

A soft-focus photograph of a woman with long, light-colored hair holding a baby. The baby is wearing a white and light blue striped shirt and is looking towards the camera. The woman is looking down at the baby. The overall tone is warm and intimate.

Birth, Breastfeeding & The Brain

The Critical Role of Breastfeeding:
Life Long Benefits for Baby, Mom and Beyond

Dr. Steph Libs, DC, CACCP, IBCLC

Let's go on a journey





Dr. Steph Libs

[@drstephlibs](#)

- Graduated from Life West 2013
- ICPA trained and CACCP & Perinatal certified
- IBCLC as of Jan 2021
- FOCUS Certified with Amy Spoelstra
- Certified Pediatric SOT with Marty Rosen
- DBB Facilitator
- Mom of 2, breastfed till 3, tandem
- Full practice with 4 associates, birth center next door
- MLS style
- Published in Pathways, Journal of Pediatric, Maternal & Family Health Chiropractic
- Created Courses for Chiro's and Courses for Moms
- Dream to teach - it's happening!
- ICPA Webster Instructor



My Family







Aubree





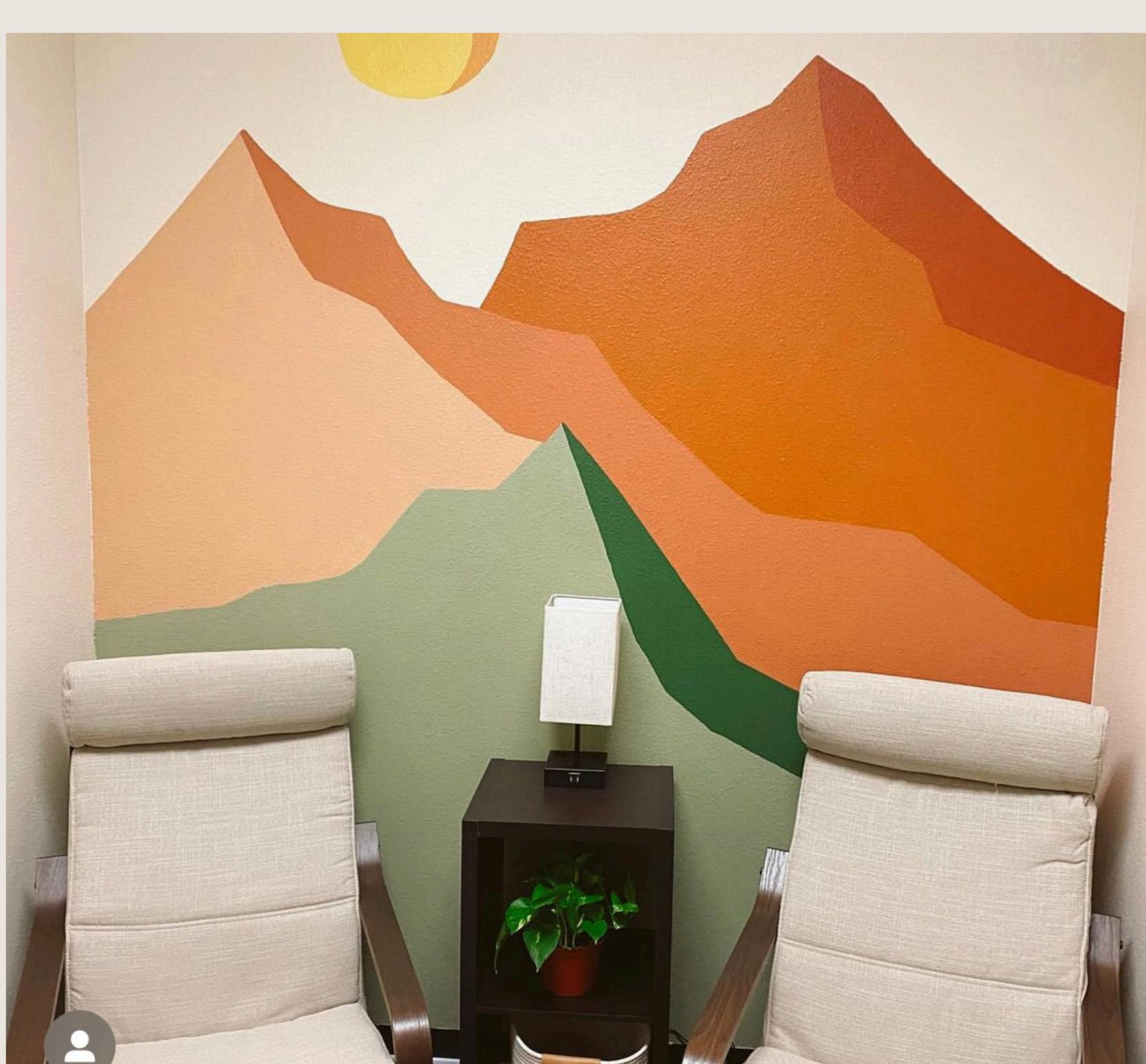




Roland







Lips Lactation Lounges

CASE STUDY

Resolution of Breastfeeding Difficulties and Concomitant Weight Gain Following Chiropractic Care in an Infant with Birth Trauma: A Case Report & Review of the Literature

Stephanie Williams-Libs, DC¹ & Joel Alcantara, DC, PhD(C)²

Research

Abstract

Objective: To describe the chiropractic care of an infant with breastfeeding difficulties

Clinical Features: A 9-day-old female with a history of birth trauma presented for care with breastfeeding difficulties and concomitant failure to gain weight. Consultation with a lactation consultant ultimately led to recommendation of a nipple shield to reduce the pain of breastfeeding.

Interventions and Outcomes: The patient was cared for with Diversified Technique (i.e., touch and hold) with adjustment to the atlas and sacrum along with cranial adjustments. Following the first visit, the infant attended four visits in two weeks followed by twice per week. Each visit resulted in more comfortable breastfeeding for both mother/infant dyad. An increase in weight gain was recorded by the parents.

Conclusion: The chiropractic care of an infant with breastfeeding difficulties was described with successful outcomes. We support documentation of the benefits of chiropractic care in similar patients to inform clinical care and research.

Key Words: *Chiropractic, subluxation, pediatrics, breastfeeding difficulties, adjustment*





Cafe of Life
Chiropractic





Our Typical Patient

Wants a natural birth

Plans a hospital birth, OB says she's overdue and recommends induction

"Routine" medications and procedures in labor alter her birth plan

Breastfeeding is difficult and painful

Formula or a bottle is introduced



Jeanne



*Life
Expresses
Intelligence*

icpa

Webster Technique

The Webster Technique is a specific chiropractic analysis and diversified adjustment. The goal of the adjustment is to reduce the effects of subluxation and/or SI joint dysfunction. In so doing neurobiomechanical function in the sacral/pelvic region is improved.



The Birth Process



Power



Passage



Passenger



Birth Trauma

99% of newborns are
subluxated from birth

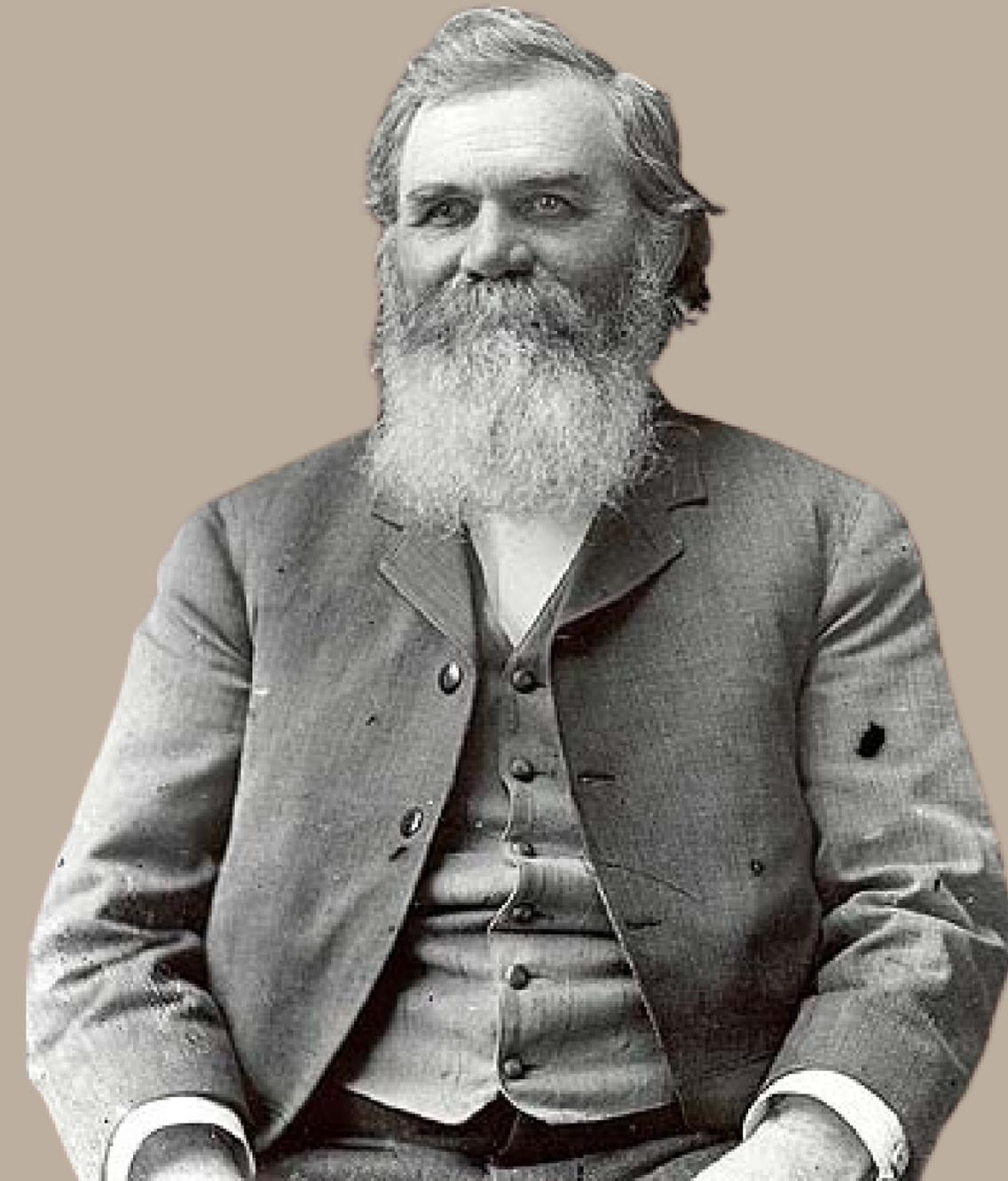


“The primary mechanisms of injury to the spinal cord appears to be excessive traction applied to the spinal canal and cord during the birth process.”

Symposium on operative obstetrics, Donn, MD: Vol. 10, No. 2, June 1983

“Mothers and their babies are liable to be injured at childbirth. Many have their vertebrae displaced at this critical period, causing acute and chronic diseases. If the adjustor is a chiropractor, he can adjust such, thereby preventing dis-ease.”

- D.D. PALMER: “THE CHIROPRACTIC ADJUSTER” 1910



“Differentiating the impact of biomechanical forces of labor and delivery vs. the effect of a posterior tongue tie on neonatal and infant feeding dysfunction: a clinical evaluation.”

ANDREW DOROUGH DC, DACCP
<https://jccponline.com/Dorough21-02.html>

Unit Comparisons	Normal Spontaneous Delivery (Grimm/Obrien)	Forceps Delivery (non-rotational) (Obrien)	Vacuum Device (Mean peak clinician force)	Ranges of Traction force with vacuum Ext. @600mmHg	Recommended Mean Peak Clinician Force with Adjustment (0-23 mos.) Marchand /Todd)
Newton	129	251-309	129-145 (Obrien) 17-99.89 (Grimm)	157-308	Max: 20 Mean: 7.7 <12 wks.: 1-2
Pounds	29	56-69	3.8-32.59 Pop-off > 70	35-69.24	4.4 1.73 .44

Figure .1^{1,20,28,29,30}

Pop off: indicates how much pounds-force is required to break the seal between the suction cup and the cranium of the fetus.



Birth Stats

- nearly 75% of all births use neuraxial analgesia (epidural & spinal)
- Up to 36% of women receive an induction
 - most are with Pitocin
 - A 2020 study found 47% women who were planning to have a vaginal birth said there was an attempt made to medically induce their labor
- Cesarean deliveries 32% of all births



Interventions

1

PITOCIN
dampens suck reflex

2

EPIDURAL
reduces reflexes and neurobehavior of baby

3

IV FLUIDS
inflates baby

4

C-SECTION
delays lactogenesis II

Pitocin

We know how PIT affects labor:

- stronger, longer, painful contractions
- can lead to decels for baby
- cascade of interventions

Oxytocin released by the pituitary gland for milk ejection (prolactin responsible for making milk)

Can engorge breasts

Reduces infant suck reflexes

Epidural

Epidural Analgesia and Lactation

Opioids cross the placenta and decrease neurobehavioral scores, which may impact breastfeeding. Numerous studies have been performed, but most have been retrospective observational studies. There have been very few randomized or prospective trials.

On postpartum day 1, the women who were randomly assigned to receive high-dose fentanyl reported difficulties with breastfeeding more frequently than did women who were randomly assigned to receive an intermediate dose of fentanyl or no fentanyl, *BUT no difference at 6 weeks pp*

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4261367/>

<https://pubmed.ncbi.nlm.nih.gov/16306734/>

Epidural

The researchers looked at the babies' neurobehavior scores, which basically looks at their behavior and their reflexes. They found that babies whose mothers received the high dose fentanyl had lower neurobehavior scores on average. Mothers in the high dose fentanyl group were more likely to stop breastfeeding at six weeks postpartum compared to the two other groups. 17% of mothers in the high dose group had stopped breastfeeding at six weeks postpartum compared to 5% and 2% in the other groups. Mothers in the high dose group were also more likely, immediately postpartum in the first few days, to state that their babies were fussy and had more difficulty with breastfeeding. 28% of them said that their babies were fussy and had difficulty breastfeeding compared to 13% and 19% in the other groups.

More on Epidurals

A Review of the Impact of Obstetric Anesthesia on Maternal and Neonatal Outcomes

Journal: Anesthesia July 2018

The “birth” of obstetric anesthesia began with the introduction of ether labor anesthesia by obstetrician James Young Simpson in 1847. While Simpson publicized this intervention as effective and innovative, he expressed reservations about its unknown effects on labor and the fetus.

Ultimately the use [of labor anesthesia] was not driven by the scientific community, but by a shift in the social attitudes of patients who demanded it.

What's in an epidural?

Epidural typically combines a series of medications:

- Local anesthetic: bupivacaine, chloroprocaine, lidocaine
- Opioid: fentanyl, hydromorphone
- Steroid: methylprednisolone, triamcinolone, betamethasone, dexamethasone

So what's the problem?

WHO and UNICEF recommend:

- early initiation of breastfeeding within 1 hour of birth;
- exclusive breastfeeding for the first 6 months of life;
- introduction of nutritionally-adequate and safe complementary (solid) foods at 6 months together with continued breastfeeding up to 2 years of age or beyond.

However, many infants and children do not receive optimal feeding. For example, only about 44% of infants aged 0–6 months worldwide were exclusively breastfed over the period of 2015-2020.

Optimal breastfeeding is so critical that it could save the lives of over 820,000 children under the age of 5 years each year.



Exclusive Breastfeeding vs Non Exclusive



Exclusive Breastfeeding

- Higher motor development
- Increased cognitive & language development
- Better immune function

Non Exclusive Breastfeeding

- Risk of ADD/ADHD
- Risk of GI issues
- No variation in formula

Breastmilk

Besides containing all the essential nutrients to fulfill the nutritional requirements for optimal growth of the infant, human milk also contains bioactive components—oligosaccharides, immunoglobulins, hormones, growth factors, cytokines and chemokines—that play important roles in the microbiome and immune system development, as well as maintaining the gut mucosal barrier function.



Breast is Best

Breastmilk

Constantly changing
Adapts to baby's needs
Changes day and night
Living cells, antibodies, enzymes
Easier to digest
Sanitary
HAMLET

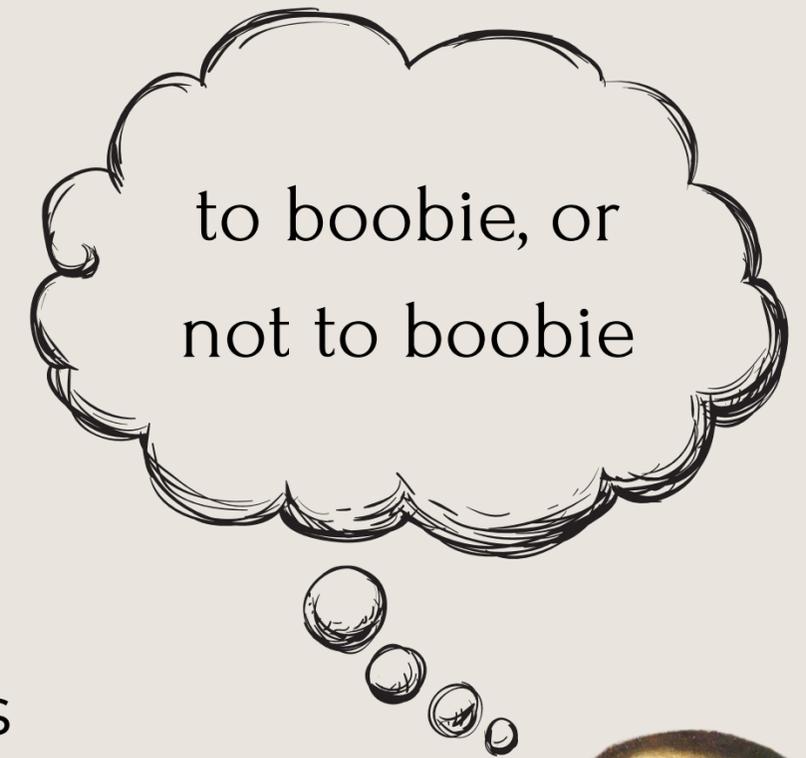
Formula

Does not change
Harder to digest
Risk of improper mixing
Affects gut health
Risk of illnesses
Expensive
Can affect bonding

HAMLET

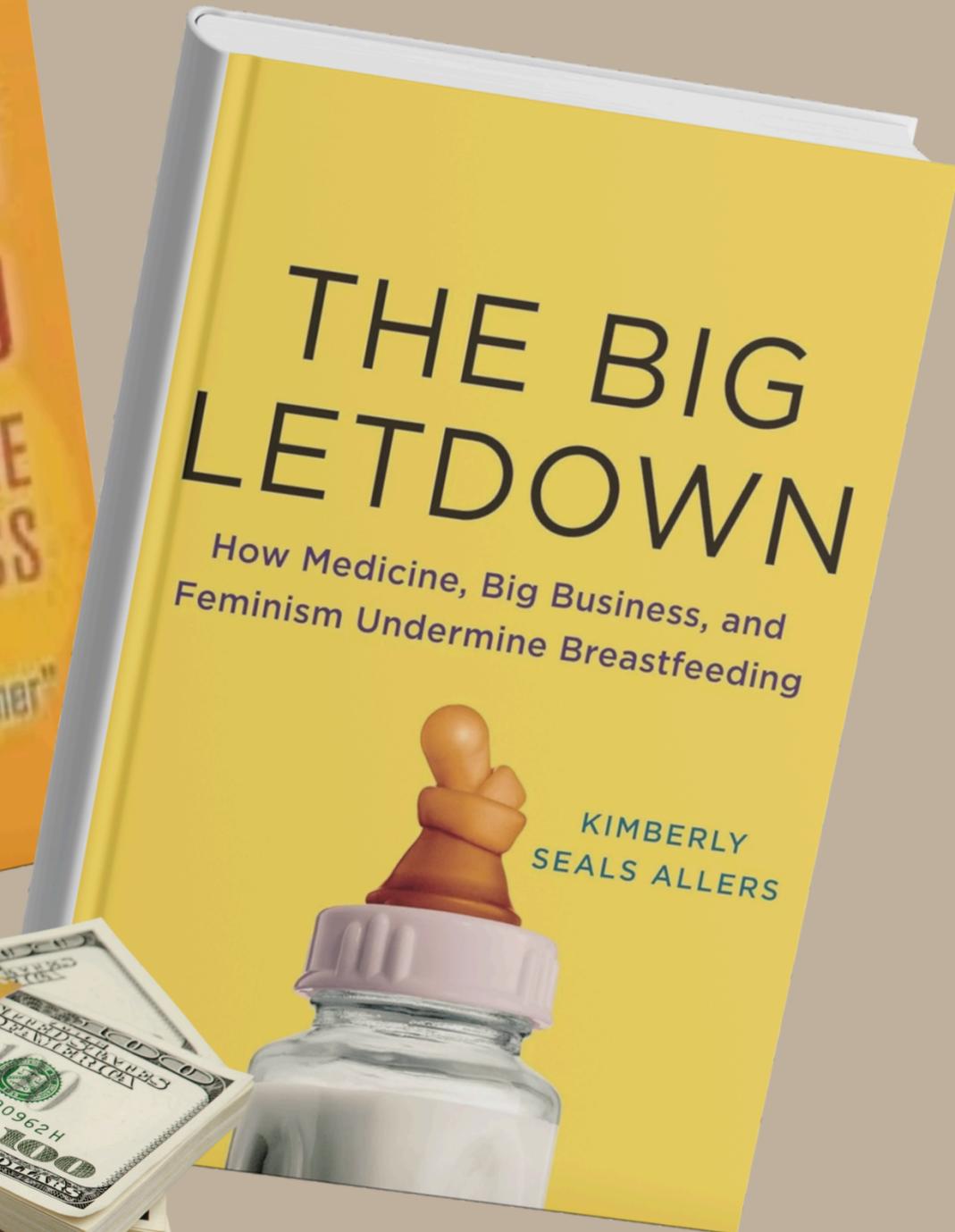
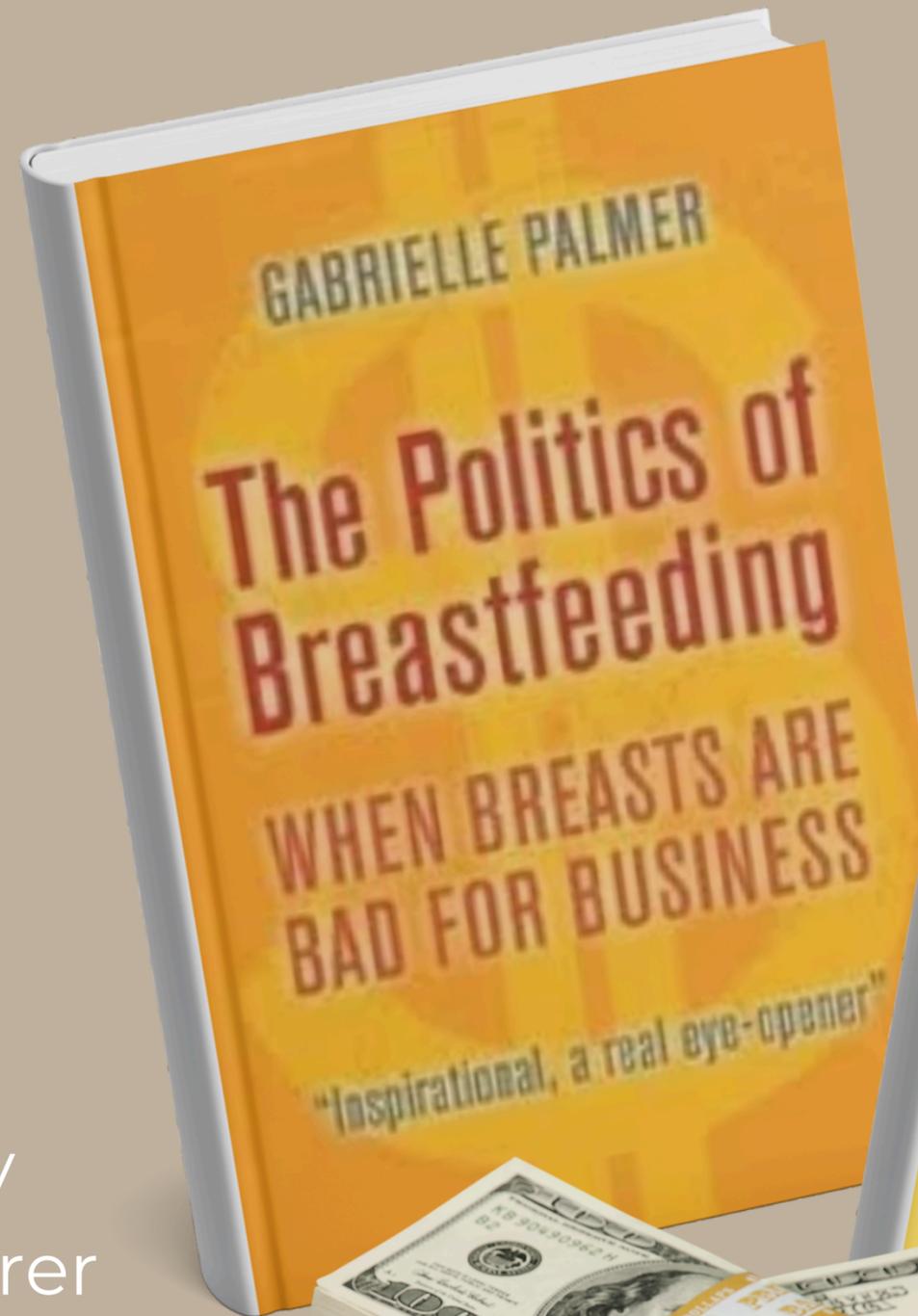
(Human Alpha-lactalbumin Made Lethal to Tumor cells)

- Selectively kills tumor cells while sparing healthy cells
- Found to affect many cancers: brain, bladder, colon, skin
- Immune modulation → supports innate defense & reduces inflammation
- Breastmilk is alive, dynamic and goes beyond nutrition to actively protect and regulate growth, immunity and cell death pathways



Formula

- Abbott Laboratories
 - Similac
 - 1.14 billion in profit
- Mead Johnson
 - Enfamil, Nutramigen
- Nestle/Perrigo Company
 - Bobbi co-manufacturer

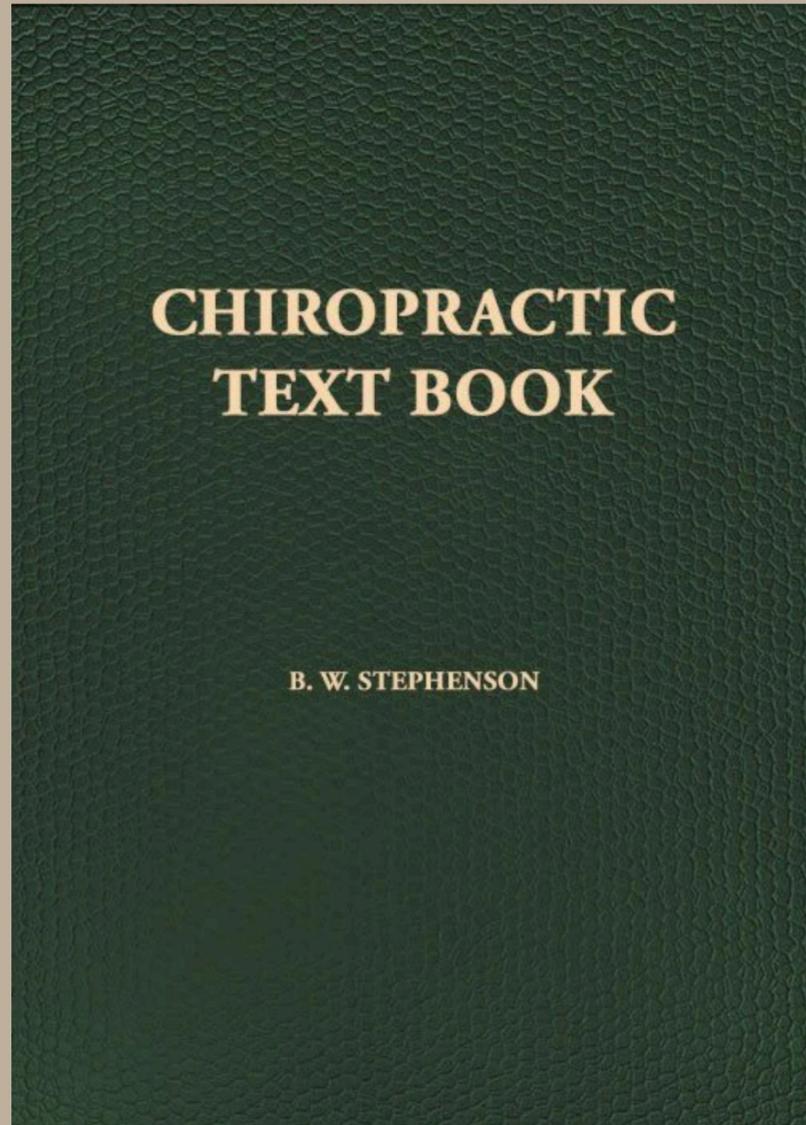


To Sum it Up

- Life expresses intelligence - adaptation #23
- Labor affects latch
- Interventions can be detrimental to breastfeeding
- Neurology can be altered - interference of forces #29
- Tone is a reflection of the brain - dis-ease #30
- How do we measure that?



Principles



The Function of Innate Intelligence

23

The function of Innate Intelligence is to adapt universal forces and matter for use in the body, so that all parts of the body will have coordinated action for mutual benefit.

Interference with Transmission of Innate Forces

29

There can be interference with the transmission of Innate forces.

The Cause of Dis-Ease

30

Interference with the transmission of Innate forces causes incoordination or dis-ease

Life is the
expression of
tone.

DD Palmer



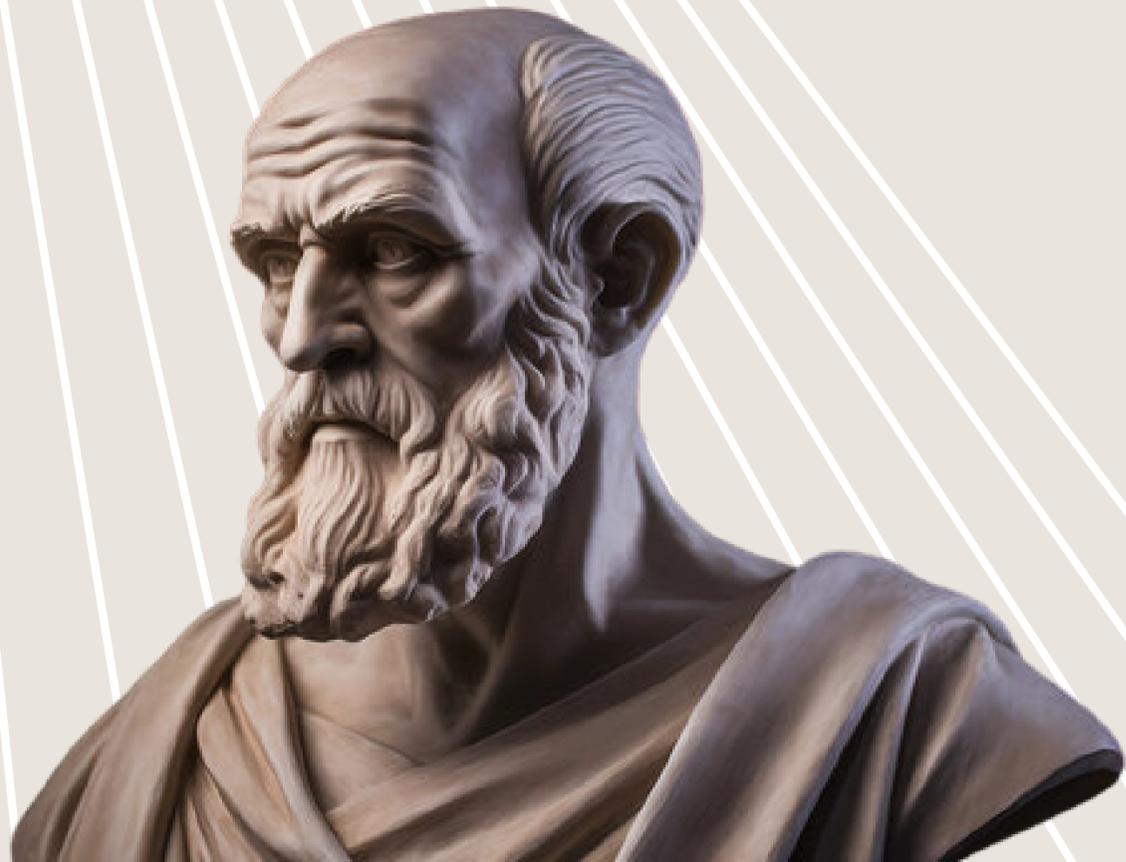
Hippocrates 400BC

When then, from birth, or during one's youth, this dislocation backward occurs, and is not reduced, whether it be connected with violence or disease (for many such dislocations occur in diseases)

In a word, luxations and subluxations take place in different degrees,

In the first place, the structure of the spine known, for this knowledge is requisite in many diseases

The apparatus for the reduction in this case must be managed in the following manner: a strong and broad board, having an oblong furrow in it, is to be fastened in the ground... at any suitable height, something like an oaken bench, of a quadrangular shape, is to be at a distance from the wall, which will admit of persons to pass round if necessary, and the bench is to be covered with robes, or anything else which is soft, but does not yield much. The physicians, or some person who is strong... should apply the palm of one hand to the hump, and then, having laid the other hand upon the former, he should make pressure, attending whether this force should be applied directly downward, or toward the head, or toward the hips. This method of applying force is particularly safe.

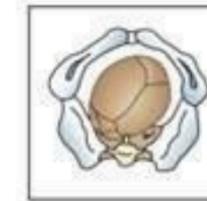
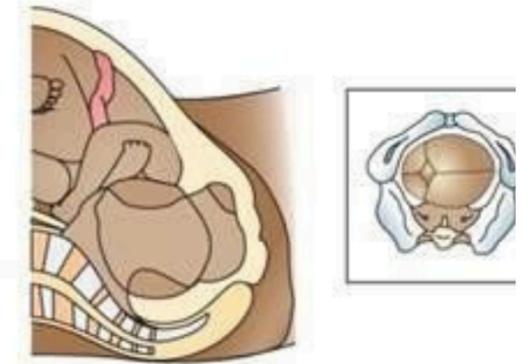
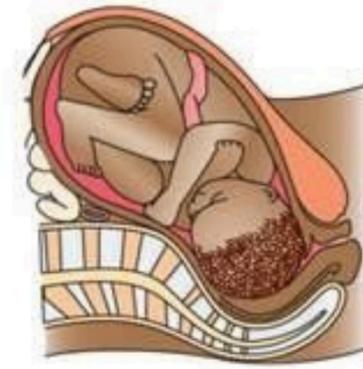


Activation of Tone

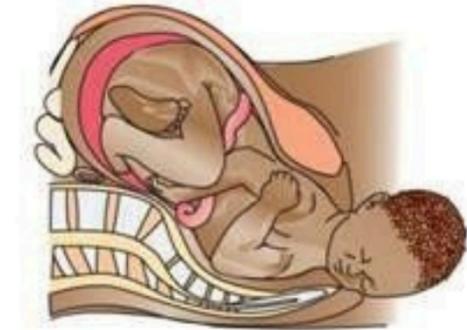
The Cardinal Movements of Labor

- Moro is activated by contractions
- ATNR - assists in rotation
- Rooting helps with descent
- Palmer grasp helps navigate canal
- Spinal galant helps change position

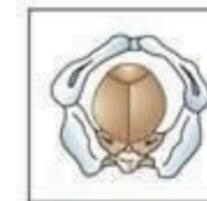
Engagement,
Descent,
Flexion



Internal Rotation



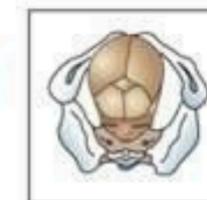
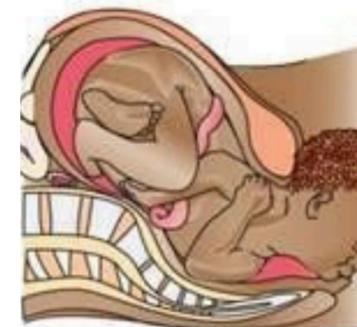
External Rotation (Restitution)



Extension Beginning (rotation complete)



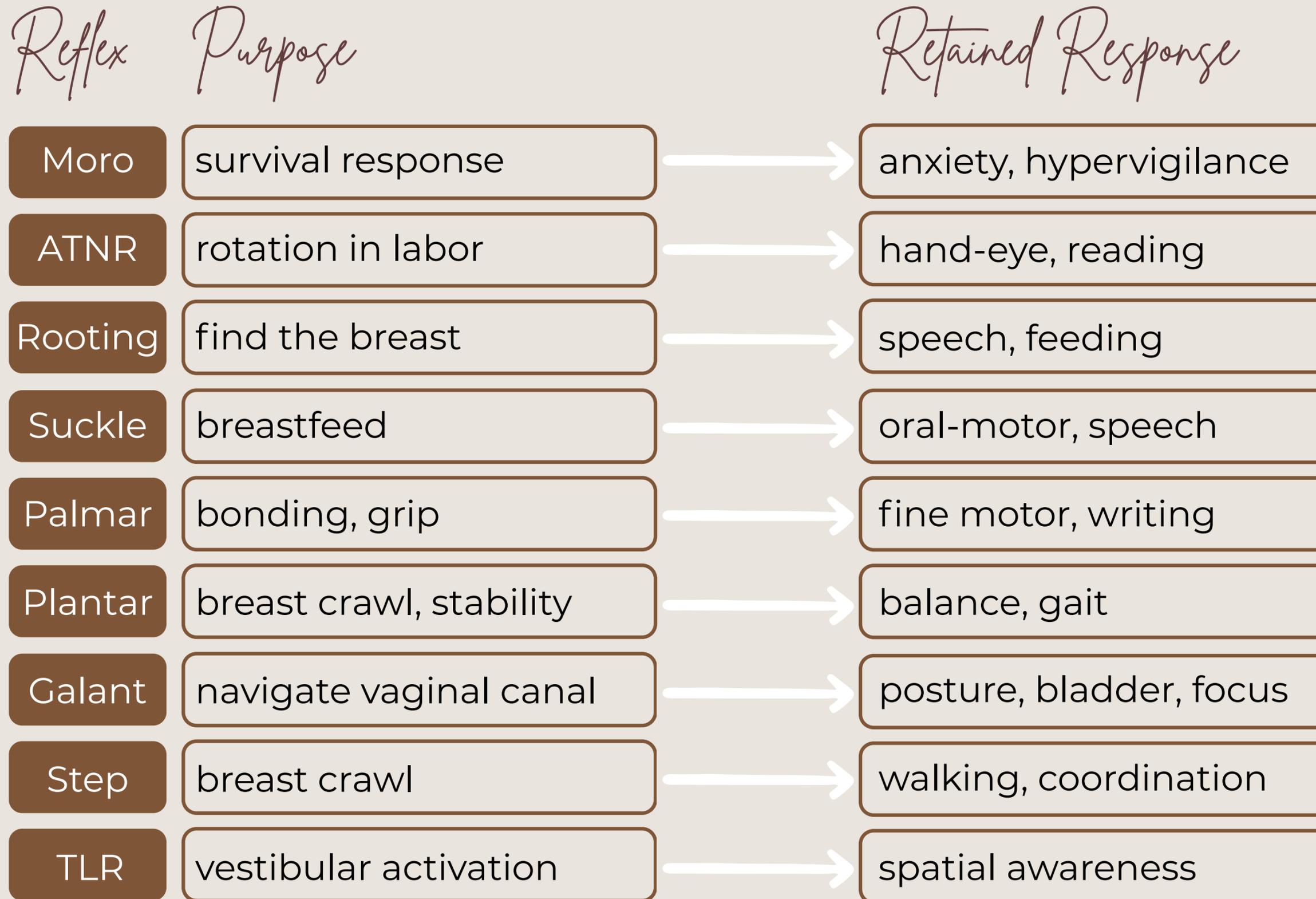
External Rotation (Shoulder rotation)



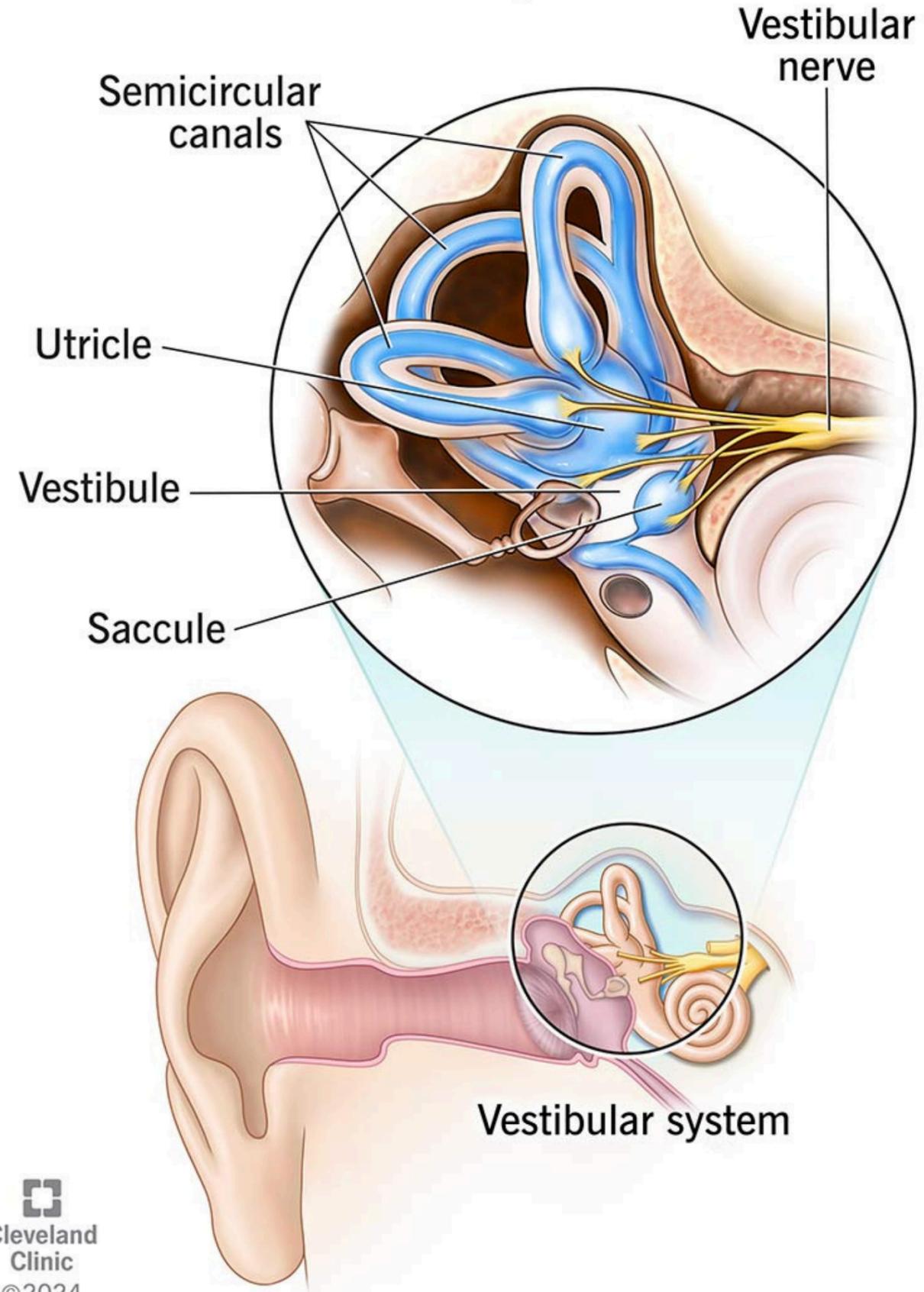
Extension Complete



Expulsion



Vestibular system



Brain Development
Vestibular System

develops in the womb beginning week 3

Vestibular

Input via movement → vestibular nerve (CN VIII) → vestibular nuclei in the brainstem (Deiters' nucleus for postural, axial & appendicular tone) →

Output to:

- cerebellum - coordination
- VOR - eye muscles, gaze stability
- thalamus & cortex - conscious balance
- spinal cord - posture and tone



Vestibular Function & Breech Presentation

Vestibular dysfunction in breech births (1977)

- Breech/transverse-born children showed ↑ vestibular test abnormalities
- Suggests intact vestibular system may aid fetal head-down orientation

Inner ear malformations study (2020)

- No ↑ breech risk in children with congenital vestibular/inner ear malformations
- Argues against strong direct causal link

Motor development study (2000)

- Breech-born infants showed altered early motor patterns
- Possible indirect role of sensory/motor systems, including vestibular

Takeaway:

Evidence is mixed — vestibular function may influence fetal orientation, but not a consistent predictor of breech presentation.





Cesarean Birth

Gross motor delays

Weaker reflexes

Low tone

Prefrontal Cortex

inhibits flexors

inhibits sympathetics

behavior



midline movement → cerebellum → PTO → PFC

CREDIT: MICHAEL HALL, DC

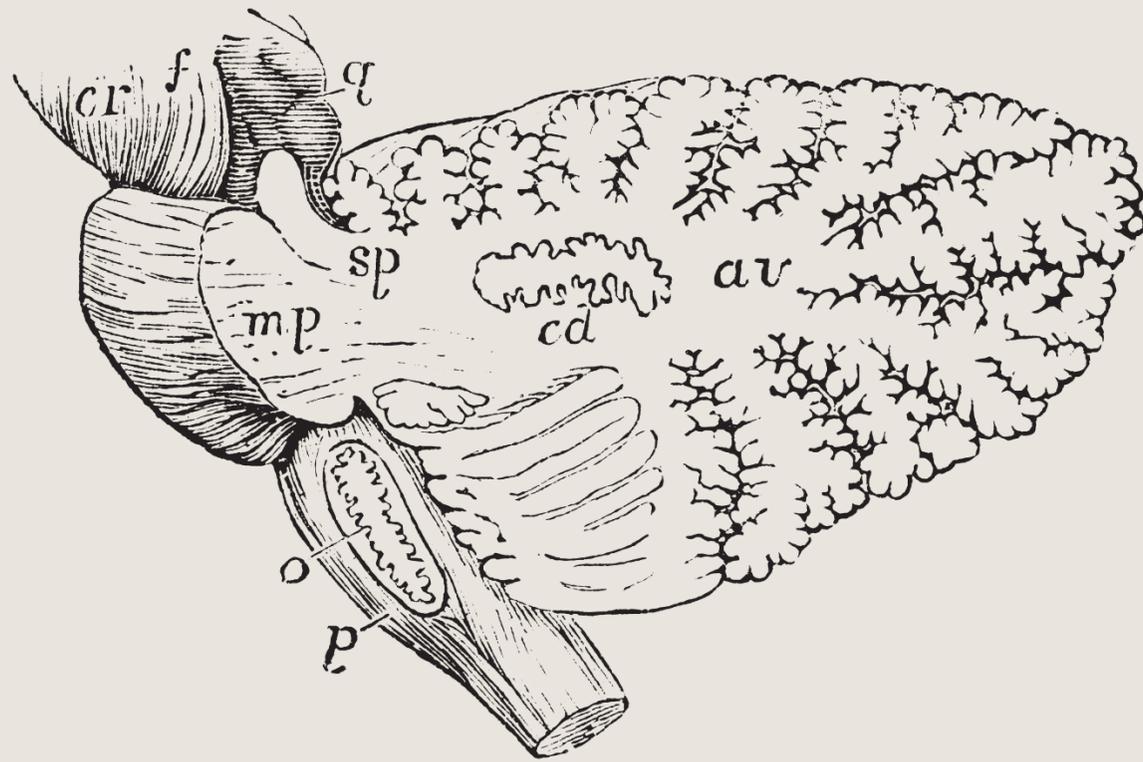
Cerebellum

Not just for balance

Guell et al, landmark study 2018 found cerebellum has three major representations:

- language
- working memory
- social processing & emotion

Smooth movements AND smooth thoughts



The Current State of Children Today

1

1 in 3 children have a chronic health condition

2

Almost 9% of children have a learning disability

3

1 in 31 have Autism diagnosis (1 in 12.5 boys in California)

4

11% of children age 3-17 have ADHD diagnosis

5

In 2020 6.16 million (over 8%) children have been prescribed psychiatric drugs

Play is the
work of a
child

Maria Montessori







So how do we
assess the nervous
system of a baby?

Infant Neurological Exam

0-3 Months

- Consult
- Visual Exam/Posture (contracted, head tilt, alert, fussy)
- ROM/Orthos
 - Cervical ROM
 - Tone for upper extremity
 - Arm traction
 - Arm recoil
 - Scarf test
 - Lumbar ROM
 - Lower extremity
 - Resistance on hip rotation (Barlow & Ortolani)
 - Leg recoil
 - Heel to ear
- Primitive Reflexes
 - Babinski
 - Moro
 - Spinal galant
 - ATNR
 - Palmer Grasp/Plantar Grasp
- Eye Exam tracking
- Suck/latch/rooting/Hazelbaker ATLFF
- *Plagio/Brachy measurements (optional)
- Palpation/Subluxation/Cranial

Subluxation Assessment

0-3 Months

5 Signs of Subluxation:

- kinesopathology (motion)
 - spine
 - cranium/CSF
 - palate/oral
- neuropathology (reflexes)
 - disafferentation (sensory altered input)
 - altered motor output
- myopathology (tone)
- histopathology (tissue changes)
- pathophysiology

Cranial Assessment

0-3 Months

Visual Analysis

- Mimos measurement (if necessary)

Overall motion

- deeper older brain → newer brain

Oral assessment

- maxilla and palatine
- latches back to second knuckle
- full ROM of tongue
- palatine moves up and down



Pacifiers & Oral Development: Evidence

- Arpalahti et al. (2024, RCT – Finland, n>400, follow-up to age 7)
 - Regular pacifier use ≥ 12 months \rightarrow \uparrow posterior crossbite
 - “Study pacifier” design showed fewer adverse effects
 - First long-term RCT on pacifiers & malocclusion
- Systematic Review (2018, Progress in Orthodontics)
 - Consistent link: pacifier use \rightarrow anterior open bite + posterior crossbite
 - Longer use = greater risk
 - Orthodontic pacifiers may reduce, not eliminate, problems

Clinical takeaway: Early, prolonged pacifier use disrupts orofacial development; limiting duration matters.







0-3 Month Example

Baby Gabriel

- Baby came in with latch issues, concerns about oral ties
- Baby not sleeping more than 1 hour, can't be laid down flat, and needs contact sleep
- Very gassy and uncomfortable
- Not gaining weight
- Lactation consultant recommended formula
- Birth was “natural”

0-3 Month Consult

Ask more questions

- Birth was vaginal, not natural
- Epidural, PIT vacuum
- First latch nurses shoved him on the breast
- They said he lost too much weight

0-3 Month Findings

Baby Gabriel

- Normal tone, normal reflexes
- Right cervical rotation restriction
- C1, left coronal suture, right zygoma, posterior palatine, right sacrum
- post adjustment baby latched and gained 3 ounces

Sphenoid

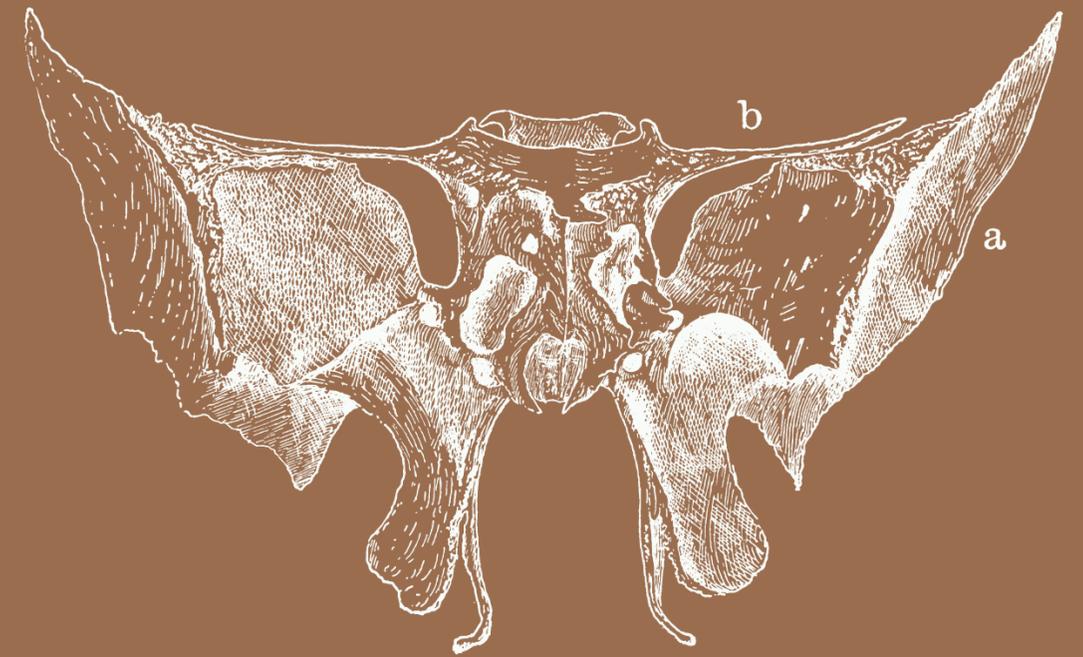
Articulates with 12 other cranial/facial bones

9 cranial nerves pass through it

The other 3 CNs pass through jugular foramen (temporal and occiput) which is affected by SBJ

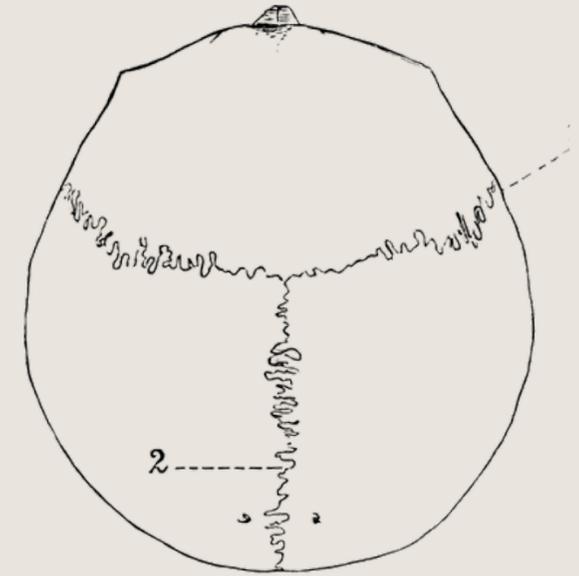
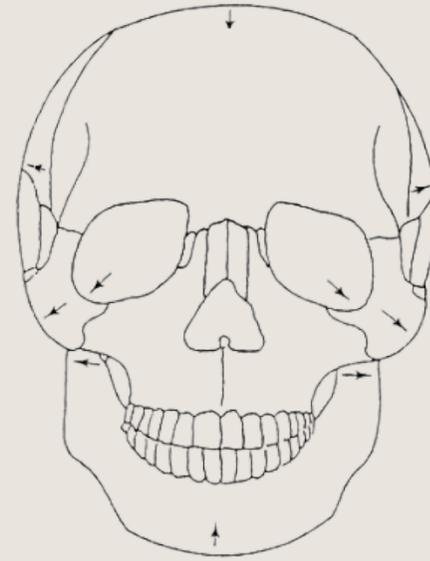
“keystone” of the cranium

SBJ has similar ranges of motion as other vertebrae

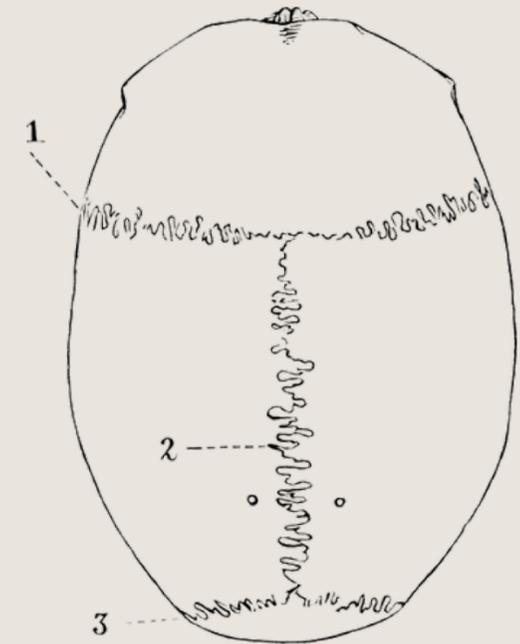
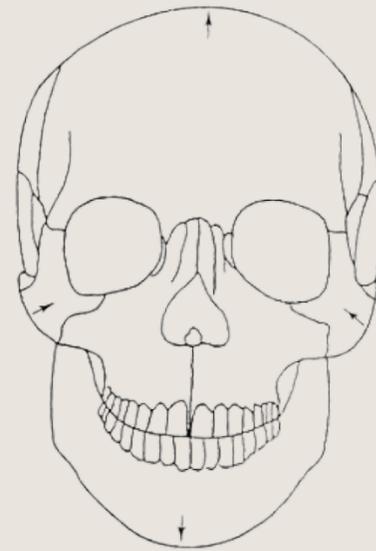


Cranial Movement Patterns

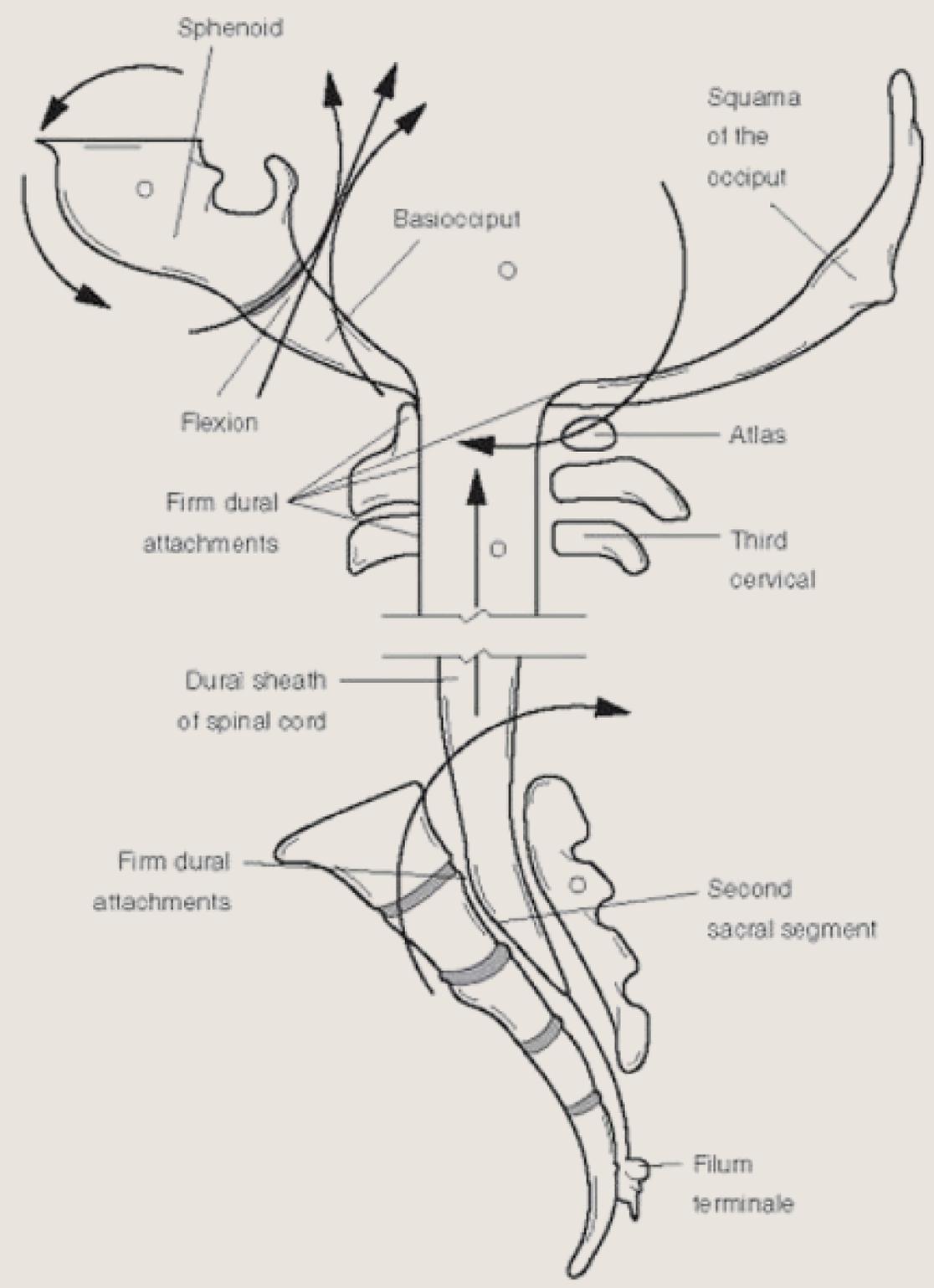
Flexion



Extension



SBJ
Flexion

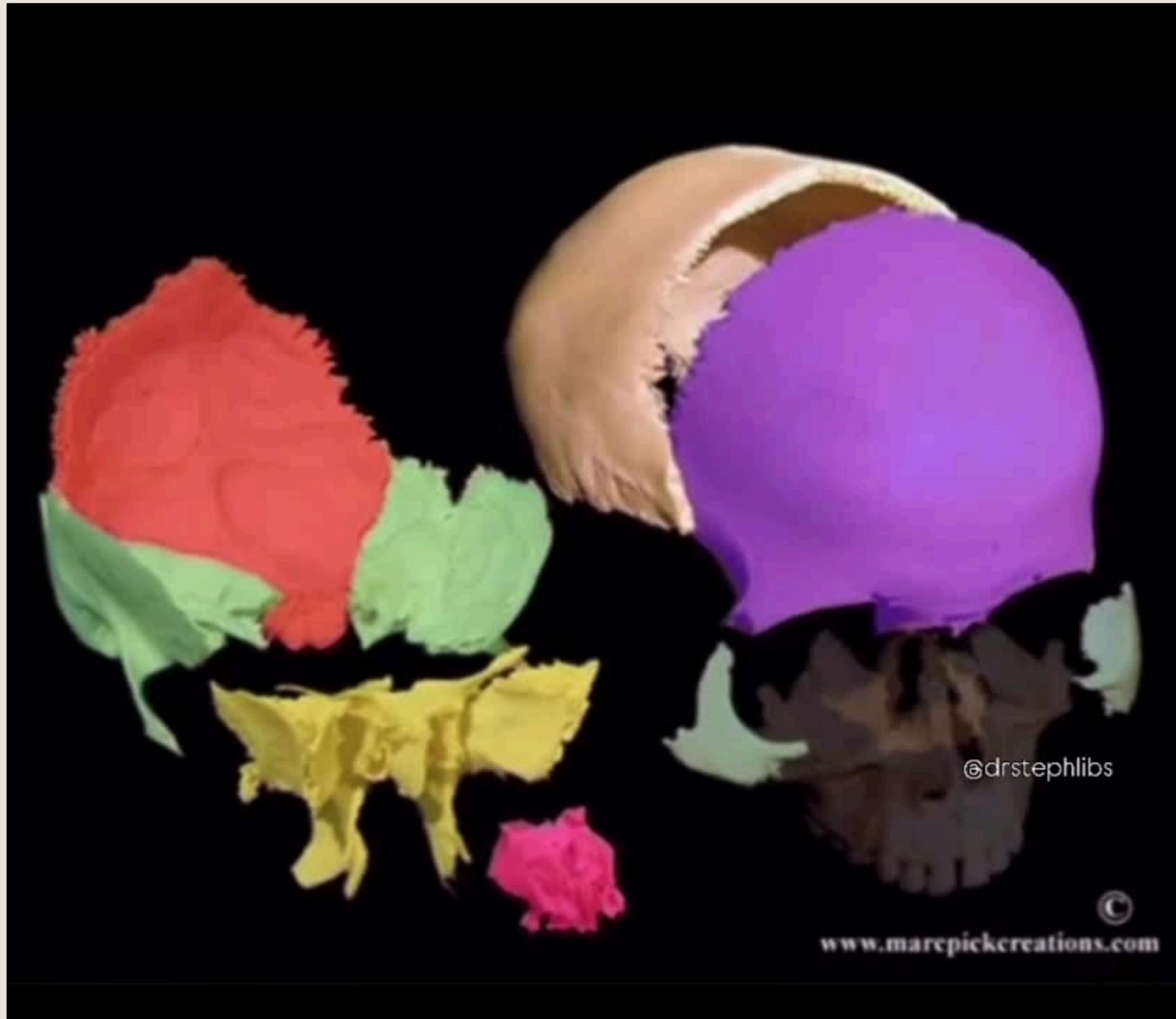


Flexion Pattern



Extension Pattern







Normal



Brachycephaly



Plagiocephaly

Positional Plagiocephaly: Prevalence & Laterality

Prevalence:

- Affects ~20–30% of infants in the first year (peaks at 4 months)
- Moderate-to-severe cases: ~10–13%

Laterality:

- Right occipital flattening most common (~60–70% of cases)
- Left-sided ~30–40%
- Linked to sleep position preference, torticollis, caregiver habits, brain imbalance

Clinical Note:

- 2:1 ratio (Right:Left)
- Early detection + positioning/chiro are key to prevention & correction

Infant Neurological Exam

4-6 Months

- Consult
- Visual Exam/Posture (contracted, head tilt, alert, fussy)
- ROM/Orthos
 - Cervical ROM
 - Tone for upper extremity
 - Arm traction
 - Arm recoil
 - Scarf test
 - Lumbar ROM
 - Lower extremity
 - Resistance on hip rotation (Barlow & Ortolani)
 - Leg recoil
 - Heel to ear
- **Pull to Sit test by 4-6 months**
- **Parachute test appears 5-9 months**
- Primitive Reflexes
 - Babinski
 - Moro
 - Spinal galant
 - ATNR
 - Plantar Grasp
- Eye Exam tracking/VOR
- Oral function/TOTs/Hazelbaker ATLFF
- *Plagio/Brachy measurements (optional)
- Palpation/Subluxation/Cranial



4-6 Month Example

Baby Meadow

- Couldn't look to the right
- Emergency C-section, APGAR 0, 5
- HIE, seizures, cooling treatments, intubated
- Diagnosed with torticollis, OT, PT
- MRI said could be CP, or ADHD
- seeing multiple specialists

4-6 Month Findings

Baby Meadow

- Babinski slightly asymmetrical
- Tone slightly low
- Right head rotation
- ASR, left sacrum, TL junction
- Right SBJ flexion
- Palate slight low on the left
- 400 seizures a day to 100



Infant Neurological Exam

6-12 Months

- Consult
- Visual Exam/Posture (contracted, posture, alert, oral appearance)
- ROM/Orthos
 - Cervical ROM
 - Tone for upper extremity
 - Arm traction
 - **Can support weight**
 - **Excessive /Restricted ROM**
 - Lumbar ROM
 - Lower extremity
 - Resistance on hip rotation (Barlow & Ortolani)
 - Heel to ear
- Pull to Sit test/**Pull to stand**
- Parachute test appears 5-9 months
- Primitive Reflexes
 - Babinski
 - Moro
 - Spinal galant
 - ATNR
 - STNR
 - Plantar Grasp
- Eye Exam tracking/VOR
- Oral function/TOTs/Hazelbaker ATLFF
- *Plagio/Brachy measurements (optional)
- Palpation/Subluxation/Cranial



6-12 Month Example

Baby Anika

- Funky crawl
- Birth was long, meant to be at the birth center
- Transferred, 50 hours
- Pelvis tilted, possible malposition
- No issues at birth, breastfed better on one side
- Crawling at 7 months, asymmetrical
- OT, considering PT
- Not vaxxed

6-12 Month Findings

Baby Anika

- Babinski normal on the right, no response on the left
- Right AI sacrum, ST ligament
- IN sacrum
- Right SBJ Flexion
- Thoracic tension T6



Child Neurological Exam

1-3 Years

- Consult
- Visual Exam/Posture (coordination, posture, **eye contact, play**, oral appearance)
- ROM/Orthos
 - Cervical ROM
 - Tone for upper extremity
 - Can support weight
 - Excessive /Restricted ROM
 - Lumbar ROM
 - Lower extremity
- Pull to sit test/Pull to stand
- Primitive Reflexes
 - Babinski
 - Moro
 - Spinal galant
 - ATNR
 - STNR
- Eye Exam tracking/VOR
- Oral function/TOTs/Hazelbaker ATLFF
- *Plagio/Brachy measurements (optional)
- Palpation/Subluxation/Cranial



Lennox

Age 2, constipation, school removed autism diagnosis

Maverick

Started as a baby, stopped care, lost his speech

Van

Speech therapy for 3 months, frustrated emotional regulation

Finn

Said "I love you" mommy after the second visit

Paxton

Pocketing food at the roof of his mouth

Attachment
Connection
Play



Sleep, Containers & Trainers







Back to Sleep... maybe not.

Belly sleep promotes:

- Cervical ROM
- Cervical curve development
- Better oxygenation
- Higher lung volume
- Nose breathing
- Normal physiological sleep posture
- We move 100+ times a night

Causes



Physical



Chemical



Emotional

A subluxation is a complex of functional and/or structural and/or pathological articular changes that compromise neural integrity and may influence organ system function and general health.





Toxic Overload

- Kids get hit with 4,000–5,000 mcg of aluminum from vaccines by age 6
- Shots like Hep B, DTaP, Hib, PCV, and Hep A are loaded with it
- Some single doses pack up to 625 mcg of aluminum—yep, in one go
- Babies rack up 1,000+ mcg in just their first 6 months
- Meanwhile, the FDA says IV aluminum should be no more than 15–20 mcg/day for a newborn
- So yeah... vaccine doses can be 10–30x higher than what's considered "safe"





California Bills

2012

- **AB 2109** - required a personal belief exemption signed by a licensed health care physician

2015

- **SB 277** - prompted by 2014 Disneyland measles outbreak removed PBE and religious exemptions, only allowing medical exemptions

2019

- **SB 276** - mandated all medical exemptions be submitted to an oversight committee, limiting doctors to 5 per year, and would face disciplinary action if they issued a high number of exemptions

Vaccine Schedule 1980s vs Today

1983

DPT (2, 4 and 6 months)
OPV (2,4, 18 months & 4 years old)
MMR (15 months)
Td (15 years)

2025

TDaP (pregnancy)
Influenza (pregnancy)
COVID (pregnancy)
Hep B (birth, 2, 12 months)
RSV (pregnancy, 8, 18 months)
Rotavirus (2, 4, 6 months)
DTaP (2, 4, 6, 15 months)
Hib (2, 4, 6, 12 months)
PCV (2, 4, 6, 12 months)
IPV (2, 4, 6 months)
MMR (12, 18 months)
Varicella (12 months)
Hep A (12 months)
Influenza (yearly)
COVID

CDC Vaccine Schedule 2025

Birth

Vitamin K
Hep B

2 Months

Hep B
Rotavirus
DTaP
HIB
PCV
IPV

4 Months

Rotavirus
DTaP
HIB
PCV
IPV

6 Months

Hep B
Rotavirus
DTaP
HIB
PCV
IPV
Influenza
COVID

8 Months

Influenza
COVID
RSV

12 Months

HIB
PCV
MMR
Varicella
Hep A
IPV

18 Months

DTaP
Influenza
Hep A

2 Years

MMR
Varicella

30 Months

Influenza
COVID

4 Years +

DTaP
IPV
Varicella
Influenza (yearly)
HPV x2 (age 10)
Meningococcal x2



CDC Vaccine Schedule 2025



Aluminum

- typical dose per vaccine is 0.125 to 0.85 mg
- Injection is slowly released from the injection site over days or weeks
- Ingested aluminum is very poorly absorbed through the gut
- gradually enters the blood stream and is filtered out by the kidneys
- some reaches the bones, muscles, soft tissue and brain
- +polysorbate 80 increased BBB permeability

	Ingested Aluminum	Injected Aluminum
Absorption	<0.3% into bloodstream	100% eventually absorbed
Clearance	Rapid, mostly excreted in stool	Slower, cleared via kidneys

Vaccine Injury Table

Vaccine Injury Table

Applies Only to Petitions for Compensation Filed under the National Vaccine Injury Act of 1986, title III of Public Law 99-660, 100 Stat. 3779 (42 U.S.C. 300aa-1 note) and section 2114(c) of the Public Health Service Act, as amended (PHS Act) (42 U.S.C. 300aa-14(c)), the following is a table of vaccines, the injuries, disabilities, illnesses, conditions, and deaths resulting from administration of such vaccines, and the time period in which the first symptom or manifestation of onset or of the significant aggravation of such injuries, disabilities, illnesses, conditions, and deaths is to occur after vaccine administration for purposes of receiving compensation under the Program. Paragraph (b) of this section sets forth additional provisions that are not separately listed in this Table but that constitute part of it. Paragraph (c) of this section sets forth the qualifications and aids to interpretation for the terms used in the Table. Conditions and injuries that do not meet the terms of the qualifications and aids to interpretation are not within the Table. Paragraph (d) of this section sets forth a glossary of terms used in paragraph (c).

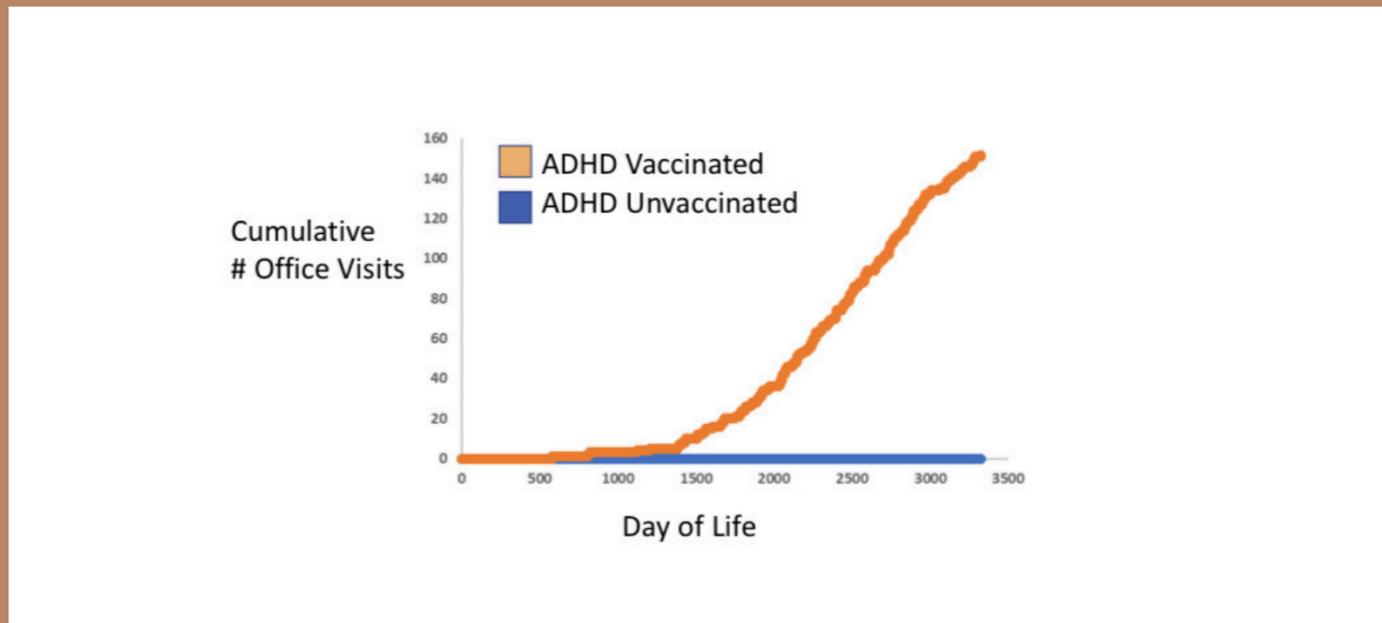
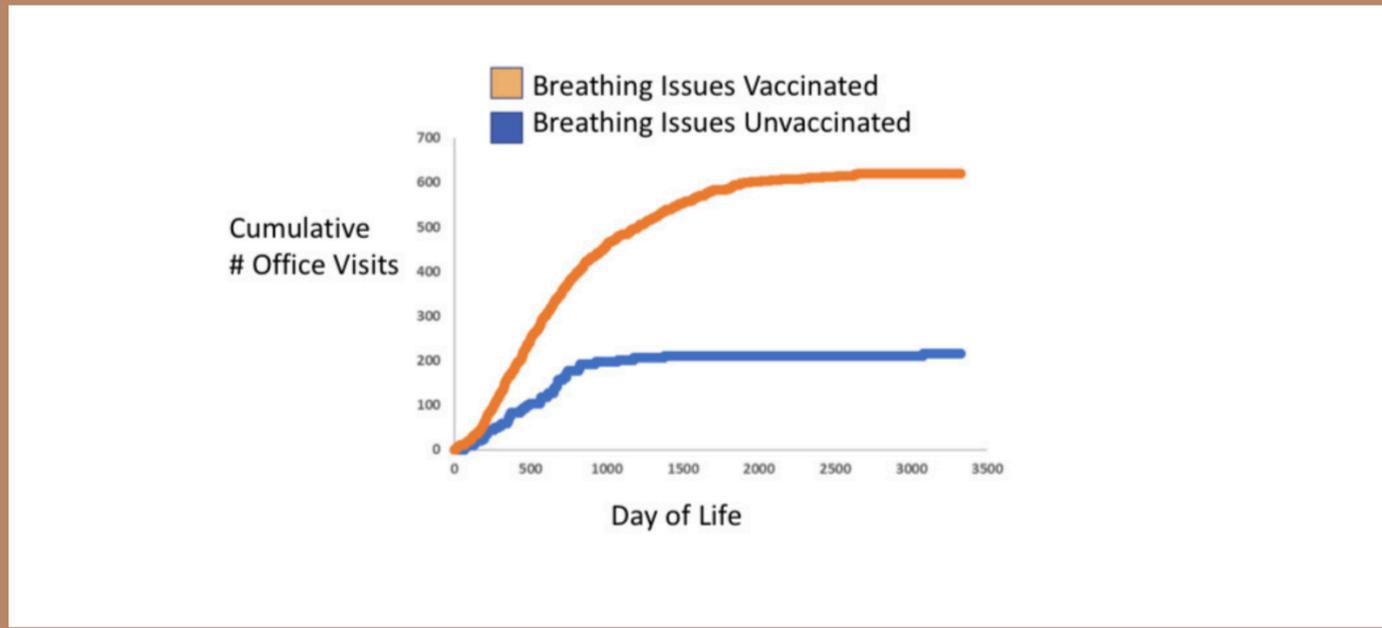
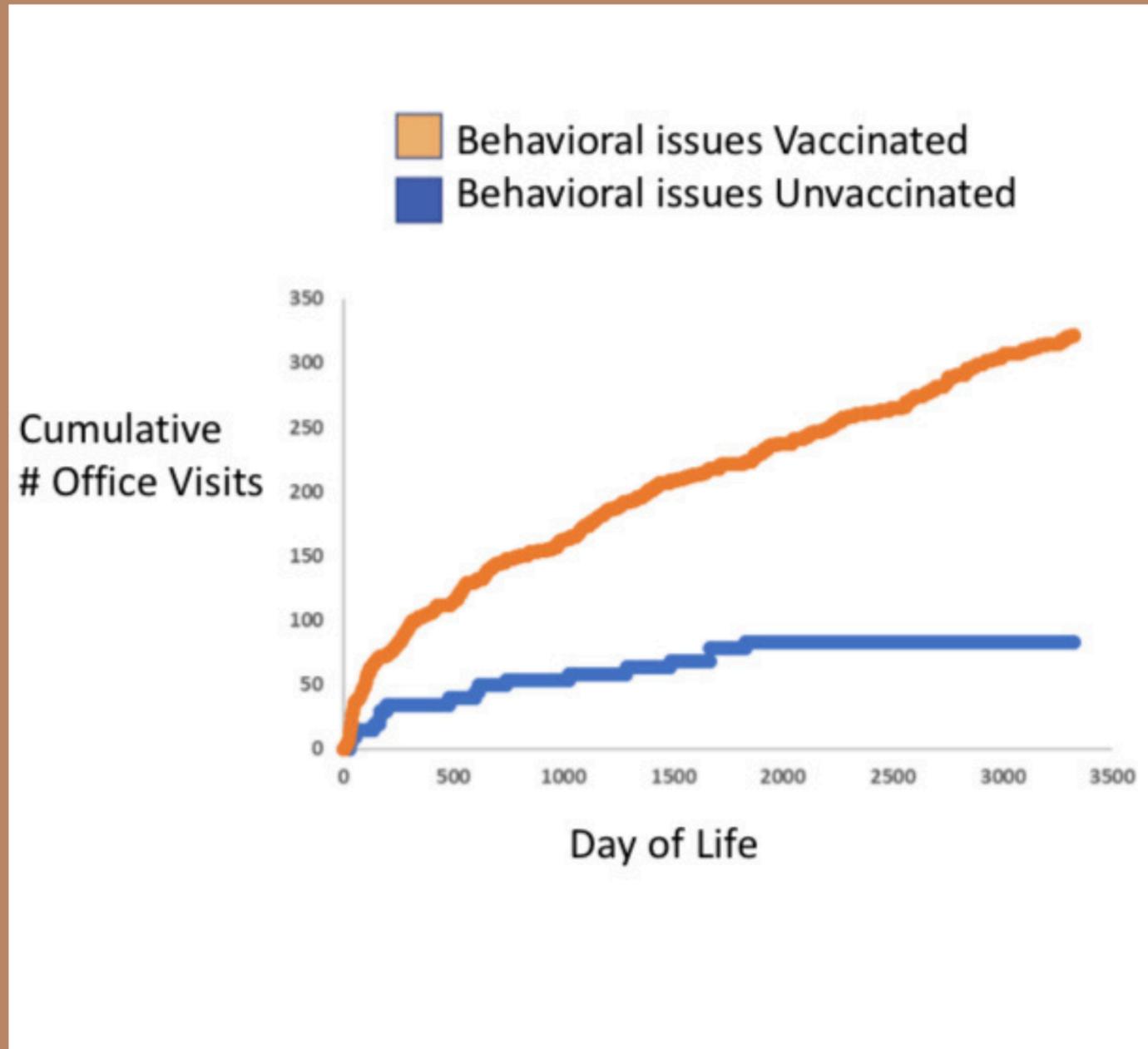
Vaccine	Illness, disability, injury or condition covered	Time period for first symptom or manifestation of onset or of significant aggravation after vaccine administration
I. Vaccines containing tetanus toxoid (e.g., DTaP, DTP, DT, Td, or TT)	A. Anaphylaxis	≤4 hours.
	B. Brachial Neuritis	2-28 days (not less than 2 days and not more than 28 days).
	C. Shoulder Injury Related to Vaccine Administration	≤48 hours.
	D. Vasovagal syncope	≤1 hour.
II. Vaccines containing whole cell pertussis bacteria, extracted or partial cell pertussis bacteria, or specific pertussis antigen(s) (e.g., DTP, DTaP, P, DTP-Hib)	A. Anaphylaxis	≤4 hours.
	B. Encephalopathy or encephalitis	≤72 hours.
	C. Shoulder Injury Related to Vaccine Administration	≤48 hours.
	D. Vasovagal syncope	≤1 hour.

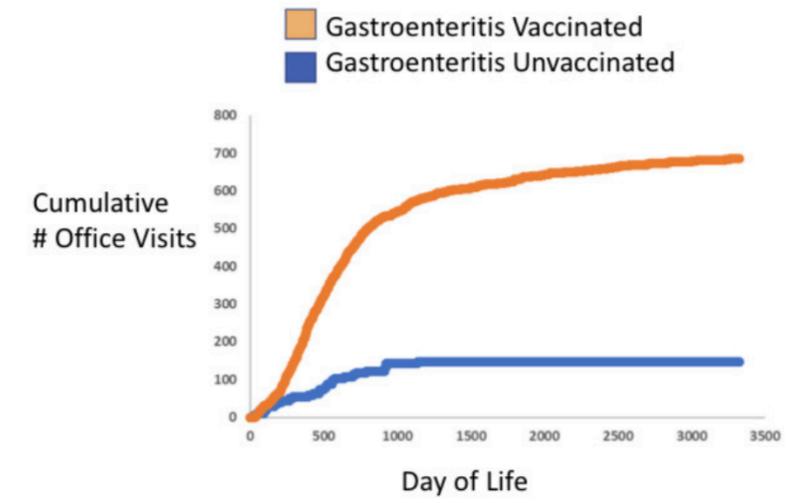
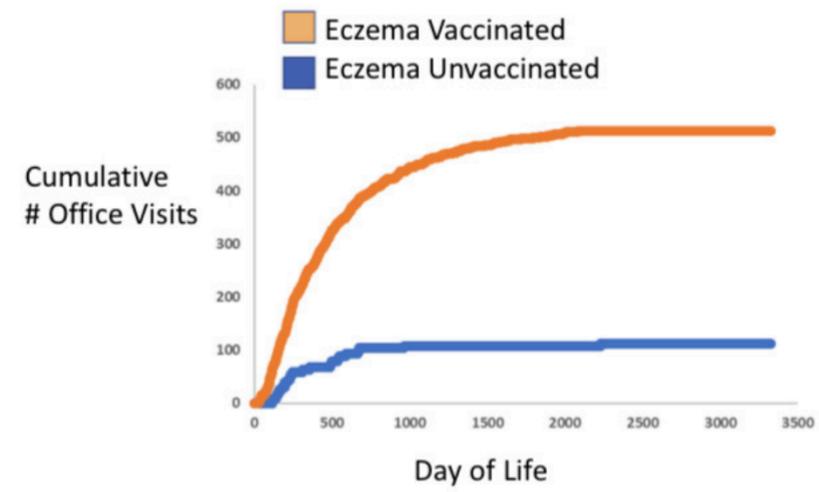
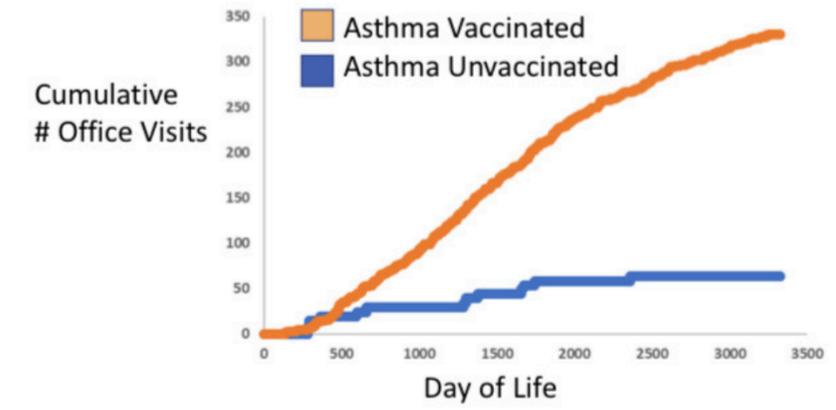
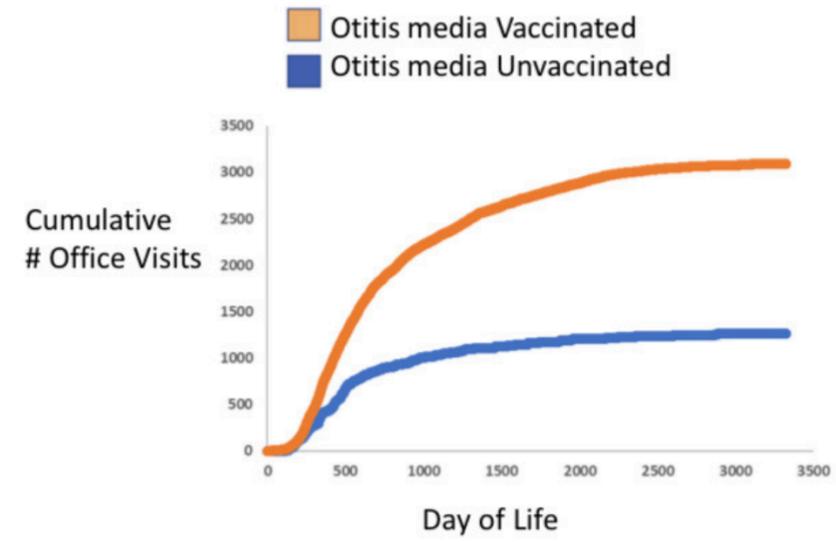
Vaccine	Illness, disability, injury or condition covered	Time period for first symptom or manifestation of onset or of significant aggravation after vaccine administration
III. Vaccines containing measles, mumps, and rubella virus or any of its components (e.g., MMR, MM, MMRV)	A. Anaphylaxis	≤4 hours.
	B. Encephalopathy or encephalitis	5-15 days (not less than 5 days and not more than 15 days).
	C. Shoulder Injury Related to Vaccine Administration	≤48 hours.
	D. Vasovagal syncope	≤1 hour.
IV. Vaccines containing rubella virus (e.g., MMR, MMRV)	A. Chronic arthritis	7-42 days (not less than 7 days and not more than 42 days).
	A. Thrombocytopenic purpura	7-30 days (not less than 7 days and not more than 30 days).
V. Vaccines containing measles virus (e.g., MMR, MM, MMRV)	B. Vaccine-Strain Measles Viral Disease in an immunodeficient recipient	Not applicable.
	- Vaccine-strain virus identified	Not applicable.
	- If strain determination is not done or if laboratory testing is inconclusive	≤12 months.
VI. Vaccines containing polio live virus (OPV)	A. Paralytic Polio	
	- in a non-immunodeficient recipient	≤30 days.
	- in an immunodeficient recipient	≤6 months.
	- in a vaccine associated community case	Not applicable.
	B. Vaccine-Strain Polio Viral Infection	

Vaccine	Illness, disability, injury or condition covered	Time period for first symptom or manifestation of onset or of significant aggravation after vaccine administration
	- in a non-immunodeficient recipient	≤30 days.
	- in an immunodeficient recipient	≤6 months.
	- in a vaccine associated community case	Not applicable.
VII. Vaccines containing polio inactivated virus (e.g., IPV)	A. Anaphylaxis	≤4 hours.
	B. Shoulder Injury Related to Vaccine Administration	≤48 hours.
	C. Vasovagal syncope	≤1 hour.
VIII. Hepatitis B vaccines	A. Anaphylaxis	≤4 hours.
	B. Shoulder Injury Related to Vaccine Administration	≤48 hours.
	C. Vasovagal syncope	≤1 hour.
IX. Haemophilus influenzae type b (Hib) vaccines	A. Shoulder Injury Related to Vaccine Administration	≤48 hours.
	B. Vasovagal syncope	≤1 hour.
	C. Anaphylaxis	≤4 hours.
X. Varicella vaccines	A. Anaphylaxis	≤4 hours.
	B. Disseminated varicella vaccine-strain viral disease	
	- Vaccine-strain virus identified	Not applicable.
	- If strain determination is not done or if laboratory testing is inconclusive	7-42 days (not less than 7 days and not more than 42 days).
	C. Varicella vaccine-strain viral reactivation	Not applicable.

Vaccine	Illness, disability, injury or condition covered	Time period for first symptom or manifestation of onset or of significant aggravation after vaccine administration
XI. Rotavirus vaccines	D. Shoulder Injury Related to Vaccine Administration	≤48 hours.
	E. Vasovagal syncope	≤48 hours.
XII. Pneumococcal conjugate vaccines	A. Intussusception	≤1 hour.
	A. Shoulder Injury Related to Vaccine Administration	1-21 days (not less than 1 day and not more than 21 days).
XIII. Hepatitis A vaccines	B. Vasovagal syncope	≤48 hours.
	A. Shoulder Injury Related to Vaccine Administration	≤1 hour.
XIV. Seasonal influenza vaccines	B. Vasovagal syncope	≤48 hours.
	A. Anaphylaxis	≤1 hour.
	B. Shoulder Injury Related to Vaccine Administration	≤4 hours.
XV. Meningococcal vaccines	C. Vasovagal syncope	≤48 hours.
	D. Guillain-Barré Syndrome	≤1 hour.
	A. Anaphylaxis	3-42 days (not less than 3 days and not more than 42 days).
XVI. Human papillomavirus (HPV) vaccines	B. Shoulder Injury Related to Vaccine Administration	≤4 hours.
	C. Vasovagal syncope	≤48 hours.
	A. Anaphylaxis	≤1 hour.
XVII. Any new vaccine recommended by the Centers for Disease Control and Prevention for routine administration	B. Shoulder Injury Related to Vaccine Administration	≤4 hours.
	C. Vasovagal syncope	≤48 hours.
	A. Shoulder Injury Related to Vaccine Administration	≤1 hour.

Dr. Paul Thomas, MD





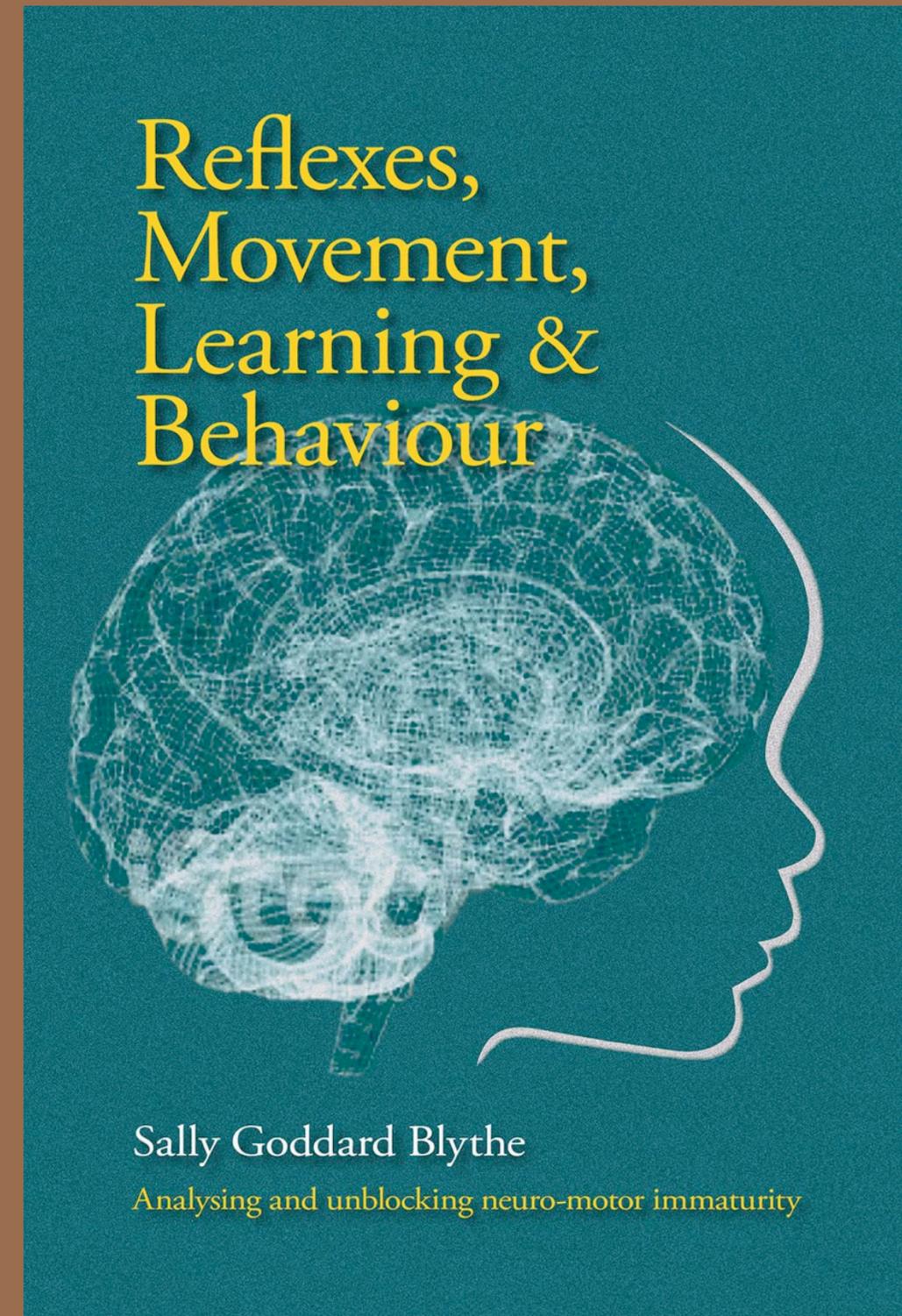
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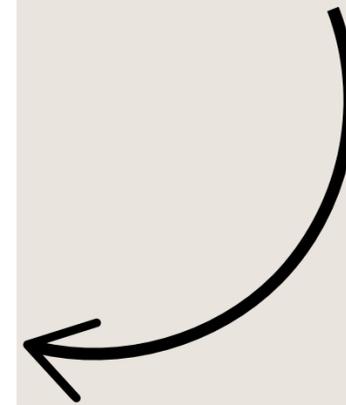
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awestruck by what the body
knows to do, for us and in
us, all the time.*

Jeanne Ohm

