Recap

• Sperm are produced in the seminiferous tubules by Sertoli cells
• Require exposure to testosterone (from Leydig cells)
• FSH signals Sertoli cells (and increases LH receptors on Leydig cells)
• LH signals Leydig cells

Recap

• Sperm is matured in epididymus
• Moved through the vas deferens to the ejaculatory duct
• Met with prostatic fluid (zinc-rich)
• Also combines with seminal gland fluids (provide nourishment)
• Stored in the prostate until time of ejaculation
Andropause

• Similar to menopause in women
• Related to normal, age-related decline in androgens, specifically testosterone and DHEA
• Estrogen will frequently elevate
• Can begin as early as mid-40’s
• Symptoms will be those of loss of androgen dominance
  – Low libido, ED, loss of muscle tone, fatigue, memory loss, gynecomastia, night sweats

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Considerations for Andropause

- Stabilize blood sugar
- Provide liver support
- Ensure healthy digestion and adequate fiber intake
- Adrenal support
- General nutrition/multivitamin
- Provide specific precursor support
- Minerals including calcium, magnesium, zinc and broad spectrum trace minerals
- Sufficient dietary fat is crucial

Hypogonadism

- Underproduction of sperm by the gonads (testes)
- Sperm production requires both FSH and LH from the pituitary
- Sertoli cells produce the male gametes and Leydig cells produce testosterone which is needed to develop the sperm
Hypogonadism

- Primary hypogonadism results from a problem with the testes themselves.
- Secondary hypogonadism involves dysfunction and/or poor signaling from the hypothalamus, pituitary gland or both.

Possible Causes

- Testicular injury or trauma including chemotherapy or radiation
- Hypothalamus or pituitary diseases
- Hormonal disorders (high prolactin, excess testosterone, progesterone, etc.)
- Some medications such as prednisone or opiate pain medications
- Genetic conditions including Klinefelter syndrome, Kallman syndrome, and Prader-Willi syndrome
Symptoms of Hypogonadism

- Incomplete sexual development
- Reduced libido
- Decreased spontaneous morning erections
- Breast discomfort or enlargement
- Loss of body hair or reduced shaving
- Depression
- Small or shrinking testicles
- Infertility/low sperm counts
- Loss of height
- Reduced muscle mass or strength
- Hot flushes/sweats
- Decreased vitality

Conventional Treatment

- Testosterone is often provided based on low serum levels
- However, tissue accumulation is never considered
- If tissue levels are high, feedback to the HP will be diminished
- This can result in insufficient signaling to the Leydig cells causing reduced endogenous production of testosterone
Testosterone Panacea

- Media and mainstream medical are enthralled with using testosterone for every man who doesn’t feel his best
- Perception is that testosterone will restore virility, energy, sex appeal, muscle tone and more
- Radio, print and television advertisements are rampant
- Unknowledgeable consumer is walking into a hormone trap

Not Low at All

- After age 40, testosterone levels fall by 1% - 2% per year
- Actual hypogonadism or hypotestosteronemia is extremely rare
- Estimate of men who would actually meet the diagnosing criteria:
  - 0.1% of men in their 40’s
  - 0.6% of men in their 50’s
  - 3.2% of men in their 60’s
  - 5.1% of men in their 70’s
Controversial Findings

• FDA has not approved testosterone to improve strength, increase athletic performance, physical appearance or prevent aging

• 2004 report from the Institute of Medicine (Testosterone and Aging: Clinical Research Directions) called testosterone replacement therapy (TRT) for age-related testosterone decline a “scientifically unproven method”

Serious Warning

• 2009 study on men using testosterone was terminated early

• Results were published in the New England Journal of Medicine

• Cardiovascular problems were four times more likely in men using testosterone replacement therapy

• Swollen, painful breasts, blood clots in the legs and low sperm count are but a few

• Commercials do report side effects but call them “rare”
Role of Sex Hormone Binding Globulin

- A glycoprotein that binds to androgens and estrogen
- Produced primarily by the liver and released into the bloodstream
- Other production sites include brain, uterus, testes and placenta
- Testes produced SHBG is called androgen-binding protein

SHBG Effects on Hormones

- Affinity for SHBG is as follows:
  - $DHT > testosterone > androstenediol > estradiol > estrone$
  - Androstenedione is bound solely to albumin
- Variations in levels of SHBG’s will inhibit the function of unbound or free hormones in the blood
- Thus, bioavailability of sex hormones is strongly influenced by SHBG
Usefulness of Serum Testing

- Gonads produce testosterone (Leydig cells via LH stimulation) and release directly into the bloodstream
- Is immediately bound to SHGB
- Variations in SHGB levels can have significant impact on serum testosterone levels

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Decreased SHBG

- SHBG can decrease with:
  - Insulin or obesity
  - Growth hormone
  - IGF-1
  - Androgen use
  - Anabolic steroid use
  - Hypothyroidism
  - Cushing’s Syndrome
  - Elevated prolactin

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Increased SHBG

- SHBG can increase with:
  - Any form of oral or topical hormones
  - Hyperthyroidism/excess thyroxin (T4)
  - Cirrhosis of the liver
  - Long-term calorie restriction of more than 50% will increase SHBG but decrease testosterone and estradiol

Serum SHBG Levels

<table>
<thead>
<tr>
<th>Patient Type</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult male</td>
<td>20 – 60 nmol/L</td>
</tr>
<tr>
<td>Prepubertal (24 mos – 8 yrs)</td>
<td>72 – 220 nmol/L</td>
</tr>
<tr>
<td>Pubertal male</td>
<td>16 – 100 nmol/L</td>
</tr>
</tbody>
</table>
Serum Hormone Levels

<table>
<thead>
<tr>
<th>Patient Type</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Testosterone</strong></td>
<td></td>
</tr>
<tr>
<td>Male, overall</td>
<td>300 – 1000 ng/dL</td>
</tr>
<tr>
<td>Male (&lt;50 yrs old)</td>
<td>290 – 1300 ng/dL</td>
</tr>
<tr>
<td>Male (&gt;50 yrs old)</td>
<td>180 – 740 ng/dL</td>
</tr>
<tr>
<td><strong>Dihydrotestosterone</strong></td>
<td></td>
</tr>
<tr>
<td>Adult male</td>
<td>30 – 80 ng/dL</td>
</tr>
</tbody>
</table>

Which Test To Use

- Serum and saliva testing are both useful
- Consider what information you are trying to obtain
- Saliva testing
  - Levels of actual hormones in the tissue
  - Relationship between other male hormones
  - Health of cell receptors
  - Possible hormone overdose
- Serum testing
  - Production of testosterone by testes and levels of SHBG
Herbal and Nutritional Considerations

- Always order saliva or serum tests as appropriate
- Start with some kind of liver detoxification
- Stabilize blood sugar by suggesting appropriate dietary changes
- Adrenal support (consider possible pregnenolone steal)
- Address any male hormone imbalances by providing appropriate herbal or nutritional support

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Tribulus

- First choice to support loss of androgen dominance
- Tribulus sourced from Bulgaria has the correct phytochemical makeup for desired therapeutic effect
- Best to use combination of leaf and stem
- Supports adrenal function and conversion of DHEA/S into testosterone
- Will not excessively elevate testosterone – herbs are modulators, bring balance

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**Tribulus**

- Provides support for hypothalamus
- Key herb for male fertility
- Shown to increase sperm count, motility and morphology
- One study showed Tribulus lowered estrogen while concurrently increasing testosterone in men
- Increases energy and stamina
- Can be taken long-term
- Dose is 2 tabs 2x/day (MediHerb)

---

**Zinc Liver Chelate**

- Zinc is needed for normal male physiology and production of testosterone
- If using longer than 2-3 months, add Trace Minerals B12 to maintain overall mineral balance
- Needed for the formation and sensitization of androgen receptors
- Can be depleted in men taking testosterone replacement
- Use Alkaline phosphatase marker as a key indicator
- Dose 3-6/day (Standard Process)
**Orchex**

- Contains enzymes to help male hormone conversion
- Provides overall testicular support
- Excellent for use with hypertensive men – can use up to 9/day
- Can be taken long-term - 6/day

**Symplex M®**

- Follows the work of Henry Harrower
- All endocrine glands work synergistically
  - Adrenals
  - Gonads
  - Thyroid
  - Pituitary
- Contains nucleic support for all four glands
- Considered and “Endocrine Multivitamin”
- Excellent when combined with trace minerals
- Dose is 6 tabs/day (Standard Process)
Erectile Dysfunction

• Also known as impotence
• Defined as the inability to obtain or maintain that is firm enough or lasts long enough to have satisfactory sexual intercourse
• Estimated to affect over 30 million American men
• Primarily affects men ages 40-70

Erectile Dysfunction

• Recent study in Journal of Sexual Medicine evaluated the trends in Erectile Dysfunction and its surgical management
• Analyses showed the prevalence of ED has increased 165% from 2001 – 2010
• But the use of penile prosthesis has decreased by 50%
Erectile Dysfunction

• The conclusion of their study?

“The research demonstrates the continued role for surgical treatment of erectile dysfunction that persists despite the increasing use of oral medications and that variation in this treatment exists even in the absence of clinical factors.”

Historical Snapshot

• In 16th and 17th century France, male impotence was considered to be a crime
• Women were able to petition the courts for divorce if their husbands weren’t able to perform
• To verify, court experts had to inspect the husband to verify his wife’s complaints
• However, in 1677, this practice was considered obscene and was prohibited
Goat Glands or Mercury

• In the 1920’s, a man named John Brinkley revived interest in male impotence cures
• He began a radio show promoting several options for men with this condition
• He recommended “goat gland implants” which were extremely expensive
• The other option was mercurochrome injections or surgery to restore complete vitality

Listed Medical Causes

• **Vascular disorders**
  – Heart disease
  – High blood pressure
  – Elevated cholesterol
  – Smoking
• **Neurological**
  – Stroke
  – Multiple sclerosis
  – Parkinsons
  – Spinal cord injury
• **Chronic illness**
  – Diabetes
  – Liver or kidney disease
• **Hormonal issues**
  – Low testosterone
  – Pituitary dysfunction
  – Testicular atrophy
  – Periapism (prolonged erections)
Listed Medical Causes

- **Injury or trauma**
  - *Prostate surgery*
  - Rectal surgery
  - Peyronies
  - Pelvic radiation

- **Medications**
  - *Blood pressure drugs*
  - *Anti-androgen drugs*
  - Antipsychotics
  - Recreational drugs

- **Psychological causes**
  - Depression
  - Stress
  - “performance anxiety”

Introducing Viagra

- Not many treatment options were available for men until the early 1980’s
- British physiologist Giles Brindley made advances in the use of vasodilator injections to induce penile erections
- This led to the introduction of Viagra in the 1990’s
- Several additional drugs were manufactured with the same effect
Current Drug Options

- There are three drug options on the market to support ED
  - Sildenafil – *Viagra*
  - Vardenifil – *Levitra*
  - Tadalafil – *Cialis*

Mayo Clinic Cautions

- Their website states “herbal options have not been well studied” and should not be considered for erectile dysfunction
- They state (correctly) that “active ingredient(s) can vary from product to product”
- The three alternative options they state are generally safe are:
  - DHEA
  - L-Arginine
  - Panax Ginseng
Mayo Clinic Cautions

- Interestingly, they note that Ginkgo “has the potential to increase blood flow to the penis” but no evidence it would be of benefit for ED
- They also (incorrectly) state that Ginkgo may increase the risk of bleeding
- Western medicine is greatly lacking in knowledge and confidence of herbal therapies

Supportive Studies

- In 2000, a study clearly demonstrated that herbs work to address the underlying cause, having a “whole body” effect
- Specific phytochemical compound mentioned was protodioscins found in Tribulus
- “Clinically proven to improve sexual desire and enhance erection via the conversion of protodioscine to DHEA
Verification of Constituents

- The researcher wisely noted that the active component was found in varying amounts depending on the soil it was grown in.
- Many herbal preparations may make claims however the phytochemical power may be missing.

Medical Evaluation

- A variety of testing options are available
  - Duplex ultrasound to evaluate blood flow
  - Bulbocavernosus reflex test to evaluate nerve function in the penis
  - Several invasive tests using specialized scanning techniques to evaluate nerve function and vascular pressure.
Medical Treatment

• Conventional options will include
  – Evaluation of brain, blood vessels, nerves and specific hormones
  – Placement of prostaglandin tablets in the urethra
  – Injections into the penis
  – Penile prosthesis
  – Penis pump
  – Vascular reconstructive surgery
  – Hormone replacement therapy

Less Invasive Options

• Aerobic exercise, has been shown to help prevent ED
• Complete cessation of smoking results in significant clinical improvement
• Support healthy liver function
• Provide nutrients which support the heart
• Regulate and control blood sugar levels through diet
• Evaluate status of serum AND salivary hormone levels
• Provide herbs or other nutrients to support male hormonal health
Gynecomastia

- Common endocrine disorder where male breast tissue is abnormally enlarged
- Up to 70% of young adolescent boys experience this condition
- 75% of pubescent gynecomastia resolves within 2 years
- Is often psychologically difficult to deal with, especially for this age group

Estrogens Play a Role

- Believed to be due to an increase in the ratio of estrogens to androgens
- Also known to occur when hormone levels are within normal but the ratio is altered
- Cause of estrogen elevation is “unknown”
- Medical options are very limited with surgery recommended if condition lasts longer than 2 years
- Aromatase inhibitors are effective only in rare cases
Estrogen and Testosterone

- Estrogen stimulates the growth of breast tissue in males (as in females)
- Increased estrogens can have an effect on the HP axis causing decreased production of testosterone (suppression of LH)
- Estrogens also increase SHBG which binds up free testosterone leaving less available to offset increasing estrogen levels in breast tissue
Testosterone Receptors

- Androgen receptors may become “defective even if blood levels of testosterone are normal”
- Likely due to the use of topical androgens or excess circulating estrogens
- This might be easily remedied by decreasing/balancing estrogens and testosterone via Phase 1 and phase 2 liver detoxification
Physiologic Causes

- 60% - 90% of newborn male infants can show slight enlargement of breast tissue due to placental conversion of DHEA/s to E1 and E2
- This usually resolves in 2-3 weeks
- Older men can also experience “senile gynecomastia” (24% - 65% >50 yrs)
  – Increased fatty tissue converts testosterone into estrogens
- Inadequate nutrition can also be a contributing factor
Physiologic Causes

- Any chronic illness that results in caloric deprivation can be a factor
- Liver failure, cirrhosis or alcoholic liver disease can have impaired detoxification capability resulting in increasing levels of estrogens in circulation

Medical Weigh-In

- Prevalence has increased in recent years
- Epidemiology is not fully understood
- Use of steroids and "estrogen-like compounds" in cosmetics, organochlorines and industrial chemicals have been suggested as possible factors
- Breast cancer surgeries have increased dramatically
- "Further study is needed"
Alternative Perspective

• Same nutritional and herbal support as would be considered for any other male hormone imbalance
  – Support the liver
  – Encourage healthy blood sugar levels
  – Evaluate exogenous exposure to estrogen-like compounds
  – Provide herbal and nutritional support designed to support healthy male physiology

Prostatitis

• Defined as swelling and inflammation of the prostate gland
• More common in men under the age of 50
• Can come on suddenly and resolve
• Some cases remain and increase in intensity
• May be caused by a bacterial infection or other unknown factor
Questions to Ask

- When did the symptoms begin?
- Are they continuous or do they come and go?
- Have you recently had a bladder/urinary tract infection?
- Have you had UTI’s in the past?
- What is your daily water intake?
- Have you had any recent injuries to the groin area?
- Have you taken anything to relieve your symptoms?

Four Categories

- Classified into four categories
  - Acute
  - Chronic
  - Asymptomatic inflammation
  - Chronic pelvic pain
Acute Prostatitis

- Inflammation of the prostate with or without an underlying infection
- Bacterial involvement accounts for only 5% - 10% of all cases
- Estimated to represent 25% of all in-office visits for genitourinary complaints
- May require medical intervention and subsequent antibiotic treatment

Prostatitis Symptoms

- Pain or burning sensation when urinating (dysuria)
- Difficulty urinating including hesitation or dribbling
- Frequent urination (nocturia)
- Pain in the abdomen, low back, groin or between the scrotum and rectum
- Painful orgasms
- Other flu-like symptoms (when bacterial in origin)
Common Causes

- Bacterial infections responsible in acute cases
- Often underlying cause is unknown
- Conventional thinking points to:
  - Nervous system disorders
  - Autoimmune disorders
  - Local injury to or in the area around the prostate
- Chronic prostatitis can be challenging to treat medically

Risk Factors

- History of prior prostatic infections
- Injury or trauma to the area (bike riding, horseback riding)
- Dehydration
- Bladder infections
- Catheter use
- Bacterial exposure from sexual intercourse
- Stress
Symptoms

• Symptoms can include:
  – Chills, fever,
  – Lower-back pain
  – Discomfort in the genital area
  – Urinary frequency
  – White blood cells and bacteria showing in a urine specimen

Bacterial Offenders

• Serum tests will often show elevated WBC’s
• Causative agents can include:
  – E. coli
  – Kliebsellia
  – Enterococcus
  – Proteus
  – Pseudomonas
  – Staph aureus
  – Enterobacter
Conventional Treatments

- Antibiotics are the standard course of care
- NSAID’s are commonly recommended
- Alpha-blockers can also be recommended
- These relax the muscles of the prostate and bladder to improve urine flow
  - Flomax (Tamsulosin)

Alternative Options

- Mayo Clinic recommends biofeedback to help with pain management
- Acupuncture or chiropractic care
- Warm sitz baths
- Herbal therapy to support healthy prostate function and elimination of possible infection
  - Andrographis
  - Echinacea
  - Saw palmetto, Nettle root, Goldenseal
Andrographis Complex

- Best with acute infections but can be taking preventatively as well
- Boosts immunity
- Can be used at any stage and with any kind of infection
- Take at the first sign of infection
- Contains Echinacea
- Dose is 1-2 tabs, 2-3x/day

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Echinacea Premium

- Fabulous for overall immune support
- Best known as an immune modulator
  - Supports compromised immune function
  - Down-regulates an overactive immune system
- Can safely be used long-term to help maintain a healthy immune response
- Provides support as an anti-aging tonic
- Supports HP axis

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Saw Palmetto 1:2

- Inhibits 5-α reductase (testosterone to DHT)
- Is also an aromatase inhibitor (testosterone to estradiol)
- Supports healthy prostate function
- Supports healthy urinary tract function
- Relieves smooth muscle spasms
- Dose is 1 tsp/day, divided (MediHerb)

Nettle Root 1:2

- Distinctly different than Nettle Leaf 1:2
- Supports overall prostate gland function
- Improves symptoms of BPH alone or in combination with Saw Palmetto
- Is a weak inhibitor of 5-α reductase
- Has a strong effect on aromatase enzyme
- Dose is 1 – 1.5 tsp/day, divided (MediHerb)
ProstaCo

- Combines Saw Palmetto and Nettle root
- Contains Crataeva which is an anti-inflammatory and improves bladder tone
- **Pumpkin seed oil contains omega 3’s but is also a traditional remedy for prostatitis**
- Supports healthy bladder function
- Can help with mild muscle spasms
- Dose is 4 caps/day (MediHerb)

Cranberry Complex

- **Key herbal formula for prevention and treatment of acute, chronic UTI’s and prostatitis**
- Works well when pain and burning are present
- Helpful with BPH as well
- Can be used preventatively
- **Combines well with ProstaCo for any kind of urinary condition**
- Contains Crataeva stem, Uva ursi, Cranberry fruit juice powder, Buchu essential oil
Golden Seal 500mg

- Assists with normalization of urinary tract discharges
- Works well as an antiseptic for the genito-urinary system
- Helps reduce inflammation along mucous passages
- Dose is 2 tabs 2x/day acutely
- Can be taken prophylactically at 2/day

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The Use of NSAID’s

- Recent data shows even more trouble from NSAID use
- Implicated in increased cardiovascular risk

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Chronic Infectious Prostatitis

- Number 1 reason for visit to urologist in men under the age of 50
- Can follow acute prostatitis or other unrelated urinary tract infections
- Urinary tract bacteria have entered the prostate
- Considered chronic if lasting longer than 3 months

Chronic Infectious Prostatitis

- Underlying bacterial infection in the prostate may not been fully resolved
- Symptoms are typically less severe than acute prostatitis and can fluctuate
- Can be difficult to diagnose as bacteria can come and go – unseen upon culture
- Patient may be asymptomatic until feelings of bladder infection begin
Chronic Infectious Prostatitis

- Treatment involves longer courses of antibiotics to penetrate the blood-prostate barrier
- Biofilms are usually involved
- Saw palmetto and cranberry have been shown to be helpful

Chronic Non-Bacterial Prostatitis

- Also known as Chronic Pelvic Pain Syndrome (CPPS)
- PSA marker is used as a baseline for treatment
- Does not involve a bacterial infection
- Also known as prostadynia
- Most common form of prostatitis
- Typically lasts longer than 3 months
- Can be confused with Interstitial Cystitis
Non-Infectious Prostatitis

- Symptoms can come and go
- Often originating in the perineum, testicles, tip of penis, pubic or bladder area
- May be caused by long-term inflammation
- Correlation seen with imbalance in male sex hormones
  - Increased conversion of testosterone to DHT

Linked to Stress

- Post-ejaculatory pain is a hallmark sign
- CPPS accounts for 90% - 95% of diagnoses
- Many report decreased libido and erectile dysfunction
- Suspected causes include stress, HP axis dysregulation and endocrine dysfunction
Conventional Interventions

- NSAID’s
- Sitz baths
- Alpha blockers (FloMax)
- Hormone blocking medication (Proscar)
- Treatments can become more aggressive as the condition progresses
  - Surgical removal of infected portions of the prostate

Proscar

- Blocks 5’ reductase
  - Conversion of testosterone to DHT
- Tablets should not taken or handled by women or children
  - Can be absorbed through the skin
- Can cause birth defects if exposure is during pregnancy
- Does not prevent prostate cancer but can actually increase risk
Proscar Warnings

• Should not be taken if:
  – Any history of liver disease or abnormal liver enzymes
  – History of prostate cancer
  – Bladder disorders
  – Urethral stricture
  – Inability to urinate

Proscar Side Effects

• Loss of sexual ability, desire, drive or performance
• Difficulty having orgasms
• Abnormal ejaculations
• Inability to obtain or maintain erection (often continues after medication has been discontinued)
• Chills, cold sweats

• Decreased ejaculatory volume and poor sperm quality
• Testicular pain
• Dizziness, weakness or sensation of passing out
• Confusion
• Headache
• Hypotension
• Edema
Alternative Considerations

• Herbal support for the prostate
  – Saw palmetto
  – Uva ursi
  – Buchu

• Stress management and adrenal support

• Evaluation of male sex hormones via salivary testing

• Regular exercise

• Myofacial trigger-point therapy

Saw Palmetto 1:2

• Inhibits 5-α reductase (testosterone to DHT)

• Is an aromatase inhibitor (testosterone to estradiol)

• Supports healthy prostate function

• Supports healthy urinary tract function

• Relieves smooth muscle spasms

• Dose is 1 tsp/day, divided
Uva Ursi 1:2

- Provides overall genitourinary support for men or women
- Has urinary antiseptic and astringent properties
- Is anti-inflammatory
- Helps tonify and strengthen all urinary passages
- Works well with all cases of prostatitis
- Helpful for interstitial cystitis

Eclectics used this in cases of:
- Chronic irritation of the bladder
- Enuresis
- Excessive mucous and bloody discharges in the urine

- Excellent support for urethritis, prostatitis
- Dose is 4.5 – 8.5 mls/day, divided
ProstaCo

• Combines Saw Palmetto and Nettle root
• Contains Crataeva which is an anti-inflammatory and improves bladder tone
• Pumpkin seed oil contains omega 3’s but is also a traditional remedy for prostatitis
• Supports healthy bladder function
• Can help with mild muscle spasms
• Dose is 4 caps/day

Asymptomatic Inflammatory Prostatitis

• Common finding in men with BPH
• Painless inflammation of the prostate gland
• No obvious sign of infection however WBC’s are usually elevated
• Treatment with antibiotics shown to be ineffective
• PSA is often used as a baseline diagnostic criteria
Alternative Considerations

• Consider evaluation of sex hormones
• Anti-inflammatory herbs are often helpful
• Uva Ursi is useful as an antiseptic and astringent
  – 1:2 extract – dose is 4.5 – 8.5mls/day, divided
• Saw palmetto has also been shown to be helpful

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- **Supports healthy urinary tract function**
- Relieves smooth muscle spasms
- Dose is 1 tsp/day, divided
Urinary Antiseptic Herbs

- Typical indications for the use of urinary antiseptic herbs could include:
  - UTI's
  - Urinary stones
  - Prostatitis
  - Interstitial cystitis
- Should not be used with kidney disease, renal failure or during pregnancy
- Can be taken before or with meals

Urinary Antiseptic Herbs

- Herbal options
  - **Golden Seal 1:3 (urinary antiseptic)**
    - Dose is 5mls/day, divided
  - **Golden Seal 500mg (urinary antiseptic)**
    - Dose is 1-3 tabs/day
  - Buchu
    - Contains in Cranberry Complex and Urico Phytosynergist®
**Golden Seal 500mg**

- Assists with normalization of urinary tract discharges
- Works well as an antiseptic for the genito-urinary system
- Helps reduce inflammation along mucous passages
- Dose is 2 tabs 2x/day acutely
- Can be taken prophylactically at 2/day

**Urico Phytosynergist**

- Best used at first onset of UTI, for males or females
- Supports normalization of urinary system function
- Contains herbs which support the prostate, immune system, urinary mucous membranes and general urinary tissues
- Dose is 5mls 1x/day, divided
**ProstaCo**

- Works well for BPH and associated symptoms
- **Also works for chronic prostatitis with pain and cramping with ejaculation as well as bloody semen**
- Excellent when combined with immune and anti-inflammatory herbs
- Contains nettle root, saw palmetto, Crataeva stem bark and pumpkin seed oil
- Dose is 2 caps 3x/day

**Prost-X™**

- Enzyme extract of the bovine prostate gland
- Contains phosphatase which is in abundance in the prostate gland
- Helps mobilize calcium in the prostate
- **Useful for prostate pain which is often related to calcium metabolism**
- Helps restore normal function to the prostate quickly
- Dose is 6 caps/day
Supplement Recap

• Acute and chronic infections
  – Echinacea Premium – 3-6 tabs OR
  – Andrographis Complex – 3-6 tabs
  – Golden Seal 500mg – 3 tabs/day
  – Saw Palmetto – 5mls/day, divided
  – Cranberry Complex – 3 tabs/day
  – ProstaCo – 6 tabs/day
  – Nettle root – 1.0 ml to 1.5ml/day

Supplement Recap

• Chronic Non-Bacterial Prostatitis
  (Chronic Pelvic Pain Syndrome)
  – ProstaCo – 2 tabs 3x/day
  – Uva Ursi – 5mls/day, divided
  – Saw Palmetto – 5mls/day, divided
  – Golden seal – 2 tabs 2x/day
Supplement Recap

• **BPH or prostate inflammation**
  – Cranberry Complex – 3 tabs/day
  – Saw Palmetto – 5mls/day, divided
  – Nettle root - 1.0 – 1.5 mls/day, divided
  – Golden Seal 500mg – 1 tab 3x/day
  – Prostaco – 2 tabs 3x/day
  – Prost-X – 2 tabs/3x/day

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Supplement Recap

• **Asymptomatic Inflammatory Prostatitis**
  – Uva Ursi – 5mls/day, divided
  – Golden Seal 500mg – 3 tabs/day
  – Saw Palmetto – 5mls/day, divided
  – Urico – 5mls/day, divided
  – Prostaco – 2 tabs 3x/day
  – Prost-X – 2 tabs 3x/day

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84 Year Old Male

- History and symptoms
  - Wired personality, hyperactive, talks fast
  - Very active but always tired
  - Some digestive issues (bloating, indigestion)
  - Loss of libido (his greatest concern)
  - Multiple symptoms indicating loss of androgen dominance
  - Using testosterone cream
84 Year Old Male

- Initial recommendations
  - Saliva testing
    - Adrenal glands (ASI™)
    - Male hormones (eMHP™)
  - Order thorough blood panel
- Ragland’s test showed a 15 point drop in systolic BP
- He was very concerned that I would take him off his testosterone cream
- Wanted to make sure he could still remain sexually active…

84 Year Old Male - ASI

| Adrenal Stress Index (Original) |  
|--------------------------------|----------------------------------|
| Free Cortisol Rhythm           |                                  |
| 06:00 - 08:00 AM               | 13 Normal                        | 13-24 nM |
| 11:00 - 1:00 PM                | 11 Elevated                     | 5-10 nM  |
| 04:00 - 05:00 PM               | 7 Normal                        | 3-8 nM   |
| 10:00 - Midnight               | 5 Elevated                      | 1-4 nM   |

Cortisol Load: 36

The cortisol load reflects the area under the cortisol curve. This is an indicator of overall cortisol exposure, where high values favor a catabolic state, and low values are sign of adrenal deterioration.

- DHEA: (7-10) 5
- Insulin fasting: (3-12) <3
- Insulin non-fasting: (5-20) <3
- 17OH Progesterone: (22-100) 24
- Total SlgA: (10-20) 8
- Gluten antibody: (>13) 22
84 Year Old Male - eMHP

Initial comments
- DHEA is 5 (see adrenal test)
- Progesterone is low/normal
  - Optimal is 50 – 95 mg/mL
- All other androgens are elevated
- Testosterone is converting into estradiol
- Estrone seems unaffected
- LH is slightly elevated
- Test clearly shows source of exposure is testosterone which is spilling over in every direction
- But his blood test tells a different story
84 Year Old Male Serum Test

<table>
<thead>
<tr>
<th>Testosterone (free)</th>
<th>Normal</th>
</tr>
</thead>
<tbody>
<tr>
<td>DHEA-S:</td>
<td>Normal</td>
</tr>
<tr>
<td>Estradiol:</td>
<td>Slightly High</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Unit</th>
<th>Normal Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free Testosterone</td>
<td>pg/mL</td>
<td>6.6-18.1</td>
</tr>
<tr>
<td>DHEA-Sulfate</td>
<td>ug/dL</td>
<td>16.2-123.0</td>
</tr>
<tr>
<td>Estradiol</td>
<td>pg/mL</td>
<td>7.6-42.6</td>
</tr>
</tbody>
</table>

84 Year Old Male

- Saliva test seems to show cell receptors have down regulated
- LH is slightly elevated
- High estradiol and exogenous testosterone cause reduced feedback to the hypothalamus and pituitary
- Symptoms of deficiency (fatigue, loss of libido even though on testosterone)
- Serum test shows testosterone is normal
- He wanted a saliva retest – must not be accurate
84 Year Old Male

- Same results as the first test
- He was convinced the saliva test was wrong because his doctor already tested his hormones

<table>
<thead>
<tr>
<th>Code</th>
<th>Test Name</th>
<th>Result / Notes</th>
<th>Reference Values/Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTF</td>
<td>Free Testosterone</td>
<td>&gt;200 (High)</td>
<td>Male (&gt; 70 yrs): 15-45 pg/ml</td>
</tr>
</tbody>
</table>

84 Year Old Male

- Need to get topical testosterone use decreased/eliminated
- Herbal support to support endogenous production
- Initial protocol (based on both saliva tests)
  - 21-Day Purification Program
  - Adrenal tonic – 1 tsp. 3x/day
    - Rehmannia 1:2 90mls, Ashwaganda 1:1 65mls, Echinacea Premium 1:2 35mls, Licorice High Grade 1:1 10mls
84 Year Old Male

- When finished, continue:
  - Livaplex® - 3 caps 2x/day
  - Adrenal tonic – 1 tsp. 3x/day
  - Tribulus – 2 tabs 2x/day
  - Symplex M® – 3 tabs 2x/day
- Patient was unwilling to do much with his diet – said it was already good
- Moderately compliant with protocol
- Finally decided he didn’t care about the problems with estrogen, just wanted to stay on his testosterone

37 Year Old Male

- History and symptoms
  - Very stressful job – works in coffee industry
  - On 2 medications – one for anxiety and one for sleep – neither are working very well
  - Overall discontented with his life – wants a change
  - Noticing greater loss of muscle tone
  - Decreased morning erections
  - Feels in a “blue funk” for no reason; slightly depressed
  - Diet high in refined carbs and grains
37 Year Old Male

- Ordered the appropriate saliva tests
- He began working on his diet
- Started the following while waiting for tests (based on ASI only…)
  - Adrenal tonic – 1 tsp 3x/day
    - Rehmannia 1:2 90mls, Ashwaganda 1:1 65mls, Echinacea Premium 1:2 35mls, Licorice High Grade 1:1 10mls
  - Drenamin® – 3 tabs 2x/day
  - Symplex M® – 3 tabs 2x/day
  - Withania Complex – 2 tabs 3-4x/day

37 Year Old Male - ASI

<table>
<thead>
<tr>
<th>Adrenal Stress Index (Original) - Saliva</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free Cortisol Rhythm - Saliva</td>
</tr>
<tr>
<td>06:00 - 08:00 AM</td>
</tr>
<tr>
<td>11:00 - 1:00 PM</td>
</tr>
<tr>
<td>04:00 - 05:00 PM</td>
</tr>
<tr>
<td>10:00 - Midnight</td>
</tr>
<tr>
<td>Total Cortisol Output</td>
</tr>
</tbody>
</table>

The Total Cortisol Output is the sum of the four cortisol values and reflects overall cortisol output. Elevated values may indicate hypercortisolism or exogenous exposure, and low values suggest adrenal hypofunction.

DHEA: (7-10) 3
Insulin fasting: (3-12) <3
Insulin non-fasting: (5-20) <3
17OH Progesterone: (22-100) 61
Total SIgA: (10-20) <5
Gluten antibody: (>13) <1
37 Year Old Male ASI Recap

• Comments and recommendations
  - Cortisol is elevated during his work day hours
  - Drops off when he gets off work
  - DHEA very low
  - May have blood sugar regulation issues
  - 17-OH Progesterone is higher than usually seen
  - Gut is compromised – likely due to high gluten consumption even though he did not show sensitive

37 Year Old Male - eMHP

<table>
<thead>
<tr>
<th>Test Name</th>
<th>Result / Notes</th>
<th>Reference Values/Key</th>
</tr>
</thead>
</table>
| Androstenedione               | 310 Normal     | Borderline Low: 100-150 pg/ml
                               |                | Normal: 151-350 pg/ml                                      |
|                               |                | Borderline High: 351-450 pg/ml                             |
| Dihydrotestosterone           | 90 High        | Male (30-39 yrs): 22-72 pg/ml                             |
|                               |                | The next age bracket (40 - 49 years) has values 52 - 123 pg/ml. |
| Estradiol                     | 2 Normal       | Male (20-49 yrs): 1-3 pg/ml                               |
| Estriol                       | <5             | Male (18-80 yrs): 5-40 pg/ml                               |
| Milk (Casein) Ab. SlgA (Saliva) | Negative     | Normal: Negative                                          |
| Egg (Albumin) Ab. SlgA (Saliva) | Negative     | Normal: Negative                                          |
| Follicle Stimulating Hormone  | 131 Elevated   | Normal All Ages: <125 uiU/mL                               |
| Luteinizing Hormone           | 18 Normal      | Normal All Ages: 10-25 uiU/mL                              |
| Progesterone                  | 84 Normal      | Male (adult): 5-95 pg/ml                                   |
| Free Testosterone             | 100 High       | Male (31-40 yrs): 50-80 pg/ml                              |

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37 Year Old Male eMHP Recap

- DHEA 5 (low normal)
- Progesterone 84 (normal)
- Androstenedione 310 (normal)
- Testosterone 100 (high)
- DHT 90 (high)
- Estradiol 2 (normal)
- FSH 131 (high)
- LH 18 (normal)

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37 Year Old Male

- Revised protocol – including eMHP results
  - Continue on tonic, Drenamin®, Withania Complex and Symplex M®
  - Evaluate for possible exogenous hormone exposure (elevated testosterone)
  - Begin 21-Day Purification Program to help clear and normalize testosterone and DHT levels

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37 Year Old Male

• 6 week visit:
  – Reports having better energy overall
  – Dietary changes are going well
  – Started weaning off anti-depressant
  – Withania is working AMAZING!!
  – Stopped sleeping pills – add Valerian Complex and/or Kava Forte
  – Overall, very encouraged with his progress

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37 Year Old Male

• 10 week follow-up
  – Finished 21-Day Purification and felt amazing
  – Still trying to locate source of possible testosterone exposure
  – Sleep is going very well with the addition of Valerian Complex (sometimes adds Kava if day has been more stressful)
  – Continuing adrenal tonic, Drenamin®, Symplex M®, Withania Complex as needed

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37 Year Old Male

• 14 week follow-up
  - Reports feeling like a different person
  - Started working out and able to see
    noticeable difference in muscle tone
  - Morning erections are increasing
  - Libido is much better
  - Depression (“blue funk”) is completely
gone
  - Mind and head are clear
  - Wants to find another job but content
  where he is

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37 Year Old Male

• 14 week modified protocol
  - Tonic – 1 tsp./day
  - Withania Complex – as needed
  - Valerian and/or Kava – as needed
  - Symplex M® – ongoing male hormone
    support
  - Tribulus – 2 tabs 3x/day
  - Catalyn® – 3 tabs 2x/day
  - Trace Minerals B12™ – 2 tabs 2x/day
  - Tuna Omega 3 oil – 2 perles 2x/day

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56 Year Old Male

• History and symptoms
  - Libido is completely gone
  - Very high stress at work
  - Works/lives 2 hours away from home so commutes Monday’s and Friday’s
  - Presented with classic symptoms of low testosterone/androgens
  - Decreased morning erections
  - Difficulty sleeping
  - Says he feels “blah” all the time
  - Diet is as good as it can be during his workweek

56 Year Old Male

• Tried multiple supplements to help with libido and hormone balance
• Was on testosterone patch for several months – made him feel horrible
• Using a protein powder on the weekends designed to enhance muscle strength
• Trying to exercise but it is difficult – says he is “beyond exhausted”
56 Year Old Male

- Initial recommendations
  - Saliva testing
    - Adrenal glands (ASI™)
    - Male hormones (eMHP™)
  - Order thorough blood panel
- Discussed ideas to help with his diet and food management while he’s on the road
- Reviewed *Dietary Makeover CD*
- Talked about endocrine triangle and importance of supporting adrenals

56 Year Old Male

- Initial protocol (began right away)
  - Adrenal tonic – 1 tsp 3x/day
    - Rehmannia 1:2 90mls, Ashwaganda 1:1 65mls, Echinacea Premium 1:2 35mls,
      Licorice High Grade 1:1 10mls
  - Drenamin® – 3 tabs 2x/day
  - Symplex M® – 3 tabs 2x/day
  - Kava Forte – 1-2 tabs 3x/day; 1-2 before bed for sleep if needed
  - Digest – 1 tab taken 15 minutes before every meal
56 Year Old Male - ASI

**Adrenal Stress Index**

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Count</th>
<th>Status</th>
<th>Normal Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>06:00 - 08:00 AM</td>
<td>24</td>
<td>Normal</td>
<td>13-24 nM</td>
</tr>
<tr>
<td>11:00 - 1:00 PM</td>
<td>6</td>
<td>Normal</td>
<td>5-10 nM</td>
</tr>
<tr>
<td>04:00 - 05:00 PM</td>
<td>5</td>
<td>Normal</td>
<td>3-8 nM</td>
</tr>
<tr>
<td>10:00 - Midnight</td>
<td>2</td>
<td>Normal</td>
<td>1-4 nM</td>
</tr>
</tbody>
</table>

**Cortisol Load:** 37 23 - 42 nM

The cortisol load reflects the area under the cortisol curve. This is an indicator of overall cortisol exposure, where high values favor a catabolic state, and low values are sign of adrenal deterioration.

- **DHEA:** (7-10) 14
- **Insulin fasting:** (3-12) <3
- **Insulin non-fasting:** (5-20) 27
- **17OH Progesterone:** (22-100) 27
- **Total SlgA:** (10-20) 6
- **Gluten antibody:** (>13) 5

Comments and recommendations:

- Cortisol looks very normal with excellent HP axis signaling
- DHEA is elevating – possibly exogenous exposure or increased ACTH/HP axis dysregulation
- Appears to have slight insulin resistance; ask about meal contents and timing
- GI lining appears compromised
- Gliaden negative
## 56 Year Old Male eMHP Recap

- **DHEA**: 14 (high)
- **Progesterone**: 33 (low)
- **Androstenedione**: 221 (normal)
- **Testosterone**: 47 (normal)
- **DHT**: 41 (low)
- **Estradiol**: 7 (high)
- **Estrone**: 39 (normal)
- **FSH**: 175 (high)
- **LH**: 16 (normal)
56 Year Old Male

• Comments
  – DHEA elevation may be coming from protein powder he was using (cortisol looks normal)
  – Topical testosterone appears to have cleared however estradiol is still elevated
  – FSH is high indicating reduced sperm production
    • Could be due to decreased availability of testosterone or receptor down-regulation
  – Needs male hormone support, continued liver detoxification and adaptogens

56 Year Old Male

• 4 week follow-up appointment
  – Feels overall improvement
  – Energy is better
  – Greater mental alertness (didn’t realize he was in such a fog all the time)
  – Digestion better; bloating gone
  – Kava has helped greatly with sleep quality
  – Libido has not returned but he says he is “starting to feel more like himself again”
56 Year Old Male

- Revised protocol (based on both tests)
  - 21-Day Purification (with Dr. Ronda’s modifications)
  - Continue adrenal tonic - 1 tsp. 3x/day
- When finished with purification, continue
  - Adrenal tonic – 1 tsp. 2x/day
  - Drenamin® – 3 tabs 2x/day
  - Kava Forte as needed

---

56 Year Old Male

- Male hormone support
  - Symplex M® – 3 tabs 2x/day
  - Tribulus – 2 tabs 3x/day
  - Orchic PMG® – 3 tabs 2x/day
- Overall nutritional support (optional)
  - Catalyn® - 3 tabs 3x/day
  - Trace Minerals B12™ – 2 tabs 2x/day
  - Cod Liver Oil – 2 gelcaps 2x/day
56 Year Old Male

- 8 week follow-up appointment
  - Improvement is significant
  - Libido and morning erections are returning – notices most improvement when he feels more calm and relaxed
  - Looking for another job closer to home
  - Uses Withania or Kava during commute to keep him calm
  - Digestive issue are still completely resolved
  - Loves the new “diet”
  - Couldn’t be happier!

48 Year Old Male

<table>
<thead>
<tr>
<th>Hormone</th>
<th>Result</th>
<th>Notes</th>
<th>Reference Ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSH - Follicle Stimulating Hormone</td>
<td>58</td>
<td>Normal</td>
<td>Normal All Ages: &lt;125 uIU/mL</td>
</tr>
<tr>
<td>LH - Luteinizing Hormone</td>
<td>59</td>
<td>Elevated</td>
<td>Normal All Ages: 10-25 uIU/mL</td>
</tr>
</tbody>
</table>
Pediatricians and veterinarians have reported rapid changes in their patients’ hormonal status. They believe this is due to inadvertent exposure to topical hormones. Unsuspecting sources can also include body care products of all kinds. Testosterone gels and topical estradiol sprays are required to carry warnings about their use.

Causes of secondary exposure resulting in virilization of children have been reported. Signs and symptoms have included enlargement of genitalia, pubic hair, increased libido, aggressive behavior, and advanced bone age.

Breast budding and breast masses in prepubertal females and gynecomastia and breast masses in prepubertal males have been reported following unintentional secondary exposure to Evamist by women using this product.
Clearing Excess Hormones

• Supporting healthy liver detoxification pathways is essential
• Start with 21-Day Liver Purification
• Follow with Livaplex®, Livco®, A-F Betafood® or Livton®
• Include artichokes, beets, carrots, apples
• Tuna Omega 3 oil or Cod Liver oil
• Black Currant Seed oil
• Milk thistle (silybum mairanum)
• Dandelion (taraxacum officinale)

Case Study: 15yo male

• Puberty came on quickly
• Muscle development advanced – beyond normal size
• Aggressive, defiant
• Poor concentration; difficulty studying
• Severe cystic acne
• Extremely muscular
Case Study: 15yo male

- Unwilling to do 21-Day Liver Purification or make dietary modifications
- Started the following protocol:
  - Livaplex – 3 caps 2x/day
  - Livco – 2 tabs 2x/day
  - Green Food – 3 caps 2x/day
  - Betafood – 3 tabs 2x/day
  - Zypan – 2 with meals
- After 45 days, face improved by 50%
- Stopped supplements, face got worse
Thank you for attending!

Individualized consultations are available for doctors or other health practitioners.

For more information, please contact Dr. Ronda Nelson at: ronda@restorationhealth.net 530-245-0880

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