A PRIMER OF LIFE STYLE MEDICINE

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CONCIERGE CONNECTED CARE

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Disclosure Information MURTHY GOKULA, MD, CMD, Dip. ABLM

Disclosure of Relevant Financial Relationships

I have no financial relationships to disclose.

Disclosure of Off-Label and/or investigative Uses

I will not discuss off label use and/or investigational use in my presentation.

LEARNING OBJECTIVES

- Define life style medicine
- Discuss the relevance of life style medicine in current health care system
- Evidence for life style medicine in chronic disease
- Discuss Reversal of disease
- Learn opportunities to train and take certification in life style medicine
- ► Life style medicine in value based care

What is lifestyle medicine?

- Lifestyle medicine is a medical specialty that uses therapeutic lifestyle interventions as a primary modality to treat chronic conditions including, but not limited to, cardiovascular diseases, type 2 diabetes, and obesity.
- Lifestyle medicine certified clinicians are trained to apply evidence-based, whole-person, prescriptive lifestyle change to treat and, when used intensively, often reverse such conditions.
- Applying the six pillars of lifestyle medicine—a whole-food, plant-predominant eating pattern, physical activity, restorative sleep, stress management, avoidance of risky substances and positive social connections—also provides effective prevention for these conditions.



The Present





Health Advances that Changed the World

- Vaccinations
- Surgical Anesthesia and anti-sepsis
- Clean water and improved sanitation
- Antibiotics and antivirals
- The Birth Control Pill
- Improvements in heart surgery and cardiac care
- Randomized controlled trials
- Radiologic imaging
- Advances in childbirth
- Organ transplantation

Quantity of Life versus Quality

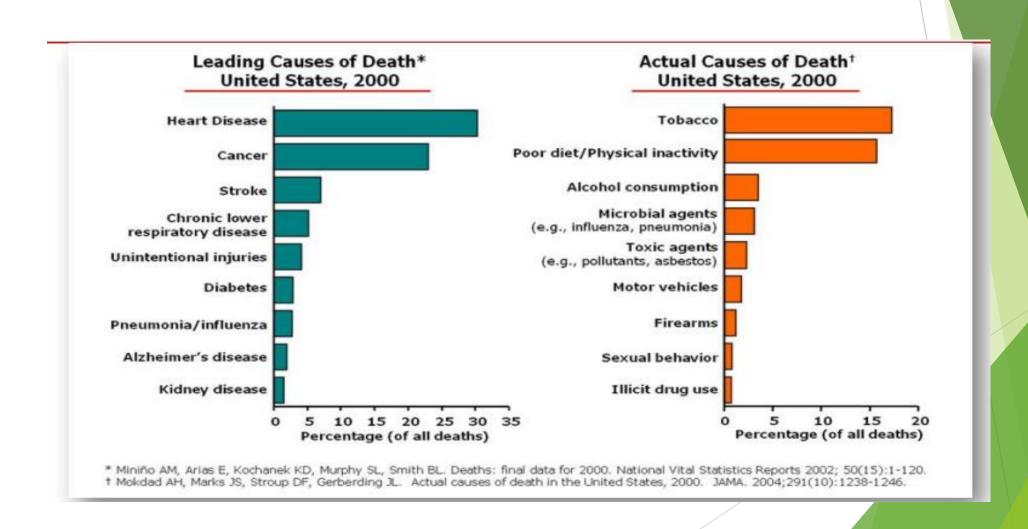
- ► Life Expectancy-- 77.9 years
- ► Healthy Years- 66.2 years
- ► Impaired Life Years- 11.7 years
- HEALTH AND LIFE EXPECTACY CHANGED
- ► INFECTIOUS DISEASE RATES DROPPED
- ► LIFE STYLE DISEASES HAVE TAKEN OVER AS TOP LEADING CAUSES OF DEATH

Number of deaths for leading causes of death

- ► Heart disease: 696,962
- ► Cancer: 602,350
- ► COVID-19: 350,831
- Accidents (unintentional injuries): 200,955
- Stroke (cerebrovascular diseases): 160,264
- Chronic lower respiratory diseases: 152,657
- Alzheimer's disease: 134,242
- Diabetes: 102,188
- Influenza and pneumonia: 53,544
- Nephritis, nephrotic syndrome, and nephrosis: 52,547

Leading Causes of Death. Centers for Disease Control and Prevention. https://www.cdc.gov/nchs/fastats/leading-causes-of-death.htm. Updated 2020. Accessed 9/10/2022.

Actual Causes of Death in the US 2000



THE PROBLEM

The combined impact of lifestyle factors such as physical inactivity, obesity, poor diet, cigarette smoking, and excess alcohol consumption have a significant impact on morbidity and mortality from the resulting chronicdisease1

- 个55% all cause mortality
- 个44% cancer mortality
- 个72% cardiovascular mortality

Risk for Chronic Disease-Related Mortality



A SIMPLE SOLUTION

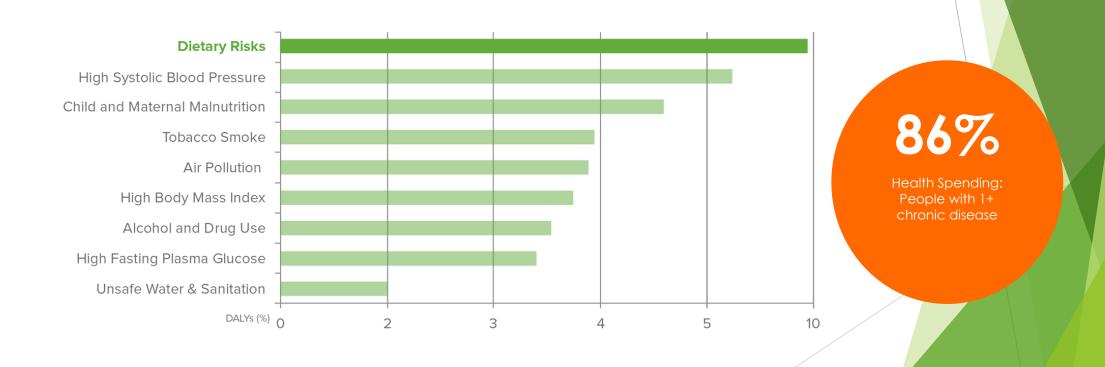


LIFESTYLE MEDICINE FOCUSES ON 6 AREAS TO IMPROVE HEALTH



CHRONIC DISEASE BURDEN

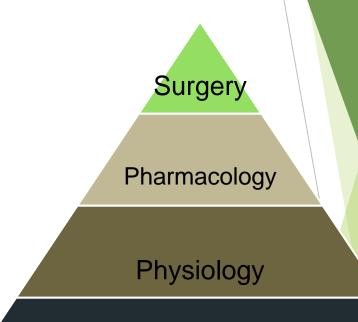
- "The most important dietary risks in the United States are diets low in fruits, low in nuts and seeds, high in sodium, high in processed meats, low in vegetables, and high in trans fats"
 - These risks are the leading cause of chronic disease, not other common culprits



Impact of LM on Health Determinants

Health **Determinants**

- Income and social status
- Employment and working conditions
- Education and literacy
- Childhood experiences
- Physical environments
- Social supports and coping skills
- Healthy behaviors
- Genetic expression
- Culture
- Medical Care



Lifestyle Medicine

Chronic Disease Pathogenesis

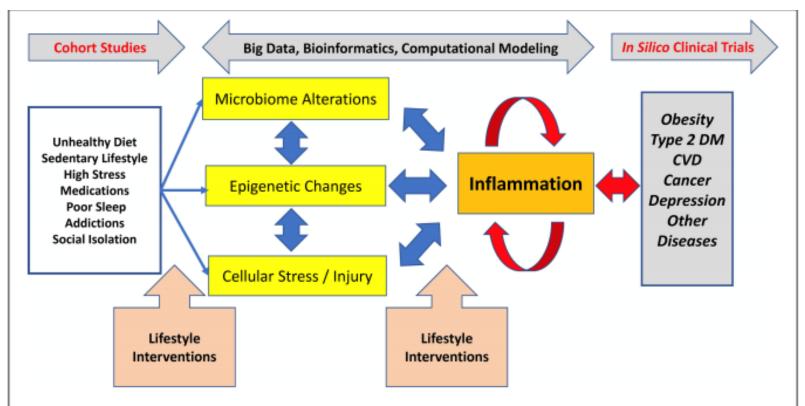
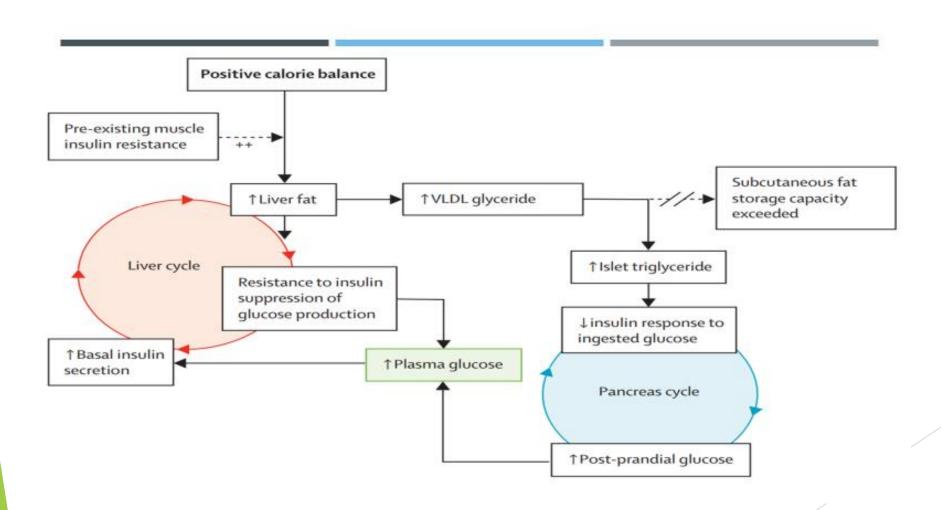
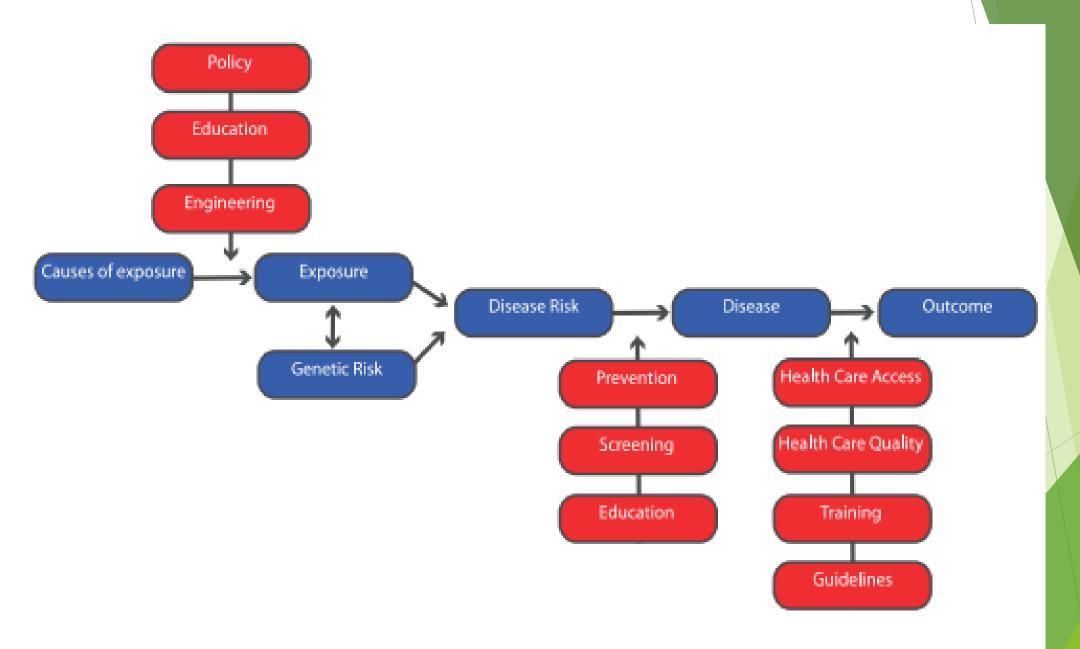


FIGURE 1 | Lifestyle-associated pathogenesis, interventions, and emerging methods for lifestyle medicine research. Unhealthy lifestyles cause dysregulation in the microbiome, epigenetic changes, and various types of cellular stress and injury which, together, drive inflammation. In turn, inflammation can drive further derangements in the microbiome, can cause distinct epigenetic changes, and can drive further cellular stress and injury. This positive feedback leads to a process wherein inflammation becomes chronic and self-sustaining, ultimately resulting in chronic diseases, such as Type 2 diabetes. The non-linear nature of these processes means that simple reductionist approaches to understanding the connections between lifestyle mismanagement and chronic disease are likely to fail. Effective lifestyle interventions prevent, treat, and reverse common chronic diseases. To accelerate the adoption and dissemination of clinical lifestyle medicine interventions, there is a need for cutting edge biological and computational approaches decipher this complexity. Adapted from Figure 3, Bodai et al. (5) with permission from The Permanente Press.

INSULIN RESISTANCE



CONTRIBUTING FACTORS AND INTERVENTIONS

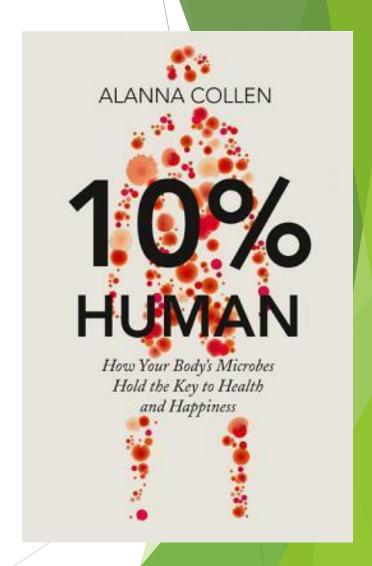


NUTRITION

- Extensive scientific evidence supports the use of a whole-food, plant-based (WFPB) dietary pattern as treatment for diet-related chronic diseases.
- ► Plant-based dietary patterns that approximate the WFPB pattern include the Mediterranean, Nordic, flexitarian, and vegetarian diets.
- ▶ The closer the approximation, the greater the expected health benefits.
- ► WFPB dietary patterns increase the intake of nutrient dense, antioxidant-rich foods and decrease or eliminate exposure to dietary toxins such as oxysterols/cholesterol oxidation products (ChOPs).¹

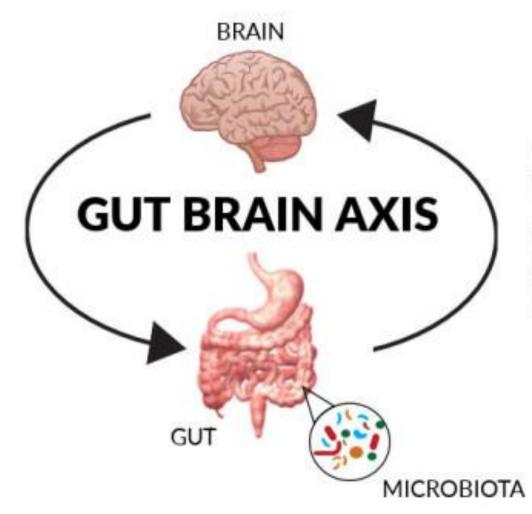
90% Microbiota Hold Key to Happiness

- We are host to up to 100 trillion microorganisms
- They make up about 2.2 lbs of your body weight
- Microbes out-number our human cells up to 10 times



The Gut-Brain Axis – What is It?

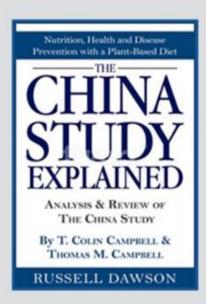
Weight Gain
Bowel Movements
Nutrient Delivery
Microbial Balance

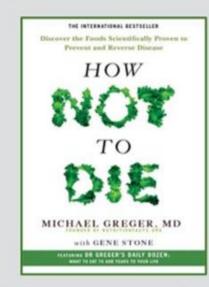


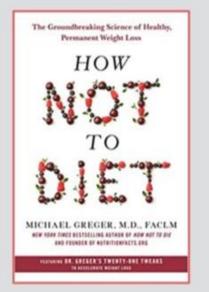
Influence on:

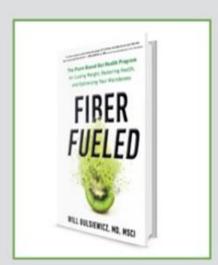
Neurotransmitters Stress/Anxiety Mood Behaviour

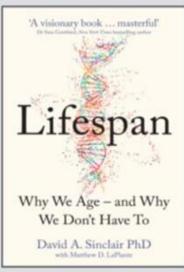
Incorporating More Science & Evidence

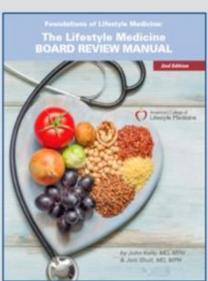




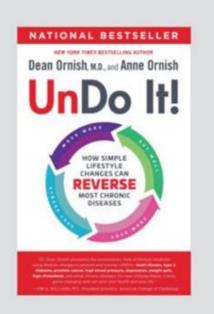


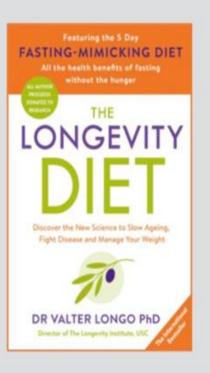






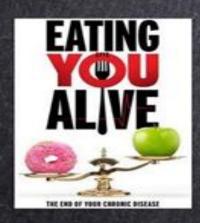
Books read during this period.





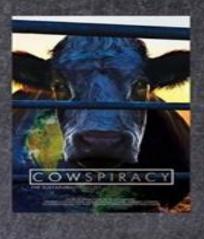
Documentaries To Watch













antbased

MY DIET SONG

- ► SAD DIET; STANDARD AMERICAN DIET
- ► MAD DIET; MODERN AMERICAN DIET
- ► CRAP; CALORIE RICH AND PROCESSED FOODS
- "I WAKE UP SAD AND BY MID DAY I AM MAD AND BY EVENING I AM CRAP"

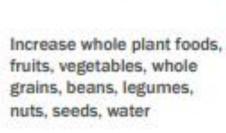
WHAT AMERICA EATS

WHOLE FOOD PLANT-BASED LIFESTYLE



Decrease sweets and snacks, fast food, fried foods, refined grains, refined sugar, meat, dairy, eggs, poultry, high sodium foods

> fruits, vegetables, whole grains, beans, legumes, nuts, seeds, water





*Food Items are not to scale

Decreased risk for chronic diseases:

ADD HERBS & SPICES

 T2Diabetes, obesity, heart disease, certain cancers



Chronic disease treatment and potential reversal



Increased risk for T2Diabetes, Obesity, Heart Disease, Some Cancers



Increased risk for comorbid conditions related to obesity



Increased risk for mortality



Increased mental health issues



EVIDENCE MATTERS

Nutrients, 2017 Aug 9;9(8), pii: E848. doi: 10.3390/nu9080848.

Cardio-Metabolic Benefits of Plant-Based Diets.

Kahleova H1, Levin S2, Barnard N3,4.

Author information

Abstract

Cardio-metabolic disease, namely ischemic heart disease, stroke, obesity, and type 2 diabetes, represent substantial health and economic burdens. Almost one half of cardio-metabolic deaths in the U.S. might be prevented through proper nutrition. Plant-based (vegetarian and vegan) diets are an effective strategy for improving nutrient intake. At the same time, they are associated with decreased all-cause mortality and decreased risk of obesity, type 2 diabetes, and coronary heart disease. Evidence suggests that plant-based diets may reduce the risk of coronary heart disease events by an estimated 40% and the risk of cerebral vascular disease events by 29%. These diets also reduce the risk of developing metabolic syndrome and type 2 diabetes by about one half. Properly planned vegetarian diets are healthful, effective for weight and glycemic control, and provide metabolic and cardiovascular benefits, including reversing atherosclerosis and decreasing blood lipids and blood pressure. The use of plant-based diets as a means of prevention and treatment of cardio-metabolic disease should be promoted through dietary guidelines and recommendations.

KEYWORDS: cardio-metabolic; diet; nutrition; plant-based; vegan; vegetarian

Kahleova H, Levin S, Barnard N. Cardio-metabolic benefits of plant-based diets. Nutrients. 2017;9(8):848.

EVIDENCE MATTERS

Plant-based diets may reduce the risk of

- Coronary heart disease events by approximately 40%
- ► Cerebral vascular disease events by approximately 29%
- ▶ Developing metabolic syndrome and type 2 diabetes by about 50%
- 1. DISCUSS ABOUT MYTHS OF MEAT PROTEIN, EGGS, AGEs TMAO
- 2. DISCUSS ABOUT PROCESSED FOOD, SUGARS, DIARY, REFINED PRODUCTS, GLUTEN, CORN AND SOY
- 3. DISCUSS SMART GOALS

SMART GOALS IN LIFE STYLE MEDICINE

- ►S = Specific
- M = Measurable
- A = Action oriented
- R = Realistic
- T = Time sensitive

NUTRITION PRESCRIPTION

- Change from sugar-laden desserts to fruit
- ► F five days a week
- ▶ I one serving a day
- T dessert
- ► T fruit
- Consuming more veggies
- F every day
- ► I two servings
- T during meals
- T vegetables

Physical Activity

- ▶ Ideally, exercise prescriptions are based on the patient's diagnosis, fitness assessment and supporting medical literature, but research on exercise as treatment for specific diseases is limited.
- ► The Physical Activity Guidelines for Americans and Exercise is Medicine guidelines from the American College of Sports Medicine are useful starting points.
- ➤ The recommendations for adults 18-64 years old is at least 150-300 minutes of moderate intensity, or 75-150 minutes of vigorous activity weekly along with two or more days weekly of strength training.
- This could mean walking briskly at least 30 minutes a day, five or more days per week.

EXERCISE PRESCRIPTON

S 12	paulding Rehabilitation Hospital 5 Nashua Street, Boston, Massachusetts 02114 (617) 720-6400	Nº 12188
PATIENT NAME	Sean Sitalot	AGE 47
ADDRESS 15	Moving Lane, Dover	DATE 1/31/09
MANU LOT # EXP RPh	Frequency: 5 days a week Intensity: Moderate with targe (so you can talk but Time: 30 minutes each session Type: Brisk walking	not sing)
LABEL	Elzabeth P. C	
REFILL	Print of Type Name Elizabet	n F. Francis
DEA. NO.	"NO SUBSTITUTION" IN THIS SPACE	

FEW IDEAS

- Guidelines:
- 150 minutes of moderate intensity physical activity per week
 OR
- 75 minutes of vigorous intensity physical activity per week
- Taking the stairs
- Parking in a space far from store
- Bicycling to work
- Walking during your lunch break
- Walking your dog
- Walking to the train or bus stop
- Raking the leaves
- Vacuuming the house

Think about M.O.S.S.™ when counseling a patient

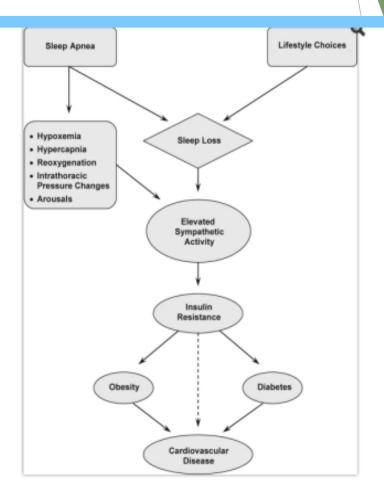
- Motivators
- **▶** Obstacles
- Strategies
- Strengths

Sleep

- Sleep requirements vary from person to person and are believed to follow a bell-shaped curve that peaks around 8.25 hours.
- The National Sleep Foundation recommends 7-9 hours of sleep a day for most adults.
- ▶ It is reasonable to suspect sleep deprivation in any adult with a clinical complaint of daytime hypersomnolence who reports consistently getting less than 7 hours of sleep per night.
- Nurses and other essential workers who get less than 7 hours of sleep each night have an increased the risk of burnout.
- Sleeping less than 6-8 hours a night increases the risk of early death by approximately 12 percent.

SLEEP AND DISEASE

- Drowsy driving crashes
- Obesity
- Cardiovascular Disease
- Metabolic Dysfunction
- Mood
- Behavior Control
- Attention
- Memory
- Executive Function



Proposed pathway linking sleep loss to cardiovascular disease. Of note, obesity triggers the onset of sleep apnea in a significant number of cases.

Sleep Prescription

- ► F- Frequency
 - ▶ Once in a 24 hour period
- ► I- Intensity
 - Deep restorative
- ► T- Time
 - > 7-8 hours: 11 pm to 6 or 7am
- ► T- Type
 - ► Night time sleep

Sleep Prescription-Nap

- ► F- Frequency
 - ▶ Once in afternoon
- ► I- Intensity
 - ► Light sleep
- ► T- Time
 - ▶ 30 minutes
- ► T- Type
 - ▶ Nap

SLEEP PRESCRIPTION

- Quality
- Quantity
- Time
- ▶ BEDS TO MONITOR SLEEP, RINGS TO TRACK SLEEP
- ------
- Pre-Sleep Routine
- Focus on Sleep Enhancers
- (dark quiet room, exercise during the day, healthy foods throughout the day, exposure to sunlight during day)
- Subtract Sleep Detractors
- Examine timing of coffee, alcohol, TV, internet use, night lights

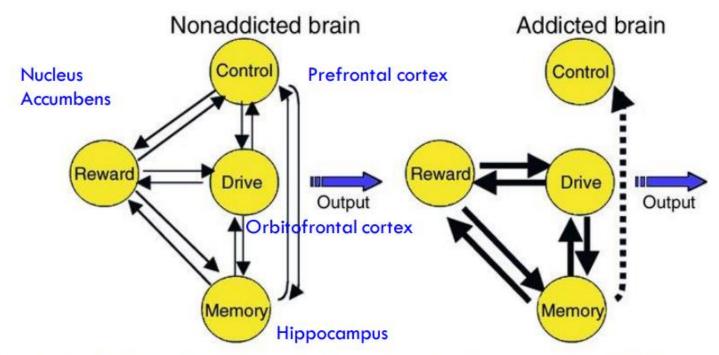
Substance Use

- ► The underlying cause of substance use/abuse disorders is addiction.
- Addiction is a chronic disease characterized.by compulsive, or uncontrollable use of a substance or behavior despite harmful consequences.
- Over 40 million Americans meet the clinical criteria for addiction to nicotine, alcohol or other drugs.
- Another 80 million may not be addicted but are risky users, that is more than the number of people with cancer, diabetes or hypertension.³¹¹
- The presence of an addiction or risky use doubles the risk of overdose, motor vehicle crashes, traumatic injuries and chronic conditions, such as arthritis, chronic pain, hypertension, heart disease, stroke, diabetes, and asthma.

IMPORTANT TERMS & FOCUS

- Drug addiction
- Drug dependence
- Drug overdose
- Drug tolerance
- Substance abuse
- Withdrawal
- Different Types
 - Focus on smoking and alcohol
 - Opioid (heroin, morphine, oxycodone, hydrocodone, pain med prescriptions)
 - Amphetamines (methylphenidate, cocaine, crack)
 - ► Benzodiazepine (diazepam, alprazolam, lorazepam)
 - ▶ How assessing addiction and substance use fits into lifestyle medicine

ADDICTED VERSUS NON ADDICTED BRAIN



Volkow ND, Wang G-J, Fowler JS. The addicted human brain: insights from imaging studies. J Clin Invest. 2003;11(10):1444-1451.

NEUROTRANSMITTERS IN ADDICTION

- Stimulants activate Dopaminergic (DA) pathway to most extreme degree.
- ► Ethanol, opioids, and nicotine have effects through activation of opioid receptors.
- Other neurotransmitters associated with the pleasure and addiction include GABA and serotonin

5As-Agree is Key & Stages of CHANGE

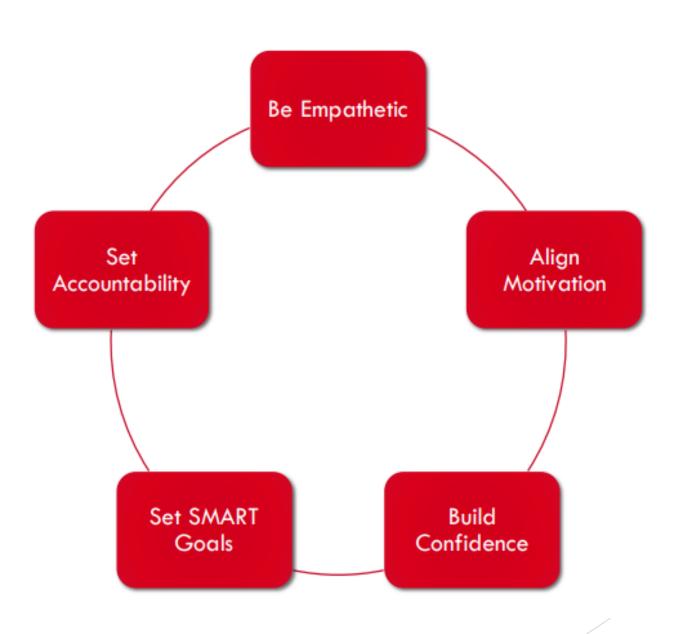
- Ask
- Assess
- Advise
- Assist
- Arrange
- Assess
- Advise
- Agree
- Assist
- Arrange

- Pre-contemplation
- Contemplation
- Preparation
- Action
- Maintenance
- Termination

CORE MOTIVATIONAL & INTERVIEWING SKILLS

- ► OARS
 - Open ended questions
 - ► Affirming
 - ► Reflective listening
 - Summarizing

Collaborating with Patients



7 Step Model for the Person with Addiction

- How to know if you have an addiction
- How to think about yourself if you have an addiction
- Recognizing the key moment in addiction
- How you keep yourself from seeing the addiction ahead of you
- Understanding what is happening at the key moment in addiction
- Short term strategies for dealing with addiction
- How to deal with addiction in the long term

Stress Management

- LM practitioners need to assist patients with managing high stress and boosting emotional well-being.
- This may require treating mild or early stage mental health conditions and referring to mental health professionals as needed.
- Stress can be defined as "any demand for change."
- ► The stress response is a cascade of physiological events that can lead to improved health and productivity or to anxiety, depression, obesity, immune dysfunction and poor health outcomes
- Assisting patients to recognize maladaptive stress responses and transform them into responses that improve health and well-being is an essential part of LM practice at all levels.

STATISTICS

- ▶ 43% of all adults suffer adverse effects of stress.
- ▶ 75%-90% of all doctor visits are for stress-related ailments and complaints
- Stress can play a part in headaches, high blood pressure, heart problems, diabetes, skin conditions, asthma, arthritis, depression and anxiety
- Occupational Safety and Health Administration (OSHA) declared stress a hazard of the workplace.
- Stress costs American Industry more than \$300 billion annually

RISK FACTORS FOR STRESS

- Internal Factors
 - Excessive caffeine
 - Insomnia
 - Highly processed food
 - Recreational drugs
 - Smoking
- Environmental issues
 - Everyday hassles
 - Family-related issues
 - Financial problems
 - Major life events
 - Other people
 - Work-related issues

Physical Factors

- Excessive exercising
- Illness
- Injury
- Lack of exercise
- Obesity
- Repetitive motion
- Starvation

Psychological Factors

- An all-or-nothing attitude
- Anxiety
- Being unduly pessimistic
- Fear
- Feelings of stress and pressure
- Reacting to life changes (e.g., the death of a loved one, divorce, etc.)

- Relationship issues
- Rigidity of thinking
- Taking things personally
- Unrealistic expectations

Recommendations for Living Wisely

- Adopting an attitude of gratitude toward life rather than seeking revenge for injuries or slights.
- Acting toward others from altruistic rather than selfcentered motives.
- Retaining a capacity for wonder and delight in the genuinely good and beautiful things in life.
- Keeping a healthy sense of modesty about one's goals or achievements.
- Finding a purpose for one's life and expressing one's individuality in fulfilling that purpose.

How to Overcome Obstacles in Your Life: Resilience

- 1) Stay flexible
- 2) Learn lessons
- 3) Take action
- 4) Stay connected
- 5) Release tension

- 6) Have a sense of purpose
- 7) Learn healthy habits
- 8) Believe in yourself
- 9) Keep laughing
- 10) Be optimistic

FITT PRESCRIPTIONS FOR STRESS RESILIENCY

Find a purpose

- the week
- I spend focused quality time alone for contemplation
- T one hour
- T strengths, gifts, talents, personal mission

Express gratitude

- F one evening in F five nights in the week
 - I focus on the things for which you feel gratitude
 - T spend 5 to 10 minutes
 - *T* 2-3 things in gratitude journal

Find beauty

- *F* once a week
- I focus on the flowers, birds, trees
- T 10 to 20 minutes
- T make careful observations using. all senses

Social Connection

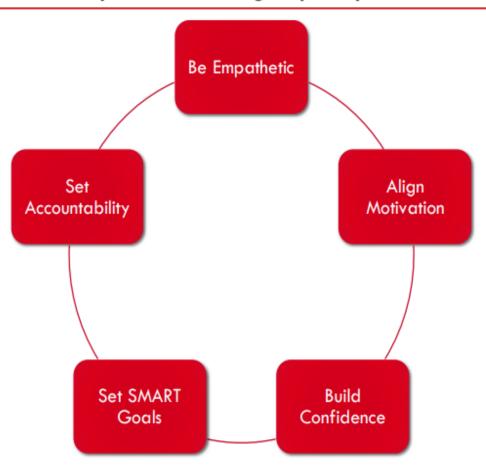
- Humans are social beings; the need for social connection is a basic survival urge that is hardwired into our nervous systems.
- ► The areas in our brain involved in processing social stimuli and decision making are noticeably larger in those with large social networks.
- Social relationships are as important to our health as diet, exercise and smoking habits. In fact, the quality of our relationships may determine whether or not we choose to engage in healthy lifestyle behaviors.
- Unhealthy social relationships, isolation and loneliness are associated with increased mortality and morbidity especially among individuals with established lifestyle-related diseases.

5 Strategies: Fostering respect and encouraging quality connections

- Conveying presence
 - Being present, mindful, paying attention
- 2) Being genuine
 - Speaking and reacting honestly (no fronts)
- ▶ 3) Communicating affirmations
 - Searching for the positive core in another
- ▶ 4) Effective listening
 - ▶ Empathic and active, focus on speaker's agenda
- ▶ 5) Supportive communication
 - Non judgmental, making requests, providing direction and guidance not criticism and threats

Collaborating with Patients

Opportunity to connect and experience a high-quality connection (HQC)



FITT Prescriptions

CULTIVATING HIGH QUALITY CONNECTIONS

- •*F* one day per week
- I deep conversation/connection with friend
- •*T* 30 minutes
- T Family dinner or meal with a friend

INCREASING SOCIAL CONTACT

- •*F* three days per week
- I superficial/new connection
- •*T* less than 5 minutes
- •*T* Strike up a friendly conversation with someone you don't know well at work, at the store, or at a social event

KEEP IT SIMPLE

AVOID

- PROCESSED FOOD
- SUGAR
- ANIMAL PRODUCTS & EGGS
- REFINED FLOURS
- GLUTEN,SOY,CORN
- ANTI INFLAMMATORY DIET
- INTERMITTENT FASTING WITH CALORIE RESTRICTED DIET

KEEP IT SIMPLE

- DOWNLOAD DAILY DOZEN AND 21 DAY VEGAN APPS
- WATCH GAME CHANGERS AND FORKS OVER KNIVES ON NET FLIX
- ► READ HOW NOT TO DIET AND HOW NOT TO DIE:MICHEAL GREGOR
- IMPORTANT WEBSITES:
 - https://nutritionfacts.org/
 - https://www.pcrm.org/





GATHER HEALTH ACO

- ACLM partnership with an innovative, nationwide lifestyle medicine accountable care organization (ACO), Gather Health ACO.
- ACO participating providers will continue to bill and receive payments for services from Medicare as they care for patients in fee-for-service.
- Additionally, participating providers will receive payment for lifestyle medicine care and services through upfront, guaranteed monthly payments

	FFS	Traditional ACO	g Gather
Providers bill CMS for care	✓	✓	✓
\$100+ in extra benefits available for patients	-	-	✓
Monthly payments to providers	-	-	✓
End-of-year shared savings	-	✓	✓
% of ACO savings shared with providers and patients	-	<40%	>50%
Focus on equity and lifestyle medicine	-	-	✓
Builds community and improves health via online platform	-	-	✓



Poplar Can TRIPLE Your Net Income

For high value primary care practices, there is no other network that offers:

- Career-Changing Revenue Boost: 50% Upside of any savings you generate can equate to tripling your net income if you perform moderately well
- Zero Downside Risk: If you are unlucky and generate losses, we cover you
- Eat What You Kill: Your practice is not lumped in with lower performing practices. If you work hard and perform well, you receive the rewards.
- Lifestyle Practice Transformation: Consulting, handouts, technology to deliver world class preventive and lifestyle medicine

Under Poplar, a moderately successful practice can earn revenue that DWARFS traditional fee-for-service payments and even traditional ACOs.

"When my practice switched from traditional ACO to Medicare Direct Contracting with Poplar, for the first time in my career I finally got paid to keep people healthy!" - Deborah Zarek, MD

High Value Practice in Fee-for-Service or Traditional ACO	High Value Practice in Poplar ACO REACH	
Total Panel Size: 5000	Total Panel Size: 5000	
Medicare (20% of panel): \$50 PMPM	Medicare (20% of panel): \$100 PMPM	
Non-Medicare (80% of panel): \$25 PMPM	Non-Medicare (80% of panel): \$25 PMPM	
Revenue: \$1.8M per year	Revenue: \$2.4M per year	
Total Office Expenses: \$1.5 M per year	Total Office Expenses: \$1.5 M per year	
Net Income: \$300,000	Net Income: \$900,000	

AMERICAN COLLEGE OF LIFE STYLE MEDICINE

- https://lifestylemedicine.org/
- https://lifestylemedicine.org/certification/





Treat, Reverse, and Prevent Chronic Disease by addressing the root causes of disease. 2022 EXAM REGISTRATION | ENDS SEPTEMBER 30, 2022

Registering for the exam secures your ability to reserve an appointment at a Prometric testing center. Invitations to reserve an appointment at a testing center will be distributed after September 30th. Registration after September 30th will go towards the 2023 exam.

