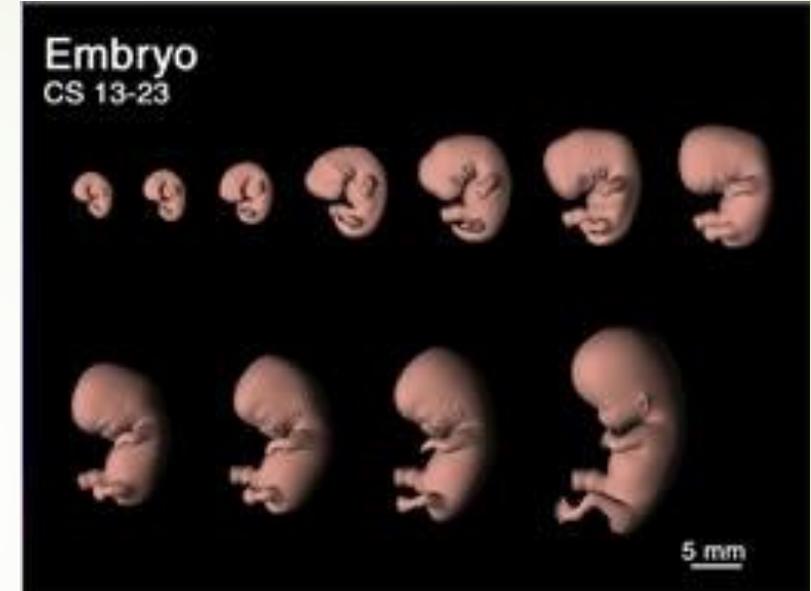


The Unfolding of the Vessel:

Human Growth and Development from Eastern and Western Perspectives

PCOM Symposium 2017



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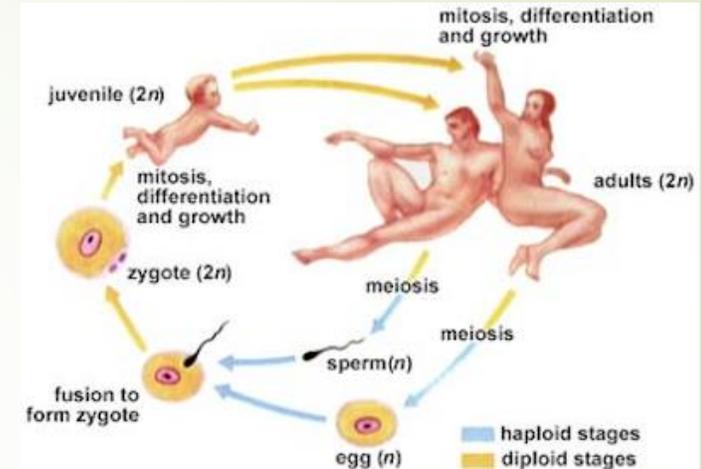
No Conflicts of Interest

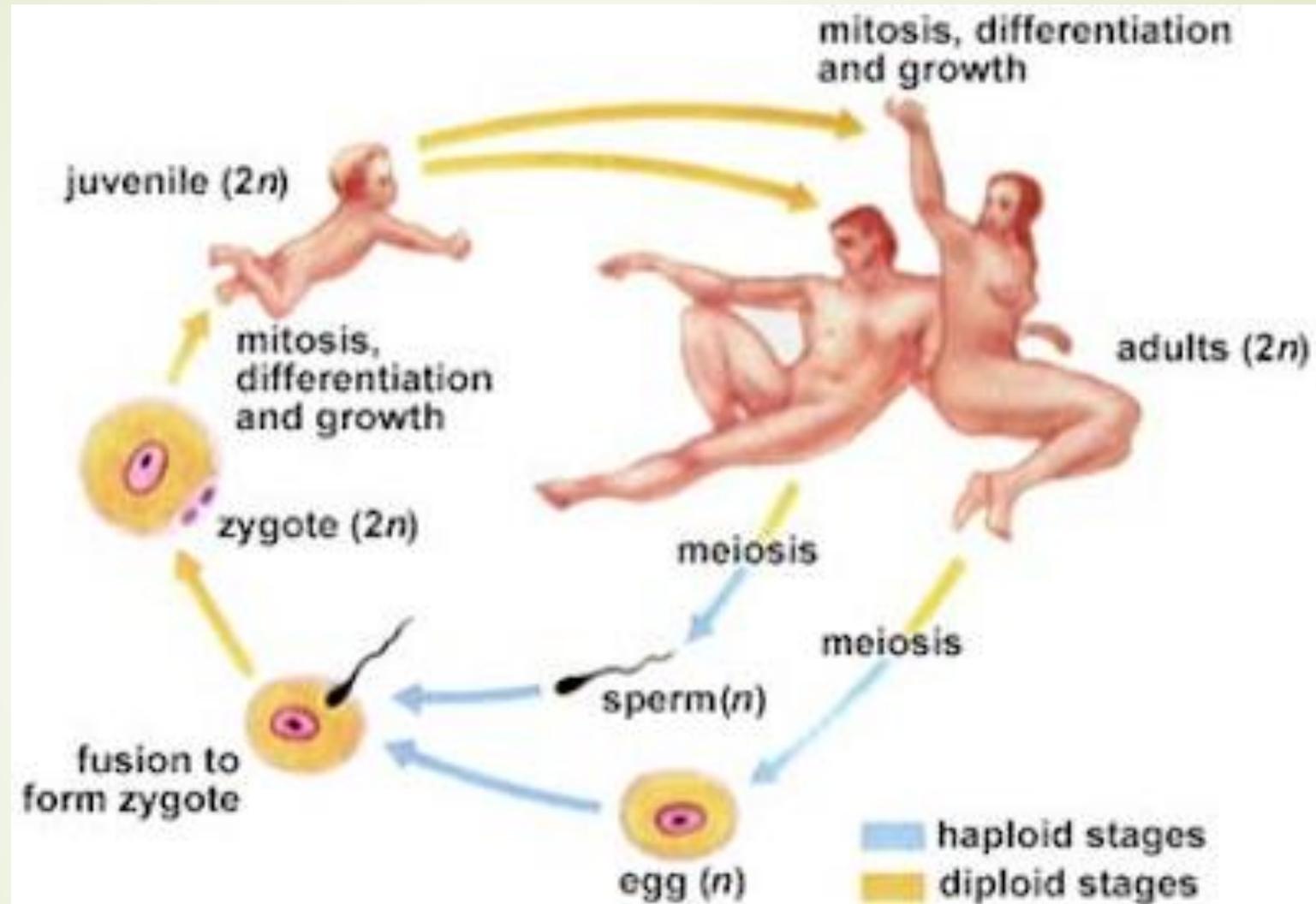
Objectives

Convey that :

- Chinese medicine describes systems.
 - These systems mature throughout the lifespan.
 - Understanding the systems and their development is key to practicing effective healing.
 - Understanding the systems and their development provides profound insight

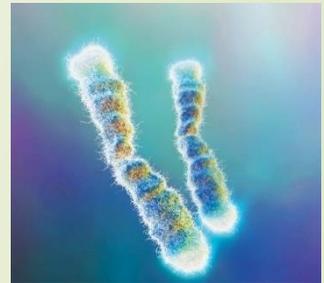
- The assumptions of Evolutionary Biology can be used immediately as the integrating field between classical Chinese and western medical theory.



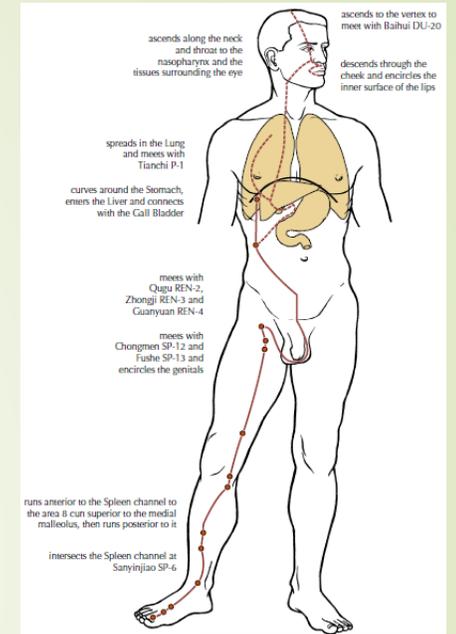


Contributions to Yuan Qi

- ▶ “Both parents contribute energetically to the baby’s conception.
- ▶ The father’s sperm and the mother’s egg consist of Jing (Essence), Qi (Energy), and Shen (Spirit).
- ▶ This combination of Jing, Qi, and Shen is referred to collectively as father Qi and mother Qi.
 - ▶ The combination of father Qi and mother Qi is known as Yuan Qi or Original Qi.” JAJ pp. 27-28
 - [*suggested*: The dynamic interplay of father Qi and mother Qi generates Yuan Qi]
- ▶ Johnson, JA, Chinese Medical Qi Gong Therapy, Vol 1, International Institute of Medical Qi Gong, Pacific Grove, CA, 2005.
- ▶ Copyright: digitalgenetics / 123RF Stock Photo



Liver channel



u25143794 fotosearch.com





“Aggression and Attack” is hard-wired

Functional identification of an aggression locus in the mouse hypothalamus.

Lin D., et al, Nature, 2011 Feb 10;470(7333):221-6.

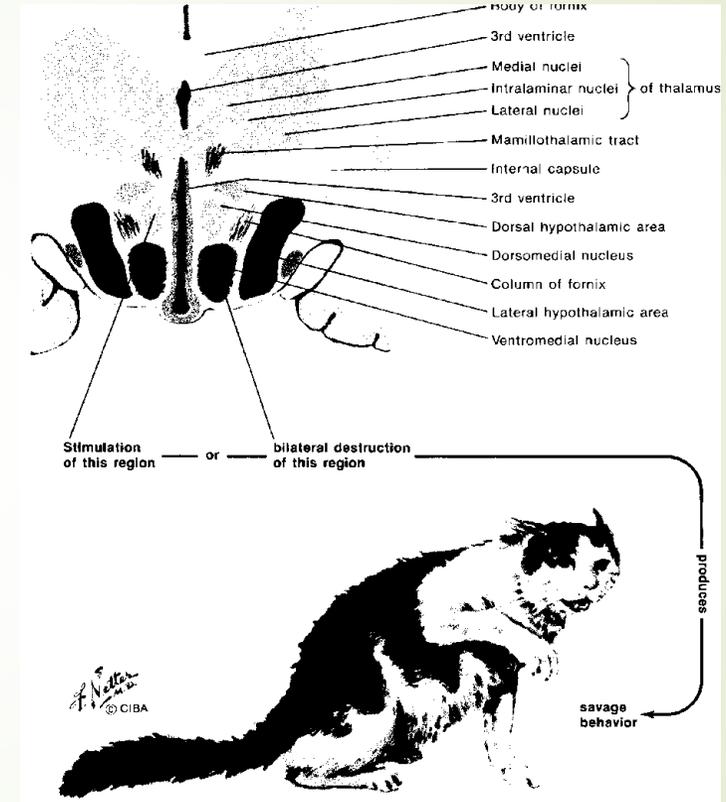
Abstract

Electrical stimulation of certain hypothalamic regions in cats and rodents can elicit attack behaviour...Here we show that ... stimulation of neurons in the ventromedial hypothalamus, ventrolateral subdivision (VMHvl) causes male mice to attack both females and inanimate objects, as well as males. Pharmacogenetic silencing of VMHvl reversibly inhibits inter-male aggression.

Immediate early gene analysis and single unit recordings from VMHvl during social interactions **reveal overlapping but distinct neuronal subpopulations involved in fighting and mating.** Neurons activated during attack are inhibited during mating, suggesting a potential neural substrate for competition between these opponent social behaviours.

Emotional Behavior

- Lesions in the ventromedial hypothalamic nuclei produce savage and vicious behavior, indicative of extreme rage.
- Stimulation of the dorsomedial nuclei also produces this reaction



Liver Emotion: Subdividing the channel (branch) for expression

➤ Anger/Agression

- Charging
- Snarling
- Snapping
- Biting for defense or attack

ascends along the neck
and throat to the
nasopharynx and the
tissues surrounding the eye



ascends to the vertex to
meet with Baihui DU-20

descends through the
cheek and encircles the
inner surface of the lips



Trans-species circuitry

A branch

- descends from the eye system through the cheek and encircles the inner surface of the lips.

Inner surface,
not outer
surface.

NOT

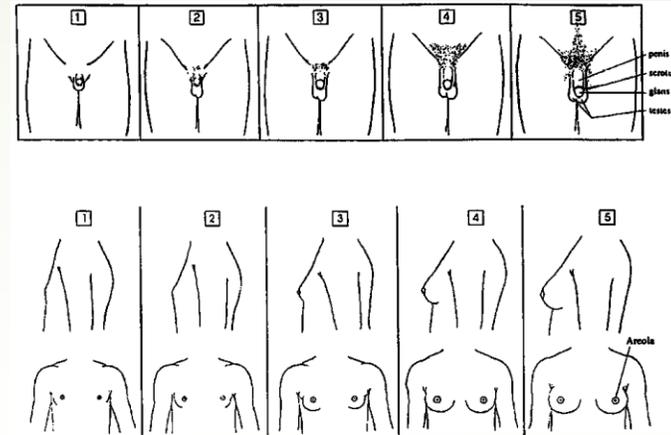




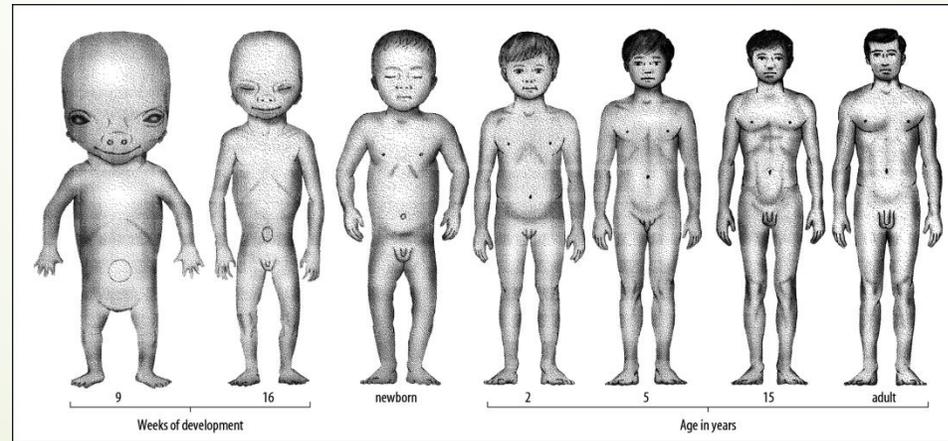
Liver



Stomach

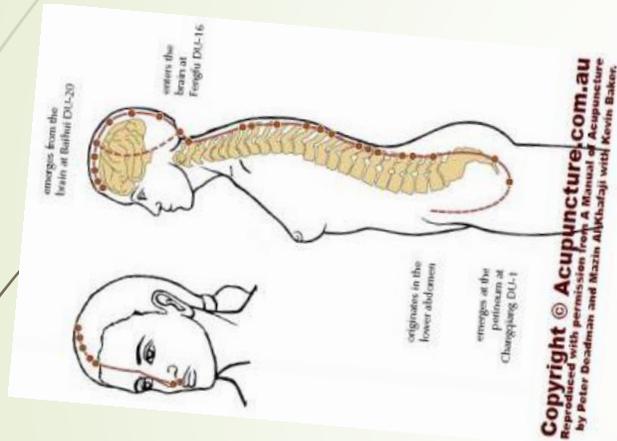


Channel Maturation



What is Channel Development?

- Du channel and mapping at ming men

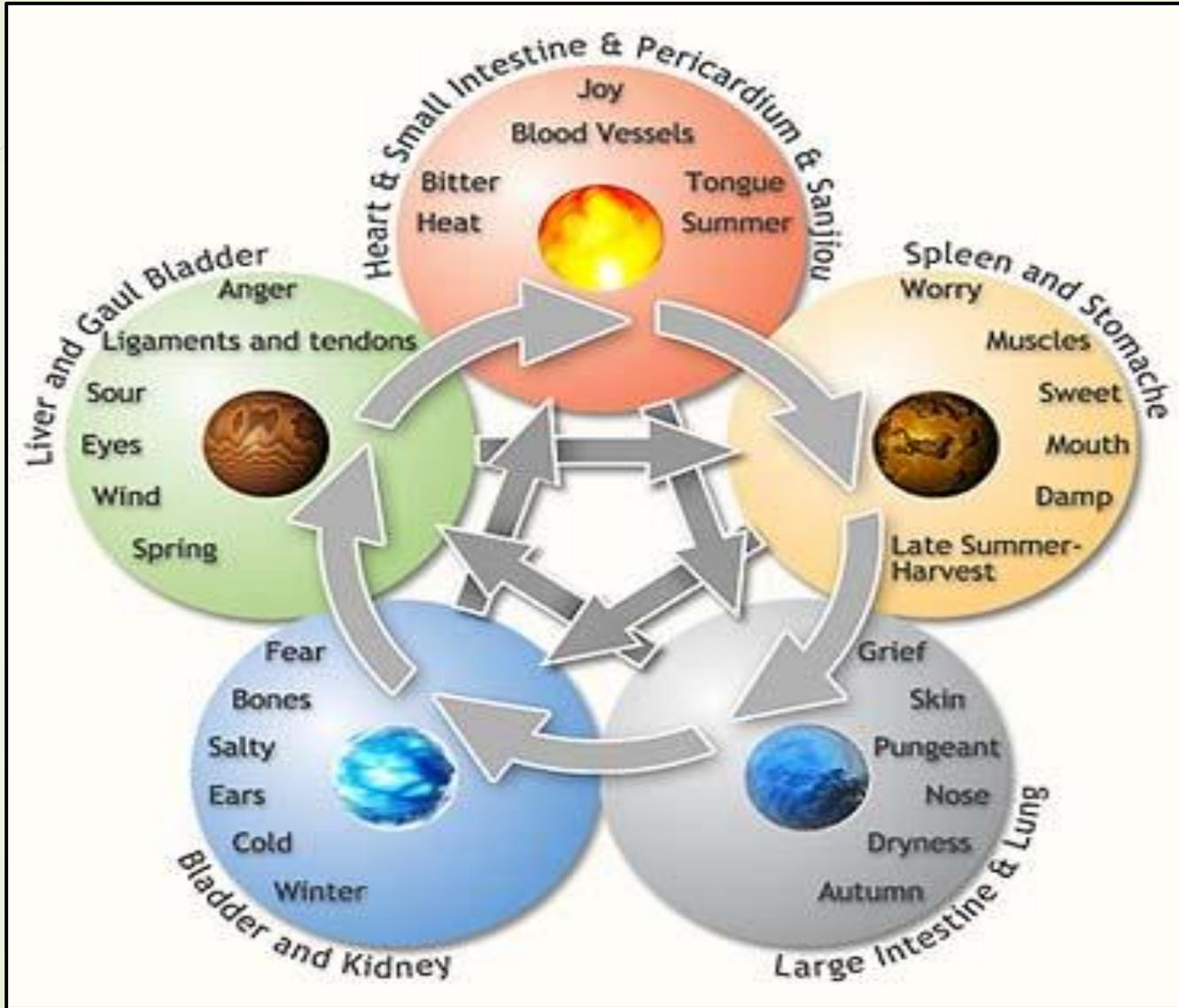


Jeffrey Yuen: “Two to three months after a child is born, they start involuntarily contracting the muscles at the back of their neck and lower back at the areas of Du 4 and Du 14. Taoists say, “ The child sees the horizon but cannot judge his relation to it...”

14

“A little later...the pulsating contractions at Du 4 cause the child to stand, walk, and go after what it is they’ve seen and become interested in...Whenever you see or think about something you want to have and go after, these points are stimulated.”





- Shen
- Yi
- Po
- Zhi
- Hun

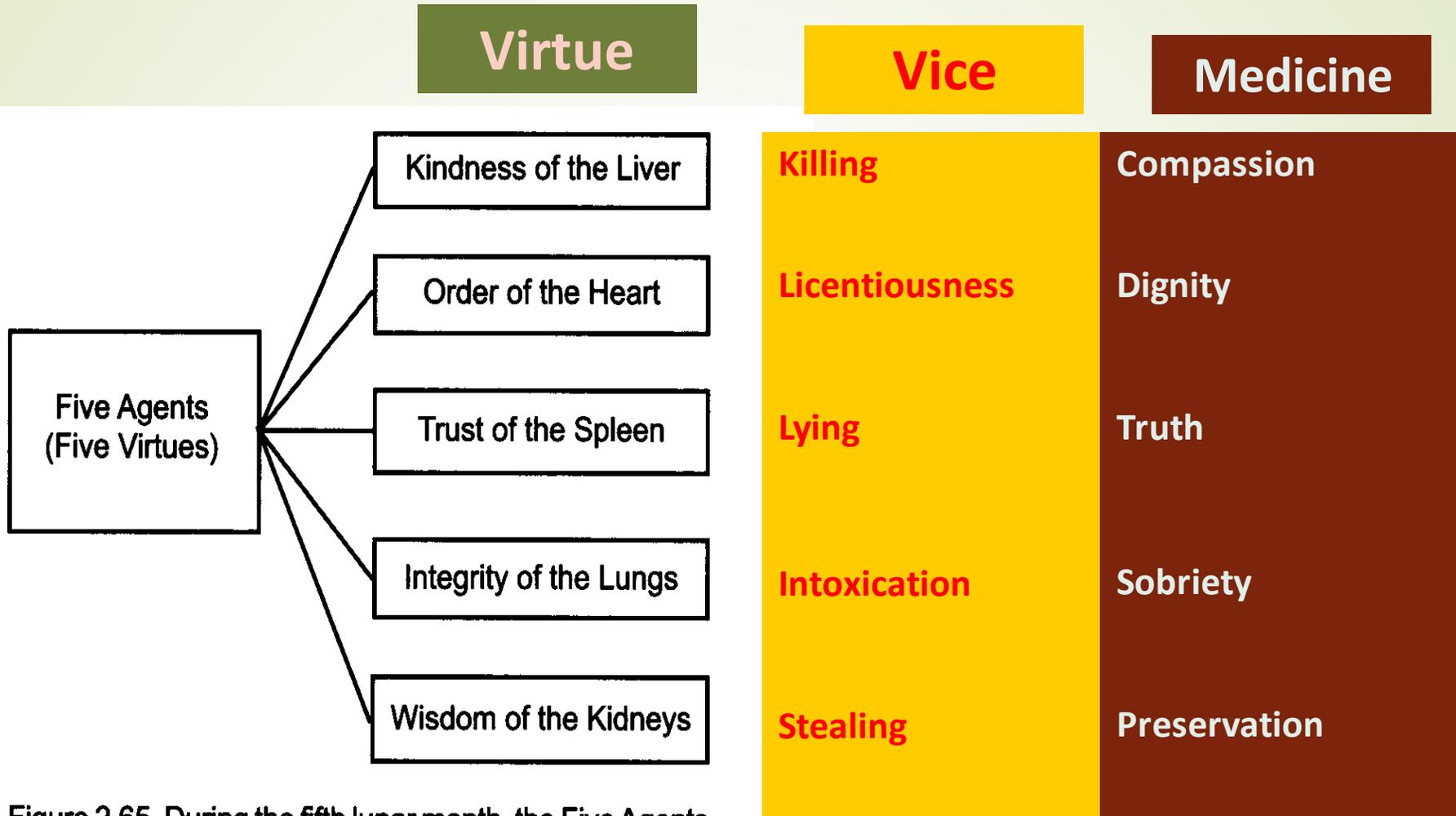


Figure 2.65. During the fifth lunar month, the Five Agents are distributed into the Five Orbs through the influence on the Middle Hun (Shang Ling).

J Intern Med. 2007 May;261(5):453-60.

Programming of the stress response: a fundamental mechanism underlying the long-term effects of the fetal environment?

Phillips DI

MRC Resource Centre, Southampton General Hospital, University of Southampton, Southampton, UK. diwp@mrc.soton.ac.uk

There is a **large body of evidence** which suggests that:

An adverse fetal environment results in a heightened biobehavioral response to stress, with increased activity of the classical mediators of the stress response, including the hypothalamic-pituitary adrenal axis and autonomic nervous system.

Although this has been amply demonstrated in animal experiments, several recent studies suggest that the same processes operate in human populations and may have important consequences for health.

PMID: 17444884 [PubMed - indexed for MEDLINE]

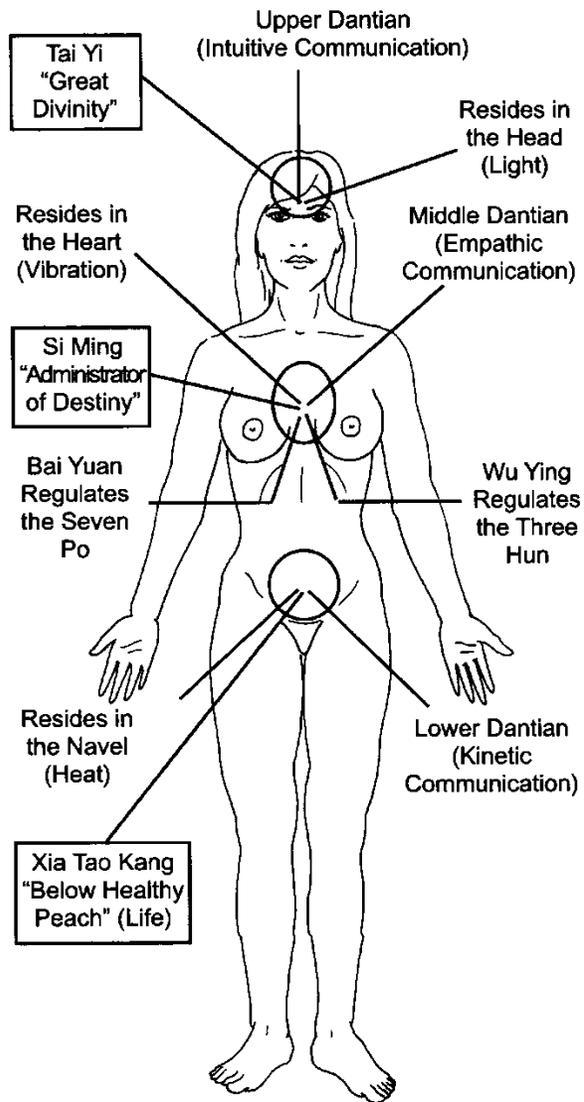


Figure 2.81. The Lords of the Three Dantians: Tai Yi, Si Ming, and Xia Tao Kang

Tai Yi: Causes Yuan Shen to shine externally. Rules all activities of the mind (including the potential of the enlightened mind). Facilitates awareness of the 3 Hun; advocates for personal spiritual enlightenment.

Si Ming: Regulates the body's Qi; source of the mind and its emotional connections. Challenges our reactions to internal and external obstacles.

Xiao Tao Kang: Responsible for procreation and for the preservation of the body's Jing.

The Three Hun



Figure 2.82. The Three Ethereal Souls of the Hun are named (1) Tai Kuang (2) Shang Ling (3) Yu Jing. The Hun represent spiritual consciousness, provide the energetic movement of the mind, and are associated with Qi of Heaven and the Five Agents. The Hun are the spiritual part of Man which ascends to Heaven after death.

Tai Guang (“Eminent Light”):
Upper Dantian, below GV-20.
Highest expression of Yin and
Yang energies in human form.
Strives for Physical, mental,
emotional, and spiritual purity.

Shang Ling (“Pleasant Soul”):
Middle Dantian. Linked to the 5
Agents. The expression of the
Hun concerned with compassion
towards others.

Yu Jing (“Hidden Essence”): Lower
Dantian. Produces our desires for
enjoying the pleasures and
comforts of life.

The Seven Po



Figure 2.86. The Seven Corporeal Souls are composed of the Seven Po.

Tun Zei 吞賊 Sipping Thief	Que Yin 雀陰 Yin Bird	Fu Shi 伏矢 Fallen Arrow	Shi Kou 尸狗 Corpse Dog	Chou Fei 臭肺 Stinking Lungs	Chu Hui 除穢 Sprouting Filth	Fei Du 飛毒 Flying Poison
						

Figure 2.90. The Po's Seven Turbid Demon Natures (Source: *Taishang Chu Sanshi Jiuchong Baoshen Jing*, Highest Scripture of the Great One and the True One)

- Chou Fei (Stinking Lungs):** The Chou Fei Po manifests as hopelessness, and it smells of death. It destroys hope and faith, and feeds on ignorance, which can lead to a sense of despair, spiritual apathy or inactivity. It manifests through victimization and martyrdom.
- Shi Kou (Corpse Dog):** The Shi Kou Po manifests through feelings of greed. It is expressed through selfish desires and covetous actions.
- Fu Shi (Fallen Arrow):** The Fu Shi Po manifests through feelings of lust. It entices the individual by tempting or luring him or her into a desirable place or situation through unethical actions. It then creates distress in the form of guilt which generates shame. This spirit further creates anxiety and fear of being discredited, dishonored, or disgraced, and then immediately generates the feeling that attempting to correct the situation is fruitless. It also manifests in addictions and compulsions.
- Que Yin (Yin Bird):** The Que Yin Po torments the individual by causing him or her to experience extreme pain and severe anguish by dwelling on unresolved past emotional issues, present anxieties, and future fears. Also known as the "night tormentor," it is especially active at night, manifesting via nightmares, restless sleep, and insomnia.
- Tun Zei (Sipping Thief):** The Tun Zei Po manifests by stealing the individual's life-force energy and devouring it through negative judgements and bitter emotions such as jealousy, envy, and resentment.

THE SPIRITUAL AWARENESS OF THE PO

The Po are classified as Yin spirits and they can be controlled and refined through breathing exercises and quiescent meditations. When the fetus begins its movement, its Yin energy tranquilizes the Po which act as guardians of the fetus' body. The seven Po help to develop the growth of consciousness by providing obstacles to test the individual's faith and devotion. Many times the Seven Corporeal Souls will work in conjunction with hostile external energetic forces to test the individual's spiritual endurance.

Energetically, the Po can be accessed through the Pohn (Door to the Po) UB-42 point located on the back of the body and between the shoulders. This point is also used clinically to treat energetic imbalances of the Lungs. The energetic nature of the Po responds to the energetic grids of the Earth,

Under the Hood

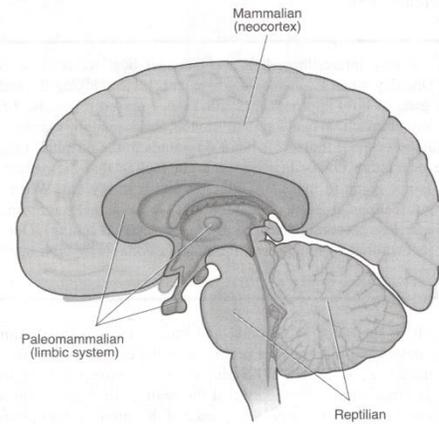
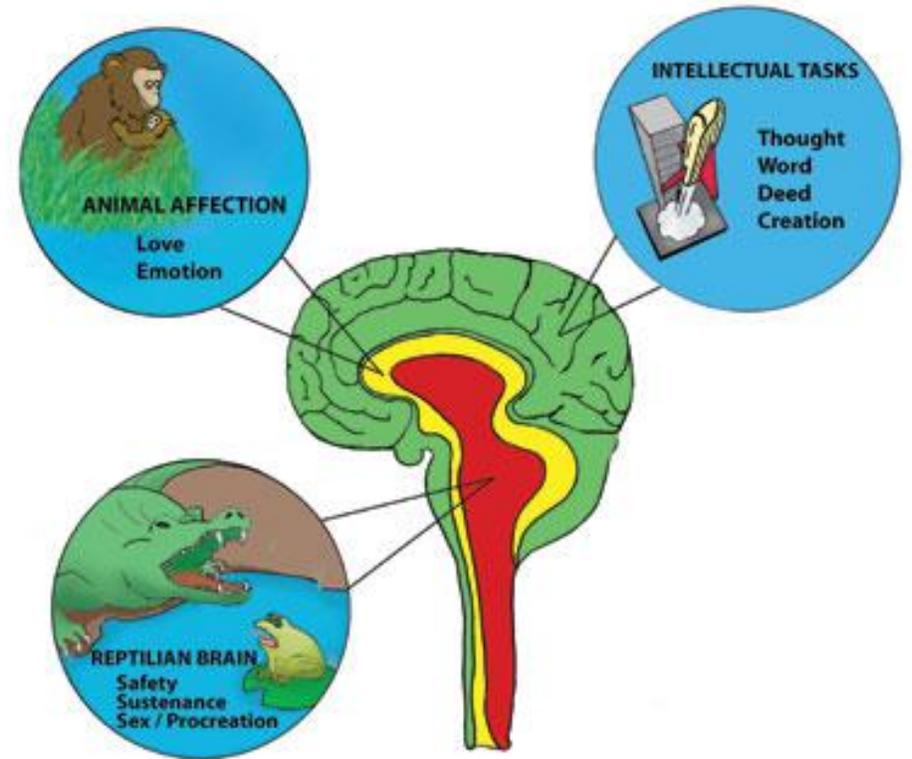


FIGURE 1.4 The triune brain.



A Review of Classic Physiological Systems

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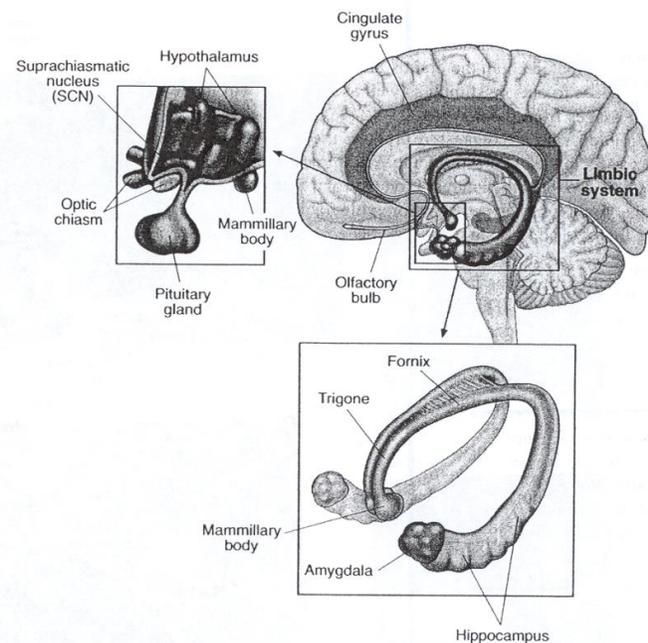
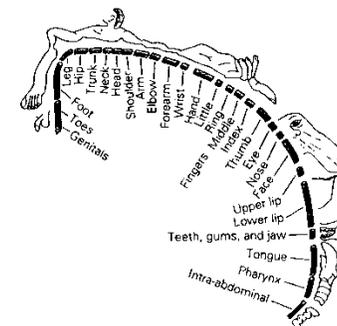


FIGURE 1.2 The limbic system and the hypothalamus.

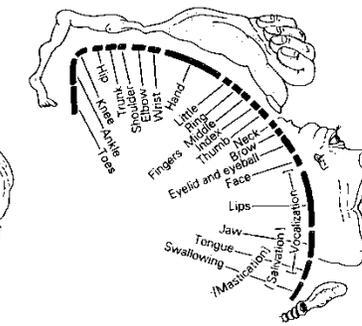
A Sensory homunculus



Medial

Lateral

B Motor homunculus



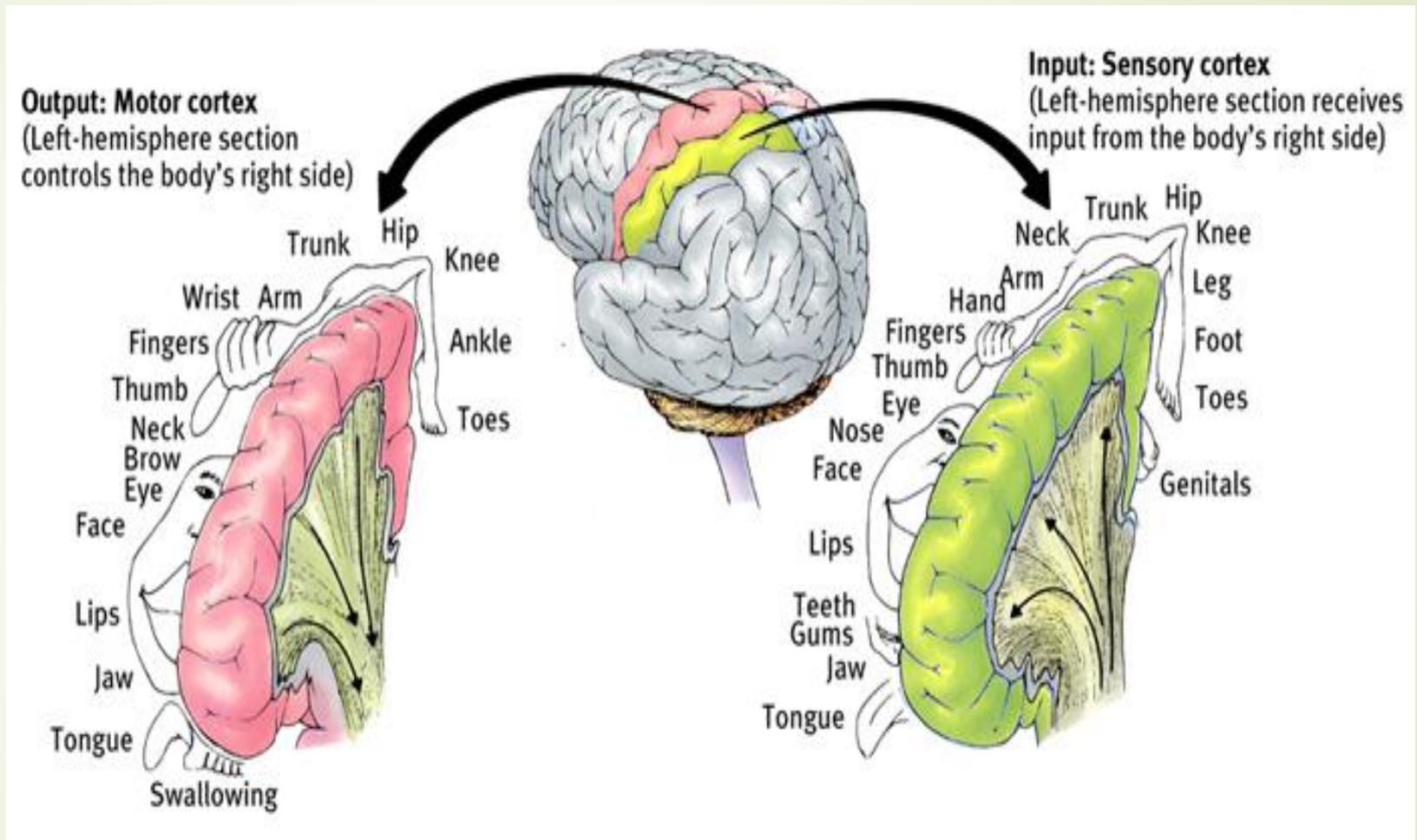
Medial

Lateral

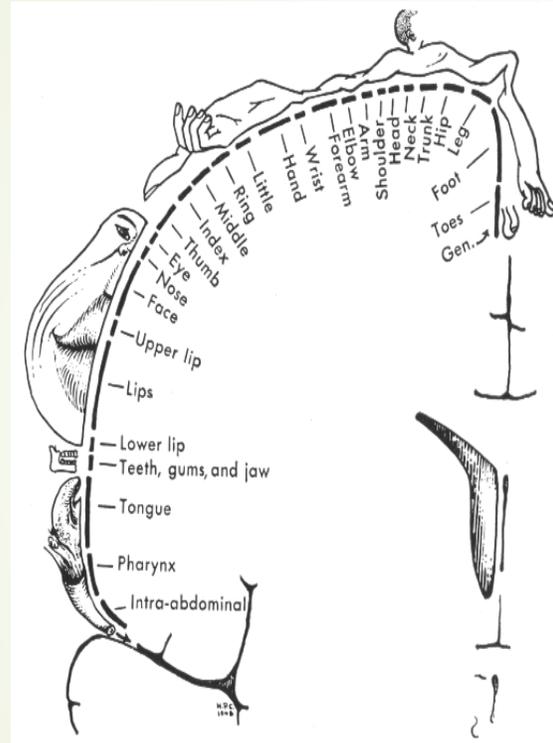
Furthermore:

“Colors, tones, smells, and tastes are mental creations constructed by the brain out of sensory experience. They do not exist, as such, outside of the brain...In short, our perceptions are not direct records of the world around us. Rather, they are constructed internally according to constraints imposed by the architecture of the nervous system and its functional abilities.”

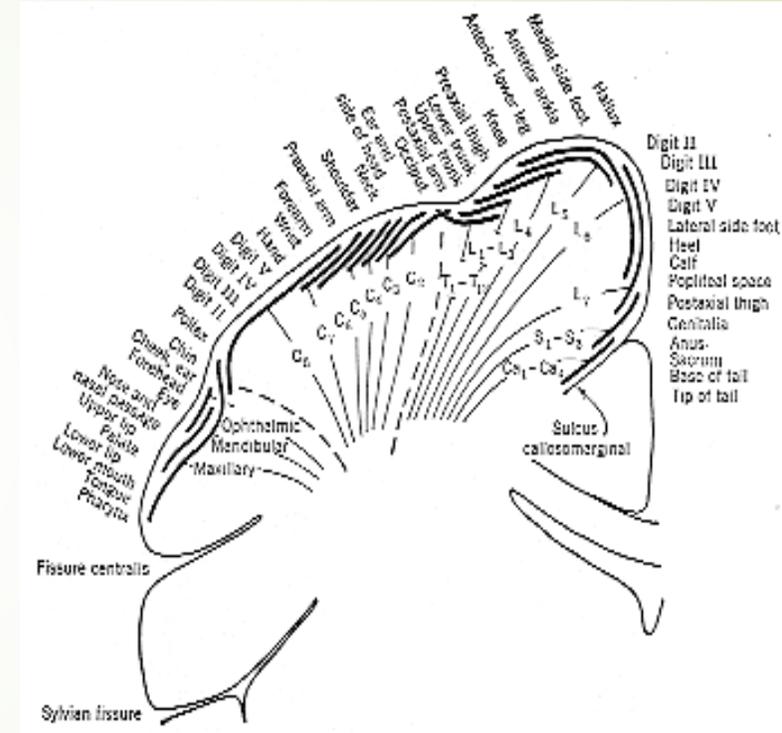
Kandel, E., et al. Principles of Neural Science, 4th ed. McGraw-Hill, 2000. pg. 412



The orderly projection from the spinal nerves, through the mid-brain, onto SI creates a 'map' of the body, or 'homunculus'



Human 'homunculus'
(Penfield & Rasmussen,
1950)

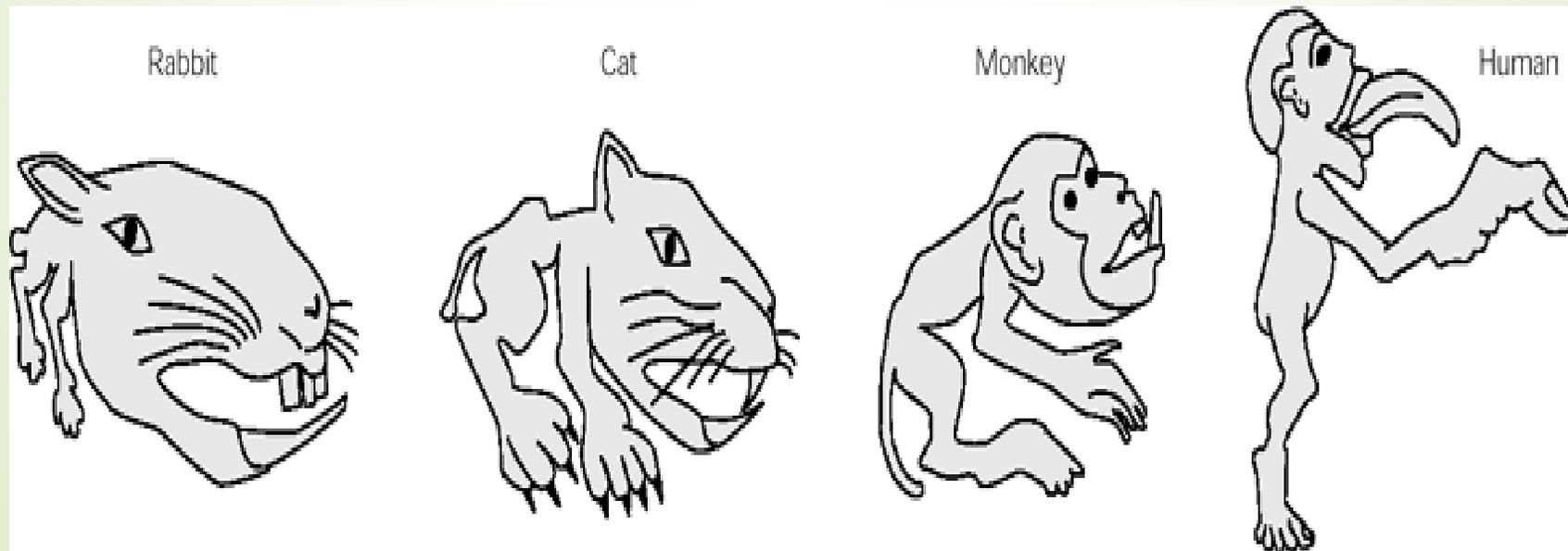


Monkey 'homunculus'
(Woolsey et al., 1942)

Primary somatosensory cortex (SI)

Homunculi reflect sensitivity & function

Across species, the SI map of the body reflects the density of peripheral receptors, & has clear functional relevance



Sensorimotor mapping of the human cerebellum: fMRI evidence of somatotopic organization.

[Grodd W](#), [Hülsmann E](#), [Lotze M](#), [Wildgruber D](#), [Erb M](#).

Source

Section Experimental Magnetic Resonance of CNS, Department of Neuroradiology, University of Tübingen, Germany.

wolfgang.grodd@med.uni-tuebingen.de

Abstract

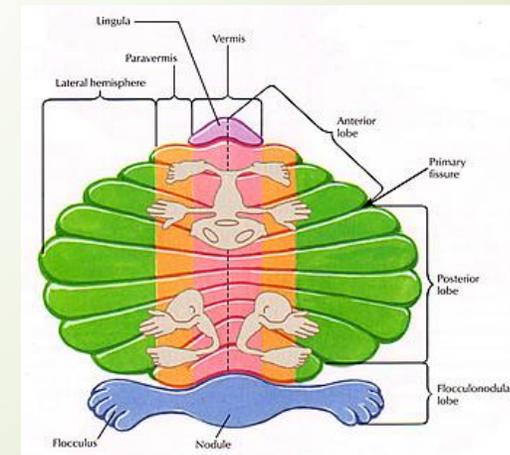
Functional magnetic resonance imaging (fMRI) was employed to determine areas of activation in the cerebellar cortex in 46 human subjects during a series of motor tasks. To reduce the variance due to differences in individual anatomy, a specific transformational procedure for the cerebellum was introduced. The activation areas for movements of lips, tongue, hands, and feet were determined and found to be sharply confined to lobules and sublobules and their sagittal zones in the rostral and caudal spino-cerebellar cortex. There was a clear symmetry mirroring at the midline. **The activation mapped as two distinct homuncloid representations. One, a more extended representation, was located upside down in the superior cerebellum, and a second one, doubled and smaller, in the inferior cerebellum...**

Copyright 2001 Wiley-Liss, Inc.

PMID:

11346886

http://www.corpshumain.ca/en/Cerveau2_en.php



Somatotopic organization of the dorsal horn in the lumbosacral enlargement of the spinal cord in the neonatal cat.

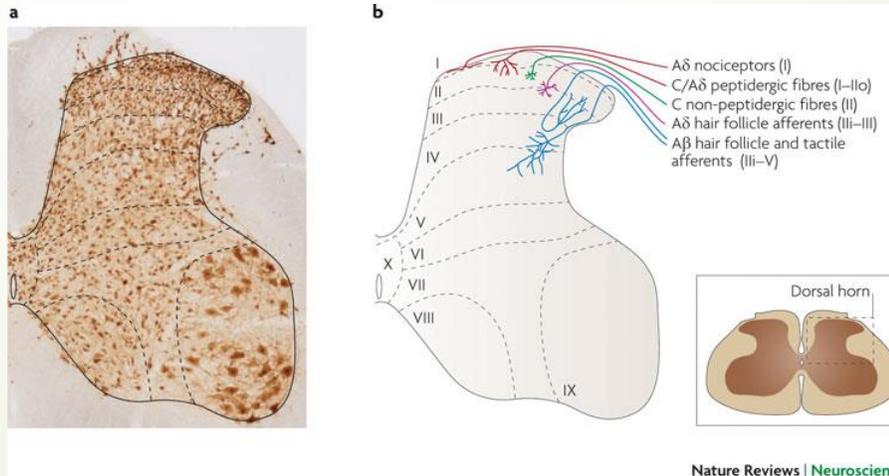
[Wilson P](#), [Snow PJ](#).

Source

Department of Anatomy, University of Queensland, St. Lucia, Australia.

Abstract

The somatotopic organization of the light touch receptive fields of single unidentified dorsal horn neurons in the lumbosacral spinal cord has been studied in the neonatal cat anesthetized with chloralose. Satisfactory recordings were obtained from single dorsal horn neurons in kittens aged 3-6 days...



[J Neurosurg.](#) 2011 Jun;114(6):1706-14. Epub 2011 Mar 4.

Three-dimensional somatotopic organization and probabilistic mapping of motor responses from the human internal capsule.

[Duerden EG](#), [Finnis KW](#), [Peters TM](#), [Sadikot AF](#).

Source

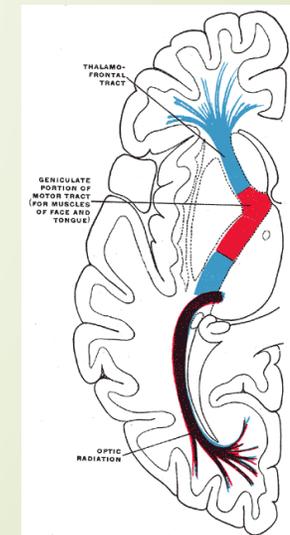
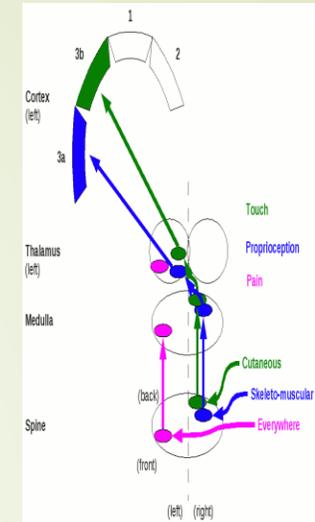
Cone Laboratory for Neurosurgery Research, Montreal Neurological Institute, McGill University, Montreal, Quebec, Canada.

Abstract

... This work resulted in a functional electrophysiological atlas demonstrating the locations of body-part representations in the posterior limb of the IC that takes individual anatomical variability into account. To further understand the spatial location and extent of the motor responses, the electrophysiological data points were transformed into 3D probability maps that describe the likelihood of obtaining motor responses in the posterior limb of the IC.

RESULTS:

The analyses suggest a reliable face-anterior, arm-intermediate, and leg-posterior somatotopic organization in the posterior limb of the IC with little overlap between the body-part representations.



Prefrontal cortex to Basal Ganglia

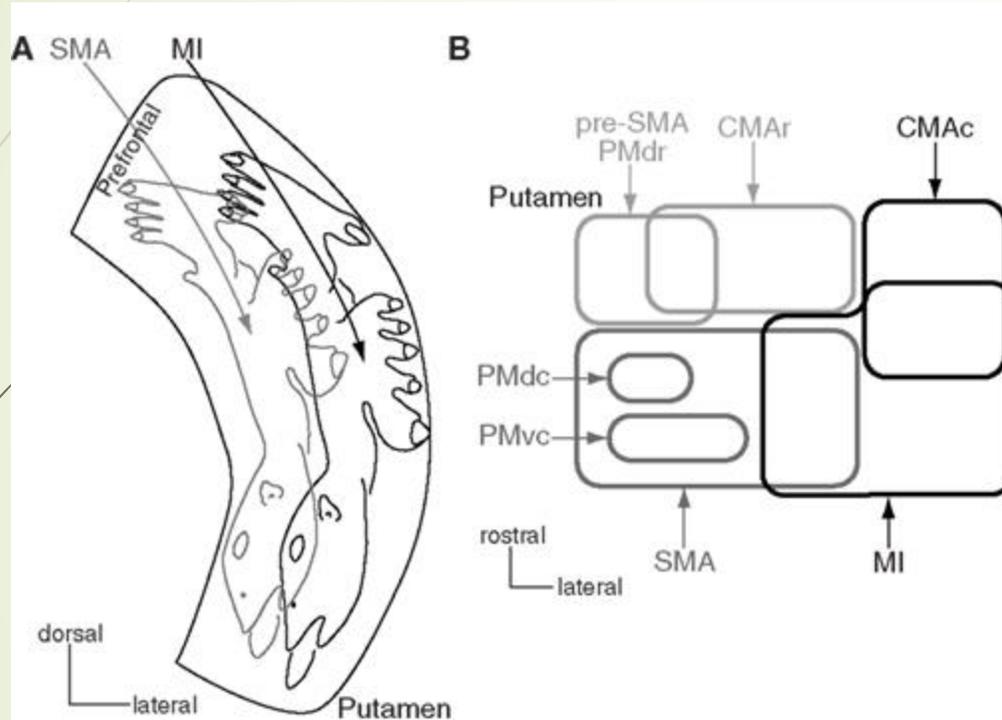


Figure 3. Somatotopy of the putamen. (A) Somatotopy of the putamen is schematically shown in a frontal section. In the caudal aspect of the putamen, the lateral part receives somatotopic inputs from the primary motor cortex (MI), and the medial part from the supplementary motor area (SMA). The somatotopy in the SMA territory is located dorsomedially to that in the MI territory. Projections from the orofacial, forelimb and hindlimb regions of the MI and SMA converge in the medio-lateral central zone in the putamen. The most dorsomedial part receives inputs from the prefrontal cortex.

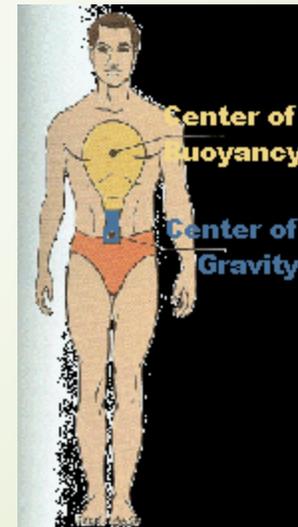
The Putamen is part of the Basal Ganglia

The basal ganglia are functionally **subdivided into motor, associative, and limbic/emotional domains** based on their relationship with relevant cortical projection areas and the engagement of these regions.

Thus, in addition to the well-known role of the basal ganglia in motor control, **there is now a better appreciation for other functions such as attention and time estimation, implicit learning and habit formation, and reward-related behavior and emotions, all of which are associated with the activation of cortical loops that connect with the CN, the anterior putamen, or the ventral putamen** ([Hikosaka et al. 2002](#); [Buhusi and Meck 2005](#); [Yin and Knowlton 2006](#)). Important evidence for this concept has arisen from studies in non-human and human primates.

Expression through the Homunculus

- ▶ How do we express into the world, through this associative homunculus?
- ▶ Personality and the 3 centers of gravity
 - ▶ (mirroring Yang, Qi, Yin)



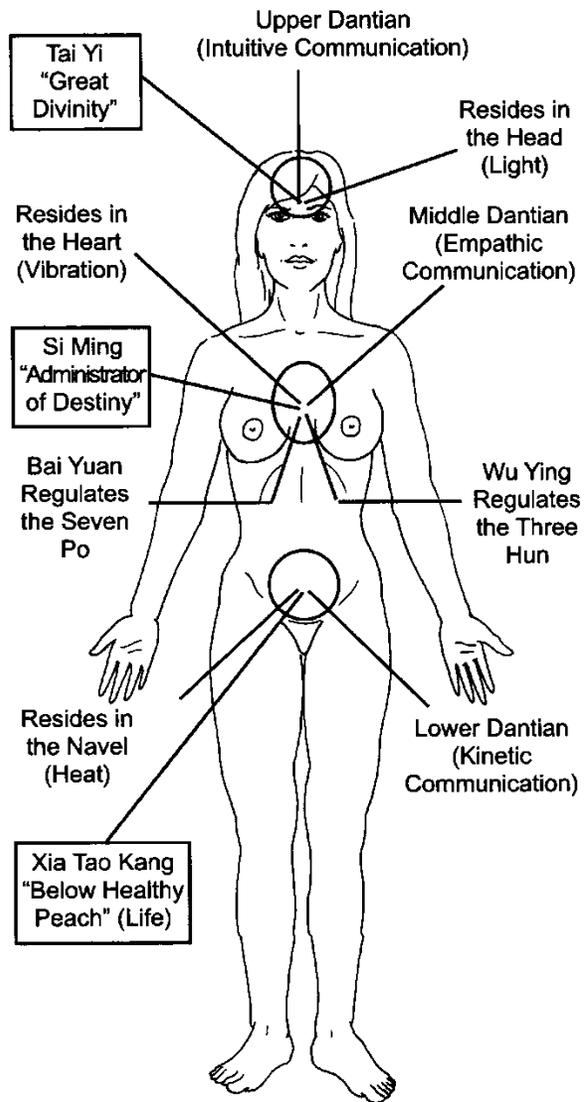


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Energetic Developmental Domains

- Du Mai – Body's Back
- Ren Mai – Body's Front
- Chong Mai – Body's Core
- Yin Qiao – Body's left and right Yin energy
- Yang Qiao – Body's L and R Yang energy
- Yin Wei – Body's interior
- Yang Wei – Body's exterior
- Dai Mai – Binds all together

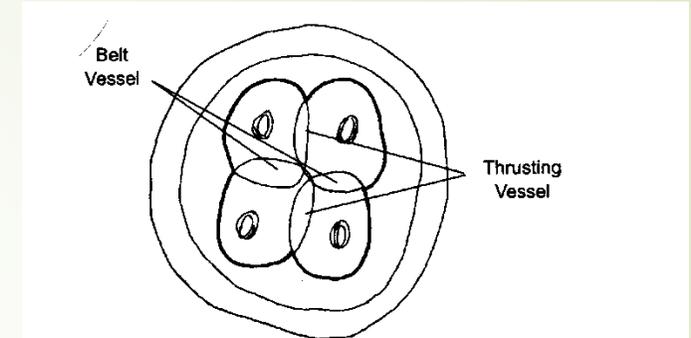


Figure 2.52. The second cellular division is associated with the development of the Belt Vessel and the Thrusting Vessel.

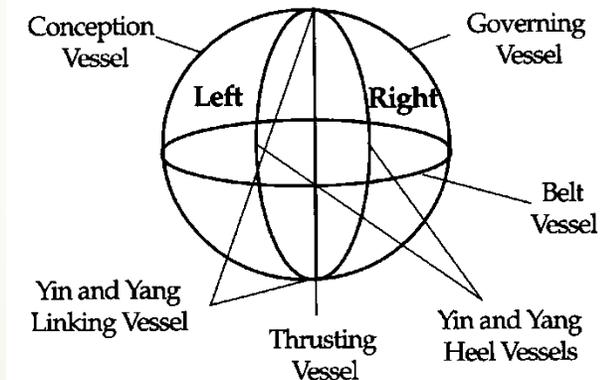
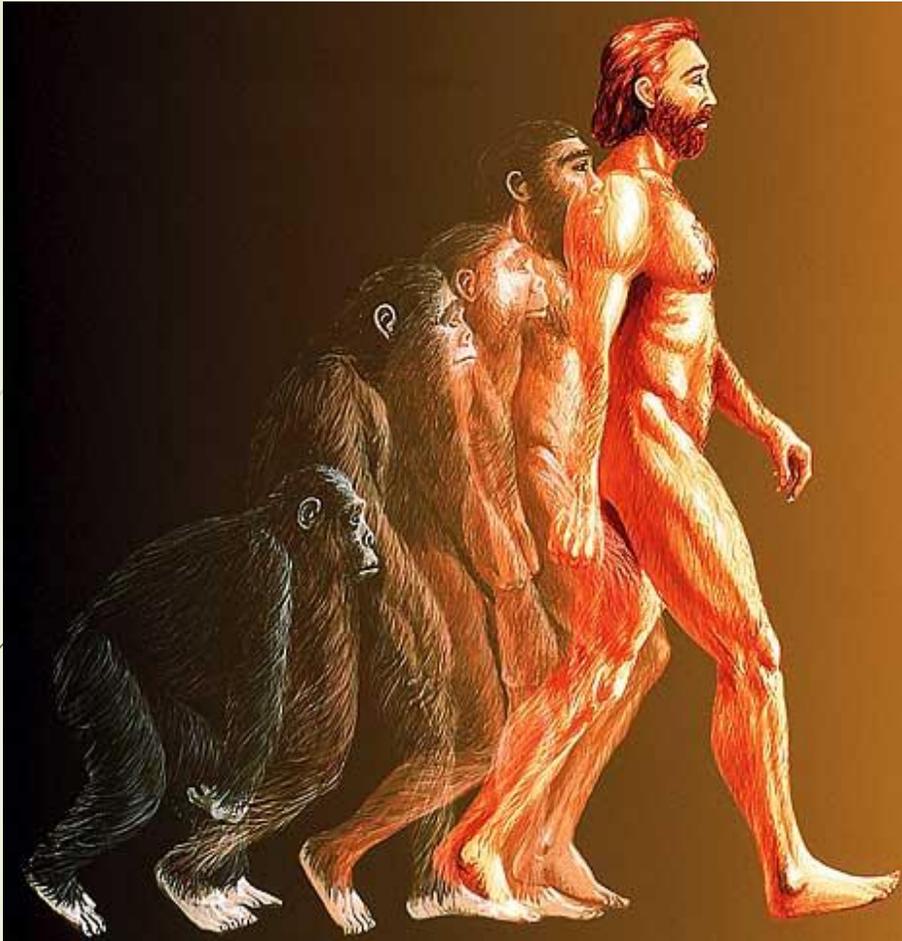


Figure 2.53. The Energetic Embryological Flow of the Eight Extraordinary Vessels



http://img.dailymail.co.uk/i/pix/2007/12_02/geneticDM1012_468x477.jpg

Human Brain Has Origin in Lowly Worm

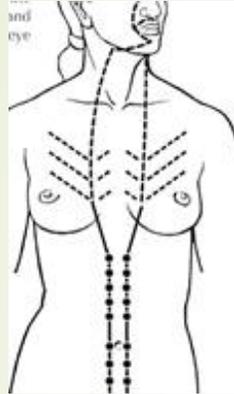
Robert Roy Britt

LiveScience Managing Editor

LiveScience.com Sat Apr 21, 11:55 AM ET

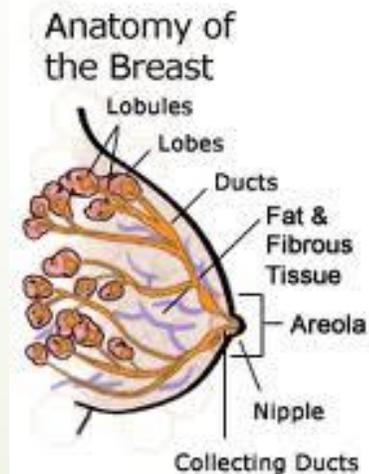
The origin of the human brain has been traced back to primitive central nervous systems in worms and bugs, researchers now say.

Sexual differentiation via 'tian gui'



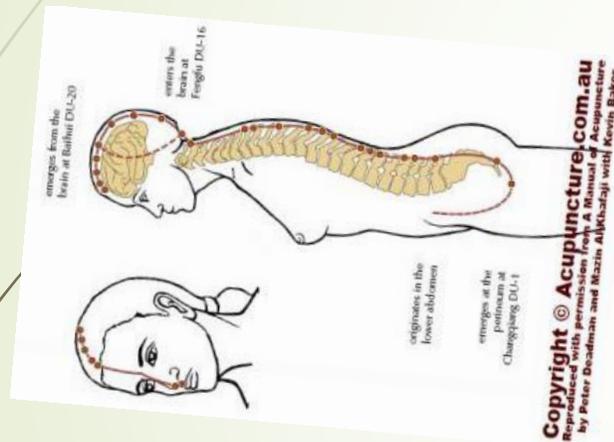
Endocrine function of chest branch (female)

The breast tissue, which is immature at the time of menarche, matures each month during the menstrual cycle in response to the cyclic increases and decreases in estrogen and progesterone.



What is Channel Development?

- ➔ Du channel and mapping at ming men



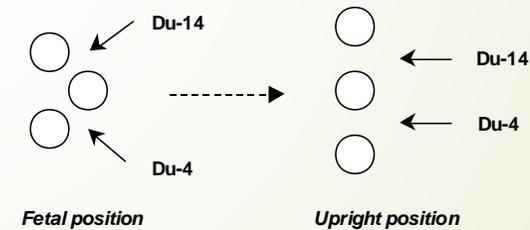
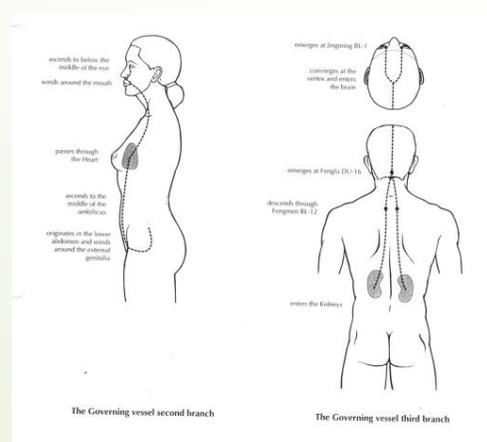
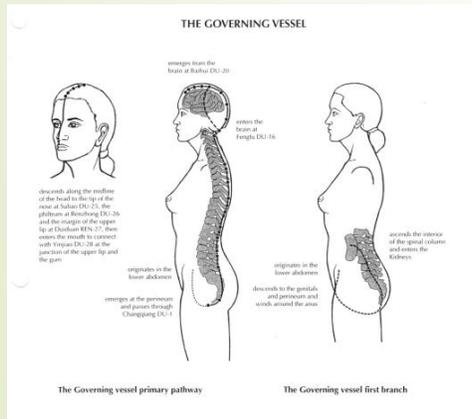
Jeffrey Yuen: “Two to three months after a child is born, they start involuntarily contracting the muscles at the back of their neck and lower back at the areas of Du 4 and Du 14. Taoists say, “ The child sees the horizon but cannot judge his relation to it...”

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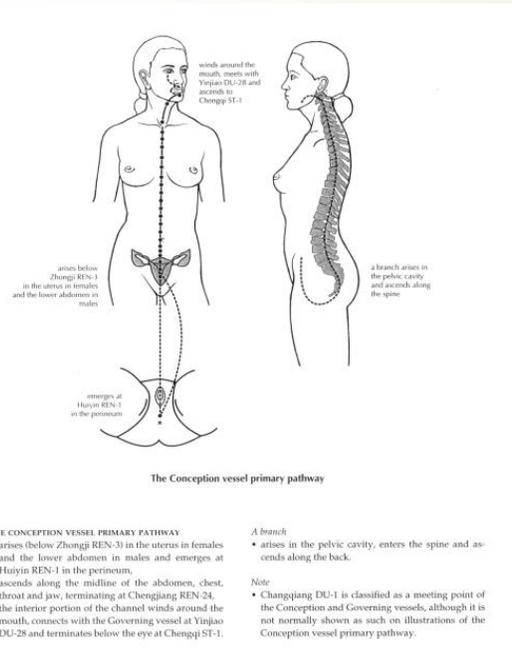
The Extraordinary Vessels: Du

- Exploration of the world beyond the 'maternal matrix'.
 - It has to do with the quest to understand oneself beyond the boundaries of the definitions created by country, friends, family and gender
- Father/yang energy
- At Du-4 and Du-14 are the major curves of the spine
 - At these points Yang pushes, bringing us from a circular fetal position to an upright, vertical stance



The Extraordinary Vessels: Ren

- The Vessel of Bonding (per Yuen)
- Formation occurs during the first year of life, with the mother representing the primary contributor. (Or the person taking the mothering role.)
 - Very early imprinting
 - Time of Yin consolidation



Contrast to

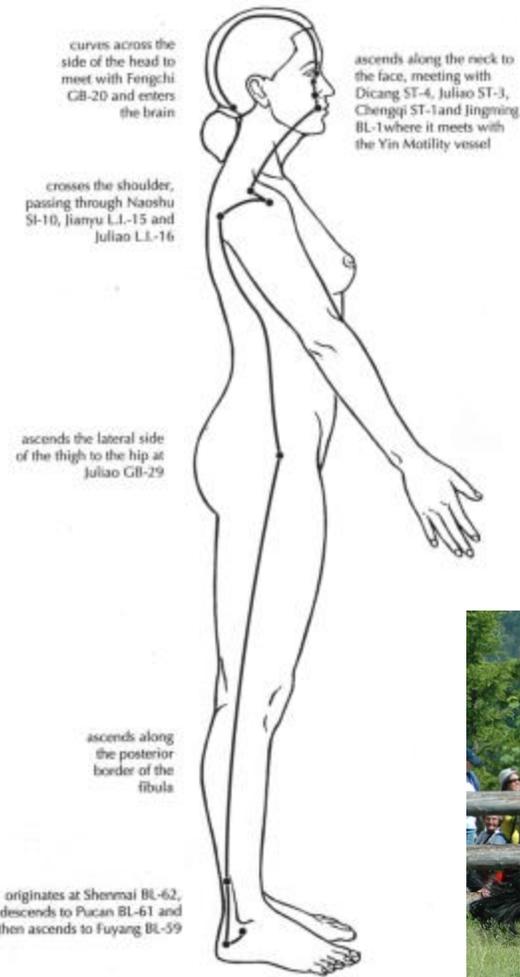


The Extraordinary Vessels: Chong

- Formation is mostly complete in the first 6-8 years of life, but the first 2-3 years are the most important time in its development (includes gestation)



THE YANG MOTILITY VESSEL



Colescent points

Shenmai BL-62, Pucan BL-61, Fuyang BL-59, Juliao GB-29, Naoshu SI-10, Jianyu L.I.-15, Jugu L.I.-16, Dicang ST-4, Juliao ST-3, Chengqi ST-1, Jingming BL-1 and Fengchi GB-20.

Pathological symptoms of the Yang Motility vessel

Daytime epilepsy, eye diseases, loss of consciousness, aversion to wind, hemiplegia, chronic painful obstruction, rigidity of the body, lumbar pain, contracted sinews, flaccidity of the muscles of the medial leg and tightness of the muscles of the lateral leg.

Vessel for What?





Thank you!

Questions/comments/concerns