A SPOTLIGHT ON MEN’S HEALTH 20-80 YEARS OLD

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INTEGRATIVE HEALTHCARE SYMPOSIUM
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Goals

• To highlight the specific age related conditions and concerns for men in their 20’s, 40’s, 60’s and 80’s
• Specific factors for health, disease and wellness will be targeted
• Herbal and supplement recommendations will be attached to each age range for solutions to avert disease and achieve optimal wellness.
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Michael E. Greer M.D. FACOG

- **Michael Greer, MD,** weaves together the best of conventional (allopathic) approaches with natural medicine philosophies.

- He is an Integrative Medicine Practitioner with a mission is to provide a wide range of health practitioners with a solid medical understanding of holistic, herbal, homeopathic, and naturopathic solutions for health.

- Dr. Greer trained at Hahnemann Medical University in Philadelphia (now Drexel University College of Medicine), was board certified in OB-GYN, and was named Teacher of the Year at Swedish Hospital Family Practice Residency Program.

- In his transition to integrative medicine, he studied with numerous natural medicine experts. He retired from OB-GYN in 2011 and now lectures and consults exclusively for health care practitioners.
Goal of the Lecture

• Establish importance of testosterone
• Detail related disease as a result of its deficiency
• Detail treatments of deficiency with herbs, vitamins and hormones (not the major purpose of this lecture) to allow improvement in well being
• Leave with immediate remedies for
  • Men’s testosterone deficiency
  • Treatments to start in your practice
• Establish what you can do and how the choices work
Disclaimer

This seminar is intended for healthcare practitioners only.

The material and information contained in this seminar is not for the diagnosis or treatment of disease.

The information is designed to assist doctors and other healthcare practitioners in evaluating the patients metabolic and nutritional status.

The information presented is for educational purposes only.

It is the sole responsibility of the healthcare practitioner using this information to determine if what is outlined herein is appropriate for his or her purpose.
• “It's no secret that women tend to seek medical attention earlier and more frequently than men

• They're also more proactive about prevention, and more likely to seek nutrition and lifestyle-based modes of managing common disorders

• Many American men take the, "If it ain't broke, don't fix it," ethos to the extreme when it comes to their own health and wellbeing

• Men will often ignore signs that things are breaking and wait until there's a serious problem before seeking care”
Gradual Decline after 20

• After peaking in the 20s, a man's level of free testosterone tends to gradually decrease and to further decline throughout the remainder of his years

• Low testosterone levels may be a risk factor for cognitive decline and possibly for Alzheimer's-type dementia as well

Normal or average Testosterone Levels

• In general, the normal range in males is about 270 to 1070 ng/dL with an average level of 679 ng/dL.

• A normal male testosterone level peaks at about age 20, and then it slowly declines

• Testosterone levels above or below the normal range are considered by many to be out of balance


<table>
<thead>
<tr>
<th>Male</th>
<th>T Level (ng/dL):</th>
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<tbody>
<tr>
<td>Age:</td>
<td>T Level (ng/dL):</td>
</tr>
<tr>
<td>0-5 months</td>
<td>75-400</td>
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<tr>
<td>6 mos.-9 yrs.</td>
<td>&lt;7-20</td>
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<tr>
<td>10-11 yrs.</td>
<td>&lt;7-130</td>
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<tr>
<td>12-13 yrs.</td>
<td>&lt;7-800</td>
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<tr>
<td>14 yrs.</td>
<td>&lt;7-1,200</td>
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<tr>
<td>15-16 yrs.</td>
<td>100-1,200</td>
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<tr>
<td>17-18 yrs.</td>
<td>300-1,200</td>
</tr>
<tr>
<td>19+ yrs.</td>
<td>240-950</td>
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<tr>
<td>Avg. Adult Male</td>
<td>270-1,070</td>
</tr>
<tr>
<td>30+ yrs.</td>
<td>-1% per year</td>
</tr>
</tbody>
</table>


Free Testosterone Decline

• This age-related decline in free testosterone may result in the manifestation of everyday symptoms and complaints

  – Foggy thinking
  – Decreased stamina
  – Decreased muscle mass
  – Decreased mental ability
  – Depression
  – Insulin resistance
  – Anxiety and irritability
  – Osteopenia/osteoporosis

  – Elevated cholesterol
  – Night sweats and palpitations
  – Nervousness
  – Decreased erections
  – Increased abdominal fat
  – Decreased urine flow
  – Fatigue and exhaustion
T/E Ratio

• As men grow older, levels of free testosterone decrease and estrogen levels increase

• The average 60-year-old man has more circulating estrogen in his blood than the average 60-year-old female

• New research has shown in that even small increases in estrogen may have detrimental effects on men's cardiovascular health

Elevated Estrogen?
Low Testosterone Markers

• Low testosterone is associated with increased morbidity and mortality

• Poor general health and certain medical conditions such as diabetes/metabolic syndrome (MetS), cardiovascular disease (CVD), and osteoporosis have been associated with low serum testosterone levels. [1],[2],[3]

• Low testosterone may be a predictive marker for those at high risk of cardiovascular disease

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Estrogen Dominance

• As a result of estrogen dominance, men become increasingly prone to benign prostatic hypertrophy (BPH) and prostate cancer

• It is important to monitor estrogen levels
  • Estradiol (E2) primarily, but also Estrone (E1)

• Testosterone levels can be increased via the Pituitary (LH), Adrenal glands and Aromatase inhibitors
Aromatase Enzyme

• One of the most important factors that affect testosterone levels in men is the enzyme aromatase
  • Responsible for converting testosterone into estrogen, thus altering estrogen to testosterone
  • Found in fat tissue and produced in estrogenic tissue

Aromatase Enzyme End Results
(References-Next Slide)

• It has long been known that aging men are at risk for having excess activity of an enzyme called aromatase. The effect of surplus aromatase is that too much testosterone is converted to estrogen.37,38

• Aging men have a propensity to develop dangerously high levels of estrogen combined with woefully inadequate testosterone, though many aging men suffer both low testosterone and estrogen.39,40

• Elevated estrogen can sharply increase heart attack risk by promoting platelet aggregation and coagulation in coronary arteries.41,42 Higher estrogen in men also increases inflammation which can cause unstable plaque to rupture and occlude a coronary artery, thus creating a sudden heart attack.43-45
Aromatase Enzyme End Results

References


Estrogen and GNRH relationship

- **High estradiol**, in the negative feedback mechanism, can shut down Gonadotrophin-Releasing Hormone (GNRH) secretion
  - Responsible for signaling the pituitary to produce more luteinizing-hormone (LH) and follicle stimulating hormone (FSH)
- LH is the primary messenger hormone to signal the Leydig cells in the testes to produce more testosterone
Estrogen Dominance = Insulin Resistance

• Overweight people have too much
• INSULIN RESISTANCE
• MAN BOOBS
• LEPTIN RESISTANCE
• PERSISTENT HUNGER
• LOW THYROID
• LOW TESTOSTERONE
Effects of Estrogen Dominance

- Puts a lock on weight loss
- Triggers inflammation (ie, cortisol), which binds sex hormone binding globulin (SHBG) including TBG (thyroid binding globulin)
  - Decreases metabolism, energy, heat production and weight loss
- Testosterone deficiency

Stress and Reproduction

• Both male and female reproductive systems are inhibited at all levels by stress

• Corticotropin releasing hormone (CRH) decreases gonadotrophin hormone releasing hormone (GnRH)
  • Decreased or absent libido in stressful situations

Graeme P. Williams, The role of estrogen in the pathogenesis of obesity, type 2 diabetes, breast cancer and prostate disease; European Journal of Cancer Prevention 2010, Vol 19 No 4
Laboratory Evaluations for Integrative and Functional Medicine -2nd edition Richard Lord (Director of Dept. of Science and Education at Metametrix Clinical Laboratory), J. Alexander Bralley (CEO, Metametrix Clinical Laboratory), 2008 pg 563-574
Molecular Endocrinology. 1998;2,4,313-323.
Cortisol, Estrogen & Fat

• Cortisol and its relationship to estrogen and its facilitation into fat
• Cortisol and its relationship to thyroid function are the main and most important things you must know

• ↑ estrogen → ↑ cortisol → ↓ Thyroid
• ↑ cortisol → ↑ estrogen → ↓ Thyroid
Systemic Inflammation Disrupts Hormones
(our plan of attack is)

1. Improve Digestion
2. Minimize Cortisol
3. Lower Insulin Level
4. Eliminate Excess Estrogen
5. Treat Sub-clinical Hypothyroidism
6. Support the Adrenal Glands
7. Eat Healthy and in Moderation
8. Exercise
9. Kill the Inflammation
10. Sleep
TO DECREASE ESTROGEN AND INCREASE TESTOSTERONE

Hit the LIVER, GALLBLADDER AND

Take Mandatory FIBER (40 grams/day) to bind the toxins

In addition to Losing weight if possible
Estrogen Dominance & Cortisol
(The Catch 22)

• Estrogen triggers inflammation (i.e., cortisol), which binds sex hormone binding globulin (SHBG) including TBG (thyroid binding globulin)
• Fat cells make leptin and produce estrogen
• Leptin, insulin, cortisol and estrogen all increase aromatase activity
• Vice versa: Leptin and estrogen increase fat deposition and inhibit insulin receptors making the body compensate by making more insulin, which in turn increases estrogen receptor number and activity
• Decreases metabolism, energy, heat production and weight loss
• Increased estrogen, increased insulin and elevated cortisol all inhibit leptin receptors (that signal satiety), thus allowing overeating (glucose) and thus elevated insulin (triggered by the elevated blood glucose) and aromatase with the estrogen dominance cycle unabated

Graeme P. Williams, The role of estrogen in the pathogenesis of obesity, type 2 diabetes, breast cancer and prostate disease; European Journal of Cancer Prevention 2010, Vol 19 No 4
Laboratory Evaluations for Integrative and Functional Medicine -2nd edition Richard Lord (Director of Dept. of Science and Education at Metametrix Clinical Laboratory), J. Alexander Bralley (CEO, Metametrix Clinical Laboratory), 2008 pg 563-574
Elevated Cortisol - The “Catch 22”

• Elevated Cortisol is associated with anxiety, insulin resistance, obesity, osteoporosis, insomnia, accelerated aging and lowered immunity

• Elevated Cortisol automatically elevates Estrogen and Insulin levels
The Problem In Men’s Health Maintenance

• The biggest problem that men have ---is not so much a specific disease, but the diseases they have are the result of lack of health care monitoring earlier in life
• Men just do not go to the health care providers for numerous reasons
Our Men’s Oath

“Men are always ‘great’ unless we are just ‘fine’. We are simply raised that way; loss, heartbreak, financial chaos – we’re loath to share most of our personal troubles...

And when it comes to our physical well-being, we keep the cards especially close.”

• David Zinczenko, Editor-in-chief, Men’s Health
Men in General

“The US is home to 157 million adult men, and 12% of them report their health status as fair or poor

STUDY GROUP

62.6 % Caucasian
13.2 % Black
17% Hispanic and Asian

https://en.wikipedia.org/wiki/Race_and_ethnicity_in_the_United_States.
Gender Differences
Slide courtesy of Berris Burgoyne ND, B.HSc

• Gender also determines vulnerability to stress
• Males and females react differently to stress
• There is a clear pattern for sex-specific prevalence rates of several mental and physical disorders
• Men are more susceptible to infectious diseases, cardiovascular disease, aggressive behavior and alcohol and drug abuse
• Women have higher rates of autoimmune diseases, chronic pain, depression and anxiety
Health, Alcohol, Tobacco

• Men 18 years and over who are in fair or poor health: 12.2%
• Men 18 years and over who had five or more drinks in 1 day at least once in the past year: 31.4%
• Men 18 years and over who currently smoke cigarettes: 18.9%

https://en.wikipedia.org/wiki/Race_and_ethnicity_in_the_United_States
http://www.cdc.gov/nchs/fastats/mens-health.htm
Obesity and Hypertension At 20

- Men 20 years and over with obesity: 34.5% (2011-2014)
- Men 20 years and over with hypertension (measured high blood pressure and/or taking antihypertensive medication): 32.6% (2011-2014)

Leading Causes of Death
- Heart disease
- Cancer
- Accidents (unintentional injuries)

https://en.wikipedia.org/wiki/Race_and_ethnicity_in_the_United_States
http://www.cdc.gov/nchs/fastats/mens-health.htm
http://www.cdc.gov/nchs/fastats/mens-health.htm
Tummy Insulin Resistance
The Dangers of Excess Insulin

• High serum insulin promotes hypertension by impairing sodium balance\textsuperscript{1}
• Too much insulin harms the kidneys\textsuperscript{2}
• By acting as a catalyst in promoting cell growth, excess insulin increases the risk and progression of certain cancers\textsuperscript{3}


20 Year Old Men and Death Risk

• For every age group, men have a much higher annual death risk than women

• For 20-year-olds, the risk is 2.5 to three times greater for men

• Men are much more prone to accidents, homicides and suicides

• By age 50, however, these causes make up less than 10 percent and heart disease is No. 1, accounting for more than 30 percent of all deaths at 50

https://en.wikipedia.org/wiki/Race_and_ethnicity_in_the_United_States
http://www.cdc.gov/nchs/fastats/mens-health.htm
http://www.cdc.gov/nchs/fastats/mens-health.htm
15 Leading Causes of Death

Accidental causes of death through the ages

Middle-aged people should use drugs carefully because most poisonings for that age group stem from misuse. Older people should focus on bone health and fall prevention. And everyone should buckle up and drive sober.

In 2012–2013, young adult males aged 18–24 were more likely than young adult females to commit suicide.

- This relationship was found for the five race and ethnicity groups studied (non-Hispanic white, non-Hispanic black, Hispanic, Asian or Pacific Islander [API], and American Indian or Alaska Native [AIAN]).

- The suicide rate was highest in the AIAN population for both males and females (34.3 and 9.9 deaths per 100,000 population, respectively).

- AIAN males were more than twice as likely to commit suicide as most other gender and racial and ethnic subgroups.

- Suicide rates for AIAN young adults are likely to be underestimated; a previous study found that deaths overall for the AIAN population were underreported by 30%.

- Only for suicides, do whites consistently exceed blacks, where whites typically have two to three times greater chances of dying.
Youth Risk – Be Aware!

• Based on combined data from 2009 through 2013 for non-Hispanic black and non-Hispanic white young adults who committed suicide, firearms was the most common method used, followed by suffocation.

• For Hispanic, API (Asian or Pacific Islander [API]) and AIAN young adults who committed suicide, suffocation was the most common method used, followed by firearms.

• Poisoning and falls were more common methods among API young adults who committed suicide (12.6% and 8.1% of suicide deaths, respectively) than among other race and ethnicity groups.

Health Risk For 20 Year Olds

• **Melanoma.** The risk of melanoma increases as people age. The average age at diagnosis is 63.

• Melanoma is not uncommon even among those younger than 30. In fact, it’s one of the most common cancers in young adults (especially young women).

• **STD's and HPV (women and Men)**

• Testicular cancer (20-39 years old
  • most often)-It accounts for 15 percent of cancer in men between the ages of 30 and 40.

• **Elevated Cholesterol**

• **Smoking and Chewing Tobacco**

• **Alcohol** -In some cases these alcohol induced choices can lead to death
  • Poor Decisions
  • Violence -According to the #World Health Organization - **Violence is the leading cause of death among young people.**

• **Injury/ Death**

External Unintentional Causes of Death
Accidents, Crashes, Overdoses, and Falls

• Within external causes of injury death, **unintentional poisoning** was the leading mechanism of injury mortality in 2013, followed by **unintentional motor vehicle traffic-related injuries**.

• The very young and very old are more likely than others to be struck by cars while on foot.....Pokey Man !! ??

• People in their **20s and 30s** tend to die in alcohol-related car accidents or when they're not wearing their safety belts.

• Other accidents pose special risks depending on age.
  • For **children under 5**, it's drowning.
  • For **people 35 to 64**, it's poisoning, mostly from misuse of prescription drugs, especially narcotic painkillers and sleeping pills.

• And for **people over 55**, falls and choking on food become increasingly common and lethal.

Young and Obese
At 20 years old

The study also found the majority of obese 20-year-olds struggled to lose weight as they got older.
Obesity and its Mortality

• Men who are obese by the age of 20 have double of the risk of dying prematurely, new research has found.

• The findings are particularly worrying for Britain's youngsters who have been labeled the 'junk food generation', with a third of youngsters aged five to 13 already considered obese.

• Scientists tracked more than 5,000 military conscripts starting at the age of 20 until up to the age of 80.

Obesity, metabolic health, and mortality in adults: a nationwide population-based study in Korea. Yang HK
Obesity and Death Risk

• They found that at any given age, an obese man was twice as likely to die as a non-obese man.

• Being overweight at 20yo had a constant effect regarding death up to 60 years later. i.e at 80 Years of Age.

• The study, presented at the International Congress on Obesity in Stockholm, also revealed that the chance of dying early increased by 10 per cent for each BMI point above the threshold for a healthy weight.

• On average obese participants died eight years earlier than those of normal weight.

The Implications of Obesity

• Obesity is a chronic disease that is strongly associated with an increase in mortality and morbidity including, certain types of cancer, cardiovascular disease, disability, diabetes mellitus, hypertension, osteoarthritis, and stroke.

• In adults, overweight is defined as a body mass index (BMI) of 25 kg/m(2) to 29 kg/m(2) and obesity as a BMI of greater than 30 kg/m(2).

• If current trends continue, it is estimated that, by the year 2030, 38% of the world's adult population will be overweight and another 20% obese.

Obesity Statistics.
Smith KB
What About the Happiness of Being 20 years Old?
Happiness through the Ages

• Old People Are Happier Than People In Their 20s | TIME MAGAZINE.. time.com/4464811/aging-happiness-stress-anxiety-depression/Aug 24, 2016

• People in their 20s and 30s reported having the highest levels of depression, anxiety and stress, plus the lowest levels of happiness, …
Perspectives from a 20 year old and an 80 year old on Life

• If a 20-year-old person looks at an 80-year-old in a wheelchair, the **20-year-old says**,
  • “I don’t want to be like that when I get older.
  • I don’t want to live that life.”

• But for the **80-year-old** in the wheelchair, he says
  “Oh, I am so lucky to be alive
  Most of the people I was born with are no longer around.
  Some of them are in nursing homes and here I am, feeling good about myself, what I did in my life.
  And I am actually quite grateful for what I have.”
Advice from AARP for the 20 year Old

• Your 20s are the absolute best time to do that thing you've always dreamed of. Travel the world, act, sing, design a video game, make art, write, compose, paint, start a business, whatever: just do it! If you don't do it now, you may never fulfill that dream

• **Always re-invest in yourself:** learn, develop new skills, keep getting educated

• Don't be ashamed to seek professional help when life's got you down.
More AARP Advice for the 20 year Old

• Make **exercise and proper nutrition** a key part of your daily/weekly life
• Learn to cook (since you eat every day your entire life)
• **Floss** as often as possible
• Drink lots of **water**
• Take **vitamins** or minerals (if deemed unhealthy)
• **Manage sun exposure** properly (a little bit is necessary, a lot is carcinogenic).
• If you smoke, quit. (Do this ASAP, it's really hard to quit later.)
• Don't drink yourself to sleep every night.
• **Practice safe sex** (use protection).
• **Finish things you start.**
• Keep in mind: Build good habits early in your life so it's easy to maintain later.
Dr Greer’s 6 Essential Herbs for Establishing a Solid Foundation for a 20-30 Year Old

- Rhodiola
- Ashwaganda
- Astragalus
- Omega 3 Fish Oils
- Milk Thistle (Silymarin)
- Boswellia (Curcumin, Turmeric)

- THE ABOVE PRODUCTS SHOULD BE USED THROUGHOUT ONES LIFETIME
The King of Adaptogens - Rhodiola

• Rivals Eleuthero and Panax ginseng and known as a “kingly” adaptogen
• Best known for memory and physical endurance by blood supply to the muscles and brain
• Increases protein synthesis (anabolic effect)
• Cardioprotective- normalizes the heart rate immediately after intense exercise
• Enhances Immunity, increases SOD, antioxidant, antimutagen.

Adaptogens in Medical Herbalism ;Elite Herbs and Natural Compounds for Mastering Stress,aging, and chronic Disease >Daonald R. Yance, CN, MH, RH (AHG)
Rhodiola Boosts Mitochondria

• Also known as golden root or Arctic root, rhodiola has been used in traditional medicine for centuries

• It has been studied extensively by Russian scientists, who have dubbed it an adaptogen

• One of the best herbs for enhancing mitochondrial energy production
Multiple Uses of Rhodiola

- Chronic fatigue
- Mental and Physical exhaustion
- Fibromyalgia
- Depression (not bi-polar however)
- Poor memory
- Cognition
- Concentration and ADD
- Stress related Headaches
- Male and female sexual dysfunction
- Infertility
- Libido and Impotence
- Tonifies the endocrine and CNS
- Enhances strength, endurance, recovery
- Enhances athletic and work performance

Adaptogens in Medical Herbalism: Elite Herbs and Natural Compounds for Mastering Stress, Aging, and Chronic Disease
Donald R. Yance, CN, MH, RH (AHG)
Rhodiola Increases Mental Acuity

• Russian researchers showed that rhodiola extract improves the capacity to perform mentally demanding tasks under conditions of extreme stress and fatigue

• Similarly controlled trial evaluated it on students during a stressful examination period

• Found that objective and subjective measures of physical and mental performance were significantly superior among subjects who took rhodiola extract vs. placebo

Rhodiola Increases Endurance

• A recent study in rats that were trained to exhaustion found that rhodiola significantly boosted the synthesis and resynthesis of ATP in the mitochondria
  • Enabled the rats to swim for 24% longer
• Rhodiola also reduces fatigue under stressful conditions and exerts an anti-inflammatory effect

Ashwagandha

- Shown to relieve mental fatigue by inhibiting the enzyme acetylcholinesterase, which degrades acetylcholine in the brain


*Chinese herbs: a clinical review of Astragalus, Ligusticum, and Schizandracea.* Sinclair S
Ashwagandana-Withania

- Increased concentrations of natural antioxidants in animal brains after supplementation

- Effects are:
  - Anti-stress
  - Immunomodulatory
  - Cognition-facilitating
  - Anti-inflammatory
  - Anti-aging effect
Ashwaganda (Withania Somnifera)

• Widely used in Ayurvedic medicine
  • Primarily as a general tonic to increase energy and to improve overall health and longevity
• Anti-stress effects
• Antioxidant and anti-inflammatory properties
• Anti-tumor properties
• Immune modulating properties
• Improved sexual performance
• Calms central nervous system
• “Instant” energy without the use of stimulants
  • Ashwaganda (10 mL/day)
    • Rapid energy for severe fatigue
Astragalus

• Unusual ability to stimulate certain immune functions while depressing others

• Overall body tonic used to strengthen digestion, increase metabolic activity, stimulate the immune systems

• Highly beneficial for anyone experiencing adrenal fatigue, low vitality and frequently occurring infections

• Chinese herbs: a clinical review of Astragalus, Ligusticum, and Schizandrae. Sinclair S
Omega 3 Omega 6

- **EPA** (eicosapentaenoic acid), which seems to have heart-protective effects

- **DHA** (docosahexaenoic acid), which appears to benefit the nervous system

http://www.heart.org/HEARTORG/General/Frequently-Asked-Questions-About-Fish_UCM_306451_Article.jsp
Misc Benefits Of Omega-3

• Possibly reducing the risk of many other medical conditions
  • Painful periods
  • Diabetic kidney damage
  • Obesity
  • Skin conditions
  • Some cancers
  • Crohn's disease
  • May improve pulmonary function
Health Benefits of Omega-3

• Prevents and treats heart disease
• Prevents cancer
• Decreases arthritis
• Increases brain function
• Enhances vision
• Treats autoimmune disorders
• Prevents strokes, depression and Alzheimer’s
• Prevents diabetes
Systemic support: Comparing Omega-6 & Omega-3

**OMEGA-6 FATTY ACIDS**
- Linoleic Acid (LA)
  - (e.g. corn, safflower, sunflower oil)
- delta-6 desaturase*
- Gamma-Linolenic Acid (GLA)
  - (e.g. evening primrose, borage, black currant seed oils)
- Dihomo-Gamma-Linolenic Acid (DGLA)
  - PGE1
    - (anti-inflammatory)
  - delta-5 desaturase
  - Arachidonic Acid (AA)
    - (meat)
    - Cyclooxygenase
    - PGE2
      - (pro-inflammatory)
    - Lipoxygenase
    - LTB4
      - (pro-inflammatory)

**OMEGA-3 FATTY ACIDS**
- Alpha-Linolenic Acid (ALA)
  - (e.g. flaxseed oil)
- delta-6 desaturase*
- Steridonic Acid
- Eicosatraenoic Acid
delta-5 desaturase
- EPA DHA
  - (e.g. fish oils)
  - Cyclooxygenase
  - delta-4 desaturase
  - Lipoxygenase
  - PGE3
    - (anti-inflammatory)
  - LTBS5
    - (anti-inflammatory)
**Omega 6 AA**

**ARACHIDONIC ACID**
(Inhibited by eating less insulin-stimulating carbohydrates, meat, and egg yolk, and by consuming more cold-water fish, fish oil, and sesame lignans.)

- **COX-1** (Inhibited by low-dose aspirin)
  - THROMBOXANE A2
    - Abnormal Platelet Aggregation

- **COX-2** (Inhibited by Celebrex®, curcumin, resveratrol, and green tea)
  - PROSTAGLANDIN E2
    - Inflammation, Atherosclerosis, and Joint Destruction

- **5-LIPOXYGENASE** (Inhibited by Zyflo®, curcumin, and 5-LOXIN®)
  - LEUKOTRIENE B4
    - Interferes with Cancer Cell Death (Apoptosis)
  - 5-HETE
Reduced AA

• If arachidonic acid levels are reduced, adrenal gland support is NOT needed. And Cholesterol manufacture for the perceived inflammation is NOT activated

• A wealth of scientific research clearly demonstrates that supplementation with long-chain fatty acids like EPA and DHA from fish oil can help reduce the production of arachidonic acid-derived eicosanoids in the body
Optimal Men’s Health Recommendations For Life

• Anti Inflammation Advice
  • Omega 3’s
  • Boswellia
  • Green Tea
  • Resveratrol

• Alzheimer’s Protection Measures

• Muscle Loss Prevention Measures

• Prostate Cancer Awareness (especially after 50)
Cardiac Benefits of Omega-3

- Omega-3 fatty acids appear to lower the overall risk of death from heart disease, reduce arrhythmias, heart attack and seem to significantly lower the risk of stroke
- Lowers blood pressure and triglyceride levels by 20% to 50%
- Lowers insulin requirements
- Stabilizes blood glucose
- All factors related to Alzheimer’s prevention
Milk Thistle

• Silybum marianum (milk thistle) is a Mediterranean plant that has been used since Greco-Roman times to treat liver ailments. Silibinin, the most active hepatoprotective constituent of the plant's seed, possesses antioxidant and anti-inflammatory properties.

• The protective effects of silymarin on liver injury may be related to the recovery of the membrane fluidities of liver microsome and mitochondria.

CURCUMIN - BOSWELLIA

- Minireview
- Multiple biological activities of curcumin: A short review
- Radha K. Maheshwari Life Sciences
- Volume 78, Issue 18 27 March 2006, Pages 2081–2087
Combination of Curcumin with Fish Oil

• Curcumin (Turmeric) suppresses destructive inflammatory reactions in the brain.

• Best penetration of the Curcumin is while ingesting structural components required by brain cell membranes (such as DHA from fish oil).

• USE BOSWELLIA AS YOUR SECOND LINE OF DEFENSE AGAINST ALL INFLAMMATION.

• THE FIRST LINE OF DEFENSE ALWAYS SHOULD BE FISH OIL.

Minireview
Multiple biological activities of curcumin: A short review
Radha K. Maheshwari Life Sciences
Volume 78, Issue 18 27 March 2006, Pages 2081–2087
Turmeric (Curcuma longa) Curcumin
(Historical Perspective)

• In 2010, sales of C longa in the United States exceeded $11 million
  – It is the fourth most popularly sold botanical in the United States

• Turmeric (Curcuma longa) is a perennial shrub native to southern Asia and cultivated extensively throughout Asia and Africa

• C longa is a member of the ginger family (Zingiberaceae) that is used in the ancient medicinal traditions of India and China for thousands of years

• The active components are thought to be the curcuminoids, primarily curcumin, which is commonly available worldwide as a standardized extract

• Minireview
• Multiple biological activities of curcumin: A short review
• Radha K. Maheshwari Life Sciences
• Volume 78, Issue 18 27 March 2006, Pages 2081–2087
Curcumin from Turmeric (Properties)

• Has antioxidant, antibacterial, anti-inflammatory and stomach soothing benefits
• It reduces inflammation by stimulating the adrenal glands to increase cortisol
• Animal studies on this herb have revealed that turmeric protects the liver from the adverse effects of alcohol and certain toxins
• Turmeric also helps in digestive problems by stimulating bile flow
• A common, therapeutic curcumin dose is – 400 to 600 mg three times daily, corresponding to 60 g of fresh turmeric root or about 15 g of turmeric powder

• Minireview
• Multiple biological activities of curcumin: A short review
• Radha K. Maheshwari Life Sciences
• Volume 78, Issue 18 27 March 2006, Pages 2081–2087
Curcumin from Turmeric (Properties)

• Curcumin has been reported to be:
  – anti-inflammatory
  – Antioxidant
  – Antineoplastic
  – Proapoptotic
  – Antiangiogenic
  – Cytotoxic
  – Immunomodulatory
  – Antimicrobial

• Minireview
• Multiple biological activities of curcumin: A short review
• Radha K. Maheshwari Life Sciences
• Volume 78, Issue 18 27 March 2006, Pages 2081–2087
Researched USES AND EFFICACY
Curcumin

• Beneficial effects of curcumin have been demonstrated for dyspepsia - ref 8
• Osteo arthritis - ref 9
• Rheumatoid arthritis - ref 10
• Uveitis ref - 11
• Orbital pseudotumor – ref 1
• A variety of premalignant or preinvasive malignancies ref 13
• Familial adenomatous polyposis ref -14
• Inflammatory bowel disease –ref 15
• Pancreatic cancer – ref 16
Curcumin References 8-16


*Minireview
*Multiple biological activities of curcumin: A short review
*Radha K. Maheshwari Life Sciences
*Volume 78, Issue 18 27 March 2006, Pages 2081–2087
Aging and Alzheimer’s
Danger Ahead

- The progression from dementia to Alzheimer’s affects 24-30 million people worldwide.
- Is predicted by 2050 to claim 115 million victims worldwide, including 13.5 million Americans (up from 5.1 million today).
- Alzheimer's is now the 6th leading cause of U.S. deaths and is expected to triple by 2050.
- Alzheimer’s is responsible for 20% of deaths worldwide! (falls, fractures, etc)

http://www.alz.org/facts/
Advanced Risk with Age

• The risk of developing Alzheimer's disease rises sharply with aging
• Doubles roughly every 5 yrs

ONLY 1% at age 60...but...
  – Nearly 20% at age 80...and
  – Nearly 40% at age 85

<table>
<thead>
<tr>
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<th>Frequency</th>
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<tbody>
<tr>
<td>60</td>
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</tr>
<tr>
<td>65</td>
<td>2%</td>
</tr>
<tr>
<td>70</td>
<td>4%</td>
</tr>
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<td>8%</td>
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<tr>
<td>80</td>
<td>16%</td>
</tr>
<tr>
<td>85</td>
<td>32%</td>
</tr>
</tbody>
</table>
Inflammation Common Links

• Much research links Alzheimer’s to the same lifestyle factors that cause heart attacks and strokes:
  • High cholesterol
  • Blood pressure
  • High blood sugar
  • Insulin resistance
  • Diabetes
  • Obesity
    • and physical inactivity

The Connection: Systemic Inflammation with Free radical production
Current data - Alzheimer’s Disease

• Alzheimer’s Association: An estimated **5.4 million** Americans of all ages have Alzheimer's disease in 2016.

• Of the **5.4 million** Americans with Alzheimer's, an estimated **5.2 million people** are age 65 and older, and approximately **200,000 individuals** are under age 65 (younger-onset Alzheimer's)

• After cancer and heart disease, the most common cause of death, and the most costly to care for

• Estimated prevalence: 30% of adults >85 years; 50% of adults in nursing homes

http://www.alz.org/facts/
Warning Signs of Alzheimer’s

- Memory loss that affects job skills
- Difficulty performing familiar tasks
- Problems with language
- Disorientation of time and place
- Poor or impaired judgment

- Problems with abstract thinking
- Misplacing things
- Changes in mood or behavior
- Changes in personality
- Loss of initiative

Rising U.S. Life Expectancy

More than doubled in the past 200 years

http://www.cdc.gov/nchs/fastats/deaths.htm
Beneficial Actions Stalling Alzheimer’s

• **Physical activity** for both the body and mind including reading

• **Crossword puzzles** have profound effects on supporting mental acuity

• **Physical exercise** promotes blood flow to the brain

• **Aerobic exercise** has been associated with improvement of cognitive function, decreased fasting levels of insulin and cortisol

Moving on to the 30-40 Men’s Health Issues
Optimal Men’s Health Factors @ 30-40

- Judgement (Better !)
- Weight Control (No HFCS, and Nutrition choices)
- Metabolism Changes (Normal Aging)
- High Blood Pressure (Adrenal stress and Detoxification Failure)
- Diabetes (Glucose)
- Heart Disease (#1 Killer of Men and Women)
- Joint Health (Poor Lubrication of joints over the years)
- Sarcopenia (Muscle wasting from lack of weight bearing exercise)
Lose Weight Through Exercise

• Reduce cortisol and aromatase activity
  • Offsets andropause-related bone loss, weight gain, and sleep and mood disturbances

• In one study, moderate physical activity:
  • Increased serum testosterone levels by 39%
  • Decreased SHBG by 19%
  • Increased free testosterone by 23%
  • Increased total serum proteins by 13%

Men’s Health
50’s to 60’s
The risk of dying from heart disease is always higher for men than women, peaking in the 50s when men are 2.5 times at greater risk of dying.

As many as 10% of all heart attacks in men occur before age 45.

As with heart attacks in older adults, about 80% of these attacks stem from coronary artery disease.
Optimal Mens’s Health Recommendations @ 50-60

• Exercise to Live longer
• Heart Protection
• Libido support – Foods and Supplements
• Muscle Strength
• Osteoporosis Protection and Posture
• Anti Cancer suggestions
• Immune status and recommendations
• Brain Support
ED Recommendations at 50-60

• Rates of erectile dysfunction (ED) increase with age
• Some possible RECOMMENDATIONS:
  Mediterranean Diet Guidelines
  Saw Palmetto
  Maca
  Tribulus
  Ashwaganda
  Rhodiola
Testosterone Enhancing Herbal Solutions

- **Tribulus** to increase growth hormone levels
- **Ashwaganda** to increase sexual stamina & endurance
- **Damiana** to increase sexual arousal and erotic orgasm
- **Rehmannia** to enhance adrenal health
- **Gingko Biloba** to increase vascularity
  - Both in the pelvic organs and in the cerebral organs
- Paired with basic health protocol using flax, fish, calcium lactate, vitamin D, multi-purpose vitamin
Hormone Modulation via Nutrients

• Nutrients function by increasing testosterone availability, often by affecting testosterone’s interaction with SHBG or by decreasing its aromatization (conversion) into estrogen

• Overweight men and women often and predictably have high blood levels of estradiol (E2)
Estradiol Tied to Metabolic Syndrome

Aromatase Enzyme

• Found in fat tissue and produced in estrogenic tissue

Important note: Testosterone is a precursor to estrogen and DHEA is the precursor to testosterone.
Increased Aromatase Activity: A Paradigm Shift in Medical Thinking

• Poor diet, increased stress, unopposed endogenous estrogens, exogenous estrogens, and leptin are all associated with increased aromatase activity

• With increased aromatase activity promoting increased endogenous estrogen and lowered testosterone, there is an increase in obesity, type II diabetes, Alzheimer’s disease and estrogenic disease
Problems Common at 50-60

- Cardiovascular Diseases
- Metabolic Syndrome 35%
- Obesity
- Osteoporosis
- Hearing Loss
- Vision Loss
- Nocturia
  - 15 to 20% at least twice nightly
- BPH
- Prostate Cancer
60 Year Olds and Obesity

• Obesity-related death risks are much higher in the United States than in Europe
• For example, the annual diabetes death risk in the United States is three times that found in northern Europe for 60 year olds.
50 + Vision and Hearing Loss

• According to the 2000 census. **Age-related eye diseases** -- macular degeneration, cataract, diabetic retinopathy, and glaucoma -- affect 119 million people aged 40 and older, And that number is expected to double within the next three decades.

• Fish oil and a diet rich in antioxidants can help prevent this condition

• "Taking vitamin supplements for eye health in the 30’s may help by the time the person is 50

• The incidence of hearing loss increases with age.
  • 29% of those with hearing loss are 45-65
  • 43% of those with hearing loss are 65 or older.
50+ Osteoporosis and Falls

• Osteoporosis and low bone mass affect almost 44 million adults age 50 and older

• Falls are the leading cause of death from injury in this age group.

• In a given year, more than one-third of adults age 65 and older experience a fall.

• Twenty percent to 30% of those who fall suffer injuries that decrease mobility and independence

• According to the National Osteoporosis Association, osteoporosis is not part of normal aging. I agree !!
Metabolic Syndrome Affecting 34% of American adults

- The diagnosis consist of 3 out of 5 of the following symptoms
- 1. High blood sugar
- 2. Low high density lipoprotein (HDL)
- 3. Elevated Triglyceride Levels
- 4. High Blood Pressure
- 5. Obesity or large waist circumference
Herbal Support for Metabolic Syndrome

Hypoglycemic Herbs

LIVER
- Glucose Production
  - Berberine
  - Fenugreek leaves
- Less glucose into blood

INTESTINE
- Glucose Absorption
  - Myrcia
  - Sangzhi

PANCREAS
- Insulin secretion
  - Ginseng
  - Bitter Melon
  - Aloe
  - Biophytum sensitivum
- Increase insulin secretion

ADIPOSE TISSUE
- Peripheral Glucose uptake
  - Ginseng
  - Bitter Melon
  - Cinnamon
  - More glucose leave blood into tissue

MUSCLE

Restore normal glucose level in blood

Prostate Cancer
Prostate Cancer Statistics

• Prostate cancer (PC) affects 1 out of every 6 men in the United States alone
• This year (2016) approximately 200,000 men will develop prostate cancer
• The average annual death rate from PC is around 30,000 in any given year or 1 in 35 Men
• This makes prostate cancer the second leading cause of cancer death in men, with lung cancer still ranked number one
• Lung cancer accounts for more deaths than breast cancer, prostate cancer, and colon cancer combined
• The Message – Don’t smoke.. And if you do Quit!

http://www.cancer.org/Cancer/ProstateCancer/DetailedGuide/prostate-cancer-key-statistics
Accessed Sept 12, 2012
50+ = Increased Prostate Cancer

• The risk of prostate cancer increases with age, and black men have a higher rate than white men
• Screening should start in your 40s, and at the very least should involve a digital rectal examination.
• More than a third of men over 50 experience moderate to severe symptoms of an enlarged prostate gland ie BPH

http://www.cancer.org/Cancer/ProstateCancer/DetailedGuide/prostate-cancer-key-statistics
Accessed Sept 12, 2012
Recommendations for Prostate Health

• Saw Palmetto
• Omega-3 fatty acids
• Antioxidants
• Nettle root
• Zinc
• Pygeum
• Polyphenols
• Ellagic Acid (nuts, raspberries) trigger apoptosis


Targeting PSA
Green Tea, Turmeric, Broccoli

• GREEN TEA

• EGCG, a green tea catechin, specifically concentrates in prostate tissue where it regulates PSA (prostate specific antigen) production to maintain healthy PSA levels ref (9, 10)

• Helps modulate genetic expression and activity of androgen receptors"

• Supports body's natural defenses against oxidation (ref 12)
Green Tea - EGCG

• Beneficial polyphenols make up roughly 30 to 40% of green tea, as opposed to only 3 to 10% of black tea.

• The polyphenols in tea are classified as catechins, and of the eight catechins in green tea, epigallocatechin-3-gallate, or EGCG, is the most active.\(^6\)

• As a result, green tea consumption has now been associated with a 54% reduction in the risk of developing cognitive decline.\(^2\)


Green Tea’s Dramatic Impact On Neurodegeneration

• **Green tea** (*Camellia sinensis*) contains *catechins*
  • naturally occurring, multifunctional compounds that have been found to have potent neuroprotective effects.  

• Green tea catechin *epigallocatechin-3-gallate* (EGCG)
  • found to lessen cognitive impairments induced by psychological stress in rodent research, which suggests its potential to be an effective protector of brain neurons.

• EGCG - shown to cross the blood-brain barrier in mammals.

• Unlike other flavonoids—green tea compounds are able to *reduce* neurodegeneration

References on slide 102
Green Tea’s Dramatic Impact On Neurodegeneration

• Catechins in Green tea exhibited
  • iron-chelating, free-radical-scavenging, and anti-inflammatory activities.\textsuperscript{42}
  • They were also neuroprotective in models of both Alzheimer’s and Parkinson’s disease.\textsuperscript{43}

• Green Tea demonstrates gene modulating and cell-signaling activities,\textsuperscript{42} favorably increased detoxifying enzymes and antioxidant enzymes,\textsuperscript{44,45} and protects DNA against oxidative damage.\textsuperscript{46}

References on slide 102
Green Tea Ref 36-46


Targeting PSA
Green Tea, Turmeric, Broccoli

• TURMERIC
  • Promotes a healthy level of inflammatory response, chiefly due to its main component, curcumin (ref 13)
  • Helps modulate cell signaling mechanisms, inhibiting abnormal cell adhesion and migration (ref 14)
  • Promotes healthy cell proliferation and apoptosis (ref 15)
Targeting PSA
Green Tea, Turmeric, Broccoli

• BROCCOLI
• Helps regulate enzymes (phase// detoxifying enzymes) in gut and liver tissue that helps render harmful dietary molecules harmless (ref 16)
• Helps promote healthy PSA levels (ref 17)
• Supports regulation of cell growth and transcription factors
• and normal production of apoptosis-inducing proteins (ref 18 and 19)
Example: Broccoli

- Member of the cruciferous, or cabbage family of vegetables
- Has a high concentration of glucosinolates (indole-3 carbinol and sulfuraphane)
- These increase the metabolism of 4-16-Hydroxyestrone (linked to breast cancer, obesity and inflammation)
- Sulfuraphane stimulates the body’s production of detox enzymes and exert antioxidant effects
- A source of vitamins K, C, A, folic acid and fiber
Indole-3-carbinol (I3C)

- I3C is one of several potent compounds found in cruciferous vegetables such as broccoli, cauliflower, and Brussels sprouts.
- I3C functions by modulation of hormones and the activation of genes.
- Dosage should be based on weight:
  - 79-180 lbs: 200 mg
  - 180-239 lbs: 300 mg
  - Over 239 lbs: 400 mg
References Targeting PSA
Green Tea, Turmeric, Broccoli

2. fain Oncoh. 2013;31(Suppl; abs 5000).
Estrone (E1) Metabolism

Estrone (E1) → Estradiol (E2)

(Affected by I3C in Brassica vegetables)

16 Alpha Hydroxyestrone
(Binds estrogen receptor, DNA. Promotes cellular proliferation.)

Hydroxyestrone
(Competes with 4 & 16 to prevent DNA damage and inflammation. Extremely protective.)

4 Hydroxyestrone
(Oxidative damage to DNA.)
## Qualities of Estrone Metabolites

<table>
<thead>
<tr>
<th>Metabolite</th>
<th>Carcinogenic Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-OH Estrone</td>
<td>Protective</td>
</tr>
<tr>
<td>16α OH-Estrone</td>
<td>Carcinogen &amp; Active Estrogen</td>
</tr>
<tr>
<td>4-OH Estrone</td>
<td>Carcinogen &amp; Active Estrogen</td>
</tr>
</tbody>
</table>

Importance of 2-Hydroxyestrone

• An increase in the formation of 2-hydroxyestrone has anti-carcinogenic properties

• It diverts estrone metabolism away from the extremely potent estrogen metabolite, 16-alpha- hydroxyestrone which is genotoxic

The PSA Controversy
THE PSA CONTROVERSY

• The issue of PSA screening is a current hot bed of discussion

• A recent decision by the United States Preventive Services Task Force (USPSTF) concluded that PSA should not be used as a diagnostic screening tool for any man, regardless of age, race or family history

• This has resulted in a hailstorm of critical responses. (Ref 1-4)

Questions about PSA Testing

• **Question**  ?? – Is the PSA worth testing?

• **Answer** – The PSA is the most valuable biologic marker (biomarker) involved with this common malignancy

  • Ejaculation and certain activities such as bike riding within 48-hours of testing may falsely elevate PSA values

  • Monitoring PSA values and rate of change over time and incorporating various PSA derivative tests such as the free PSA percentage and more recently the PCA-3 test can add important information to PSA testing particularly if the PSA is rising quickly or is elevated above 4 ng/mL

• • **A federally funded task force has concluded that PSA should not be used as a diagnostic screening tool for any man, regardless of age, race, or family history.**


SO.... Men are Fragile Human Beings

Loneliness, Loss of fellow loved one’s, Retirement
Loss of hearing and sight
MAY lead to depression and its consequences
Retirement Depression and Suicide

• One of the biggest life changes is retirement
• Many people have their sense of worth tied up with work
• In retirement, depression and suicide rates rise
• Physicians must be aware that the concomitant presence of depressive symptoms and several life events (especially loss and loneliness in women and physical illness in men) should be considered warning signs for suicidal behavior.
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SUICIDE

US methods of suicide 2012

- Firearm: 50.9%
- Suffocation/hanging: 24.8%
- Poisoning: 16.6%
- Fall: 2.3%
- Cut/pierce: 1.8%
- Other Spec., classifiable: 1.2%
- Drowning: 1.1%
- Transportation related: 0.4%
- Fire/burn: 0.4%
- Other Spec., NEC: 0.3%
- Unspecified: 0.1%
Important Take Away Points

• Remember the Importance of supplements early in life to reduce inflammation, enhance vascular integrity and allow a graceful exit without drama and its role in the immune system

• Strive to get enough sleep for resetting the Matrix and eliminating excess stress hormone Cortisol

• Modulate the metabolism of Inflammation triggers

• What you do, eat, and expose yourself to daily will and can alter your DNA

• Obesity is Real. Change is Real. Suicide at the start of life or at the end can be prevented with attention to choice supplements
Attaining Hormonal Clarity Credits

- Information in this seminar and workshop has been borrowed from the work of many Doctors, including:
  - Angela Hywood, ND
  - Kerry Bone- Herbalist
  - Lee Carroll- Nutritionist/Herbalist
  - Life Extension Foundation
  - Standard Process/MediHerb
  - Tori Hudson, ND
Michael E. Greer, M.D.
Thank You
Integrative healthcare Symposium

IHS NYC 2017
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