Pfffff! Deer Valley...... Park City Mountain Rocks!
“Low T” Syndrome

Low Testosterone or
Hypogonadism in Men
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St. Louis Urological Surgeons
How does this 67-year-old doctor have the body of a 30-year-old?

INCREASE VIRILITY!
RECHARGE YOUR SEX LIFE!
GET BIGGER AND STRONGER!
IMPROVE YOUR HEALTH AND ENERGY!
FOUNTAIN OF YOUTH!
Objectives

- What is testosterone and what does it do?
- What is “Low T”?
- Prevalence of “Low T”: How common is it?
- Signs and Symptoms, Diagnosis: Could I have it? What can it do to me?
- Treatment Options: A rapidly expanding market.
- Safety: Is testosterone replacement therapy safe?
- Caution: There is a lot we don’t know yet.
What is Testosterone?

- Steroid hormone
- Anabolic
- Secreted by the testes (Leydig cells)
- Small amounts from the adrenals
- Derived from cholesterol
- Has wide reaching effects on almost every body system
Dihydrotestosterone

Testosterone is converted to dihydrotestosterone in some end organs by the enzyme 5 alpha reductase.

DHT:

1) Develop male genitalia
2) Prostate growth
3) Hair loss
5 alpha reductase inhibitors

Proscar, Avodart, Jalyn:
Reduce the size of the prostate gland to decrease sxs of BPH.

Does NOT lower testosterone.

Rogaine, Propecia:
Reduce hair loss and stimulate growth of hair.

NOT for pregnant women!
MY FRIEND - THE YEAR IS 2011.
I HAVE A MACHINE THAT CAN LOOK THROUGH YOUR SKIN AND SEE YOUR BONES. I HAVE A MACHINE THAT CAN KEEP YOU ALIVE EVEN IF YOUR BRAIN AND HEART DON'T WORK.
I EVEN HAVE A MACHINE THAT CAN LOOK AT A DROP OF YOUR SPIT AND TELL ME WHO YOUR PARENTS ARE. BUT RIGHT NOW, I NEED TO ROUGHLY GAUGE THE APPROXIMATE SIZE OF YOUR PROSTATE, SO I'M JUST GONNA STICK MY FINGER IN YOUR BUTTHOLE AND WIGGLE IT AROUND A BIT.

SEEMS UNNECESSARILY ARCHAIC...

AND YET HERE WE ARE...
What Does Testosterone Do?

- Development of Male Genitalia
- “Male Brain”
- Erectile Function and Sex Drive
- Increase Muscle Mass
- Decrease Body Fat
- Increase Bone Density
- Increase Prostate Size
Testosterone Regulation: HPG Axis

1. Hypothalamus
2. GnRH
3. Pituitary
   - LH
   - FSH
4. Leydig cells
5. Sperm
6. Seminiferous tubule
7. Testis
What is “Low T”?

Total testosterone level
Bioavailable testosterone
Free testosterone
SHBG: Sex hormone binding globulin
Albumin

Caution: Wide “normal” ranges (220-1100), variable from lab to lab.
“Low T” Syndrome

- Decreased libido, ED
- Decreased muscle mass
- Increased body fat, truncal obesity
- Decreased bone density
- Low energy, loss of “mojo”
Percentage of Men with Low Testosterone Rises as They Age

HIM Study: prevalence of hypogonadism in 2165 men > age 45 presenting to 95 primary care practices

<table>
<thead>
<tr>
<th>Age Range, Years</th>
<th>Percentage of men with low testosterone</th>
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<tbody>
<tr>
<td>Total (45+)</td>
<td>39%</td>
</tr>
<tr>
<td>45–54</td>
<td>34%</td>
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<tr>
<td>55–64</td>
<td>40%</td>
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<tr>
<td>65–74</td>
<td>40%</td>
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<tr>
<td>75–84</td>
<td>46%</td>
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<tr>
<td>85+</td>
<td>50%</td>
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Diagnosis of “Low T”

- Signs and Symptoms
- Total testosterone level
- Free testosterone level
- LH and Prolactin level
- PSA level: Prostate bx if high
Prostate Cancer and Testosterone

- Prostate cancer is treated by blocking testosterone
- Testosterone supplementation in a pt with known prostate cancer is contraindicated
- Testosterone supplementation has not been shown to increase the risk of prostate cancer
No. Ironically, this will not involve an anal probe. I get that a lot.
Treatment Options

- Injections: 100mg/week
- Patch: (Androderm, Testoderm)
- Gel: Most widely used method (Androgel, Testim, Fortesta)
- Buccal Pellet
- Oral (pills): high liver toxicity, not an option
- Depot Pellet
- Clomiphene
“Natural Supplements”
Safety and Side Effects

- Erythrocytosis
- Infertility
- Smaller testes
- Fluid retention
- Acne
- Breast enlargement
- Altered mood “roid rage”

No worries about:
- Heart dx
- HTN
- BPH
- Liver toxicity
Monitoring

- Testosterone levels, mid cycle
- H and H
- PSA
- Signs and Symptoms
Summary of “Low T”

- Prevalent
- Treatable
- Supplementation is Safe
- Monitoring is Mandatory
- Caution: No long term studies
Thank you!

Whenever you feel worthless, REMEMBER
you were once the quickest sperm cell.