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# Food as Medicine: An Integrative Approach to Diet + Cannabis



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# Topics to Cover

- Historical basis of food as medicine
- Cellular health
- Toxic load
- Inflammation
- Health conditions where cannabis + food work synergistically
- Upregulating the ECS with food
- ECS + eating behavior



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Cannabis + the microbiome





# Nutrition Is Not Alternative

- Nutrition services, education, counseling, coaching
- Personalized lifestyle medicine or healthcare





# Ancient Health Sages

- Hippocrates: *Let food be thy medicine and medicine be thy food*
- Paracelsus: *All that man needs for good health and healing can be found in nature. It's the job of science to find it.*
- Brillat-Savarin: *Tell me what you eat, and I will tell you what you are.*





# Dr. Benjamin Rush

- A signer of the Declaration of Independence
- Personal physician to George Washington
- *Unless we put medical freedom into the constitution, the time will come when medicine will organize into an undercover dictatorship*
- Political freedom *plus* medical freedom







# More Food as Medicine Quotes

- Thomas Edison: *The doctor of the future will give no medication, but will interest his patients in the care of the human frame, diet, and in the cause and prevention of disease.*
- Ralph Waldo Emerson: *Without health, what do you have?*
- Proverb: *An apple a day keeps the doctor away.*



# Modern Day Wisdom

- Rockefeller Institute of Medical Research: *If the doctors of today do not become the nutritionists of tomorrow, then the nutritionists of today will become the doctors of tomorrow.*
- Joan Dye Gussow: *As for butter versus margarine, I trust cows more than chemists.*
- Michael Pollan: *Do not to eat anything that your great-great grandmother wouldn't recognize as food.*







# Cellular Health

- Food is the basis of life itself
- Cellular health is fed – literally – by nutrition
- Healthcare without consideration to food constitutes poor healthcare





# Categories of Toxins

- Chemical – heavy metals, vaccines, etc
- Biological – viral agents, etc
- Physical – trauma from surgery, accidents, radiation, pregnancy
- Metabolic – high insulin, high uric acid, etc
- Psychological – chronic stress, emotional abuse, some relationships
- Environmental – food, pollen, sensitivities





# Toxic Overload Issues

- Symptoms – brain fog, joint pain, lethargy, constipation
- Cancer, CVD, diabetes, infertility
- Neurological diseases, ADD/ADHD, ASD
- Depression, anxiety







# Step #1 Is Lowering Toxic Load

- Subjective assessment
  - Environmental exposures – in childhood, occupational, hobbies
  - Cooking + food storage
  - Cleaning + personal products
  - 200 chemicals in skin products daily, 60% absorbed directly into bloodstream





# Objective Assessment

- Urine heavy metal testing
- Toxicity panels from functional medicine labs
- Genomic for detoxification single nucleotide polymorphisms (SNPs)





# What Are SNPs?

- Genetics variations that can predict disease risk
- 20 million in the human population, accounting for basically all genetic variations
- Detoxification capacity SNPs
  - Methylation
  - Acetylation
  - Glutathione conjugation
  - Oxidative protection







# Genetics Is Not Destiny

- Express or repress genetic tendencies with lifestyle choices
- Personalized lifestyle healthcare, getting down to the cellular level





# Ways to Reduce Toxic Load

- Sweating – exercise, infrared sauna
- Urinating
  - Drink half your weight in ounces of pure water
  - *The solution to pollution is dilution!*

- Bowel movements

- 1-3 daily



# Diet = Food Plan!

- No artificial ingredients – flavorings, colorings, sweeteners, preservatives
- Environmental Working Group – [ewg.org](http://ewg.org)
- Non-GMOs + organic food
- Animal products
  - Ground foods – coffee, tea, chocolate, spices, herbs, nut + seed butters
  - Fruits + vegetables
  - Dirty dozen + clean 15 from [ewg.org](http://ewg.org)
- 200+ toxins in the umbilical cord blood







# Endocannabinoid Deficiency according to Ethan Russo

- Endocannabinoid deficiency is a hypothesis that all humans have an underlying endocannabinoid tone that is a reflection of the levels of anandamide and 2-AG, their production, metabolism, and the relative abundance and state of cannabinoid receptors.
- Under particular conditions, endocannabinoid tone can become deficient, producing clinical symptoms and health conditions.





# Changing Endocannabinoid Tone

- Food is the ultimate health modulator
- Relationship between the GI system (the gut) + the brain
- 85% of neurotransmitters produced in the gut
- Brain + gut speak the same language with ECS as a modulatory force
- Food choices + nutrition *can* modulate EC tone





# Integrating Nutrition + Cannabis Care

- ADHD
- Alzheimer's Disease
- Anxiety
- Autism
- Cancer
- Crohn's Disease
- Epilepsy
- Fibromyalgia
- Gastrointestinal Disorders





# Overall Gut Healing

- Probiotics
  - Lactofermented foods– kimchi, kombucha, yogurt
  - Probiotic supplement (recommended by a holistic practitioner)
- Prebiotics – oligosaccharides that feed prebiotics
  - Artichokes, garlic, onions, dandelion greens, jicama
  - Prebiotic supplement (as recommended by a holistic practitioner)
  - Inulin fiber





# Anti-Inflammatory Food Plan

- Optimal balance between omega-3, 6, 9 fatty acids
- No trans fats
- Little to no added sugar
- 6-11 serving of mostly vegetables & fruits daily
- Low to no dairy products
- Low to no alcohol





# Fatty Acids + CB2 Receptors

- Adequate levels of dietary omega-3s required for proper endocannabinoid signaling, serving as homeostatic regulators
- Italian study in mice compared various oils – olive, soybean, and salmon
- Mouse diet “enriched with olive oil significantly increased the number of CB2 receptors in fat tissue of mice and reduced inflammation and proliferation of mice adipose tissue.”
- CB2 receptors – anti-obesity, anti-inflammatory, anti-cancer effects







# Food Constituents Impacting the ECS

- Flavonoids in vegetables, fruits, teas, herbs
- EGCG, a polyphenol in green tea
- Curcumin
- Genestein in soy
- Supports anti-inflammatory food plan recommendations





# ECS + Food Behavior

- From regulation of sensory responses to food preferences
- Works beautifully when access to food is scarce
- When food is plentiful, it may be another story
- ECS controls lipid + glucose metabolism
- Emerging data about skeletal muscle + pancreas





# Eating Stimulation + Smell

- Appetite stimulation → application in cachexia + anorexia
- CB1 receptors involved with olfactory information + sense of smell
- Hunger hits → CB1 receptors triggered → olfactory circuit activated
- CB1 receptors promote food intake by increasing odor detection
- Application in hyperphasia (for genetic conditions such as Prader-Willi) + obesity







# Cannabis + the Microbiome

- Cannabis in weight management, preventing obesity
- Study showing cannabis consumers less likely to be overweight
- Role of cannabis in eating behavior, body weight + obesity is complex
- Protective effect of cannabis against microbes associated obesity
- THC kept intestinal bacteria ratio at optimal levels for mice fed a high-fat diet, possibly modulating gut permeability
- Support the ketogenic high-fat, high protein food plan?





# Lifestyle + Endocannabinoid Tone

- Acupuncture
- Aromatherapy
- Herbal medicine
- Massage
- Meditation
- Mind-body medicine
- Non-aerobic exercise



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Osteopathic manipulation



# Cannabis Models

- Medical/pharma
- Alcohol, tobacco + firearms
- Holistic – YES!!

