



Healthy, Wealthy & Wise - The Latest and Greatest in the World of Longevity

Lecture Notes for Access Circles LA Forum – April 21, 2016

I was recently invited to speak before a very prestigious group of women at their Access Circle LA Forum. My charge was to share (in one hour!) what I believe are the must do's - physically, mentally and spiritually - to better insure our health and sense of well-being, as we live out our lives.

My take-away points were: **Stress** is Bad, **Estrogen** is Good (for women), and the risks for **Heart Disease, Stroke, Cognitive Decline** and many **Cancers** can be significantly reduced, often prevented AND a life with a sense of balance and well-being is truly possible. What is exciting is that longevity research is validating the fact that we do have significant control of our future health and science continues to provide evidence as to how our brain actually responds to our behaviors through a learning process called *neurogenesis*.

What Do We Know?

- ◆ Human beings are now **living longer** than ever. However, while we may be living longer, We want to:
 - Live well and Enjoy our lives
 - Succeed, Thrive and make a Positive Difference
 - While (at the same time) *adjusting* to our constantly changing world, including our own health.
- ◆ Life Expectancy
 - Defined by Social Security and Insurance Companies as the 'number of years we have to live'
 - In general if you are **65 yrs of age:** you can expect to live about another **20 yrs:**
 - Male – **84** yrs; Female – **87** yrs
 - AND: 25% will live > **90 yrs** & 10% > **95 yrs**
 - By 2050 20% of US population will be 65 or older.

SO our challenge: how do we *live well*, while we are living longer? We KNOW that the quality of our lifetime is significantly influenced by how we chose to live our daily lives. Studies are replete with data that demonstrates the benefits of what and how much we eat, how much we exercise, how we challenge our brains, our level of financial security, and how we engage in our society.

Living Well = Living Healthy, Living Purposefully, Being Socially Engaged & Financially Independent

What is "Sense of Well-Being"?

- ◆ It is being aware of the reasons we wish to be alive:
 - Not just at the end of life or when debility strikes us
 - But every day of our life
- ◆ It means identifying our *handicaps*, our *fears* and our *hopes* and managing them in a healthy manner.
 - Fear is paralyzing; it creates uncertainty, immobility and reduces *spontaneity*
 - An example of how fear has paralyzed millions of women around the world over the past 14 years is the fear of estrogen replacement therapy. Estrogen's possible role in breast cancer had been a worry for decades. Their fears mushroomed after the Women's Health Initiative Study (WHI) was first published in 2002. Women who had happily taking estrogen were told to stop and they promptly entered 'hot flash hell'. Their fears are still being propagated by professionals who are ill informed and fail to support the health needs of their patients'. A patient recently told me that her previous female gynecologist told her: 'no estrogen because it will kill you and to suck it up'. (*Refer to my website under Health Articles: **Menopause and Hormone Therapy - Updated 2016** for a factual discussion and reference guide*)

What is Known about Estrogen in 2016:

- ◆ Long-term follow up of WHI Study of post-menopausal women who have taken estrogen for over 20 years have an **all-cause** mortality 60% LOWER than women who never took estrogen, a 25% LOWER incidence of breast cancer and 63% less mortality, if they get breast cancer.
- ◆ 2012 British Study – Role of HRT & Heart Disease: 50% REDUCED risk of mortality, heart attack and heart failure AND with no increase of cancer (breast), blood clots, or stroke.
- ◆ Active estrogen is estradiol (E2) and E2 receptors are part of normal cells through-out the body
- ◆ All hormones exert their effect by attaching to specific receptor sites located in the nucleus of every cell of the body.
- ◆ Hundreds of studies have demonstrated estrogens' vital role in the normal metabolism of a woman. Certain tissues are 100% dependent on the presence of E2, e.g. the endometrium (the lining of the endometrial cavity), vagina and vulva. Others tissues will continue to function, but not optimally; e.g. bone, skin, brain (especially the prefrontal cortex and hippocampus), epithelial lining of the walls of arteries, muscles, joints.
- ◆ Estrogen is neuro-protective, especially in the hippocampus and prefrontal cortex.
- ◆ In the absence of estrogen there are significant changes in the tissues and organs, including Emotional and Cognitive changes and physiologic changes. I have hundreds of patients whose *sense of well-being* has been dramatically changed by their using ERT. And if they forget to use it, their husbands quickly remind them.
- ◆ Patient Letter: A patient recently sent me an email letter describing how estrogen impacted her life and her sense of well-being (Refer to References)

The Role of Stress in Our Lives

- ♥ **Stress = “Life Out of Balance”** (See Longevity Article: “*Thoughts on Balance – A Personal Story*”)
 - Stress induces hormonal changes in the body to help it adapt. The adrenal glands produce cortisol, adrenalin and norepinephrine and are called *stress responsive steroid hormones*.
 - How people respond to the daily stressors in their lives is predictive of their future chronic health conditions. It is well established that chronic stress reduces a body's immune response in part due to chronic higher levels of circulating cortisol.
 - Fear induces both physical and emotional **stress**:
 - **Acute Stress** situations as in survival mode [classic fight-or-flight reaction], the *optimal* amounts of cortisol can be life saving. You become more aware, awake, focused and are generally more responsive. It also helps to shift blood flow away from areas of your body where it might not be as crucial, like the skin and digestive tract, and towards more essential areas at the time, like the heart, blood vessels and muscles, so you can better deal with the stressful scene.
 - **Chronic Stress & Chronic Anxiety** occurs when you stew on a problem. In chronic stress the body *continuously* releases excessive stress hormones, especially cortisol, and **chronic elevated levels can lead to serious issues**. Too much cortisol can suppress the immune system, increase blood pressure, blood sugar and risk for heart disease and diabetes. It can decrease libido, cause anxiety and depression, contribute to obesity and lead to chronic **inflammation** in the body.
 - After ten years of enduring chronic daily stressors there is a significantly higher incidence of chronic physical health conditions, including stroke, heart attack, risk of dying from a heart attack, acute and chronic inflammatory conditions, and even cancers' response to therapy.
- ♥ **Dealing with Stress:**
 - Identify the common causes of stress in your life: issues at work, relationships, financial or health.
 - Separate the causes that you can do something about from those you have no control over.
 - **External Stress Factors** = Conditions you CAN change:
 - **Identify the obstacles** that you need to overcome or the changes that need to occur in order to eliminate your stress.
 - **Give yourself permission** to *take care of yourself*. Accept the reality that you may not be able to meet all the expectations of others. Look in the mirror and say: “It is OK to take care of me too”. Discover your *sense of purpose*.
 - **Share your decisions** with all the persons who will be affected by your actions. Ask for their understanding and even their help. And then start your journey.

- **Internal Stress Factors** - Explore how you typically respond to conditions you CANNOT change and consider actively embracing the following **Five Positive Behaviors** and make a commitment to yourself to engage them on a daily basis. These will definitely reduce Stress, decrease Risk of C-V Disease and improve Cognition:
 1. **Achieving Balance thru Meditation & Mindful Awareness** – I refer to balance within this context as an emotional and spiritual sense of well-being. Stress is a struggle with what is, what was or what may be. Chronic stress is a killer to our body’s immune system and our brain. It raises circulating cortisol (the *stress hormone*) that suppresses the immune defenses that our body employs to fight infection, heal an injury and eliminate random mutant cancer cells. Studies have clearly shown chronic stress and chronic anxiety are directly related to increased risk for heart attack, stroke, cancer, depressive behavior, actual depression and cognitive decline leading to dementia. Stress is NOT your friend. Meditation practiced on a daily basis is a powerful tool to reduce stress. When you meditate, you’re focused on the moment, on your breathing and you learn to feel the tension in your body begin to relax. I believe that achieving balance by learning to manage stress successfully is the foundation upon which to build healthy behaviors. This is the tough one, because it requires commitment and practice, practice and practice. I can testify that it works. For many it starts with giving themselves permission to take personal time – every day. I tell my patients: “If you want to insure a healthier life, NOT taking time is NOT an option.” (Refer to my website Health Articles: **Meditation – What Exactly Is It & Thoughts on Balance – A Personal Story**)
 2. **Exercise**- Whether it’s running or yoga, exercise is one of the best ways to manage and relieve stress. Exercise builds grey matter in the brain and also releases endorphins, which improves your mood. (Refer to my website Health Article: **Exercise – How Much Is Enough?**)
 3. **Sleep**- Sleep is a very important natural stress reliever. Make sure to find the right balance of sleep that allows you to feel well rested and alert. To promote better sleep, establish a bedtime routine that signals the brain that it’s time to rest. A recent discovery identified a *Glymphatic* system within our brain that clears our metabolic waste products and is optimized while sleeping, especially, if on sleeping on one’s side.
 4. **Organization**- When your life is more organized, it offers a sense of control and peace of mind. If you’re feeling edgy in your cluttered house or room, clean it up. Or if you the type of person who is always doing and running around, make lists so you don’t forget anything.
 5. **Positive Attitude - Enjoy Every Day**- Take time for the activities that bring you joy. Engage socially with family, friends, social organizations, church activities and philanthropy organizations. Discover the power your smile can bring to your world.

♥ **Role of the Immune System and Inflammation in the Body: *The Good & The Bad***

♥ **Protective (“Good”):**

- Immune response to infection and injury with release of antibodies and an increase in WBC’s eliminate the infectious agent (viral, bacterial or fungal) and heal the traumatized tissues.
- Inflammatory response is TEMPORARY.

♥ **Destructive (“Bad”):**

- **Auto-Immune & Inflammatory Disorders:** Our immune system can create antibodies that attack our body’s normal cells causing an inflammatory response, which then becomes CHRONIC and destructive. EXAMPLES:
 - **Our Gut** (esophagus, stomach, small intestine and colon)
 - Normally, our immune cells ignore the trillions of *healthy bacteria* (biome) that live in the gut. But for some people their immune cells can begin to attack their healthy bacteria, creating a disruption in the normal digestion causing chronic inflammation referred to as *irritable bowel syndrome*. As we age our intestinal tract can become *intolerant* to certain foods we ingest such as milk products, gluten and certain vegetables.
 - Role of *probiotics* containing the bifido strains of bacilli
 - Immune cells can also attack the digestive tract itself, an *autoimmune condition* known as *inflammatory bowel disease (IBD)* – e.g. ulcerative colitis, proctitis, Crohn’s disease.
 - **Our Joints**
 - *Rheumatoid Arthritis* is an autoimmune disorder that can occur at any age and appears to

- have a genetic component; but is also linked to smoking and a lack of vitamin D
 - *Osteoarthritis* is a degenerative disease of the joints related to chronic overuse and age
- **Our Arteries - Heart Disease, Stroke & Peripheral Vascular Disease**
 - Inflammation can occur in the lining of the wall of arteries, resulting in the formation of plaque, which is a composite of cholesterol and inflammatory cells. Once begun plaque tends to be self-perpetuating and progressive.
 - Role of CRP-hs and interleukin-6 receptor (IL6R) - inflammatory proteins that seem to play an important role in both the formation and the progression of plaque.
 - Chronic inflammation is associated with obesity and autoimmune disorders have a higher risk of arterial disease
- **Our Risk of Cancer**
 - Chronic inflammation has been linked to cancers of the lung, esophagus, and colon
- **Our Gums**
 - Periodontal disease is chronic inflammation of the gums caused by bacteria accumulation. Periodontal disease doesn't just affect oral health. It is linked to heart disease and dementia as well.
- **Our Weight and Diabetes**
 - **Nutrition** – Three important concepts in nutrition and heart disease prevention and reversal:
 - There is no single best diet or eating strategy for heart disease prevention.
 - Heart disease is complex, and the optimal eating strategy for any individual depends on their unique mix of clinical characteristics.
 - The connection between food, atherosclerosis, heart disease and diabetes cannot be interpreted by looking only at blood levels of *total cholesterol*. A mix of indicators known to link diet to heart disease must be evaluated, including all the blood markers of heart disease risk (including small-dense LDL-C, large HDL-C, fatty acid profiles, inflammatory markers, genetics, diabetes – Ref: *BostonHeartDiagnostics.com*).
 - **Obesity**
 - A major cause of inflammation in the body.
 - Losing weight is one of the most effective ways to fight it. Often that is easier said than done. Elevated levels of inflammation related proteins and chronic inflammation in the intestines could slow down metabolism, so you eat more and burn fewer calories.
 - Inflammation increases insulin resistance & raises the risk for diabetes.
 - Waist circumference is more important than your BMI (body mass index). For women under 35" and for men under 40" is associated with lower risk of Type 2 Diabetes (see below)and heart disease.
 - **Diabetes**
 - A disease in which the body is unable to properly use and store carbohydrate or blood sugar. Diabetes occurs when either the *pancreas* does not produce adequate insulin or when the body cells do not respond well to insulin, which is called "insulin resistance."
 - There are two types of diabetes: Type 1 (*juvenile diabetes*) and Type 2 (*adult onset*).
 - **Type 1 Diabetes** - occurs because the cells of the pancreas are destroyed by the body's immune system and does not produce insulin. The typical age a person finds out they have Type 1 diabetes is under 20 years old and can develop rather suddenly. While developing Type 1 diabetes is not preventable, it is important that it is diagnosed and treated as its earliest onset. People with Type 1 diabetes can live long and healthy lives with careful medical management and self-care.
 - **Type 2 Diabetes** – occurs when the pancreas does secrete adequate insulin or the body cells are resistant to insulin, so higher than normal insulin levels are required for glucose metabolism. Type 2 diabetes develops over time. While there are genetic risk factors for Type 2 diabetes, there are many lifestyle behaviors that can be adapted to reduce and even reverse Type 2 diabetes.
- **Our Skin**
 - The effects of inflammation aren't just internal: They can also be reflected on your skin.

- Psoriasis, for example, is an inflammatory condition that occurs when the immune system causes skin cells to grow too quickly. Assoc. with increased risk of abdominal aneurysm.
- Skin allergies result in both acute and chronic inflammation and can occur from both external irritants and with acute and chronic stress.
- **Our Brain: Mood, Depression and Cognition**
 - Stress adversely affects learning and memory and can lead to depressive behaviors or precipitate depression.
 - Inflammation in the brain and inflammatory markers in our blood have been linked to depression and may be responsible for depressive symptoms such as low mood, lack of appetite, and poor sleep.
 - All the recommendations for reducing CVD, including the five behavioral changes previously discussed plus proper nutrition and social engagement and estrogen replacement in women, have all been shown to improve cognition, mood and depression.
- ♥ **Another Key to Living Long, Living Well: Telomere Length of our Chromosomes**
 - Telomeres consist of a sequence of DNA that caps each end of every chromosome in every cell of the body, including our brain. Telomere length shortens with age. Progressive shortening of telomeres leads to directly affect the health and lifespan of an individual. Shorter telomeres have been associated with increased incidence of diseases and poor survival. Neuroscience studies have shown that the rate of telomere shortening can be either increased or decreased by specific lifestyle factors.
 - Telomeres shorten with age and progressive telomere shortening leads to senescence and/or cell death. Older people with shorter telomeres have three and eight times an increased risk dying from heart and infectious diseases, respectively.
 - Rate of telomere shortening is therefore critical to an individual's health and pace of aging.
 - Smoking, exposure to pollution, a lack of physical activity, obesity, stress, and an unhealthy diet increase oxidative burden and the rate of telomere shortening.
 - To preserve telomere length and reduce cancer risk and the pace of aging, a better choice of diet, healthy activities and stress reduction have great potential, leading to delayed onset of age-associated diseases and an increased lifespan.
 - Post-menopausal estrogen replacement has been demonstrated to have a positive correlation with increasing telomere length.

Conclusion: Be Pro-Active in the prevention and early detection of disease and take Ownership of your health. Remember: every choice we make, every action or reaction we take - has consequences. Staying healthy is WORK, but your health is the best investment you will make towards achieving your goal of Living Long & Living Well. It is never too late. Be open to re-inventing yourself throughout your life.

My Six "C's" to Achieving a Long Life and Living Well

1. **Care** for yourself – if you do not, no one else will; except maybe at your end of life
2. **Change** – Be open and welcome the option of transformation. Review your *trade-offs*. What compromises are you are willing and not willing to make
3. **Commitment** to engaging in the behaviors that will enhance your life
4. **Connectedness** to others – social connections play a key role in longevity
5. **Consistency** in your actions = perseverance = sustainability. Newly learned behaviors require practice, practice, and more practice to create and instill in your brain new neurogenic pathways (neurogenesis) that become the *new normal* in spontaneous behavior
6. **Control** by learning to be rooted and centered in your daily life through mindful meditation

GOAL: A natural flow to your life as you move through your day with balance and a sense of well-being

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What I Recommend

- ♥ **Recommended Daily Supplements:** [Over 50% of supplements do NOT contain the labeled contents]
 - **Vit D3** – 4000 IU (Goal: 40 – 60)
 - **Omega – 3 Fatty Acids** (Fish Oils) – 2400 mg. (**EPA** - Goal: 50; **DHA** - Goal 100)
 - **Omega – 3 ALA** (flaxseed powder or oil) Goal 30
 - **Probiotics** – containing Lactobacilli & Bifidobacterium strains (gut micro biome)
 - **Baby Aspirin** (81 mg. coated tablet) – Ages 50–70 with any risk of CVD risk
- ♥ **Recommended Vaccinations:**
 - **Hepatitis A/B** – All ages
 - **Influenza** – Annually
 - **Pneumococcal** – Prevar & Pneumovax13 – age 65 (earlier, if history of COPD, asthma)
 - **Shingles** – Approved age 50, Recommended age 60; even with history of shingles
 - **T/D** (tetanus/diphtheria) – every 10 yrs.
 - **T/Dap** (tetanus/diphtheria + acellular pertussis - whooping cough) – Once as an adult
- ♥ **Recommended Screening for Early Detection of Cancer, Heart Disease and Diabetes**
 - I. **Screening for Cancer:**
 - ♦ **Cervix & Vagina:**
 - **Pap Smear** – annually, after age 23; every two years with complete hysterectomy
 - ♦ **Breast:**
 - **Self Breast Exam** – monthly, starting at age 18
 - **Mammogram** – annually, starting at age 40 and continuing past age 74
Comment: Mammogram debate is an example of distinguishing between scientific opinion, medical insurance companies and personal values
 - ♦ **Colon:**
 - **Colonoscopy** - every 5 – 7 years, starting at age 50; @ age 40 with family history.
Comment: Medicare and most insurances will approve a colonoscopy every 10 years. There has never been a study that has shown 10 years to be safe. I have too many patients that developed colon cancer in less the 8 years. It will be approved, if done for *diagnostic indications* (occult blood in stool, change in bowels). Do not let an insurance company dictate the quality of your care.
 - **Stool Test for Occult Blood**– part of annual exam starting at age 40 years. A rectal exam should be a part of your regular annual examination.
 - ♦ **Ultrasound Screening for Tumors (cystic & solid):**
 - **Thyroid** - nodules
 - **Abdomen** - tumors of the liver, kidneys, gall bladder, pancreas, spleen
 - **Pelvis** – uterus and endometrial lining and ovaries for polyps, cysts, tumors
 - ♦ **Bones:**
 - **Dexascan** – every 2 years, starting at age 50; annually, with osteoporosis
 - ♦ **Lung:**
 - **Chest X-Ray** – every 3-5 years
 - **Low Dose CT Scan of Lung** - age 55-77 years; for current smokers or history of smoking.
Note: 85% detection of early lung cancer (Stage 1)
 - ♦ **Skin:**
 - **Self exam** – monthly
 - **Dermatologist** - annually, starting at age 40
 - ♦ **Dental:** Annual with hygiene care, 2-3 times per year
 - ♦ **Eye:** Annual for refraction, glaucoma, macular degeneration, starting at age 50

II. Screening for Risks of Heart Attacks, Strokes and Type 2 Diabetes (which are *Preventable*)

- ♥ **Blood Pressure (BP)** – Use an arm (not wrist) digital blood pressure unit & monitor:
 - If normal – check it monthly
 - If taking BP medications – check daily at rest & use a BP chart for tracking

 - **Goal:** Old Goal is the New Target - **120/80**
Note: *Sprint Study (2016)*: Patients >50 years with systolic BP <120 had significant lower incidences of heart attack, heart failure & stroke
- ♥ **Carotid Artery Screening (CADS):**
 - Screens for presence of cholesterol plaque (soft and calcified) within the carotid arteries in the neck for stroke risk. Plaque is NOT normal at any amount. IF plaque is present, patient should be treated as *high risk*, according to recommendations of the American Heart Association.
- ♥ **Carotid Artery Diagnostic Duplex Scan:**
 - Complete diagnostic scan to establish a baseline as to the type and extent of existing plaque and with which to compare future scans for periodic monitoring.
 - A note about a **bruit**: (French for *noise*) or "vascular murmur" - an abnormal sound generated by **turbulent flow** of blood in an artery due to partial obstruction heard by pressing a **stethoscope** to the skin over the artery. It takes over 70% of plaque obstruction to cause a bruit.
- ♥ **Coronary Artery Calcium Score (CACs):**
 - Demonstrates calcified plaque with the major coronary arteries of the heart. The higher the score, the greater risk of a future heart attack and dictates further evaluation, including a stress test. **Note:** a negative calcium score does not mean there is an absence of *soft plaque* within the arteries.
- ♥ **Advanced Cardiovascular, Diabetes, Metabolic, Fatty Acid Balance and Genetic Testing:**
 - ◆ **Boston Heart Diagnostics Lab Report**
 - This comprehensive report book provides me with the most in-depth analysis available anywhere of a persons risk for heart disease, stroke, and metabolic disorders, including diabetes. The report is written for the patient explaining the results and uses illustrative graphs and color coded results: Green is good, Yellow is a concern and Red is an alarm.
 - I use this report to create a personalized **Life-Plan Recommendation** list of specific behavior modification recommendations (using the principles I have discussed in this lecture) and specific prescription medications and supplements targeted to specific abnormalities. The goal is to move the Yellow and Red into the Green ranges.
 - ◆ Patients register and create their own private account on the Boston website. Using the patients' lab results and the answers to a brief questionnaire an 18-page computer generated **Personalized Nutritional Life-Plan** is formulated and can be printed.
 - ◆ Boston Diagnostics also provides access for all patients to their **Boston Registered Dietitian Consultation Program**. Registered Dietitians work with patients to educate and assist them in achieving their health goals.

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References:

- www.gordongunnmd.com
- **Sightlines Project** Stanford University (available online)
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- **Trying Not to Try – Ancient China, Modern Science, and the Power of Spontaneity** by Edward Slingerland