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INTRODUCTION TO BASIC SYNTONIC SYNDROMES

Disclosure

- I have no financial interest in any of the items, methods, or equipment mentioned in this lecture

College of Syntonic Optometry

A NONPROFIT CORPORATION DEDICATED TO RESEARCH IN PHOTORETINOLOGY, THE THERAPEUTIC APPLICATION OF LIGHT TO THE VISUAL SYSTEM

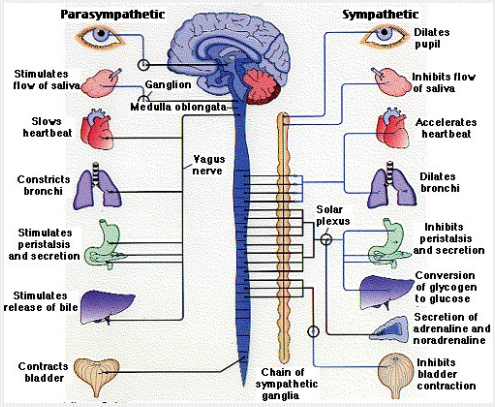
Rob Fox, OD, FCOVD, FCSO – President CSO

Basic Syntonic Syndromes

- Will cover 90-95% of cases
- What caused the stress?
- Treat the problem, not the symptom

The Autonomic Nervous System

Sympathetic and Parasympathetic



Sympathetic Actions

- Dilates the pupil
- Increases tearing
- Increases intraocular pressure
- Decreases accommodation
- Turns eye outward

Sympathetic Actions

- Decreases mucus, saliva and digestion
- Decreases arterial dilation
- Increases pulse rate
- Increases blood pressure
- Increases blood sugar

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Sympathetic Activation

- Thyroid
- Adrenal Medulla
- Pituitary
- Gonads
- Muscles

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Post-Traumatic Vision Syndrome

- Exophoria/exotropia
- Reduced accommodation
- Reduced convergence
- Poor blink rate / poor tearing
- Photophobia

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Parasympathetic Actions

- Pupil constriction
- Decreases tearing
- Decreases intraocular pressure
- Increases accommodation
- Turns eye inward

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Parasympathetic Actions

- Increases mucus, saliva and digestion
- Decreases pulse rate
- Increases arterial dilation
- Decreases blood pressure
- Decreases blood sugar

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Parasympathetic Activation

- Parathyroids
- Adrenal cortex
- Digestive tract
- Liver
- Pancreas
- Spleen

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Light Action on the Visual System

- Light Pathways
- Effect on Autonomic Nervous System
- Frequencies of light and how they affect the visual system

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Light Pathways

- Nonvisual photoreceptors of the deep brain, pineal gland and retina
- Hypothalamus: suprachiasmatic nucleus>pituitary
- Pituitary: ACTH to adrenal gland
- >cortisol/stress hormone
- Pineal: melatonin production
- Retina: influences suprachiasmatic nucleus
- **Intrinsically photosensitive retinal ganglion cells**

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- **Intrinsically photosensitive Retinal Ganglion Cells**(ipRGCs), also called **photosensitive Retinal Ganglion Cells** (pRGC), or **melanopsin-containing retinal ganglion cells,** are a type of neuron (nerve cell) in the retina of the mammalian eye. While responses to light in mice lacking rods and cone cells were first noted in 1923,[1] they were forgotten, then rediscovered in the early 1990s.[2] The source of these responses was shown to be a special type of retinal ganglion cell, which, unlike other retinal ganglion cells, is intrinsically photosensitive. This means that they are a third class of retinal photoreceptors, excited by light even when all influences from classical photoreceptors (rods and cones) are blocked (either by applying pharmacological agents or by dissociating the ganglion cell from the retina). Photosensitive ganglion cells contain the photopigment melanopsin. The giant retinal ganglion cells of the primate retina are examples of photosensitive ganglion cells.

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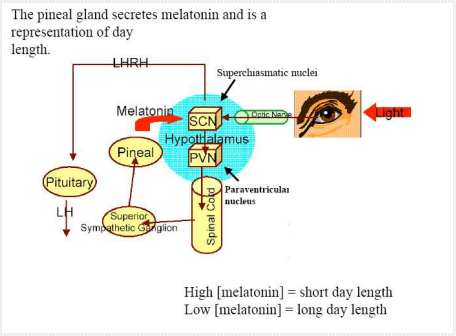

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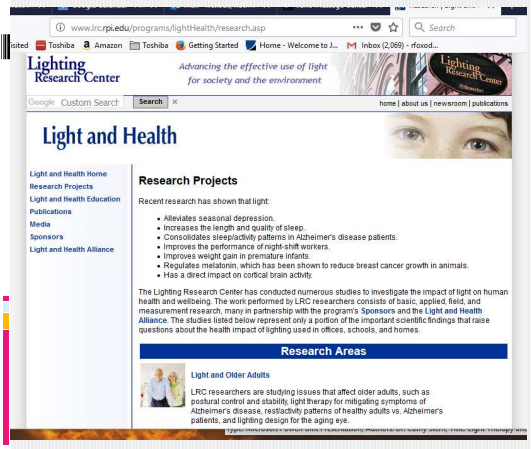

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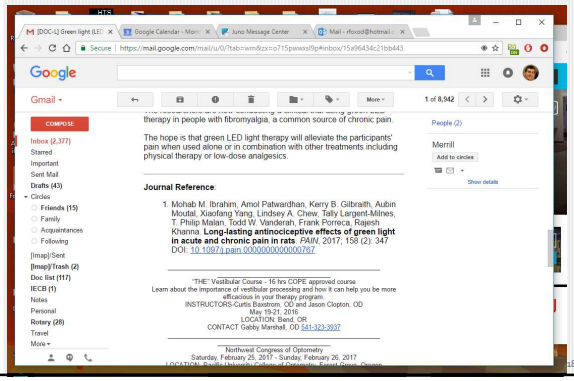
Current Research



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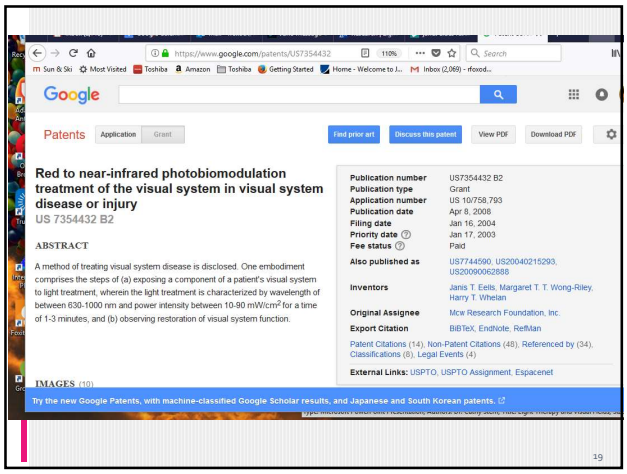
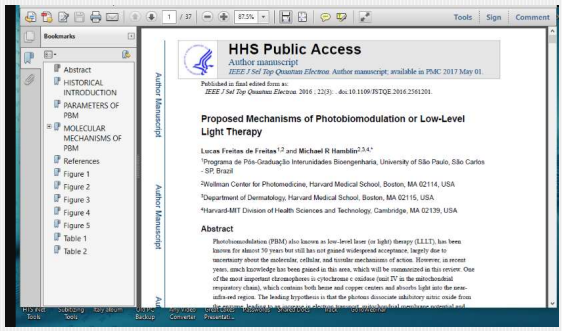


Photobiomodulation



Balance Board – general considerations

NEUTRALIZATION KEY

Stimulate Sympathetic						Syntony			*Stimulate Parasympathetic*				
αδ	αθ	α	δ	θ	μθ	μδ	μ	μυ	μπ	π	ω	ν	πω	υω

Add "S" to augment this side Flash

L

Add "D" to augment this side No Flash

Red end of spectrum= sympathetic stimulation

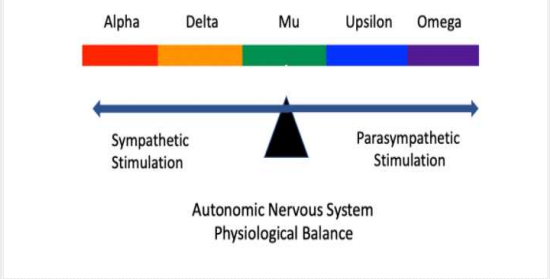
Blue end of spectrum= parasympathetic stimulation

Red = sensory stimulant
Orange = motor stimulant
Yellow = intense motor stimulant

Green equalizes for physiological balance

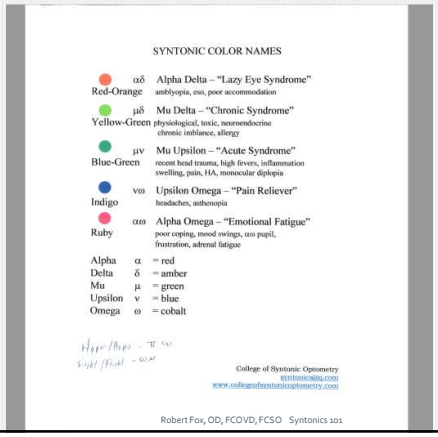
Blue = sensory depressant
Indigo = motor depressant
Violet = intense sensory depressant

α alpha = red
δ delta = amber
μ mu = green
υ upsilon = blue
ω omega = indigo



The "Miracle Workers"

- Chronic Syndrome
- Acute Syndrome
- Amblyopia/Esotropia Syndrome
- Emotional / Adrenal Exhaustion Syndrome



SYNTONIC COLOR NAMES

Red-Orange	αδ	Alpha Delta – "Lazy Eye Syndrome" amblyopia, eso, poor accommodation
Yellow-Green	μδ	Mu Delta – "Chronic Syndrome" physiological, toxic, neuroendocrine chronic imbalance, allergy
Blue-Green	μν	Mu Upsilon – "Acute Syndrome" recent head trauma, high fevers, inflammation swelling, pain, HA, monocular diplopia
Indigo	νω	Upsilon Omega – "Pain Reliever" headaches, asthenopia
Ruby	αω	Alpha Omega – "Emotional Fatigue" poor coping, mood swings, αω pupil, frustration, adrenal fatigue

Alpha	α	= red
Delta	δ	= amber
Mu	μ	= green
Upsilon	ν	= blue
Omega	ω	= cobalt

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Lemon Mu Delta – "Chronic Syndrome" physiologic stabilizer

Dx: convergence excess, esophoria/esotropia alpha omega pupil and poor oculomotor constricted visual field for form or color low recovery on ductions (especially BI)

Sx: toxic or neuroendocrine imbalance chronic health problems or past trauma

Tx: stimulate sympathetic, create exo response

Ruby Alpha Omega – "Emotional Fatigue" Syndrome

Dx: alpha omega pupil, fatigue exo, low breaks and recoveries (especially BO), adrenal fatigue

Sx: photophobia, transient blurred vision, fatigue, headache

Tx: balance parasympathetic and sympathetic

Treatment Protocol (end at middle of spectrum)

Ruby Alpha Omega

\+

Lemon Mu Delta

Alpha Delta – "Amblyopia Syndrome"

Red-Orange sensory + motor stimulant

Dx: amblyopia, esotropia, poor accommodation, constricted visual field, reduced vergence ranges

Sx: reduced acuity on one eye, head tilt or turn, poor depth judgment, diplopia
also slow reading speed and poor handwriting

Tx: stimulate sympathetic
especially in long standing strabismus

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Alpha Delta – "Amblyopia Syndrome"

Red-Orange amblyopia, eso,
poor accommodation

Mu Delta – "Chronic Syndrome"

Lemon physiological, toxic,
neuroendocrine

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Why Red-Orange or Lemon ?

- Sympathetic Activation
- Sensory and Motor Stimulant
- For amblyopia, esotropia
- Stimulates Exo Response

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Treatment Protocol (end at middle of spectrum)

Red-Orange Alpha Delta

+

Lemon Mu Delta

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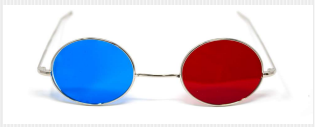
Nascentization

- Usually used for amblyopia
- Local vs Non-Local
- Red lens over non-dominant eye
- Syntonizer just has diffusing filter
- Do for 3 minutes prior to syntonic treatment



Alpha Omega – "Emotional Fatigue"

Ruby pupil, adrenal fatigue, emotional
trauma, exhaustion, mood swings

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Color Combinations

- Alpha Delta + Mu Delta (esotropia)
- Alpha Omega + Mu Delta (80% of cases)
- Alpha Omega (alone)

Always end at the middle of the balance board

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Mu Upsilon – "Acute Syndrome"

Blue-Green recent head trauma, anoxia, stroke

Dx: exophoria, exotropia, convergence insufficiency (PTVS), alpha omega pupil, enlarged blind spot, poor ocm / accommodation

Sx: headache, motion sickness, vertigo, transient blurred vision, diplopia (monocular)

Tx: stimulate parasympathetic

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Why Indigo or Blue-Green ?

- Parasympathetic Activation
- Sensory and Motor Depressant
- For Pain and Spasm
- Stimulates Eso Response

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Upsilon Omega – "Pain Reliever"

not a syndrome

Indigo headaches, asthenopia

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Mu Upsilon – "Acute Syndrome"

Blue-Green recent head trauma, high fevers, inflammation, swelling, pain, HA, monocular diplopia

Upsilon Omega – "Pain Reliever"

Indigo (Violet) headaches, asthenopia

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Treatment Protocol (end at middle of spectrum)

Indigo Upsilon Omega

+

Blue-Green Mu Upsilon

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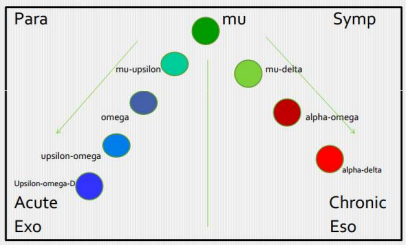
Color Combinations

- Mu-Upsilon
- Upsilon-Omega + Mu-Upsilon
- Omega + Mu-Upsilon

Treatment Protocol

- Frequency of light into the eye
- 20 minutes per session
- Minimum of 4x per week
- Progress Evaluation every 8 sessions
  repeat history, vision analysis, VF
- Low Risk and Few Side Effects

Hancock Decision Tree



Questions?

- See you tomorrow!!