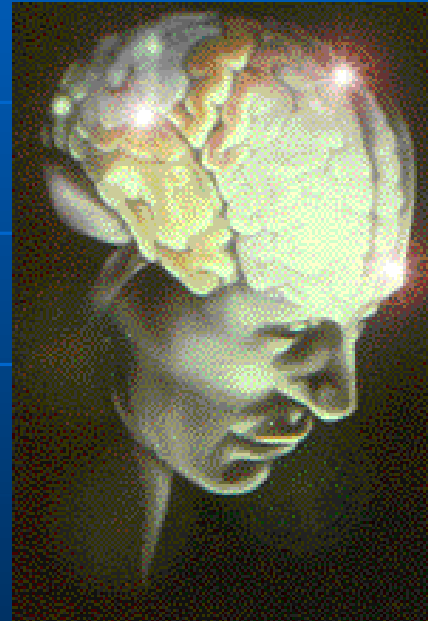


UNDERSTANDING YOUR BRAIN & NERVOUS SYSTEM



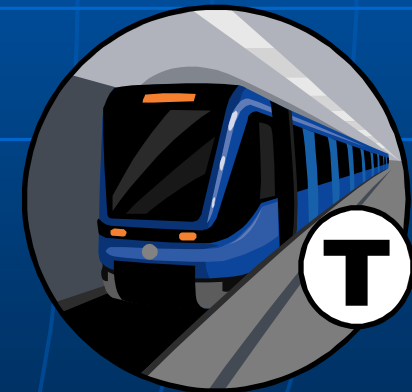
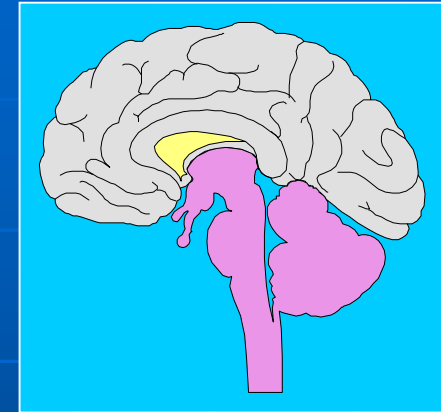
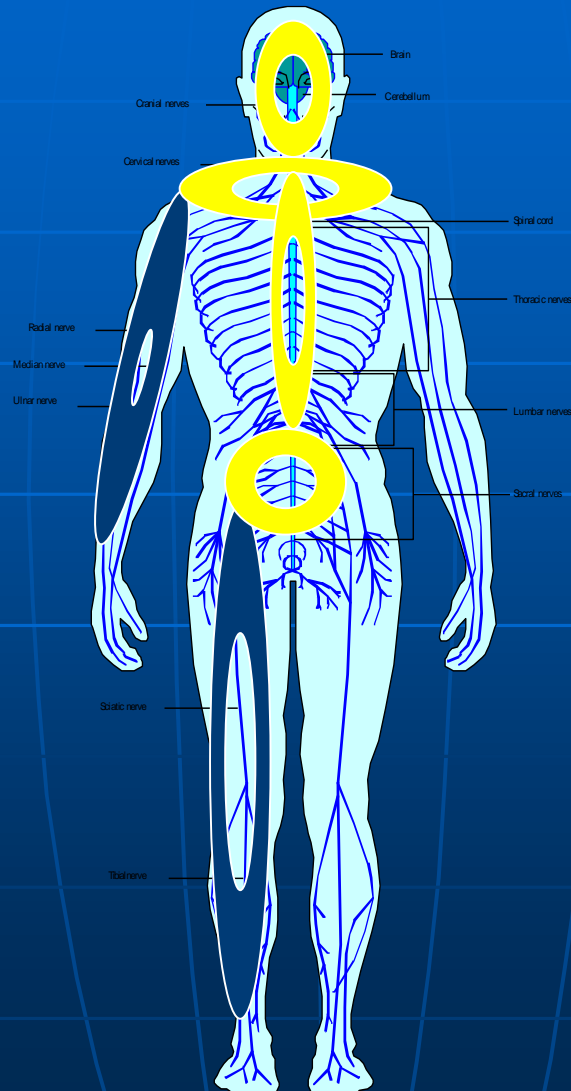
Ocean Park Natural Therapies
Dr. T. W. Brown, ND

Your Nervous System

- Your Nervous System is Composed of 3 Distinct Components
 - Central Nervous System
 - Peripheral Nervous System
 - Autonomic Nervous System

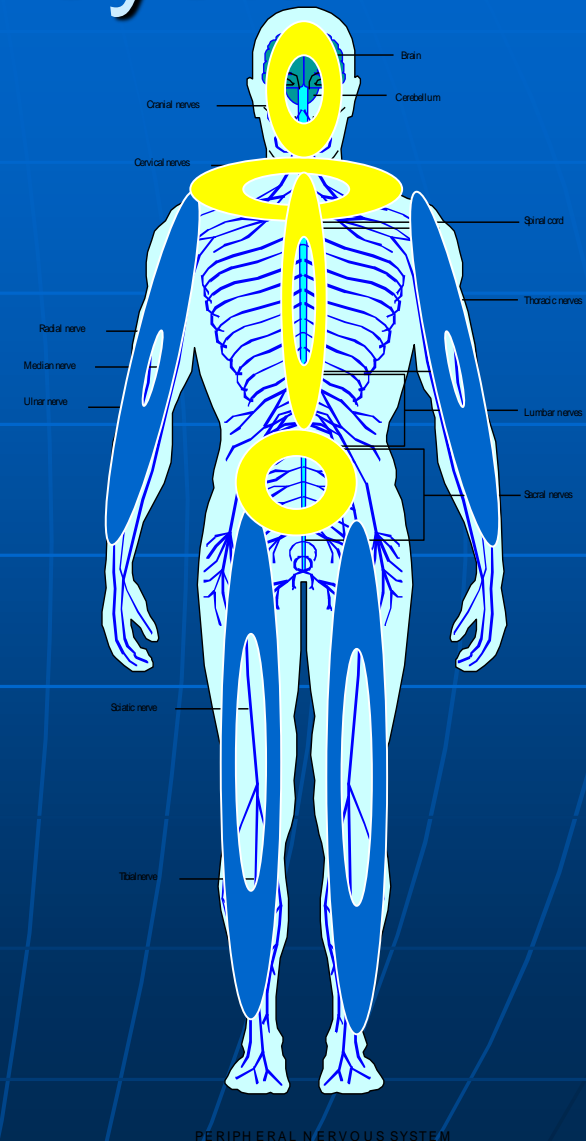
Central Nervous System

Brain
Stem &
Spine
Act
Like a
"Central
Subway"
or Main
Skytrain
System

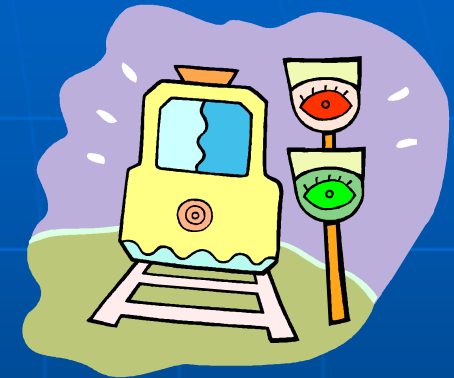
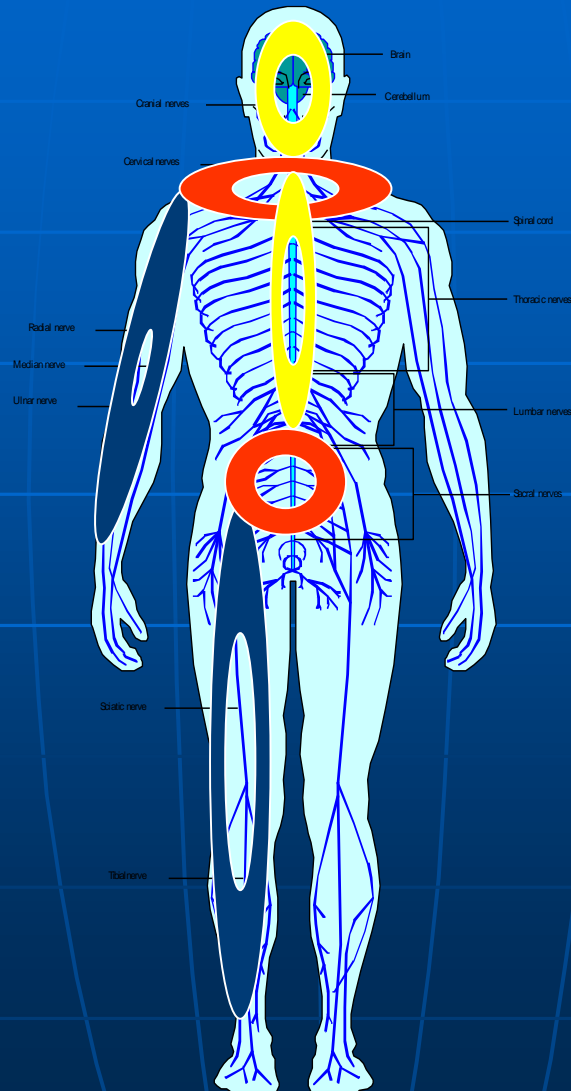


Central Nervous System

- Trains go back and forth along a central routing system
- When all goes well everything is quick and efficient
- When one area gets in “trouble” the whole system begins to back up becoming “dysfunctional”.

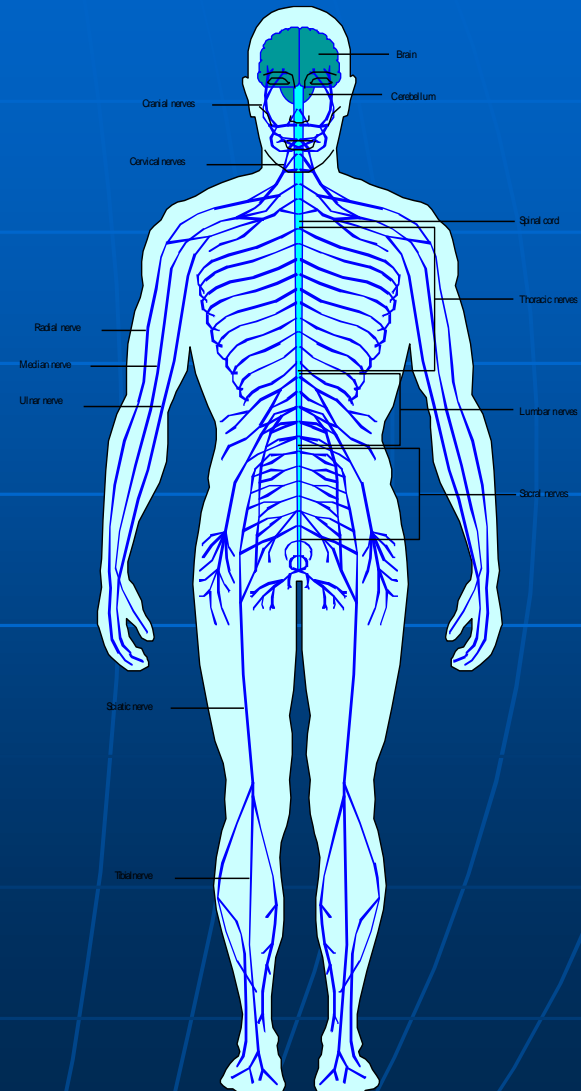


Central Nervous System Disrupted



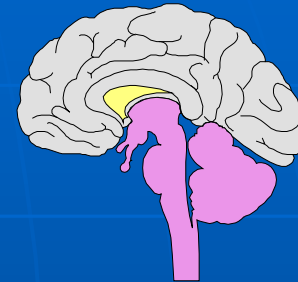
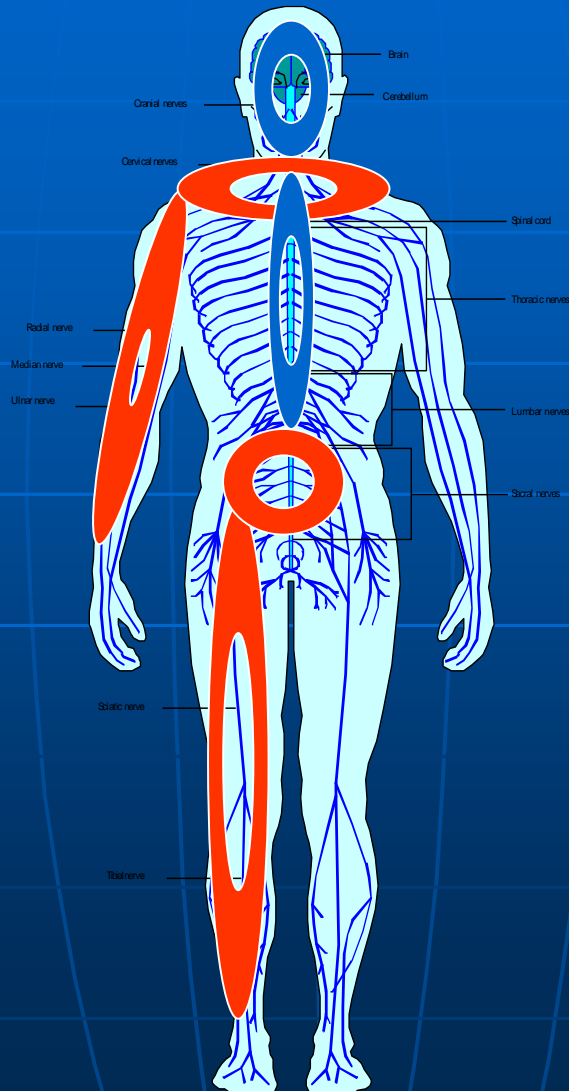
Peripheral Nervous System

- Routes connecting to outlying areas “the suburbs” = extremities
- Connects to spinal (central) system at connecting terminals or hubs called –
 - Nerve plexi or
 - Nerve ganglia



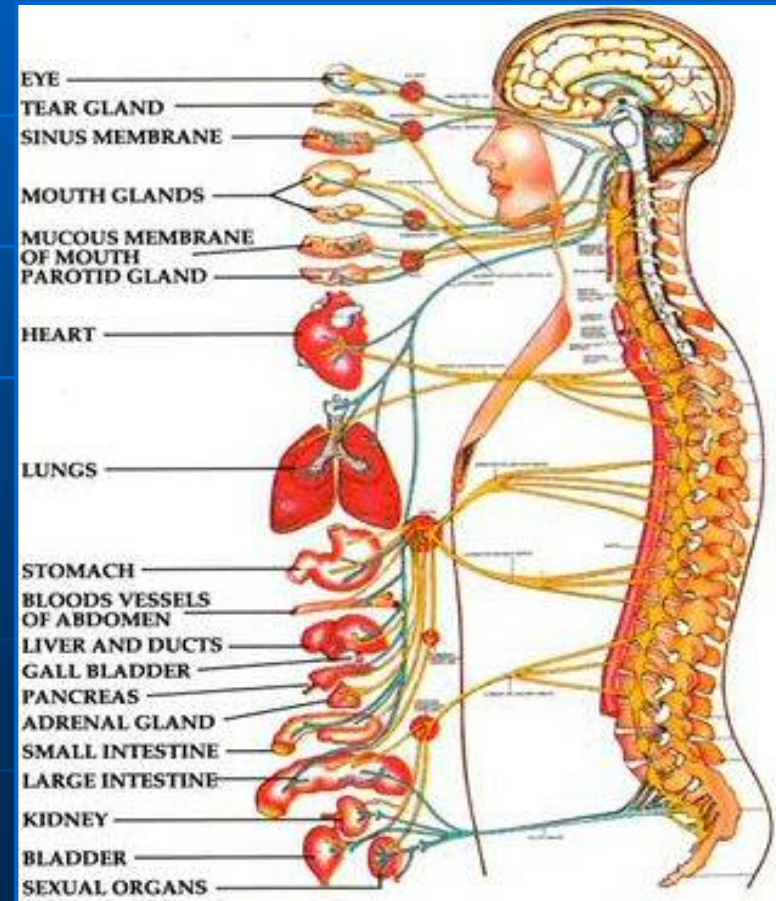
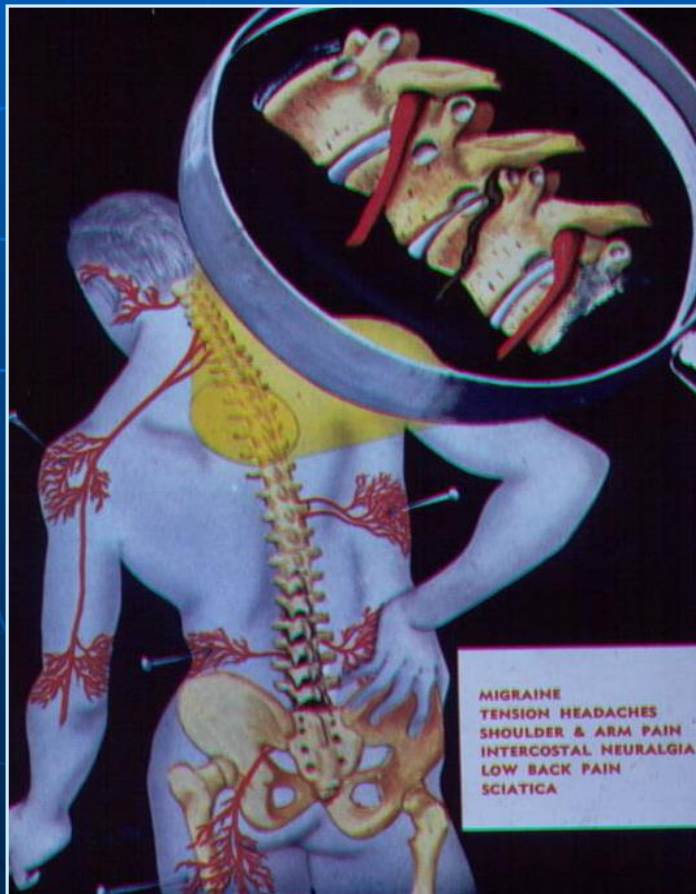
Peripheral Nervous System

Hubs
Connect
From Outlying
Areas to
Central Nervous
System



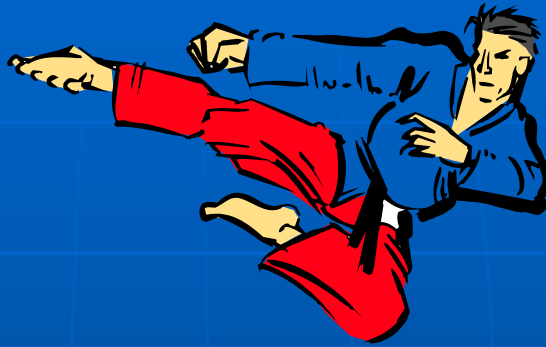
Autonomic Nervous System

Automatic Internal Processing

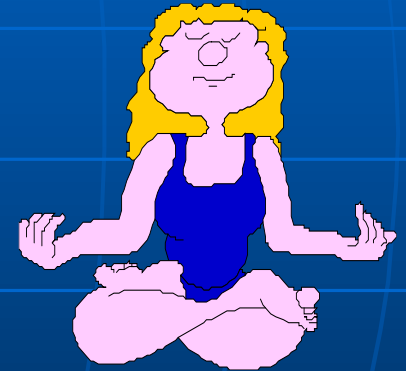


Autonomic Nervous System

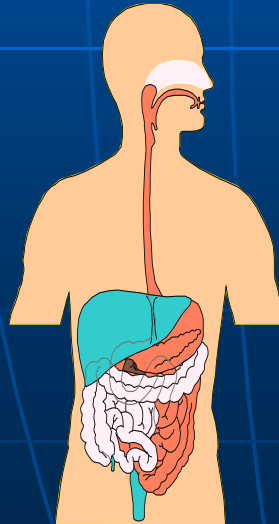
- Sympathetic



- Parasympathetic



- Enteric



Autonomic Nervous System

Sympathetic – fight, flight, fright and the 'away from system'

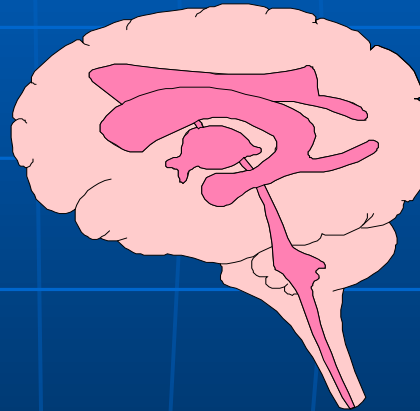
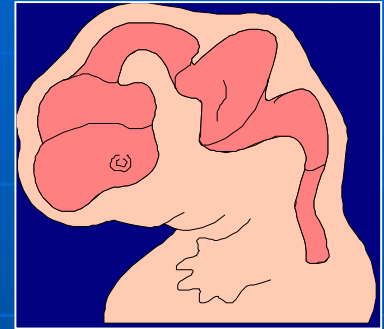
- Parasympathetic – rest, repair, relaxation, reproduction – our 'towards system'
- Enteric nervous system – our gut or 'belly brain' -

Autonomic Nervous System

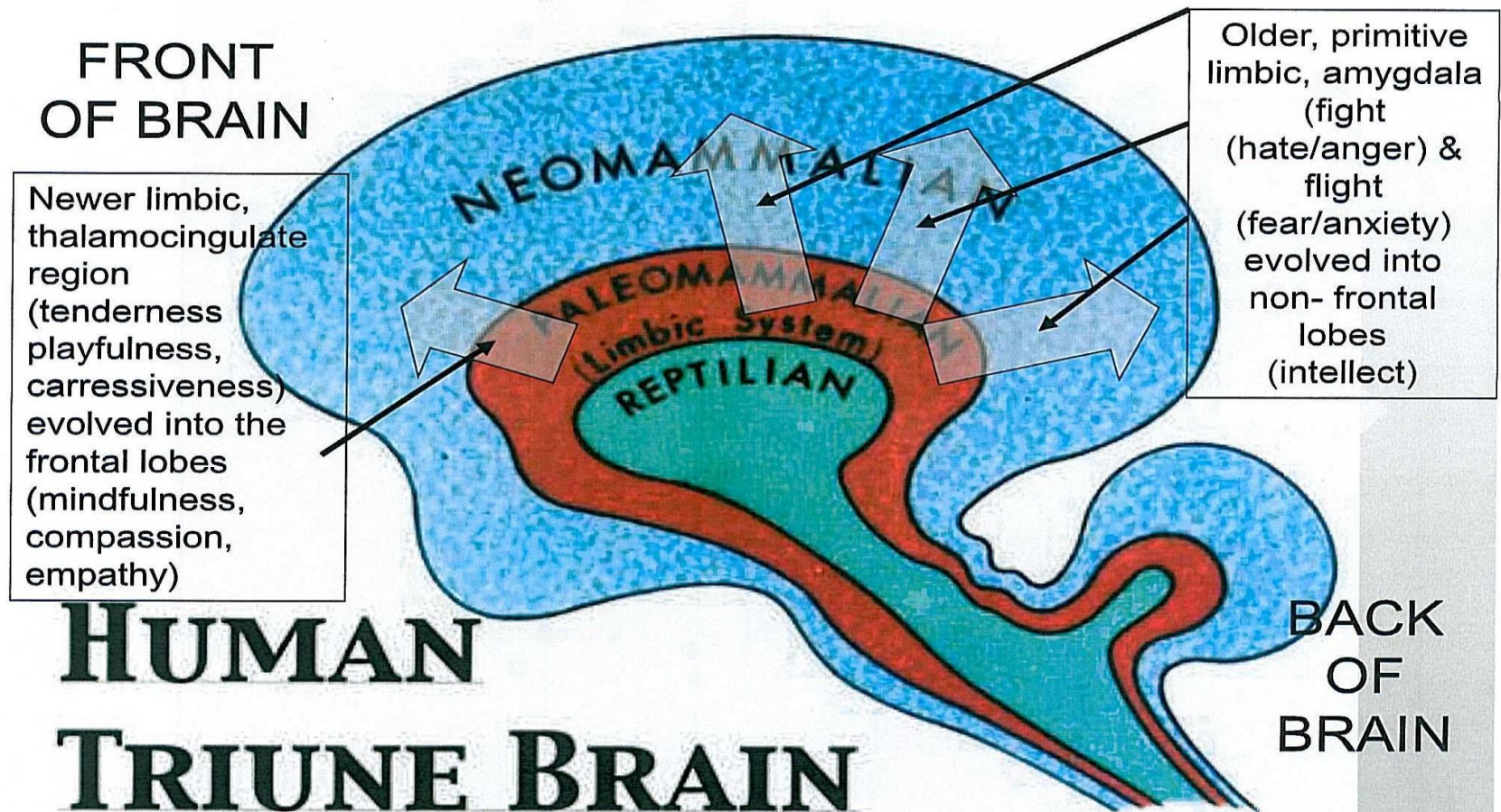
- Innervates everything – including all joints, viscera (guts), and extracellular tissue (outside the cell)
- Operates entirely at the subconscious levels of the nervous system (Limbic and Reptilian Levels)

The 4 Levels of Central Nervous System Function

- Reptilian – Brain Stem & Spinal Cord
- Limbic – Midbrain Functions
- Cortical – Lower & Higher Brain Functions

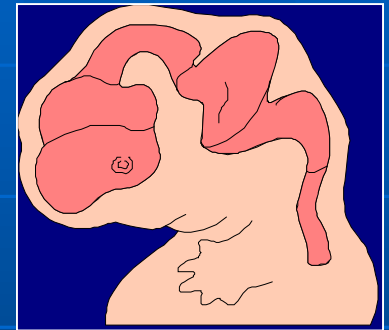


Human Triune Brain

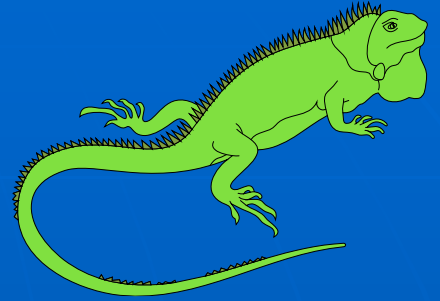


Reptilian System

- Primitive High Speed
- Basic & Reflexive
- Poor Differentiation
- Basic Survival Functions
 - Withdrawal or Startle Reflexes
 - Food – Suckling, Swallowing Reflexes
 - Shelter – Bonding, Fetal Positioning
 - Reproduction – Mating Reflexes
 - Territorial – Proprioception Reflexes



Reptilian System



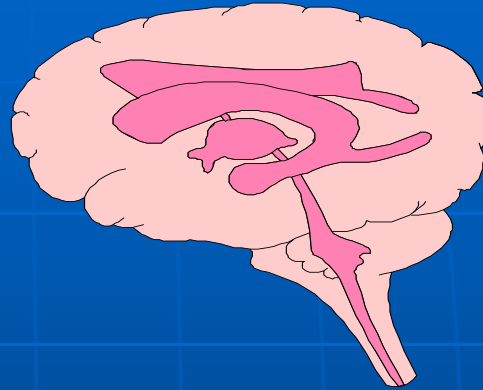
■ Reflexive

- Reflexes are designed to activate quickly – ie without thought
- Activate only when stimulated
- Are not supposed to be on – all-the-time or at-the-wrong-time.
- Should be active when needed.

■ Inappropriate activation/deactivation equals problems in normal processing

Limbic – Mammalian Brain

- Midbrain
- Emotions
- Bonding
- Pain – Abandonment-Survival
- Affects Decision Making – Towards/Away From



“Survival System Memories”

- Memory Can Store in the Reptilian and Parts of the Limbic System
 - As opposed to everyday memories.....
 - These are remembered and put into long term survival memory – very hard to extinguish...(IMPRINTED) ...
 - Their purpose is to “protect” you....
 - They form the basis of phobias, neurosis, and post traumatic stress syndromes



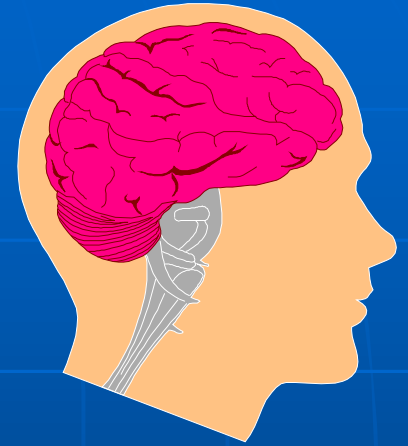
Survival System Memories (Imprints)



- Because they reside below the conscious level of brain functioning...
- They have to be treated from the level of the subconscious/unconscious functioning – (much like hidden files/programs in a computer)
- ... Not from conscious over-ride “programming”

Cortical Functions

- Adult
- Conscious - Cognitive
- Comparative
- Preplanning- Initiates
- Inhibitor to Reflex System
- Higher Energy Usage System
 - Shuts down when power goes down



Higher Brain Functioning

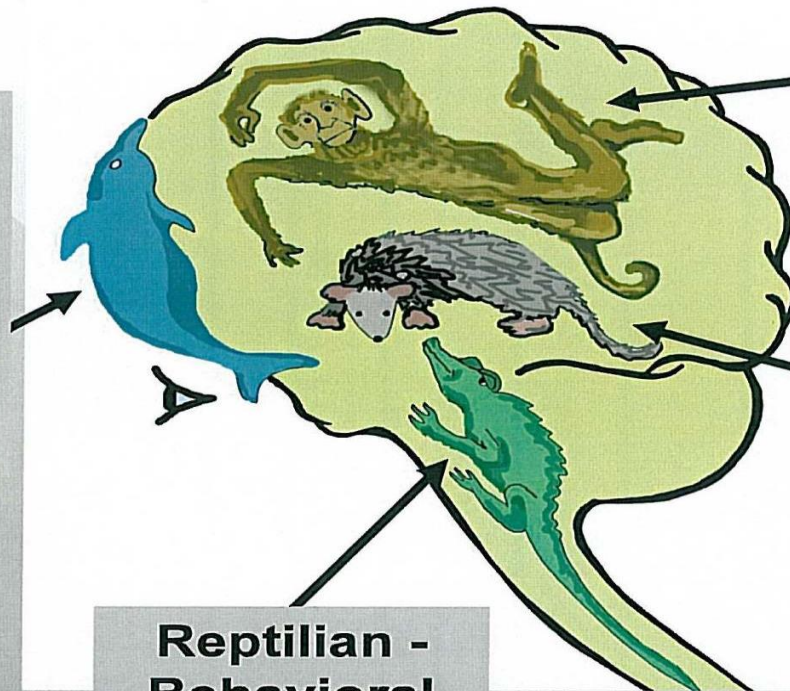
- Preplanning & Initiation
 - The person operating the computer
 - Decides direction and desired outcomes
 - Cortex is the keyboard – to input and initiate functioning.

The Quadrune Brain

The Quadrune Brain

Dr. MacLean took us to the threshold of the Quadrune Brain

Neo-mammalian
Mindfulness,
Compassion,
Empathy,
“Higher
Porpoise”



Neo-mammalian
Intellect,
cognition the
drunk monkey

Paleo-mammalian -
Emotionality,
warm blooded-
ness, nursing,
playfulness
and carress-
iveness

Reptilian -
Behavioral
compulsions

Higher Brain Functioning

- Inhibitory –
 - Braking System on Lower Functions
 - Loss of higher functioning = exaggerated reflex actions – as with deep tendon reflexes



Higher Brain Functioning

■ Integration

- Two of almost everything
- Sharing and comparing of information
- When working properly appears to be one co-ordinated , whole brain
- When not working properly seems fragmented, fractured, or broken

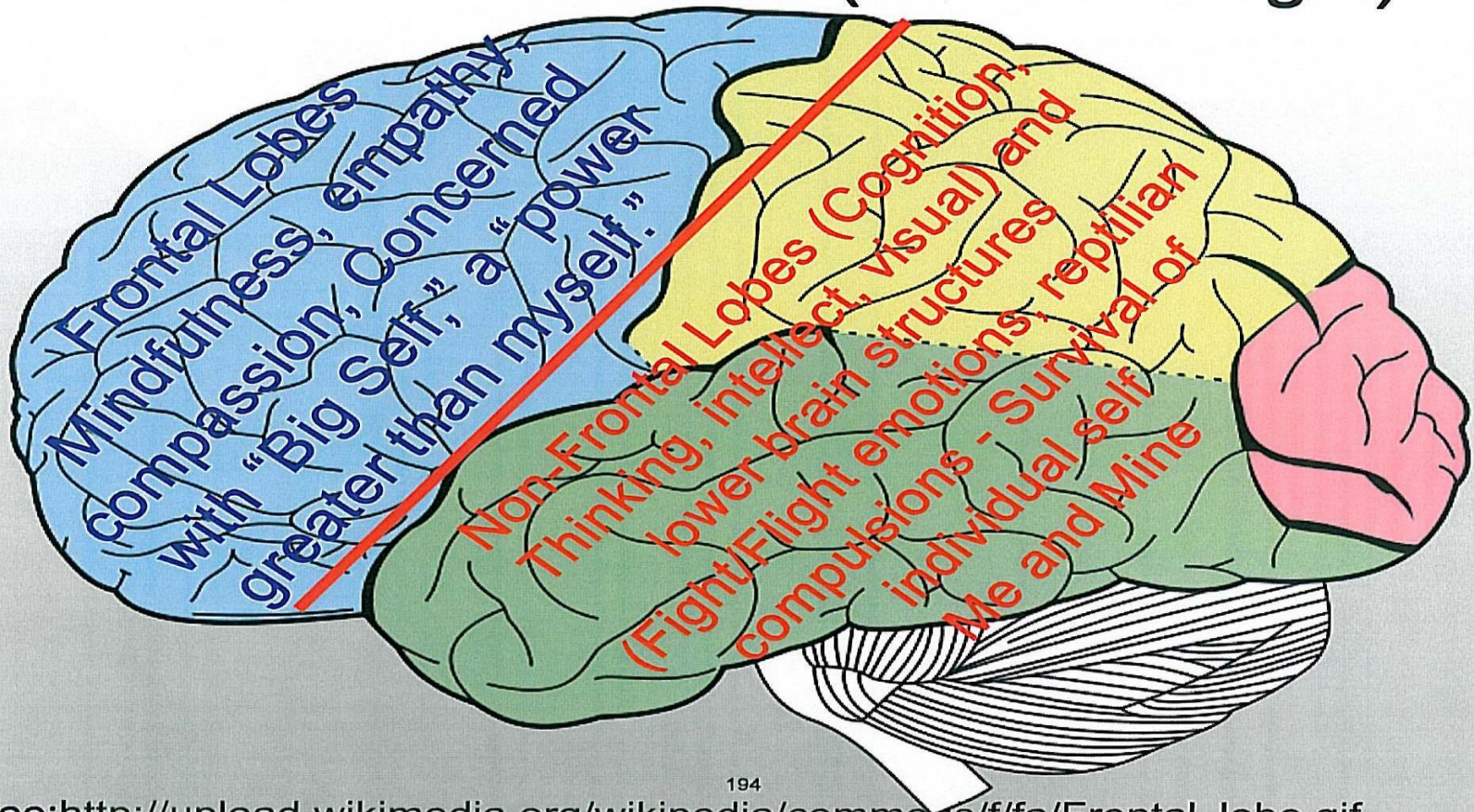


Higher Brain Functioning

- High Energy Utilization
 - Requires blood flow for oxygen, nutrients, and waste removal
- Loss of Energy results in:
 - Hibernation or Safe Mode
 - Shuts down to basic survival functions
 - Loss of inhibition – basic behaviors surface or unleash
 - Coma or/at least sleep if severe (think of alcohol overload)

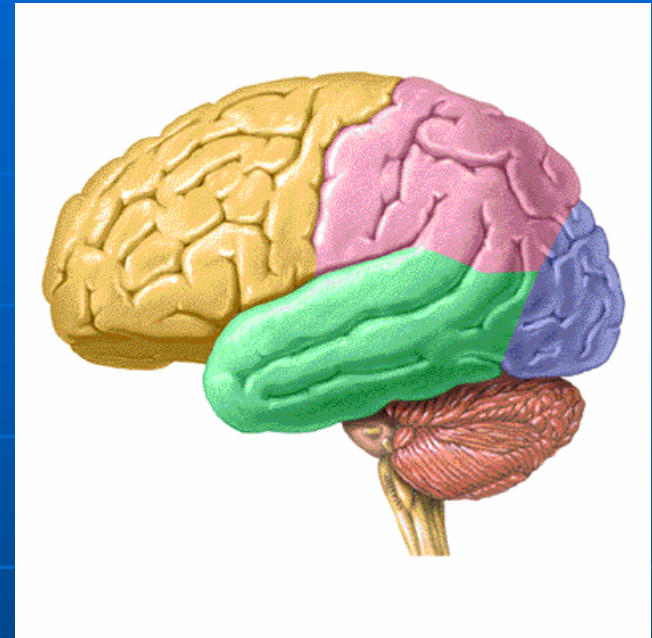
Cortical Function – Front/Back

A Dichotomous Brain (not left vs right)



There are 6 Areas of Major Brain Function

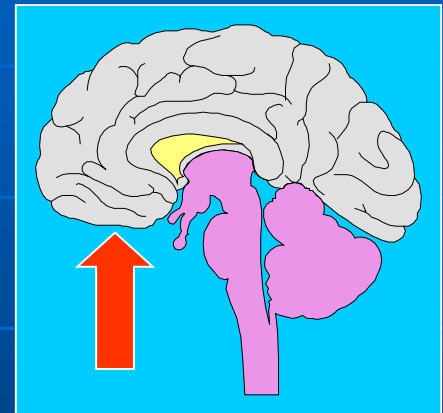
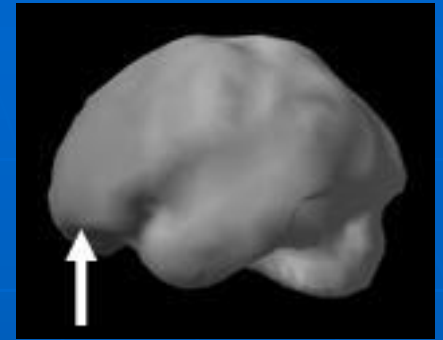
- PFC – Prefrontal Cortex
 - ACG – Anterior Cingulate Gyrus
 - DLS – Deep Limbic System
 - BG – Basal Ganglia
 - TL's - Temporal Lobes
 - Cerebellum
-
- Generally there are 2 sides to each area



Prefrontal Cortex

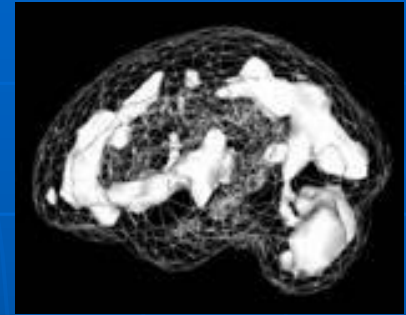
PFC

- Chief Executive Officer
- Adult - Executive functions
 - Forethought
 - Judgement
 - Impulse Control
- Not fully developed until adulthood
- Associated with ADD, Head Injuries, Toxic Exposure

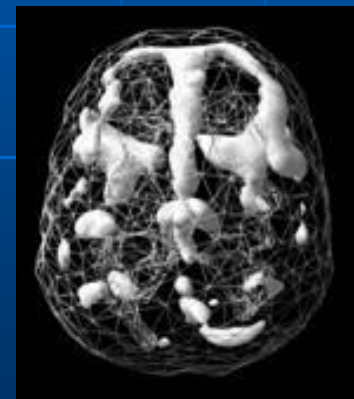


Anterior Cingulate Gyrus ACG

- The Brain's Gear Shifter
- Involved with
 - Flexibility – ability to adapt or change
 - Cooperation
 - Error Detection
- Problems of worry, hold grudges, opposition, argumentative



Side View

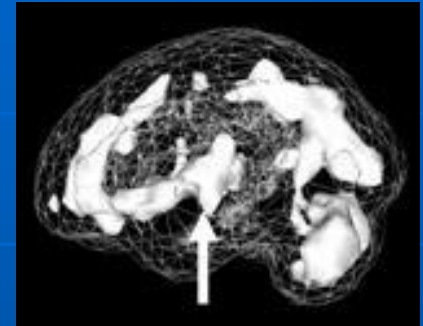


Top Down
View

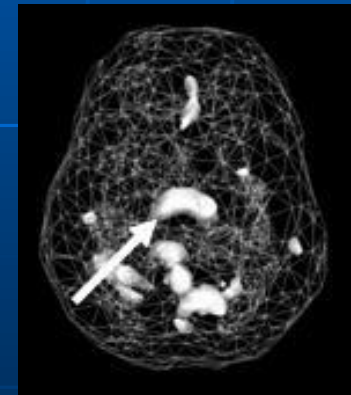
Deep Limbic System

DLS

- Sets Brain's Emotional Tone
- Filter through which we interpret and color events according to emotional state of mind
- Affects motivation & drive
- Associated with depression



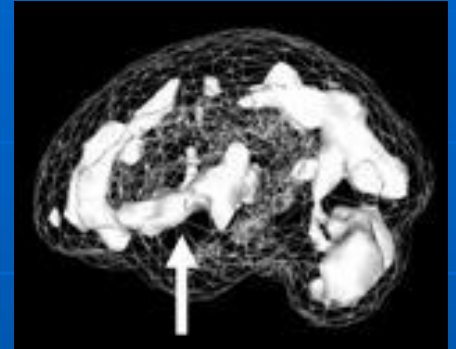
Deep Limbic
Side View



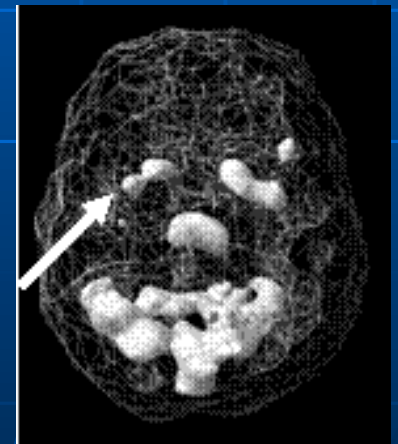
Deep Limbic
Top View

Basal Ganglia BG

- Sets Brain's Alarm or Anxiety Level
- Associated with
 - Anxiety
 - Irritability
- Helped with
 - Relaxation Therapies
 - Supplementation
 - Biofeedback Training



BG Left Side
View

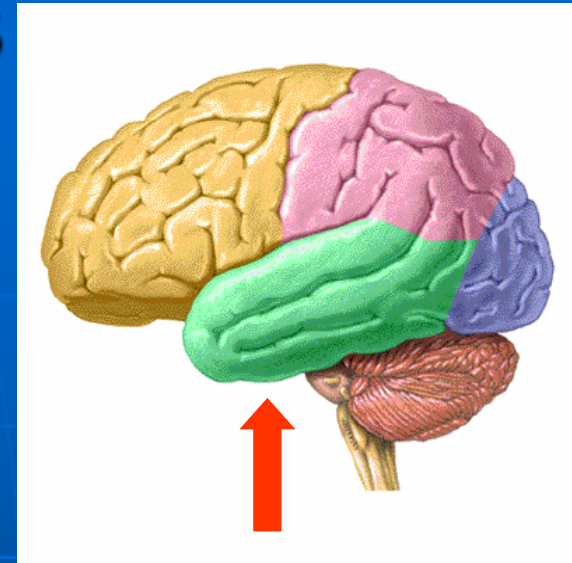


BG Top Down
View

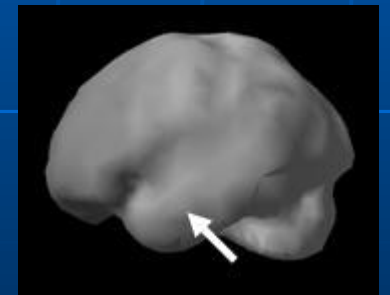
Temporal Lobes

TL's

- The “What” Pathways of the Brain
- Involved with
 - Language
 - Hearing and Reading
 - Music and Voice Tone
 - Connecting name to object
 - Spiritual connections

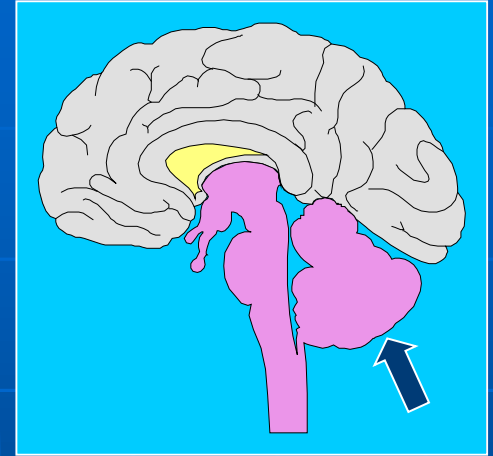


Temporal Lobe
Left Side

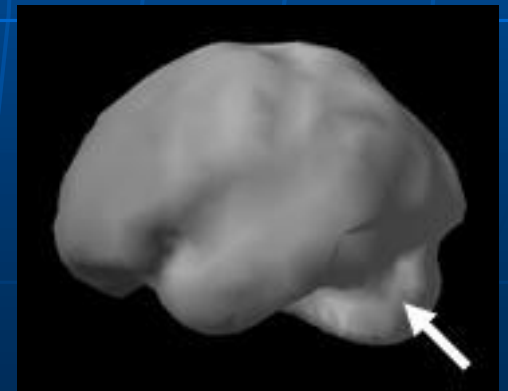


CEREBELLUM

- Lieutenant of the Cortex
- Motor Control & Feedback
- Usually the most active part of the brain
- Involved with high speed decision making and reactions
- Associated with trauma, toxins, ADD, impulsivity, and judgement issues.



Cerebellum Side View



ASSESSMENTS



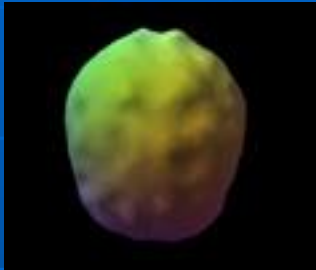
- Assessments involve Functional Evaluation of the different areas of the brain
- Functional Questionnaires
- Functional Brain Scans
- Functional Neurological Testing
- EEG Mapping

SCANS

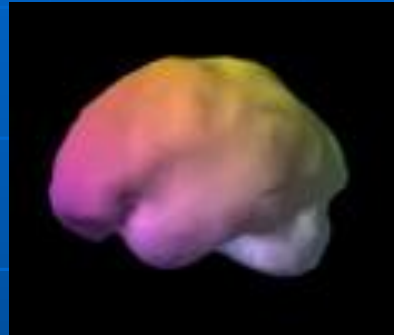
- fMRI or SPECT Scans – to demonstrate blood flow of the brain under different activities
- Lack of blood flow = poor brain function
- Deposits of iron indicate areas of previous damage/trauma

Brain Scans

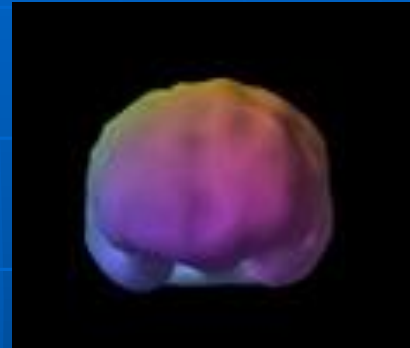
Normal Brain
Top View



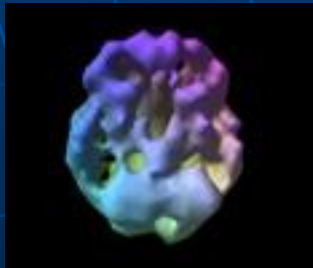
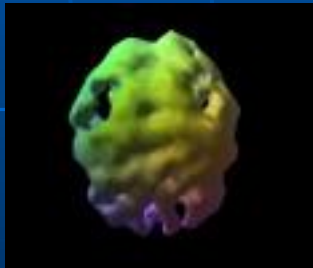
Normal Brain
Side View



Normal Brain
Front View



Alzheimer
Brain Views



Stroke Side
View



Trauma Front
View



QUESTIONNAIRES

- Questionnaires have been correlated with brain scans – reliable predictors of function
- Correlate 6 areas of brain function for differential diagnosis
- 3 major questionnaires –
 - Brain Master Questionnaire
 - ADD/ADHD
 - Anxiety/Depression

Questionnaires

- Need to be filled out by two people
 - Indicate objective (other person)
 - Plus subjective (your self) evaluation

These two perspectives gain a more accurate assessment than just one view.

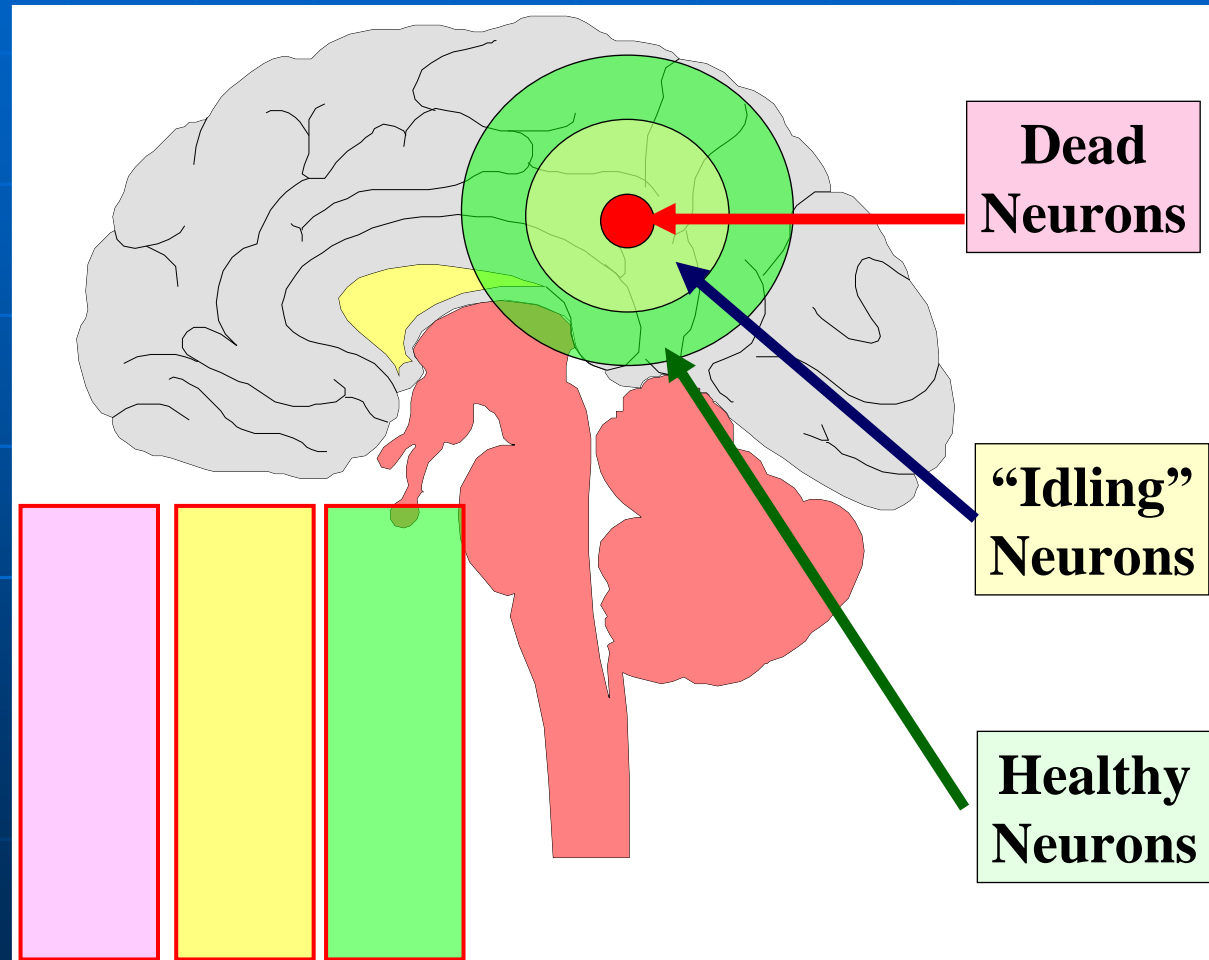
Scoring indicates – minor, probable, highly probable involvement

Neurological Assessments

- Standard neurological evaluations for pathology or dysfunction
- Non-standard assessments using autonomic reflex testing and manual muscle testing for strength and reflexes.
 - Both help to pinpoint problem areas

Neurological Assessments

Designed to
Differentiate
Injured or
Impaired
Functions
from Healthy
Functional
Neurons



Interference Factors

- The following are common causes of interference to normal healthy brain functioning:
 - Injury – Central, Spinal, Peripheral
 - Toxicity – Infections, Petrochemical toxins, drugs,
 - Deficiencies – Lack of essential nutrients, sleep, etc.

INTEGRATION FACTORS

- NUTRIENTS
- EXERCISE
- TOXINS
- STRUCTURAL INTEGRATION
- COMMUNICATION SYSTEMS
 - OPERATING SYSTEMS
 - PROGRAMS
 - LINKAGE

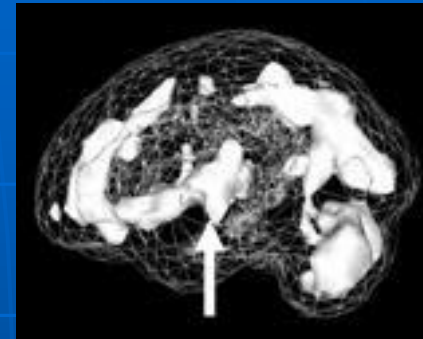
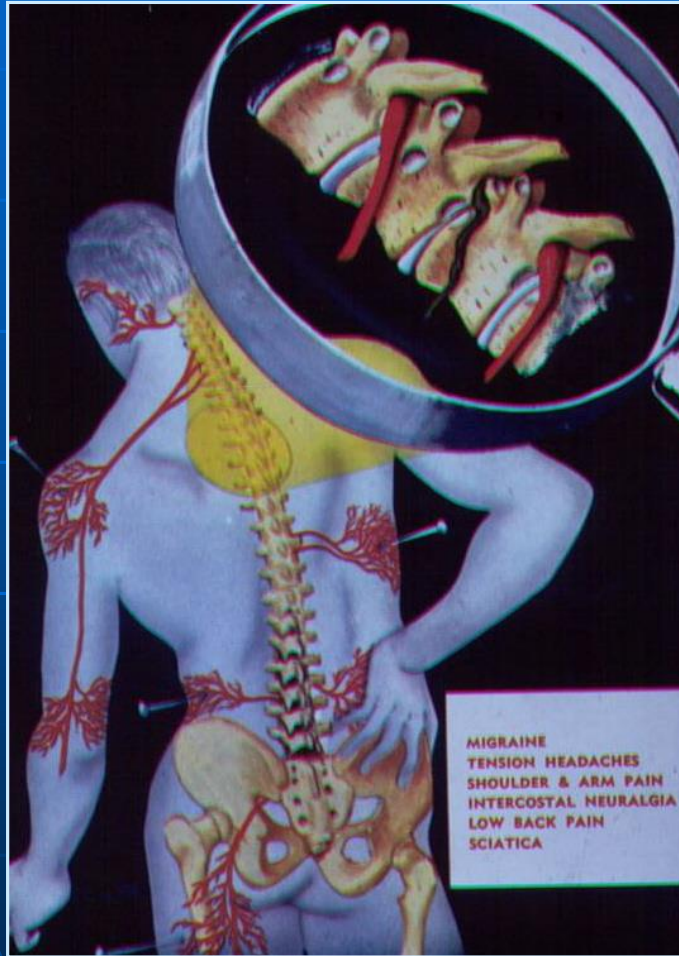
Integration Factors

- The brain is dependent on the body for its functioning
 - Needs oxygen
 - Needs blood supply for food and waste removal....
 - Has little room for toxin storage....
 - Has little capacity for structural rearrangements....

Integration Factors

- Therefore the brain can malfunction
 - “Feel like it is broken...”
 - when it is affected by
 - Structural disruption....CNS, Peripheral, or Locally
 - Nutritional deficiencies.... Vitamin, Minerals, Enzymes
 - ToxicityInfections, Drugs, Chemicals or Disrupted communication systems

BACK PAIN



Deep Limbic
System -
Thalamus

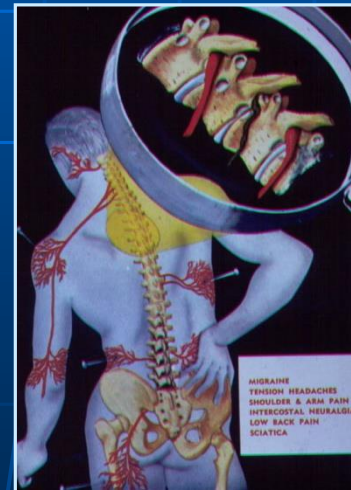
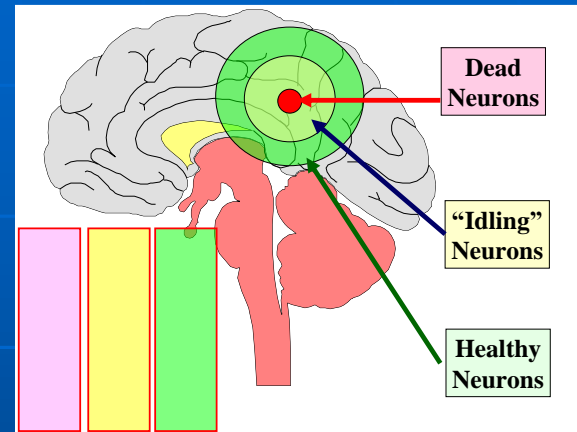


Irritability/Stress

Fixing Broken Brains



- Involves
- Identifying and Correcting all the factors that are causing interference
- In the proper sequence
- Thoroughly



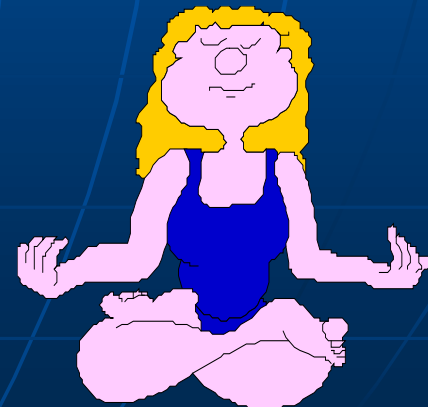
Prozac ®
Paxil ®
Zoloft ®



Fixing Broken Brains



- Means tuning the system
- With Structural Integration, Nutrients, Reprogramming, and Integrated Therapies
- To create Healthy Integrated Functioning



Healthy Brain Solutions



Ocean Park Natural
Therapies

#200 12761-16th
Avenue
Surrey, B.C.
604-538-3017