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Staying young in Mind and Body!

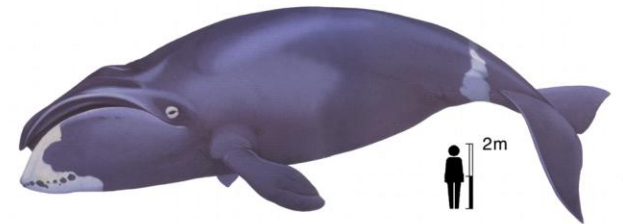


The Fountain of Youth, by Eduard Veith, 1856-1925 Austrian

Oldest recorded species!



- Koi fish: 226 yrs
- Bowhead whale: 211 yrs
- Aldabra Tortoise 152 yrs
- Lake Sturgeon 152 yrs
- Human female: 122.5 yrs
- Human male: 115 yrs



Approaching a record!



My grandmother Wilma, now 101.5!!!

What makes us age and how can we address it?



- Hayflick theory
- Telomere theory
- Free Radical theory
- Mitochondrial theory
- Inflammation
- Reproductive cell cycle theory
- Your genes and DNA damage



Hayflick Theory



- Proposed by Leonard Hayflick 1961
- Cells have a limited ability to divide, and have a ticking molecular clock.
- After the age of ~35 our cells become imbalanced leading to an increase risk of disease, senescence, and death.

Approach to Hayflick theory



- Live life to its fullest!
- Your cells are programmed to decline and you will pass away regardless of what you do!

Telomere Theory, more optimistic!

2009 Nobel Peace Prize by Blackberry, Greiden, Szostak.



Telomeres

Small caps on chromosomes that get shorter with every cell division, and shorten more rapidly with hormone imbalance, stress, inflammatory diet.



Shortened telomeres then activate a cellular mechanism that prevents further cell replication.

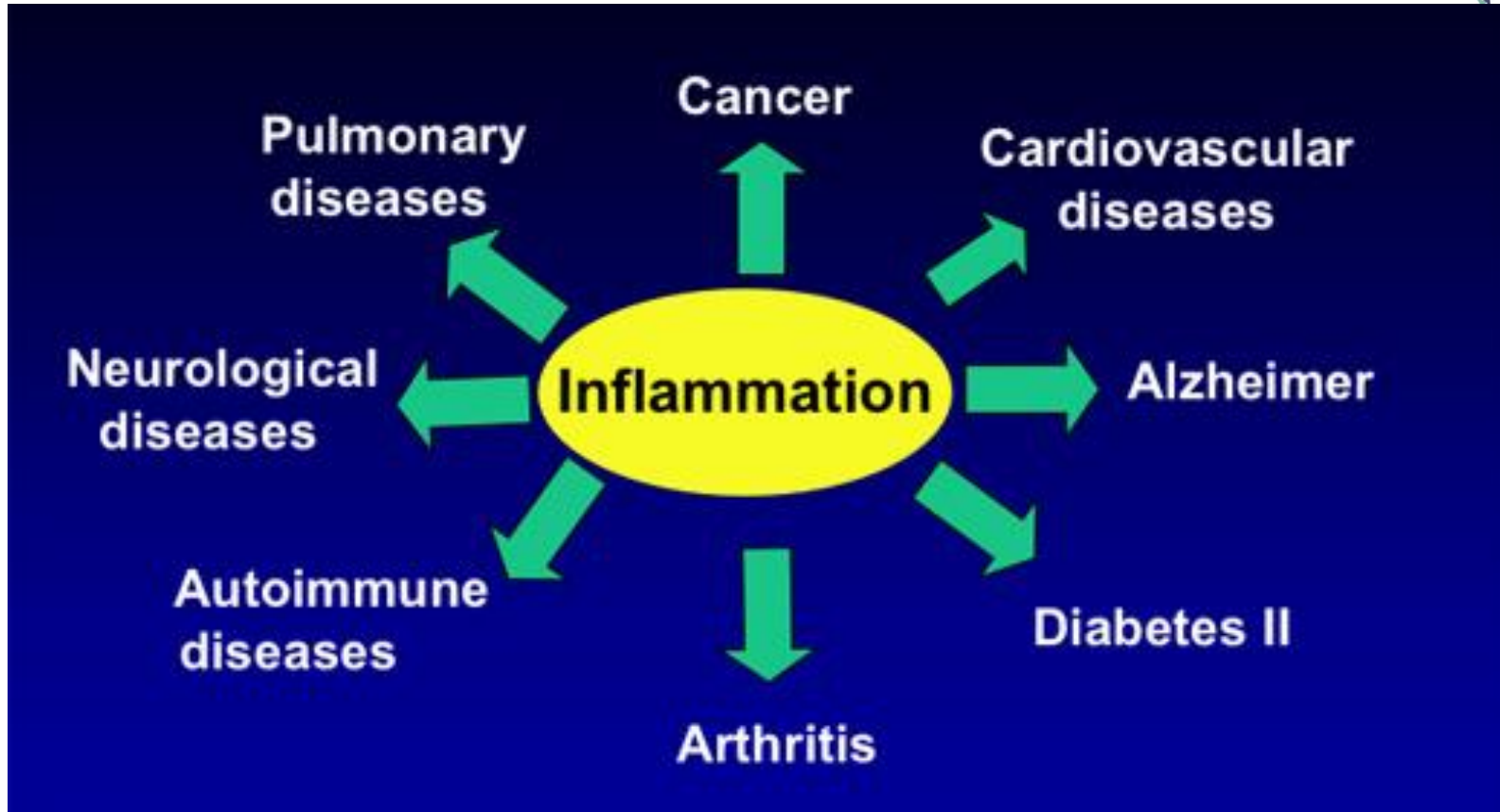
Telomerase enzyme helps repair the frayed and shortened ends.

Causes of Telomere Shortening



- ✓ Hormone imbalance
- ✓ Obesity, Metabolic Syndrome, Diabetes.
- ✓ Smoking
- ✓ Oxidative stress/Mitochondrial Stress
- ✓ Mental Stress/high cortisol
- ✓ Hypertension, Heart disease, Periph. Artery disease

Inflammation, disease, T length

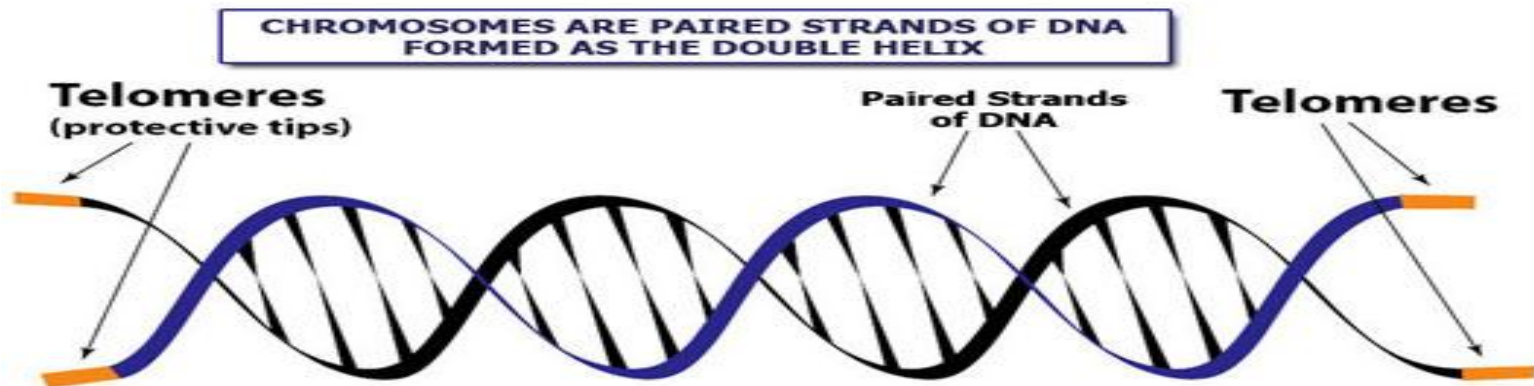


Reduced telomere length was associated with increased mortality, independently of age, gender and inflammation (likelihood ratio 41.6, $P < 0.0001$)

How to check telomere length



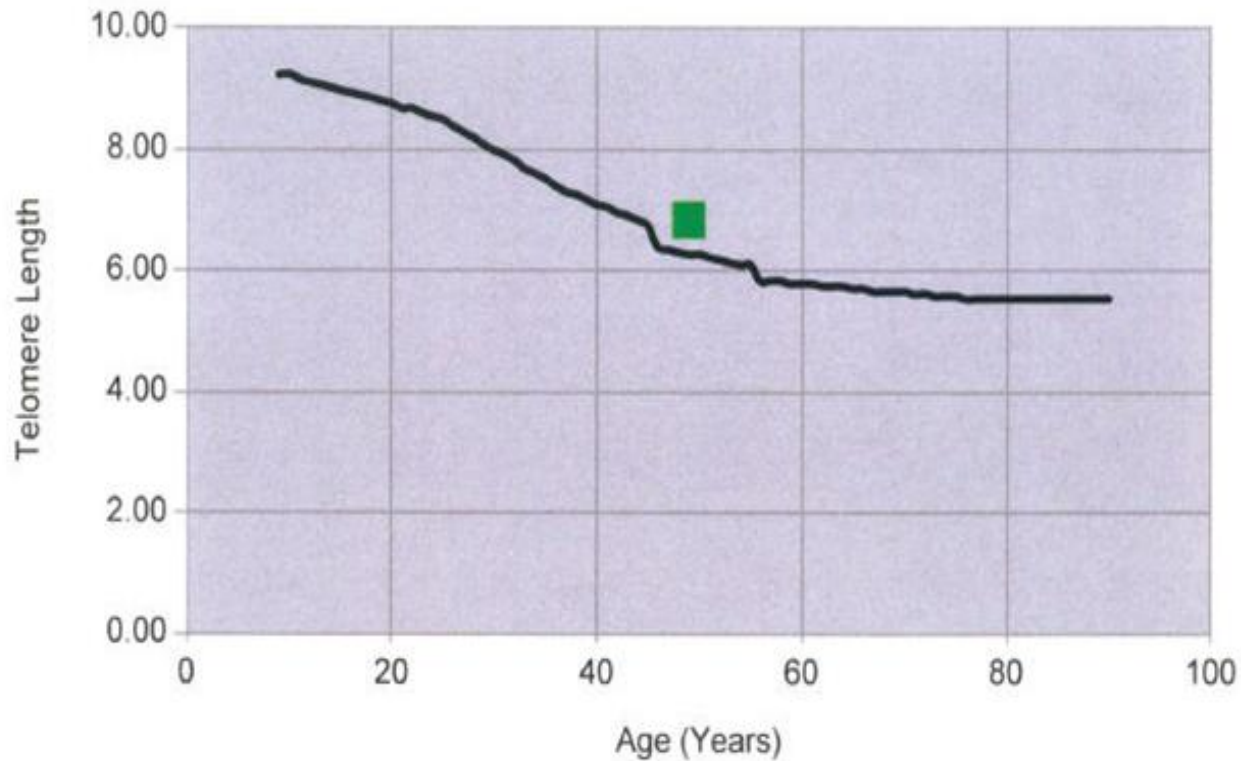
- Physician order through **Spectracell** labs
- Is a simple blood test drawn that can be done at same time with other labs, such as cholesterol.



Telomere length vs age



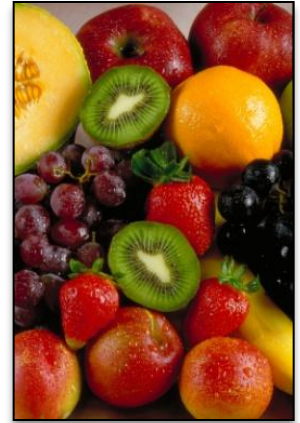
Telomere Test Results



How to lengthen your telomeres!



- ✓ **Exercise more!**
- ✓ Keep your **weight** in a healthy zone (BMI<25)
- ✓ **Reduce Stress**
- ✓ Bio-identical **Hormone Replacement**
- ✓ Mediterranean **diet**, whole grains, veggies, lean proteins.
- ✓ Avoid trans fats, sat fats, sodas, refined carbs etc.
- ✓ Anti-Oxidants: Vit C, E, **Resveratrol**, Co-Q 10
- ✓ B-Complex via Multi, Vitamin D, possibly Omega-3's
- ✓ **Stop Smoking**
- ✓ Medications to improve blood pressure, cholesterol: Statins, ACE, ARB's.

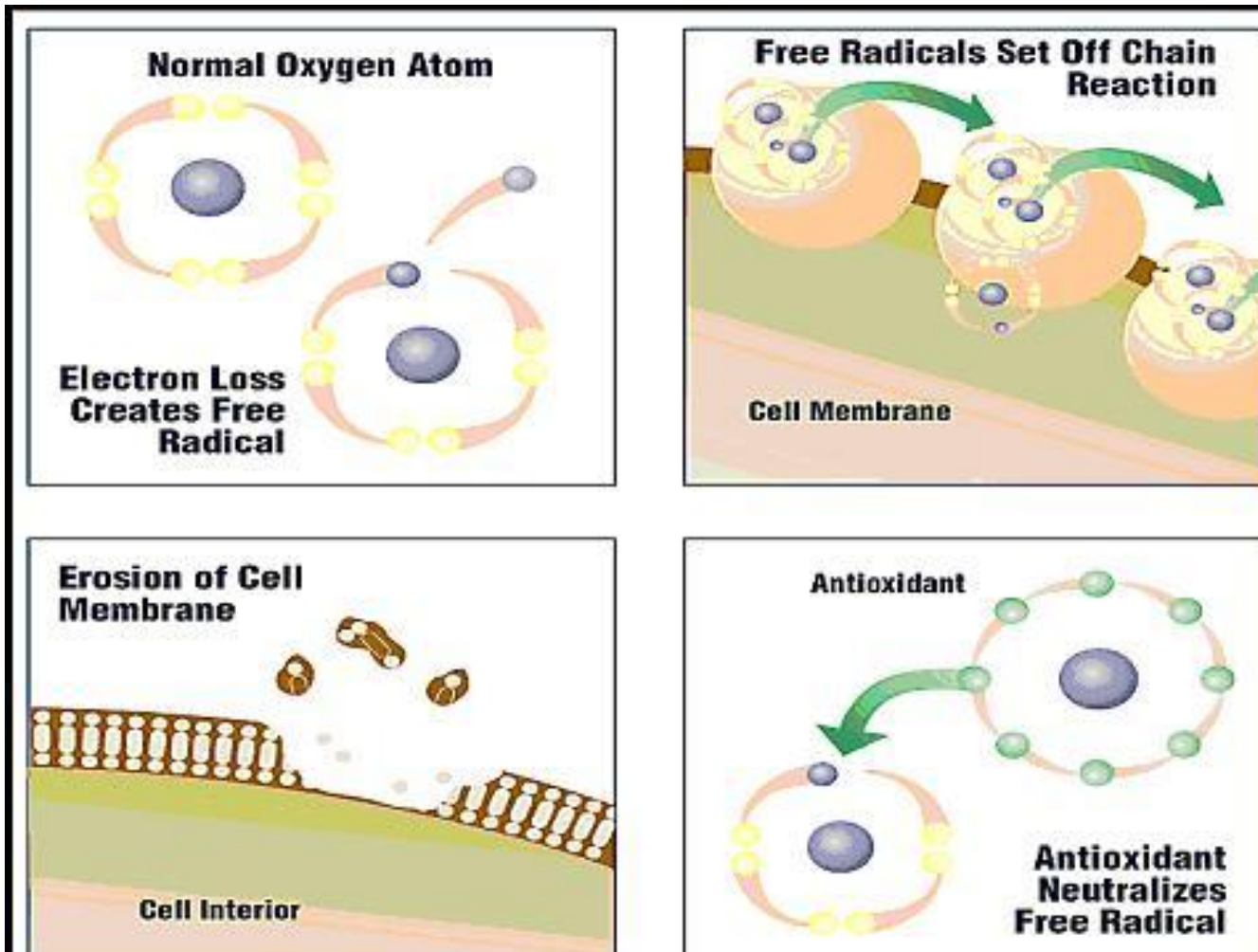


Free Radical Theory of Aging

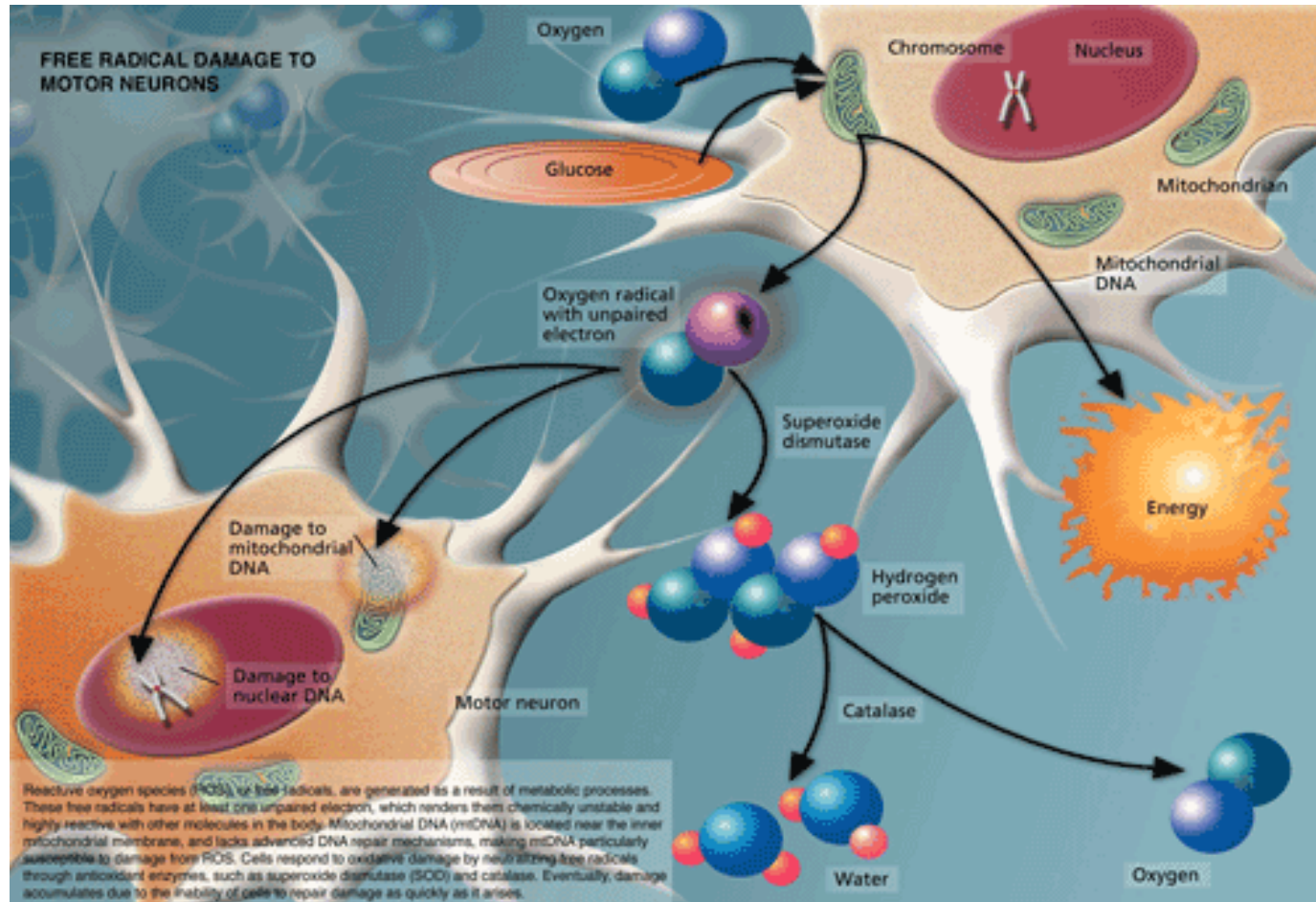


- Cellular structures are damaged by superoxide, hydrogen radicals and others free radicals leading to accelerated aging.
- Environmental free radicals from industrial waste, chemicals, pesticides, herbicides, auto exhaust, cigarette smoke, preservatives, ionizing radiation, and sunlight.

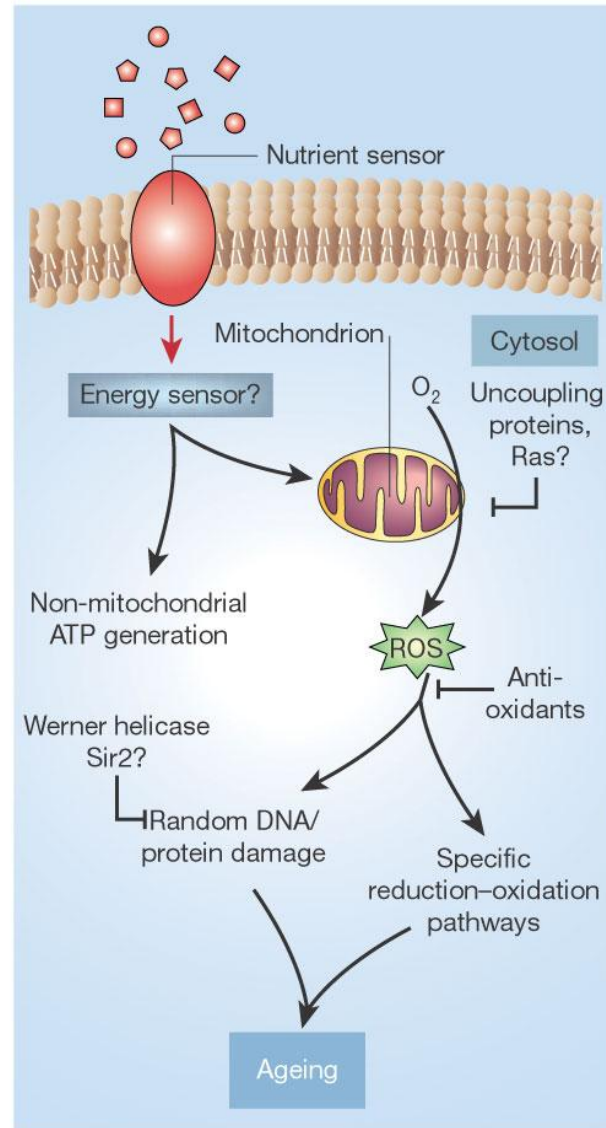
Impact of Free radicals on cells.



Mitochondria also produce free radicals as a byproduct.

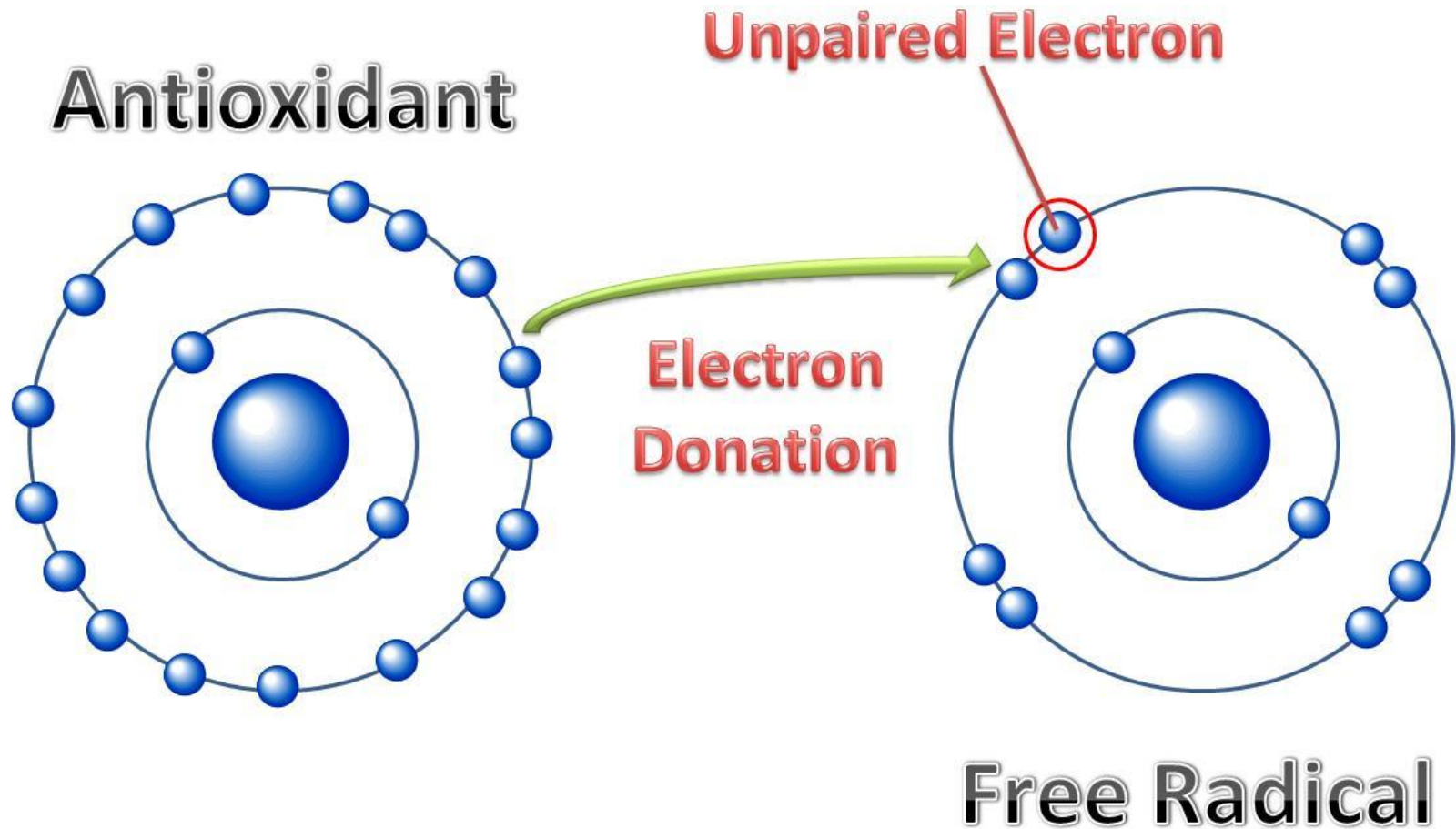


Mitochondrial impact on aging



Nature, May 2004

Counter free radicals with antioxidant rich diet



Antioxidant rich foods and supplements

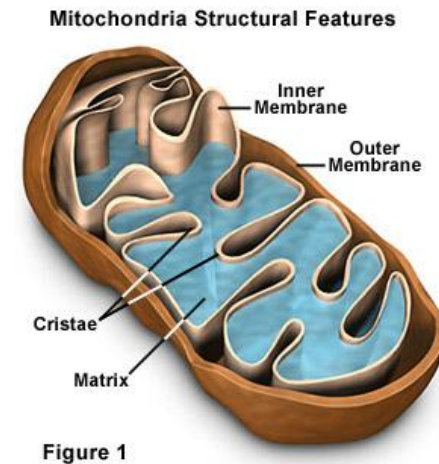


- Antioxidant rich fruits
 - Acai, goji, prunes, pomegranate, raisins, blueberries, blackberries.
- Antioxidant rich veggies
 - Kale, spinach, brussel sprouts, alfalfa, broccoli.
- Antioxidant supplements
 - Vitamin C, Alpha lipoic, Co-Q10, Resveratrol, Green tea, Glutathione, Curcumin

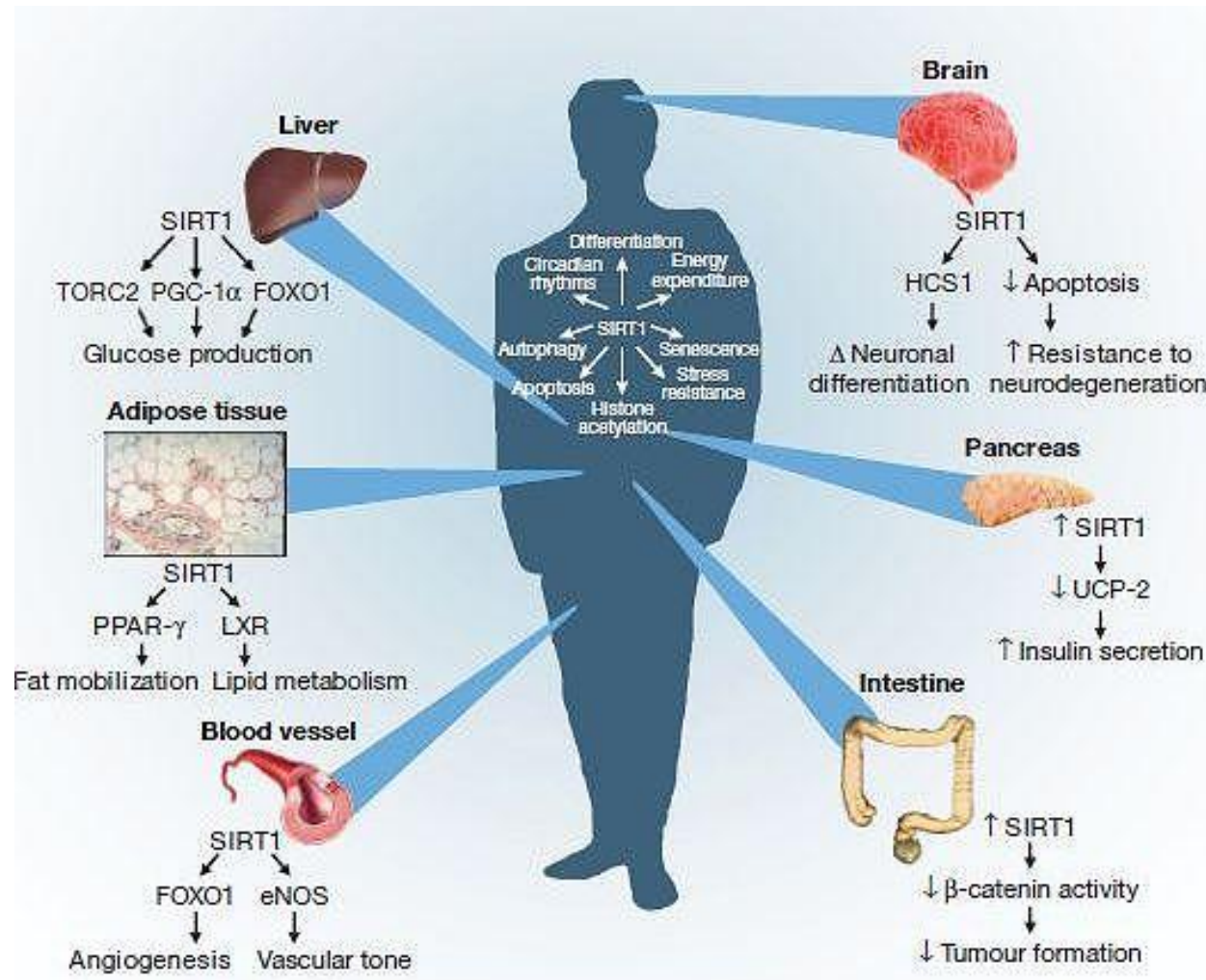
Enhance Mitochondrial function with Co-Q 10



- Co-enzyme Q 10
 - Assists in cellular energy production of ATP via the electron transport chain.
 - Is a strong antioxidant scavenger.
 - May help prevent degeneration of mitochondria in cells, thus slowing aging.



Resveratrol, aging and SIRT1



Omega-3, Curcumin and inflammation



- **Omega-3** in diet or by supplement can reduce vascular and musculoskeletal inflammation.
- **Curcumin** (Turmeric) has been found to increase NRF 2 levels (anti-inflammatory marker) and may be the spice reducing alzheimer's incidence in India.

Declining sex hormones, and its impact on aging.



- Sex hormones help maintain healthy skin, muscle mass, sexual function, and brain health.
- Healthy hormone levels also improve growth hormone levels which can slow aging and improve energy.

Hormones and aging



Hormone Levels Decline as we age-

Sometimes contributing to weight gain, insomnia, anxiety, depression, and numerous other symptoms in women and men.

Level of Decline Varies

Your genetic make up, lifestyle, diet, and stress level all play a role.



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A Quick summary on balancing hormones for anti-aging benefits!

Menopausal symptoms



- ✓ Depression, poor concentration, memory lapses
- ✓ Disturbed Sleep
- ✓ Hot Flashes
- ✓ Irregular Menstruation
- ✓ Reduced Libido
- ✓ Painful intercourse
- ✓ Osteoporosis
- ✓ Thinning, sagging skin

Traditional Hormones for Women



- **Premarin (CEE)** - manufactured by concentrating horse urine into a pill that over 20 types of estrogen, with slightly different structure than human form.
- **Provera**- a “progestin” Medroxyprogesterone Acetate, is a modified progesterone structure that may be accountable for adverse outcomes such as increased risk of breast cancer and cardiovascular disease.
- **Most Birth Control Drugs** - have progestins.

Why are Bio-Identical Hormones Better?



Hormones - exact copies of your endogenous hormones, as opposed to synthetically modified versions.

Bio-identicals - may include estradiol, estriol, progesterone, testosterone.

- Typically made by isolating compounds found in wild yam, soy based products.

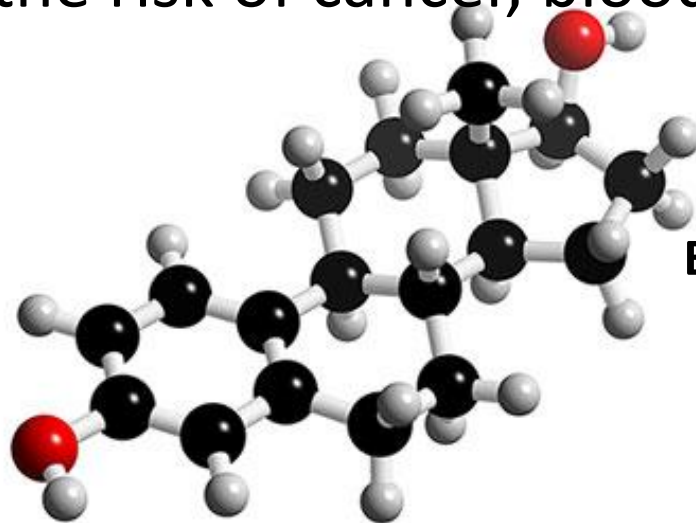


Bio-identicals over non-bioidenticals



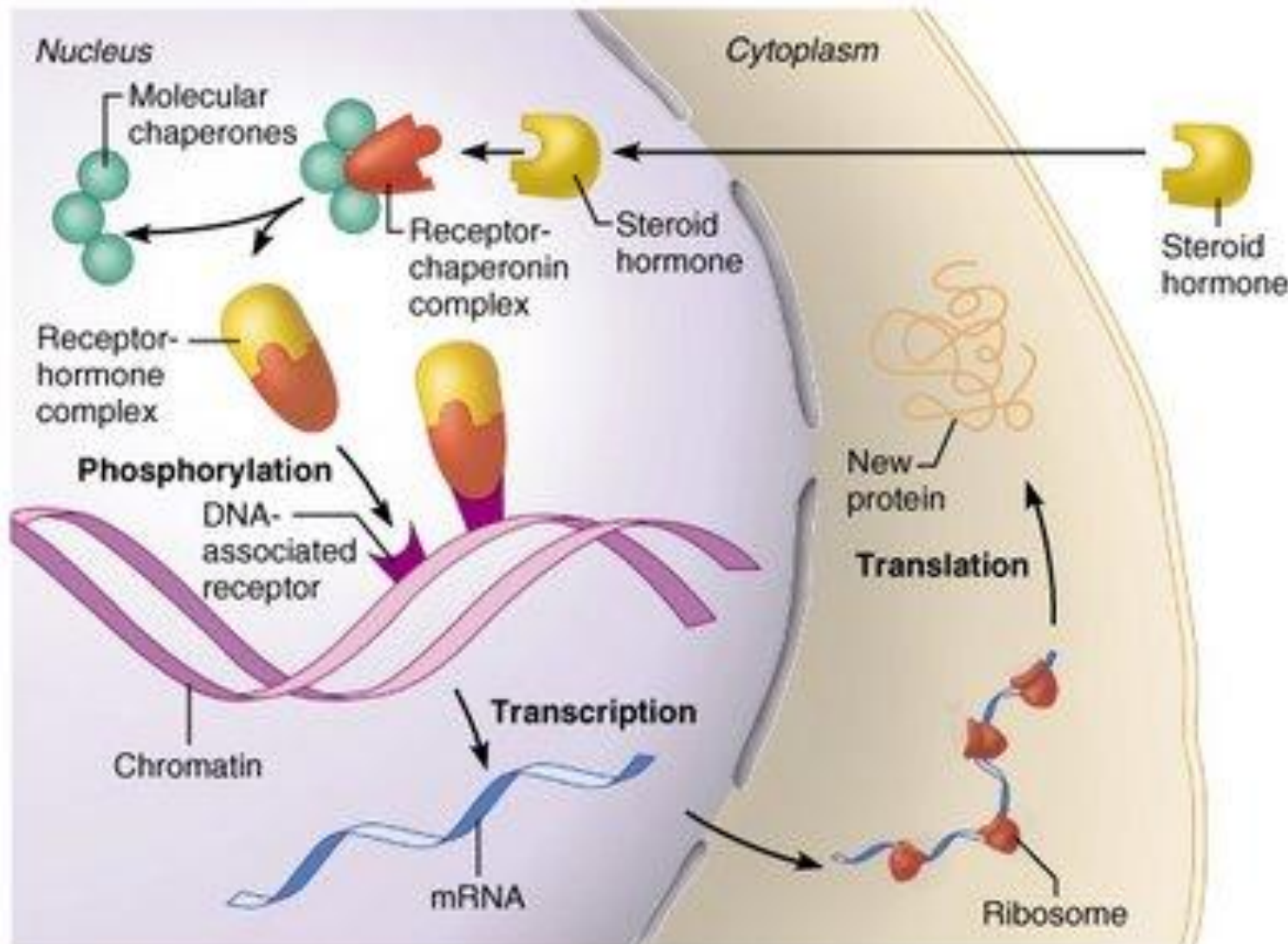
Hormones Complex 3-D Structures - interact with receptors throughout cells throughout your body.

Varied Structure of a non-bioidentical hormone may Activate Receptors - in a different way perhaps increasing the risk of cancer, blood clots, etc.



Estradiol 3-D

Hormones and Receptors



Progestin vs Progesterone



- **Progestins** (non-bio-identical) increased risk of breast cancer, and using estrogen by itself increases risk of breast cancer. (Nurses Health Study, Fornier Study)
- May also increase the bad estrogen 16-hydroxyestrone (Seeker, Horm. Metab)

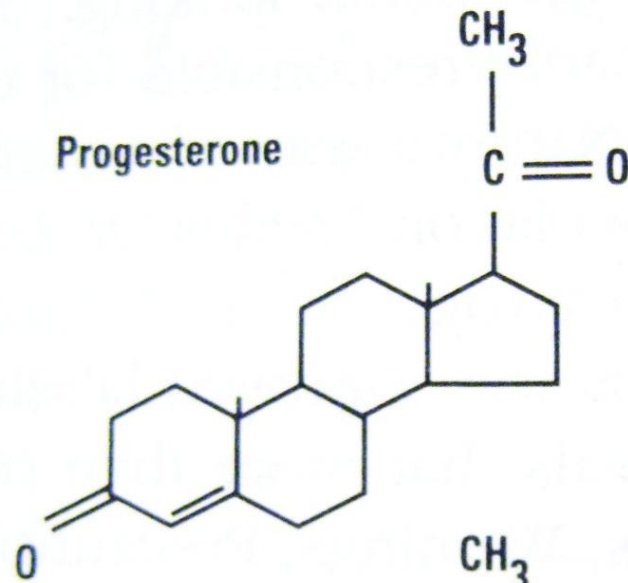
Bio-identical Progesterone



Bio-Identical Progesterone

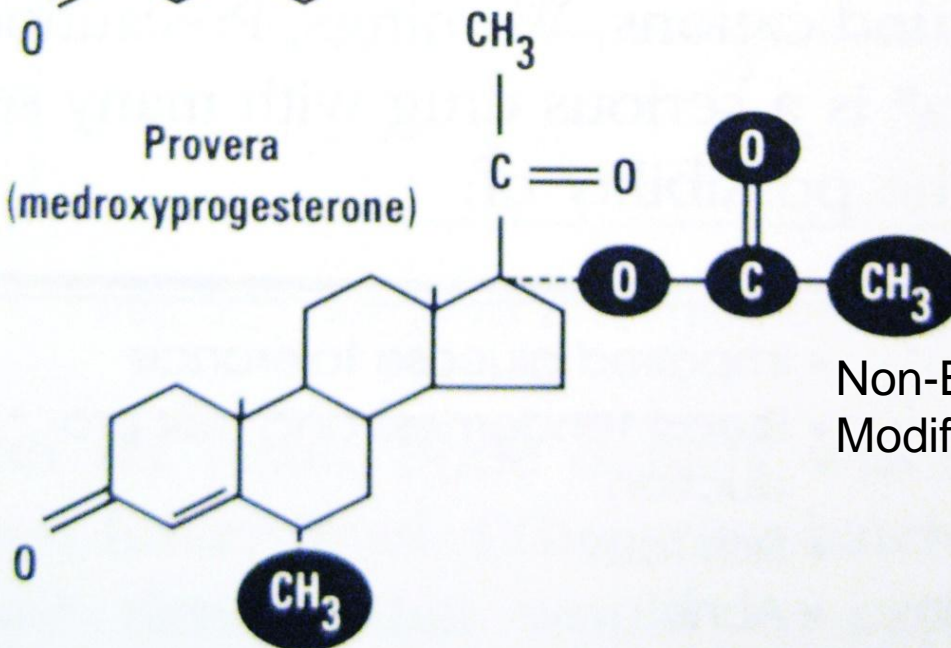
- Balances/blocks breast tissue growth from estrogen.
- Numerous studies show a decreased risk of breast cancer using progesterone. (but not medroxyprogesterin)
- Prometrium and micronized progesterone are bio-identical forms available.

Progesterone



Bio-identical form

Provera
(medroxyprogesterone)



Non-Bio-identical
Modified form.

Progesterone Summary



Bio-identical Progesterone has *protective effects* on breast cancer, and can improve your quality of life when an imbalance is noted.

Using **estrogen alone**, or in combination with non-bioidentical progestins may be harmful by increasing your risk of breast cancer.

Bio-Identical Estrogen Replacement



Bio-identical Estrogen Replacement - typically uses “Biest” which combines both balanced levels of Estradiol and Estriol, available through compounding pharmacies.

Estradiol - available commercially as Climara, Vivelle, Estace, etc but lacks the benefits of having Estriol added and is more expensive.

Non-Bio-identical Estrogen



- Most common is **Premarin**, usually pill form.
- Composed of over 20 conjugated (sulfated) types of estrogen from pregnant mares.
- May have other effects on cells due to the metabolites and varied structures.



Estriol



Benefit of Estriol in compounded Bio-identical Estrogen

Breast Protective:

- ✓ Binds a receptor in breast which may prevent breast cancer development.
- ✓ Does not contain equilenin a potentially carcinogenic compound found in Premarin.
- ✓ Estriol increases by 1000 X in pregnancy and is thought to be accountable for long term reduction in breast cancer in women that have had children.

Testosterone Deficiency in Women



- ✓ Very common in perimenopause, menopausal women.
- ✓ Is the “hormone of desire” in women.
- ✓ Optimizing can improve libido, muscle mass, and decrease central body fat.
- ✓ Can be compounded in low dose into creams with estrogen, or applied separately.

Recommendations for Women



Consider Hormone Restoration for improved quality of life and potential benefits in age management.

See your physician when significant perimenopausal or menopausal symptoms develop. Bring in a symptom check list to discuss bio-identicals with your physician. Be sure to ask if they prescribe and are knowledgeable about bio-identicals prior to making appointment.

Fine-tuning Hormones



Restoration is titrated to dose - provides relief of hot flashes, and improves libido, energy and mood.

Levels typically checked within 3 months - after starting for reassurance, then less frequent if feeling well.

Markers for aging such as IGF-1, DHEA, Telomere may also be checked..

- This can be via blood, or urine metabolites.

Cancer Screening Tips



- ✓ Always maintain age-appropriate cancer screening. Mammography, Paps, Colon cancer screening. Hormones are contraindicated if you have a history of breast or uterine cancer.
- ✓ Remember that a worrisome family history may change the frequency and timing of cancer screening.

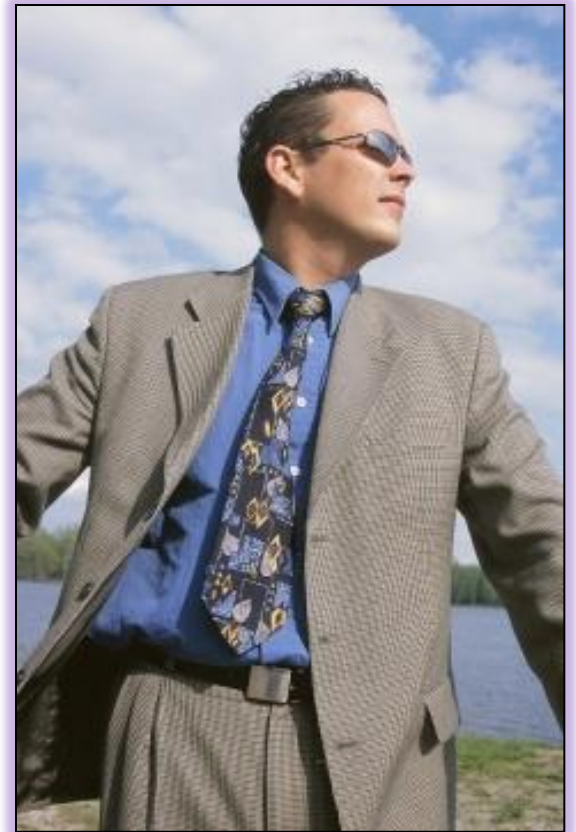
Hormones for Men



Testosterone Deficiency, commonly called Male menopause, or “andropause”, “Low T”

Important for slowing aging in men, just as estrogen is in women.

Unfortunately Goes Unrecognized in Most Men - since testosterone levels are not checked by most docs, and symptoms often ignored or treated with an anti-depressant, viagra, etc.



Symptoms of Testosterone Deficiency



- ✓ Decreased Libido
- ✓ Lack of Energy
- ✓ Decrease strength/endurance
- ✓ Decreased enjoyment of life.
- ✓ Sad/Grumpy
- ✓ Erections less strong, decrease in morning erections.
- ✓ Deterioration in work performance

(Adam Survey)

Testosterone Deficiency Exam Findings



- ✓ Increased fat mass, especially abdominal.
- ✓ Loss of muscle mass
- ✓ Decrease in bone density
- ✓ Decreased body hair
- ✓ Skin thinning
- ✓ Frailty syndrome in severe cases.

Testosterone Replacement Benefits



- ✓ Helps reverse many of the symptoms and physical finding mentioned in deficiency.
- ✓ Strong stimulator of growth hormone
- ✓ Improves blood flow to heart by dilating coronary vessels.
- ✓ May slow or prevent onset of Alzheimers
- ✓ Improves lean muscle mass, energy, libido.
- ✓ May alleviate depression.



Risks of Testosterone



- Studies have shown little to no risk of prostate cancer when replacing in low testosterone men.
- Prostate cancer screening must be performed prior to starting testosterone, as a pre-existing cancer may be stimulated by supplemental testosterone.
- New research is suggesting that low testosterone may actually increase one's risk of prostate cancer.
- Testosterone may be replaced in men with a history of successfully treated prostate cancer when approved by a urologist.

Optimizing Testosterone Levels



- ✓ **Topical cream or gel** – preferred
- ✓ **Injectable or pellets** if poor skin absorption.
- ✓ **Goal** - get patient in 70% of normal range or higher.
- ✓ **Total, Free & Bioavailable testosterone** - monitored.
- ✓ **PSA monitored** - closely.
- ✓ **Estrogen Levels Monitored** - corrected with aromatase inhibitor, zinc, chrysin if needed.

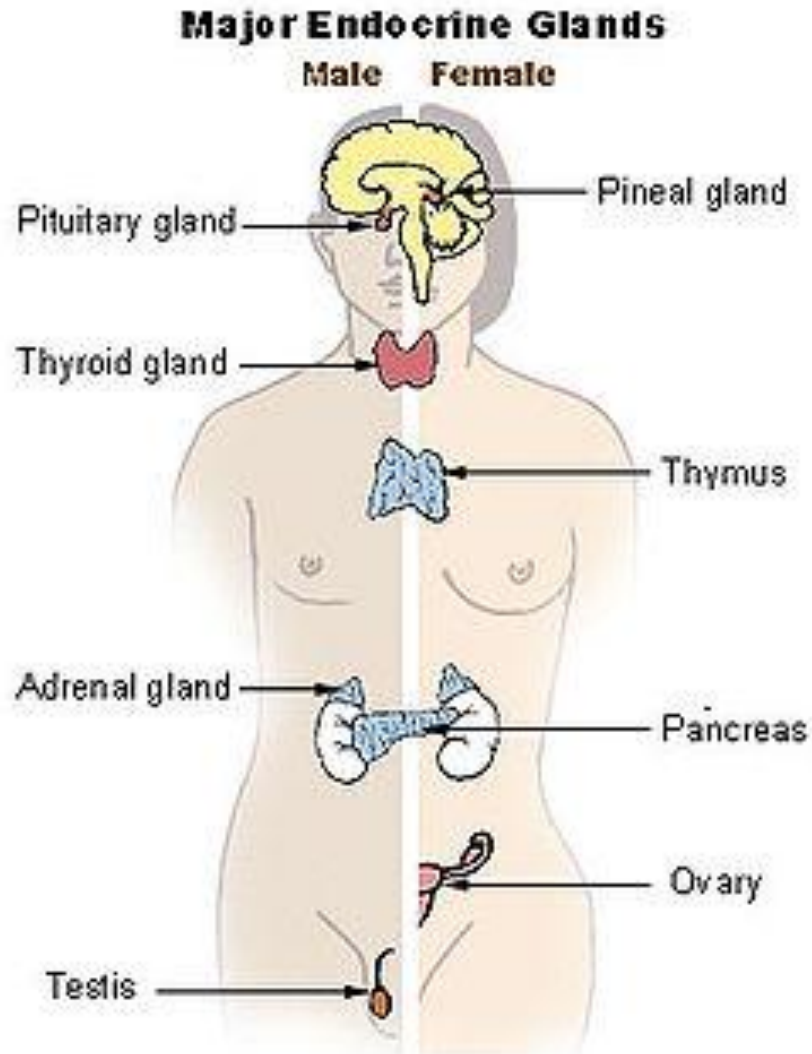
Other hormones to help with aging?



Thyroid

Adrenal

Growth Hormone



Your inherited genes and DNA damage



- Your DNA contributes to about 1/3 of your aging. The rest is environmental.
- Protect your DNA. Avoid unnecessary CT scans, rides on nuclear subs, and trips to Japan. Consider Bioshield or similar prior to a CT scan.
- Healthy levels of anti-oxidant in your diet can be helpful, and levels can be checked by a nutritional test. (Comprehensive Micronutrient analysis by spectracell.)

Additional tips to stay young!



- Nurture your spiritual self
- Keep you mind balanced with meditation or prayer.
- Stay connected with family and friends.
- Consider massage therapy, energy medicine modalities.(PEMF etc)

Brain Health Program



Brain Health:QEEG Brain Mapping, Neurofeedback Therapies

Skin care health/Anti-aging tips



- Sunscreen 30 spf plus
- Vitamin D orally 5000 IU day to compensate.
- Omega-3 2 grams/day
- Co-Q 100mg day
- Multi, Vitamin C 1000 mg, Resveratrol 250mg
- Topical Vitamin C 10%, Retin-A like product at night.
- Good cleanser, toner, moisturizer daily.

Keeping Your Skin youthful



**Microderm, facials, intense pulse light,
Botox, Juvederm, light based therapies, topicals.**

Summary



- ✓ Maintain a health diet and lifestyle.
- ✓ Balance your hormones if needed
- ✓ Check nutritional and telomere labs to optimize.
- ✓ Keep yourself in good shape.
- ✓ Eat and supplement to keep your anti-oxidant levels optimized.
- ✓ Optimize Mind, Body and Spirit
- ✓ Be happy and enjoy life!



Dr. G's Wellness Model



- ✓ A shift from the traditional model to a pro-active wellness model, helping you live your best!
- ✓ Includes balancing of hormones.
- ✓ Blends modern medicine, Integrative Medicine, Anti-Aging Medicine, and Functional Medicine.

Dr. Grover's Wellness Plans



Advanced Prevention and Wellness Annual Plan

- Reasonably priced for a year of care.
- Includes pro-active prevention and quarterly gameplan, evaluation and ongoing treatment of hormones and other medical conditions.

Standard Wellness Plan

- An al la carte option, also reasonably priced for bio-identical hormone consultations, wellness consults, and ongoing care.

Please call or set up a free meet and greet to learn more.

888-726-4442,

info@revolutionarymd.com



ADVANCED
**PREVENTION
& WELLNESS**
Optimizing Wellness to Live Your Best



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Thank you for coming.
Live your Best!