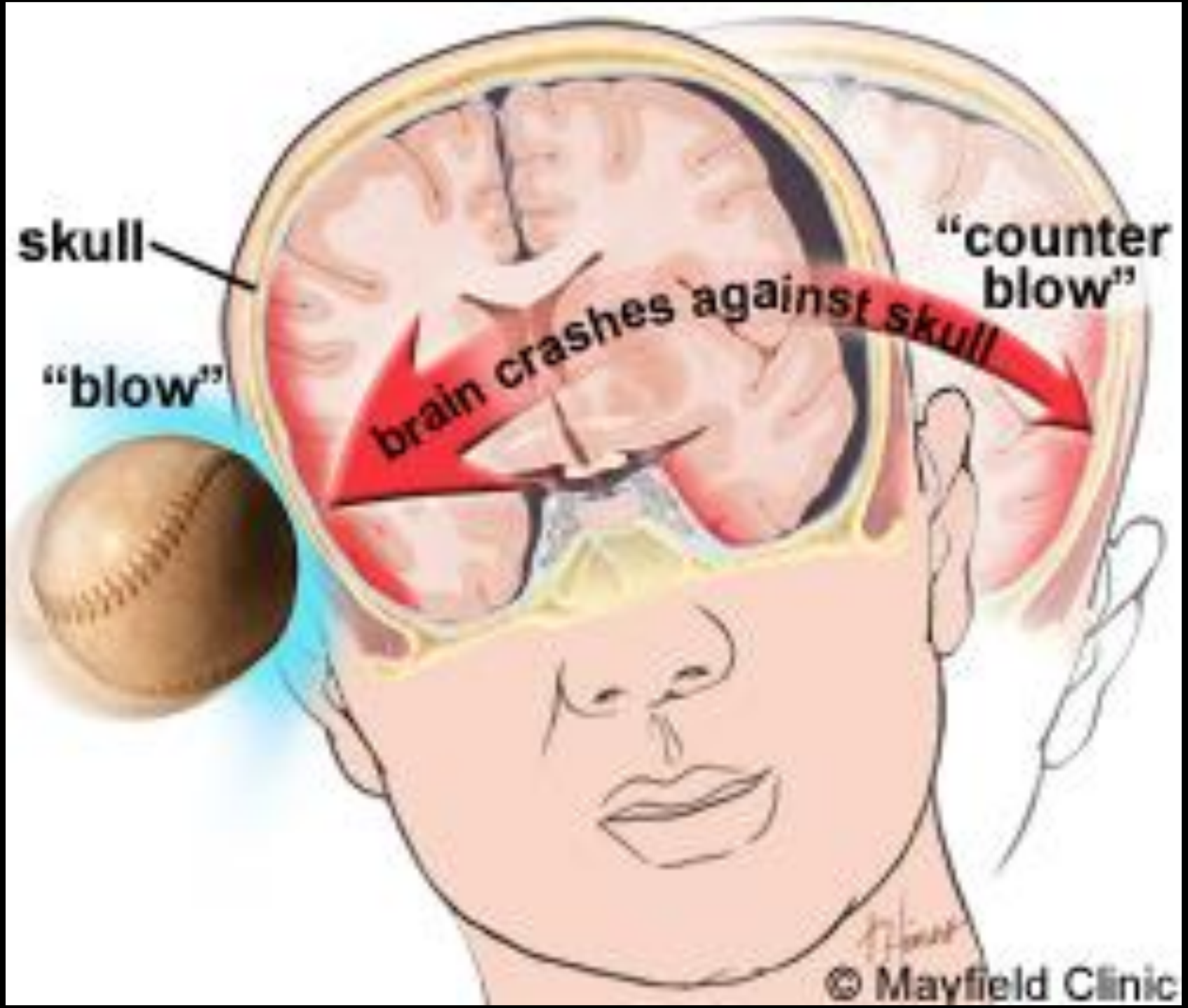
30 Day Post Atlas Correction

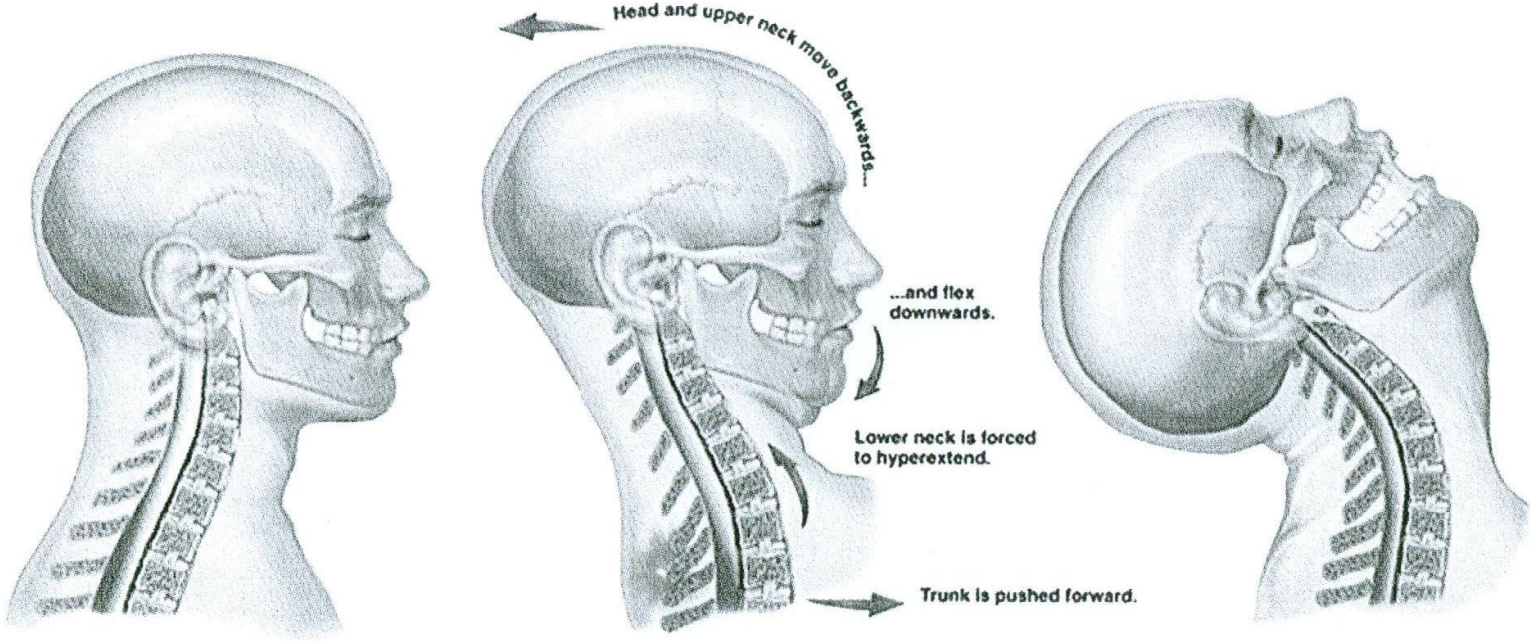
A noticeable change seen in venous outflow pattern on the post image; less flow through the internal jugular veins and more through the paravertebral venous plexus. This patient was imaged in a supine position before an Atlas correction using the NUCCA procedure and then 30 days following the correction. Intracranial compliance increased by one third.

You don’t have to be a professional athlete to suffer cervical spine trauma






skull
"blow"
brain crashes against skull
"counter blow"
© Mayfield Clinic



Just Prior to Impact:
Neck has normal curvature

1/20th Second (50ms) Later:
Neck has an "S" shaped curve.
Lower neck with possible facet injury.

1/10th Second (100ms) Later:
All levels extend, but none excessively.
Likely after the moment of injury.

Is it really a concussion? Symptoms overlap with neck injuries, making diagnosis a tough call

July 31, 2014 University at Buffalo
http://www.buffalo.edu/news/releases/2014/07/040.html

Athletes and others reporting cognitive difficulties after a head injury are usually diagnosed as having had a concussion. But is it really a concussion? A new study finds that many of the same symptoms are common to concussions and to injuries to the neck and/or balance system, known collectively as cervical/vestibular injuries.

History

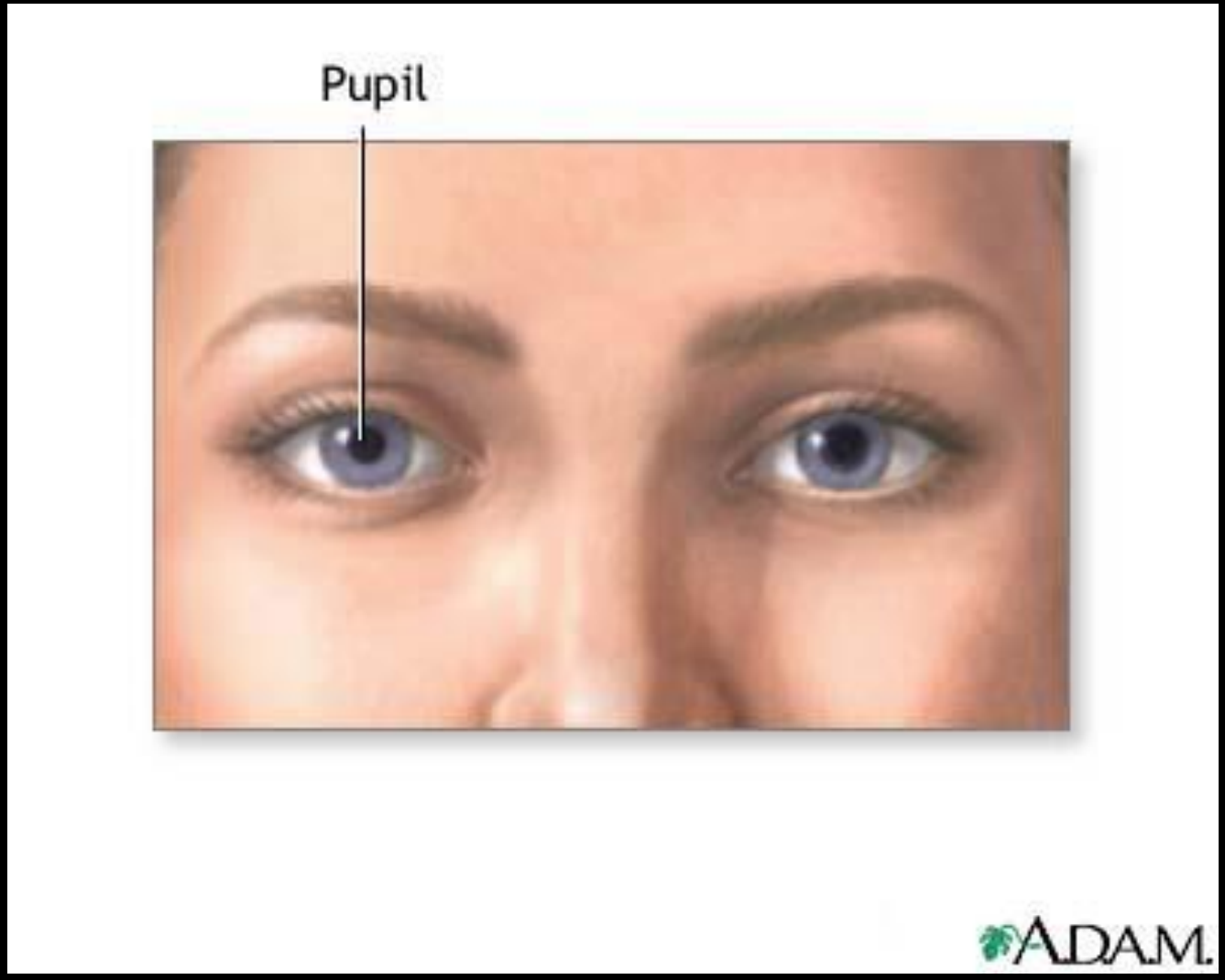
Reduced Parasympathetic Activity

- Dry mouth
- Difficulty swallowing supplements or large bites of food
- Slow bowel movements/tendency for constipation
- Chronic digestive complaints
- Bowel or bladder incontinence

Increased Sympathetic Activity

- Tendency for anxiety
- Easily startled
- Difficulty relaxing
- Sensitive to bright or flashing lights
- Episodes of racing heart
- Difficulty sleeping

Pupils



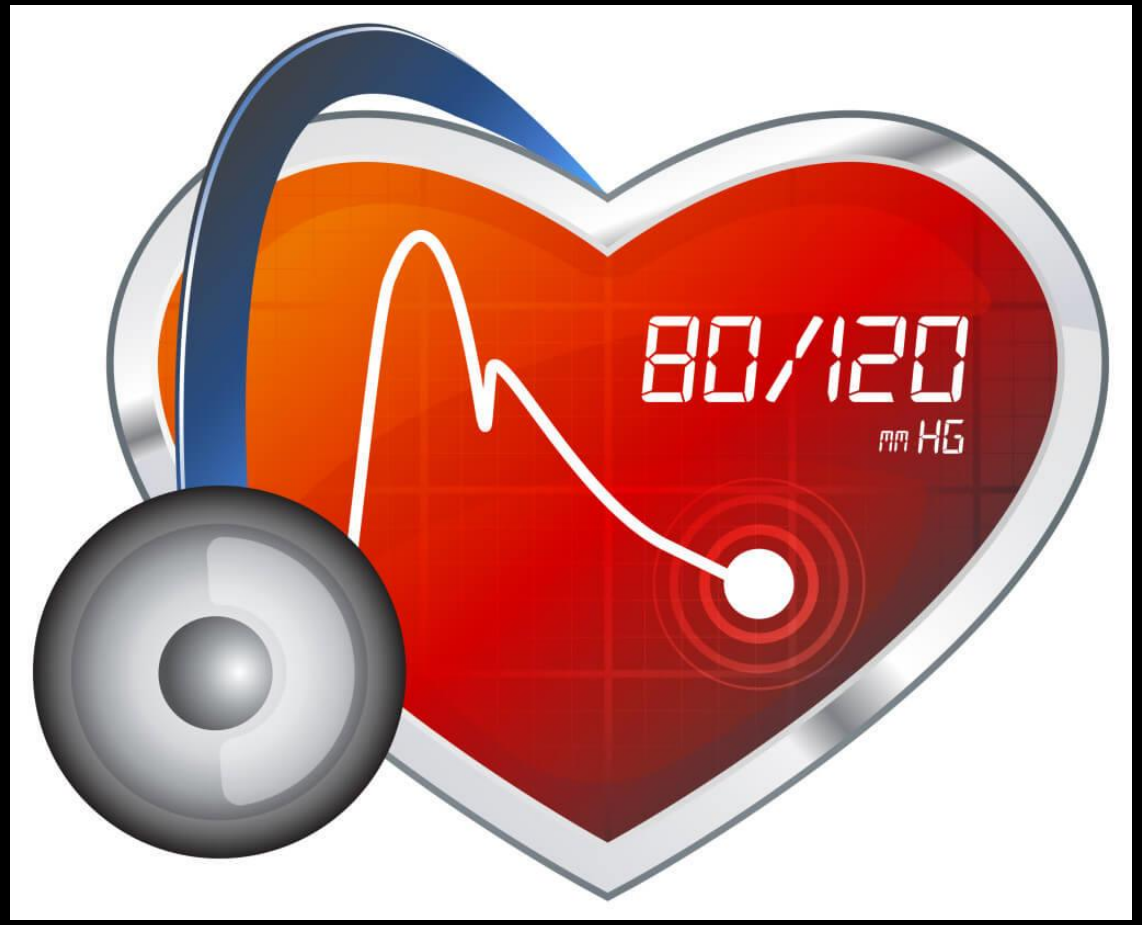
Pupillary Reflex

Facial Symmetry

Finger to wrist temperature differential

Pulse Rate

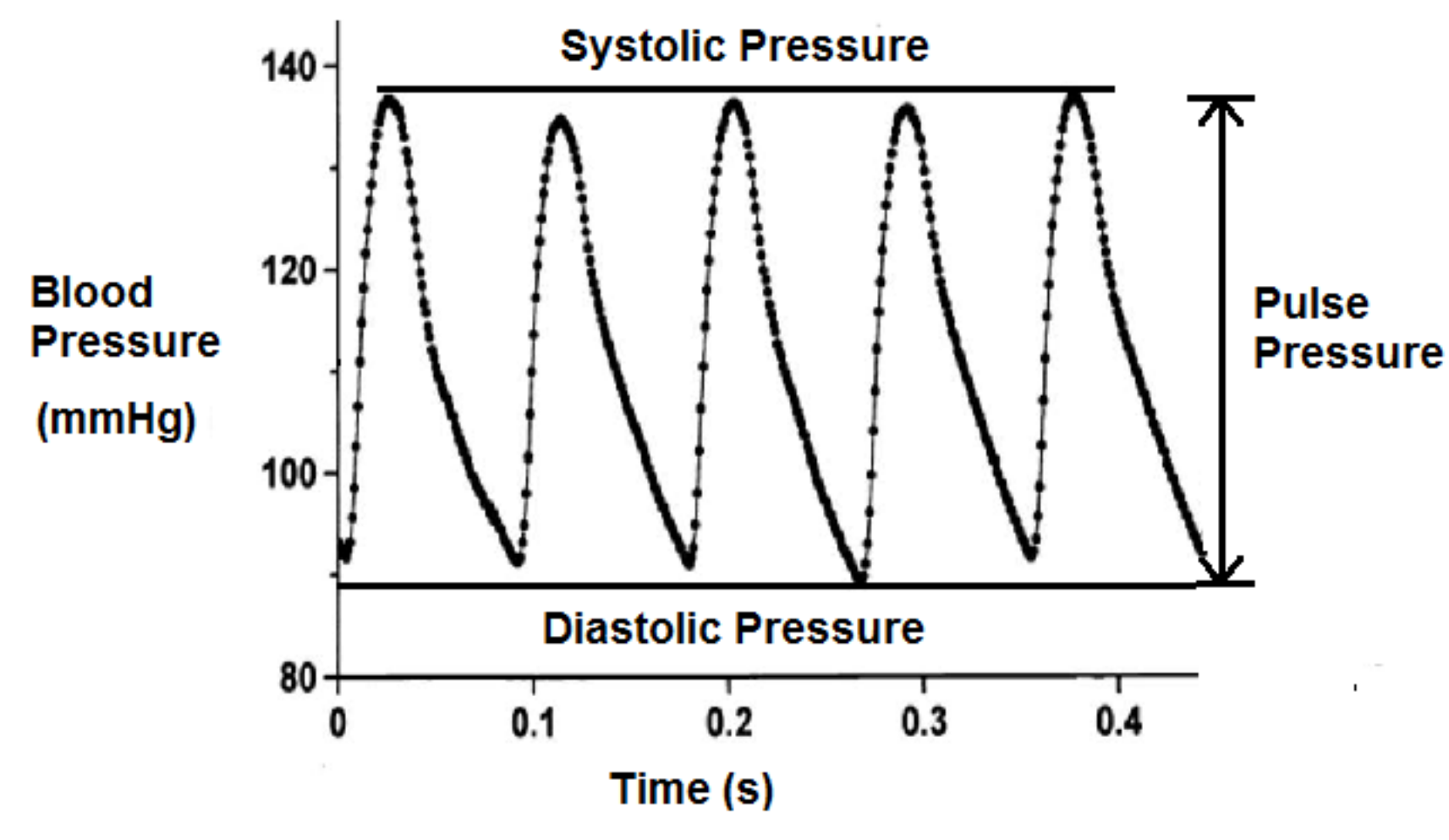
Blood Pressure

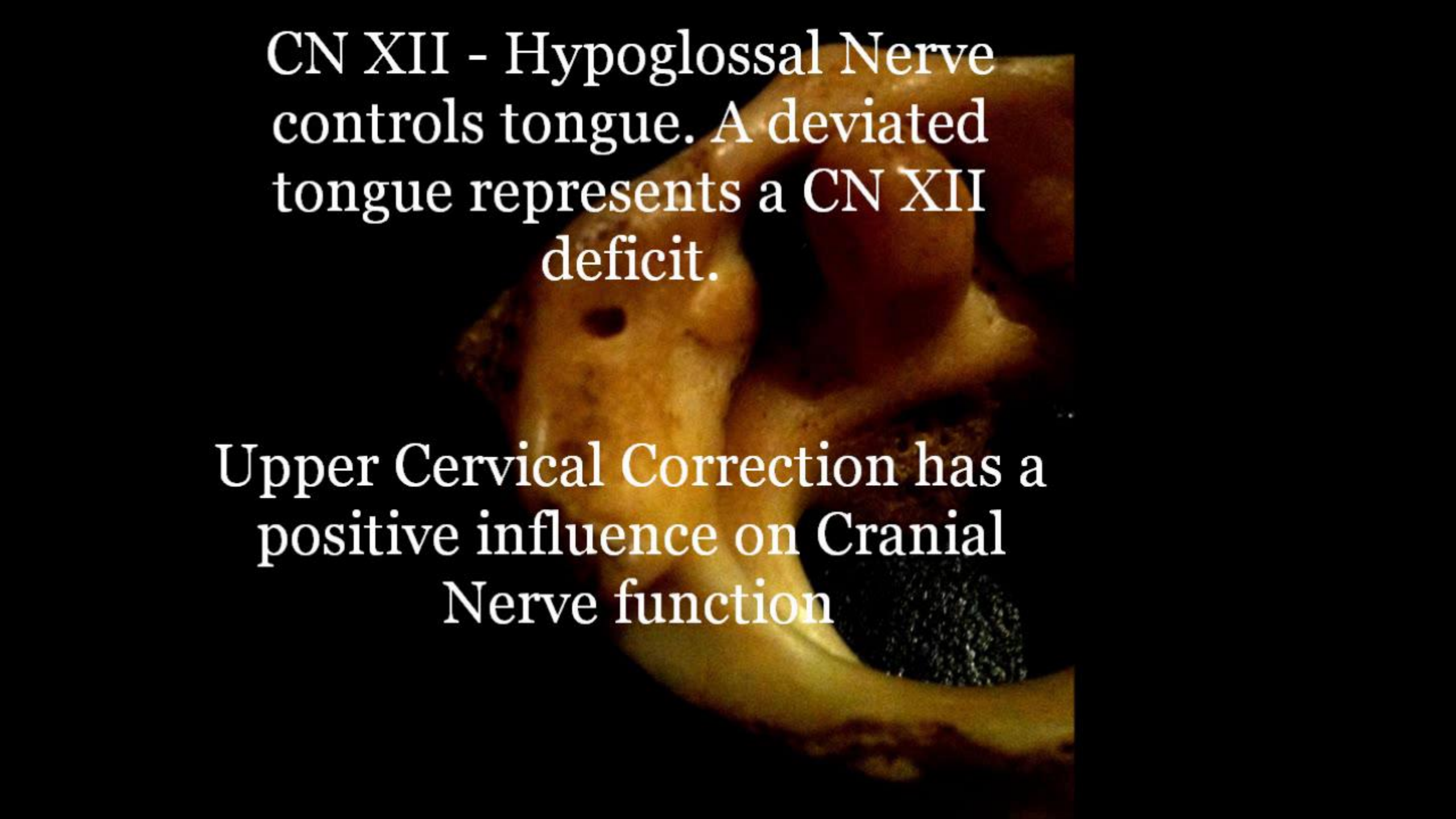



HYPERTENSION
STOP

My blood pressure study

Pulse Pressure





CN XII - Hypoglossal Nerve controls tongue. A deviated tongue represents a CN XII deficit.

Upper Cervical Correction has a positive influence on Cranial Nerve function

Vascular Compression of the Medulla Possible Cause of Type 2 Diabetes
Decompressive Surgery May Improve Glucose Control

Megan Brooks Medscape Medical News

- August 18, 2010 — Arterial pulsatile compression of the right anterolateral medulla may play an etiologic role in the development and progression of type 2 diabetes mellitus, according to a report published online July 16 in the open access journal *Surgical Neurology International*.

“In addition, neurosurgeons from Pennsylvania report in their article that 7 of 10 patients with steadily progressive type 2 diabetes and documented right lateral medullary compression showed significant improvement in glucose control after microvascular decompression (MVD) surgery.”

Case Study – 6 y/o boy with skin rashes for 2 years prior to care

- Additional history – rashes were reported as painful and bleeding. Parents also reported chronic strep throat (multiple episodes)

Case Study – 24 y/o female with psoriasis

Name _____ Date July 13th, 2016

Phone _____ Work Phone _____

Email _____

Address _____ City/State/Zip _____

Date of Birth 04/20/92 Age 23 M ___ F ✓ Occupation 4th gr. teacher

Married ✓ Single ___ Divorced ___ Widowed ___ Spouse Name Creagan Number of Children 0

When was your last medical care June Where Lieberman - Allergy care

When was your last chiropractic care _____ Where _____

When was your last dental care July Where Wright family Dentistry

Referred by Christina Parish

Payment is due at the time of service. We gladly accept Cash, Check, Debit or Credit Card. Additional financial arrangements are available through Care Credit. Please Initial GW

Because we are out of network for all insurance companies, we do not submit claims through our office. We are happy to provide you with a super bill that you may use to submit a claim to your insurance company. Please ask at checkout for this form.

What Is Your Major Complaint? Growing rash on my body & face

How Long Have You Had This Condition? 1½ yr Getting Worse? ✓ Constant? ✓

Pain Comes/Goes? _____ What Aggravates It? unknown Similar Conditions In Past? _____

List Previous Diagnosis/Treatments You Have Received For This Condition

	ALCOHOL	COFFEE	TOBACCO	DRUGS	EXERCISE	SLEEP
HEAVY						
MODERATE	every now and then ✓	✓				
NONE			never ✓	never ✓	✓	✓

Please list all medications and over the counter supplements or herbs you are currently taking:

-

List Below The Conditions You Have Been Treated For In The Past Ten Years Or Any Other Health Information You Feel Important:

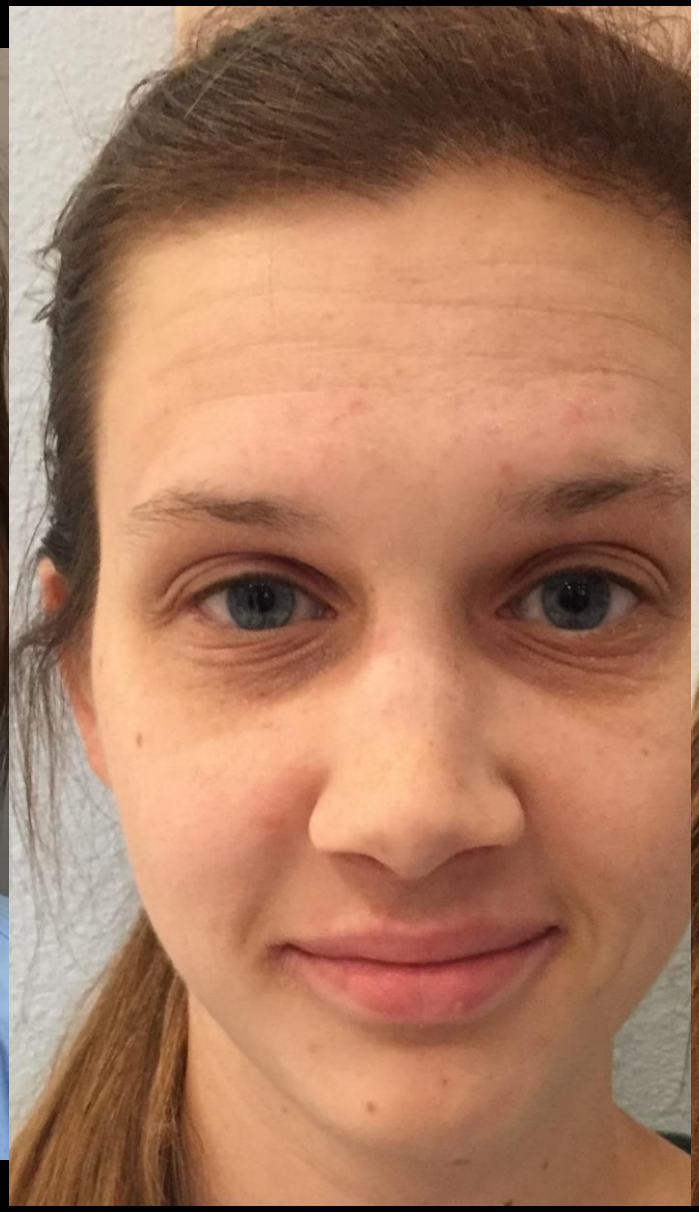
I've been to 7 doctors in the last year trying to figure this out. I sorted them below by field of practice.

Dr. Charles Safley
Dr. Markus Webb
Dr. Gunnar Gibson
> Dermatology

Dr. Wendy Spanos
Dr. Phil Lieberman
> allergists

Dr. Jim Citty - OBGYN

Dr. Mike Barden - Family


Case Study – Early Dementia


EXIT


EXIT

Date 8/26/2014

Name _____ SS# 511 94 8407

Home Phone _____ Cell Phone _____ Work Phone _____

Email _____ City/State/Zip _____

Date of Birth 2/20/85 Age 29 M ___ F ✓ Occupation Graduate Student

Married ✓ Single ___ Divorced ___ Widowed ___ Spouse Name Mark Number of Children Ø

When was your last medical care ? Where _____

When was your last chiropractic care Spring 2013 Where Kessinger

When was your last dental care August 2014 Where Moorkamp DDS

Referred by _____

* * * * * * * * * * *

Is This a Personal Injury/Workers Compensation Claim? Yes (No) Responsible Party _____

Do You Have Health Insurance? (Yes) No What Company? United Healthcare

Who Is Responsible For This Account? Mark Grant

* * * * * * * * * * *

Before Accepting You As A Patient The Doctor Will Evaluate Your History And Physical/Laboratory Examination Findings To Assure That Chiropractic Natural Health Care Is The Best Treatment Choice For This Condition.

You (Or Designated Guardian) Will Need To Sign This Lien Of Responsibility

Signature Jessica Grant *Date* 8/26/14

* * * * * * * * * * *

What Is Your Major Complaint? (Infertility) / neck + shoulder pain

How Long Have You Had This Condition? 10 years Getting Worse? _____ Constant? _____

Pain Comes/Goes? ✓ What Aggravates It? exercise, lifting Similar Conditions In Past? ✓

List Previous Diagnosis/Treatments You Have Received For This Condition chiropractic

What Do You Believe Is Wrong With You? underdeveloped neck muscles?

Other Complaints? _____

List Operations And Dates Uterine Fibroids removed via C-section cut, January 2010

Do You Have A History Of Antibiotic Therapy? ✓ Any Allergies? Food dairy Drugs _____

Do You Take: Nerve Pills _____ Pain Killers _____ Pep Pills _____ Muscle Relaxors _____

Birth Control Pills _____ List Over The Counter Pills You Take _____

Have You Been In An Auto Accident In The Last Year? No 5 Years? _____ Ever? _____

Loving what we do!


Kassinger
Health and Wellness
Diagnostic Center

Case Study – 23 y/o female with Grand Mal Seizures every 45 minutes

Everything is going very well with the baby.

❤️❤️❤️❤️

Love it!!

iMessage

For info on:

KCUCS UC Neuro Boot Camp

KCUCS Upper Cervical Seminar

drk@drkessinger.com

www.kcucs.com