Natural Substitutes for Aromatase Inhibitors

by Dr. Sam Schikowitz ND, LAc

Natural, Integrative, and Holistic Health Solutions

Combining Eastern and Western Healing Traditions

www.WholeFamilyMedicine.com

Contact@WholeFamilyMedicine.com

(845) 594-6822

Naturopathic Medicine

- Blends modern medical sciences with centuries-old natural, approaches.
- Concentrates on the whole-patient wellness
- Attempts to find the underlying cause of the patient's condition rather than focusing on symptomatic treatment.
- Work as a team with patients to empower them to keep themselves healthy

Sam Schikowitz ND LAc, Contact@WholeFamilyMedicine.com, 845-594-6822

Naturopathic Medical Training

- 4 years pre-medical bachelors
  - General, Organic, and Biochemistry
  - Zoology, Botany, Cell Biology
  - Statistics, Psychology, Physics, etc
- 4 to 5 year medical training
- 2 to 3 year supervised clinical internship
  - Over 600 patient visits
- 1 or 2 year residencies

Sam Schikowitz ND LAc, Contact@WholeFamilyMedicine.com, 845-594-6822

Naturopathic Medical School

- Outpatient Rotations
- Diet Therapy
- Nutrient Therapy
- Manipulative Therapy
- Counseling
- Botanical Medicine
- Homeopathy

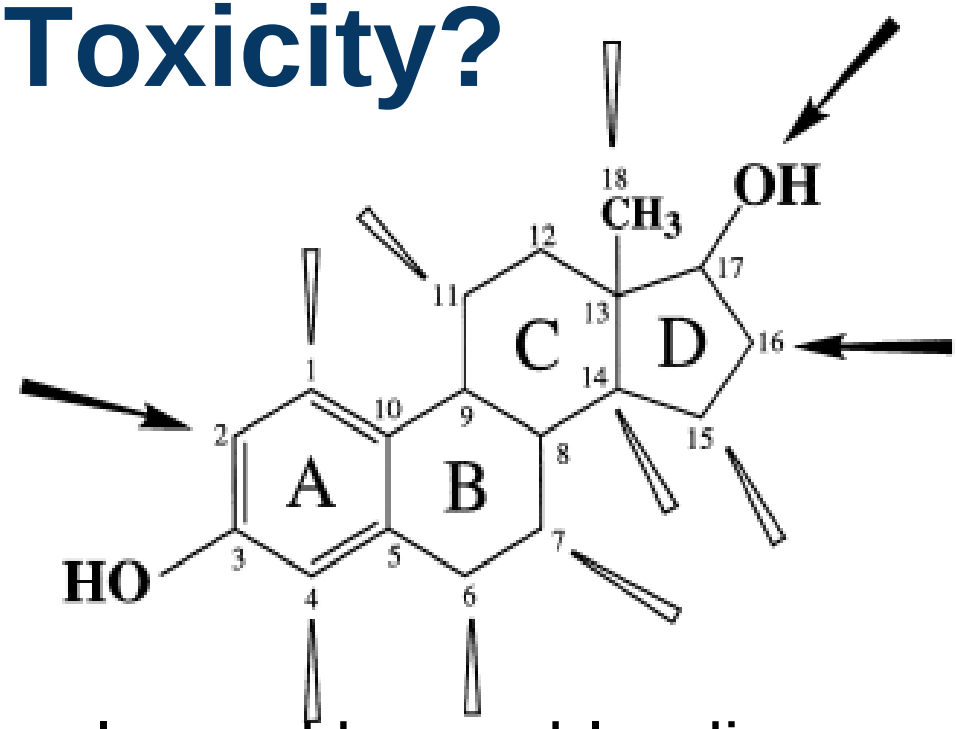
- Bachelor's Degree
- Pre-med Coursework
- Biomedical Sciences
- Pre-Clinical Medicine
- Pharmacology
- Minor Surgery
- Pediatrics
- Geriatrics
- Gynecology
- Cardiology
- Endocrinology
- Immunology
- Clinical Rotations

Allopathic Medical School

- Hospital Rotations
- Surgical Rotations

Sam Schikowitz ND LAc, Contact@WholeFamilyMedicine.com, 845-594-6822

Estrogen Dominance... Estrogen Toxicity?



1. Breast Cancer
2. Weight gain
3. Fibrocystic breast disease
4. Certain types of PMS
5. Migraines
6. Menstrual disturbances--irregular and heavy bleeding.
7. Endometriosis which is helped by the use of estrogen blockers.
8. Uterine Fibroids, a sign of excess proliferative capacity of the uterus
9. Ovarian cysts

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A Little Rant About RESEARCH!

Profit Motive:

- Skews Evidence!
- Emphasizes the WRONG TOPICS FOR RESEARCH
  - Should be preventative emphasis
  - Treatments readily found in nature and diet
  - Cheap or free first, then difficult to synthesize or procure
- Why are synthetic Estrogens and Progestins better researched than naturally occurring hormones?
- Research and use continues even when toxicity of patentables is PROVEN!
- Millions spent on treatement, practically NOTHING spent on prevention

Is Estrogen REALLY the "BAD GUY"?

- Evidence against estrogen may be confused with the actions of PROVEN carcinogenic estrogen METABOLITES
  - 16a-hydroxyestrone (16-OHE1) is a proven initiator AND Promoter of cancer
  - Estrogens are NOT initiators, and the direct evidence of promoter action is rarely separated from metabolite action
    - Much of the "Estrogen" research is done with "ESTROGENS" (Synthetic Versions)
    - Estrone may be, estriol is protective
    - Estrogen shown to reduce the number of stem cells that initiate the cancer's growth. (journal Breast Cancer Research and Treatment)
- There may be synergistic effects with Xenoestrogens

What do we mean by ESTROGEN?

- "Bioidentical Estrogens" Estrone (E1), Estradiol (E2), Estriol (E3)
- Estrogen Metabolites: C-2, C-16, (Also C-4, etc)
- Estrogen-like Pharmaceuticals: Oral Contraceptives and Hormone Replacement Therapy.
- Xenoestrogens: Pesticides, Herbicides, Plastics, Refrigerants, and Industrial Solvents, Bleach Byproducts,
  - The hormones used to fatten livestock and promote milk production, found in factory-farmed meat and milk products

4 Strategies for Reducing Estrogen Toxicity

1. Prevent Estrogen Production
    - Aromatase Inhibitors
    - "Bodybuilding Supplements"
    - Flavones
2. Clog up the Estrogen Receptors
    - SERMs
    - Lignans, Phytoestrogens, etc
3. Improve Estrogen Breakdown to Healthy Metabolites
    - DIM, I3C, Cruciferous Veggies
    - Exercise, Thyroid hormone, Diet, etc
4. Remove Xenoestrogens through Detoxification
    - Detoxification,
    - Fiber, etc

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Aromatase Inhibition

Stopping all production...

Sam Schikowitz ND LAc, Contact@WholeFamilyMedicine.com, 845-594-6822

Aromatase Inhibitors: When are they useful and why?

Estrogen is synthesized from testosterone by the enzyme Aromatase

This is why body builders use aromatase inhibitors: More testosterone, less estrogen!

Used for post menopausal women who have ER Positive breast cancer:

- Blocks the synthesis of estrogen
- Lowers the estrogen level
- Slows the growth of cancers.

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Aromatase Inhibitors: Side effects?

Anastrozole, Exemestane, and Letrozole:

- hot flashes
- arthralgias
- vaginal dryness
- dyspareunia (painful intercourse)
- bone loss
- hypercholesterolemia

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Evidence Base for Aromatase Inhibitors

Adjuvant! Online

Decision making tools for health care professionals

Adjuvant! for Breast Cancer (Version 8.0)

Patient Information

Age: 60

Comorbidity: Minor Problems

ER Status: Positive

Tumor Grade: Grade 1

Tumor Size: 0.1 - 1.0 cm

Positive Nodes: 0

Calculate For: Mortality

10 Year Risk: 1 Prognostic

Adjuvant Therapy Effectiveness

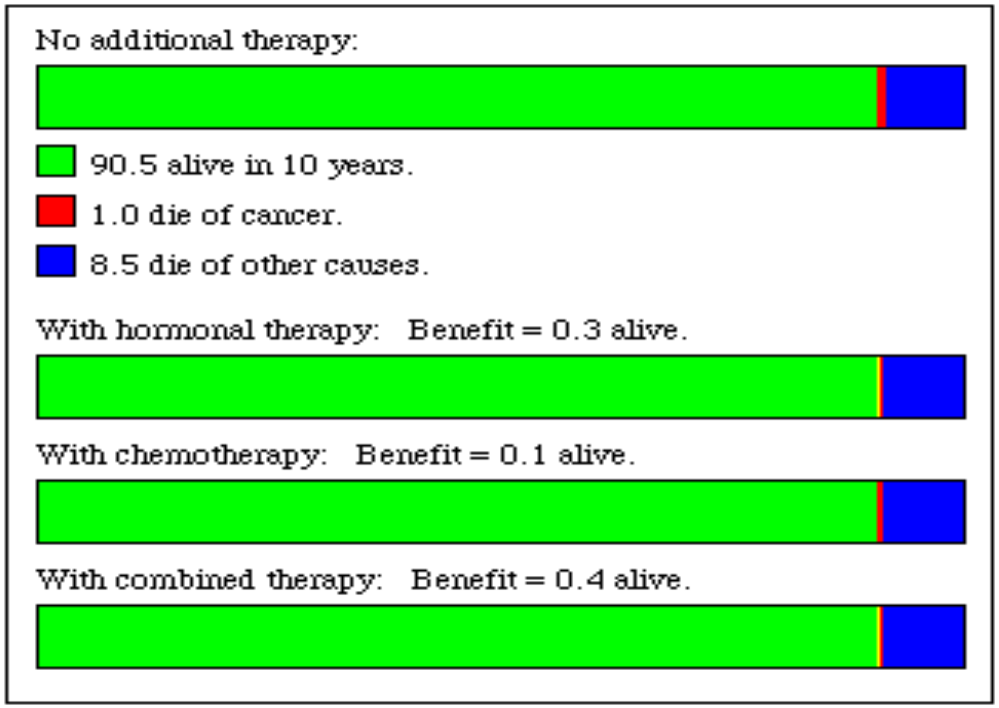
Horm: Tamoxifen (Overview 2000)

Chemo: CMF-Like (Overview 2000)

Hormonal Therapy: 32

Chemotherapy: 8

Combined Therapy: 37



Print Results PDF | Access Help and Clinical Evidence

Images for Consultations

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Evidence Base for Aromatase Inhibitors

Adjuvant! Online

Decision making tools for health care professionals

Adjuvant! for Breast Cancer (Version 8.0)

Patient Information

Age: 60

Comorbidity: Major Prob. (+30)

ER Status: Positive

Tumor Grade: Grade 3

Tumor Size: 0.1 - 1.0 cm

Positive Nodes: > 9

Calculate For: Mortality

10 Year Risk: 70 Prognostic

Adjuvant Therapy Effectiveness

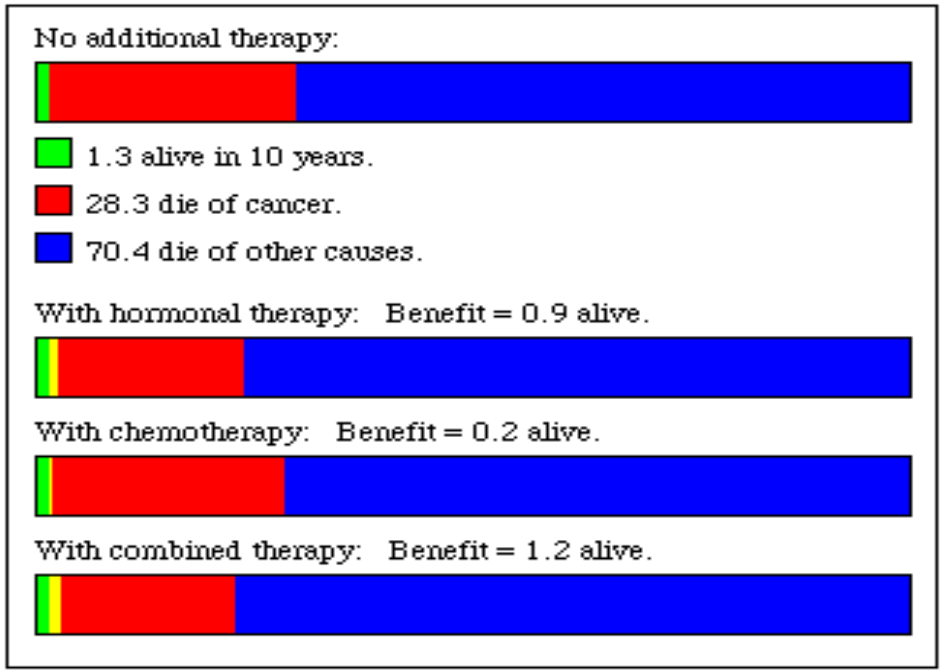
Horm: Aromatase Inhibitor for 5 yrs

Chemo: CMF-Like (Overview 2000)

Hormonal Therapy: 32

Chemotherapy: 8

Combined Therapy: 37



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Bodybuilding Supplements
Reducing Testosterone->Estrogen

OTC Anti-estrogens via Aromatase Inhibition.

(please note they can be written SEVERAL different ways, I'm going basic here)

- 3,17-dioxo-etiochol-1,4,6-triene (More commonly, ATD)
- 6,17-dioxo-etiocholene-3-ol (More commonly, 3-OHAT)
- 3,6,17-AndrosteneTrione (More commonly, 6-oxo)
- 17a-methyl-17b-hydroxyl-3-keto-delta 1,4,6-etioallocholtriene
- 4-hydroxyandrostenedione (More commonly, Formestane or 4-OHAD)

The most common:

1. ATD is cheap and very effective, doses of ATD usually never exceed 75mgs. ATD Can have impact on your libido.
2. 3-OHAT is a bit less common, but still effective, it is known to be faster acting than ATD.
3. 6-oxo is an old favorite for many, it is a suicide inhibitor.
4. Methylated ATD is NOT liver toxic and allows users to reap the full benefits of ATD minus the lack in libido.
5. Formestane is becoming more and more popular, especially in the transdermal form which requires not only a lesser dose, but less frequent dosing.

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A taste of research on bodybuilding supplements:

Baylor University conducted an eight-week study to determine the effects of 300 mg or 600 mg of 6-OXO in resistance-trained males. Compared to baseline, free testosterone increased by 90% for 300 mg group and 84% for 600 mg group, respectively. Also dihydrotestosterone and the ratio of free testosterone to estradiol increased significantly. The report concluded that "[t]he results of this study indicate that eight weeks of 6-OXO supplementation had no effect on body composition or clinical safety markers, but incompletely inhibited aromatase activity and significantly increased endogenous DHT levels that were attenuated after a three-week washout period." This study did not utilize a control group and was funded in part by two producers of commercial 4-AT.

Alternative Aromatase Inhibitors

Flavonoids from whole foods that inhibit aromatase:

- Chrysin,
- Quercetin,
- Naringenin,
- Resveratrol,
- Apigenin,
- Genistein,
- Oleuropein

Alternatives Aromatase Inhibitors: Research on Polyphenols

Modulation of Aromatase Activity by Diet Polyphenolic Compounds

J Agric Food Chem. 2006 May 17;54(10):3535-40. Rosário Monteiro,* Isabel Azevedo,† Conceição Calhau†
of Biochemistry (U38-FCT), Faculty of Medicine, University of Porto, 4200-319 Porto, Portugal.

Abstract: Estrogens are involved in physiological actions related to reproduction, body fat distribution, and maintenance of bone mass and are also related to the pathogenesis of estrogen-dependent cancers. The aim of this work was to study the effect of polyphenols on estrogen synthesis. The effect of polyphenols and polyphenolic-rich beverages on aromatase activity was tested in JAR cells (a choriocarcinoma cell line) through the tritiated water release assay. Some of the tested polyphenols inhibited estrogen production, chrysin being the most potent. Additionally, we observed that red wine, alcohol-free red wine, green tea, and black tea (200 microL/mL) significantly decreased aromatase activity. No effect on aromatase expression, as assessed by western blotting and RT-PCR, has been detected after 24 h of treatment with any of the flavonoids under study. In conclusion, polyphenols are able to modulate aromatase activity and, consequently, estrogen synthesis. The knowledge of such interference may help to clarify some of the biological properties attributed to polyphenols and may be useful in prevention/treatment of estrogen-dependent disorders.

Chrysin: The best of the Food-based Aromatase Inhibitors

Flavonoid inhibition of aromatase enzyme activity in human preadipocytes

Steroid Biochem Mol Biol. 1993 Sep;46(3):381-8. Deborah R. Campbell[a] and Mindy S. Kurzer

Abstract

Eleven flavonoid compounds were compared with aminoglutethimide (AG), a pharmaceuticalaromatase inhibitor, for their abilities to inhibit aromatase enzyme activity in a human preadipocyte cell culture system. Flavonoids exerting no effect on aromatase activity were catechin, daidzein, equol, genistein, β-naphthoflavone (BNF), quercetin and rutin. The synthetic flavonoid, α-naphthoflavone (ANF), was the most potent aromatase inhibitor, with an I50 value of 0.5 μM. Three naturally-occurring flavonoids, chrysin, flavone, and genistein 4′-methyl ether (Biochanin A) showed I50 values of 4.6, 68, and 113 μM, respectively, while AG showed an I50 value of 7.4 μM. Kinetic analyses showed that both AG and the flavonoids acted as competitive inhibitors of aromatase. The Ki values, indicating the effectiveness of inhibition, were 0.2, 2.4, 2.4, 22, and 49 μM for ANF, AG, chrysin, flavone, and Biochanin A, respectively. Chrysin, the most potent of the naturally-occurring flavonoids, was similar in potency and effectiveness to AG, a pharmaceutical aromatase inhibitor used clinically in cases of estrogen-dependent carcinoma. These data suggest that flavonoid inhibition of peripheral aromatase activity may contribute to the observed cancer-preventive hormonal effects of plant-based diets

SERMs Selective Estrogen Receptor Modulators: Found in NATURE?

Selective estrogen-receptor modulators -- mechanisms of action and application to clinical practice.
Riggs BL, Hartmann LC. N Engl J Med. 2003 Mar 20;348(12):1192

The selective estrogen-receptor modulators (SERMs) represent a major therapeutic advance for clinical practice. Unlike estrogens, which are uniformly agonists, and antiestrogens, which are uniformly antagonists, the SERMs exert selective agonist or antagonist effects on various estrogen target tissues. The SERMs are chemically diverse compounds that lack the steroid structure of estrogens (Figure 1) but possess a tertiary structure that allows them to bind to the estrogen receptor. Although some members of this class of drugs have been available for decades, their tissue-specificity in humans has only recently been recognized. Certain phytoestrogens, such as genistein, also appear to have SERM-like properties. . . .

Improving Estrogen Metabolism

The Good, the Bad, and the 16-OHE1

Sam Schikowitz ND LAc, Contact@WholeFamilyMedicine.com, 845-594-6822

What Are Estrogen Metabolites?

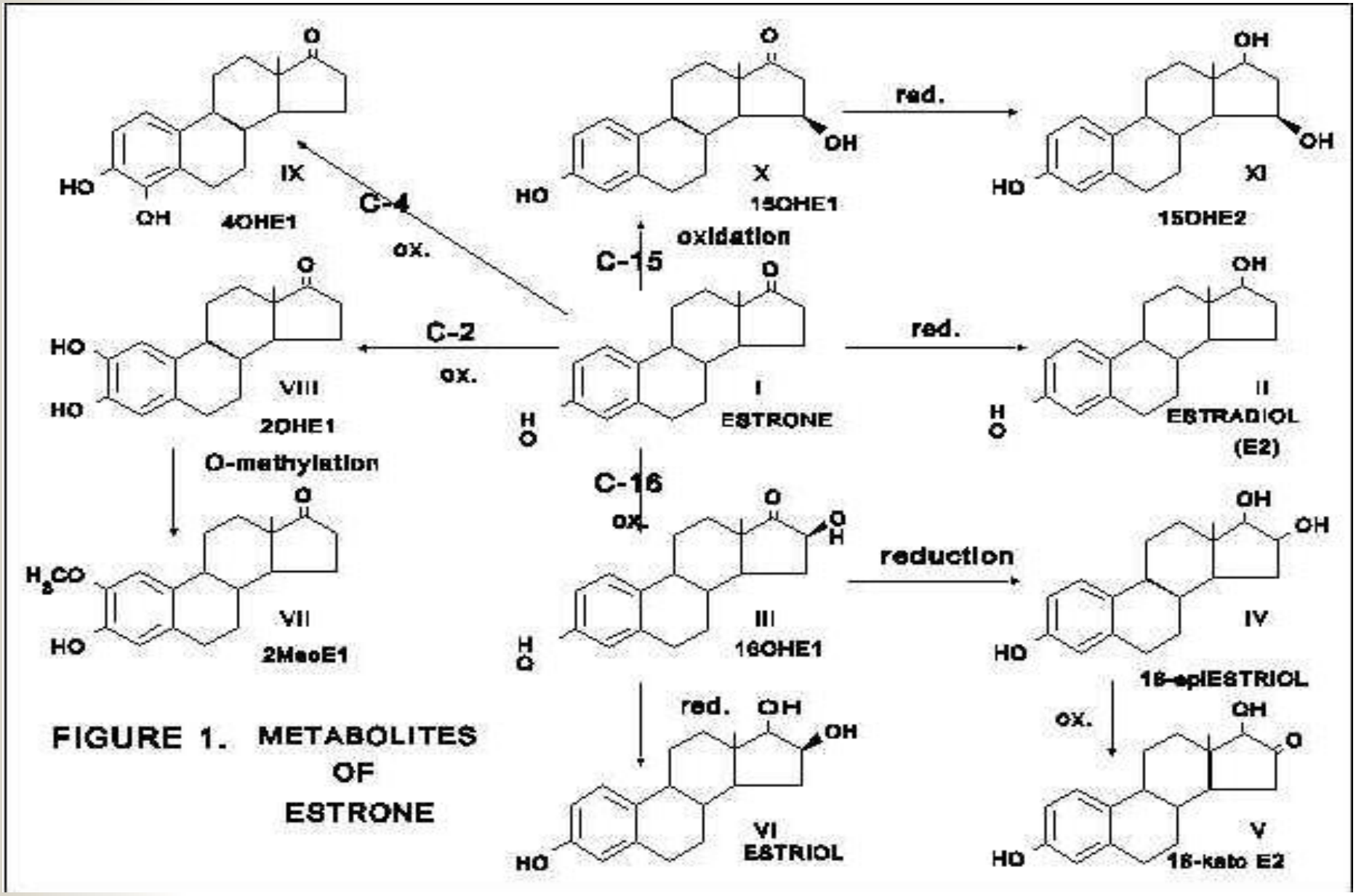

FIGURE 1. METABOLITES OF ESTRONE

2-Hydroxyestrone vs 16a-hydroxyestrone

Considerable work has shown that the major metabolites of estradiol and estrone are those hydroxylated at either the C-2 or the C-16α positions, although forms hydroxylated at the
C-4 and C-15a are present, but in relatively lesser amounts.
C-2 metabolites are essentially devoid of estrogenic activity, as shown in studies on uterine weight, gonadotrophin secretion, and cell proliferation. 2-Hydroxyestrogen has even been found to exert a modest anti-estrogenic effect, and has been called "the good estrogen"

16OHE1 has several unique properties:

- Binding permanently to the estrogen receptor, to nuclear histone proteins, and to DNA.
- Because of this covalent linkage to the receptor, 16OHE1 shows persistent biological responses.
- The formation of 16OHE1 is elevated in:
  - Women with breast cancer,
  - Women at high risk for breast cancer
  - Strains of mice with a high incidence of spontaneous mammary tumors.

16a-hydroxyestrone
Estrogen Super-Villian?

- Unlike E2 or E3, 16OHE1 possesses both initiator and promoter activities in normal (non-transformed) mammary epithelial cells.
- In proliferation assays 16OHE1 had activity comparable to that observed for dimethlybenzanthracene (DMBA), unlike E2 and E3.
- In a mutagenic assay measuring unscheduled DNA repair, 16OHE1 was likewise considerably more potent than estrone (E1), E2 or E3.
- Measurements of anchorage-independent colony formation of mammary epithelial cells grown in soft agar showed that 16OHE1 was far more potent than E1, E2, or E3 at increasing growth.
- 16OHE1 is the only estrogen that has been shown to be mutagenic in the Ames test, causing his+ revertants in 2 of 5 cell lines tested.

Clinical Consequences of the 2/16 Ratio

- Postmenopausal women with a 2/16 ratio below 1.38 had a multivariate adjusted odds ratio of 33 for breast cancer risk, whereas those with a 2/16 ratio between 1.38-1.90 had an odds ratio for breast cancer of 10. Analyses of the individual metabolites indicated that urinary 16a-hydroxyestrone was also a strong risk factor. (case-control study)
- A case-control study of 101 Chinese women, comprising 65 breast cancer patients, and 36 controls found that the profile of urinary estrogen metabolites was distinctly altered in breast cancer patients. The odds ratio of breast cancer for women with higher 2/16 (>0.9) was 0.1, or one-tenth that of those with 2/16<0.9. for both pre- and postmenopausal women.
- Several studies of estrogen metabolism in African-American women reported significantly lower ratios of urinary estrogen metabolites 2/16 compared to Caucasian women. In agreement with other studies, breast cancer patients were significantly more likely to have lower 2/16 ratios than control subjects (p=0.008) after adjusting for race, age, and menopausal status. Part of this ethnic difference in estrogen metabolism was found to be due to ethnic differences in body mass. These findings may explain, in part, the higher mortality and stage at clinical presentation of breast cancer in African-American women, and present the possibility of altering disease risk and outcome in this group by altering estrogen metabolism.

Improving the 2:16 Ratio

Unlike certain risk factors for cancer such as genetics, a 2:16 ratio is highly treatable:

- Lifestyle factors such as exercise and a high protein diet were found to improve ratios.
- Indole-3 carbinole significantly improves a 2:16 ratio.
- Flaxseed supplementation at 10 g/d significantly increases the urinary 2/16 hydroxy-estrone ratio.
- Dietary intake of soy products and flax have been shown to favorably modulate the rates of 2- vs. 16-hydroxyestrone production.
- Estrogens are metabolized by cytochrome P-450 (CYP450) enzymes that are inducible by compounds found in vegetables such as cabbage, Brussels sprouts, and broccoli, from the Brassica plant family. I3C and DIM, are found in these foods. Other constituents in the cruciferous family are also speculated to aid in estrogen metabolism. Glutathione S transferase is also upregulated by the sulfur constituents in cruciferous vegetables. Brassica vegetables also improve glucuronidation aiding with elimination of estrogen metabolites. These compounds that aid estrogen metabolism were also found to decrease DNA damage, quantifiable by reduction in 8-OH 2-deoxyguanosine, an oxidative marker of DNA damage.

Clinically Profound Physiological Consequences of Increasing the 2/16 Ratio.

In a study of children with laryngeal papillomatosis, a condition due to infection with the Human Papilloma Virus

- Oral administration of indole-3-carbinol significantly increased the disease-free interval after tumor removal in 2 out of 3 children.
- Duration of the disease-free interval was directly proportional to the increase in the urinary 2/16 ratio.
- Children with no increase in 2/16 with treatment had the shortest interval to recurrence.
- HPV infection is associated with an increase in 16α-hydroxylation, and indole-3-carbinol is thought to restore the balance of estrogen metabolism by inducing 2-hydroxylation.

16-OHE1 and Disease Progression

- The ratio of 2-hydroxyestrone to 16 alpha-hydroxyestrone is not only a risk factor of breast cancer but also other conditions of inappropriate estrogen activity.
- 16 alpha-hydroxyestrone has been found to be elevated in those at risk for breast cancer, as well as other conditions associated with hyperimmune activity such as systemic lupus erythematosis and rheumatoid arthritis.
- In these populations 16 alpha-hydroxyestrone was 10 times higher than the control population. Estrogen metabolism should therefore be evaluated when treating patients with autoimmune conditions.
- Cancers that react favorably to a higher 2:16 ratio
  - ER + breast cancer
  - ER – breast cancer
  - Prostate cancer
  - Cervical cancer
  - Ovarian cancer
  - Laryngeal cancer

Sam Schikowitz ND LAc, Contact@WholeFamilyMedicine.com, 845-594-6822

Other factors that improve 2/16 Ratio

- thyroid hormone
- smoking
- cimetidine
- Progesterone
- Oil of Rosemary
- Soy isoflavones
- Decreased saturated fat intake
- Omega-3 fatty acids
- Increased fibre intake

Sam Schikowitz ND LAc, Contact@WholeFamilyMedicine.com, 845-594-6822

I3C vs DIM

- Both help to modulate estrogen metabolism.
- Even though a larger body of research exists demonstrating safety with I3C, more recent studies may begin to favor DIM
  - I3C may increase 4-hydroxylation of estrone and estradiol, whereas DIM may not.
  - 4-hydroxylation has been demonstrated to promote breast and prostate cancer tissue via estrogen receptor stimulation as well as DNA damage.
  - Additionally, 4OHE is elevated in breast cancer patients.
  - However, 4OHE1 is an extremely minor metabolite, comprising less than 1% of estrogen metabolism, thus whether this metabolite or the DNA adducts formed by its activity are important markers in cancer is questionable.

	DIM	I3C
Activity	fully active	precursor
Absorption	predictable	unpredictable
Stability	high	low
Toxicity	none reported	dose related, includes dizziness and gastritis
Tumor Promotion	none reported	positive in rats, promoting colon cancer: relates to excess enzyme induction
Anti-oxidant Action	purely antioxidant	some reaction products like indolocarbazole (ICZ) cause oxidative damage
Relative Dose Needed	3 times dietary intake	30 times dietary intake
Estrogen Regulation	more complete	dose limited, due to toxicity above 400 mg/day
PMS Benefits	demonstrated	untested
Breast Pain Resolution	demonstrated	untested
Cervical Health	demonstrated	demonstrated
Weight Loss Promotion	demonstrated	untested
Potential for Interaction with Drugs, Nutrients and Hormones	limited	greater
Enzyme Induction	limited and specific	greater and non-specific

Detoxification

Clearing out the Estrogen Residues

Sam Schikowitz ND LAc, Contact@WholeFamilyMedicine.com, 845-594-6822

What are toxins?
Naturopathic approach:

- External toxins: Metals, chemicals, foods
- Biological toxins: From bacteria, yeasts, or parasites in your system
- Internal toxins: Metabolites created by poorly functioning cells

Toxins in the Environment

- 4 billion pounds of toxic chemicals are released by industry into the nation's environment each year, including
- 72 million pounds of recognized carcinogens.
- Tissue hexachlorobenzene levels:
  - 50% increase past 5 years
- DDE, dieldrin, oxychlordane, heptachlor epoxide and para-BHC:
  - 100% of all samples

Internal Sources of Toxins

The life and Times of a Toxin

- Hangs around cells wreaking havoc
- Finds its way to the bloodstream
- May be urinated, sweated, exhaled
- Most toxins end up in the liver

Sam Schikowitz ND LAc, Contact@WholeFamilyMedicine.com, 845-594-6822

Major Detoxification Systems

- Liver/GI Virtually all chemicals and fat- soluble toxins, food-borne bacteria & toxins from intestines
- Skin Fat-soluble toxins such as DDT
- Heavy metals such as lead
- Kidneys Water-soluble toxins
- Lungs Gas wastes and mucous
- Lymphatic Tissue-generated toxins, viruses

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Phase I: Grab it, Make it reactive

- Creates toxic byproducts
  - Must be neutralized by Phase 2
- Byproducts cause many detox symptoms: Bad breath, headaches, irritability
- Clinical:
  - Underactive: caffeine intolerance, intolerance to perfumes and other environmental chemicals, liver disease
  - Overactive: unaffected by caffeine drinks
- Laboratory: caffeine clearance test

Phase 2 Detoxification: Neutralize it

- Getting rid of the toxic products of Phase 1
  - Adding amino acids, sugars, methyl, sulphur, etc
- Supporting Phase 2 prevents “detox syndrome”
  - Amino acids, specific vitamins and minerals, and some other supportive nutrients like lipotrohphic factors
- Byproducts become bile (with cholesterol and some other substances)

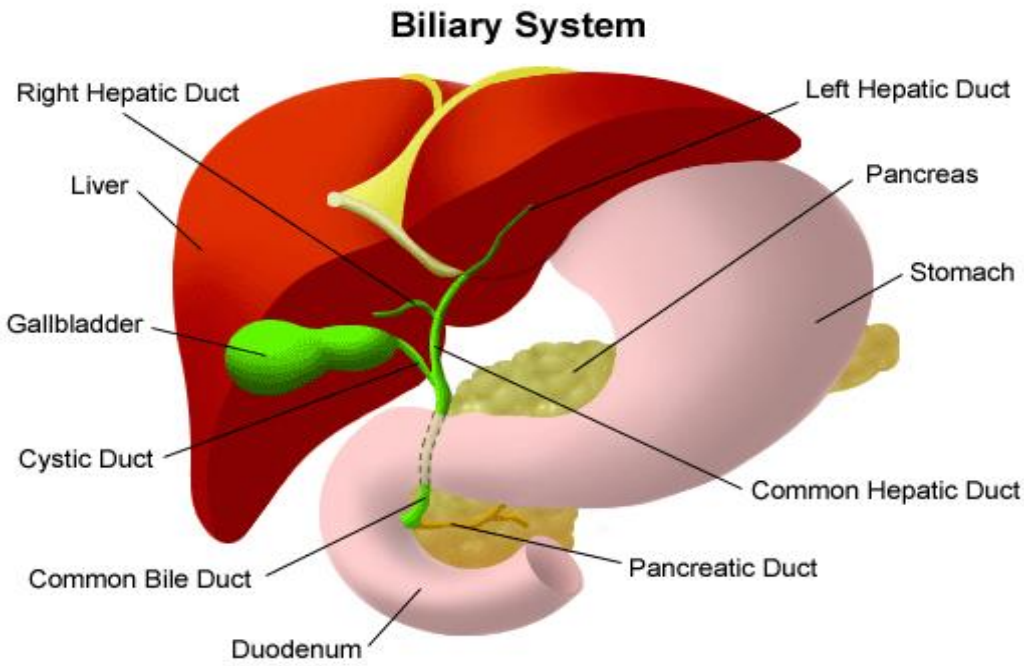
Sam Schikowitz ND LAc, Contact@WholeFamilyMedicine.com, 845-594-6822

What Happens to Bile?

- Stored in liver cells, released in response to CCK, a hormone secreted when lipids are in the stomach
- Bile can get stuck:
  - In the liver (Fatty Liver), or
  - The bile ducts (forms sludge or stones)
- Inflammation in the gut (bacteria, allergies) can reduce the liver's ability to purge

What Happens to Bile?

- Passes through the bile ducts of the liver to either the gallbladder or the small intestine
- Gallbladder stores and concentrates bile to be released in the presence of a fatty meal
- Some bile gets resorbed from the gut into the blood then back to the liver



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Back to the Gut!: Bile Binding

- This is why diet and gut bacteria are so important
- Bacteria change the bile for better or worse
- Prevent bile from resorbing:
  - Soluble fiber
  - Colon hydrotherapy
  - Charcoal

Toxic Range

• Drugs • Allergens • Organ Meats • Hydrogenated fats • Fried foods • Preservatives	• Fats • Meats • Sweets • Milk • Eggs • Wheat • Potato	• Nuts • Seeds • Beans • Grains	• Roots • Squash • Veggies	• Fruits • Greens • Herbs • Water

More Potentially Toxic←----------→ More Detoxifying

More "Acidic" ←----------→ More "Alkaline"

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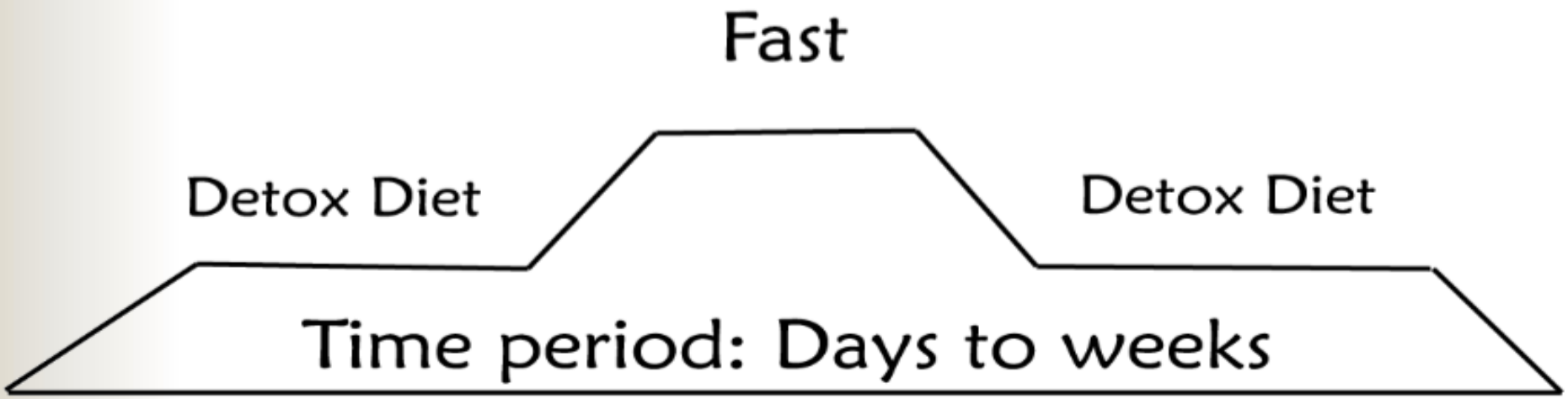
Ramping Up and Down

- Minimizes the side effects of transitions
- Prepares the body for what is to come
- Can be a few days to a week of preparation



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Supplementation

- Increase production and secretion, and binding of bile
- Make sure Phase 1 and 2 are working efficiently (avoid detox reaction)
- Support deficiencies

Sam Schikowitz ND LAc, Contact@WholeFamilyMedicine.com, 845-594-6822

Supplimentation

- Heavy metals must be chelated carefully!
- Solvents, pesticides, and mold residues require some specific coaxing
- Protect cells from the mobilized toxins

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Problem:

- “15 million adults took prescription medications concurrently with herbal remedies or high-dose vitamins or both”
- “Up to 60% of CAM users did NOT disclose to their medical doctor the fact that they had received at least one type of CAM therapy”
- NDs are clinically trained in Pharmacology, Clinical Nutrition, and Herbal Medicine.
- NDs are experts in herb/ nutrient/ drug interactions

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Do No Harm:

The Therapeutic Order

- High-force interventions
- Symptom-based synthetic prescriptions
- Symptom-based natural prescriptions
- Correct structural integrity
- Tonify systems
- Stimulate the healing power of nature
- Determinants of health
  - Remove obstacles to cure: Improve sleep, rest and relaxation, breath, hydration, diet, exercise, and posture.
  - Assess mental, emotional, and spiritual influences on health.

Principle 6:

Preventive medicine.

- Accurately perceiving factors which obstruct healing and accelerate aging, degeneration of tissues, and the onset of disease.
- Devising practical, effective, and harmless interventions which can eliminate or reduce these factors.

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What happens on a first visit to a Naturopathic Doctor?

- 2 hour complete visit
- Starts with an interview stating the goals and intentions of both parties
- Complaint-focused investigation
- Complete history: childhood to present, family history, medical history, psychosocial, and occupational history

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What happens on a first visit to a Naturopathic Doctor?

- Appropriate physical exam
- Laboratory exam may be sought out
- Assimilation of all data to form a Naturopathic Diagnosis, which includes appropriate western and functional diagnoses
- Patient education and patient-physician collaboration in the development of a plan

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Case Study: Cancer

- Diagnosis of disease based on routine screening, signs and symptoms, and laboratory tests
- Referral to oncologist or an integrated cancer treatment center for definitive diagnosis and staging
- Patient education on options
- Collaborative management:
  - Avoidance of therapies that interfere with conventional approaches
  - Use of the best alternative therapies based on research
    - Choosing effective anticancer therapies
    - Minimizing drug side effects
    - Optimizing health during treatment and recovery
    - Emotional support/counseling for patient and family
- Periodic follow-up/ re-screening

Typical Treatment Plan for Cancer Support

- Improve diet to prevent wasting and maximize vitality
- Indicated vitamin/ herb/ nutrient supplements to address complaints, medical history, family history, based on research and clinical experience
  - eg. Supplements and herbs to outcome
  - Herbs and acupuncture for nausea, etc
- Stress reduction: Appropriate exercise, cognitive therapy (counseling), yoga prescription
- Warm supportive atmosphere for patients undergoing stressful therapies

Sam Schikowitz ND LAc, Contact@WholeFamilyMedicine.com, 845-594-6822

What makes seeing an ND unique?

- We really get to know our patients
  - 2 hour initial intake covers many important aspects of the patient's life
  - This knowledge allows us to tailor medicine to our patients instead of fitting our patients into the medicine
  - Develop long-term therapeutic relationships with our patients

What makes seeing an ND unique?

- More freedom to explore unique causes and solutions to the patient's problems.
  - More education on biochemical/physiological interactions than other professions…More likely to look at the ingredients and fine print
  - Use a wide variety of tools and approaches to look for and treat causes
  - Work closely with patients to find a unique approach that the patient can follow
  - Fine-tune the approach over time

Dr. Sam Schikowitz ND, LAc

Natural, Integrative, and Holistic Health Solutions Combining the Best of Eastern and Western Healing Traditions

www.WholeFamilyMedicine.com
Contact@WholeFamilyMedicine.com

(845) 594-6822