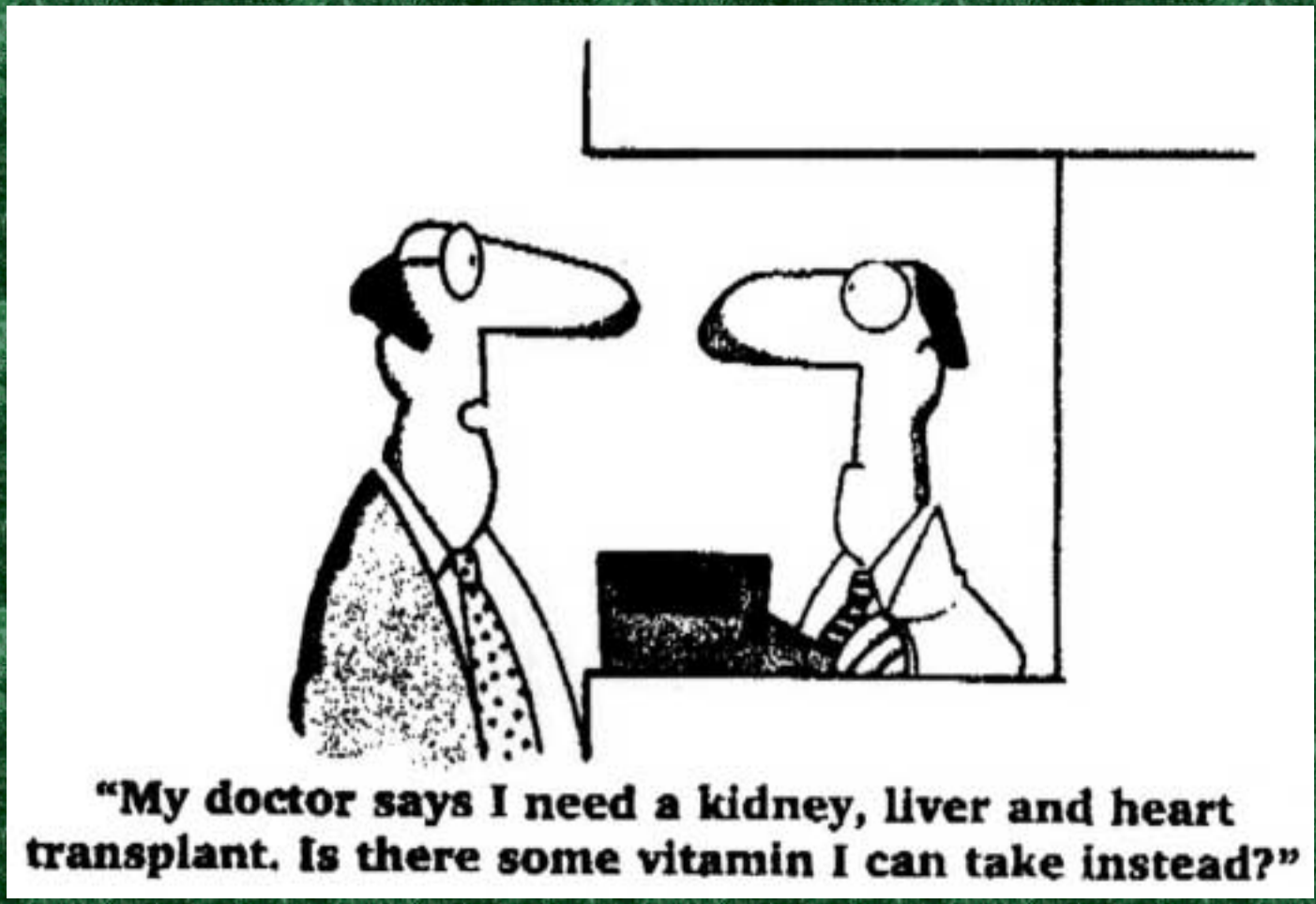
# A.D.D.


**“The body is not sick because it has a disease.**

**The body has a disease because it is sick.”**



"My doctor says I need a kidney, liver and heart transplant. Is there some vitamin I can take instead?"

"Some day, son, this will all be yours but not for a long, long time. Im taking DHEA and growth hormone injections."

"That's one of the unfortunate side effects of the medicine."

# 3 KINDS OF "SICKNESS"

- **Nutritional Sickness**
- **Toxic Sickness**
- **Genetic Sickness**

# ADD IS AN INDUSTRY

- Physicians
- Pharmaceutical Companies
- Psychiatrists
- Psychologists
- Family Practitioners
- Tutors
- Schools

Over $2 billion per year!

# SUBJECTIVITY

- ADD cannot be objectively diagnosed at the present time
- Symptoms of ADD are highly subjective
  - 3% of all children exhibit ADHD symptoms
  - 6% of all children are on medication for ADHD

# FACTS

- Therapies for ADD have reached $2 billion annually
- From 8 to 22 million children may be placed on activity-modifying drugs by the year 2000
- 20-40% of this group will not be helped
- ADD is diagnosed more than ever before. Why?
  - Increased awareness
  - Changes in diet
  - Lack of proper nutrition
  - Increased exposure
    - Indoor & outdoor pollution
    - Biologically active agents in food and water

# RITALIN®

- Ritalin® (methylphenidate) continues to be the most prescribed therapy for ADD
- In the last 5 years, Ritalin® prescriptions have increased from 4.5 million to 11.4 million
- Ritalin® is:
  - **Structurally similar to amphetamine**
  - **Called "pediatric cocaine"**
  - **Cocaine and Ritalin use the same receptor site in the brain**

# RITALIN®

- Side effects
  - Nervousness
  - Insomnia
  - Hypersensitivity
  - Anorexia
  - Nausea Dizziness
  - Headache
  - Abnormal liver function
  - Depressed mood
  - Leukopenia/Anemia
  - Social withdrawal
  - Dyskinemia
  - Drowsiness
  - Blood pressure changes
  - Tachycardia
  - Angina
  - Arrhythmias
  - Abdominal pain
  - Tourette's
  - Scalp hair loss
  - Decreased growth
  - Irritability

# RITALIN®

- Package insert:
  - "long-term use of Ritalin in children for safety and efficacy is not available"
  - "...should not be used in children under six"
  - "…may lower the threshold in patients with a history of seizures"
  - "…is not to be given **unless environmental causes of the problem have been ruled out**"

# STUDY THE INDIVIDUAL

- The person with the condition - not the condition itself needs to be understood.
- We are all biochemical individuals.
- Many different diseases are derived from the same origin.
- The same symptoms may be derived from different origins.

# Hallmarks of ADD w/ Hyperactivity (Classic AD/HD)

- Attention-Deficit/Hyperactivity Disorder
- Likely Brain System = Prefrontal Cortex System
- Likely Neurotransmitter System = Dopamine
- Dopamine is a suppressive neurotransmitter. A deficiency causes increased brain activity.

# Hallmarks of ADD w/o Hyperactivity (Couch Potatoes)

- AD/HD, Predominately Inattentive Type
- Likely Brain System = Prefrontal Cortex System
- Likely Neurotransmitter System = Dopamine
- Brain activity is confused due to over-activity of the brain.

# Hallmarks of ADD, Overfocused Subtype (Tend to Get Stuck)

- Likely Brain System = Cingulate System
- Likely Neurotransmitter System = Serotonin
- Low levels of Serotonin can in part lead to lack of recognition, consequences, setting off impulsive and aggressive behaviors.

# Hallmarks of ADD, Limbic System (Negative and Irritable)

- Likely Brain System = Limbic System
- Likely Neurotransmitter System = Serotonin / Norepinephrine
- Norepinephrine acts as excitatory or inhibitory with effects on the Central Nervous System.

# Hallmarks of ADD, Temporal Lobe Subtype (Violent, Explosive, Dark Thoughts)

- Likely Brain System = Temporal Lobe
- Likely Neurotransmitter System = Gaba
- Gaba is the most common message-altering neurotransmitter in the brain and is a suppressive neurotransmitter.

# Other Neurotransmitter Hormones

- Estrogen
- Progesterone
- Pregnenalone
- DHEA
- ACTH
- Cortisol
- Insulin
- Glucacon
- Aspartate
- Gaba
- Alanine
- GSH
- Glycine
- Calcium
- Sodium
- Chloride
- Potassium
- Nitric Oxide
- Histamine
- Immuno Modulators
- Acetyl Choline (Cognitive Function)
- Excitatory deficiencies decrease cognitive activity.

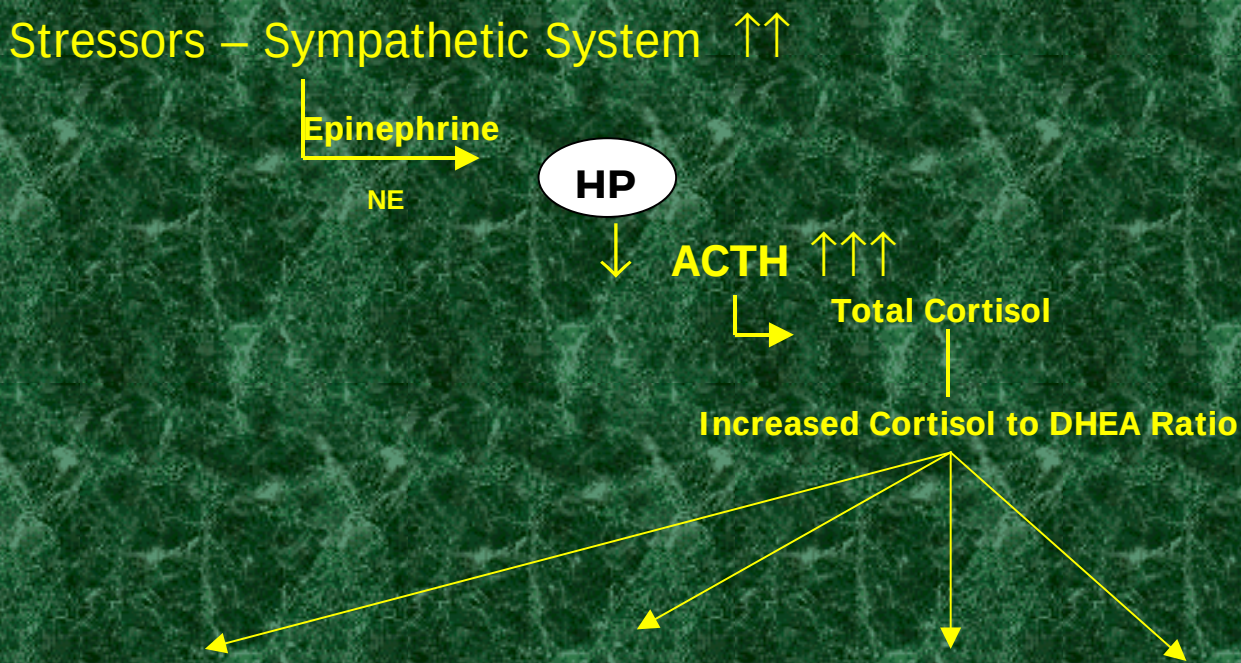
# Adrenal Stressors

- Anger
- Fear
- Worry/anxiety
- Guilt
- Depression
- Late hours/ insufficient sleep
- Chronic,severe, or prolonged infections
- Surgery
- Trauma/injury
- Toxic exposure
- Chronic inflammation
- Chronic pain
- Chronic illness
- Chronic/severe allergies

# Results of Stressors

- Excessive fatigue
- Weakness
- Nervousness/irritability
- Mental depression
- Apprehensions
- Inability to concentrate
- Moments of confusion
- Poor memory
- Feelings of frustration
- Light-headedness
- Dizziness that occurs upon standing
- Insomnia
- Craving for sweets
- Headaches
- Pain/spasms in upper back & neck
- Hypoglycemia
- Excessive hunger
- Epigastric discomfort
- Dyspepsia (indigestion)
- Alternate diarrhea and constipation
- Palpitation (heart fluttering)
- Poor resistance to infections
- Food &/or inhalant allergies
- Tenderness in adrenal area
- Low body temperature
- Unexplained hair loss
- Difficulty building muscle
- Difficulty gaining weight or weight gain
- Tendency to inflammation

# Chronic Stress Response




**Energy Production**
- Insulin sensitivity ↓
- Glucose utilization ↓
- Hypoglycemia ↑
- Blood sugar ↑

**Immune Activity**
- Secretory IgA ↓
- Antigen penetration ↑
- Circulating IgG ↑
- NK cells activity ↓
- Interleukin 2 ↓
- T-Lymphocytes ↓

**Disease Process**
- Increased infections
- Depression
- Allergies

**Complaints**
- Insomnia
- Reduced vitality
- Hunger

# Heavy Metals Stressors: MERCURY

- **Mercury** is found in dental fillings, amalgams, crowns, posts, other metallic implants, plastic implants and environmental pollution of air, soil and water (resulting in toxic fish).
- Mercury is the most toxic of the heavy metals. It is:
  - **Cytotoxic** (kills cells)
  - **Neurotoxic** (accumulates in the brain and damages brain cells). Long term chronic low doses of mercury cause neurological, memory, behavior and mood disorders.
  - **Immunotoxic** (damages and weakens the immune system). This can result in allergies, asthma, immune system disorders and multiple sensitivities.
  - **Nephrotoxic** (toxic to kidneys)
  - **Endocrine system** disrupting chemical (affects pituitary gland)
  - **Reproductive and developmental** toxin
  - Causes **cardiovascular damage and disease**

# Heavy Metals Stressors: MERCURY (cont'd)

- The use of mercury amalgams has been **banned for children and women of child-bearing age** or put on a schedule for phase out by 4 European countries.
- The use of amalgam is declining in Europe and Germany's largest producer of amalgam has ceased production
- The director of the U.S. Federal program overseeing dental safety **advises against using mercury amalgam for new fillings**.

# Heavy Metals Stressors: LEAD

- **LEAD** is in a number of commercial and industrial products including storage batteries, paints, pottery, plumbing (resulting in lead in drinking water), gasoline and imported vinyl mini-blinds.
- Lead primarily affects the gastrointestinal, the central nervous system and blood.
- Often lead toxicity goes undetected as the signs and symptoms are non-specific and exposure is not suspected.
- **Common signs include:**
  - Abdominal pain.
  - Constipation.
  - Headaches.
  - Joint pain.
  - Irritability.
  - Fatigue and weight loss.

**Severe poisoning may cause:**

- Muscular weakness and paralysis.
- Seizures and coma.
- Cerebral type (or lead encephalopathy).
- Death.

# Heavy Metals Stressors: LEAD (cont'd)

- Children are at increased risk because of incomplete development of the blood-brain barrier before age 3 years allowing more lead into the central nervous system.

- Children with even moderate or minimal elevations in blood lead level can exhibit evidence of toxicity such as **Attention Deficit Hyperactivity Disorder, learning disabilities, developmental delay, motor skill incoordination (gross and fine motor can be affected) and speech and language disturbances**.

# Heavy Metals Stressors: ALUMINUM

- **Aluminum** exposure comes from drinking water, deodorants, infant formulas containing calcium salts and soy protein, antacids, aluminum cans, containers, and cooking utensils, as well as medications that contain aluminum.
- Aluminum has been studied as a factor in a wide number of disorders;
  - Aluminum particularly affects disorders of the brain. The molecular mechanisms of aluminium neurotoxicity remain unclear.
  - Studies indicate that chronic exposure to aluminum impairs glutamate-induced activation of nitric oxide synthase and nitric oxide-induced activation of guanylate cyclase. Impairment of the glutamate-nitric oxide-cyclic GMP pathway in neurons may contribute to the neurological alterations induced by chronic exposure to Aluminum.

# Heavy Metal Stressors
# CADMIUM

- The largest source of **cadmium** release to the general environment is the burning of fossil fuels [coal, oil, etc.] or the incineration of municipal waste materials.

- It is also used in pvc, toys (particularly those imported from China), evaporated milk, organ meats, silver polish, soft drinks from machines with cadmium pipes, soft water from galvanized pipes, processed cheese, electroplating, in solder for aluminum, as a constituent of easily fusible alloys, as a deoxidizer in nickel plating, in process engraving, in cadmium-nickel batteries, in reactor control rods, and black rubber tires.

- **Cadmium is a component of cigarette smoke**.

# Heavy Metal Stressors: ARSENIC

- Arsenic exposure comes from:
  - Well water (due to rich arsenic rock close to the groundwater)
  - Air (present as tiny particles)
  - Wood preservative (Copper Arsenate)
  - Cigarettes
  - Brake fluids, Auto exhaust, Diesel fumes
  - Paint
- Arsenic toxicity affects most organ systems:
  - Skin (light and dark spots)
  - Liver
  - Nervous system
  - Cardiovascular system
  - Respiratory system
  - Digestive tract
    - leading to pain, nausea, vomiting, diarrhea, decreased production of red and white blood cells, abnormal heart function, blood vessel damage, liver and/or kidney injury, and impaired nerve function causing a "pins-and-needles" feeling in the feet and hands.
- OCD - Obsessive Compulsive Disorder, Ritalin use, fear, malicious, selfish, mania, self torture.

# Chemicals & Petrochemicals As Stressors

- Mode of interference: **Chlorine**
  - Found in chlorinated water.
    - (THM content increases as water sits in the pipes.)
  - Drinking, Showering/bathing in chlorinated water
    - Also used in cooling systems, meat, fish, vegetable and fruit processing, foot baths, laundries, dishwater
    - Dairy equipment, shrink-proofing in wool, some pesticides, batteries with lithium or zinc
    - Automotive fluids, household bleaches and refrigerants
    - PVC - polyvinyl chloride
      - Vinyl plastic coatings, Plastic packaging, Children's toys, credit cards, records, wallpaper, blinds, shower curtains, office furniture, binders, folders, pens, underseal in cars, cable and wire insulation, imitation leather, garden furniture and medical disposables.
  - **Mimics Estrogen**
  - Reacts with organic matter giving off methane gas.
  - Effects the immune system, blood, heart & respiratory system.
  - Reacts with proteins and nucleotide bases.
  - Creates trihalomethanes (THMs) - suspected of being carcinogenic.

# Chemicals & Petrochemicals As Stressors

- **Over 1400 pesticide ingredients in over 70,000 formulations.**
  - 10% have adequate data on human health hazards.
  - 90% have not been evaluated for cancer causing ability, genetic mutations, birth defects.
  - Of these, 30% of insecticides, 60% of herbicides and 90% of fungicides used in the U.S. cause cancer.
  - Resistant to natural decomposition process and some last as long as 20 years.
- Mode of interference:
  - Insecticides
  - Herbicides
  - Solvents
  - Household cleaners

# Chemicals & Petrochemicals As Stressors

- **SOME EXAMPLES ARE:**
  - **Pest control products (rats, mice, fleas, cockroaches, flies, lice, mosquitoes)**
  - **Household disinfectants & cleaning products**
  - **Wood preservatives, glues, paints**
  - **Formaldehyde** used in: carpets, pressed wood products, foam insulation, durable press fabrics, upholstery, dry cleaning, some paints, coatings and cosmetics, kerosene, natural gas, burning wood, automobiles, cigarettes, spray and wick deodorizers.
  - **Fluoride**
  - **DEET (insect repellents)**
  - **Fruits, Vegetables & Grains *not raised organically***
- There is increasing evidence that exposure to certain synthetic compounds, including dioxins and polychlorinated biphenyls (PCBs), during the perinatal period can also **impair learning, memory, and attention processes in offspring.**
- Animal and human studies show that exposure can impair nervous system, normal thyroid function, bones, GI tract, cardio vascular.

# Yeast and Fungal Growth

- Arabinose forms cross-linked proteins called pentosidines that accumulate in neurological conditions like Alzheimer's disease.
- Yeast overgrowth causes multiple problems with the integrity of the intestinal mucosa.
- A variety of symptoms, including behavioral disorders and autism in children and mental and emotional disorders in adults, have been associated with overgrowth of these microbes.

# CHAIN REACTION

- Dysbiosis
- Leaky Gut
- Immune System Reactivity

# IMMUNE SYSTEM

- ↑ Cortisol Levels
- ↓ Secretory IgA
- Gluten Intolerance
- Allergies
- Cytokines

# Essential Amino Acids & Metabolite Deficiencies

- **Glutamine** - Brain fuel, readily crosses blood-brain barrier. Precursor to glutamic acid and GABA.
- **Glycine -** Inhibitory neurotransmitter Proper balance equalizes energy in the body.
- **Phenylalanine** - Precursor to tyrosine, which is a precursor to dopamine and norepinephrine. Can elevate mood, minimize pain, promote memory and learning. The L-form functions as a building block for proteins and increases mental alertness. Influences thyroid metabolism.
- **Glutamic Acid** - Increases firing of neurons in the CNS. Precursor to GABA. Aids in metabolizing sugars and fats. The brain uses it as a fuel. Helps potassium cross the blood-brain barrier. Precursor to glutamine. Detoxifies ammonia. Essential to cerebral function.
- **Taurine** - Building block of all other amino acids.

# Amino Acids

- Phenylalanine → Tyrosine → NE, E
  - Tyrosine → Dopamine
- Tryptophan → Serotonin → Melatonin
- Glutamine → GABA
- Glycine
- Arginine
- Aspartate
- NAC
- GSH
- Pyroglutamate
- DMAE (Dimethylaminoethanol)

GSH, Pyroglutamate → Increases Acetyl Choline

# Essential Fatty Acids

- Precursor to Prostoglandin
- Anti-inflammatory
- Constituents of the brain
  - Arachadonic Acid
  - DHA (docosahexaenoic acid)
- Involved with immuno-modulators that are also neuro modulators

# Vitamin Deficiencies

## Vitamin B1 - Thiamine

- Required by every cell in the body to form ATP. Required by nerve cells for normal function. Optimizes cognitive activity and brain function. Positive effect on energy, growth, learning capacity.
- Some signs of deficiency include: forgetfulness, nervousness, poor coordination.

## Vitamin B5 - Pantothenic Acid

- The “anti-stress” vitamin. Critical in the production of adrenal hormones and antibody formation. Plays a role in converting fats, carbohydrates and proteins into energy and utilizing other vitamins. Required by all cells. Neurotransmitter production.
- Some signs of deficiency include fatigue, headache, nausea, tingling of hands.

# Vitamin Deficiencies

- Vitamin $B_6$ - Pyridoxine
  - The “master” vitamin in processing amino acids. Probably involved in more bodily functions than any other single nutrient. Needed in the formation of serotonin, melatonin, and dopamine. Critical to normal brain and nervous system function. Synthesizes RNA and DNA, activates enzymes, important to IS function.
  - Some signs of deficiency are anemia, sore tongue, fatigue, hyperirritability, learning difficulties, oily facial skin, tingling.
- Vitamin $B_{12}$ - Cyanocobalamin
  - Necessary to normal nerve cell activity by maintaining the fatty sheaths that cover and protect nerve endings; replication of DNA; and production of SAM ( a mood-affecting substance in the body). Needed for proper digestion and food absorption, to synthesize protein and convert carbohydrates and fats into energy.
  - Some signs of deficiency include abnormal gait, fatigue, constipation, eye disorders, irritability, memory loss, moodiness, nervousness, neurological damage, ringing in the ears.

# Vitamin Deficiencies

- Folic Acid
  - Considered a brain food, it is necessary for energy production. Important to immune function and in DNA and RNA synthesis. Needed for B12 absorption. Involved in converting protein to energy.
  - Some symptoms of deficiency include growth impairment, insomnia, memory problems and weakness.
- Biotin
  - A co-enzyme in converting proteins, fats and carbohydrates into energy, supports fatty acid production, important in the utilization of other B vitamins. Promotes healthy nerve tissue, sweat glands and bone marrow.
  - Some signs of deficiency include anemia, depression, insomnia and muscular pain.
- Choline
  - Choline - Necessary in proper transmission of nerve impulses from the brain throughout the central nervous system. Needed for normal gallbladder and liver function and aids in hormone production. Brain function and memory are impaired without it. Some signs of deficiency include impaired memory, inability to digest fats, stunted growth.

# Mineral Deficiencies

- **Calcium** - As well as being necessary for bone strength, a deficiency can interfere with the transmission of messages from the nerves.
- **Chromium** - Deficiencies can lead to anxiety, fatigue, glucose intolerance, increased risk of arteriosclerosis and inadequate amino acid metabolism.
- **Copper** - An essential component of many enzymes and a deficiency can disrupt those functions. Deficiency can also lead to excessive iron absorption by tissues leading to neurological disorders and bacterial infections, among other things.
- **Magnesium** - A natural sedative - deficiency will contribute to hyper-irritability, memory loss, tremors, inability to concentrate, apathy, depression and hyperactivity.
- **Manganese -** Deficiency is common in U.S. Deficiency can affect energy, abnormalities in neurotransmitters, mental excitement, impaired memory, insomnia, compulsive actions and hyperactive reflexes as well as other problems.
- **Molybdenum** - While a deficiency is rare, irritability and amino acid intolerance may result if deficient in Molybdenum.

# Mineral Deficiencies

- **Potassium -** A deficiency will create cognitive impairments, depression, nervousness, glucose intolerance, growth impairment, muscle fatigue, weakness and insomnia among other health problems.
- **Selenium** - Deficiencies can cause symptoms of tremors, loss of appetite, fatigue and irritability. Necessary for thyroid function.
- **Vanadium -** Deficiency problems of vanadium have not been clearly shown in humans, though there is a suspicion that low vanadium can increase susceptibility to heart disease and cancer or lead to higher cholesterol and triglyceride levels. Sugar Metabolism.
- **Zinc** - Required for protein synthesis, collagen formation and a healthy immune system.

# HPA Axis / HPT Axis / HPO Axis

- HPA Axis
  - (Hypothalmus Pituitary Adrenal)
    - Immuno Suppressive
    - Cytokine Activation (Neuromodulator)
    - Activating ACTH Cortisol
- HPT Axis
  - (Hypothalmus Pituitary Thyroid)
    - Alteration of T hormones via Immune System Activity
- HPO Axis
  - (Hyopthalmus Pituitary Ovarian)

# GENETIC "SICKNESS"

- Miasms
  - Behind all diseases
  - Predisposes people to certain illnesses
  - Psoric, Sycotic, Syphilitic, Tuberculinum, Carsinosin, Vaccination


**“The body is not sick because it has a disease.**

**The body has a disease because it is sick.”**