Depression:

It's Not What You Think

Franciscan WORKING Well

Why is this topic important to wellness programming?

- Engagement
- Investment
- Intrinsic motivation
- Energy
- Commitment
- Incentives

Mayo Clinic: Definition

- Depression is a mood disorder that causes a persistent feeling of sadness and loss of interest.
- Also called major depressive disorder or clinical depression, it affects how you feel, think and behave and can lead to a variety of emotional and physical problems.
- You may have trouble doing normal day-to-day activities, and sometimes you may feel as if life isn't worth living.
- More than just a bout of the blues, depression isn't a weakness and you can't simply "snap out" of it.
- Depression may require long-term treatment. Most people with depression feel better with medication, psychological counseling or both.

Depression: FM Definition

- A natural response of the body and the brain to biochemical imbalances; toxicities; metabolic imbalances; genetic predispositions
- A sympathetic state, too often for too long causes adrenal burn out
- Dx as bipolar, ADHD, Anxiety = Medication

Depression: Root Cause

- Metabolic
- Immune
- Infections (Lyme)
- Co-infection (Mold)
- Toxicities (Heavy Metals)
- Nutritional (Food Allergy)
- Genetics Methylation defects.

New Paradigm

- Functional Medicine vs. Diagnosis, Disease, Treatment, Compliance, Chronic Illness
- Discover and Treat Root Cause
- Chronic disease is healed
- Where are we allocating resources
  - Bridging disease management?
  - Physician check ups and medication management?
  - Hypertension example

Functional Medicine Web

- Environmental Inputs
  - Diet
  - Exercise
  - Nutrition
  - Toxins
- Immune and Inflammatory Imbalance
- GI Imbalance
- Energy Production/Oxidative Stress
- Detox and biotransformation
- Structural Imbalance
- Hormonal and Neurotransmitter Imbalance
- Mind and Spirit
- 11 organ systems affected

Dr. Terry Wahls

Progressive MS

- Cleveland Clinic for Traditional Treatment
- Latest Research
- Brain Shrinkage = mitochondria damage
- Found fish oil, Coenzyme Q, Creatine to protect brain
- IFM: Neuroprotection
- Cell biology: Brain cells Insulated with Myelin

What protects brain function?

- Myelin – Insulation for wiring
  - B1, B9, B12
  - Omega 3 fatty acids
  - Iodine
- Neurotransmitters
  - Sulfur
  - B6
- Mitochondria – Manage energy of cell
  - Sulfur
  - B vitamins
  - Antioxidants

Food Plan: Hunter Gatherer Diet

- More Nutrition that AHA, ADA, USDA food Pyramid
- Paleo plus nutrients for brain and mitochondria
  - 3 cups of green leaves
  - 3 cups sulfur rich vegetable
  - 3 cups of bight color
  - Grass fed meat, organ meat
  - Seaweed

Result

- Nov 2007 could not sit, in reclining wheel chair
- 3 months later could walk with cane
- 1 month later walk without a cane
- 5 months into program could ride bike
- 9 months biked 18 miles
- Told she was giving MS patient false hope
- Conducted numerous clinical trials
- Presented breathtaking results to 2011 Neuroscience Conference.

Inflammation

- The Wahl's protocol is also anti-inflammatory and crowds out toxins such as sugar, gluten, GMOs, trans fats, preservatives

Inflammation: The Good, the Bad, and the Ugly

- Your body's defense system — to infection and trauma.
- Overactive immune response and too much inflammation. (MS, RA, IBD)
- Hidden inflammation run amok is at the root of all chronic illness we experience

Inflammation

- "The real concern is not our response to immediate injury, infection, or insult. It is the chronic, smoldering inflammation that slowly destroys our organs and our ability to function optimally and leads to rapid aging."
- *--Dr. Mark Hyman*

Traditional Medications

- Nonsteroidal anti-inflammatory drugs (NSAIDs such as aspirin, ibuprofen, or naproxen)
- Corticosteroids (such as prednisone)
- Antimalarial medications (such as hydroxychloroquine)
- Other oral drugs including methotrexate, sulfasalazine, leflunomide, azathioprine, penicillamine, and cyclophosphamide
- Biologic drugs such as infliximab, etanercept, adalimumab, certolizumab, golimumab, abatacept, tocilizumab, and rituximab

The ultimate Side Effect

- "Common treatments such as anti-inflammatory drugs (ibuprofen or aspirin) and steroids like prednisone — though often useful for acute problems — interfere with the body's own immune response and can lead to serious and deadly side effects."

Inflammation

- "In fact, as many people die from taking anti-inflammatory drugs like ibuprofen every year as die from asthma or leukemia. Stopping these drugs would be equivalent to finding the cure for asthma or leukemia -- "

Organs Affected by Inflammation

- •Inflammation of the heart (myocarditis) may cause shortness of breath or fluid retention.
- •Inflammation of the small tubes that transport air to the lungs may cause shortness of breath.
- •Inflammation of the kidneys (nephritis) may cause high blood pressure or kidney failure.

Symptoms of Inflammation

- Depression
- Osteoporosis
- Irregular Heart Beat
- Heart Disease
- Migraines
- Hypertension
- Alzheimer's
- Autoimmune Disorders

Causes of Inflammation

- Poor diet—mostly sugar, refined flours, processed foods, and inflammatory fats such as trans and saturated fats
- Lack of exercise
- Stress
- Hidden or chronic infections with viruses, bacteria, yeasts, or parasites
- Hidden allergens from food or the environment
- Toxins such as mercury and pesticides
- Mold toxins and allergens

Tests for Inflammation

- A study of a generally "healthy" elderly population found that those with the highest levels of C-reactive protein and interleukin 6 (two markers of systemic inflammation) were 260 percent more likely to die during the next 4 years. The increase in deaths was due to cardiovascular and other causes.
- Fasting Insulin
- ESR for RA

7 Steps to Heal Inflammation

- Whole Foods
- Healthy Fats (omega 3)
- Regular Exercise
- Relaxation
- Avoid Food Allergens
- Heal the Gut
- Supplement (Vit. D)

Top Anti-Inflammatory Foods

- Animal based omega 3 fats
- Leafy Greens
- Blueberries
- Machta Tea
- Fermented Vegetables
- Shitake Mushrooms
- Garlic

Anti- Inflammatory Spices

1. Cloves
2. Cinnamon
3. Ginger
4. Turmeric
5. Oregano
6. Rosemary
7. Marjoram
8. Sage
9. Thyme

Case Study

- 57 year old male
- On 15 medications
- Dx: hypertension, pre-diabetes, colitis, reflux, asthma and alopecia (autoimmune)
- He felt great! Controlled on Meds

Case Study

- Inflammation and immune imbalance at the root of chronic disease
- Identity triggers
- Restore immune balance
- Went to specialists instead

Case Study

- Why did he have six different inflammatory diseases?
- New Dx: Celiac disease
- 6 months later off all meds, lost 25 pounds all conditions resolved.
- *-- Dr. Mark Hyman*

Sick Brain: Type 3 Diabetes

- The same pathological process that leads to insulin resistance and type 2 diabetes may also hold true for your brain.
- As you over-indulge on sugar and grains, your brain becomes overwhelmed by the consistently high levels of glucose and insulin that blunts its insulin signaling, leading to impairments in your thinking and memory abilities, eventually causing permanent brain damage.

Depression and Alzheimer's

- A sick frontal cortex from inflammation and toxins
- Repair hormones with proper amino acids.
- Brain also produces insulin, not just the pancreas.
- This is responsible for the survival of brain cells.

Invisible Brain Toxins

- Body needs zinc to detoxify environmental toxins
- One common agent (trichloroethylene) is converted to another agent (choloral hydrate) that causes depression, brain fog and dizziness.
- Many other environmental chemicals linked to depression

Depression: Prefrontal Cortex

- Hardwired to shut off the effects of chronic stress.
- Test iron, copper, functional evidence of B vitamin, tryptophan and blood, melatonin and amino acid, mycotoxins, yeast, gut and gastrointestinal testing, cultures and sensitivities
- Food allergy creates fight or flight

Tests for Toxicity/Deficiencies

- RBC mineral/toxic chemical assay (Genova/MetaMetrix)
- Toxic Effects Core (Genova/MetaMetrix)
- Urine Toxic Metals- DMSA Challenge (Doctor's Data)

How Meditation Works

- Frontal lobes are by activating the prefrontal cortex, they actually are physiologically turning off the parts to the brain that are driving the mood imbalances
- Functional MRI study: serotonin system may serve as a biological basis for spiritual experiences.

--American Journal of Psychiatry

Psychotherapy tool = Mindfulness

- Mindfulness is a separate faculty of consciousness.
- Biochemical process based on neurotransmitters, especially dopamine and serotonin.
- Utilizes Gaba and Taurine to shut off the locus coeruleus and virtually quiet every other part of the brain.
- Inner peace, and ability to live in the now, depends on having an healthy prefrontal cortex.

Why Therapy May Not Work

- Mindfulness is an awareness, is a faculty of consciousness that's not cognitive, it's not emotional sensory, or kinesthetic.
- It's a separate faculty of consciousness
- Mindfulness and compassion has clearly been shown to be primarily associated with the prefrontal cortex.

Test for vitamin D

- *The suicidal patients' levels of Vitamin D were significantly lower than those in the healthy controls… The patients who were deficient in vitamin D also had higher inflammatory markers in their blood, the study found, suggesting that low levels of vitamin D could be a cause of the inflammation*

Deficiency of GABA and Glutamate:

- Behavioral issues
- Anxiety
- Depression
- Alzheimer's

- *Resource: The Mood Cure by Julia Ross*

The Walsh Institute

- Bring the benefits of advanced biochemical therapy to millions of persons challenged by ADHD, schizophrenia, bipolar disorder, anxiety, clinical depression, behavior disorders, autism, and neurodegenerative disorders.
- Conduct research studies in a range of mental disorders and train doctors around the world in advanced, drug-free biochemical treatment of these disorders using advanced nutrient-therapy protocols.

Dr. Walsh's Accomplishments

- Groundbreaking studies reporting reduced violent behavior following nutrient therapy
- The 1999 discovery of under methylation and copper/zinc imbalances in autism
- The 2000 finding of metallothionein protein depletion in autism
- The 2007 published study linking copper overload and post-partum depression
- The identification of five biochemical subtypes of clinical depression
- The 2011 development of the Walsh Theory of Schizophrenia
- The direction of the Beethoven Research Project that revealed that the composer suffered from severe lead poisoning.

Depression: Root Cause Review

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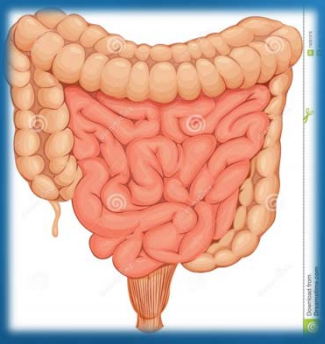
Gut Brain Connection: 3 Systems



Depression and Gut Health

Depression is often found alongside gastrointestinal inflammations and autoimmune diseases as well as with cardiovascular diseases, neurodegenerative diseases, type 2 diabetes and also cancer, in which chronic low-grade inflammation is a significant contributing factor. Thus researchers suggested "depression may be a neuropsychiatric manifestation of a chronic inflammatory syndrome."

Second Brain

- Relationship between but and brain is bio-directional
- Vagus nerve
  - longest of 12 cranial nerves
  - Runs outside the brain and through digestive system
  - primary channel between nerve cells in intestinal nervous system (enteric nervous system) and central nervous system (brain and spinal cord)
  - Gut bacteria directly affect its function

Gut Brain Axis

- Gut is second brain -- created from the identical tissue as brain during gestation -- and contains larger levels of neurotransmitter serotonin, which is associated with mood control.
- Gut bacteria are an active and integrated part of serotonin regulation and actually produce more serotonin than your brain

Future of Medicine

- 10 times more cells from micro-organisms than human cells in and on the human body
- Genes are outnumbered 100 to 1 by microbial genes
- Microbes are necessary for good health
- Birth through first 3 years of life is determine quality of microbiome
- Microbes resemble parents and siblings

Neurons and Chemicals in the Gut

- Regulate muscle function
- Immune cells
- Hormones
- Manufacture of 90% of neurotransmitter, serotonin
- GABA (amino acid that calms nerve activity)
- Glutamate (neurotransmitter needed for learning, cognition and memory

Healthy Gut=Healthy Brain

- Dr. William Walsh
  - Nutrient Power: Heal Your Biochemistry and Heal your Brain
- Dr. Natasha Campbell-McBride holds a degree in Medicine and Postgraduate degrees in both Neurology and Human Nutrition
  - Gut and Psychology Syndrome
- Dr. David Perlmutter, Neurologist and fellow of the American College of Nutation
  - Grain Brain
  - Brain Maker: The Power of Gut Microbes to Heal and Protect Your Brain

Depression and Thyroid Function

Approximately 10%-15% of patients with depression have a thyroid hormone deficiency.

Testing of your thyroid MUST include the following:

- Thyroid-stimulating hormone (TSH)
- Free serum thyroxine (fT4)
- Free triiodothyronine (fT3)
- Reverse T3 (rT3)
- Anti-thyroglobulin antibodies (anti-TG)
- Anti-thyroid peroxidase antibodies (anti-TPO)

Thyroid and Depression

- Link between low T3 and long-standing depression.
- Common treatment of hypothyroidism with Synthroid (a T4-only thyroid medication)may contribute to an increase in depressive symptoms due to its inability to address a deficient T3.
- A comprehensive thyroid panel will also test for thyroid auto-immune/depression syndrome.

Thyroid and Depression

- Women with high levels of anti-thyroid peroxidase (anti-TPO) antibodies were found to be more vulnerable to depression.
- Must assess the autoimmune status of the thyroid gland (autoantibodies)

Depression and Adrenal Function

- Stress center is HPA (hypothalamic Pituitary adrenal axis)
- Hyperactive HPA = too much cortisol = Depression
- Testing for cortisol through saliva testing

Issues with Current Approach

- **Serotonin Theory Has Been Proven Wrong**
- Research[4,5] published in 2009 added further evidence to the pile indicating the low serotonin idea was incorrect, as they found strong indications that depression actually begins further up in the chain of events in the brain. Essentially, the medications have been focusing on the effect, not the cause.

- *"Supplements Proven Beneficial for Depression"*
  --July 14, 2016 Mercola.com

Review: Causes of Depression

- Inflammation
- Medication side effects
- Thyroid
- Gut Issues
- Sick Brain

Beauty of Functional Medicine

- Discover the root cause and the entire body heals