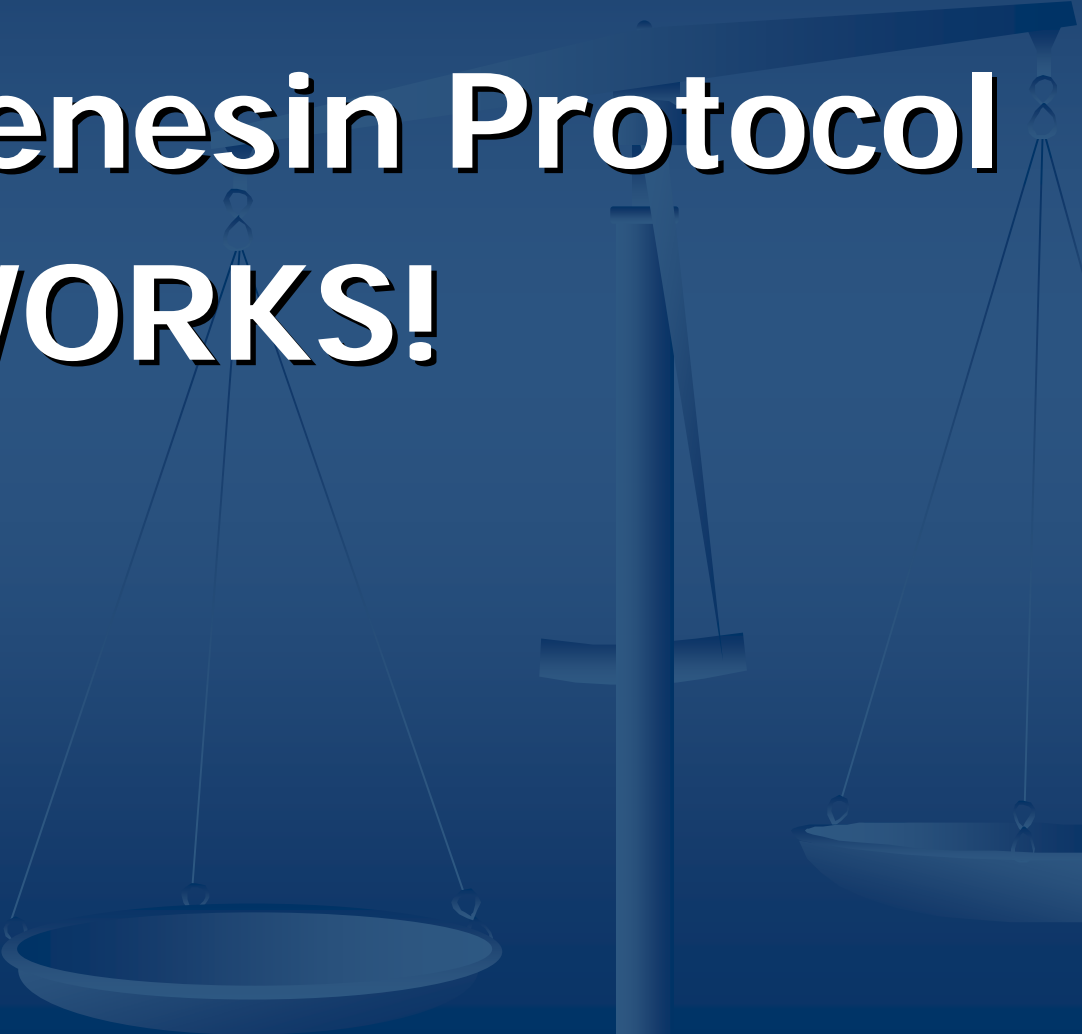




# The Relationship Between Fibromyalgia and Fungal Infections

Part I

**The Guaifenesin Protocol  
WORKS!**

A faint, light blue background image of a balance scale is visible. The scale is positioned on the right side of the frame, with its vertical pillar and horizontal beam extending across the right half. Two pans are suspended from the beam by thin wires. The entire scene is set against a solid dark blue background.

# Brenda's Personal Experience

- 1993-1995: Periodontal (gum) infection requiring multiple doses of antibiotics followed by a root canal. Continued infections, more antibiotics, until the tooth was finally extracted and replaced with an implant. Symptoms of fibromyalgia began and continued to worsen.
- 1997 – Diagnosed with fibromyalgia at the Mayo Clinic. Began low-carb diet and experienced some immediate improvement, but soon relapsed.
- 2000 - Went to Dr. St. Amand & began Guaifenesin Protocol and magnesium supplements.
- 2000-2005 – Added B-Complex vitamins, Emu oil, Xango and a regular exercise program. Continued improvement over time until **symptoms were all in remission.**
- Late 2005 – Another gum infection, followed by more antibiotics and a **return of fibromyalgia symptoms.**
- Early 2006 – Broke foot and ankle, probiotic therapy for bone healing (mainly kefir). **Fibromyalgia symptoms in remission again!**

# 4/06 - Research Project Began:

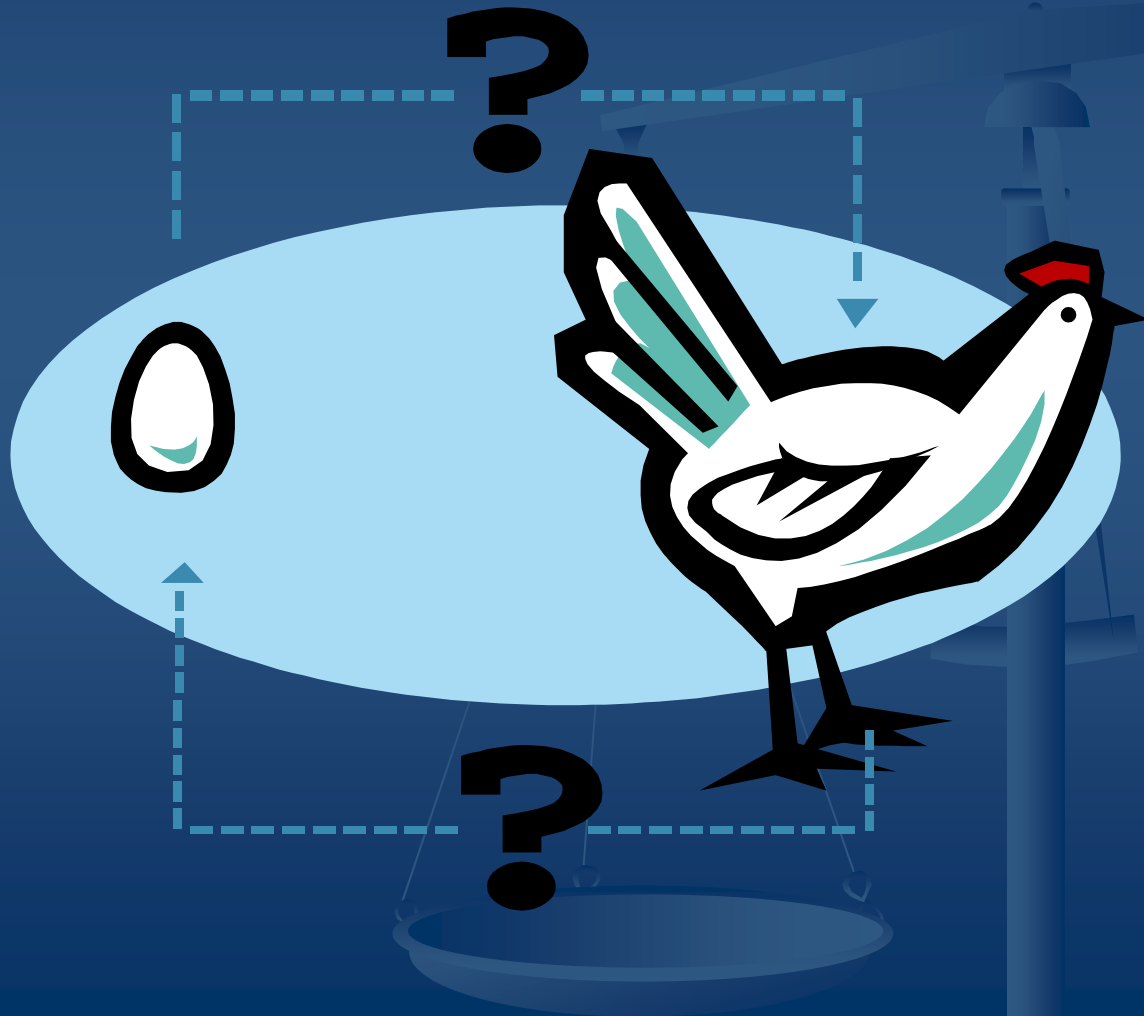
- Did the **antibiotics** cause my relapse?
  - How did the **probiotics** affect my recovery?
- 
- Suspected a Candida infection
  - Spent hundreds of hours on the internet
  - Bought (almost) all the books ever written on Candidiasis and Probiotics

# What do the experts say?

"We know the immune system in FMS (and most chronic illnesses) is depressed. So it makes sense there would be more fungal infections, etc. You are looking at a 'chicken and egg' situation."

Claudia Marek, June 2006

# Which came first?

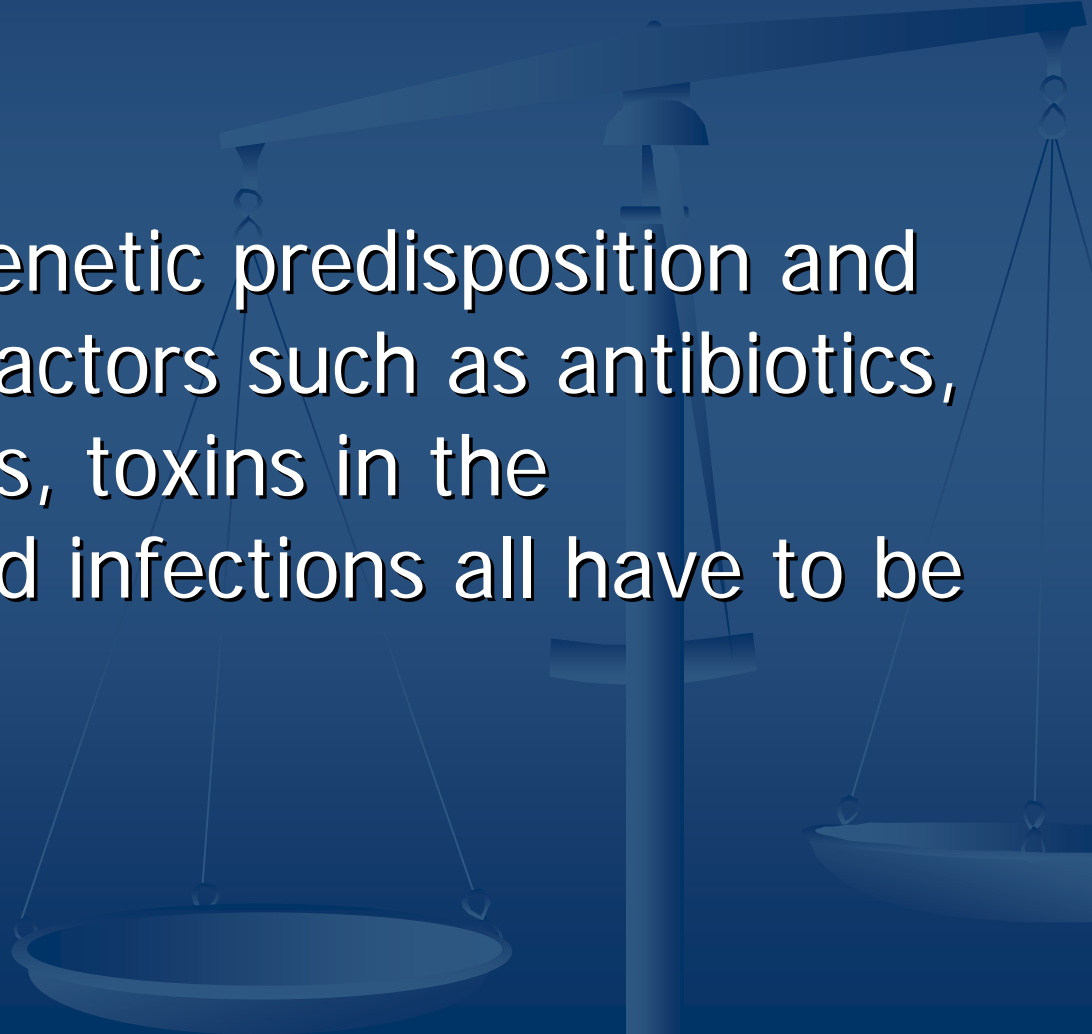


# Two Different Theories

1. Immune disorders such as chronic fatigue and fibromyalgia make one more susceptible to fungal infections.
2. Fungal infections cause altered immunity which leads to disorders such as chronic fatigue and fibromyalgia.

# Carol Jessop, MD FMS & CFIDS Clinician & Researcher

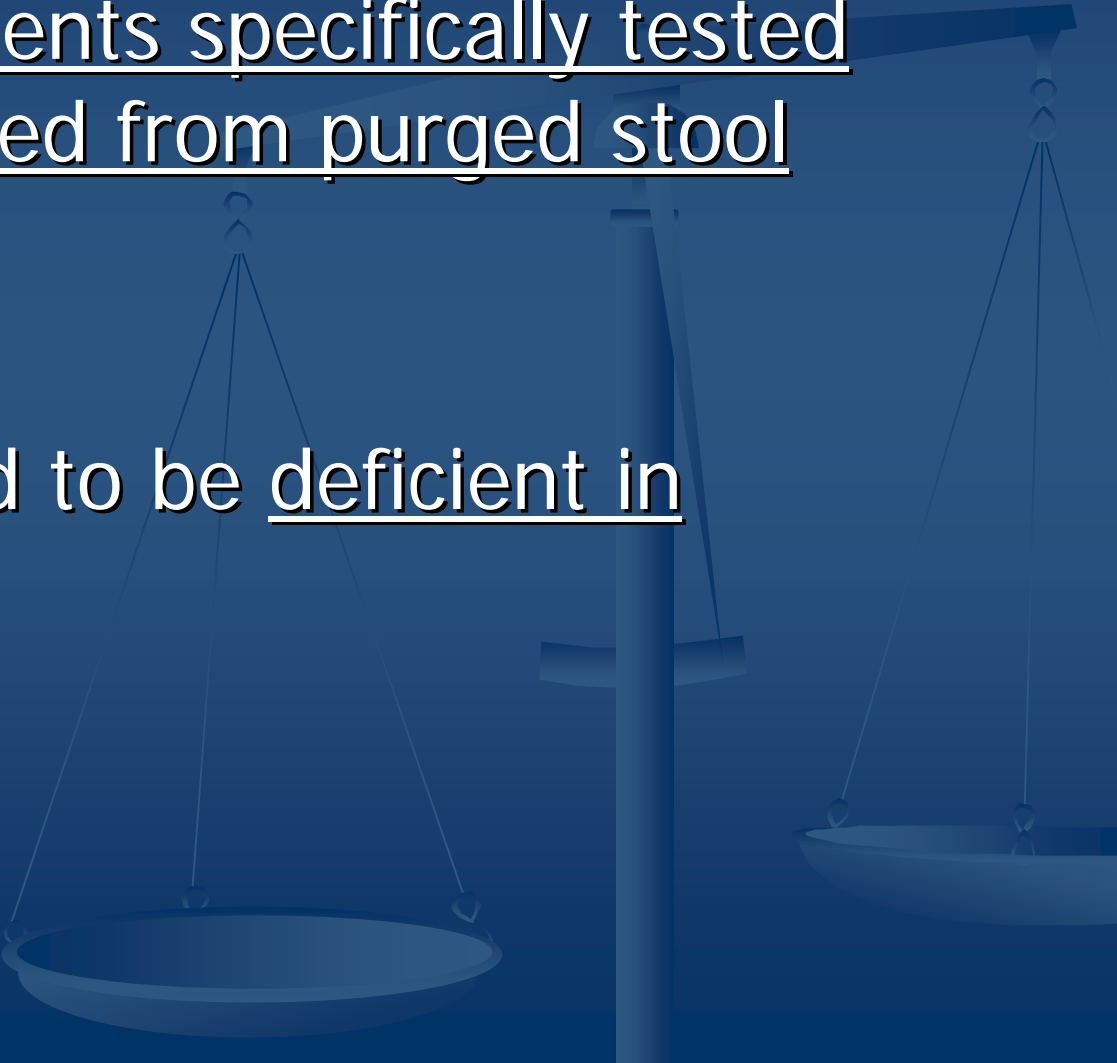
"I do think that genetic predisposition and environmental factors such as antibiotics, birth control pills, toxins in the environment and infections all have to be considered."



# Physical and Laboratory Findings in Dr. Jessop's Fibromyalgia Patients

- Tender neck muscles: 91%
- Yeast infections (tongue or mouth): 87%
- FMS tender spots: 86%
- Low blood pressure: 86%
- Abdominal tenderness: 80%
- Subnormal temperature: 65%
- Tender thyroid: 40%

# Other Significant Findings

- 82% of 880 patients specifically tested had yeast cultured from purged stool samples.
  - 38% were found to be deficient in magnesium
- 

# Disturbances and Symptoms that pre-dated the CFS/FMS symptoms

- 89% had irritable bowel symptoms before their FMS/CFS
- 80% had 'constant gas' or bloating before their FMS/CFS
- 58% had constipation before their FMS/CFS
- 40% reported heartburn before their FMS/CFS
- 89% reported recurrent childhood ear, nose, throat infections
- 40% had a history of recurrent sinusitis
- 30% recurrent bronchitis
- 20% recurrent bladder infections
- Sleep problems were present in just 1% of the patients before CFS/FMS and over 90% after its onset

# How Does It Begin?

"Both Chronic Fatigue Syndrome and Fibromyalgia often seem to begin after an infection or a severe shock (physical or emotional), and the symptoms are very similar. The only obvious difference seems to be that for some people the fatigue element is the most dominant, while for others the muscular pain symptoms are greatest. In other words, for many people the diagnosis Chronic Fatigue Syndrome and Fibromyalgia are interchangeable terms...."

Leon Chaitow N.D., D.O., M.R.O.

# **FIBROMYALGIA**

**According to Dr. St. Amand Includes:**

**CHRONIC FATIGUE SYNDROME**

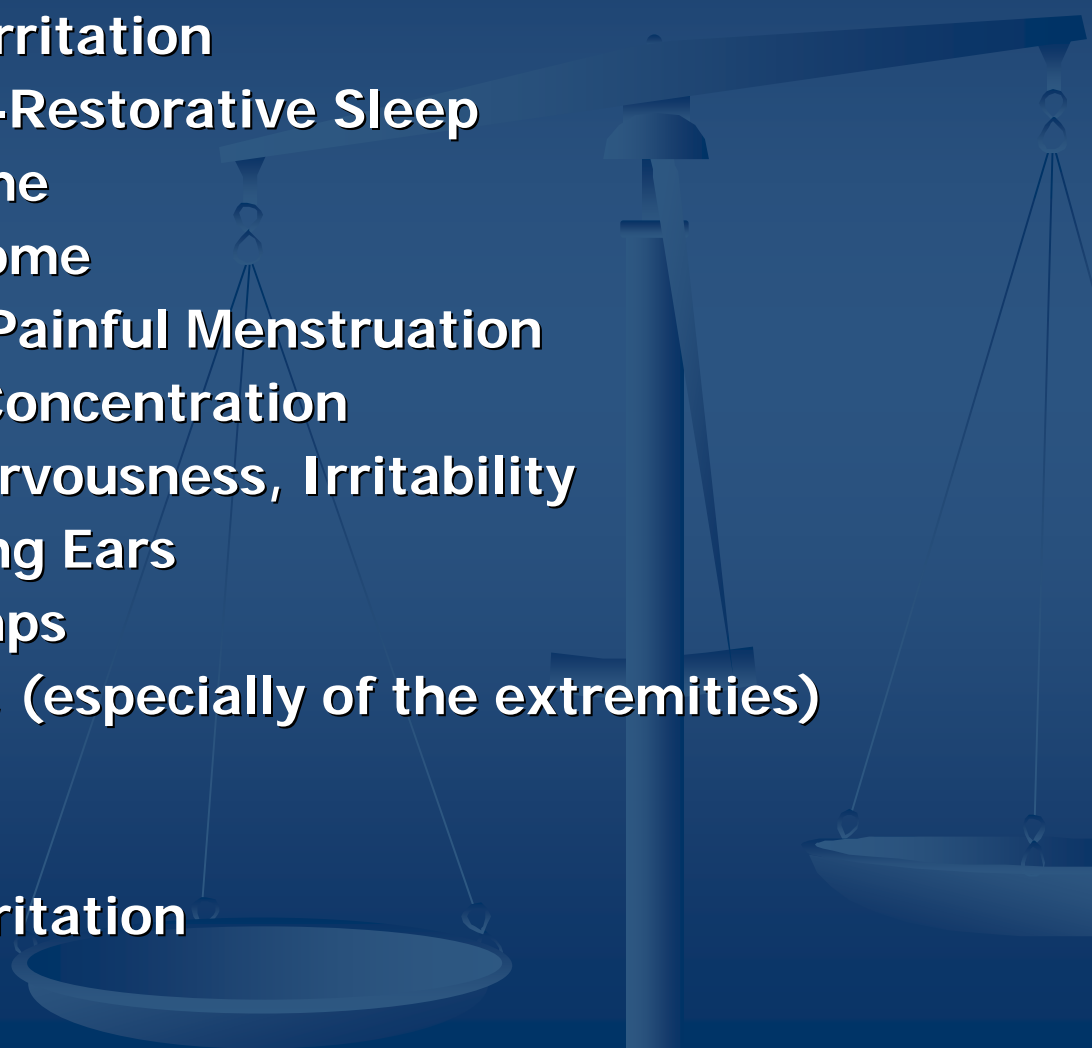
**MYOFASCIAL PAIN SYNDROME**

**VULVAR PAIN SYNDROME**

**CHRONIC CANDIDIASIS**

# FIBROMYALGIA SYNDROME

According to Dr. St. Amand

- Generalized Body Pain
  - Headaches, Migraines, Dizziness
  - Blurring of Vision, Eye Irritation
  - Fatigue, Insomnia, Non-Restorative Sleep
  - Irritable Bowel Syndrome
  - Irritable Bladder Syndrome
  - Vulvar Pain Syndrome, Painful Menstruation
  - Impaired Memory and Concentration
  - Depression, Anxiety, Nervousness, Irritability
  - Abnormal Tastes, Ringing Ears
  - Restless Legs, Leg Cramps
  - Numbness and Tingling, (especially of the extremities)
  - Nasal Congestion
  - Brittle Nails
  - Itching, Rashes, Skin Irritation
  - Morning Stiffness
- 

# Major Symptoms Attributed To:

## FIBROMYALGIA

- Body pain
- Brain Fog (Cognitive Difficulties)
- Headaches; migraines
- Blurred vision; eye irritation
- Fatigue; insomnia
- Irritable Bowel Syndrome
- Irritable Bladder Syndrome
- Vulvar Pain Syndrome
- Painful Menstruation
- Impaired memory
- Depression; anxiety
- Abnormal tastes; Ringing ears
- Restless legs; Leg cramps
- Numbness & tingling
- Allergies; Chemical Sensitivities
- Brittle Nails; Hair Loss
- Itching; Rashes; Skin Irritation
- Morning Stiffness

## CANDIDAISIS

- Muscle aches & bone pain
- Brain Fog (Cognitive Difficulties)
- Headaches; migraines
- Eye fatigue & irritation
- Fatigue; insomnia
- Irritable Bowel Syndrome
- Frequent urination
- Vulvar Pain Syndrome
- Painful Menstruation
- Impaired memory
- Depression ; anxiety
- Bad breath; Ringing ears
- Magnesium Deficiency; cramps
- Numbness & tingling of face or extremities
- Allergies; Chemical Sensitivities
- Brittle Nails; Hair Loss
- Itching; Rashes; Skin Irritation; Acne
- Symptoms Worse in the Morning

# Other Conditions Associated With:

## FIBROMYALGIA

- Hypoglycemia
- Arthritis
- Carpal Tunnel Syndrome
- Colitis
- Hypothyroidism
- ADD/ADHD
- Mitral Valve Prolapse
- Prostatitis
- TMJ
- Candidiasis

## CANDIDIASIS

- Hypoglycemia
- Arthritis
- Carpal Tunnel Syndrome
- Colitis
- Hypothyroidism
- ADD/ADHD
- Mitral Valve Prolapse
- Prostatitis
- TMJ
- Fibromyalgia/Chronic Fatigue
- Autism \*

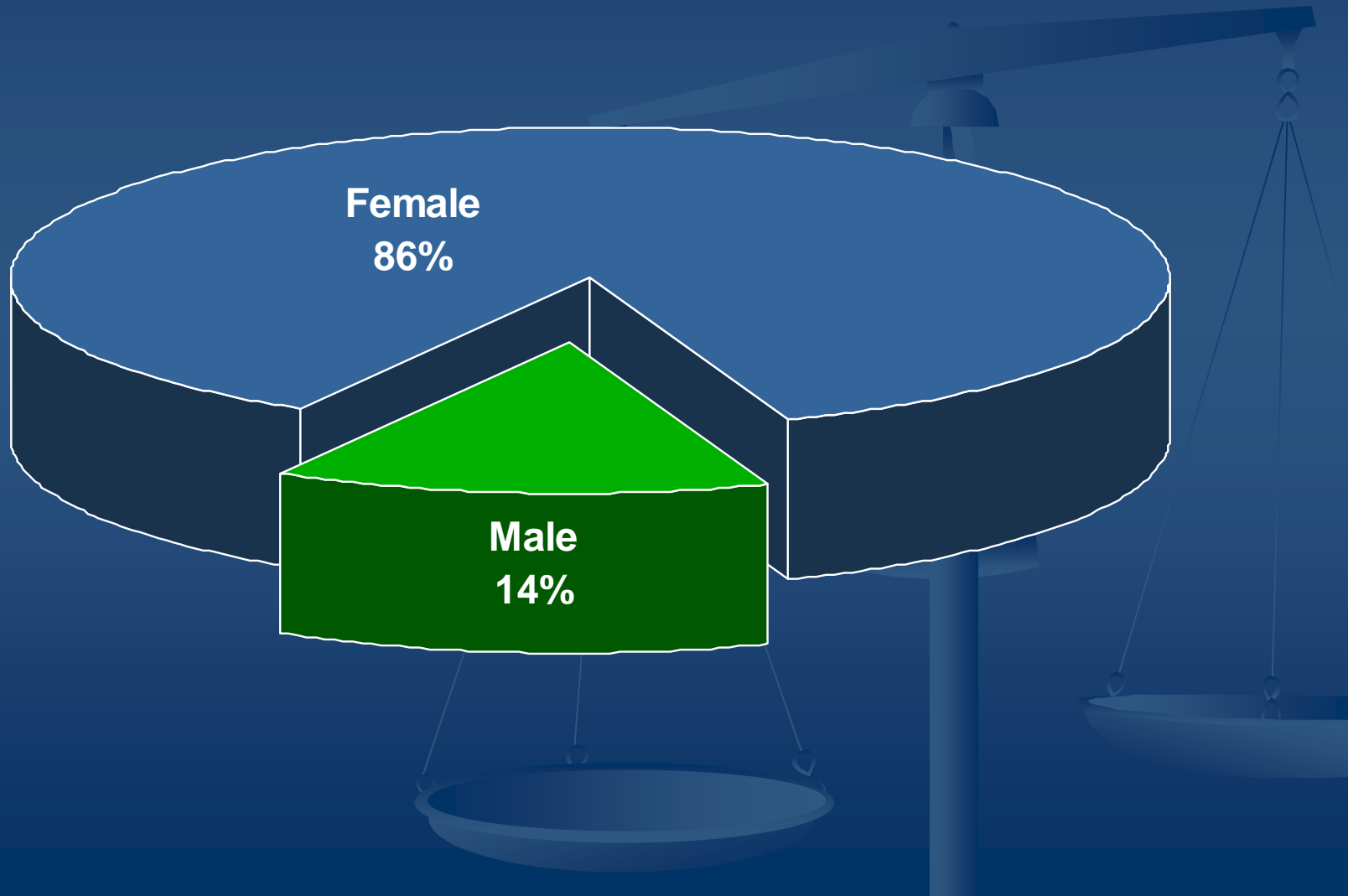
# Other

## Symptoms of Candidiasis

- High sugar foods will drastically increase symptoms. - This is a primary diagnostic tool.
- Vaginal Yeast Infections
- Inflammation of the hair follicles (candidiasis folliculitis) of various parts of the body (rashes on feet, legs, arms)
- Lactose intolerance
- White coated tongue
- Psoriasis/seborrheic dermatitis/dandruff; dry, itchy skin
- Rectal itching
- Swollen lips/face
- Dry, scaly skin on feet

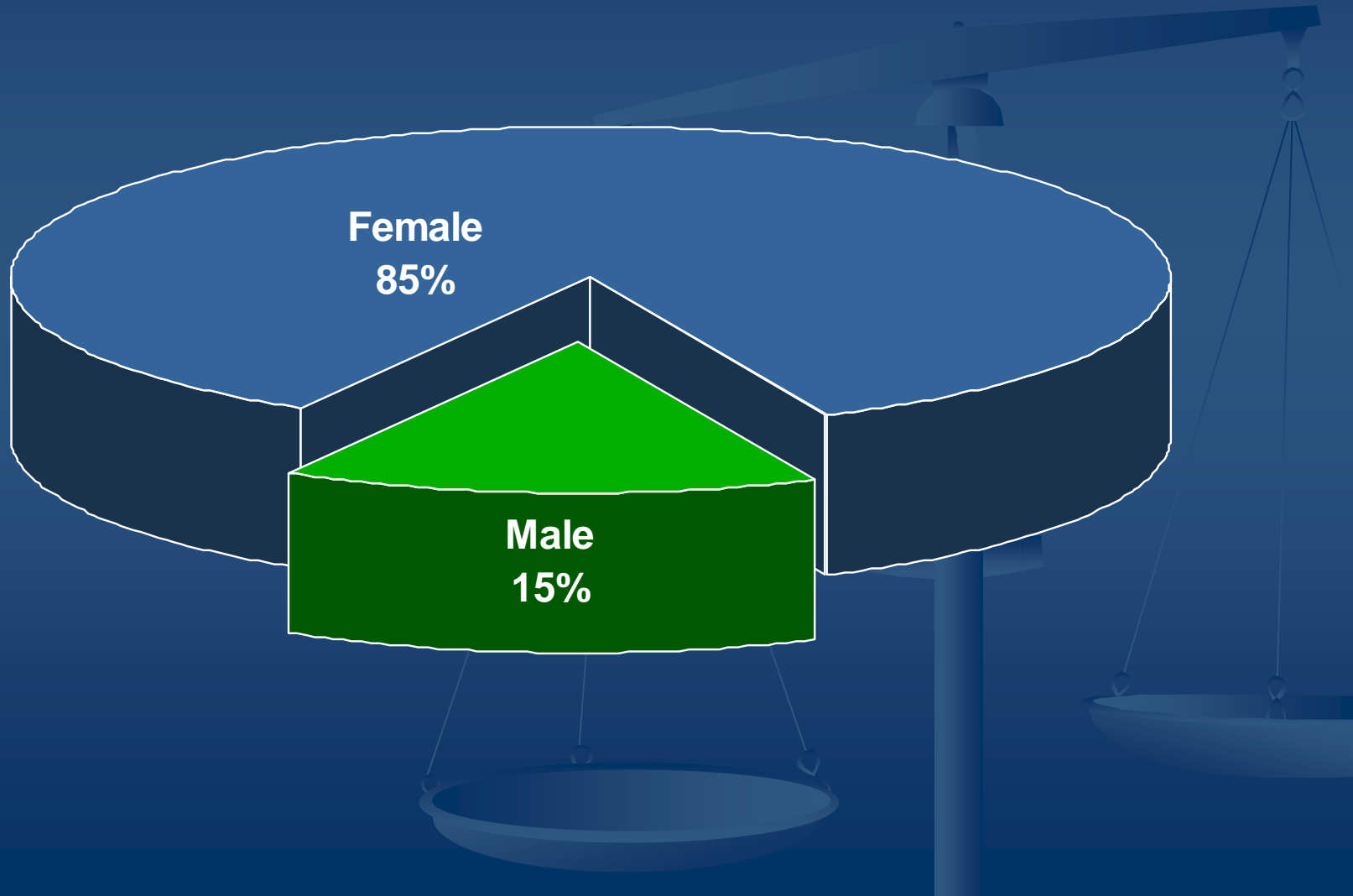
# Percentage of Male and Female Patients with Fibromyalgia

BASED ON 1,111 CONSECUTIVE PATIENTS OF DR. ST. AMAND




# Percentage of Male and Female Patients with Candidiasis

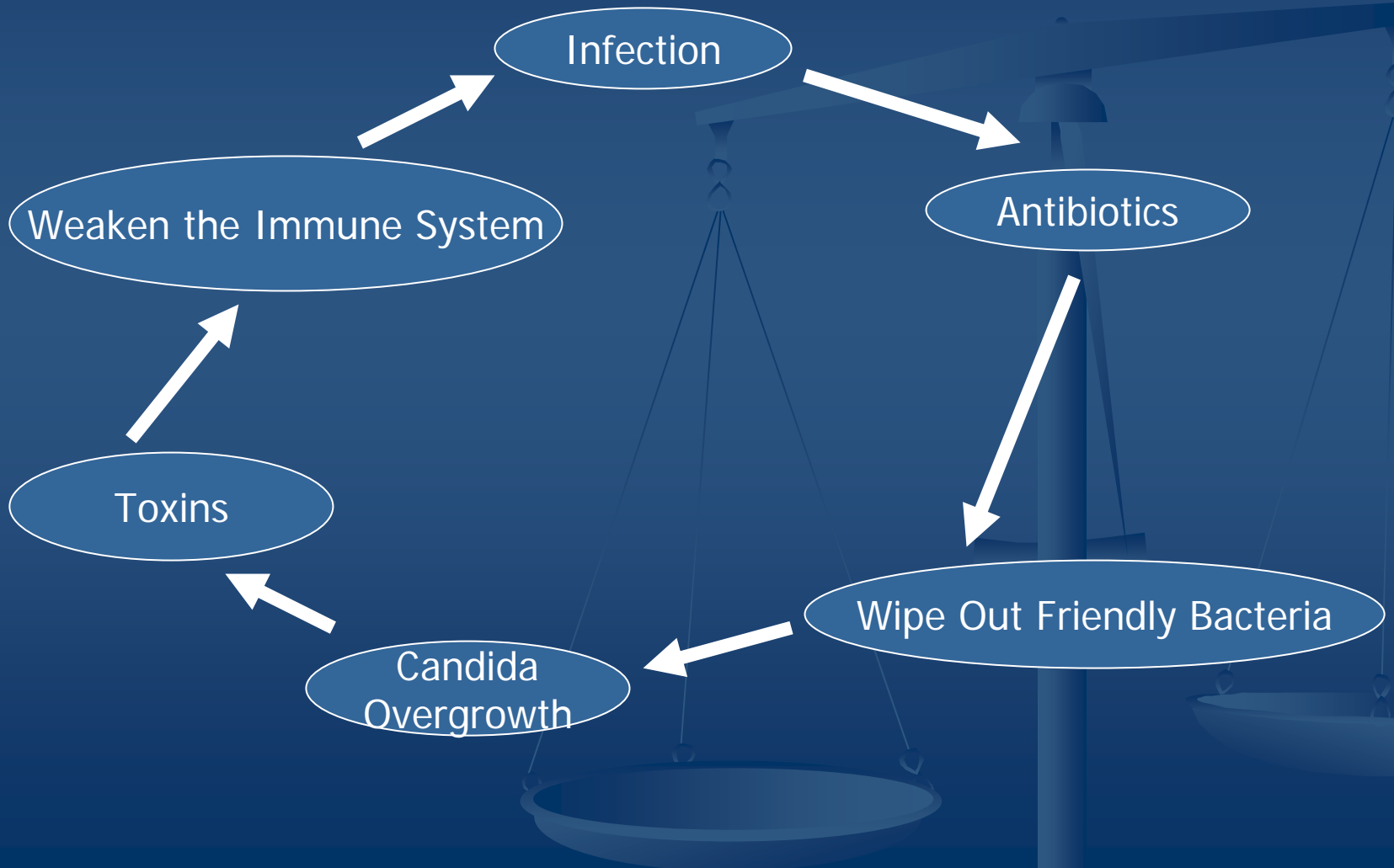
BASED ON 100 CONSECUTIVE PATIENTS OF DR. CROOK



# What Causes Candida Overgrowth?

- Antibiotics
  - Steroids: Cortisone, Prednisone
  - Birth-control Pills
  - Estrogen Replacement Therapy
  - Poor Diet
  - Chemotherapy, Radiation
  - Stress
  - Alcohol Overuse
- 

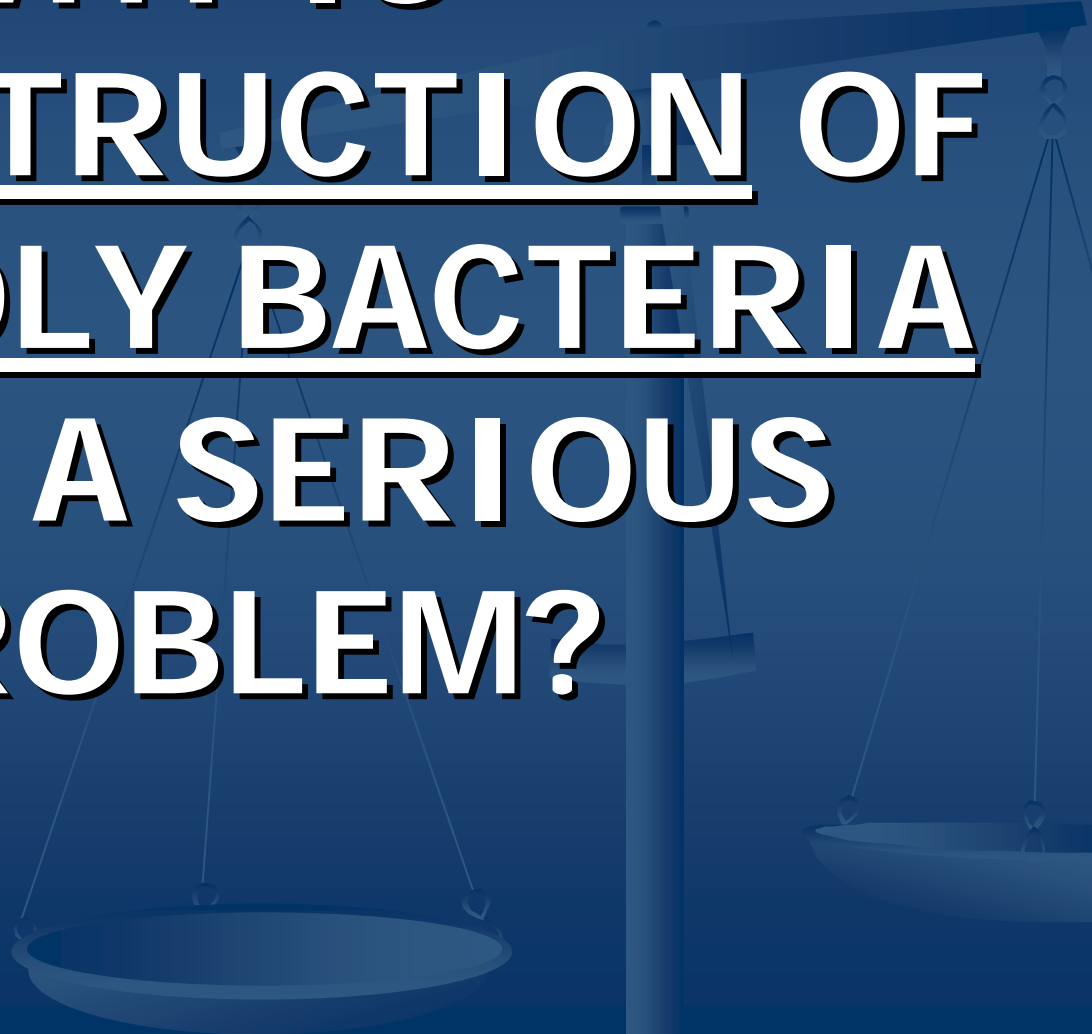
# The Vicious Circle



"Your GI tract ideally contains 85% good bacteria and just 15% bad bacteria. Unfortunately, most of us in the western world have eaten foods and taken drugs and supplements that cause this ratio to actually reverse!"

Dr. Joseph Mercola

**WHY IS  
THE DESTRUCTION OF  
FRIENDLY BACTERIA  
SUCH A SERIOUS  
PROBLEM?**



# Benefits of Good Bacteria

Good Bacteria are a Normal Part of Our Body's Ecological System which:

- Acidify the Colon
  - Normalize Bowel Movements
  - Strengthen the Immune System
  - Assist in Vitamin Synthesis (B, K)
    - Assist in Enzyme Production
    - Decrease Lactose Intolerance
- Aid in Digestion of Proteins, Fats, Carbohydrates
  - Remove Cancer-Causing Elements
    - Reduce Cholesterol Levels

# Additional Benefits of Probiotics

- *Competition against harmful micro-organisms including Candida*
- *Preventing colonization of pathogens through the production of inhibitory substances including acids and hydrogen peroxide and natural antibiotics*
- *Immune enhancement, including enhanced macrophage activity*
- *Direct anti-tumor activity of certain strains*
- *Reduction in liver toxicity*
- *Enhancement of peristalsis, digestion, regularity and re-absorption of nutrients*
- *In infants, promotion of healthy digestive tract colonization*
- *Enhancement and balance of estrogen levels, prevention of osteoporosis through increased calcium uptake*
- *Protection against food poisoning, travelers' diarrhea, allergies, skin problems*

The Evidence for Probiotics, Sarah Goodman, Ph.D.

# Low Levels of Helpful Bacteria are Hazardous to Your Health!

Without good bacteria you get:

- Poor Vitamin K Synthesis
- Magnesium Deficiencies
- Vitamin B Deficiencies
- Overgrowth of Yeast
- Overgrowth of Harmful Bacteria
- Toxicity from Nitrites
- Dairy Intolerance

# Vitamin K – Synthesized by Good Bacteria in the Gut

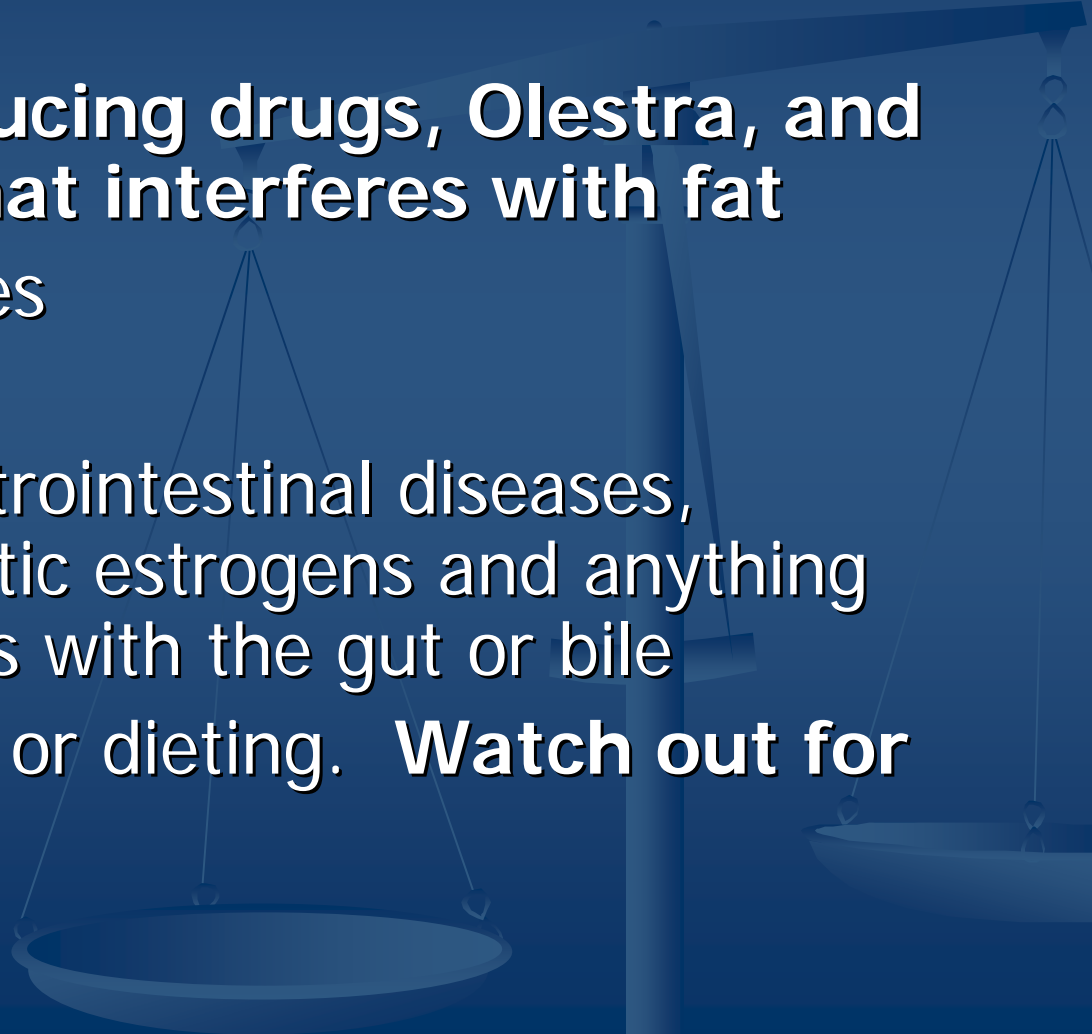
## Vitamin K Regulates Calcium - Deficiency Can Cause

- Calcification of arteries and other soft tissues
- Heart Disease
- Alzheimer's Disease (Vit. K prevents abnormal calcium accumulation in the brain)
- Bone loss
  - Osteopenia
  - Osteoporosis
  - Fractures
  - Scoliosis
- Vitamin K is a powerful anti-oxidant

## Vitamin K may also prevent:

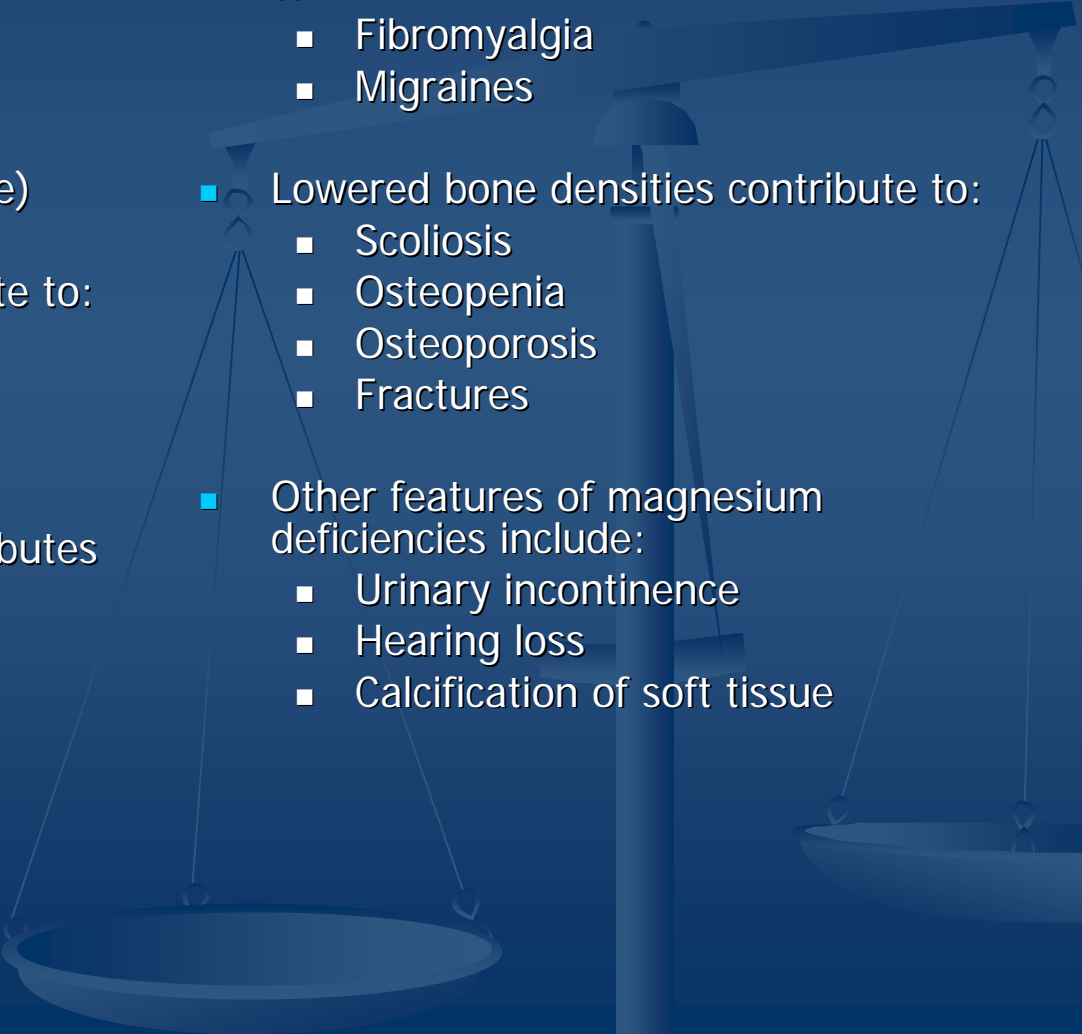
- Stroke
- Inflammation & Increased IL-6
- Diabetes (Vitamin K helps control blood sugar)
- Blood clots
- Heavy menstrual periods
- Nosebleeds
- Hematuria (blood in the urine)
- Gastrointestinal bleeding
- Eye hemorrhages
- Bleeding gums
- Purpura/Easy Bruising
- Lowered blood pressure

# Vitamin K Stressors

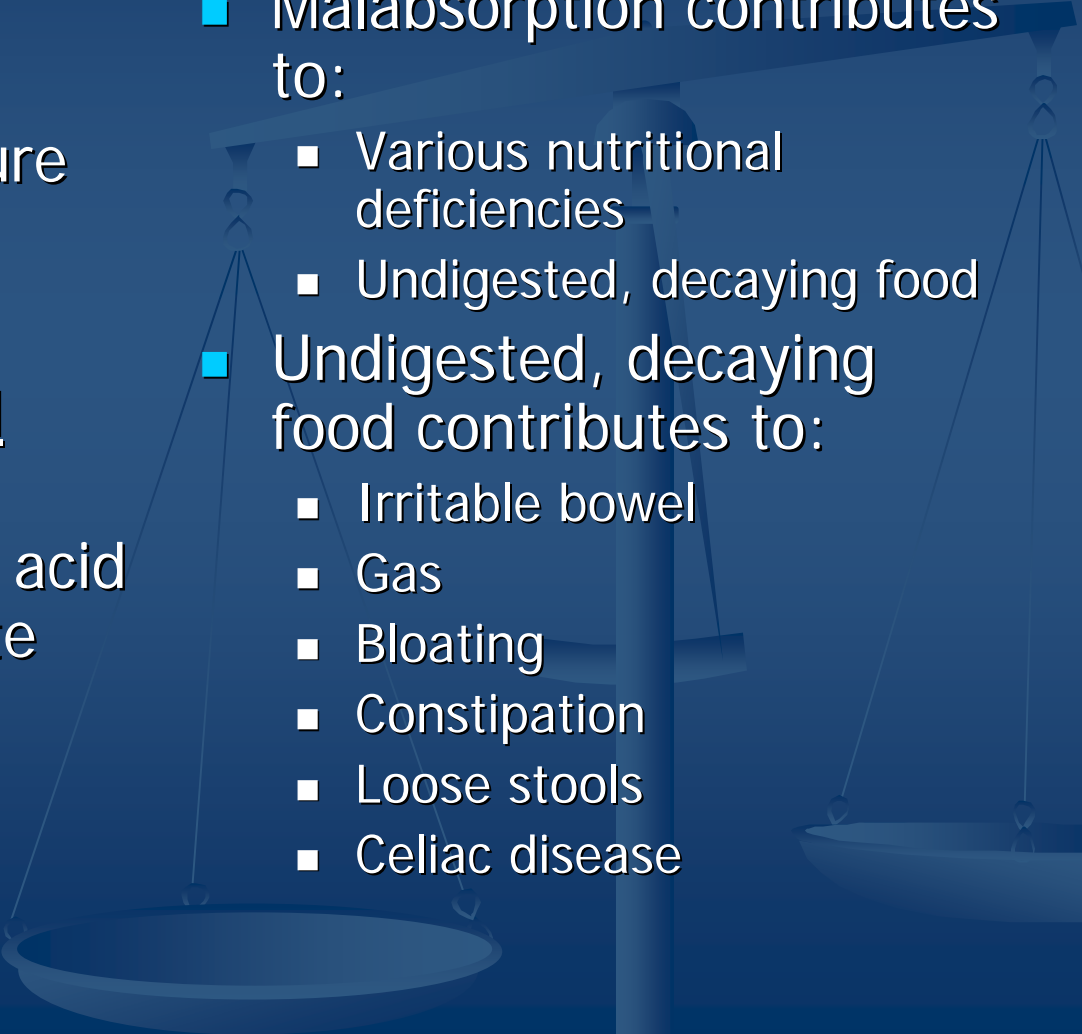
- Antibiotics
  - Cholesterol-reducing drugs, Olestra, and anything else that interferes with fat
  - Mineral oil laxatives
  - BHT
  - Liver disease, gastrointestinal diseases, gallstones, synthetic estrogens and anything else that interferes with the gut or bile
  - Dietary restriction or dieting. **Watch out for low-fat diets!**
- 

# Magnesium Deficiencies

## Can Cause:

- Poor hyaluronic acid synthesis contributing to:
    - TMJ
    - Hypermobility joints
    - Mitral Valve Prolapse
    - Keratoconus (cornea disease)
  - Raised histamine levels contribute to:
    - Allergies
    - Asthma
    - Chemical sensitivities
  - Increased adrenaline flow contributes to:
    - Insomnia
    - Migraine headaches
    - Attention Deficit Disorder
    - Hyperactivity
    - Anxiety disorders
    - Depression
    - Psychiatric disorders
  - Muscles stay contracted contributing to:
    - Fibromyalgia
    - Migraines
  - Lowered bone densities contribute to:
    - Scoliosis
    - Osteopenia
    - Osteoporosis
    - Fractures
  - Other features of magnesium deficiencies include:
    - Urinary incontinence
    - Hearing loss
    - Calcification of soft tissue
- 

# Vitamin B Deficiencies Can Cause:

- Sensory perception problems
  - Lowered blood pressure
  - Abnormal gait
  - Tingling of nerves
  - Increased uric acid levels
  - Lowered hydrochloric acid levels which contribute to:
    - Malabsorption
    - Digestive Problems
  - Malabsorption contributes to:
    - Various nutritional deficiencies
    - Undigested, decaying food
  - Undigested, decaying food contributes to:
    - Irritable bowel
    - Gas
    - Bloating
    - Constipation
    - Loose stools
    - Celiac disease
- 

# Vitamin B8 (Biotin)

Deficiencies in Biotin are generally seen only after long antibiotic therapies which deplete the intestinal fauna.

**This may lead to extreme exhaustion, drowsiness, muscle pain, loss of appetite, depression, grayish skin color, central nervous system abnormalities such as depression, lethargy, hallucinations, and paresthesias.**

[Paresthesias is a skin sensation, such as burning, numbness, itching, hyperesthesia (increased sensitivity) or tingling, with no apparent physical cause (idiopathic). The most common locations of paresthesias are the hands, arms, legs and feet, although paresthesias can occur anywhere on the body.]

# Dr. St. Amand, Gout & Uric Acid

"I had been interested in gout and suspected that there was more to the illness than merely joint pains and swelling. I reread the original description Thomas Sydenham had written more than three hundred years before, in 1683. He described gout as a disease with joint pain and one manifested by 'great mental torpor,' 'suffision of the sinuses,' generalized flu-like aching, and malaise or fatigue, along with many other complaints...When I treated these patients with gout medication, their uric acid precipitously dropped to normal."

From "What Your Doctor May Not Tell You About Fibromyalgia" by R. Paul St. Amand

# Gout Study Gives Clues

The work of Dr. A.V. Constantini, MD, is based on research in the peer-review literature which has been either ignored or overlooked. He focused on gout which his literature review concludes is not a disease of metabolism but an infectious, granulomatous disorder based on abnormality of mycotoxicity, due to exposure to fungus. Looking at the veterinarian literature, it is observed that chickens and turkeys develop gout from mycotoxins. He then looked at one of the standard gout cures, colchicine, to understand its mechanism of action. Colchicine has no specific activity against uric acid, but is highly effective in the acute gout attack. His literature research reveals that colchicine has an anti-fungal activity. He then looked at agents which are reportedly anti-fungal, griseofulvin, for example. Griseofulvin has been shown to eliminate toenail fungus after continued use for one year. Griseofulvin also has a remarkable effect against gout. This led Dr. Constantini to suspect that fungus may play an important role in causing a broad number of diseases. His research suggests that fungal etiologies may be seen in some forms of cancer, cardiovascular disease, alcoholism, psoriasis, leukemia, rheumatoid arthritis, bowel-related diseases, and sarcoidosis.

*Jonathan Collin, MD*

# Uric Acid & Fungi (Yeast)

Uric Acid is a mycotoxin. An elevation in the Uric Acid Score indicates overgrowth of fungi (yeast) in the gastrointestinal tract.

Health Equations Physician Manual, Copyright ©2004

“The human body does not synthesize uric acid. All the uric acid present in the body comes from production and secretion by fungi. All anti-gout or uric acid-lowering drugs are antifungal.”

Zoltan P. Rona, MD

# Uric Acid and Uricase: A Medical Mystery

- Other sources say that uric acid is produced in the liver from purines in food. It then enters the bloodstream. Most uric acid then eventually passes through the kidneys and is excreted in the urine. The rest is disposed of in the intestines, where it is processed and broken down by bacteria.
- But, if the good bacteria have been destroyed by antibiotics and the overgrowth of Candida, it makes sense that uric acid levels (whether secreted by the yeast or produced by the body) would build up.
- The enzyme uricase converts uric acid into allantoin, a harmless substance. Uricase is produced in microbes and most mammals, but is absent in humans.
- Why does the human body not produce uricase? Could it be because the human body does not produce uric acid so there is no need for uricase?

# Overgrowth of Intestinal Yeast

- Yeast secrete an enzyme that digests the lining of the intestines.
- Yeast shifts the immune system from Th1 to Th2. This sets the stage for allergies and viral infections.
- Yeast enzymes break down IgA. IgA is the most predominant type of antibody that is found covering the gut mucosa. IgA keeps toxins and bacteria from binding to the cells that line the intestines. Without enough IgA, the intestines become inflamed, and the lymphoid tissue in the gut swells.
- The byproducts of certain yeasts or fungus are able to alter the bacterial content of the intestines.
- Candida secretes an enzyme that reduces the body's ability to kill *Staphylococcus aureus*, a common pathogen in human intestines.

# Other Problems with Yeast

- Yeast creates between 79-180 toxins. Some of these toxins, like tartaric acid, acetaldehyde and arabinol, interfere with the body's ability to produce energy.
- Drs. Truss, Galland and Ionescu have all measured reduced levels of amino acids, imbalances of fatty acids and deficiencies of various vitamins and minerals in their yeast syndrome patients.
- The most harmful place for yeast to flourish seems to be in the small intestine. This was shown in a study of children with failure to thrive syndrome.
- The Great Plains Laboratory has found that tartaric acid from yeast causes muscle weakness in autistic children. Tartaric acid is also found in the urine of those with fibromyalgia and can be elevated as high as 50 times normal in adults with fibromyalgia.

# Acetaldehyde

Much of the harm done by Candida (yeast) results from its waste product, acetaldehyde, which in turn can affect the metabolic, neurological, endocrine, and immune systems. Further, few chemicals can create so much havoc in the body as acetaldehyde can.

Acetaldehyde is known to poison tissues -- accumulating in the brain, spinal cord, joints, muscles and tissues.

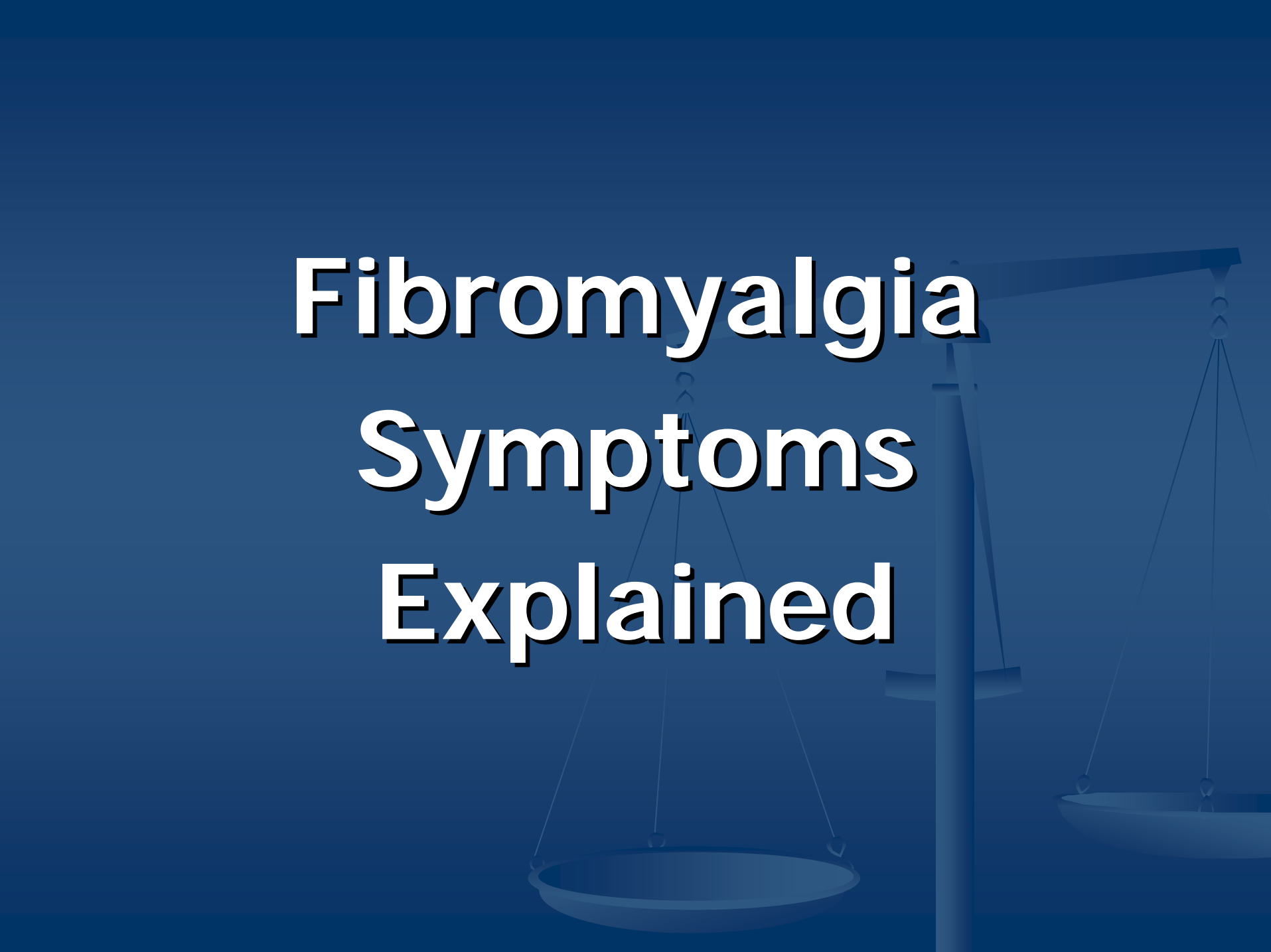
Acetaldehyde accumulations in tissue are responsible for weakness in muscles, irritation, and **PAIN**.

# The Downward Spiral of Mycotoxins

- The amount of uric acid and acetaldehyde produced by yeast and fungus can be overwhelming to the body.
- When acetaldehyde is converted into alcohol in the liver, the body is depleted of magnesium, sulfur, hydrogen, and potassium, thus reducing cell energy.
- The body chelates uric acid and other toxins with fats, raising LDL cholesterol. (Cholesterol is part of the body's immune system!)
- In a similar balancing act, the body reacts chemically to neutralize uric acid by binding it with minerals such as potassium, magnesium, sodium, zinc, and calcium; this process further reduces mineral supplies and can create deficiencies.

# The Spiral Continues....

- Fungal hampering of red blood cells also reduces oxygenation. The less oxygen there is in the body, the more alcohol is produced, which can give the symptoms of being drunk, disoriented, dizzy, or mentally confused.
- Acetaldehyde further reduces cell energy because it destroys essential enzymes.
- The immune system is provoked into trying to neutralize it and to retard the yeast and fungus by releasing large amounts of free radicals.
- If body pollution is constantly generated, then the immune response, our amazing house-cleaning process, eventually becomes overloaded and exhausted.




# **Fibromyalgia Symptoms Explained**

# Fatigue

- Toxins from yeast and bacteria can interfere with energy production by the cell's mitochondria.
- Epstein-Barr, Herpes, CMV and other viruses are associated with chronic fatigue. These are normally kept in check by your cell-mediated immunity. Intestinal yeast suppress your cell-mediated immunity and thus make it more difficult for your body to keep these viruses in check.
- Thyroid hormone is required for energy production. Thyroid hormone levels can be suppressed by the body's reaction to the intestinal flora and its toxins.
- Poor flora can lead to alterations in your immune system that can promote the formation of fibrin. When fibrin coats your capillaries, this can interfere with oxygen getting to your cells.
- Good flora helps your body digest food and acquire the nutrients that your body needs to function properly.
- Poor flora interferes with the nutrition needed to produce energy; e.g., yeast destroy coenzyme Q10 before your body gets a chance to absorb it. Coenzyme Q10 is very important for cellular energy production. Yeast also reduce alpha ketoglutaric acid in the body. This interferes with the Krebs energy cycle.
- Intestinal inflammation depletes the body of sulfates. The liver needs sulfates to detoxify many harmful substances that interfere with the production of energy in the body.

# “Brain Fog”

1. **Hypoglycemia**
  2. **Immune System Alteration**
  3. **Hypothyroidism or Hyperthyroidism**
  4. **Low Cellular Energy**
  5. **Ammonia**
- 

# Constipation or Diarrhea

There are several ways that poor intestinal flora can lead to constipation or diarrhea.

1. Certain bacteria create methane gas. Methane gas can shut down the contractions in the intestines and lead to constipation.
2. Bacteria, parasites and yeast can contribute to diarrhea by causing intestinal inflammation.
3. Poor intestinal flora can contribute to hypothyroidism. Hypothyroidism is classically associated with constipation. However, this does not preclude the possibility of a person being hypothyroid and experiencing diarrhea.
4. Poor flora can lower the body's nutritional and energy status. It can reduce the liver's ability to detoxify hormones and neurohormones. It can alter the immune system. All of this will have an indirect effect on intestinal motility.

# Hypoglycemia

How does Candida overgrowth contribute to hypoglycemia?

- Biotin
- Ethanol/alcohol/arabitol
- Production of glucose (a sugar) is impaired by tartaric acid.
- Poor flora can lead to low thyroid function. Poor thyroid function contributes to hypoglycemia by reducing cellular respiration and by reducing the liver's ability to detoxify estrogen.
- Estrogen causes hypoxia (lack of oxygen). This contributes to hypoglycemia.
- Progesterone protects the body from hypoglycemia. It is more likely to be in short supply if the thyroid function is low.
- Low levels of glutamine and branch chain amino acids can contribute to hypoglycemia.

# Hypothyroidism

Low thyroid function or hypothyroidism is often present when there is poor intestinal flora. There are several reasons for this.

- **Immune alterations**
- **Toxins from the gut**
- **Polyunsaturated oils**
- **Hypothyroidism makes you more susceptible to acquiring poor flora.**

# Hypothyroidism & Pain

“There appear to be two main DNA regions covered by proteins affected by thyroid hormone. The first one covers genes for a number of enzymes involved in energy production, and, when thyroid binds to it, it lifts up, causing more of these enzymes to be made. The other covers genes responsible for the production and detection of Substance P, which is responsible for pain sensation. When thyroid binds to this protein, it sticks tightly to the DNA, reducing production and detection of Substance P.

Thus, low thyroid effect causes decreased metabolism (fatigue, poor mental functioning, etc.) and increased pain sensation.

These are exactly the problems experienced by patients with fibromyalgia.”

*Dr. Michael McNett*

# Insomnia

Things associated with Candida overgrowth that will affect sleep:

- Ammonia (from bacteria)
- Acetaldehyde
  - Depletes alpha ketoglutaric acid which helps the body remove ammonia
- Candida deplete taurine and coenzyme B6 which are both important for good sleep.
- Food allergies
- Immune system reactions to yeast
- Excess histamine (caused by)
  - Hypothyroidism
  - Low magnesium

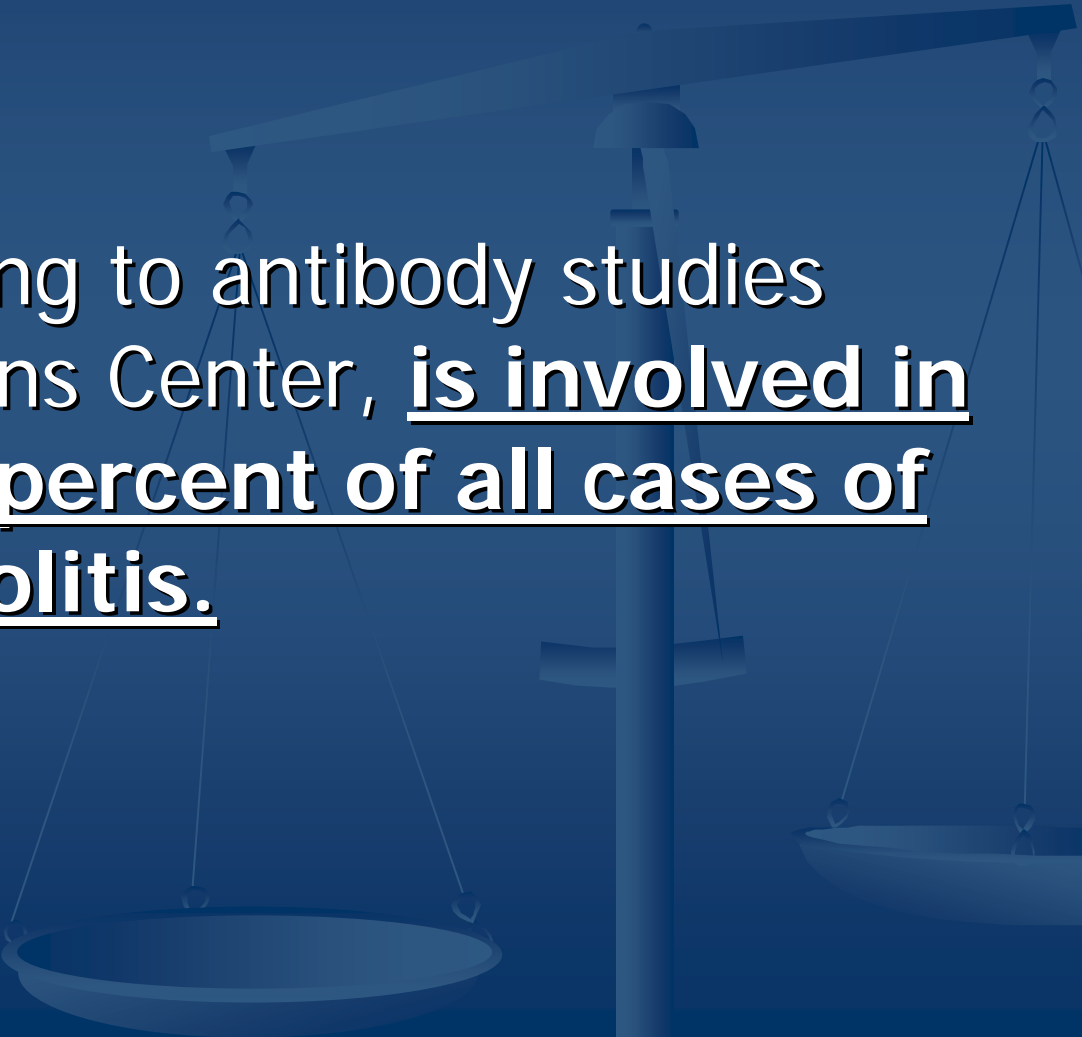
# Migraines

Our intestinal flora affect our susceptibility to migraines because:

- Allergies cause platelets to clump together.
- Low taurine makes one more susceptible.
- Hypoglycemia makes one more susceptible. We can diminish the probability that hypoglycemia will start a migraine by changing the fats in our diet.
- Stress will also release oils into our blood stream in their free fatty acid form. Avoiding polyunsaturated oils and substituting olive or coconut oil may help.
- More magnesium is often helpful. Also, people with Candidiasis are often low in thyroid. Low thyroid will cause the loss of magnesium.
- Intestinal bacteria can create substances that can initiate a migraine.
- Many people with migraines have a weak sulfation pathway in their liver and thus have a more difficult time removing vasoactive amines. Candidiasis enters into the picture by weakening this sulfation pathway.

# Crohn's Disease and Colitis

Candida, according to antibody studies done at the Atkins Center, is involved in more than 80 percent of all cases of Crohn's and Colitis.



# Autism

80% to 90% of the children with autism have abnormal levels of bacteria or fungal metabolites in their urine.

(Great Plains Laboratory results.)

However, it isn't just the toxins from bacteria and yeast that interfere with cognition. The changes in the immune system caused by abnormal intestinal flora also interfere with memory and learning. Some of these same immune changes can cause central hypothyroidism, which is often found in autism.

# Attention Deficit Disorder (ADD)

William Crook, MD, postulates that “the yeast syndrome” has a strong connection to attention deficit disorder:

- Various substances (toxins) produced by bacteria and yeast will affect your ability to think.
- The bacteria and yeast in the gut will alter the immune system.
  - Lipopolysaccharide (LPS)
  - IL-1
- LPS can also cause central hypothyroidism.
- Fuad Lechin, MD, PhD has found two types of neurochemical disorders in attention deficit hyperactivity.
  - Free serotonin in the plasma can be caused by allergies, low magnesium, toxins from the gut, or free unsaturated fatty acids.
  - The Feingold (low salicylate) diet will improve the liver’s ability to remove norepinephrine and dopamine. The Feingold diet reduces the strain on the liver’s sulfation pathway, which is used to remove norepinephrine and dopamine.

# Evidence of Candidiasis in FMS Patients

- Abnormally high amounts of yeast metabolites (primarily tartaric acid) was detected in the urine of patients with fibromyalgia and treatment with antifungal medication decreased the amount.
- It has also been shown that large doses of malic acid supplements are able to alleviate some symptoms. Malic acid (the natural compound) and tartaric acid (the yeast compound) compete for the same enzyme in our energy producing biochemical cycle. Tipping the scale towards malic acid will prevent tartaric acid from inhibiting this cycle, thus leading to improvement of some symptoms.

*Source: Journal of Nutritional Medicine (1992) 3, 49-59.*

# The Salicylate Factor

- Allergies and asthma have both been linked to high levels of salicylates, as well as to aspirin sensitivity.
- Salicylates block the action of vitamin K, which is why aspirin thins the blood and can cause bleeding problems.
- Studies indicate magnesium is partly dependent upon vitamin K.
- Salicylates block vitamin K, which impacts magnesium levels, which increase adrenaline flow.
- The increased adrenaline flow then results in a variety of hyperexcitability disorders including ADD. ADD in children has been linked to a high intake of salicylates.

# Salicylate Sensitivity

According to the FDA, 5% of the population is sensitive to salicylates.

- [WebMD](#) states that salicylate sensitivity symptoms vary but may include:
  - Asthma-like symptoms, such as trouble breathing and wheezing
  - Headaches
  - Nasal congestion
  - Changes in skin color
  - Itching, skin rash or hives
  - Swelling of the hands, feet, and face
  - Stomach pain

# “Die-off” = Herxheimer = “Cycling”?

- When yeast cells are rapidly killed by the immune system, drug treatment, or dietary intervention, a "die-off" or Herxheimer reaction occurs. This reaction is caused by the massive release of toxins from dying candida cells. Toxic proteins from the dead yeasts cross cell membranes, enter the bloodstream, and trigger an intense immune reaction.
- Other death-stress chemicals cause direct cellular toxicity throughout the body. Immune/yeast complexes trigger the release of histamine, an irritating tissue hormone which initiates tissue inflammation and causes discomfort. **Severe allergic and toxic reactions exacerbate the symptoms of candida.** Die-off reactions may last from a few days to a few weeks but usually clear up in less than a week.
- Candida “Die-off” and the Herxheimer reaction occur when a large number of yeasts die rapidly, releasing toxins and causing allergic reactions. A die-off reaction is especially pronounced when using powerful antifungal drugs like Nystatin that literally cause yeast cells to burst apart. **Even though a strong die-off reaction causes a significant amount of discomfort, it is a sign of a successful treatment.**

# Aspirin – Antifungal Drug

There are some researchers and clinicians who have been able to demonstrate a direct link between the presence of fungi in the body and cardiovascular disease of all kinds. This is known as the fungal mycotoxin etiology of atherosclerosis and has been promoted by Dr. A.V. Costantini and other researchers working for the World Health Organization. According to these doctors, aspirin is an antifungal drug which can go a long ways towards offsetting the negative effects of fungi and their mycotoxins. They believe that it is this antifungal property of aspirin that prevents heart disease, stroke and cancer - diseases all suspected to have a fungal mycotoxin etiology.

# Three Means to Control Candida

Diet/Fiber

Starve and Remove  
Candida

Probiotics

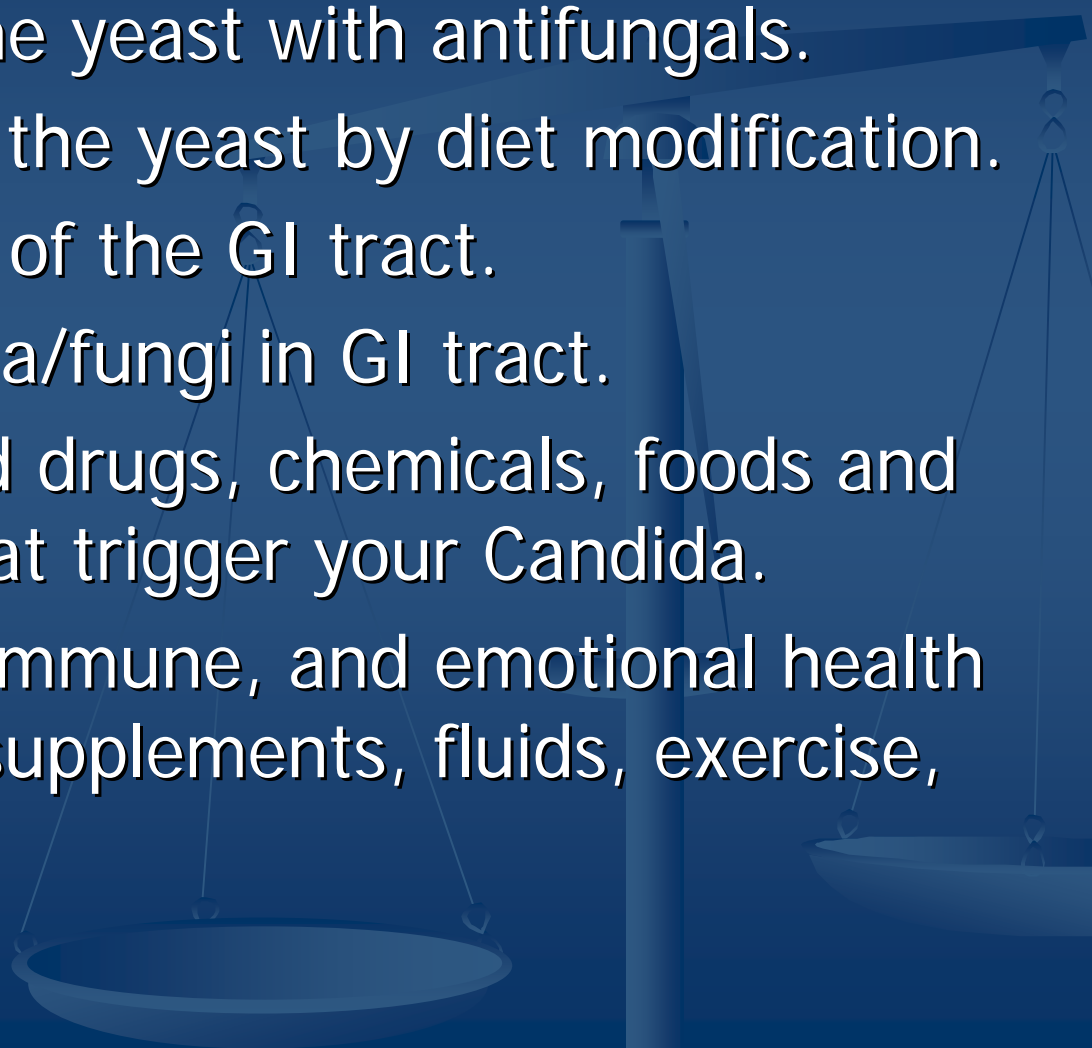
Improve Intestinal  
Ecosystem & Immunity

Antifungals

Kill Candida

This is a battle not easily won!

# Protocol for Candida

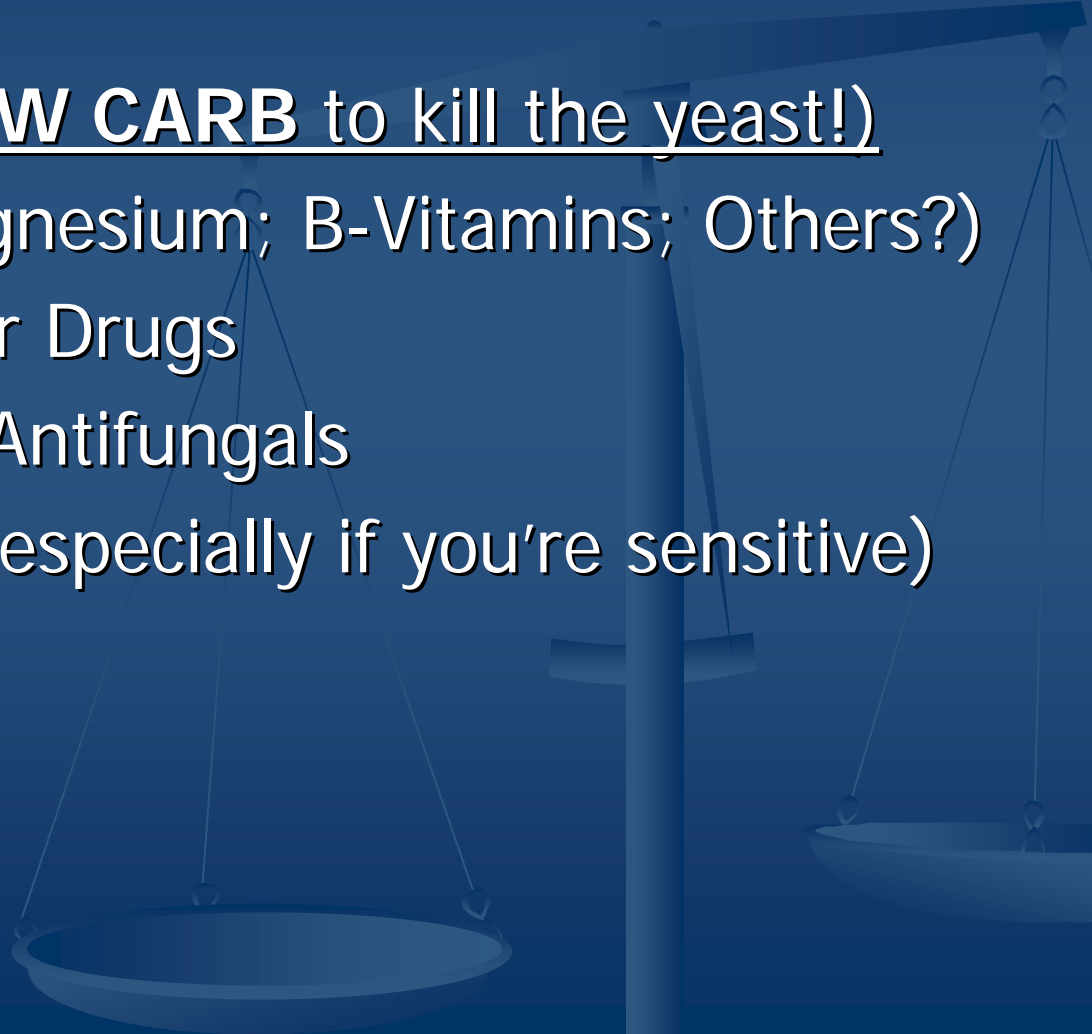
1. Suppress or kill the yeast with antifungals.
  2. Deprive or starve the yeast by diet modification.
  3. Cleanse the walls of the GI tract.
  4. Rebalance bacteria/fungi in GI tract.
  5. Identify and avoid drugs, chemicals, foods and other allergens that trigger your Candida.
  6. Build your body, immune, and emotional health via a program of supplements, fluids, exercise, and meditation.
- 

# How Might This Relate To The Guai Protocol?

1. Like all uricosuric drugs, Guaifenesin is a mucus thinning, systemic anti-fungal. Candida live on the mucosal membranes of the body. Additional anti-fungal medications may be needed for more severe or localized infections.
2. Even though a strong die-off reaction causes a significant amount of discomfort ("cycling"), it is a sign of a successful treatment.
3. The diet for hypoglycemia starves the yeast which live on carbohydrates.
4. Supplementation with magnesium and B-vitamins replaces nutrients lost when Candida takes over. Increasing fiber and water in the diet helps to cleanse the GI tract.
5. **Rebalance bacteria/fungi in GI tract with probiotics.\***
6. Identify and avoid drugs, chemicals (including salicylates), foods and other allergens that trigger your Candida.
7. Build your body, immune, and emotional health via a program of exercise and meditation.

\* Not currently discussed as part of the guai protocol

# Why Does the Guaifenesin Protocol Work for Some, but Not For Others?

- Diet (Must eat **LOW CARB** to kill the yeast!)
  - Supplements (Magnesium; B-Vitamins; Others?)
  - Antibiotics & Other Drugs
  - Probiotics and/or Antifungals
  - Avoid Salicylates (especially if you're sensitive)
  - Exercise
- 

# Where Do You Begin?

- Follow the Guaifenesin Protocol
- Add cultured foods to your diet
- Change the type of fats and oils you consume (use butter, coconut oil, olive oil)
- Drastically reduce your intake of carbohydrates and sugar
- Exercise

# Two Theories = One Solution

- R. Paul St. Amand, MD believes guaifenesin helps rid the body of excess phosphate which causes symptoms of Fibromyalgia and Chronic Fatigue Syndrome. The hypoglycemic diet is required for those who show signs of hypoglycemia, an often related disorder.

(Dr. St. Amand graduated from Tufts Medical School in 1952. He still practices medicine in CA.)

- William G. Crook, MD believed that antifungals and a low carbohydrate diet are required to rid the body of Candida overgrowth which causes symptoms of Chronic Fatigue and Fibromyalgia.

(Dr. Crook graduated from Johns Hopkins Medical School in 1949. He died in October, 2002.)

**The Guaifenesin Protocol**

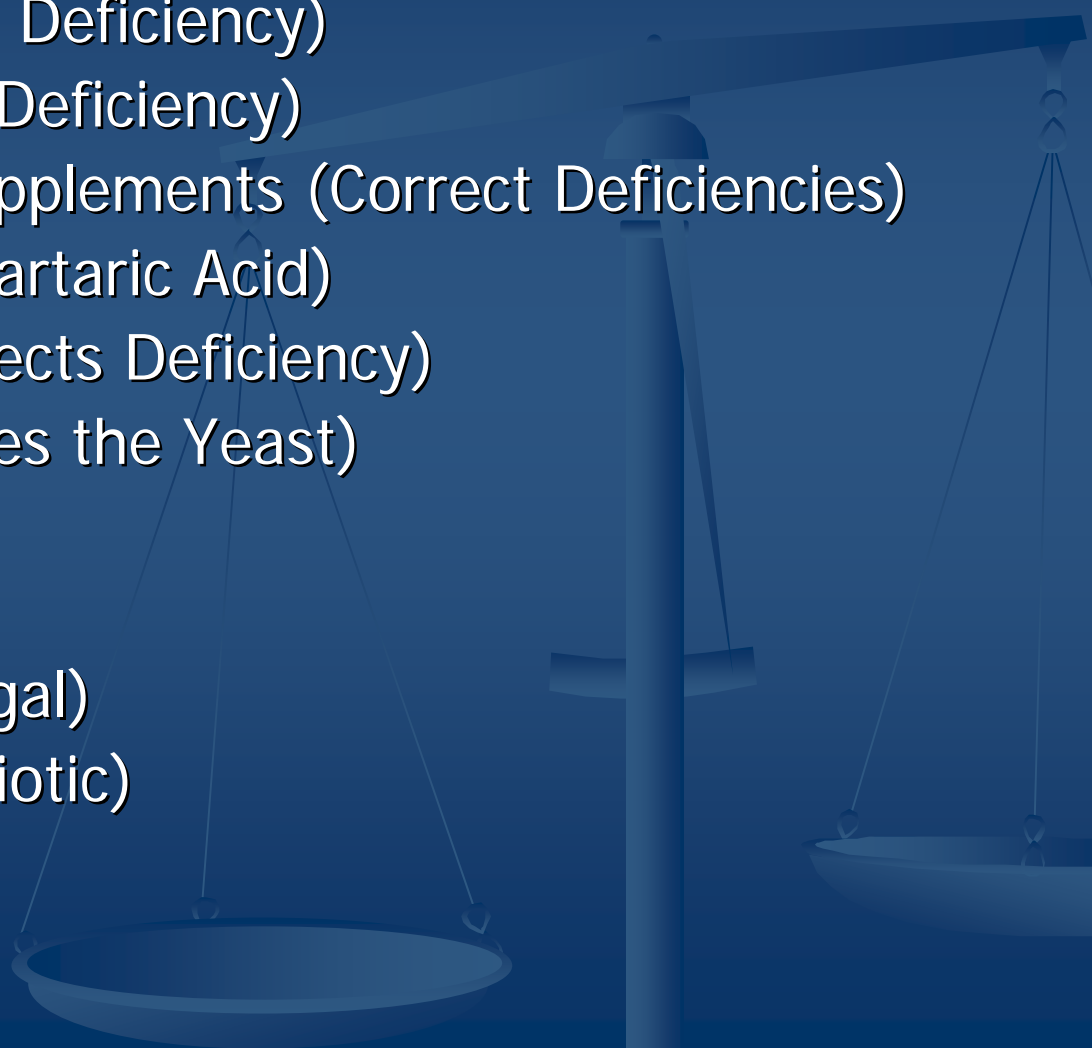
**WORKS,**

**but we may have found**

**a way to make it work**

**BETTER!**

# “Anecdotal” Evidence Explained

- Magnesium (Corrects Deficiency)
  - B-vitamins (Corrects Deficiency)
  - Vitamin & Mineral Supplements (Correct Deficiencies)
  - Malic Acid (Inhibits Tartaric Acid)
  - Coenzyme Q10 (Corrects Deficiency)
  - Low Carb Diet (Starves the Yeast)
  - Emu Oil (Antifungal)
  - Three-Lac (Probiotic)
  - Xango Juice (Antifungal)
  - Kombucha Tea (Probiotic)
  - Kefir (Probiotic)
- 

**To be continued.....**

