Emanate Health™

Formerly Citrus Valley Health Partners

Aging Well & Younger Next Year Seminar

Saturday, October 12, 2019

Pacific Palms Resort, City of Industry, CA

Emanate Health™

Always there, whatever it takes.

Our passion for healthier communities is intrinsic to each and every one of us, fostering a deep commitment to keep people well in body, mind and spirit. We consider each other and those we serve family, developing sincere and loyal relationships and going to great lengths to make people feel at home. And as family–when it comes to health–we'll do whatever it takes.

Our new name tells the story of who we are as a system of care for our community –

Our positive energy empowers every life we meet

It radiates from inside all of us into our community

Some call us their catalyst for change

Their source for soaring

Their beacon for healthier lives.

We are Emanate Health.

Welcome to today's "Aging Well & Younger Next Year" seminar.

We have assembled leading medical experts to provide you with the secrets to successful aging. The goal is to give seniors the tools that they need to live healthy, active lifestyles.

We are very proud that physicians from Emanate Health, Cedars-Sinai Medical Center, the Keck School of Medicine of USC and the UC Irvine School of Medicine, are partnering with us today to improve your health. A special thanks to our sponsors and to our program planning committee.

At Emanate Health, we provide comprehensive health care services to 130,000 active seniors among the one million people living in our surrounding communities. With baby boomers expected to grow by approximately 20% in the next five years, Emanate Health is prepared to cover the San Gabriel Valley region with advanced medical care through every stage of life–from our Family Birth & Newborn Center to the most preferred hospice and home care in the valley.

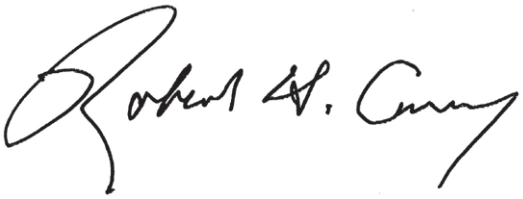
We have prioritized our commitment to provide exceptional patient care by recruiting leading physicians from top regional and national medical schools, many of whom you will hear from today. Our medical experts in Cardiology, Neurology and Women's Health have been awarded Top Doctors by the Los Angeles Business Journal. Emanate Health hospitals in Covina, West Covina and Glendora consistently rank among the Best in the San Gabriel Valley with a network of more than 16 primary and specialty care clinics to choose from.

Leading the region with innovative technology, our center of excellence includes master surgeons in minimally invasive robotic surgery. Our trusted cardiologists perform more life-saving heart procedures than other hospitals in the area. We have added state-of-the-art equipment to our suite of specialized care to deliver significantly advanced diagnosis and treatment of stroke and other neurological disorders, from head to toe.

As our community continues to grow, so do we. To further our mission by providing quality health care services in a safe, compassionate environment, Emanate Health continuously invests back into our communities. Our latest modernization projects include the expansion of the Queen of the Valley Hospital Emergency Department in West Covina and plans for a new urgent care in a city near you.

In addition to providing the best medical care and outcomes, we also strive to empower patients with education to make informed decisions about their health care. Thank you for choosing Emanate Health. Enjoy the program!

Sincerely,



Robert H. Curry
President & CEO
Emanate Health

Know Your Hosts

Dr. Gurjeet Kalkat

Chief Medical Officer

Dr. Gurjeet Kalkat is the Chief Medical Officer for Emanate Health. Before he took on this role he was the Medical Director of Foothill Presbyterian Hospital. He also served as the Chief of Staff at Foothill Presbyterian Hospital in 1997. Dr. Kalkat has been with this organization since 1992.

He received his medical degree from the University of Delhi and trained in pulmonary and critical care at University of Southern California. He is board certified in internal medicine, pulmonary medicine, critical care medicine, palliative care and hospice medicine.

His focus is to provide integrated, quality and efficient medical care to our community.

Diane Martin

Chief Marketing & Communications Officer

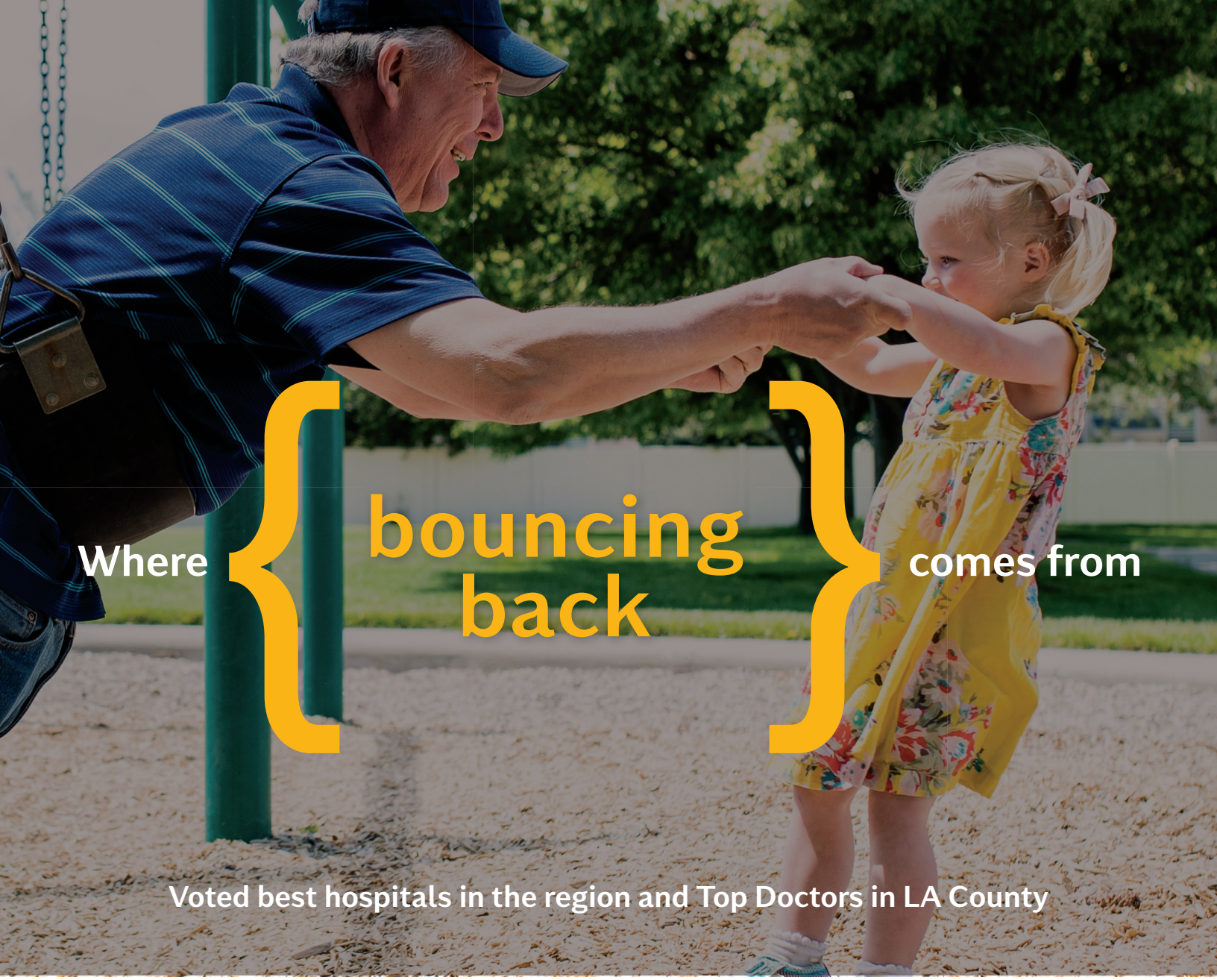
Diane is the Chief Marketing and Communications Officer. Prior to joining Emanate Health, Diane served as the Corporate Director of Marketing Communications and Digital Strategy for Prime Healthcare where she was charged with unifying the health system's brand across the nation and improving its reputation through storytelling, press releases and the utilization of influencers.

She is also a former strategic marketing and communications consultant with Stanford Health Care and UCLA Health Affiliates, leading successful marketing and advertising initiatives for a wide range of service lines.

Diane received her MBA from the University of Redlands and a bachelor's in Public Relations from Barry University in Florida. Diane studied LEAN methodologies at Reitaku University in Japan and The Chinese University of Hong Kong in China as part of a global business study abroad program.

Know What's Next

7 - 7:45 a.m.	**Registration & Continental Breakfast**
7:45 - 8 a.m.	**Welcome** Dr. Gurjeet Kalkat Chief Medical Officer *Emanate Health* Diane Martin Chief Marketing & Communications Officer *Emanate Health*
8 - 8:40 a.m.	**Vitamin & Mineral Supplements, Truths & Falsehoods** Dr. Kurt Hong *Keck School of Medicine at USC*
8:50 - 9:35 a.m.	**Joint Care & Orthopedics: Keep Movin' & Flexin'** Dr. Ankur Patel *Emanate Health*
9:35 - 9:55 a.m.	**Vendor Walk**
10 - 10:40 a.m.	**Sex Health & Seniors: A Perspective for Baby Boomers** Dr. Edward Tangchitnob *Emanate Health*
10:50 - 11:30 a.m.	**Neuroscience & Dementia** Dr. Claudia Muñoz *Emanate Health*
11:45 a.m. - 12:30 p.m.	**Digital Health for Seniors** Dr. John Luo *UC Irvine School of Medicine*
12:30 - 1:15 p.m.	**Lunch**
1:15 - 2 p.m.	**Keynote Address: Secrets of Successful Aging & the Biology of Aging** Dr. Sonja Rosen *Cedars-Sinai Medical Center*
2 p.m.	**Seminar ends**



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Know Your Health

Vitamin and Mineral Supplements: Truths and Falsehoods
Dr. Kurt Hong
Keck School of Medicine of USC

Navigating proper health can be tricky with so many “health” promoting items, such as vitamins and supplements on the market. Learn why people use vitamins, minerals and supplements, what the potential health and wellness benefits are, and learn how to distinguish which over-the-counter supplements are safe.

Joint Care & Orthopedics: Keep Movin’ & Flexin’
Dr. Ankur Patel
Emanate Health

Keeping active as you age can be a challenge, especially for those with joint pain and aches. Learn about the common causes of joint pain, why joints hurt and what can be done to keep joints feeling young. Hear about medical treatments available that may help maintain joint health, and know when it’s time to seek treatment.

Sex Health & Seniors: A Perspective for Baby Boomers
Dr. Edward Tangchitnob
Emanate Health

Aging brings physical, emotional and physiological changes that can be hard to understand and cope with. Learn about gynecological procedures that may reduce and relieve pain, and the steps partners can take to have a healthy sex life, using the latest health care treatments.

A woman's health care needs change throughout her life.
At Emanate Health, we pledge to be there
to help you through all of them.

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Know Your Health

Digital Medicine for the Elderly: Tools for Health
Dr. John Luo
UC Irvine School of Medicine

In the digital age, there is a wealth of health information and technology geared towards helping people lead healthier lives. Learn which new tools can make it easier to track heart health, medication reminders and more. In addition to apps and tools, learn what to look out for and how to keep personal information safe online.

Neuroscience & Dementia
Dr. Claudia Muñoz
Emanate Health

Keep your brain sharp and body moving. The brain, the body's control center, can be susceptible to issues such as dementia and Alzheimer's disease. Learn how to keep your memory sharp and active. Hear about the signs of dementia to look for and learn how to keep your loved one with dementia safe.

Secrets of Successful Aging & the Biology of Aging
Dr. Sonja Rosen
Cedars-Sinai Medical Center

It's important to know how to maintain a healthy lifestyle and regain overall health after an injury or illness. Learn which steps to take to prevent disease before it starts, how to detect disease early, and how to live a healthy life at any age.

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Know Your Experts

Dr. Kurt Hong

Keck School of Medicine of USC

Dr. Kurt Hong is dual board-certified in Internal Medicine and Clinical Nutrition. He specializes in a comprehensive approach to managing patients with obesity, metabolic diseases and other nutrition-related disorders. Dr. Hong is committed to improving outcomes for patients through clinical and translational research. Current interest include the study of macro and micro-nutrients affecting energy metabolism, impact of lifestyle intervention on health care utilization, nutrition support for aging, and innovative use of computational phenotyping and machine learning for management of chronic diseases.

He is the founding director of the Center for Clinical Nutrition and currently holds joint faculty appointments at Keck School of Medicine of USC and the USC Davis School of Gerontology. Dr. Hong received his medical degree from Harvard Medical School in 1999. He completed his Internal Medicine training at Scripps Clinic and subsequent fellowship training in Clinical Nutrition at UCLA. Dr. Hong also received his Ph.D in Cellular and Molecular Pathology, and research training in Stem Cell Biology from UCLA. He is a reviewer for multiple medical journals, serves on committees of leading scientific organizations and is frequently invited to speak at hospitals and national conferences.

Dr. Ankur Patel

Emanate Health

Dr. Ankur Patel is an orthopedic surgery specialist for Emanate Health Medical Group who specializes in treating joint pain/swelling, joint replacement, Carpal Tunnel Syndrome, Osteoarthritis, herniated disc and bone fracture, among other ailments. Dr. Patel earned his medical degree from UC San Diego, and served his residency and internship at the UCLA School of Medicine. He completed his fellowship at the Keck School of Medicine of USC.

Dr. Edward Tangchitnob

Emanate Health

Dr. Edward Tangchitnob is the Medical Director, Minimally Invasive Gynecology and Robotic Surgery for Emanate Health Queen of the Valley Hospital. With a background in both engineering and medicine, Dr. Tangchitnob is uniquely trained to deliver expert surgeries including hysterectomies and procedures to remove fibroids and endometriosis lesions, as well as treat other women's health issues. As a highly skilled gynecologic and cosmetic surgeon, he also provides gentle and effective care for patients throughout the region at Tangchitnob MD in West Covina, California.

Dr. Tangchitnob completed his engineering medical degree at Tufts University in Boston, graduating Cum Laude in electrical and biomedical engineering before earning his doctorate of medicine at Tufts University School of Medicine. He served his residency and interned at Cedars-Sinai Medical Center in Los Angeles and completed fellowship training in minimally invasive gynecologic surgery at Scripps Clinic in San Diego. In addition to his expertise as a gynecologic surgeon, Dr. Tangchitnob is passionate about educating his patients about their bodies and their health. He helps patients understand their health needs so they can make better-informed choices and take more control over their health and wellness.

Dr. Claudia Muñoz

Emanate Health

Dr. Claudia Muñoz is the Medical Director of Neuroscience at Emanate Health Queen of the Valley Hospital, and board certified in Neurology and Epilepsy. She previously served as an Assistant Clinical Professor of Neurology and Director of Epilepsy at UC Riverside School of Medicine. Dr. Muñoz was a co-investigator on the Hoag Foundation Sports Concussion Project, to help identify genetic and inflammatory biomarkers that predict outcomes after a concussion in young athletes. She worked as a public health coordinator on the Guantanamo Refugee Project and developed public health programs for Cuban and Haitian refugees in camps.

Dr. Muñoz holds a Bachelor of Arts in International Relations, a Masters of Public Health from Stanford University, a Public Health Doctor of Medicine degree from Tulane University, and a medical degree from Case Western Reserve University School of Medicine. She interned at Alameda County Medical Center, served her residency at UCI Medical Center and completed an Epilepsy fellowship at Washington University-affiliated Barnes-Jewish Hospital. Dr. Muñoz is also fluent in Spanish.

Dr. John Luo

University of California Irvine School of Medicine

Dr. John Luo is the Director of Consultation-Liaison and Emergency Psychiatry at the University of California Irvine Medical Center. Previously, he served as the Chief Medical Information Officer for UCR School of Medicine, directing the implementation of the Epic electronic health record for the clinical enterprise. He was also a senior physician informaticist in the UCLA Health System, responsible for the development and deployment of the UCLA CareConnect electronic health record based on Epic. At the UCLA School of Medicine, he served as the co-chair for the second-year medical school Neuroscience block. Dr. Luo is an internationally recognized educator and expert on behavioral health informatics. He has presented at numerous conferences, written books and articles on technology use in mental health, and he has been recognized locally and nationally for excellence in teaching. He is past-president of the Association for Academic Psychiatry, and is currently co-chair of the Information Systems committee for the American Association for Directors of Psychiatry Residency Training.

Dr. Luo completed his Medical Informatics fellowship at UC Davis Department of Psychiatry, where he implemented an electronic sign-out process using the Palm Pilot. He was chief resident and resident at the Harbor-UCLA Medical Center in Psychiatry, and received his medical degree from the University of Texas Medical Branch at Galveston. He is one of the few psychiatrists who are board certified in Clinical Informatics, a new sub-specialty board certification.

Dr. Sonja Rosen

Cedars-Sinai Medical Center

Dr. Sonja Rosen serves as both the Medical Director and Chief of Geriatrics at Cedars-Sinai Medical Center. She is also an Associate Professor of Medicine at Cedars-Sinai and Associate Clinical Professor of Medicine at UCLA David Geffen School of Medicine.
Dr. Rosen completed her fellowship in Geriatric Medicine at UCLA, residency in Internal Medicine at Harbor-UCLA, and medical school at the University of Chicago Pritzker School of Medicine. She is board certified in Internal Medicine, Geriatric Medicine and Hospice & Palliative Care Medicine. Dr. Rosen's research and clinical interests include safe transitions of care and safe prescribing in older persons, combatting social isolation, and fall prevention. Dr. Rosen is co-investigator for an AARP Foundation Grant titled, "Leveraging Exercise to Age in Place" (LEAP), with goals to help combat social isolation and prevent falls through community exercise classes.

Neuroscience & stroke care services include:

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Contributions from our doctors

A Collection of Health and Wellness Articles to Support Today's "Aging Well & Younger Next Year" Seminar

The "Circle of Life", when a baby is born, he or she will have total care. As a person ages, he or she might also require total care. Does it have to be that way? The answer is NO. At Emanate Health, we exist to help people keep well in body, mind and spirit by providing quality health care services in a safe, compassionate environment.

In support of today's "Aging Well and Younger New Year" seminar, our physicians have put together a series of health and wellness articles to provide valuable information that will allow seniors to live long, prosperous lives.

Heathy aging means continually reinventing yourself and learning to adapt to change, staying healthy and being socially active. Living well can mean the difference between a productive life or one facing numerous health challenges.

My sincere appreciation goes out to all the Emanate Health physicians for their contribution to this collection of articles, including those from our young doctors in the Family Medicine Residency Program. I hope the articles, and the beautiful poem by Dr. Sunanda Chatterjee, will provide interesting and informative reading for guests of today's seminar to enjoy at their leisure.

Finally, my hope is that we will make each moment of our lives count and live to the fullest. Be who we are and go after what we want to keep aging well.

Sincerely,

Bill W. Tang

PharmD, M.D. F.A.C.O.G., F.A.C.S.

Attitude is Everything. Age is But a Number

By Sunanda J Chatterjee, M.D., Ph.D.

When I was younger, I used to worry
About food on the table, sandwich or curry
Send kids to school, I used to scurry
Between home and work I used to hurry

Now I'm eighty, you gotta see me
Those around 60? They want to be me!
I drink my coffee, sweet and creamy
Years did not age me, they acted to free me

I have metal in my knees and wires in my chest
Medicare docs are the best of the best
Growing old is not an easy test
And retirement is not to rest

Sure I have aches and pains and cricks
Many a plan I've had to nix
My body's a list of things to fix
I nap at two, or four, or six

I play with grandkids and feed them ice cream
Things as a mother, I would never dream
I pamper those angels till my kids scream
I wink, I cackle, I beam

Kids grow up and no one stays
I'm done with all those middle school plays
I don't crave for the good old days
I shiver in Julys, and Junes, and Mays

I complain and scold, I don't need tact
I stoop, I limp, that's not an act
They took my appendix, that is a fact
Some teeth fell out, but most are intact

Sickness can cause mayhem
I take meds for my DM
And OA and HTN
But I am not defined by them

I control the TV, drink wine in my bed
If I didn't age, I would be dead
I prefer growing old instead
Death is easy, it's dying I dread

Growing old is like a spell
It can be heaven, it can be hell
You'll get sick, you may get well
Start with "Whatever", end with "Oh well!"

With teeth 32 and bones 108
We begin life with predestined fate
But learn to love and forget to hate
Enjoy living before it's too late

Aging gracefully or disgracefully? Your Choice

By Zaira Y. Ortega, MD

What does aging exactly mean? For some, the meaning is simple, acquiring wisdom, turning a year older and blowing another candle on the cake. For others, it becomes a dreadful reality that our face turns into a road map that takes us further away from our youthful and refreshed appearance. Aging is the chronological process accompanied by a progressive loss of the physiological function in multiple organs. When speaking exclusively about skin, and its physiology, chronological aging is a progressive process where skin looses its natural mechanical tension and elasticity. Fragmented collagen and micro inflammation are also prominent features in aged skin and are linked to wrinkle formation and impaired barrier function. At the cellular level, its senescence is many times induced from the exposure to UV light, ROS damage, DNA telomerase shortening and just plain cellular DNA damage.

In aged skin, dermal fibroblast exhibit a decreased level of extracellular matrix proteins such as collagens, and show an enhanced expression of inflammatory and innate immunity markers. Lipid metabolism and fat cell differentiation genes also increase their expression in older skin when compared to young skin (Salzer et al.). With skin's physiology in mind several products, treatments and procedures are constantly invented to reverse and prevent skin's aging at the cellular level. From the array of procedures and treatments to prevent and reverse the aging process, there are two simple and rather inexpensive recommendations to slow the aging process.

It is well known and documented the importance of daily sunscreen use for the protection against exposure to ultraviolet radiation (UVR) energy. UVR is not only associated with aging but also with skin cancer. From the different UVR wave-lengths, the ones that affect skin the most are UVB, associated with alterations in DNA, RNA, and protein synthesis, induction of cyclobutyl pyrimidine dimers, and production of various cytokines; and UVA, which induces an immediate pigment-darkening reaction and new melanin pigment formation (Farris). Although it was thought that the major contributor to skin aging was UVB radiation, UVA is known to contribute to skin cancers by inducting DNA mutations directly as well as by enhancing the damage incurred by UVB. Human skin exposed to UVA has altered expression of the p53 tumor suppressor protein; these can be reduced by the use of UVA sunscreens.

Also at the cellular level, diet plays a fundamental role in delaying aging. Aging is a multifactorial process as discussed before with intrinsic and extrinsic factors affecting its progression; recent studies have focused on nutrition as an environmental factor that can influence aging by altering gene expression. Although the health benefits of caloric restriction are well documented, it is unrealistic and rather challenging approach to delay aging and reduce age related illnesses. The exact mechanism of how caloric restriction affects the aging process is not completely well known, but it is believed it is related to down-regulation of mTor signaling and up-regulation of Sir1 gene expression (Farris). A less complicated alternative to calorie restriction is to change the quantity of our nutritional intake, by improving the quality of foods, and decreasing the sugar intake. Diets high in added sugars and refined carbohydrates contribute to the development of metabolic syndrome, type II diabetes and other age-related illnesses. Glycation increases cross-linking of collagen and elastin fibers render them stiff and inelastic, causing loss of skin suppleness and contributing to the aging. Once glycated collagen and elastin is deposited in tissues, it cannot be broken down, so prevention remains the best strategy (Farris). Therefore, one can alter the rate of glycation by lowering the intake of dietary sugars and maintaining tight glycemic control. In addition to their direct effects on tissues, glycated proteins increase oxidative stress and up-regulate inflammation (Farris).

Certainly, now days with the technology advancements there are many more strategies to delay the aging process, than diet and the simple use of sunscreen. Whether one chooses to use a cream, do surgery, use sunscreen or become a vegetarian, aging is an inevitable process for everyone. One cannot always look forward to the wrinkles in the forehead or a balding head, but certainly the wisdom acquired through each year can make up for those inconveniences.

Reference:

Farris, Patricia K.. Cosmeceuticals and Cosmetic Practice, John Wiley & Sons, Incorporated, 2013. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/socal/detail.action?docID=1557283.
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Carbohydrates or Low Carbohydrates?

The Debate Continues

Ann Kuns, MSN, RN, CNS, PHN, CDE, CLA

The health care provider needs evidence-based nutritional recommendations to promote healthy aging and meet the nutritional needs of chronic disease states. Multiple studies support both a carbohydrate-based meal plan, such as the Mediterranean diet and a low-carb meal plan, such as the Atkins and ketogenic diets. In addition, there is some evidence to support periods of fasting or calorie-restriction to promote health. Based on the information, several broad-based recommendations are made.

Whether a carbohydrate proponent or opponent, everyone can agree that processed sugars, especially in sugar-sweetened beverages are detrimental to health. Liquid sugars are processed more rapidly by the body than sugars contained in solid food; foods with fiber seem to reduce the effects of sugar (Wang). Liquid sugar is also the single largest source of added sugar in the American diet (US Department of Agriculture). Far from an "empty calorie," sugar aggressively contributes to fatty liver disease, metabolic syndrome, obesity, diabetes and many types of cancers (Brown, et al., Elliot, et al., Teff et al., and Zheng). Drinking even one 12-ounce can of regular soda per day increases the risk of dying from heart disease by 33% (Yang and Schmidt, Yang et al., & Schwingshackl, et al.) and drinking one to two cans per day vs one can per month results in a 26% higher risk of developing type 2 diabetes (Malik). Of additional concern, sugar may be as addictive as cocaine or nicotine leading to compulsive eating and obesity (Johnson and Kenny). Just removing sugar from any meal plan and eating real food results in successful weight loss and improved health (Gardner, et al.). However, as with any meal plan, maintaining a lifestyle change is challenging. "Cheat days" with refined carbohydrates are not recommended as one study indicated signs of blood vessel damage with just one 75-gram CHO load after a 7-day very low carbohydrate diet (Durrer, et al.).

Carbohydrate-based Meal Plan

A plant-based meal plan may contribute to longevity as seen in one study of centenarians. The study looked at the health behaviors of five populations, known as Blue Zones that had a very high percentage of centenarians. Although all groups ate plant-based carbohydrates, the Okinawans' diet consisted of a high percentage of non-starchy vegetables (Davinelli, et al). Several additional studies also saw more benefits with the consumption of non-starchy vegetables, but not with an increase in fruit intake (Leenders, et al & Fung, et al).

The percentage of carbohydrates in the meal plan must also be considered. A recent study (2018) with a primary outcome of all-cause mortality found a U-shaped curve in the percentage of carbohydrate consumption and mortality. In the over 15,000 adults aged 45-64 years with a mean follow up of 25 years, a percentage of 50-55% carbohydrates in the meal plan was associated with the lowest risk of mortality. Those with < 40% or > 70% had an increased mortality risk and shorter residual lifespan (Seidelmann, et al).

Low-carbohydrate Meal Plan

Both the Atkins and ketogenic meal plans result in significant improvement in glucose metabolism and insulin sensitivity, reduction in truncal obesity and insulin resistance, preservation of lean body mass, and improved blood pressure, triglycerides and HDL cholesterol (Krebs, et al.). In a study of over 300 patients with type 2 diabetes, followed for one year, blood glucose control quickly improved. The A1c was reduced > 1%, body weight reduced 12%, and the need for diabetes medication was significantly reduced. Of those on insulin, 94% had a reduced dose or discontinued insulin completely and those on sulfonylureas no longer needed the medication. There was also an improvement in dyslipidemia and liver function while reducing markers of inflammation. The study did require continuous remote care to achieve results while reducing the risk of hypoglycemia (Halberg, et al.). In addition to the benefits in treating type 2 diabetes, a very low carbohydrate diet may reduce neurological disorders, including dementia (Masood and Uppaluri) and in one study showed some effectiveness in brain cancer treatment/prevention (Strowd, et al.).

Intermittent Fasting

Reduction in cellular and environmental stressors through improved nutritional intake may result in a longer and healthier lifespan; however, caloric restriction appears to be the only common method to increase lifespan (Davinelli, et al.). Very low calorie meals plan (400 – 800 kcal day) may provide temporary success, but weight is regained when the patient resumes their former dietary patterns (Bistrian, et al.). Intermittent fasting may be one method to reduce overall calories and is easier to incorporate in a daily regimen. One method recommends 16 hours per day of fasting with 8 hours of eating (8 AM - 4 PM or 10 AM – 6 PM). The other method uses 2 whole days (non-consecutive) per week of no calories. Only water, coffee, tea and other non-caloric beverages are permitted during the fasting period. Intermittent fasting has been shown to reduce appetite and hunger hormones, and increase fat burning to induce weight loss, which may be effective for patients with diabetes and obesity (Ravussin, et al).

Recommendations for All Types of Meal Plans

- Refer to a Registered Dietitian Nutritionist for patient-specific meal prescription.
- Omit **processed** carbohydrates, especially in liquid form.
- Increase non-starchy vegetables to at least four servings per day.
- Include 1 to 2 low glycemic fruits per day, such as berries.
- Keep proteins to about 20% of calories per day, whether meal plan is vegan or ketogenic. If using animal proteins, use unprocessed, grass-fed sources.
- Include unprocessed fats, including olive/avocado oils, raw nuts, coconut oil, butter (from grass-fed sources), and dark chocolate/cocoa powder.
- Consider using intermittent fasting with any recommended meal plan to reduce overall calories, but be aware that glucose-lowering medications must be adjusted to prevent hypoglycemia.

Where does your added sugar come from?

Rank	Food group	Proportion of average intake
1	Soda/energy/sports drinks	42.2%
2	Grain-based desserts	11.9%
3	Fruit drinks	8.5%
4	Dairy desserts	5.5%
5	Candy	5.0%
6	Ready-to-eat cereals	2.9%
7	Sugars/honey	4.1%
8	Tea	3.8%
9	Yeast breads	2.3%
10	Syrups/toppings	1.4%

Source: CDC, National Health and Nutrition Examination Survey, 2005–06.

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It's Never Too Little or Too Late for Older Patients to Participate

Haein Kim, M.D. and Hamed Shalikar, M.D.

Introduction

The benefits of exercise for people of all ages is undeniable. There is an abundance of evidence published over the last few decades demonstrating its positive effect on the quality of life. As the average age life expectancy in the US is 78.6, most Americans will spend 17-36% of their lives as an "older person" [1], which is defined as anyone 65 and older or 50-64 with significant comorbidities and/or functional impairment [2]. The American population continues to grow older and it is becoming increasingly important to tailor exercise regimens to meet their unique needs.

Benefits of Exercise

Increasing levels of physical activity is associated with healthy aging in a dose dependent and linear fashion [3,4]. Elements of healthy aging often include longevity, cognitive and functional status, mood, sleep, and being free of chronic disease [2,5]. Improvements in most of these parameters are seen even in patients who participate in minimal levels of activity [6] or start exercising as late as 85 years of age [7].

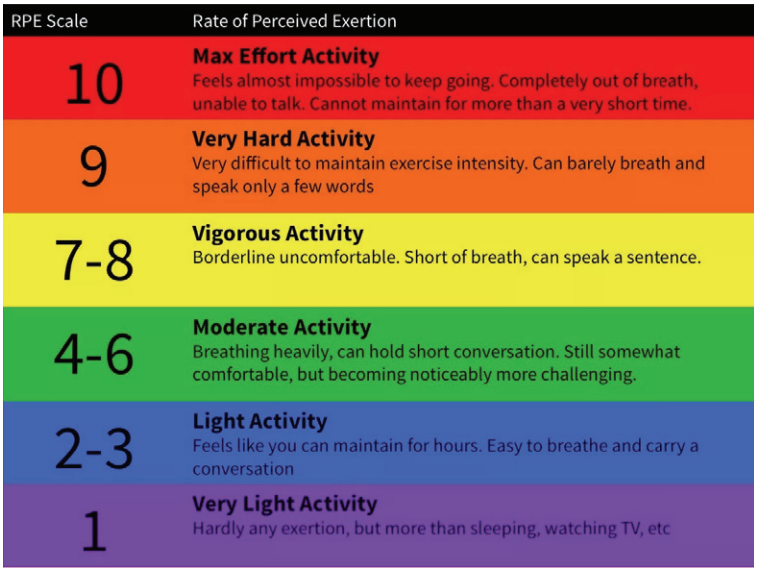
Participating in moderate to vigorous intensity physical activity levels below currently recommended doses can decrease mortality by up to 22% [8]. Even leisurely physical activity reduces the risk of total and cardiovascular disease morbidity and mortality independent of major risk factors, such as hypertension, hyperlipidemia, diabetes, and obesity [9]. The greatest benefit is noted when a person goes from being sedentary to mildly active.

Strength training (i.e. weight lifting) in particular can prevent age-related muscle loss and weakness, which are risk factors associated with development of disability and loss of independence [10,11]. Balance training has been shown to decrease fall risk [12,13]. Physical activity can also help reduce stress, anxiety, and depression, and also regulate sleep patterns. By mechanisms that warrant further investigation, exercise may improve cognitive function by altering levels of growth hormones and the amino acid homocysteine [2,14].

Recommendations

It cannot be stressed enough that any activity is better than no activity. However, the American Heart Association (AHA) and American College of Sports Medicine (ACSM) do have specific exercise recommendations for older persons in regards to the four aspects of exercise: aerobic, strength, flexibility, and balance [15]. Activities of daily living, such as doing laundry, cleaning, or walking to and from the car, do not technically qualify as exercise. Intensity is based on the Borg Rating of Perceived Exertion (RPE). See TABLE 1 [16].

TABLE 1.



Courtesy of http://sarahbockhart.com/fitness/my-10-golden-rules-for-training-in-the-gym/attachment/rpe-scale/.

Aerobic

The AHA and ACSM recommend a minimum of 30 minutes of moderate intensity exercise (5-6 RPE) 5 times a week, 20 minutes of vigorous intensity exercise (7-8 RPE) 3 times a week, or a combination of the two [15]. Patients should be able to carry on a conversation during both moderate and vigorous intensity activity. For example, a moderately intense fast-paced walk would allow for 30 minutes of talking but not singing. Aerobic exercise can be split up into multiple doses in a day, but each increment should be no less than 10 minutes to still be considered true aerobic activity.

Strength

The National Institute on Aging (NIA) recommends a minimum of 2 non-consecutive days of strength training that target the abdomen, arms, legs,

shoulders, and hips. Each activity should be repeated 10-15 times at moderate to vigorous RPE [10]. If a weight cannot be lifted or pushed 8 times with ease it is considered inappropriate. The act of lifting or pushing should last 2-3 seconds, with a 1 second pause before returning to baseline, which should be take 3-4 seconds. It is important to avoid locking joints.

Patients should be counseled on the difference between normal muscle soreness, which resolves within a few weeks, from worsening of chronic illness [10]. Correct form and a gradual increase in intensity prevents injuries. Thus, even frail patients should not be discouraged from starting strength training.

Flexibility

Stretching activities should be done for 10 minutes at least 2 times a week when the body is warmed up, such as after aerobic or strength training. Stretches should be held for 10-30 seconds without bouncing. Discomfort is normal, but pain is a signal to back off. For stretching ideas, please visit the NIA's webpage Your Everyday Guide: Exercise & Physical Activity [10].

Balance

Formal evidence-based balance training programs, such as the Otago Exercise Programme or 6 months of Tai Chi 3 times a week, are appropriate options [10,12,13,17]. The NIA recommends engaging in balance activities in a safe environment throughout the day. Activities include heel-toe-walking or standing on one foot with a sturdy chair in front. For more balance training ideas, please visit the NIA's webpage Your Everyday Guide: Exercise & Physical Activity [10].

Engaging Older Patients

Motivational interviewing and exercise prescriptions have demonstrated some success in helping patients incorporate exercise into their daily routines [18,2]. Discussing a patient's goals, priorities, and comorbid conditions is paramount to developing a meaningful exercise plan with greater likelihood of adherence. For example, prescribing walking for a patient with osteoarthritis of the knee may cause unwanted pain and early termination of the exercise program. Low impact activities, such as water aerobics, may be a better fit for this particular individual.

The AHA endorse a modified Transtheoretical Model (Stages of Change) to help patients transition from contemplation to action and eventually maintenance. The "5 A's" are as follows: **A**ssess current activity level, **A**dvise on the benefits of exercise, **A**gree with where the patient is in regards to change, **A**ssist with exercise planning and writing an "exercise prescription," and **A**rrange for close follow up [19].

Minimizing Risks Associated With Exercise

No testing is need prior to starting a exercise program. Contraindications to exercise outside monitored environment include myocardial infarction within the last 6 months, angina, signs and symptoms of congestive heart failure, and resting systolic blood pressure of 200 and above [2].

Patients should be counseled on how their medications can affect exercise. ACE inhibitors and diuretics may worsen exercise-induced dehydration, and thus cause hypotension and dizziness. Beta-blockers, calcium channel blockers, and nitrates can exacerbate postural hypotension. Insulin and oral diabetic medications may increase hypoglycemic episodes with vigorous exercise [2]. Hyperglycemia can also occur with vigorous activity due to glucagon stimulation.

In general, new physical activity prescriptions should begin low and be titrated up slowly. Close follow up with primary care providers is crucial to ensuring safety, as well as fostering the motivation and support necessary for patient success. Patients with lower physical capabilities should be reminded that any activity is better than no activity, and that it is never too late to start moving.

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The Effects of Aging on the Cardiovascular System

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By the year 2050, it is estimated that approximately 2 billion people will be over the age of 60 years, representing 22% of the world's population.[1] In turn, advanced age is a major risk factor in the development of cardiovascular disease (CVD). The complications of CVD range from hypertension, heart failure (HF) to myocardial infarction (MI), cerebrovascular accidents/stroke (CVA), and chronic disability. There is a strong direct correlation between age and the prevalence of CVD. In 2011 alone, CVD was cited as the cause of death in 20% of non-geriatric patients (less than 65 years old) and in 34% of geriatric patients ages 65 to 75 years old.[1] In turn, CVD is a major cause of chronic disability which may lead to decreased quality of life, physically, psychologically, and ultimately, mortality.

Although efforts at prevention and treatment of CVD have been substantial in the past two decades, associated morbidity and mortality rates continue to escalate and to impose a tremendous burden on patients, their families, and the national healthcare system.[2] Approximately one of every three deaths (30.8%) in the United States is caused by CVD and/or its complications.[2]

This article provides a summary of the latest information on the effects that aging has on the cardiovascular system, from a biochemical and biological approach, with an emphasis on evidence-based medicine and on improving cardiovascular health.

WHAT IS NEW IN THE BIOCHEMISTRY OF AGING AND DEVELOPMENT OF CVD

At the molecular level, cell biology presents interesting hypotheses regarding aging and disease progression. Several epidemiological surveys have reported an association between short telomere length (TL) with CVD[3,4,5,6] and cardiovascular mortality.[7,8]. For instance, the Cardiovascular Health Study reported that each shortened kilobase pair of TL corresponded to a threefold increased risk of MI and CVA.[3] Moreover, a recent systematic review and meta-analysis reported a constant positive association between decreased leukocyte TL (LTL) with cardiometabolic outcomes. Findings suggested that one standard deviation decrease in LTL was significantly associated with a 21%, 24%, and 37% increased risk of CVA, MI, and Type 2 Diabetes Mellitus, respectively.[5]

The development of cardiomyopathy itself has been associated with dysfunction of mitochondrial polymerization. Koczor et al. (2016) correlated cardiomyopathy progression to mitochondrial DNA depletion.[9]

With regards to heart failure(HF), one of its etiologies has been identified as the excessive accumulation of an extracellular matrix. Additionally, Ghosh et al. (2016) identified microRNAs as important biomarkers for the development of HF.[10] Structural or "epigenetic" modifications in these microRNAs have also been linked to aging.

THE BIOLOGICAL EFFECTS OF AGING ON CVD DEVELOPMENT: ONE ORGAN AT A TIME

Heart:

Normal changes in the heart include deposits of the "aging pigment," lipofuscin. At the cellular level, fatty deposits and fibrous tissue may develop around heart conduction pathways. To this effect, with increasing age the myocardium becomes rigid. Moreover the innate cardiac pacemaker, the SA node, atrophies and may undergo cellular loss. The myocytes degenerate slightly. Altogether, the latter appears to possibly increase the risk for bradycardia in the elderly.

Yet, atrial fibrillation (AF) is the most frequent arrhythmia in the elderly. The latter is partly associated with the imbalance of sympathetic and parasympathetic drive to the heart tissue. The autonomic nervous system changes with age. Normally, its parasympathetic component sets the level of the heart rate at rest, while the sympathetic counterpart governs the heart in anticipation of/in response to physical activity — stimulating a timely and appropriate increase in systemic blood flow to support an activity. Continuous adjustments between the sympathetic and parasympathetic systems result in minute heart rate variations. This is known as Heart Rate Variability (HRV) and is evident on a beat-to-beat basis. This type of sensitive regulation is characteristic of a healthy heart conduction system. With increasing age, however, the contribution of the parasympathetic system wanes as the sympathetic

system's activity increases, even at rest. HRV disappears and the heart's rhythm becomes more prone to disruption.[11,12]

Structurally, hypertrophy may be observed, specifically in the left ventricle resulting in decreased cardiac filling capacity during diastole. The compensatory increase in pulse and cardiac output in response to physical activity is also compromised. Of note, the drop in maximum heart rate appears to be greater than average in sedentary individuals and in those with overt cardiovascular disease.[13]

Blood vessels:

Baroreceptors monitor the blood pressure and register appropriate changes to help maintain a fairly constant blood pressure when a person changes positions during activities. The baroreceptors become less sensitive to such changes with aging, hence orthostasis. The resulting perception of instability results from the decreased blood flow to the brain as a consequence of faulty baroreceptors. Moreover, the capillary walls thicken, which interferes further with the appropriate baroreceptor response.[14]

Blood:

The blood itself changes slightly with age. Normal aging causes a reduction in total body water. As a result, there is less fluidity of the bloodstream and a decreased effective circulatory blood volume. The efficiency with which red blood cells are produced in response to stress/illness is reduced with advanced age as well. Neutrophils decrease in number and in their ability to mount an effective immune response to pathogens and ward off infection.[15]

HOW CAN THESE CHANGES BE DELAYED OR REVERSED

The proper control of high blood pressure, blood cholesterol levels, blood sugar, obesity risk factors, and lifestyle choices, such as smoking, have been shown to effectively prevent CVD. Men between the ages of 65 to 75 years who have ever smoked should be screened for aneurysms of the abdominal aorta (AAA).[16]

Get more exercise (easier said than done):

Exercise is medicine: it assists in weight control, blood sugar and high blood pressure control, and helps with mood and a healthy outlook in life. Individuals who exercise often have less body fat and smoke less than people who do not exercise.[14] Such individuals also tend to have fewer blood pressure problems and hence decreased CVD. It is recommended to have an annual exam and annual blood pressure check. Also, it is recommended that cholesterol level be checked every 5 years, if it is normal at baseline. For those with diabetes, heart disease, kidney problems, or certain other chronic conditions, blood pressure and cholesterol level may need to be monitored more closely. Other less well-studied methods which are currently being looked at as lifestyle alternatives include "time-restricted feeding," where food is consumed within a limited time period during the day, limiting caloric intake to 8 hours during the day and the more restrictive, "one-meal-a-day" option. Calorie restriction (limiting caloric intake to less than 1600 cal/d for men and 1200 cal/d for women) and low carbohydrate/ketogenic diet, which involves limiting the total carbohydrate intake to 20-50g/d, with the aim at reducing the effects of hyperinsulinemia, are other lifestyle modifications under study. Much more research is needed in these areas. It is highly recommended to consult with your provider before beginning a new exercise and/or dietary program.[17,18] Currently, recommendations include: eating a heart-healthy diet with reduced amounts of saturated fat and cholesterol, following your health care provider's recommendations for treating high blood pressure, high cholesterol and diabetes. Additionally, regular, moderate exercise is one of the best things to keep the heart, body, and mind healthy and young at their core.

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Aging Well: The Importance of Good Mental Health

Anna Pavlov, Ph.D. and Thomas Chong, MD

"Aging is not lost youth but a new stage of opportunity and strength."
Betty Friedan (1921-2006)

Aging presents inevitable physical and mental challenges. Preserving and enhancing mental health as we age is an important goal as we live longer and strive for an optimal quality of life. Successful aging is defined as a lack of disability, good general **and mental health**, social function and a lack of dementia (Bryant et al., 2012). Positive and optimistic attitudes toward aging matter. Negative attitudes can lead to an erosion of self-care and to depression.

Physical and mental health are inextricably linked. Poor mental health is not only a threat to emotional well-being, but to physical health as well. Older adults who rate their health as good are twice as satisfied with life as older adults who rate their health as poor (APA, 2019). Physicians caring for seniors must rule out an underlying medical condition, adverse effects of any medications or substance use/abuse before diagnosing a mental health condition.

From a broader context, equity and social determinants of health among older adults can significantly affect mental health. The main five main social determinants of health that can have an impact on the mental wellbeing of older adults inlcude: Discrimination, participation in meaningful activities, relationships, physical health and poverty (Wallace, 2019). It is important for health care providers and others supporting seniors to ask about their family relationships since elder abuse, including neglect and exploitation, is experienced by 10% of those, aged 60 and older, who live at home (CDC). It is likely that this statistic is an underestimation of the problem as many victims are afraid or unable to report the abuse.

Many seniors are the geriatric caregivers for spouses and other family members. Caregiving itself, while an act of love and family responsibility, can be a risk factor for declines in physical and mental health. Some large studies found that older caregivers who reported high caregiving strain had significantly higher adjusted mortality rates (Shultz & Beach, 1999; Martinique, P, et al., 2012). Therefore, prevention, early diagnosis, treatment and quality of life interventions for mental health on both an individual and community level are paramount (Fernandes and Paul, 2017).

The World Health Organization estimates that approximately 20% of people age 55 years or older experience some type of mental health concern. The most common conditions include anxiety, severe cognitive impairment and mood disorders such as depression and bipolar disorder (CDC, The State of Mental Health and Aging in America, 2008).

Anxiety

Though it is often undiagnosed, anxiety affects as many as 10-20 percent of older adults (American Association of Geriatric Psychiatry). A number of factors can contribute to an anxiety disorder:

- Extreme stress or trauma
- Bereavement and complicated or chronic grief
- Alcohol, caffeine, drugs (prescription, over-the-counter, and street drugs)
- A family history of anxiety disorders
- Other medical or mental illnesses or
- Neurodegenerative disorders (like Alzheimer's or other dementias).

The stresses and changes that sometimes accompany aging – a decline in health, memory problems, and losses – can cause an anxiety disorder. Anxiety can interfere with memory, and significant anxiety can contribute to amnesia or flashbacks of a traumatic event.

Common fears about aging along with life circumstances can lead to anxiety. Many older adults are afraid of falling, being unable to afford living expenses and medication, being victimized, being dependent on others, being left alone, and death. Older adults and their families should be aware that health changes can also bring on anxiety. Anxiety disorders commonly occur along with other physical or mental illnesses, including alcohol or substance abuse, which may hide the symptoms or make

them worse. Many older adults living with anxiety may have suffered an anxiety disorder (possibly undiagnosed and untreated) when they were younger.

Signs of an Anxiety Disorder

- Excessive worry or fear
- Refusing to do routine activities or being overly preoccupied with routine
- Avoiding social situations
- Overly concerned about safety
- Racing heart, shallow breathing, trembling, nausea, sweating
- Poor sleep
- Muscle tension, feeling weak and shaky
- Hoarding/collecting
- Depression
- Self-medication with alcohol or other central nervous system depressants

Depression

Depression and anxiety often co-exist. For older adults, either can be debilitating, reducing overall health and quality of life. Depression can be more difficult to diagnose in the older population since presentations differ from younger counterparts. An older person may complain more about physical symptoms such as having insomnia and body aches or pain rather than voice complaints about feelings of sadness or worthlessness.

Symptoms of Depression usually last more than two weeks:

- Disturbed sleep (sleeping too much or too little)
- Changes in appetite (weight loss or gain)
- Physical aches and pains
- Lack of energy or motivation
- Irritability and intolerance
- Loss of interest or pleasure
- Feelings of worthlessness or guilt
- Difficulties with concentration or decision-making
- Noticeable restlessness or slow movement
- Recurring thoughts of death or suicide

If left untreated, depression can lead to loss of hope and feelings of worthlessness and possible suicide. Suicide is more common in older people than in any other age group. Those over age 65 account for more than 25 percent of the nation's suicides. White men over age 80 are the largest risk group being six times more likely to commit suicide than the general population. Suicide attempts or intense thoughts or wishes by older adults must always be taken seriously (American Association of Geriatric Psychiatry). Suicide attempts by older adults are much more likely to result in death than among younger persons (CDC - https://www.sprc.org/populations/older-adults).

Where to get help?

It is important for older adults and their families or caregivers to tell their physicians or another health care professional, such as a mental health provider, if they have signs of anxiety and depression. There are two rating scales commonly used in primary care to screen for anxiety and depression: the GAD-7 (Generalized Anxiety Disorder) and the Geriatric Depression Scale (GDS). Anxiety and depression **are very treatable** conditions. Both can be treated with medications called Selective Serotonin Reuptake Inhibitors (SSRIs) and behavioral health counseling. Treatment can involve medication, talk therapy, stress reduction, coping skills training, and family or other social support.

Get help immediately if a loved one or friend is experiencing thoughts of ending their life. It is critical not to leave the individual unattended with a means (i.e., a firearm or medications) to self-harm. It may become necessary to take the individual to the emergency room for an evaluation. An important resource is the National Suicide Prevention Hotline

1 (800) 273-TALK (8255).

Practical ways to help you stay mentally well

- Continue to maintain a healthy lifestyle
- Continue to engage in routine preventive health behaviors (e.g., get immunizations for flu and pneumonia).
- Be prepared for changes. Plan ahead; Getting older and retirement both involve a change in lifestyle and adjustments. Make adjustments for any changes in your function (e.g., hearing, vision, flexibility or strength).
- Advocate for yourself and your family in health care settings or bring a knowledgeable representative with you. Do not be afraid to ask questions or get a second opinion. Ask for patient education materials or if unable to, for a health care provider to write down information for you.
- Talk about problems and concerns and ask for and accept help
- If you feel anxious, depressed or are using alcohol or drugs to manage your mood, seek assistance. Untreated mental health problems are associated with poor physical health outcomes, including increased disability and illness as well as decreased quality of life
- Socialize with family and friends and cultivate new friendships. Check out your local senior center.
- Be active. Even a moderate amount of exercise each day can help one stay active, independent and maintain a positive mood.
- Sleep well – talk to your doctor if you are having problems falling or staying asleep of if the quality of your sleep is disturbed in any other way
- Eat and drink sensibly
- Do things that you enjoy; Engage in something that matters to you and that you care passionately about. Consider becoming a volunteer
- Learn and practice relaxing techniques and have breaks from routines

Taking care of oneself, both physically and mentally during later life is critical to successful aging. Planning ahead and using good problem solving skills and getting help to solve problems is essential. Getting connected to the ever growing community supports available (including churches and other places of worship) can help seniors with fundamental needs and socialization. This is especially critical for those who do not have many family or social ties or who struggle financially. Support for caregivers is also essential.

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Prevention of Cancer

Subhash Dhand, M.D.

About one out of every three Americans will develop some kind of malignancy during their lifetime. Cancer used to be the third most common cause of death, first being the accidents and second heart diseases. However now with advancement in cardiology, it is moving down the list, leaving cancer as the second leading cause of death in America.

Cancer begins when healthy cells change and grow uncontrollably. This forms a mass called a tumor. The process of a healthy cell becoming cancerous usually takes years, and many genetic, dietary, and lifestyle factors, such as smoking, may influence this process.

Instead of waiting for some kind of miracle breakthrogh, we all can do a lot to protect ouselves from developing a cancer. The American Cancer Society estimates that upto 60% of cancer deaths can be prevented. A 2005 study argues that over 2.4 million of the world's 7 million annual cancer deaths can be blamed on nine potentially correctable risk factors. Some of such risk factors are Smoking, tobacco use, obesity, fatty diet like red meat, lack of exercise, exposure to carcinogens, viruses like hepatitis, human papillomavirus, women's reproductive factors like late or no childbearing, late menopause, excessive alcohol consumption, and excessive exposure to sun.

There are some other factors like poverty, environmental pollution, food additives and contaminants etc. which one should be aware of.

Simple lifestyle changes can make a difference. Please consider following cancer prevention tips:

1) Don't use tobacco:

Between 25-30% of all cancers are related to tobacco use

Smoking has been linked to various types of cancer- including cancer of the lung, mouth, throat, larynx, pancreas, bladder, and kidney. Chewing tobacco has been linked to cancer of the oral cavity and pancreas. Even exposure to second hand smoke may increase your risk of lung cancer. Incidence of smoking among women has been rising at an alarming rate.

2) Eat a healthy diet:

Eating healthy, though can't guarantee prevention of cancer, however it may reduce the chances of getting one.

Eat plenty of fruits, vegetables, whole grain and other foods from plant sources. This is associated with reduced risk of several cancers, including lung, oral cavity, pancreas, larynx, esophagus, bladder and stomach.

Avoid obesity by eating lighter and leaner by choosing fewer high calorie foods such as refined sugars and fat from animal sources. If one chooses to consume alcohol, one should do in moderation. The chances of developing cancer of breast, colon, lung, kidney and liver increases with the amount of alcohol and length of time one drinks.

Limit Processed meats: International Agency for Research on cancer, which is part of World Health Organization has concluded that eating large amounts of processed meat can increase the risk of developing GI cancers. In addition it has been noticed women who eat mediterranean diet supplemented with extravirgin olive oil and mixed nuts have a reduced risk of breast cancer

3) Maintain a healthy weight and be physically active:

Maintaining a healthy weight might lower the risk of various types of cancers including cancer of breast, lung, colon and kidney. Physical activity in addition to controlling the weight independently can lower the risk of breast and colon cancers. Ideally there should be more than 150 minutes per week of vigorous aerobic activity which really comes to about 30 minutes of physical activity in a day.

4) Protect yourself from Sun:

Skin cancers are mostly caused by ultraviolet rays of sunlight. One can take precautions:

Avoid midday sun

Stay in the shade

Cover exposed areas

Sunscreen: Use a broadspectrum sunscreen with a SPF of at least 30. Apply it generously and reapply every 2 hours if you are swimmimg or perspiring.

Avoid tanning beds and sunlamps

5) Get Vaccinated:

Hepatitis B: Hepatitis infection can increase the risk of developing liver cancer. Hepatitis-B vaccination is recommended to adults at high risk such as: adults with multiple sexual partners, with sexually transmitted infections, using IV drugs, men having sex with men, health care and public safety workers.

Human papillomavirus (HPV): HPV is a sexually transmitted virus that can cause cervical and other genital cancers. It is also associated with cancers of anus, penis, throat, vulva and vagina.

The HPV vaccination is recommended for girls and boys ages 11-12.

People with HIV/AIDS have a higher risk of developing cancer of the anus, liver, lung and lymphoma.

Infection with Epstein-Barr virus is associated with nasopharyngeal carcinoma

6) Avoid risky behaviors that can lead to infections which in turn can lead to increased risk of cancer:

Practice safe sex: Limit sexual partners and use condoms.

7) Chemoprevention:

Cancer chemoprevention uses substances to stop cancer from developing. These substances may be natural or made in a laboratory. A doctor uses chemoprevention to lower a person's risk of developing cancer, especially for people who are at a high risk of developing cancer.

This includes those with an inherited cancer syndrome or a family history of cancer.

Chemo prevention is also used for people who have already had cancer. Chemoprevention can lower the risk of a cancer recurrence or a new cancer. However taking such drugs do not fully protect a person from developing cancer in the future.

The following are examples of medicines used for chemoprevention:

Tamoxifen (Soltamox) and raloxifene (Evista). Researchers have studied these medicines as a way to lower risk of breast cancer. They are most effective in lowering the risk of estrogen receptor-positive breast cancer. Tamoxifen blocks the effects of estrogen on tumor growth.

It has also been shown to lower the risk of a breast cancer recurrence. Raloxifene has been shown to lower the risk of breast cancer in women who have gone through menopause.

Aspirin and other non-steroidal anti-inflammatory drugs (NSAIDs):

Aspirin and other NSAIDs may lower the risk of many types of cancers. Studies show long-term aspirin use lowers rates of precancerous colorectal polyps and prostate lesions. In fact, taking a low-dose (81 mgs.) aspirin daily could reduce your colon cancer and rectal cancer risks by as much as 50%. The story is much the same for other common cancers. A study of recovering breast cancerpatients found those who took a daily aspirin for three to five years were 60% less likely to suffer from a recurrence of the disease. The aspirin swallowers also were 71% less likely to die as a result of breast cancer. In addition, aspirin may slow the spread of lung cancer by 20% to 30%. And, taking low-dose aspirin each day for more than 10 years could drop stomach cancer deaths by 31%. It isfelt the benefit comes from aspirin fighting chronic inflamation, a precursor of cancer.

That's not to say everyone should start swallowing a daily aspirin. The drug comes with some very real risk for internal bleeding, especially among older adults.

8) Get Regular medical check up:

Regular self exam and screenings for various types of cancers such as skin, colon, cervix and breast should be done

The American Cancer Society has developed following simple reminder called "C A U T I O N".

C: Change in bowel or bladder habits

A: A sore that refuses to heal.

U: Unusual bleeding or discharge

T: Thickening or lump in the breast or elsewhere

I: Indigestion or difficulty in swallowing

O: Obvious change in wart or mole

N: Nagging cough or hoarseness

Stem Cells Determine Man's Biological Age

Roberson Baron, M.D.

Aging is a biological process that affects all living organisms. However, while the questions of why and how we age have baffled scientists for decades, the field of aging and longevity research have stayed in the backburner for many years until not too long ago when it attracted the attention of some of the world's most serious scientists. Today, medicines and therapies aimed at slowing down the process of aging and targeting age-related diseases are being developed, with some already launched in clinical trials in humans.

Aging is associated with decline of all the physical and biological processes and functions over time. With the aim of slowing down the aging process, scientists have turned to studying stem cells for their regenerative abilities. However, while stem cells offer potential solutions to retard or reverse aging process, they also appear to be either the cause or part of the problem that cause aging. Stem cells, which are essential parts of the body's repair system due to their ability to differentiate into many other cell types, lose their regenerative potency as our body ages. Additionally, their self-renewing ability triggers mutations that affect every cell in the body. And once these mutations accumulate they can lead to diseases.

With money and investments continuously pouring in, the field of stem cell biology is still developing. However, focus has veered away from what scientists thought was stem cells' greatest promise: that is their ability to grow replacement organs and tissues that are damaged due to diseases or injuries. Today, focus has shifted dramatically and researchers are now harnessing stem cells for their potentially powerful uses in modeling disease for drug discovery as well as in targeting treatment for personalized medicine. Using easily accessible cells – such as skin or blood -- from the sick, researchers are reprogramming them into the affected tissue types and using them as models to study the disease and test interventions on major disorders, including heart disease, stroke, diabetes, and cancer, as well as rare conditions such as amyotrophic lateral sclerosis (ALS).

In addition, knowledge of stem cell biology is continuously evolving. Previous understanding was that once embryonic stem cells has differentiated into stem cells for muscle, skin, blood, and other tissue, those stem cells maintain their flexibility to further develop into various cells within the tissue, when required. Recent works, however, indicate that this ability may be more limited, with different stem cells possessing different capabilities, and or their capabilities diminished with age. If this were the case, then this would probably explain why aging varies from person to person. But the science of stem cell research is evolving, disease profiles are changing, and the tools and knowledge of physicians are readily at their disposal, more powerful and targeted. It would not be a far-fetched idea that one day the full potential of stem cell science will transform our biological landscape and the way humans develop and grow old.

Anti-Aging and Stem Cells

A little over two decades ago, Dr. Michael West, stumbled upon a major scientific breakthrough when his lab scientists successfully isolated the active component for the gene that confers immortality to cells: the telomerase. Fast forward to today, when a new field has emerged: the science of longevity and healthspan, when people can live longer free of age-related diseases. Backed with substantial investments from some of the world's largest companies, numerous pre-clinical researches are developing and various clinical trials are underway, with the aim of developing therapeutics to target human aging and age-related disorders.

While the biggest challenge for the field is the complexity of the aging process, scientists are making great progress in the context of individual aspects of aging with some of the most promising areas of research and discoveries in aging, which we are highlighting below:

1. Pluripotent stem cells have paved the way to manufacture young cells and tissue of any kind. Twenty years after the isolation of the first human embryonic stem cells, there is an explosion of research and applications all aimed at making different cell types of the human body.

2. Early human development could be the key that will unlock the mystery of aging. Cells possess not only the ability to replicate, but to regenerate. There are animals in nature whose regenerative ability is never turned off – like the flatworm, which can grow back its head if it gets cut off, and it doesn't show signs of aging either. Discovering and understanding how the

cells' regeneration ability gets turned on or off may unlock the mystery of aging. And medical research has the power to unlock this mystery.

3. Companies are pouring in their resources into anti-aging research. Major companies are investing heavily in anti-aging research with the aim of devising interventions to slow down the aging process. Some of these companies are AgeX, a subsidiary of BioTime, Calico, AbbVie Inc., Unity Biotechnology, Samumed, Human Longevity Inc., RestorBio, Rejuvenate Bio, and Juvenescence, among others.

4. The majority of clinical applications will not be happening soon. However, despite the mad rush to develop potentially beneficial interventions, majority of these applications will require years of clinical trials before they can be made available to the populace.

5. There are very few medical interventions that are proven to slow the aging process available today. Because there is a huge marketplace out there, there are companies with claims of stem cell products that will extend your life. However, it is important to understand that they are likely not based on pluripotent stem cell technology or are products which are not approved by the FDA.

6. Ethical issues still hounds this new science. Could genetic engineering be used one day to program longer lifespans by modifying or reprogramming human embryos? Despite advances in technologies, people should take note that there remain major ethical issues regarding interventions aimed to prolong life. Dr. Michael West said that while it is entirely possible to engineer babies, but when you make modifications, it is an experiment, and you put a human life at risk.

7. Interventions in human aging face major cultural challenge. While aging affects all people of all races, we humans have adapted to the fact that death is part and the end of life, which people generally see as inevitable. This precept is anchored on different belief systems based on one's culture and traditions.

8. Healthy children born today could enjoy a lifespan never before seen in human history. It is highly possible that in the foreseeable future, people will live up to at least 150 years of age. And as more advances and powerful therapies are designed and developed, the prospect of people enjoying longer and healthier lifespan is highly possible.

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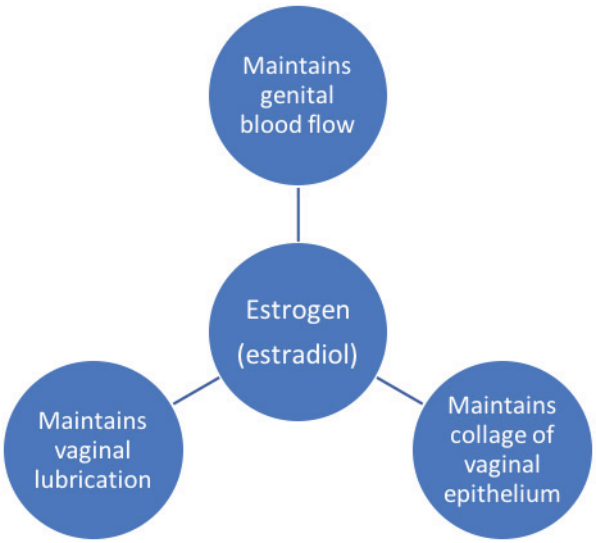
Genitourinary syndrome of menopause

Zaid Chaudhry, M.D., F.A.C.O.G.

-Formerly known as vaginal atrophy/vulvovaginal atrophy/atrophic vaginitis/urogenital atrophy

-Symptoms and signs associated with a decrease in estrogen and other sex steroids involving changes to the labia majora/minora, clitoris, vestibule/introitus, vagina, urethra and bladder.

Pathophysiology



-Estrogen receptors are present on the vaginal epithelium, vulva, urethra, and bladder trigone.

-Menopause is associated with a 95% reduction in serum estradiol levels

Decreased estradiol
• Thinning of vaginal epithelium • Loss of superficial cells • Loss of rugae • Shortening and narrowing of vaginal canal • Increase in vaginal pH • Reduced vaginal secretions • Decreased elasticity of vaginal epithelium • Decreased glycogen content

Common causes of decreased estrogen production

- Natural menopause
- Oophorectomy
- Premature ovarian insufficiency (spontaneous or due to radiation/chemotherapy)
- Medications (Tamoxifen, Medroxyprogesterone acetate, GnRH agonists)
- Lactation

Presenting signs/symptoms

- Vulvovaginal dryness
- Pain with intercourse
- Vaginal discharge
- Vaginal bleeding
- Decreased sexual arousal
- Lower urinary tract symptoms (urgency/frequency/dysuria)
- Recurrent urinary tract infections

Physical Exam/Laboratory

- Fragile/thin vaginal epithelium
- Loss of labia minora/vaginal rugae
- Urethral prolapse
- Decreased elasticity of vaginal epithelium
- Increased vaginal pH
- Maturation index: Proportion of parabasal, intermediate and superficial cells per 100 cells taken from smear from the upper 2/3 vagina.
    - In premenopausal women: predominately intermediate and superficial cells
    - In menopausal women: predominately parabasal and some intermediate cells

-

Treatment

- Non-hormonal
    - Vaginal moisturizers: Can be used several times a week (Replens, Crème De La Femme)
    - Lubricants: Typically used at time of intercourse. Can be water or silicone based. Oil based is option but will degrade latex condoms.
- Vaginal estrogen therapy
    - Premarin or Estrace cream
    - Vaginal tablets (Vagifem)
    - Vaginal rings (Estring)
    - Avoid intercourse on nights using vaginal estrogen
    - Using progesterone for low dose estrogen is generally not necessary
- Selective estrogen receptor modulator
    - Ospemifene
        - Requires daily use
        - Can cause hot flushes
        - Potential risk of thromboembolism
- Vaginal Dehydroepiandrosterone
    - FDA approved for dyspareunia caused by vaginal atrophy in post-menopausal women
    - Can increase circulating levels of testosterone and estrone
- Therapies with limited data
    - Vaginal laser/energy based therapy
        - Expensive and generally not covered by insurance
        - FDA warning in 2018 on its use and risks (burns, scars, pain)
        - American College of OBGYN does not recommend use at this time

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