All Disease Begins in the Gut

*Hippocrates was correct over 2000 years ago!*

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Disclosures

Danielle Williamson declare(s) no conflicts of interest, real or apparent, and no financial interests in any company, product, or service mentioned in this program, including grants, employment, gifts, stock holdings, and honoraria.”

The American College of Apothecaries is accredited by the Accreditation Council for Pharmacy Education as a provider of continuing pharmacy education.
Learning Objectives

At the conclusion of this program, the participating pharmacist or technician will be able to:

– List the top 7 inflammatory foods in the United States
– Describe how intestinal permeability (leaky gut) contributes to the overall health of a patient
– Describe what an elimination diet is and how it decreases inflammation in the body
– Review the role of food sensitivity testing with their clients, and how to incorporate into their practice.
“What you find at the end of your fork is more powerful than anything you’ll find at the bottom of a pill bottle.”

~Dr. Mark Hyman
WHAT HAPPENED TO OUR GUT?

• Industrial Revolution (1790-1840ish)
  – Refined sugar and flour became affordable
  – Frozen, packaged, microwavable, globally shipped
  – Additives: preservatives, dyes, artificial flavors and sweeteners
  – Stress, poor air and water quality
HERE’S A START TO WHAT HAPPENED!
BETWEEN THE AGE 12-29

• 638 CANS OF CARBONATED DRINKS
• 134 LBS OF REFINED SUGAR
• 90 LBS OF FATS AND OILS
• 63 DOZEN DONUTS
• 23 GALLONS OF ICE CREAM
• 22 LBS OF CANDY
• 8 LBS OF CORN CHIPS, POPCORN, PRETZELS
• 7 LBS OF POTATO CHIPS
The Gut

• 25-30 feet long & 100 sq yards of surface area
• 100 trillion bacteria live within our intestinal system
• Contains more genetic material than the human body
• Contains 1000+ species of bacteria, yeast, parasites.

Primary Functions:
• Digestion & absorption
• Barrier to differentiate friend from foe
• Metabolism and detoxification
PANCREAS

• DIGESTIVE ENZYMES MADE HERE
  – LIPASE: HELPS BREAKDOWN FATS
  – AMYLASE: HELPS BREAKDOWN STARCHES
  – PROTEASE: HELPS BREAKDOWN PROTEIN

INSULIN
BICARBONATE
SMALL INTESTINES

• 15-20 FEET LONG

• HUNDREDS OF FINGERLIKE VILLI COVERED BY MILLIONS OF ONE CELL THICK MICROVILLI

• MICROVILLI
  – PRODUCES DIGESTIVE ENZYMES
  – ABSORBS NUTRIENTS
  – BLOCKS THE ABSORPTION OF NON-NUTRIENTS
SMALL INTESTINES

• KEY TO A HEALTHY DIGESTIVE TRACT AND IMMUNE SYSTEM.

• “HOLDING TANK” OF THE DIGESTIVE TRACT

• KEEPS FOOD IN PLACE UNTIL IT IS DIGESTED

• KEEPS GOOD NUTRITION IN AND HARMFUL INVADERS OUT
Did you know?:

• IF YOU HAVE BLOATING AFTER EATING THEN FOOD IS GOING INTO THE SMALL INTESTINES!!

– USE HIGH QUALITY DIGESTIVE ENZYMES
LIVER

• ENVIRONMENTAL TOXINS ARE AN INCREASING PROBLEM

  – 300,000 NEW CHEMICALS ARE LISTED EACH YEAR

  – WE CONSUME 14 LBS OF FOOD ADDITIVES EACH YEAR

  – 70,000 TOXINS ARE USED IN FOODS, DRUGS AND PESTICIDES

• IF THE LIVER CANNOT DETOXIFY THE CHEMICALS, THE CHEMICALS ARE STORED IN TISSUES THROUGHOUT THE BODY

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LIVER

• MANUFACTURES BILE TO EMULSIFY FAT

• MANUFACTURES AND METABOLIZES CHOLESTEROL AND HORMONES

• REGULATES BLOOD SUGAR

• PROCESSES ALL FOOD, NUTRIENTS, ALCOHOL, DRUGS ETC.
GALLBLADDER

• STORES AND CONCENTRATES BILE
  – BILE EMULSIFIES FAT, CHOLESTEROL AND FAT SOLUBLE VITAMINS
  – WHEN BILE BECOMES TOO CONCENTRATED, STONES FORM
  – GALLBLADDER DISEASE IS DIRECTLY RELATED TO DIET
LARGE INTESTINE

• FUNCTION
  – ABSORB WATER AND REMAINING NUTRITION
  – FORMS STOOL

• INTESTIONAL BACTERIA
  – LOWER PH
  – PRODUCE VITAMINS A, B AND K
  – PRODUCES SFA (BUTYRIC ACID) WHOSE DEFICIENCY IS ASSOCIATED WITH COLON CANCER AND IBD

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LARGE INTESTINE

- WESTERN DIET PRODUCES 5 OZ. OF STOOL A DAY
- AFRICANS TRADITIONAL DIET PRODUCE 16 OZ. OF STOOL
- NORMAL BOWEL MOVEMENTS SHOULD BE 2-3/DAY
- THE LONGER STOOL IS IN THE BOWEL THE MORE REASORPTION
- THE LARGER THE STOOL~THE SMALLER THE HOSPITAL (J.V. WRIGHT)
## Bristol Stool Chart

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td>Separate hard lumps, like nuts (hard to pass)</td>
</tr>
<tr>
<td>Type 2</td>
<td>Sausage-shaped but lumpy</td>
</tr>
<tr>
<td>Type 3</td>
<td>Like a sausage but with cracks on the surface</td>
</tr>
<tr>
<td>Type 4</td>
<td>Like a sausage or snake, smooth and soft</td>
</tr>
<tr>
<td>Type 5</td>
<td>Soft blobs with clear-cut edges</td>
</tr>
<tr>
<td>Type 6</td>
<td>Fluffy pieces with ragged edges, a mushy stool</td>
</tr>
<tr>
<td>Type 7</td>
<td>Watery, no solid pieces. <strong>Entirely Liquid</strong></td>
</tr>
</tbody>
</table>
The Original Prescription

Take one a day with tomato and cucumber.
Gut Health

- Food choices, eating habits, digestion, the gut flora, and elimination all influence the integrity of the gut.
- Preventing or setting the stage for food sensitivity & ultimately immune dysfunction, inflammation, & chronic disease.
• A DIGESTIVE SYSTEM ORGAN

• TOTAL WEIGHT OF FLORA IS 3-5 LBS EQUAL TO THE LIVER

• 400-500 TYPES OF BACTERIA THAT WE KNOW ABOUT

• MORE STRAINS ARE DISCOVERED EVERY YEAR
SYMBIOSIS VS. DYSBIOSIS

• SYMBIOSIS- LIVING TOGETHER IN MUTUAL HARMONY

• DYSBIOSIS- NOT LIVING TOGETHER IN MUTUAL HARMONY
DYSBIOSIS

– CONSTANT HIGH LEVELS OF STRESS
– EXPOSURE TO MANUFACTURED CHEMICALS
– POOR FOOD CHOICES
– ORAL CONTRACEPTIVES
– NSAIDS/STEROIDS
– SURGERY
– USE OF ANTIBIOTICS-MOST COMMON
Uh... dude...

O... yeah...

it's just

my

LEAKY

GUT...
LEAKY GUT SYNDROME

• INCREASED INTESTINAL PERMEABILITY
  – DYSFUNCTION OF THE “BARRIER FUNCTION” THE BRUSH BORDER

  – THE TIGHT JUNCTIONS (DESMOSOMES) ALLOW FOOD, TOXINS, BACTERIA TO LEAK INTO THE BLOODSTREAM
WHAT CAUSES LEAKY GUT?

• CHRONIC STRESS
  – DECREASED SECRETORY IgA
  – SLOWING DOWN PERISTALSIS
  – REDUCES BLOOD FLOW
  – PRODUCES TOXIC METABOLITES

• DYSBIOSIS
  – YEAST, UNFRIENDLY BACTERIA AND PARASITES DAMAGE BRUSH BORDER CELLS
WHAT CAUSES LEAKY GUT?

- ENVIRONMENTAL TOXINS, STRESS THE IMMUNE SYSTEM
- ALCOHOL
- STANDARD AMERICAN DIET (SAD)
  - PROBIOTIC IMBALANCE, ALKALINE pH
  - LOW FIBER
  - PROCESSED FOODS, FOOD ADDITIVES, FATS AND SUGARS
  - USE OF MEDICATIONS
  - ZINC DEFICIENCY: ZINC IS CRITICAL TO A STRONG LINING
Normal Gut
Toxins lead to leaky gut

- NSAIDs
- Foods
- Drugs
- Antibiotics
- Toxins
Leaky gut is a gateway to chronic disease.

Food allergies & Intolerances
Immune system dysregulation
“Did you know that approximately 70% of your immune system is located in your digestive tract? So when your gut is healthy, it helps your whole body stay healthy.”
Inflammation

• Modern research is showing that 95% of all chronic disease has an inflammatory component
It Takes 3

Studies are showing that the triad of (1) environmental triggers (food, microbes), (2) genetic susceptibility, and (3) intestinal hyper-permeability play a key role in the development of autoimmune and other systemic diseases through uncontrolled inflammation.
IRRITABLE BOWEL SYNDROME (IBS)

• 10-20% WORLDWIDE

• ANXIETY/DEPRESSION ARE INCREASED WITH IBS
  – ARE THEY PRECURSORS OR RESULTS OF IBS?
  – 95% OF SEROTONIN IS LOCATED IN THE GUT

Siri Carpenter, American Psychological Association; September 2012, Vol 43, No. 8
“ANYTHING THAT AFFECTS THE GUT ALWAYS AFFECTS THE BRAIN.”

DR. CHARLES MAJORS

davidperlmutter MD

#GRAINBRAIN
IBS TREATMENT

• TRADITIONAL RX’S TO TREAT DIARRHEA AND CONSTIPATION

• ANTI-SPASMOTICS (CRAMPING AND PAIN)

• TRICYCLIC AND SSRI’S OR ANXIOLYTICS
TREATMENT OF IBS

• INTEGRATIVE TREATMENT:
  – KNOW FOOD SENSITIVITIES
  – AVOID SUGAR AND CAFFEINE
  – PEPPERMINT OIL -1-2 CAPSULES 3X DAILY FOR PAIN AND SPASMS BETWEEN MEALS
  – MELATONIN 3-5 MG AT BEDTIME
  – 5HTP 100MG AT BEDTIME
  – PROBIOTICS: SPECIFICALLY LACTOBACILLUS, ACIDOPHILUS, L.GG AND VSL #3

• EARLY RESEARCH
  – ARTICHOKE LEAF EXTRACT FOR DYSPEPSIA, PAIN, CRAMPING, BLOATING, CONSTIPATION
GASTROESOPHAGEAL REFLUX (GERD)

- DIET: CHEW FOOD THOROUGHLY.
- NO LARGE MEALS AT NIGHT
- AVOID SUGAR, CAFFEINE, ALCOHOL, CHOCOLATE, ONIONS, PEPPERMINT, SPEARMINT, TOBACCO
- KNOW FOOD SENSITIVITIES
- BETAINE HCL WITH PEPSIN
- DEGLYCRRHIZINATED LICORICE (380 MG) 1-2 TABLETS ON AN EMPTY STOMACH 3-4X DAILY
3 Main Types of Adverse Reactions

– Food Intolerance
– Food Allergy
– Food Sensitivity
Food Intolerance

• Lactose Intolerance
  
  Lactase deficiency

  – Bacteria in the gut eat the undigested lactose
  – Bacteria produce hydrogen gas and lactic acid causing
    • Bloating, gas, distention
    • Abdominal discomfort & pain
    • Diarrhea & loose stools

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Food Intolerance Treatment

- Avoidance
- For lactose intolerance
  - Lactaid
- Lactase treated foods
- Lactase enzyme as supplement with dairy foods

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Allergy and Food Intolerance/Sensitivity

• Anaphylactic Allergy
  – Immediate/severe symptom onset
  – Specific immunity
  – Genetic/Exposure related
    ▫ IgE mediated – Induce Mast cells/Basophils to release Histamine
    ▫ Skin test/RAST
    ▫ Peanut, milk, egg, fish, shell fish, wheat, nuts, soy

• Intolerance/Sensitivity
  – Genetic/Exposure Related
  – Delayed symptom onset
  – Generally less severe but chronic symptoms
  – Result of Altered Gut integrity
  – Remove food to break the cycle of chronic inflammation
  – As many neurons in gut as along spine
  – 95% of serotonin consumed in gut
Between 1997 and 2011, food allergies among children increased 50% and now affect 6 million or #1in13 US children.

kidswithfoodallergies.org

A Division of the Asthma and Allergy Foundation of America
Skin Prick Test (RAST)

• Accurate for environmental IgE allergies.
• Not accurate for food allergies.
• Do we really think our skin reacts the same as our gut immune system?
• Positive result is only 30 – 50% predictive.
Food Allergy Treatment

• Careful avoidance of allergic foods
• Keep an Epi-pen or Benadryl with you
Do you offer food sensitivity testing in your pharmacy?

• Alcat
• Immuno Labs
• Alletesse
• Cyrex
• Great Plains Labs
• Meridian Valley
• Quest/Labcorp
Not everyone agrees...

Can have high IgG levels to a food without symptoms.  

“Testing for IgG4 against foods is not recommended as a diagnostic tool: European Academy of Allergy and Clinical Immunology Task Force Report*.”  
Position Paper, Allergy 2008: 63: 793–796

Recently the National Institute of Allergy and Infection Disease of the National Institute of Health published guidelines for the diagnosis and management of food allergy which recommends against the use of laboratory test that measure IgG4 or other IgG subclasses that binds to food allergens. These tests indicate the specific antibody is present but these levels are not diagnostic of a disease process.  
(Guidelines for the Diagnosis and Management of Food Allergy in the United States. J Allergy Clin Immunol 126:1106-1118)

May have higher IgG levels to foods with high IgE associated with them... “no evidence that IgE/IgG4 antibody test...is a reliable diagnostic tool.”  
Food Sensitivity Testing

• Identifies foods & substances that provoke a negative cellular response.

• With repeated consumption, can develop into a chronic systematic inflammatory response and the constant activation of the immune system.

• Inflammation can create chronic conditions that can go undiagnosed and untreated for years: Weight issues, fatigue, migraines, headaches, IBS, depression, arthritis, skin disorders, acid reflux, sinus, asthma, and many more.
The Short Term Efficacy of the ALCAT Test of Food Sensitivities to Facilitate Changes in Body Composition and Self-Reported Disease Symptoms: A Randomized Controlled Study

- The ALCAT Test (exp. group) resulted in highly significant improvements in body composition and self-reported disease symptoms.
The Short Term Efficacy of the ALCAT Test of Food Sensitivities to Facilitate Changes in Body Composition and Self-Reported Disease Symptoms: A Randomized Controlled Study

• 98% of those following the ALCAT plan either lost weight and/or improved body composition.

• There was a marked reduction in cravings in general, especially for sweets.

G. R. Kaats, Dir., Health and Medical Research Foundation, San Antonio, TX
D. Pullin, Executive Director, Baylor Sports Medicine Institute, Houston, TX
L. K. Parker, MD, Women's Total Health Care, Angelton, TX
What is a Food Sensitivity

- A non-IgE immune response
- Immune system perceives food in the same way it perceives things which are truly harmful
- Release of chemicals called mediators
The Many Faces of Food Sensitivity

Gastrointestinal
- IBS, diarrhea/constipation, bloating, Reflux, associated malabsorption and nutrient deficiencies.

Dermatological
- Eczema, psoriasis, rashes, hyperkeratosis pilaris, urticaria

Neurological
- Migraines, memory/mood issues, neuropathy, ADHD, chronic fatigue

Respiratory
- Chronic cough, wheezing/airway constriction, sinusitis

Endocrine
- Thyroid disease, infertility, irregular periods, weight gain or loss, Obesity

Musculoskeletal
- Sore or stiff joints, arthritis, tendonitis

Immune System
- Decreased resistance to viral illness, allergies, autoimmune disease
THE 4 R’S TO HEALING THE GUT

• INSTITUTE OF FUNCTIONAL MEDICINE
  – REMOVE
  – REPLACE
  – REINOCULATE
  – REPAIR
REMOVE

• REMOVE POTENTIAL TOXINS/PATHOGENS AND ID FOODS OR FOOD GROUPS THE PATIENT CAN’T TOLERATE

• ABX TO WIPE THE SLATE CLEAN 7-10 DAYS
  – RIFAXIMIN FOR SIBO, BLOATING, FLATULANCE, CRAMPING
  – NEOMYCIN + RIFAXIMIN FOR SEVERE CASES

• ABX WILL CLEAR THE GUT OF FERMENTED BACTERIA, AND ALLOW IT TO BE REPOPULATED WITH A HEALTHY MICROBIAL MIX
ANTIBACTERIAL TREATMENTS

• Rifaximin is minimally absorbed and concentrated in the GI tract. It has a broad-spectrum in vitro activity against gram-positive and gram-negative aerobic and anaerobic enteric bacteria. Rifaximin has a low risk of creating bacterial resistance.

• 2 200 mg TID for 7-10 days

• RX of choice for Small Intestinal Bowel Overgrowth (SIBO)

NEJM 364;1 January 6, 2011
NEJM362;12 March 25, 2010
HERBAL ALTERNATIVES
- BERBERINE, GOLDENSEAL, GARLIC, OIL OF OREGANO, ARTEMISIA/CHINESE WORMWOOD

THESE HERBAL ALTERNATIVES SUPPRESS PATHOGENIC STRAINS WITHOUT WIPING OUT HEALTHY FLORA
Elimination Diet

• Requires PLANNING. Most patients do NOT plan to fail, they fail to plan.

• Help them plan the work and work the plan!

• I highly recommend you experience an elimination diet yourself!!!
REPLACE

• Replacement of factors that are inadequate or lacking.

Digestive Enzymes:

• Pancreatin: Combo of amylase, lipase, protease
• 5000-24000 USP lipase activity
• Porcine or Bovine-derived
• Fungal and plant based are less potent
  – Bromelain (Pineapple, papain)
  – 1200-2400 MCU
  – Taken before meals
REPLACE

• Fiber to support transit and overall GI heal

• Betaine HCL (350-3500 mg) with protein containing meal (before and throughout the meal)

• Apple Cider Vinegar
REINOCULATE

• Reinoculate by reintroducing desirable GI microflora to create symbiosis in the GI tract.
• Use pre and probiotics together that are backed by clinical trials and guaranteed potency at expiration date.
• Fecal microbiota transplant (FMT) or human probiotic infusion
• Used in C. Difficile and less in
• What is the challenge in FMT?
Prebiotic Foods

- Asparagus
- Bananas
- Burdock root
- Chicory
- Chinese chives
- Eggplant
- Fruit
- Garlic
- Green tea
- Jerusalem artichokes
- Legumes
- Onions
- Peas
- Soybeans
- Sugar maple
- Yogurt, cottage, kefir
Probiotics

• World Health Organization:
  – “Live micro-organisms which when administered in adequate amounts confer a health benefit on the host.”
  – A bacterial strain that will:
    • Survive pH of stomach acid and bile
    • Adhere to intestinal lining
    • Grow and establish temporary residence in the intestines
    • Impart health benefits

Probiotics

- Lactobacillus sp.
  - reuteri
  - casei
  - rhamnosus
  - acidophilus
    - Plantarum
    - Brevis
- Streptococcus sp.
- Bifidobacterium sp.
  - infantis
  - lactis
  - longum
  - breve
  - bifidum
- S. boulardii (nonhuman)
Probiotics

B. LONUM

IMPROVES LACTOSE TOLERANCE
PREVENTS DIARRHEA AND FOOD ALLERGIES
IS A POWERFUL ANTIOXIDANT
REDUCES RISK OF CANCER BY SUPPRESSING CANCEROUS GROWTHS IN THE COLON

BENEFITS OF L. ACIDOPHILUS

1. IN WOMEN, IT HELPS CURB THE GROWTH OF CANDIDA ALBICANS, WHICH CAUSES YEAST INFECTIONS
2. HELPS STABILIZE CHOLESTEROL LEVELS
3. PRODUCES MANY BENEFICIAL SUBSTANCES THAT COMBAT PATHOGENIC MICROBES IN THE SMALL INTESTINE

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REPAIR

Repair provides nutritional support for healing the GI mucosa.

  - L-Glutamine promotes epithelial recovery in the small intestine
Anti-inflammatory Protocol

- Elimination Diet
- Probiotics: QHS
- Vitamin D: 1,000-5,000 iu/d
- Omega-3 Fatty Acids: 1-4 g/d
- L-Glutamine: 2-4 g/d divided doses for general GI repair. 10-40 g/d divided doses for critically ill and advanced disease
Antioxidant Supplementation

- Antioxidant combination to Provide:
  - Quercetin 400-800 mg
  - Ginkgo biloba extract (24% ginkgo favonone glycosides) 40-80 mg
  - Vitamin C (magnesium ascorbate) 1,000-2,000 mg
  - Vitamin E (d-alpha tocopheryl succinate) 200-400 mg
  - N-acetyl-L-cysteine (NAC) 150-300 mg
  - Zinc (Zinc picolinate) 45-90 mg evening meal
    (Consider copper 0.75-1.5 mg with zinc intake)
The 5\textsuperscript{th} R

• REBALANCE:
  – Providing support for modifying lifestyle, stress, attitude, diet, community to bring BALANCE to the patient.
  – Mindful eating
  – Yoga, mediation, prayer, breathing
  – Psychotherapy
  – COMMUNITY
You can't fix your health until you fix your diet.
Eliminate the top 7 foods:

- Gluten
- Dairy
- Soy
- Corn
- Sugar
- Eggs
- Peanuts

www.thevirgindiet.com/accessed June 1, 2015
Do You Know What Gluten Is?
Chronic inflammatory diseases of the intestine, such as inflammatory bowel disease and celiac disease, are characterized by a leaky intestinal barrier.
Quote from Alessio Fasano, MD

“Imagine gluten ingestion on a spectrum. At one end, you have people with celiac disease, who cannot tolerate one crumb of gluten in their diet. At the other end, you have the lucky people who can eat pizza, beer, pasta and cookies – and have no ill effects whatsoever. In the middle, there is a murky area of gluten reactions, including gluten sensitivity.”
Gluten Sensitivity

• Where gluten sensitivity is present, the innate immune system responds to gluten ingestion by fighting the gluten directly.

• This creates inflammation both inside and outside of the digestive system.

• Fasano and colleagues reported that only 57% of those identified as gluten sensitive carried the genes that are tested for when determining gluten metabolism disorders (DQ2 or DQ8 genes).

• This finding indicates that those two genes are less involved in gluten sensitivity than they are in celiac disease.
Non-Celiac Gluten Sensitivity

• An adverse reaction occurring upon ingestion of gluten in patients who do not have celiac disease or wheat allergy and whose symptoms subside after gluten withdrawal’

• Prevalence is currently unknown but thought to be at least as common as celiac disease, and likely much more commonly seen in adults than in children

• The definition is necessarily broad, as many clinical manifestations are attributed to gluten sensitivity, ranging from strictly gastrointestinal to extra-intestinal such as fatigue, headaches, joint pain....

Curr Gastroenterol Rep 2011 Jul 27
THE GRAINS IN THE PAST WERE DIFFERENT FROM THE CURRENT GRAINS
John 6:48

I am the bread of life
Hybridization of Wheat

- Wheat strains hybridized & cross-bread for resistance to drought and pathogens
- Resulted in changes to genetic code altering protein (gluten/gliadin) structures
- Altered proteins cause abnormal immune response
- Others have immune response to non-gluten components of wheat

T. turgidum  AABB  28 chromosomes  100,000 genes
Aegilops tauschii  DD  14 chromosomes  50,000 genes
T. aestivum  AABBDD  42 chromosomes  150,000 genes
Why is Gluten Sensitivity Increasing?

- Hybridized wheat has increased gluten content and gluten is a common food additive
- Toxins and hormones in food supply
- Compromised digestive enzymes
- Imbalanced intestinal flora
- Increased intestinal inflammation/infection/dysbiosis
Alzheimer’s disease is currently at epidemic proportions, with 5.4 million Americans—including one in eight people aged 65 and over—living with it. There is no known cure, and few truly effective treatments.

Research suggests the best hope is in prevention focusing on exercise and diet, specifically replacing carbs with higher amounts of healthful fats, and moderate amounts of high-quality protein.

Gluten sensitivity appears to be involved in most chronic disease, including those affecting the brain, because of how gluten affects your immune system. Glucose and fructose, (sugars) and carbohydrates can also have powerfully toxic effects.
What has the highest Glycemic Index?
Glycemic Index (GI) of Wheat

• Wheat consumption induces the accumulation of abdominal fat (wheat belly) through transient but rapid elevations of blood sugar, which stimulates insulin, the fat storage hormone. **Higher GI causes more rapid rise in blood sugar (BS)**
  - Whole wheat bread - GI 72
  - Table sugar - GI 59
  - Snicker’s bar GI - 41

• Wheat contains the complex carb amylopectin A - easy to digest, causing rapid rise in BS
Wheat Belly

• Consumption is linked to visceral fat
Wheat Withdrawal

• 30% of people have withdrawal symptoms with elimination

• Digestion of wheat produces morphine-like compounds that bind to the brain’s opiate receptors inducing a mild euphoria.

• Explains wheat as an appetite stimulant and why some people experience cravings.

• Wheat impacts the nervous system in certain individuals, some related to gluten and some related to the production of the morphine-like compounds created by wheat.
As Michael Polan says *In Defense of Food* “You are what you eat eats”

- Cows fed grains instead of grass
- Farm raised salmon fed fish meal that can be polluted with toxic PCB chemicals
- High consumption of N6 fats, and arachidonic acids in favor of Omega 3’s (e.g., Soy, corn, refined grains, vs. fish, leafy greens, etc.) increases substrates for pro-inflammatory mediators
Dirty Dozen
Shopper's Guide to Pesticides in Produce

APPLIES
CELERY
CHERRY TOMATOES
CUCUMBERS
GRAPE
NECTARINES
HOT PEPPERS & KALE/COLLARD GREENS

Clean Fifteen
Shopper's Guide to Pesticides in Produce

ASPARAGUS
AVOCADOS
CABBAGE
CANTALOUPE
CAULIFLOWER
Eggplant
GRAPEFRUIT
KIWI

MANGOES
ONIONS
PAPAYAS
PINEAPPLES
SWEET CORN
SWEET PEAS (FROZEN)
SWEET POTATOES
Key Findings EWG

- **99 percent** of apple samples, 98 percent of peaches, and 97 percent of nectarines tested positive for at least one pesticide residue.

- The average potato had more pesticides by weight than any other produce.

- A single grape sample and a sweet bell pepper sample contained **15 pesticides**.

- Single samples of cherry tomatoes, nectarines, peaches, imported snap peas and strawberries showed **13 different pesticides apiece**.

- Avocados were the cleanest: only 1 percent of avocado samples showed any detectable pesticides.

- Some 89 percent of pineapples, 82 percent of kiwi, 80 percent of papayas, 88 percent of mango and 61 percent of cantaloupe had no residues.

- No single fruit sample from the Clean Fifteen™ tested positive for more than 4 types of pesticides

- Multiple pesticide residues are extremely rare on Clean Fifteen™ vegetables. Only 5.5 percent of Clean Fifteen samples had two or more pesticides.
EAT REAL FOOD

Know your farmer

Eat food grown as close to home as possible

Eat in season as much as possible

CONVENTIONAL STRAWBERRY

ORGANIC STRAWBERRY


Ingredients: Strawberry

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I do not want your GMO!

I do not like you, MONSANTO!
Know Your Farmer

- Farmers planted about 170 million acres of GE crops in 2013—principally corn, cotton, and soybeans—representing about half of the U.S. farmland used to grow crops.

http://www.ers.usda.gov/
Take Home Message

• Knowing a good integrative nutritionist/and or life coach that you can refer to will be a huge advantage for you and your patients.

• Oftentimes simply following an elimination diet like the Virgin Diet can relieve the symptoms of migraines, depression, joint pain, IBS, eczema etc.
Take Home Message

• The gut is the center of our immune system
• Food will either heal you or kill you
• Eat gluten free food…not products
• Most patients have decades of dysfunction to treat. Healing will take longer than a few weeks or even months.
• Do an elimination diet yourself to be able to relate to your patients.
• Find out your own food sensitivities.
Take Home Message

• Gluten Sensitivity is not rare
• Gluten Sensitivity cannot be distinguished from Celiac Disease purely on the clinical basis;
• Gluten Sensitivity can present with vague, non-specific symptoms;
• A gluten free diet can be considered only when other forms of gluten reactions and other causes of pt’s symptoms have been ruled out;
• Listen to your patient!!!
“Let medicine be thy food and let food be thy medicine”

Hippocrates
HEALING IS A MATTER OF TIME
BUT IT IS SOMETIMES ALSO A MATTER OF OPPORTUNITY

Walking is man's best medicine.

Hippocrates

“When health is absent, wisdom cannot reveal itself, Art cannot manifest, strength cannot fight, Wealth becomes useless, and intelligence cannot be applied”

Herophilus 200BC

WHEREVER THE ART OF MEDICINE IS LOVED, THERE IS ALSO A LOVE OF HUMANITY.

- Hippocrates

A wise man should consider that health is the greatest of human blessings, and learn how by his own thought to derive benefit from his illnesses.

- Hippocrates

It is far more important to know what person the disease has than what disease the person has.

Hippocrates

NATURAL FORCES WITHIN US ARE THE TRUE HEALERS OF DISEASE.
Have a great lunch!!

"The food you eat can be either the safest & most powerful form of medicine or the slowest form of poison."

Ann Wigmore
Need More Information?

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