Balancing Hormones Naturally

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Notice

This material is not intended to treat or diagnose a medical condition. Only a trained physician can make clinical recommendations based on a thorough history and evaluation of your condition.
Atrazine Use

**ATRAZINE** - herbicide
1997 estimated annual agricultural use

Average annual use of active ingredient
(pounds per square mile of agricultural land in county)
- no estimated use
- 0.001 to 0.358
- 0.359 to 2.151
- 2.152 to 9.855
- 9.856 to 32.77
- >= 32.771

<table>
<thead>
<tr>
<th>Crops</th>
<th>Total pounds applied</th>
<th>Percent national use</th>
</tr>
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<tbody>
<tr>
<td>corn</td>
<td>62,381,038</td>
<td>84.00</td>
</tr>
<tr>
<td>sorghum</td>
<td>6,750,038</td>
<td>9.09</td>
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<tr>
<td>summer fallow</td>
<td>2,539,169</td>
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<td>sugarcane</td>
<td>2,203,421</td>
<td>2.97</td>
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<td>sweet corn</td>
<td>340,452</td>
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<tr>
<td>sod harvested</td>
<td>30,214</td>
<td>0.04</td>
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<tr>
<td>other hay</td>
<td>13,224</td>
<td>0.02</td>
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<tr>
<td>seed crops</td>
<td>5,833</td>
<td>0.01</td>
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</table>
Diabetes Rates

2007
Age-adjusted percent of adults ≥ 20 years old with diabetes

0 - 7.0  7.1 - 8.1  8.2 - 9.0  9.1 - 10.5  ≥ 10.6
What are hormones?

- Chemical messengers that control and coordinate activities in the body. The release of these hormones is controlled by the nervous system.

- They carry information from one group of cells to another.

- Hormones influence almost every cell, organ, and function.

- They regulate growth, development, tissue function, metabolism, reproduction, etc...

- The two main female hormones are estrogen and progesterone. These will be discussed today in more detail.
Endocrine Miscommunication

Normal

Blocked

Excessive (up regulation)

Excessive (down regulation)
Who’s Being Affected?
Adolescents

- Younger onset of menses
- Irregular periods
- Extremely heavy periods
- Extreme cramping
- PMS from the beginning
- Insulin resistance
- PCOS
- Early Breast Development (8 years old)
Women in their 20-30’s

- PMS
- Yeast or Candida
- Infertility
- Pregnancy issues
- Fatigue/Anxiety/Depression
- Weight gain or control issues
- Poor diet
- Insulin resistance
- Cancer
Middle Years

- Adrenal Stress
- Cancer
- Allergies
- Fibromyalgia
- Menopause
- Sleep Disorders
- Depression
- Fibroids
- Weight issues
- Memory issues
- Low sex drive
- Thyroid issues
Later Years

- Inflammation, Arthritis, GI, Heart disease
- Fatigue
- Malnutrition
- Sleep disorders
- Cognitive dysfunctions
- Blood sugar disorders
- Cancer
Estrogen hormones are responsible for the growth and development of female sexual characteristics and reproduction.

3 types: estrone, estradiol, estriol.
Three Types of Estrogen

- **Estrone E1**: 5-10%. Considered a “strong” estrogen because of its ability to cause cell proliferation.

- **Estradiol E2**: 5-10%. Considered the “strongest” estrogen because of its ability to cause cell proliferation (growth).

- **Estriol E3**: 80-90%. Considered a “weak” estrogen because it does not cause cell proliferation. However, estriol appears to balance the cell proliferating effects of estrone and estradiol, providing protection against their cancer-causing ability.
Estrogens Affects the...

- Endometrium
- Vagina
- Urinary Tract
- Libido
- Blood Sugar/Insulin levels
- The Brain, Mood and Memory
- The Breasts
- The Skin
- The Bones and Osteoporosis
- The Heart
Known Functions of Estrogen

- Slows bone loss
- Stimulates brain function
- Plays role in cognition, memory, emotions, mood, stamina, ambition, pain perception, and sleep
- Increases body fat especially in hips, abdomen, and thighs.
- Creates progesterone receptors
- Increase type III collagen, which helps skin heal faster and remain soft and pliable
- Promotes hydration (E3)
- Increases HDL’s, and lowers LDL’s and total cholesterol
- Increases vasodilation
- Inhibits vascular intimal and muscle proliferation (involved in atherosclerosis)
- Helps prevent inappropriate cholesterol deposition
Causes of elevated estrogen

- Ovarian or adrenal dysfunction
- Increased aromatase activity due to factors such as age, insulin, alcohol
- Reduced detox of estrogen
- Increased fat tissue
- Xeno-estrogen exposure (chemicals that mimic estrogens, found in plastics and other chemicals)
Estrogens MUST come from androgens from CHO

Hydroxylation & Reduction

Rate Limiting CYP19 gene

Hydroxylation

E3

E3
Aromatase activity

Med food for insulin resist.
α lipoic acid, CLA

Insulin → Androstenedione

DHEA → Aromatase

Inhibitors: lignans, flavonoids

Insulin → Testosterone

Insulin → Aromatase (Adipose, skin, etc.)

Isoflavones
Lignans, fiber

SHBG (SHBG transports estrogen and, when bound, makes it

ESTROGEN (E2)
Estradiol*

ESTROGEN (E1)
Estrone

* Estradiol can be metabolized through the same pathways as estrone.
Deficiencies and Toxicities

Step 1: (Healthy Function)
In the healthy intestine fewer internal poisons are formed and most of the toxins are excreted, with only a small amount naturally transported to the liver.

Step 2: (Healthy Function)
In the healthy liver toxins are transformed in Phase I to an intermediate substance.

Step 3: (Healthy Function)
In the healthy liver the intermediate substance is transformed in Phase II to a more water-soluble substance and released to the kidney.

Step 4: (Healthy Function)
The water-soluble substance is excreted via the urine.

Step 2-A: (Healthy Function)
Harmful free radicals (Ox•) are formed as a result of Phase I activity, but are transformed to harmless water (H₂O) by antioxidant nutrients.
Chemicals shown to have estrogenic effects

4-Methylbenzylidene camphor (4-MBC) (sunscreen lotions)

butylated hydroxyanisole / BHA (food preservative)

atrazine (weedkiller)

bisphenol A (monomer for polycarbonate plastic and epoxy resin; antioxidant in plasticizers)

dieldrin (insecticide)

DDT (insecticide)

endosulfan (insecticide)

erythrosine / FD&C Red No. 3

ethinylestradiol (combined oral contraceptive pill) (released into the environment as a xenoestrogen)

heptachlor (insecticide)

lindane / hexachlorocyclohexane (insecticide)
## Organic vs non organic foods

<table>
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<tr>
<th></th>
<th>Percentage of Dry Weight</th>
<th>Millequivalents per 100 Grams Dry Weight</th>
<th>Trace Elements Parts per Million Dry Weight</th>
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<tr>
<td></td>
<td>Tot. Ash, Mineral, Phosphorus, Calcium, Magnesium, Potassium, Sodium, Boron, Manganese, Iron, Copper, Cobalt</td>
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<tr>
<td><strong>SNAP BEANS</strong></td>
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<tr>
<td>Organic</td>
<td>10.45</td>
<td>0.36</td>
<td>40.5</td>
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<tr>
<td>Commercial</td>
<td>4.04</td>
<td>0.22</td>
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<td><strong>CABBAGE</strong></td>
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<td>10.38</td>
<td>0.38</td>
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<td>Commercial</td>
<td>6.12</td>
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<td><strong>LETTUCE</strong></td>
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<td>24.48</td>
<td>0.43</td>
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<td><strong>TOMATOES</strong></td>
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<td>14.2</td>
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<td>23</td>
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<td>Commercial</td>
<td>6.07</td>
<td>0.16</td>
<td>4.5</td>
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<td><strong>SPINACH</strong></td>
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<tr>
<td>Organic</td>
<td>28.56</td>
<td>0.52</td>
<td>96</td>
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<tr>
<td>Commercial</td>
<td>12.38</td>
<td>0.27</td>
<td>47.5</td>
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</table>
Where Do These Chemicals Show Up?

Car Exhaust
Hormones in Meat and Dairy
Soaps, Shampoos, Lotions
Carpet, Counter Tops
Paneling
Furniture
“New Car Smell”
Fruits and Vegetables Sprayed With Plastic
Food Dyes
According to Dr. George Pauli, Associate Director of Science Policy, FDA Office of Food Additive Safety, the regulations mandated in 1958 assume that all plastics migrate toxins into the food they contact. Migration is the movement of free toxins from plastic into the substances they contact — in this case it’s your food. The manufacturer must "prove" that the migrations fall within an acceptable range.[3]
Hormones in Meat = Xenoestrogens

These hormones are linked ever more closely to the escalating incidence of reproductive cancers in the U.S. since 1950-55% for breast cancer, 120% for testicular cancer and 190% for prostate cancer. The endocrine-disruptive effects of estrogenic pesticides and other industrial food contaminants known as xenoestrogens are now under intensive investigation by federal regulatory and health agencies. But the contamination of meat with residues of the far-more-potent estradiol remains ignored.
**Estrogen Excess can cause**

- Heavy bleeds
- Clotting and Cramping
- Water retention, bloating
- Breast tenderness, lumpiness, cystic breasts, enlarged breasts, fibrocystic breasts
- Weight gain
- Headaches, migraines
- Emotional hypersensitivity
- Depression, irritability, anxiety, anger, agitation
- Decreased sexual response
- Thyroid dysfunction
- Cold hands and feet
- Blood sugar instability, sweet cravings

- Causes deficiency in zinc, magnesium, and B complex
- Endometriosis
- PCOS
- Ovarian cysts
- Cervical dysplasias
- Uterine fibroids
- Infertility
- Irregular periods
- Auto immune disorders
- Copper Excess (toxicity)
- Breast cancer
- Endometrial cancer
- Uterine Cancer
- Insomnia
- Gall bladder dysfunction
Estrogen Dominance
Why is this so bad? It's the root cause of a myriad of illness

Fibrocystic breast disease
PCOS
PMS
Uterine fibroids
Breast cancer
Endometriosis
Symptoms of Perimenopause:
Hot flashes, night sweats, agitation, anxiety
Progesterone is the counter hormone to estrogen

Progesterone is a by-product of cholesterol synthesis

Progesterone levels fluctuate through the female cycle

Low levels can be caused by adrenal issues and luteal insufficiency
Functions of Progesterone

- Balances estrogen
- Prevents estrogen from overproducing uterine lining buildup
- "Ripens" uterine lining to allow for pregnancy
- Maintains and protects fetus
- Stimulates new bone growth
- Help calm and focus brain
- Helps burn fat for energy
- Precursor for other hormones
- Functions in the nervous system and rest of body are mostly unknown. Is a natural anti-depressant
- Can increase libido
- Is a natural muscle relaxant
- Facilitates thyroid hormone function
- Keeps testosterone from getting too high
- Is preventative against breast, uterine and all forms of cancer
- Regulates sensitivity of estrogen receptors
- Protects against auto immune diseases
**Progesterone Deficiency**

- PMS
- Heavy bleeding
- Clotting, cramping
- Inability to concentrate
- Short term memory impairment
- Muscle tension, spasm, fibromyalgia
- Water retention, bloating
- Insomnia
- Breast tenderness, lumpiness, cystic breasts
- Weight gain
- Thyroid dysfunction
- Headaches, migraines
- Anxiety, irritability, nervousness, moodiness
- Hot flashes
- Depression
- Decreased sexual response
- Osteoporosis
- Amenorrhea (no periods)
- Oligomenorrhea (infrequent periods)
- Spotting
- Endometriosis
- Fibroids
As a result, the estrogen mimics can trick the body into turning off, or ratcheting up, certain biochemical pathways – especially those in the reproductive system. The result: sexual development, in both males and females, gone seriously askew.

...For one thing...since 1938, sperm counts of men in the U.S. and 20 other countries have plunged by an average of 50%. At the same time, testicular cancer has tripled. ...Now physicians are analyzing studies that link estrogen like pollutants to breast cancer and endometriosis... Perhaps the oddest thing about endometriosis is that there were only 21 reported cases in the world 70 years ago; today there are over 5 million in the U.S. alone.”
Breast Cancer, is it Genetic?
“It’s Genetic…It runs in my family”

“Genetically our bodies are virtually the same as they were at the end of the paleolithic era... The appearance of agriculture and domestication of animals...and the industrial revolution some 200 years ago introduced new dietary pressures for which no adaptation has been possible in such a short time span. Thus an inevitable discordance exists between our dietary intake and what our genes are suited to.”

Mann, NJ. 2004 Paleolithic Nutrition: What we can learn from the past? Asia Pac J Clin Nutr: 13 (suppl): S17
“DNA evidence shows that genetically, humans have hardly changed at all (to be specific, the human genome has changed less than 0.02% [in all of human existence]).”

“In other words, built into our genes is a blueprint for optimal nutrition—a plan that spells out the foods that make us healthy, lean and fit.”
Breast Cancer

“The incidence of breast cancer varies greatly around the world, being lower in less-developed countries and greatest in the more-developed countries.”


“Women in the United States have the highest incidence rates of breast cancer in the world.”


American Cancer Society (September 13, 2007). "What Are the Key Statistics for Breast Cancer?". Retrieved on 2008-02-03.
Breast Cancer and Genetics

“About 5% to 10% of breast cancers are thought to be linked to changes (mutations) in certain genes. The most common gene changes are those of the BRCA1 and BRCA2 genes. Women with these gene changes have up to an 80% chance of getting breast cancer during their lifetimes.”

American Cancer Society

The Altered BRCA-1 gene appears in only 5% of the 182,000 breast cancer cases that develop. BRCA-2 is responsible for the same amount.

(9,100 = 7,280---174,720?)
Causes of Breast Cancer

The tissues of women with breast cancer may have 10 to 50x the level of plasma concentration of Estrogen. This suggests that estrogens are not properly detoxified, and therefore accumulate in the breast tissue. These levels will increase the risk of breast cancer.

Causes Reviewed

Liver Dysfunction
Loss pH
Insulin/Stress
Xenoestrogens
Deficiencies/Toxicities
Diagnosis and Management
What Are The Current Treatments?

- Hormone replacement therapy (HRT)
- Anti Depressants
- Insulin
- Sleeping Medications
- Surgery
- Anti Inflammatory
- Thyroid Medications
Diagnosing and treating hormonal imbalances can be very rewarding since it provides a clear picture of what is going on internally.

Complex conditions require time and patience from both the patient and the doctor.

Patient centered protocol vs disease centered.

Every patient should be taking a high grade multi-vitamin to provide adequate nutrition for enzyme pathways.
<table>
<thead>
<tr>
<th>AVOID</th>
<th>SUBSTITUTE WITH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>Non-alcoholic drinks, low carb beers, use sparingly</td>
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<tr>
<td>Coffee</td>
<td>Water processed organic de-caff. or Teechino, an herbal coffee available at health food stores or <a href="http://www.teechino.com">www.teechino.com</a></td>
</tr>
<tr>
<td>Black Tea</td>
<td>Herbal tea or green tea</td>
</tr>
<tr>
<td>Artificial Fats</td>
<td>Real butter, coconut butter</td>
</tr>
<tr>
<td>Hydrogenated Fats</td>
<td>coconut, safflower, or peanut oils are best to cook with</td>
</tr>
<tr>
<td>Deep Fried Fats</td>
<td>Deep fry with peanut oil</td>
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<tr>
<td>Sharp Cheese</td>
<td>Mild cheeses</td>
</tr>
<tr>
<td>Commercial Eggs</td>
<td>Organic eggs</td>
</tr>
<tr>
<td>Commercial Hamburgers</td>
<td>Free ranges meats</td>
</tr>
<tr>
<td>Meats with Nitrates</td>
<td>Meat w/o nitrates</td>
</tr>
<tr>
<td>Farm Raised Fish</td>
<td>Fresh water fish or wild caught fish</td>
</tr>
<tr>
<td>Overcooked Beef/Steak</td>
<td>rare or medium rare steak</td>
</tr>
<tr>
<td>Pasteurized Milk</td>
<td>RAW milk, almond, rice or coconut milk</td>
</tr>
<tr>
<td>Chips with hydrogenated Fats</td>
<td>corn or potato chips with peanut or safflower oil, use sparingly</td>
</tr>
</tbody>
</table>
Balancing Elevated Estrogen

- Increase consumption of cruciferous vegetables (broccoli, cauliflower, brussel sprouts, kale, cabbage and bok choy)
- DIM supplementation to help with estrogen metabolism
- Calcium D-glutarate to help eliminate estradiol through the bowels
- Detoxification of the liver
- Saw palmetto berries and Chaste tree berry
Hot Flashes

- 85% percent of patients treated with iodine therapy (prolomine iodine) report complete resolution of hot flashes within the first week of use.

- 98% of women reported a reduction in menopausal hot flashes and night sweats using a standardized herbal supplement called Tribulis.

- Both treatments are very effective, very affordable and safe.
Menstrual Cramps

- 50% of Americans are deficient in magnesium and calcium

- Magnesium and calcium are natural muscle relaxers

- Magnesium and B vitamins are depleted when women take birth control

- Cravings for chocolate and or cramping in the feet are signs of magnesium deficiency

- A high quality supplement containing a B complex combined with calcium and magnesium can eliminate menstrual cramps with regular use
Mood Swings

- Hormonal imbalances such as lowered progesterone can cause mood swings
- A poorly functioning thyroid can cause mood swings
- Poor liver function can prevent hormone conversion and activation
- Low DHEA levels can reduce the body’s ability to produce progesterone
- Excessive stress will lower DHEA production
- Low fat diets reduce the body’s ability to make steroid hormones like DHEA
Female hormones are complex and can be difficult to treat without proper evaluation and management.

Treatment of hormone imbalances must be tailored specifically to the patient's needs based on a thorough evaluation.

Functional testing takes the guesswork out of treatment protocols.

You do not have to live in pain and suffer needlessly.
Diet

Hormone free meat

No greater than 120 grams of carbohydrates per day

No milk...have you ever seen an adult cow drink milk?

At least 5-7 serving of fruit & vegetables per day
Environment

Wash/Soak all non home grown fruits and vegetables

Do not store food in soft plastic containers

Do not heat any plastics containing food or drinks in the microwave
General Supplementation For Hormone Support

ChasteBerry Plus
Causes the anterior pituitary to secrete LH and FSH to balance estrogen and progesterone levels

EPA/DHA (fatty acids)
1,500mg-3,000mg per day

Folic Acid (5-methyl tetrahydrofolate)
Needed for all hormone metabolism
General Supplementation For Hormone Support

Vit D (2000-6000 IU per day)
Needed for proper hormone functions

Meta IC 3
Potent estrogen detoxifier
Indole-3-Carbinol

Converts estrogen to 2 hydroxestrogen
Found naturally in cruciferous vegetables (Broccoli, Brussels sprouts, Cabbage, Cauliflower, Turnip)
“Even if a women is overweight, if she eats at least five servings of vegetables and fruit a day and walks briskly for 30 minutes, six days a week, her risk of death from her disease goes down by 50 percent.”

Dr John Pierce, Director of the cancer Prevention and Control Program at the Moores UCSD cancer Center
Why Functional Medicine

- Functional medicine (FM) is used to treat complex cases
- FM poses the question, WHY?
- FM is a tool to help the doctor come up with the best possible treatment plan for a patient
- FM is patient centered, not disease centered
- FM get results when all other methods of care fail
- FM saves money, no wasted money on treatments that are based on guess work
My commitment to my patients

› I will listen to your health related concerns and take a thorough health history

› I will educate you on how the body works so that you can appreciate its inner beauty and complexity but not be afraid of it

› To make my services as affordable as possible so that everyone can get the care they need and put an end to their pain and suffering

› I will not waste your time or money if I cannot help you
Goals of treatment

- Take a good history (listen to you)
- Identify the problem using the history and functional testing
- Determine the best course of action that is practical and affordable
- Measure your outcomes subjectively and objectively
## Patient Results

<table>
<thead>
<tr>
<th></th>
<th>pH</th>
<th>rH2</th>
<th>r</th>
<th>Cond.</th>
<th>Nitr.</th>
<th>Amm.</th>
<th>Carb</th>
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<tbody>
<tr>
<td><strong>Saliva</strong></td>
<td>5.89</td>
<td>30.0</td>
<td>231</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Urine</strong></td>
<td>6.68</td>
<td>27.2</td>
<td>295</td>
<td>3.4</td>
<td>2</td>
<td>2</td>
<td>3.40</td>
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<tr>
<td><strong>Avg. pH</strong></td>
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| Urea | 4 | Specific Gravity | 1.013 |

## Optimum

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<th>Amm.</th>
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<td></td>
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</table>

| Specific Gravity | 1.005-1.030 |

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**Optimal**

- Alkaline Reserve
- Oxidative Stress
- Electrolytes
- Carb Metabolism
- Protein Metabolism
- Cellular Respiration
- Hydration
- Liver Stress / Tox.
- Kidney Stress
- Adrenal Stress

---

**Anabolic / Catabolic**

- Anabolic
- Catabolic
### Patient Results

<table>
<thead>
<tr>
<th></th>
<th>pH</th>
<th>pH2</th>
<th>r</th>
<th>Cond.</th>
<th>Nitr.</th>
<th>Amm.</th>
<th>Carb</th>
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<td>25.9</td>
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<tr>
<td>Urine</td>
<td>5.73</td>
<td>25.8</td>
<td>260</td>
<td>3.8</td>
<td>2</td>
<td>1</td>
<td>0.50</td>
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<td>Avg. pH</td>
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### Optimum

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<th>Nitr.</th>
<th>Amm.</th>
<th>Carb</th>
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<tbody>
<tr>
<td></td>
<td>6.5-6.75</td>
<td>18-19</td>
<td>180-220</td>
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<tr>
<td>Urea</td>
<td>6.5-6.8</td>
<td>18-19</td>
<td>50-100</td>
<td>6.7</td>
<td>3</td>
<td>3</td>
<td>1.3-1.9</td>
</tr>
</tbody>
</table>

- **Specific Gravity**: 1.002
- **Specific Gravity**: 1.005-1.030

---

- **Alkaline Reserve**
- **Oxidative Stress**
- **Electrolytes**
- **Carb Metabolism**
- **Protein Metabolism**
- **Cellular Respiration**
- **Hydration**
- **Liver Stress / Tox.**
- **Kidney Stress**
- **Adrenal Stress**
- **Inflammation**

- **Anabolic / Catabolic**

---

*Colors indicate levels of stress and balance.*
Questions?