

## Healthy Hormones

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### What is Naturopathic Medicine?

- Naturopathic Medicine is an integrative system of medicine
- The best of both worlds
- Uses natural modalities to promote health and healing
- Uses Nutrition, Herbal Medicine, Homeopathy, Chinese Medicine, Acupuncture, Hydrotherapy and Lifestyle Counselling

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### How are ND's trained?

- Receive a minimum of 7 years of post-secondary education.
- Graduate from an accredited naturopathic medical school.
- Complete North American standardized board exams.
- Maintain licensure (in regulated provinces and states).

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## For further info on Naturopathic Medicine

- Canadian Association of Naturopathic Doctors

[www.cand.ca](http://www.cand.ca)

- Nova Scotia Association of Naturopathic Doctors

[www.nsand.ca](http://www.nsand.ca)

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## Understanding Hormones

- What does someone mean when they say they're feeling "hormonal"?
- Hormones are messengers within the body.
- Are produced in endocrine organs such as the pituitary gland, thyroid and ovaries.

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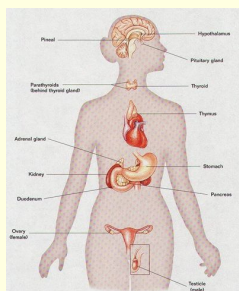
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## The Endocrine System



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## The Endocrine System

- The hypothalamus and the pituitary are the "master glands".
- Thyroid produces T4 and T3.
- Ovaries produce Estrogen and Progesterone.
- Adrenal Glands produce epinephrine and cortisol.
  - Also produce precursors to estrogen and progesterone after menopause.

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## Estrogens

- Are the dominant hormones for most of a woman's reproductive life.
- Produced by the ovaries.
- 3 types of Estrogen
  - Estrone (E1) - dominant during menopause
  - Estradiol (E2) - dominant during 20's and 30's
  - Estriol (E3) - during pregnancy

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## Estrogens

- E1 and E2 are produced by the ovaries.
  - "strong" estrogens
- E1 and E2 are converted to E3 in the liver.
- E3 is considered a "weak estrogen".

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## Estrogens

- High levels of E1 and E2 are associated with increased risk of breast, uterine and ovarian cancer risk.
- High levels of E3 are associated with decreased risk.
  - Explains protective effect of pregnancy on BRCA risk
- Improving liver function can help increase levels of E3.

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## Estrogen Metabolites

- Estrogen is broken down by enzymes in the liver, then secreted into bile, intestines and eventually excreted into stool.
- During the breakdown process, metabolites are formed:
  - C2 = good
  - C16 = bad
  - C4 = ugly

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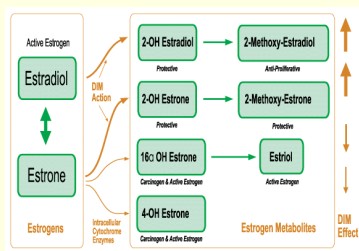
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## Estrogen Metabolism



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## Estrogen Metabolites

- The C4 pathway is activated by pesticides, environmental estrogens, dioxin, car exhaust, paint fumes, alcohol, caffeine, pharmaceuticals, sugar, and a high-fat diet.
- The good news is that once formed, the C4 estrogens can be inactivated in the liver.

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## Estrogen Metabolites

- Bottom line is you want MORE C2 and LESS C16 and C4.
- A urine test can measure the ratio of C2:C16 metabolites.
- Useful for those concerned about hormone sensitive cancers and those with estrogen dominant conditions.

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## Estrogen Dominance

- Refers to a state of hormone imbalance where estrogen is too high *relative* to progesterone.
- Progesterone acts as an antagonist to estrogen
- Progesterone is produced by the ovaries and adrenal glands.

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## Estrogen Dominance

### Commonly associated with:

- Breast cysts
- Uterine Fibroids
- Endometriosis
- Polycystic Ovarian Syndrome
- PMS
- Menstrual Cramps
- Perimenopause

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## Estrogen Dominance

### Two scenarios:

- Estrogen is too high  
Progesterone is normal
- Estrogen is normal  
Progesterone is too low

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## Excess Estrogen

### Where does it come from?

- Excess E1 or E2
- Excess estrogen metabolites (too much C16 and C4)
- Environmental Estrogens
- Synthetic Estrogens

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## Environmental Estrogens

- Estrogens used in agriculture (beef cattle).
- Xenoestrogens that accumulate in fish.
- Pesticide residues.
- A diet that is high in meat and dairy promotes estrogen dominant conditions.

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## Xenoestrogens

- Generic term applied to "chemical estrogens".
  - Pesticides
  - Plastics
  - Petrochemicals
  - Solvents
  - Fire/flame retardants

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## Synthetic Estrogens

- Birth Control Pills
- Hormone Replacement Therapy

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## Balancing Estrogens

- Reduce Xenoestrogen exposure by:
  1. Emphasizing organic foods when possible.
  1. Reducing the use of plastics

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## Pesticides in foods

- | ■ High pesticide residues | ■ Low pesticide residues |
|---------------------------|--------------------------|
| Strawberries              | Avocadoes                |
| Bell Peppers              | Corn                     |
| Peaches                   | Onions                   |
| Apples                    | Sweet Potatoes           |
| Apricots                  | Bananas                  |
| Spinach                   | Broccoli                 |
|                           | Cauliflower              |

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## Reducing Pesticides...

- Organic food is more accessible than it's ever been.
- Some companies even deliver (Home Grown Organic Foods)
- Grow your own!
- Prioritize

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## Plastics

- Can leach hormone-disrupting chemicals into foods
- Biggest concern is with bisphenol-A found in hard, clear polycarbonate plastics
- Found in baby bottles, "sippy" cups, dental sealants, microwave cookware and Nalgene bottles.
- Mimics estrogen
- Now present in every human tested.

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## Effects of Bisphenol-A

- Early onset of puberty
- Decreased testosterone
- Enlarged prostate
- Decreased sperm production
- Altered immune function
- Recent study found that BPA persists for several months after exposure
  - Greater risk in newborns

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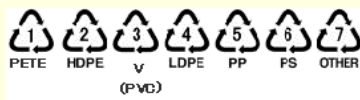
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## Plastics

- Not all plastics are created equal.
- Avoid food use for any plastic labeled 3, 6 or 7



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## Plastics

- 3 = PVC = polyvinyl chloride
  - Found in cling wrap, some plastic squeeze bottles, cooking oil bottles, peanut butter bottles
- 6 = PS = polystyrene
  - Used in styrofoam, take-out containers and opaque plastic cutlery
- 7 = polycarbonate
  - Baby bottles, 5-gallon water bottles, "sport" water bottles, clear plastic "sippy cups"

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## Plastics: tips for safer use

1. Avoid heating plastic in the microwave.
2. Beware of cling wraps.
3. Use alternative whenever possible.
4. Avoid plastic bottled water.
5. To reduce exposure to BPA, don't use for hot liquids and discard old, scratched bottles.

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## Phthalates

- Are a class of chemicals used as softeners in PVC products.
- Used in children's toys, building products, cosmetics and personal care products.
- Considered a "probable carcinogen" by the WHO.
- Also considered a "reproductive toxicant", "development toxicant" and "suspected endocrine disruptor".

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## Phthalates

- Other uses:
  - Product packaging and food wrap
  - Vinyl clothing
  - Printing inks
- Use will be restricted in some EU countries and California beginning in 2009.

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## Parabens

- Used as a preservative in the cosmetic and pharmaceutical industries
- Bacteriocidal/fungicidal
- In 2004, researches found parabens in 18 out of 20 breast cancer tumours studied.
- [www.cosmeticdatabase.com](http://www.cosmeticdatabase.com)

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## Other Xenoestrogens

- 4-methylbenzylidene camphor (sunscreen)
- BHA (food preservative)
- Atrazine (weed killer)
- DDT (insecticide)
- Erythrosine/FD&C Red No.3 (food dye)
- PCB's (lubricants, adhesives, paints)
- Phenosulfthiazine (red dye)

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Treating Estrogen Dominant Conditions with Naturopathic Medicine.

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PMS

- 80% of women recognize their period is coming based on how they're feeling.
- PMS refers to more than 150 different symptoms that occur after ovulation and improve with the onset of flow.
- Up to 10% of women describe their symptoms as "debilitating".

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PMS-A: Anxiety (65-75%)

- Anxiety, tension, irritability, depression
- Estrogen dominance
- Low serotonin
- Sample Treatment:
  - Vitex
  - St. John's Wort
  - Vitamin B-6

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## PMS-C: Cravings

- Craving sweets, carbs, chocolate
- Increased appetite, headaches, palpitations
- Low cortisol and low serotonin
  
- Sample Treatment:
  - Adrenal support
  - Magnesium
  - Chromium
  - Fish oil

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## PMS-D: Depression

- Depression, forgetfulness, confusion, insomnia
- Low serotonin and possibly thyroid
  
- Sample Treatment:
  - Thyroid support
  - St. John's Wort or 5-HTP
  - B-6
  - Cal/Mag

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## PMS-H: Hyperhydration

- Breast swelling/tenderness, bloating, weight gain, general swelling.
- Estrogen dominance
- Blood sugar dysregulation
  
- Sample Treatment:
  - Cal/Mag
  - Chromium
  - Liver support
  - Dandelion

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## PMS: Dietary Treatment

- Avoid sugar and white flour
- Reduce/avoid caffeine
- Limit red meat and full-fat dairy
- Limit Salt
- Complex carbs
- Herbal teas
- Nuts and seeds
- Turmeric
- Flaxseeds

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## Menstrual Pain

- Up to 50% of women report having pain with their periods
- Most often experience just before or during the first 2 days of flow.
- Pain can be in the pelvic region, lower back or radiate down the thighs.

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## Menstrual Pain

- Important to get to the root of the problem
- Investigate for endometriosis, fibroids, cysts or PID.
- Often related to estrogen dominance

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## Menstrual Pain

- Anti-Inflammatory Diet
  - Certain fats promote inflammation
    - Red meat
    - Dairy fat
  - Avoid high sugar/refined carbs
  - No trans fats

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## Menstrual Pain

- Sample Treatment:
  - B Complex
  - Magnesium
  - Milk thistle
  - Crampbark
  - Dandelion
  - Fish oil
- Acupuncture

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## Menopause

- Usually occurs between the ages of 45-55.
- Peri-Menopause describes the period (up to 10 years) of hormonal changes that precede actual menopause
- Not officially menopausal until periods have stopped for 1 full year.

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## Symptoms

- Hot Flashes
- Anxiety
- Depression
- Vaginal dryness
- Irregular periods
- Sleep changes
- Fatigue
- Dizziness
- Joint Pain
- Headaches
- Fast heartbeat
- Changes in libido

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## Hot Flashes

- Experienced by 60% of women
- Due to surges in LH (luteinizing hormone)
- Probably linked with drops in estrogen

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## Hot Flashes

- Physical inactivity
- Exhaustion
- Stress
- Hot drinks
- Spicy foods
- Alcohol (red wine)
- Cheese
- Chocolate/caffeine
- Hot weather
- Smoking

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## Hot Flashes

- Treatment
  - 20 g of soy protein
    - ½ cup of tofu + 1 cup of soymilk
  - 2 tbsp of ground flaxseed daily
  - 1000 mg of fish oil
  - Herbs: black cohosh, dong quai, red clover
  - Acupuncture

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## Insomnia, Anxiety, Depression

- Often occurs in the peri-menopausal years.
- Peri-menopause may coincide with other life changes (empty nest, etc.)
- Often the most bothersome set of symptoms

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## Insomnia, Anxiety, Depression.

- Sample Treatment:
  - Cut out caffeine and alcohol.
  - Exercise at least 3x/week.
  - Try Yoga or Tai Chi.
  - Calcium/Magnesium before bed
  - B complex
  - St. John's Wort.
  - Melatonin

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## Adrenal Health

- The adrenal glands are responsible for our "flight or fight responses"
- Produce cortisol and epinephrine.
- Also produce estrogen and progesterone after menopause
- Adrenal fatigue can exacerbate estrogen dominant conditions
  - Cortisol blocks progesterone receptors.
  - Progesterone can also be shunted to other hormones if needed.

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## Adrenal Health

- Have have hypoadrenal response (adrenal fatigue) or hyperadrenal response
- Usually have hyper adrenal response first, followed by adrenal fatigue, then exhaustion.

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## Adrenal Health

- Learn to control stress and have fun!
- Eat a balanced diet:
  - Protein at every meal
  - Avoid simple carbohydrates
  - Limit sugar and caffeine
- Adaptogenic herbs can be very useful in restoring adrenal balance.

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## Thyroid Health

- High levels of estrogen can suppress thyroid function.
- May explain why hypothyroidism is often diagnosed post-partum, and during perimenopause.
- Treating estrogen dominance can help restore normal thyroid function.

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## Saliva Testing

- Saliva tests measure levels of "free" hormones.
  - Amounts available to tissues.
- Blood levels usually only measure "bound" hormones.
- Also can provide information on various types of estrogens, progesterone, DHEA (precursor), cortisol, etc.

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## Bioidentical Hormones

- Better option than synthetic.
- Fewer side effects.
- Still carry risks of HRT.
- Best to explore alternative options first.

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Women's Health Diet

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1. Eat Organic

- Fewer hormone-disrupting pesticides
- Higher amounts of vitamin C, and possible other vitamins
- Promote sustainable agriculture

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2. Include Vegetarian Meals

- Try having 2-3 meatless meals every week.
- Try vegetarian chili, black bean soup or curried lentils instead of meat & potatoes.
- Legumes contain "phytoestrogens", which offer protection from the effect of xenoestrogens.

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### 3. Low-glycemic carbohydrates

- Choose complex over simple, wholegrain over refined.
- Limit sugar.
- Combine carbs with protein and/or fat to reduce the glycemic index.

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### 4. Eat High-Fibre Foods

- Aim for 30-45 grams/day from a variety of sources.
- Maintains health flora in the bowel.
- Lowers cholesterol.
- Try adding 2 tbsp. of ground flax to your morning cereal, oatmeal, or yogurt.

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### 5. Eat 7-10 servings of fruits and vegetables.

- Vegetable 'allstars'
  - Cabbage, broccoli, kale, onions, garlic, leeks, brussel sprouts.
  - Dark leafy greens.
  - Red/orange
- Fruit 'allstars'
  - Blueberries
  - Apples
  - grapes

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## 6. Include Phytoestrogens

- Weak estrogens that bind to receptors sites for estrogen, displacing stronger estrogens.
- Beans, soy, flaxseed, pumpkin seed, red clover sprouts.
- ½ cup soybeans
- ½ cup soy milk
- 2 tbsp ground flax seed.

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## 7. Avoid sugar and limit sweeteners.

- Sugar raises blood glucose, insulin and IGF-1.
- Promotes obesity, diabetes, PCOS, etc.
- Artificial sweeteners should not be consumed on a regular basis.
- Naturally sweeten with fruits

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## 8. Avoid trans fats, limit saturated fats.

- Saturated fats are mainly found in animal products, including meats and dairy.
- Trans fats are hydrogenated oils, that are more dangerous than trans fats.
- Xenoestrogens are fat-soluble, so tend to be found in higher concentrations.

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## 9. Limit Alcohol

- 2-3 drinks/week.
- Especially important if you have are at risk for breast cancer.
  - One study found one drink a day increased the risk by 11%.

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## 10. Eat 'Superfoods'

- **Flaxseed**
  - High fibre, phytoestrogen, complete protein
- **Turmeric**
  - Anti-inflammatory, assists liver detoxification, anti-cancer
- **Garlic**
  - Anti-biotic, lowers cholesterol and blood pressure, anti-cancer, assists liver detoxification

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## Super foods

- **Raw Brassicas**
  - Cabbage, cauliflower, kale, broccoli
  - Assist liver detoxification
  - Improve C2:C16 ratio.
- **Shiitake Mushrooms**
  - Enhance immune function
- **Blueberries**
  - High in antioxidants

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## Super Foods

- **Cooked Tomatoes**
  - High in lycopene, protects against cancer.
- **Legumes**
  - Low glycemic index, protein, phytoestrogen
- **Green Tea**
  - Protects against certain cancers.

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Any Questions?

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