

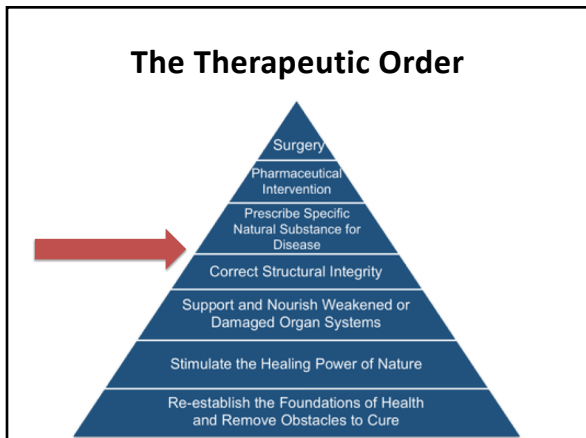


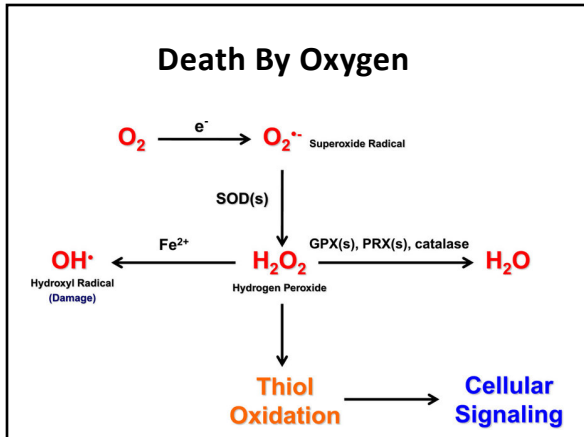
• I have no disclosures






### Principles of Naturopathic Medicine

- **1- First, Do No Harm (*Primum non nocere*)**  
non-invasive and least toxic treatments necessary for each patient.
- **2- The Healing Power of Nature (*Vis medicatrix naturae*)**  
the body's inherent ability to heal itself.
- **3- Identify and Treat the Causes (*Tolle causam*)**  
identify, address and remove the underlying causes of disease.
- **4- Doctor as Teacher (*Docere*)**  
Educating and supporting patients, empowering patients to take responsibility for their own health. The therapeutic value inherent in the doctor-patient relationship.
- **5- Treat the Whole Person (*Tolle totum*)**  
The body as an integrated whole. Treat the patient, not the disease.
- A naturopathic assessment addresses the nutritional status, lifestyle, family history, physical, mental, emotional, genetic, environmental and social factors in a person's life.
- **6- Prevention (*Praevenic*)**  
Naturopathic doctors promote a focus on overall health, wellness and disease prevention.





### Antioxidants

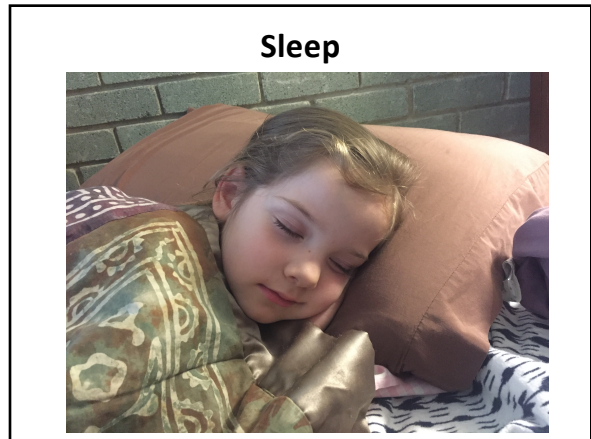
- Polyunsaturated Fatty Acids (olive, avocado, coconut oils)
- Vitamins E, A, D, K (fat-soluble)
- Curcumin, resveratrol, flavonoids
- Anthocyanins, carotenoids
- Epicatechins: Cocoa powder/ dark chocolate, blackberry, raspberry, strawberry
- Melatonin, glutathione (Vitamin C, NAC)
- Capsaicin, Ginger
- Omega 3 Fatty Acids (fish oil)

### Inflammation Testing

**inflammation testing™**  
from ClevelandHeartLab

Multi-marker testing for targeting use of antioxidant and nutritional supplements

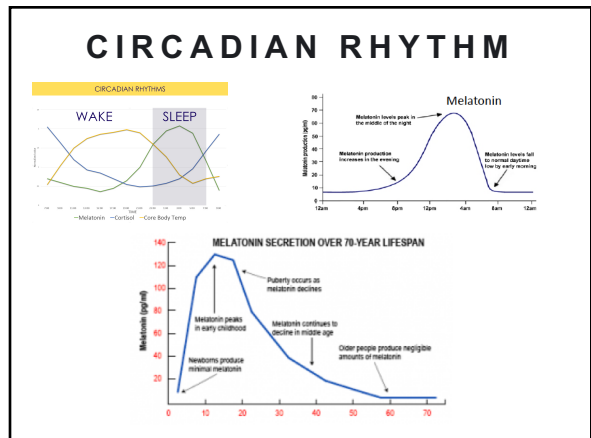
- F<sub>2</sub>-Isoprostanes
- Oxidized LDL (OxLDL)
- Microalbumin
- hsCRP
- Lp-PLA<sub>2</sub> Activity
- Myeloperoxidase (MPO)
- Lipid Testing
- Metabolic Testing

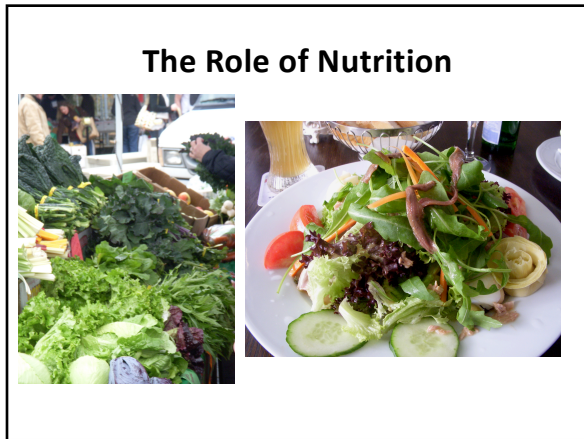
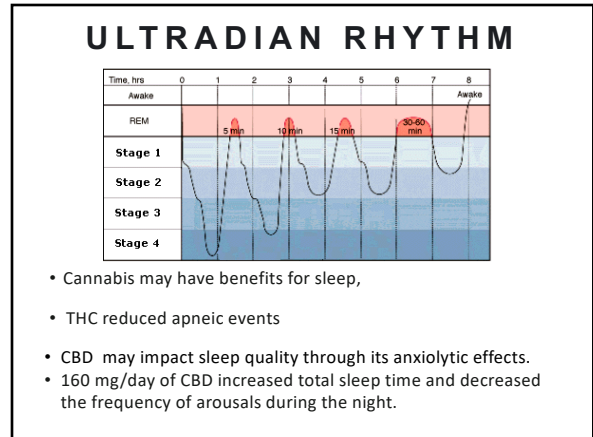
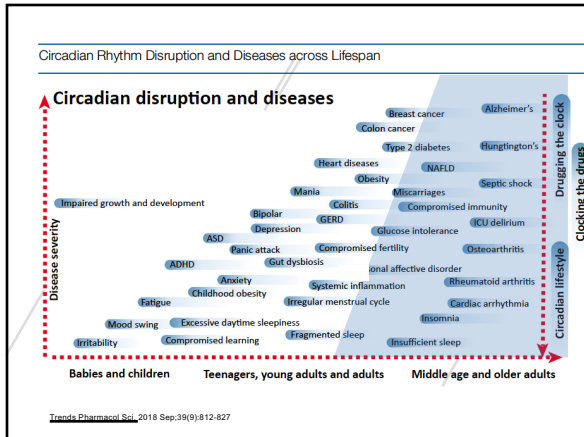


### Circadian Dysfunction

**INSOMNIA: 19.2% of the adult US population**

- Disrupted, insufficient, poor quality, difficulty falling and staying asleep
- Women are 2x more likely to report sleep disturbance than men
- Coincides with fluctuations of ovarian hormones, including puberty, pregnancy, and the menopausal transition
- 60% of perimenopausal women report sleep problems
- Related to decline in melatonin production





### CALORIE RESTRICTION TIME-RESTRICTED EATING

Cutting caloric intake by 15% for 2 years slowed aging and metabolism and protected against age-related disease (including Alzheimer's). Limiting calories lowers inflammation in brain cells (microglia, neurons)

**Time restricted eating:**  
Limit eating to a 10 hour window or less!

Trends in Pharmacological Sciences

### COGNITIVE HEALTH

- 50 million people globally with dementia
- 2/3 of diagnoses are women
- Circadian disruption/genetic are risk factors

### Naturopathic Medicine

- Nutritional Status/Caloric restriction
- Exercise Status
- Sleep Quality
- Hydration
- Fatty acids
- Antioxidants
- Herbs/supplements

**Expense**

**Invasiveness**

**Risk**

SURGERY

DRUG THERAPY

REPLACEMENT THERAPY

TARGETED NATURAL PRESCRIPTIONS


SUPPORT WEAKENED SYSTEMS


STIMULATE THE BODY'S ABILITY TO HEAL


ESTABLISH THE FOUNDATIONS FOR HEALTH

## THE ENDOCANNABINOID SYSTEM


Implicated in processes such as pain, perception, mood, memory and reward.<sup>8</sup>  
To provide that we:

EAT  


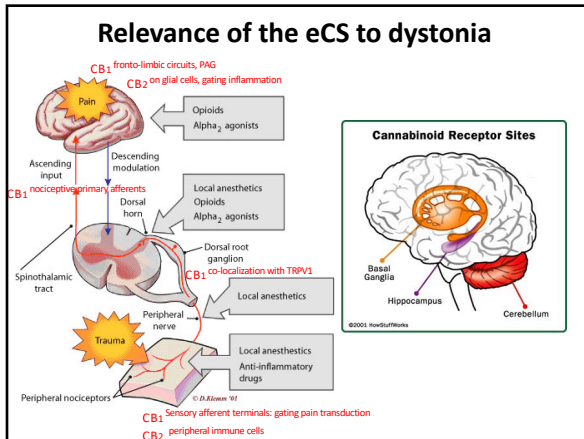
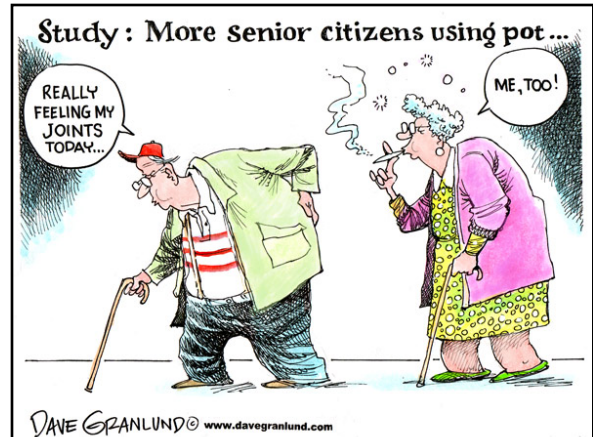
SLEEP  


RELAX  


FORGET  


PROTECT  


Di Marzo V, Piscitelli F, Mechoulam R (2011) Cannabinoids and endocannabinoids in metabolic disorders with focus on diabetes. Handbook of Experimental Pharmacology; 75-104.



### Case Study of Cervical Dystonia

44 YO Female, onset 3 months ago – had to discontinue working as a hair dresser

Started Smoking cannabis

Within 2 weeks all motor and pain symptoms were gone.

She withdrew the cannabis and within 1 week symptoms returned.

Re-starting cannabinoids. intake yielded gradual improvement of both involuntary head rotation and pain until almost complete remission of symptoms 1 week later.

In the next year, the patient continued to smoke cannabis with no obvious dystonic sign being evident. on neurological evaluations performed every 3 months; she only reported infrequent neck pain.

### Review of Clinical Trials

**Table 1** Clinical trials of cannabinoids in dystonia

Reference	Study design	Number of study patients, diagnosis	Number of drop-out	Concomitant botulinum toxin treatment	Intervention	Outcome measure*	Side effects	Results
Zakoff et al. [13]	Double-blind, randomized, placebo-controlled crossover study	9, cervical dystonia	2	No	-Dronabinol up to 15 mg/day (3 weeks) -Placebo	FWSTRS-A (primary)	Vertigo, lightheadedness, ataxia, dry mouth, blurred vision, bitter taste, insomnia, heart racing, and hypotension	No significant differences compared with placebo
Fox et al. [14]	Double-blind, randomized, placebo-controlled crossover study	15, generalized dystonia (9), cranial dystonia (2), axial dystonia (1)	2	No	-Nabilone 0.05 mg/kg to the nearest whole milligram (single dose) -Placebo	BIMDRS movement scale (primary)	Proximal hypotension, sedation, slight dizziness, drowsiness, and feeling "vague"	No significant differences compared with placebo
Jahsh et al. [16]	Randomized, placebo-controlled study	1, musician's dystonia (spasms)	No	No	-Δ <sup>9</sup> -THC 5 mg (single dose) -Placebo	Finger motor control assessed by MIDI-based scale	Tiredness and poor concentration	Finger motor control improvement
Conroe et al. [17]	Open-label prospective study	5, cranial dystonia (1), cervical dystonia (1), generalized dystonia (2), L-dopa-induced dystonia (1)	No	No	Cannabidiol 200 to 600 mg/day mean mean dose (6 weeks)	BIMDRS movement scale	Dry mouth, sedation, psychomotor slowing, lightheadedness, hypotension, psychomotor slowing, hypokinesia, and resting tremor exacerbation	Dose-related improvement
Radke et al. [12]	Retrospective chart review	5, blepharospasm	No	Yes	Medical cannabis* (from 2 to 12 weeks)	BSDH <sup>†</sup> , JRS <sup>‡</sup>	Decreased tremor exacerbation (dilated sleep, headache, and lightheadedness)	Decrease in both indices

\* Concomitant botulinum toxin treatment; † combination of different doses of Δ<sup>9</sup>-THC and cannabidiol in capsules or tincture; ‡ evaluated in 3 out of 5 patients; § FWSTRS-A, Toronto Western Hospital Spasmodic Torticollis Rating Scale part A; BIMDRS, Burke Fahn-Massini Dystonia Rating Scale; MIDI, Musical Instrument Digital Interface (17); BSDH, Blepharospasm Disability Index; JRS, Jerkless Rating Scale

### Cannabinoids in similar diagnoses

- Refractory Tics
- Epilepsies
- Headache disorders
- Pain
- Spasticity in MS
- Parkinson Tremor
- Restless Leg Syndrome

- Muscle relaxant
- Anti-anxiety
- Analgesic
- Slows movement



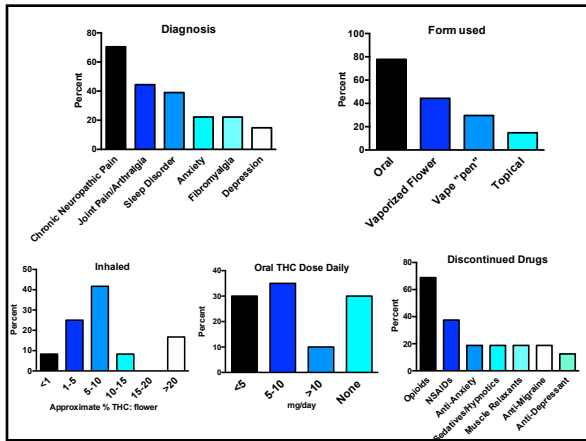


### Retrospective Chart Review

Subject	AGE	Diagnosis	MME		Subjective Pain score (average)	
			Before	After	Before	After
Male	72	Failed back surgery syndrome	220	40 (8-wk)	9/10	4/10
Female	66	Chronic LBP	42.5	0 (4-wk)	7/10	0/10
Female	66	Failed back surgery syndrome	50	0 (4-wk)	7/10	3/10
Male	73	Spinal stenosis/radiculopathy	135	30 (8-wk)	7/10	5/10
Female	50	Cervical Spondylosis	69	22.5 (4-wk)	5/10	4/10
Female	60	Failed Back Surgery	60	7.5 (11 wk)	7/10	5/10

Average pain score improvement = 3.5 points on VAS.  
Average MME reduction: 87.25%

UC San Diego  
Center for Integrative Medicine

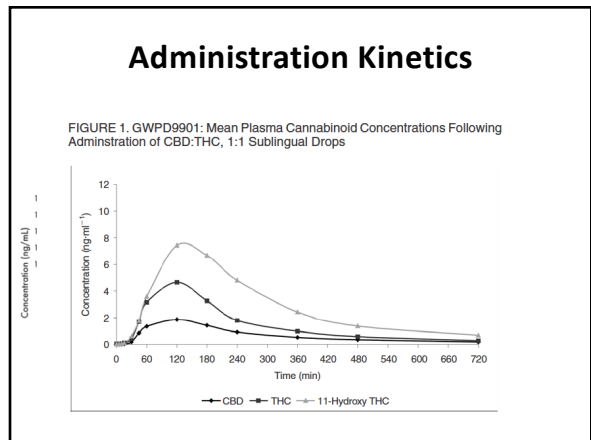


### Administration Forms

- Inhalation
- Ingestion
- Sublingual/Tincture
- oromucosal
- Topical (non-psychoactive)
- Raw (non-psychoactive)
- Suppository

### THC or CBD?

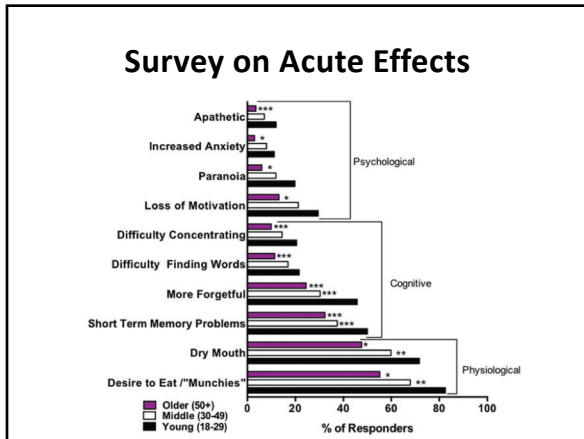
- There is No evidence that different ratios affect different cancers
- There is NO evidence that CBD is *analgesic*.
- Take a close look at who is making “claims”
- Ask/Look for “Evidence” of the claims
- Always demand a certificate of analysis for potency, terpenes, fungal toxins and pesticides





### Potential Side Effects

- Primarily from THC: dose-related
  - Hypotension
  - Tachycardia
  - Anxiety/dysphoria
  - Cognitive Effects



### How Much?

- Patient-specific, self-titrating model is a useful dosing paradigm.
- When they have pain
- Inhalation PRN
- Oral: q 6 hours
- Patients are generally successful at balancing side-effects vs. pain relief

"Undesirable Acute Effects"



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**Thank you for your attention!**

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SCHOOL OF MEDICINE

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