



# Herbal Support for PCOS

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- **PCOS affects 5 to 18% of all women**
- **PCOS is the most common hormonal disorder in women**
- **PCOS is one of the most common causes of female infertility.**

# Common Symptoms of PCOS

- **Amenorrhea, Oligomenorrhea**
- **Central Obesity**
- **Hirsutism**
- **Acne**
- **Infertility**
- **Late or Early Menarche**
- **Enlarged, Cystic Ovaries**

# **MULTIPLE HORMONAL** **IMBALANCES OF PCOS**

- **In Addition elevated Androgens:**
- **Insulin may be elevated**
- **Dopamine may be low**
- **Prolactin may be elevated**
- **FSH and LH Feedback loops may be abnormal**
- **TSH, T3 and T4 may be abnormally high or low**
- **GnRH may be abnormal**
- **Thyroid Anti-Antibodies may be present**
- **Adiponectin may be elevated**
- **Numerous inflammatory agents and cytokines may be elevated**

# **CLINICAL IMPLICATIONS**

**A trial of nutritional Thyroid Support  
(or sometimes even administration of thyroxine),**

**And dopaminergic herbs- can help women with PCOS  
and may restore menses and endocrine balance.**

# PCOS AND DISEASE RISK

- **Because of numerous hormonal difficulties, women with PCOS are at increased risk for heart disease, diabetes, and hormonal cancers.**

# **BOTANICALS AFFECTING DOPAMINE**

- *Hypericum*, *Cimicifuga*, *Vitex* and *Melissa* promote dopamine.
- Amphetamines promote dopamine including *Coffea arabica*, *Thea sinensis*, *Illicium*, *Theobroma cacao*, and *Ephedra*.



## *Vitex agnus castus*

***Vitex*** has neuroendocrine and dopaminergic effects, and can lower elevated prolactin.

***Vitex*** is a traditional herb for:

- Fertility
- Breast Pain/Mastalgia
- Menopause
- Hormonal Acne





*Hypericum perforatum*  
St Johns Wort



# *Coffea species* Coffee





# *Camellia* – Green Tea



# *Theobroma cacao* - Chocolate



# **GABA PROMOTES DOPAMINE**

- **GABA activity promotes dopaminergic activity.**
- **Therefore GABAergic herbs impact dopamine, decrease prolactin, and help balance hormones.**
- **GABA promoting botanicals include *Leonurus*, *Hypericum*, *Valeriana*, *Withania*, *Passiflora*, *Kava*, and L-Theanine.**



# *Valeriana officinalis, stitchensis* Valerian





# *Piper methysticum* Kava Kava





*Passiflora incarnata*  
Passion Flower





# **OPTIMIZING THYROID FUNCTION** **MAY IMPROVE PCOS**

- **Many women with PCOS have overlapping hypothyroidism**
- **Even in euthyroid women with PCOS, supporting thyroid function may improve symptoms of obesity, infertility, and menstrual cycles.**

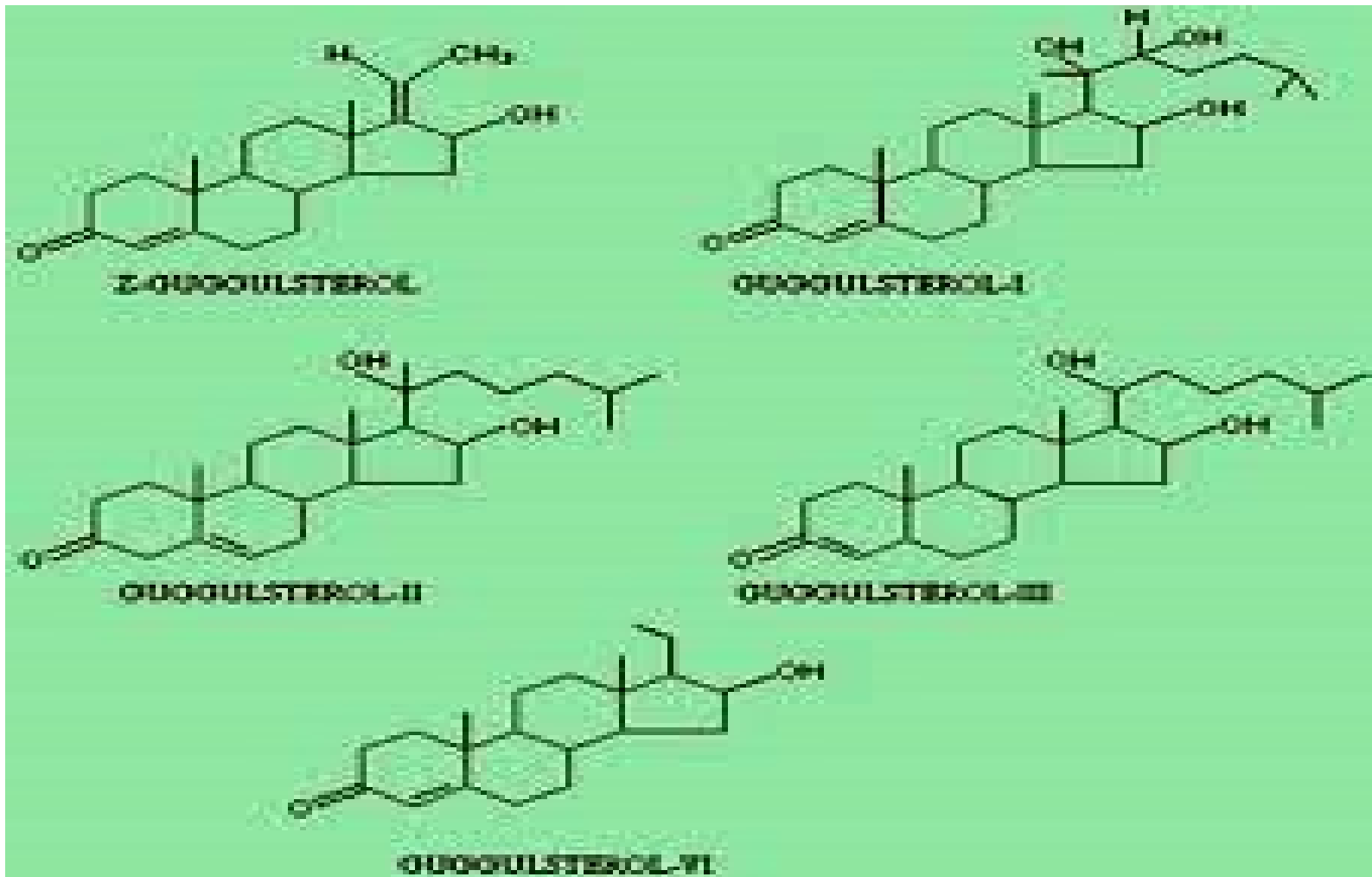
## *Commiphora mukul*

**A ketosteroid found in the oleoresin of *Commiphora* is reported to increase the uptake of iodine by the thyroid gland and enhance the activity of thyroid peroxidase enzymes.**

**Planta Med.** 1984 Feb;50(1):78-80. *Thyroid Stimulating Action of Z-Guggulsterone Obtained from Commiphora mukul.* Tripathi YB, Malhotra OP, Tripathi SN.



# Guggulsterones



## *Commiphora mukul*

### Guggul

- *Commiphora mukul* has a thyroid stimulating effect useful for high cholesterol and obesity.
- One study reported Guggul supplementation to significantly reduce total cholesterol after 12 weeks.

# *Commiphora mukul*

**Guggul decreases  
Cholesterol due to  
enhanced uptake of LDL  
by the liver**

**And via increased LDL  
binding sites and  
enhanced membrane  
receptor-mediated  
endocytosis.**



# *Commiphora mukul*

**Guggul improves  
the uptake of  
iodine and  
promotes lipid  
metabolism**

**Guggul reduces the  
effects of thyroid  
suppressing drugs  
in study animals.**



# **AGENTS THAT HELP REDUCE INSULIN RESISTANCE**

- ***Opuntia* species, the Prickly Pear Cactus Fruits**
- **Legume Foods and Herbs**
- ***Glycyrrhiza*, Licorice**
- ***Mahonia*, Oregon Grape roots**
- ***Stevia* leaves**
- ***Hibiscus* flowers**
- **Vitamin D**
- **Chromium**
- **Magnesium**
- **N-Acetyl-Cysteine**
- **D-Chiro-Inositol**
- **Pinitol**
- **Thyroid Support**
- **Metformin**

# Inositol Compounds

- Myo-inositol, Pinitol and D-Chiro inositol can improve signal transduction at insulin receptors
- Myo-inositol levels in ovarian follicles may be abnormally low
- Supplementation with inositol compounds may improve insulin resistance and fertility.
- Myo and Chiro-inositol are found in:
- Legumes – *Astragalus*, Beans, *Medicago*, Carob....
- Buckwheat, *Polygonum*
- Supplements are becoming available



# **DIETARY SOURCES OF D-Chiro Inositol**

- **AMOUNTS PER 100 GRAMS:**

- Soy lecithin            1,200 mg
- Carob                            1,000 mg
- Garbanzos            760 mg
- Brown Rice            700 mg
- Wheat Germ            690 mg
- Lentils                    410 mg
- Barley                    390 mg
- Oats                    320 mg
- Beef                    260 mg
- Lentils                    240 mg
- Oranges                    210 mg
- Peanuts                    210 mg



# CHROMIUM TO IMPROVE INSULIN RESISTANCE

- Chromium is a component of Glucose Tolerance Factor
- Chromium enhances signal transduction at insulin receptors
- Chromium deficiency is associated with dysglycemia and atherosclerosis
- *Hibiscus* is the best known plant source of Chromium



# DIETARY SOURCES OF CHROMIUM

- *Hibiscus* flowers
- *Taraxicum* leaves
- Oats
- *Stevia*
- Whole Grains
- Molasses
- Oysters
- Onions
- Tomatoes
- Brewer's Yeast



# *Opuntia* – Prickly Pear Cactus





# *Opuntia* and Insulin Resistance



- *Opuntia* may improve insulin resistance
- *Opuntia* may help lower elevated glucose and lipids
- *Opuntia* may help protect the blood vessels from elevated glucose and lipids
- *Opuntia* may improve hypertension
- As little as 1 TBL of just juice or 4 or 5 fresh fruits per day may be helpful.

# *Opuntia*



# LEGUMES TO IMPROVE INSULIN RESISTANCE, HYPERGLYCEMIA, AND HYPERLIPIDEMIA

- *Glycine max* (Soy)
- *Astragalus membranaceus* (Astragalus)
- *Medicago sativa* (Alfalfa)
- *Trigonella foenum-graceum* (Fenugreek)
- *Glycyrrhiza glabra* (Licorice)



# *Astragalus*





# *Astragalus*



# *Medicago sativa*



ALFALFA  
*Medicago sativa* L.  
PEA FAMILY

# *Medicago sativa*





# *Glycyrrhiza*



# *Glycyrrhiza*



# *Trigonella foenum-graceum*



## AGENTS THAT HELP REDUCE ELEVATED ANDROGENS

- ***Glycyrrhiza glabra (Licorice)***
- ***Serenoa repens (Saw Palmetto)***
- ***Vitex agnus castus (Vitex)***



# Vitex agnus castus





# *Vitex agnus castus*



# *Serenoa repens*



# **Alpha-5 Reductase Inhibitors**

- **Alpha-5-reductase is the enzyme that converts testosterone into the more active dihydrotestosterone.**
- **Because dihydrotestosterone has a greater proliferative effect than testosterone, inhibition of this enzyme may help reduce the increased endometrial cancer risk women with PCOS face.**
- **Genes that control 5 alpha-reductase are induced by high fat diets and hyperlipidemia.**

# Alpha-5 Reductase Inhibitors

Alpha-5 Reductase is inhibited by :

- Genistein
- *Serenoa repens*
- *Pygeum africanum*
- *Urtica*
- *Camellia sinensis*
- *Ganoderma lucidum*
- *Piper nigrum*



# ENHANCING FERTILITY FOR WOMEN WITH PCOS

- **Clomiphene**
- **Inositol compounds**
- **N-Acetyl cysteine**

# ENHANCING FERTILITY BY REDUCING ELEVATED PROLACTIN

- **Bromocriptine/Parlodel**
- ***Vitex agnus castus***
- ***Melissa officinalis***



## ***Vitex agnus castus***



- ***Vitex* has dopaminergic actions.**
- **Increasing dopamine can in turn reduce elevated GnRH and Prolactin.**
- ***Vitex* is a folkloric herb for amenorrhea, irregular cycles, and menstrual cycle irregularities.**

## *Melissa officinalis*

- **Melissa is dopaminergic.**
- **Melissa may reduce elevated prolactin, thyrotropin, and gonadotropins.**
- **Melissa contains rosmarinic acid that can reduce thyroid autoantibodies, commonly elevated in women with PCOS**





# PCOS and Infertility

- Infertility may occur due to amenorrhea, anovulatory cycles, and habitual miscarriage.
- Obese women with PCOS may have elevated amounts of oxidized LDL and cholesterol in ovarian follicles contributing to poor ova health
- When women with PCOS do conceive, the miscarriage rate is higher by ~15% compared to women without PCOS

# **CONSIDER A “PRENATAL YEAR”**

**Rather than going through the emotional trauma of failed attempts at conception and early miscarriages,**

- **A Prenatal Year is encouraged**
- **Work on diet, exercise, supplements and medical foods to optimize hormonal balance when possible.**
- **Clomiphene is not as effective in women with PCOS compared to other women and should not be considered without a “Prenatal Year.”**
- **Women with autoimmune hypothyroidism do not respond well to Clomiphene either.**

**HERBAL FORMULATIONS**  
**FOR PCOS**  
**TUTORIAL**

# **INDIVIDUALIZED THERAPIES**

## **FOR PCOS**

- **Choose herbs to improve insulin resistance where needed**
- **Choose herbs to promote thyroid function where needed**
- **Choose menstrual regulating herbs**
- **Choose dietary and medicinal legumes**
- **Choose agents that improve circulation to pelvis and ovaries**
- **Use a Prenatal year protocol for infertility**
- **Combine dietary, exercise, nutritional and herbal therapies for best results.**



## Sample Formula for Amenorrhea

- ***Serenoa***
- ***Vitex***
- ***Glycyrrhiza***
- ***Angelica***

## Sample Formula for Elevated Prolactin

- ***Vitex***
- ***Salvia***
- ***Melissa***
- ***Hypericum***

# Sample Formula for Insulin Resistance

## TEA FORMULA

- *Hibiscus* flowers
- *Mahonia* root, shredded
- *Glycyrrhiza* shredded
- *Taraxacum* leaves
- *Stevia* leaves
- *Medicago* leaves

Steep 1 TBL per cup, and drink 3 C/day

# Sample Formula for Hypothyroidism with PCOS

- ***Vitex***
- ***Commiphora mukul***
- ***Melissa***
- ***Fucus***
- ***Ephedra***



**For all PCOS Patients to use regularly**

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- **Hibiscus Tea, chilled**  
**1 cup**
- **Glycyrrhiza or Stevia tea, chilled**   **1 cup**
- **Sparkling water**  
**1 cup**
- **Prickly Pear juice (*Opuntia*)**                                 **1 Tbl**
- **Inositol powder**  
**1 Tbl**
- **Liquid Lecithin**  
**2 tsp**
- **Vit D liquid**  
**1-5 drops**

**THANK YOU!**