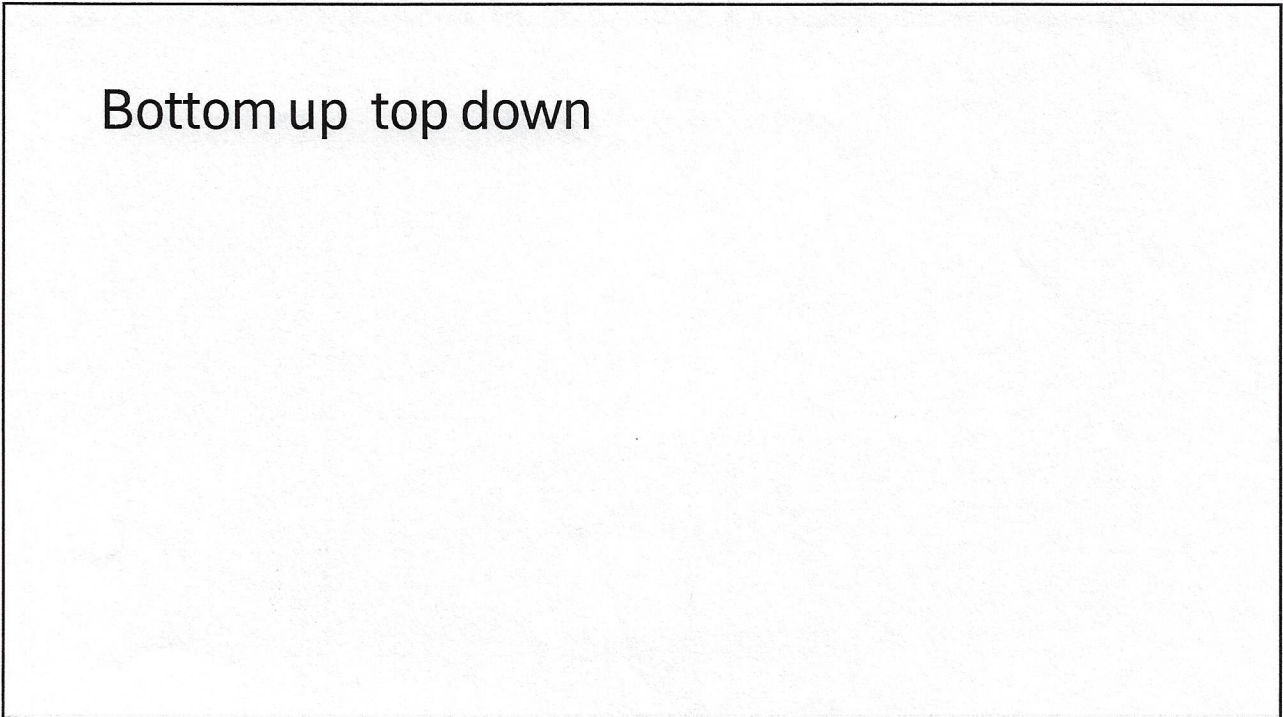


New

1



Bottom up top down

2

Bottom up/Top down

- Bottom-Up:

Always receptor driven first

Involves using a stimulus from one of the stimulus categories

- Touch
- Vibration
- Smell
- Taste
- Light
- Sound
- Stretch
- Vestibular

- Top-Down:

- Brain Driven
- Involves using some type of brain activation first
- TMS
- Saccadic Eye Movements
- Explicit Motor Imagery

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PMRF—Brainstem findings

Dysautonomic	Reflex	Motor
Increased Bld Pressure	Decreased Corneal Reflex	Soft Pyramidal Paresis
Increased Pulse Rate	Decreased Gag Reflex	Depressed DTR's
Decreased HRV	Decreased Carotid Sinus Reflex	Depressed Soft Palate Elevation
Cold Hands/Feet	Decreased Valsalva's Reflex	
Decreased Capillary Refill	Decreased Mammalian Dive Reflex	
Decreased o2 Saturation		
Decreased A: V Ratios (Eyes)		
Dry Eyes		
Decreased Gut Motility		
Constipation		
Irritable Bowell Syndrome		

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PMRF Assessments

Compass 31	Corneal Reflex	Soft Palate Elevation
Bilateral Blood Pressure	Gag Reflex	
Capillary Refill/Pulse Oximetry	Valsalva's Reflex	Soft Pyramidal Weakness
HRV	Orthostatic Intolerance/Tilt Table	DTR's
Red Desaturation	Carotid Sinus Compression	
Decreased o2 Saturation	Mammalian Dive Reflex	
Bilateral A: V Ratios (Eyes)		
Bowell Sounds		

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PMRF therapies

- Chewing Gum Gargling SSEP (Ipsilateral)
- Vagal Nerve Stimulation (Ipsilateral)
- Carotid Sinus Massage (Ipsilateral)
- EMS/Touch/Vibration to Face (Ipsilateral)
- Insufflation Therapy (Ipsilateral)
- Magnetic Auricular Therapy

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Cerebellum Findings

Midline	Intermediate	Lateral
Impaired Visual Acuity with Head turns	Limb coordination Issues	Cognitive Processing Issues
Impaired Balance	Clumsiness	Depression
Nausea	Dyspraxia	Memory Issues Intermediate Region
Dizziness	Extremity Tremor on Movement	
Vertigo	Hypotonia	
Orthostatic Intolerance		
Nystagmus		
Hypotonia		

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Cerebellar Assessments

Midline	Intermediate	Lateral
Stork Test	Finger to nose to finger	King Devick
Saccadic Accuracy	Rapid Alternating Hand Movements	Cognitive
Ocular Tracking	Rapid Alternating Thigh Taps	Intermediate Region
Head Impulse Test	Heel: Shin to Toe	
Unterberger's Test		
mCTSIB		
Orthostatic Intolerance		
Midline Spinal Titubation Perform Gillets Test		

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Cerebellar Therapies

Midline	Intermediate	Lateral
Vestibular Rehab	Figure and limb movements from shoulder and hip	King Devick
Gaze stabilization exercises	Passive	Interactive Metronome
Head Impulse	Active	Intermediate therapies
Galvanic Nerve Stimulators	Resisted	Peak performance App
Saccades/Pursuits	Complex	
Core Stabilization exercises	Bird Dog exercises	
	Guided limb movements	
	Laser Feedback	
	DynaVision/Senaptec	

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Midbrain

Findings	Assessment	Therapies
Visual Disturbances (Vertical Plane)	Ptosis, Exophoria/Exotropia	Vertical OKN/Ocular Tracking & Saccades
Oscillopsia	Pupillary Light Reflex	Convergence/Accommodation Exercises
Anxiety	Ocular Tracking (Vertical)	Hemistim
Depression	OKN (Vertical)	
Tremors	Convergence/Accommodation Convergence Insufficiency	
Vertical Diplopia		
Blurred vision		
Eye strain		

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Frontal lobe Findings

Cognitive/behavioral	Motor	Reflexes	Sensory
Impulsivity	Dyspraxia	Ipsilateral Hyporeflexia Pyramidal Distribution	Smell
rigidity	Hypotonia	Contralateral Hyperreflexia Pyramidal Distribution	
Memory loss	Hypomnesia	Contralateral Reemergence of Primitive reflexes	
Depression	Soft Palatal Weakness		
Decreased Affect	Slowed saccades		
Perseveration	Impaired vertical eye movements		
Lack of abstract thinking	Impaired Anti-saccades		

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Frontal Lobe Assessment

Cognitive/Behavioral	Motor	Reflexes	Sensory
S.A.C	Shoulder Shrug	Primitive reflexes	Smell
Trail Making Test	Gait: Arm swing	OKN(vertical)	
Digit Symbol Substitution			
Wisconsin Card Sorting	Wisconsin Card Sorting	Wisconsin Card Sorting	Wisconsin Card Sorting
Cambridge Brain Science	Saccades (Vertical)	Glabella Tap Test	
Cognivue	Finger Tapping	DTR's	
Impact	Applause Test		
CNS Vital Signs	Go/No Go Task		
	Stroop		

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Frontal Lobe Therapies

- Vertical/Oblique Patterned Saccades
- Vertical OKN Stimulation
- Anti-Saccades
- Unilateral Naris Occlusion
- Smell (Essential Oils)
- Interactive Metronome Motor Sequencing & Patterning
- Contralateral Cerebellar Therapies
- Peak App for Motor Planning
- Stroop/Go No-Go/N Back (Dynavision)

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Basal Ganglia Findings /assessment

Findings	Assessments
Resting Tremor	Observation of Resting Tremor (My Tremor App)
Hypo/Hyper Kinetic Movements	Rigidity
Rigidity	Hypotonia
Increased Time to Initiate Movement (Latency)	Freezes/Hesitations in Movements
Impulsivity	Delayed Time to Initiate Movements
Obsessive/Compulsive Tendencies	Behavioral Changes (Impulsivity)

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Basal Ganglia Therapies

Direct

- Sensory Guided Motor Reaction Time
- Dynavision
- Fit Lights
- Blaze Pods
- Peak (Reaction Times)

InDirect

- Stroop
- Go/No-Go
- Anti-Saccades

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Parietal Lobe Dysfunction

Sensory	Motor	Reflexes
Neglect	Dyspraxia	Impaired Ipsilateral OKN Refer to Current Literature
Environmental Unawareness	Hypotonia	
Spatial Localization Impairment	Impaired Ocular Tracking	
History of Dysesthesia		
History of Repetitive Injuries to One Side of The Body		

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Parietal Lobe Assessments

Sensory	Motor	Reflexes
Light Touch & Pinwheel	Horizontal Pursuit Eye Movements	Horizontal OKN
Sensory Extinction	Arm Drift/Pronator Drift	Arm Repositioning to Slap
Point Localization	Limb Repositioning Test	
2-Point Discrimination	Interlocking Finger Test	
Graphesthesia		
Joint Position Sense		
Sound Localization		
Stereognosis/Barognosis		
Blind Spot: Inferior Field		

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Parietal lobe therapies

- Horizontal OKN Stimulation (Ipsilateral)
- Skin Brushing/Massage (Contralateral)
- Point Localization (Contralateral)
- Saccades to Touch (Contralateral)
- Explicit Motor Imagery (Bilateral)
- Inferior Quadrantanopic Light Stim (Contralateral)

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Temporal Lobe

Cognitive/Behavioral	Motor	Reflexes	Sensory
Difficulty with Auditory Discrimination	Motor Aphasia	None	Sensor Aphasia
Difficulty Naming Smells			Tinnitus
Smells Become More Pungent			Anosmia
Short/Long Term Memory Deficits			Superior Visual Scotoma's
Difficulty Understanding Speech			
Religious Preoccupations			
De Ja Vu			
Absent Seizures			

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Temporal Lobe Assessments

Cognitive/Behavioral	Motor	Reflexes	Sensory
Memory Evaluation	Saccades to Remembered Targets	None	Identifying Smells (Left Brain)
Peak App	Weight Shift Targeting to Sound Image		Identifying Smells as Pleasant or Pungent (Right Brain)
Cambridge Brain Science			Facial Recognition (Left Brain)
EQ Brain			Facial Emotional Recognition (Right Brain)
			Blind Spot (Enlarged Superior Portion)

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Temporal Lobe Therapies

Cognitive/Behavioral	Motor	Reflexes	Sensory
Memory Focused Tasks	Saccades to remembered targets (Contralateral)	None	Smell (Ipsilateral)
N-Back (N-Back Pro App)	Limb Movements to remembered targets (Contralateral)		Superior Quadrantanopic light stimulation (Contralateral)
Peak App	Weight shift targeting to sound image		Sound (Contralateral Ear)
Sudoku			Unilateral Ear Canal Occlusion
Crossword Puzzles			
Make it Salient			

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Occipital lobe

Sensory	Motor	Reflexes
Visual disturbances either of impaired vision and or visual hallucinations (Floaters)	Impairment of Visual Guided Movements	None
Color Blindness	Reading (Saccades)	
Reading	Any Action Requiring Vision	

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Occipital lobe assessment

Sensory	Motor	Reflexes
Ishihara Test	Optic Ataxia	None
Munsell Hue Test	Impairment of any movement that requires vision (Visual Guided)	
Snellen Eye Chart		
Visual Field Testing Via Confrontation Testing or computerized		

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Occipital lobe Therapies

Sensory	Dorsal	Ventral stream
Hemifield Light Stimulation	Visual Guided Movements	Recognizing Faces
Eye Lights	Marsden Balls	Recognizing Objects
Syntonics	QBall	

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