

# **Lifestyle & Performance Medicine Lecture Series: Unlock the Power of Lifestyle Medicine to Prevent, Treat, and Reverse Disease**

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***“Medically Ready Force...Ready Medical Force”***

# Dr. Mary Anne Kiel, Col, USAF



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Chief, Air Force Medical Home  
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# Air Force Col Mary Anne Kiel, M.D., F.A.A.P., Dip.A.B.L.M.



- San Antonio Military Pediatric Center Residency Grad 2006
- Board Certified by American Board of Pediatrics 2010
- Board Certified by American Board of Lifestyle Medicine 2019
- Currently the Chief of Air Force Medical Home, Air Force Medical Readiness Agency, Falls Church, Virginia. Leads a team of professionals to optimize patient centered care for 218 outpatient clinics across the Air Force
- The United States Air Force (USAF) representative for primary care to the Defense Health Agency, collaborates with other service leads on policy for the Military Health System and advises on the standards for primary care execution
- A founding leader of the Air Force Lifestyle & Performance Medicine Working Group which strives to transform how healthcare is delivered in the Air Force and across the Department of Defense (DoD); focuses on behaviors as the root causes of disease and partners with patients to guide them in health. She is grateful to collaborate with other like-minded individuals to bring attention to Lifestyle Medicine within our military population.

***“Medically Ready Force...Ready Medical Force”***

# Jennifer B. Harward, Lt Col, USAF



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Nutritional Medicine Flight Commander,  
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# Air Force Lt Col Jennifer B. Harward, M.S., R.D., F.A.N.D., Dip.A.C.L.M.



- Bachelor of Science Degree in Dietetics from Michigan State University in 2000
- Fellow of Academy of Nutrition and Dietetics
- Diplomat of American College of Lifestyle Medicine
- Currently the Nutritional Medicine Flight Commander at David Grant Medical Center on Travis Air Force Base and the Air Mobility Command Nutrition Consultant. Leads 55 personnel in the Air Force's largest Nutritional Medicine Flight with a \$3.9M budget, serving 245K meals, and 6K patient visits annually. Guides 17 dietitians at 11 military treatment facilities in nutrition compliance for 448,000 beneficiaries.
- Implemented Air Force's first multi-disciplinary Lifestyle & Performance Medicine Clinic at Travis AFB
- A founding leader of the Air Force Lifestyle & Performance Medicine Working Group.

# Disclosures



- Col Kiel and Lt Col Harward have no relevant financial or non-financial relationships to disclose relating to the content of this activity.
- The views expressed in this presentation are those of the presenters and do not necessarily reflect the official policy or position of the Department of Defense, nor the U.S. Government.
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# Learning Objectives



At the conclusion of this activity, participants will be able to:

1. Identify the impact of suboptimal lifestyle on death, disease and readiness.
2. Summarize the six pillars of Lifestyle Medicine (LM).
3. Compare how Lifestyle Medicine is different from other traditional and non-traditional approaches to patient care.
4. Describe how Lifestyle Medicine aligns with Defense Health Agency's Quadruple Aim and how it can be implemented to overcome current challenges facing our chronic disease epidemic.
5. Summarize key studies supporting how Lifestyle Medicine prevents, treats and reverses chronic disease.

# A Chronic Disease Epidemic

- Healthcare in US costs \$3.8 trillion annually<sup>1</sup>
- 90% of these costs are attributed to treating patients with chronic conditions<sup>2</sup>
- Lifestyle Medicine addresses the **root cause** to both improve health and reduce costs



1. Martin, 2021.

2. Buttorff, 2017.

*Graphic Source: American College of Lifestyle Medicine, LM in the Workplace Toolkit*

# Lifestyle Leads in Death/Disability

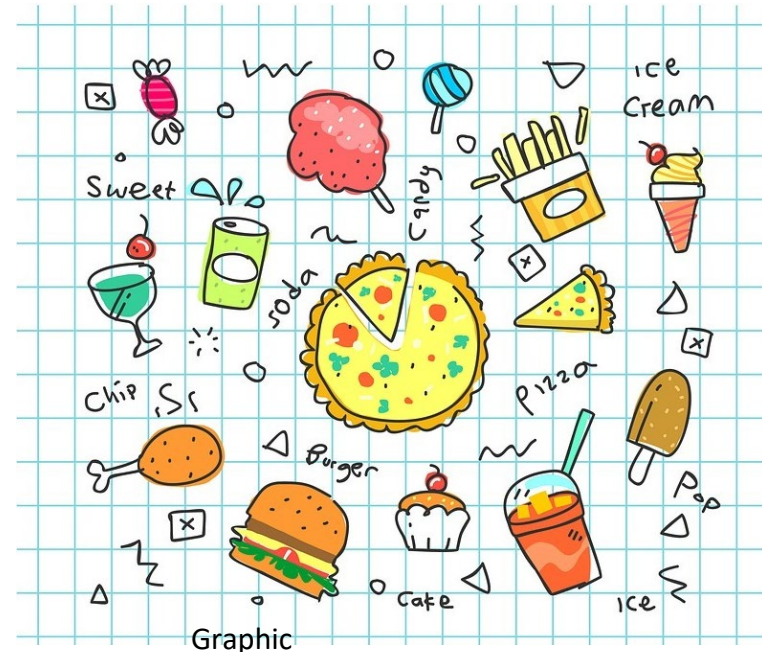
## SUBOPTIMAL DIET #1 LEADING CAUSE OF DEATH AND DISABILITY GLOBALLY<sup>1</sup> (Surpassing Tobacco Use)

### Top Diet Related Deaths:

1. Cardiovascular
2. Cancers
3. Type 2 Diabetes

### Top 3 Dietary Contributors

1. Diet High in Sodium
2. Diet Low in Whole Grains
3. Diet Low in Fruits



Graphic

Source: Pixabay; <https://pixabay.com/illustrations/colorful-doodle-soda-cartoon-set-3042582/>

1. GBD 2017 Diet Collaborators, 2019.

# Unsustainable Health Trends IN THE DOD



Overweight and Obesity Rates in the Military: <sup>1,2</sup>

1995 → 51%

2008 → 61%

2017 → 69%



Graphic Source: Military Times; <https://www.militarytimes.com/off-duty/military-culture/2018/10/03/a-staggering-number-of-troops-are-fat-and-tired-report-says/>

The Department of Defense spends \$1.5 billion annually  
on obesity-related healthcare costs

for current & former service members and their families.<sup>3</sup>

1. Meadows, 2018.
2. Reyes-Guzman, 2015.
3. CDC, 2020.

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# UNFIT TO SERVE

## OBESITY

### IS IMPACTING NATIONAL SECURITY

#### THE PROBLEM



Approximately  
**1 in 5 children** and  
**2 in 5 adults**  
in the U.S. struggle  
with obesity.

Only **half of adults**  
and about **one  
quarter of youth**  
get recommended  
amounts of aerobic  
physical activity.



About **1 in 4**  
young adults is  
too heavy to  
serve in our  
military.



*Over the last decade, we have experienced increasing difficulty in recruiting soldiers due to the decline in the health of our nation's youth. Unless we see significant change in physical activity and nutrition in America our national security will be affected.*

Mark Hertling, Lieutenant General, U.S. Army (Retired)

#### INELIGIBLE TO SERVE



**71% of young people** in the U.S. would not be able to join the military if they wanted to.

3 most common reasons young people are ineligible.



Overweight  
or obesity



Educational  
deficits



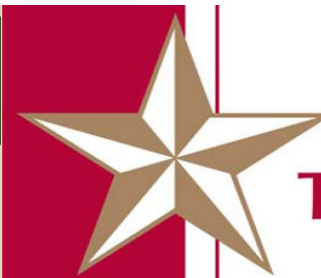
Criminal or drug  
abuse record

#### OVERWEIGHT AND OBESITY IMPACTS MILITARY READINESS

Overweight and obesity among active duty service members  
has risen **73% between 2011 and 2015**

These individuals are less likely to be medically ready to deploy.

Between 2008 and 2017 active duty soldiers had more than 3.6 million musculoskeletal injuries. One study found that active duty soldiers with obesity were 33 percent more likely to get this type of injury.



# Too Fat to Fight

Retired Military Leaders Want  
Junk Food Out of America's Schools

*"Basic training lasts weeks, but building strong troops takes years. Encouraging healthy lifestyles early in life will help our nation prepare for future challenges."*

— GENERAL (RET.) RICHARD B. MYERS, U.S. AIR FORCE, 15TH CHAIRMAN OF THE JOINT CHIEFS OF STAFF

#### IMPROVED NUTRITION AND INCREASED PHYSICAL ACTIVITY CAN BUILD A STRONG NATION

Healthy eating and physical activity can provide multiple performance and health benefits for current and future service members.

##### Healthy Eating Benefits

- Improved brain function
- Delayed muscle fatigue
- Accelerated recovery from strenuous activity
- Improved overall military readiness
- Sustained health and disease prevention



##### Physical Activity Benefits

- Improved aerobic and muscular fitness
- Improved balance and bone health
- Improved joint mobility
- Improved mental health
- Reduced risk of falling
- Extended years of active life



*"If we don't take steps now to build a strong, healthy foundation for our young people, then it will not just be our military that pays the price – our nation as a whole will suffer also."*

Richard R. Jeffries, Rear Admiral, U.S. Navy (Retired) and former Medical Officer of the U.S. Marine Corps

March 2019



U.S. Department of  
Health and Human Services  
Centers for Disease  
Control and Prevention

FOR MORE INFORMATION PLEASE VISIT:  
Division of Nutrition, Physical Activity, and Obesity  
[www.cdc.gov/nccdphp/dnpao](http://www.cdc.gov/nccdphp/dnpao)



**MISSION:  
READINESS**  
COUNCIL FOR A STRONG AMERICA

**"Medically Ready Force...Ready Medical Force"**

# Health Behaviors & Readiness



## ■ Airmen's behaviors leave room for improvement<sup>1</sup>

<input type="checkbox"/> Drinking alcohol in risky amounts	17.3%
<input type="checkbox"/> Not being physically active for $\geq 150$ minutes/week	20.7%
<input type="checkbox"/> Taking potentially harmful supplements	35.9%
<input type="checkbox"/> Not obtaining $\geq 7$ hours of sleep	53.8%
<input type="checkbox"/> Regularly consuming sugar-sweetened beverages	61.4%
<input type="checkbox"/> Not consuming $\geq 2$ servings of vegetables and fruits	74.0%

## ■ During four years after Basic Military Training<sup>2</sup>

<input type="checkbox"/> Mean weight and waist circumference gain: 14.6 lbs and 1.2 ins
<input type="checkbox"/> Transition from normal to overweight or obese: 28.2%
<input type="checkbox"/> Transition from overweight to obese: 9.1%

1. HeRO, 2020.

2. Webber, 2020.



# Optimize Current Performance



- Sufficient sleep<sup>1</sup> and more diverse social networks<sup>2</sup> are linked to fewer upper respiratory infections
- Aerobic exercise improves hippocampal volume, brain-derived neurotrophic factor levels, and working memory<sup>3</sup>
- Even a single exercise session improves cognitive function<sup>4</sup>
- Vegetable and fruit consumption is correlated with same-day experiences of purpose, creativity, and engagement<sup>5</sup>
- Sugar, fried food, and refined grain consumption is correlated with higher psychological symptom score<sup>6</sup>

1. Prather, 2015.
2. Cohen, 1997.
3. Erickson, 2011.
4. Chang, 2012.
5. Conner, 2015.
6. Jacka, 2010.

# Optimize Future Health



- About 80% of cardiovascular mortality and 25% of cancer mortality can be prevented by five lifestyle factors: not smoking, normal weight, physically active, moderate alcohol, and healthy diet<sup>1</sup>
- Short sleepers (<7 hours) have 12% greater risk of mortality compared to sufficient sleepers (7–9 hours)<sup>2</sup>
- Physical inactivity is responsible for 9% of premature deaths<sup>3</sup>
- Men and women who gain 5–22 lbs in middle adulthood are 89% and 75% more likely to develop diabetes as those who gain <5 lbs<sup>4</sup>
- Adults with higher purpose have 15% lower hazard of mortality<sup>5</sup>

1. Li, 2018.

2. Itani, 2017.

3. Lee, 2012.

4. Zheng, 2017.

5. Hill, 2014.



# MILITARY HEALTH 2020

## A CASE FOR LIFESTYLE MEDICINE



### HEALTH & PERFORMANCE OPTIMIZATION OF WARFIGHTERS THROUGH LIFESTYLE MEDICINE

#### BOTTOM LINE UP FRONT

In an effort to build, maintain, and sustain the strongest, healthiest, and most lethal warfighters in the world, Lifestyle Medicine (LM) serves as a foundation for health optimization and human performance.

**Lifestyle Medicine is a gateway to improved readiness, recruitment, and resilience.**

Upon entering the military, recruits are healthier than the general population, but veterans tend to exhibit equivalent or worse health than the general population.

J Behav Med. 2017;40(1):175-193



**88 million** American adults—more than 1 in 3—have **prediabetes**. Of those with prediabetes, more than 80% do not know they have it.

CDC - Prediabetes, 2020.

#### HYPERTENSION

17% of soldiers have reported high blood pressure since entering the Army. Among veterans over 30% have hypertension.

RAND. HRBS. 2008.



Emphasis on improving "nutritional fitness" as well as physical fitness should continue as a priority of military medical and line leaders at every level.

#### DIABETES

Diabetes affects more than 130,000 Department of Defense beneficiaries, including 50,000 Airmen and family members worldwide.

Mil Med. 2019;184(3-4):e139-e142.



Veterans and soldiers who see multiple tours of combat are roughly 33% more likely to have high blood pressure. If they witness a death while on active duty, this percentage goes up to 50%.

**Additional Causes of High Blood Pressure in Soldiers and Veterans.**

- Smoking
- Diabetes
- High salt intake
- High alcohol intake
- Vitamin D deficiency

Hypertension. 2009;54:966-973.

### STATE OF HEALTH U.S. SERVICE MEMBERS

[www.LIFESTYLEMEDICINE.org/MILITARY](http://www.LIFESTYLEMEDICINE.org/MILITARY)

Exemptions taken on the Air Force Physical Fitness Test, increased abdominal circumference, and elevated body mass index are strongly associated with prediabetes in this military population. HbA1c could be a screening tool for these at-risk personnel to identify diabetes in its early stages.

Mil Med. 2019;184(3-4):e139-e142.

#### CHRONIC PAIN

Pain is the most common physical complaint affecting service members, with 50% of male and 75% of female veterans reporting chronic pain.

J Rehabil Res Dev. 2016;53(1):vi-x.



**Poorly managed pain** in the general population is estimated to result in **\$560 to \$635 billion** annually in increased healthcare expenses, lost income, and lost productivity, as well as an increasing incidence of opioid misuse and abuse and deaths due to opioid overdose.

Service members who returned from deployments in Middle East operations experienced a higher prevalence of pain and a greater severity of pain than faced by civilians.

P T. 2016; 41(10):623-634.



Basic Military Training graduates add:  
~ 4 pounds per year  
~ 0.5 inches in abdominal circumference per year

Over 4 years of military service:  
37.3% transitioned to a higher BMI category

Am J Prev Med 2020; 58(1):117-121.

#### OBESITY

2015 Health Related Behaviors Survey (Active Duty):  
**51%** of service members were overweight  
**14.7%** of service members were obese.

Rand. HRBS. 2015.

U.S. Military spends more than  
**\$1.5 BILLION**  
each year treating  
obesity-related health conditions

CDC. Unfit To Serve. 2019.

## Polling Question # 1



■ Are you familiar with or have you heard about the formal practice of Lifestyle Medicine?

- a) I have never heard of it before
- b) I have heard of it, but I'm not exactly sure what it is about
- c) I am familiar with it
- d) I have done formal training in Lifestyle Medicine (i.e., core competencies or certification)

# Lifestyle Medicine



Lifestyle Medicine is the use of evidence-based lifestyle therapeutic approaches, such as a whole-food, plant-predominant dietary lifestyle, regular physical activity, adequate sleep, stress management, avoiding use of risky substances and pursuing other non-drug modalities, to prevent, treat and reverse chronic disease.

- Validated as **highly effective**
- **Addresses the root-cause** of disease
- Better outcomes and lower cost ... **value-based care**
- **Engaging / affordable / patient-centered / healing**

***“Medically Ready Force...Ready Medical Force”***

# Lifestyle & Performance Medicine (L&PM)



Optimize the health and performance of Airmen by promoting

- Sufficient and restorative sleep
- Regular aerobic and strength-training activity
- Whole-food, plant-predominant diet
- Healthy management of psychological stress
- Robust and diverse social connections
- Safe alcohol use and tobacco cessation



NUTRITION



SLEEP



EXERCISE



SUBSTANCE  
ABUSE



STRESS  
MANAGEMENT



HEALTHY  
RELATIONSHIPS

***“Medically Ready Force...Ready Medical Force”***



# Sleep

## ■ Disrupters:

- ☐ Eating late, caffeine/alcohol
- ☐ Too much “screen time,” noisy environment
- ☐ Medications/Medical Conditions

## ■ Better sleep tips:


- ☐ Regular schedule
- ☐ Increase sunlight exposure during the day
- ☐ Eliminate nighttime caffeine/late-night meals
- ☐ Healthy diet/exercise routine
- ☒ Eliminate alcohol in evening

## ■ Goals:

- ☐ Increase sleep quality – ultimately 7-9 hours per each 24-hour period

### Lifestyle Sleep Health

Sleep is an extremely important part of human health. Negative effects of sleep delays or interruptions include sluggishness, low attention span, decreased sociability, depressed mood, decreased deep sleep, decreased caloric burn during the day, increased hunger and decreased feeling of fullness, insulin resistance and decreased performance.



#### Sleep Disrupters

- Too much food or drink close to sleep time
- Blue light from phone/computer/television screen
- Caffeine and alcohol use
- Stress/anxiety/worry
- Certain noises/sounds
- Temperature (too hot or too cold)
- Lack of daytime sunlight exposure
- Medications and medical conditions
- Bed partner and/or pets

#### Tips for Better Sleep

- Use bed for sleep only
- Establish regular sleep schedule (same sleep and wake times)
- Minimize/eliminate bedroom noise and lights
- Increase daytime exposure to sunlight
- Move at least every hour during the day
- Eliminate nighttime caffeine and limit daytime caffeine
- Avoid alcohol within 3 hours of bedtime
- Avoid high-sodium foods close to bedtime
- Eliminate/limit after-dinner and late-night snacking
- Maintain a healthy BMI
- Stay hydrated during the day
- Cognitive Behavioral Therapy for Insomnia
- Exercise
- Food choices
- Meditation

#### Sleep Management Goals

Setting goals around sleep health is a great way to increase your sleep quality. It's often easier to achieve positive goals. An example of a positive sleep goal is, "I will begin a new bedtime routine of shutting off the television and instead, read a book for at least 30 minutes before bed, four nights this week."

**Specific** - What are you going to do to improve your sleep quality/quantity?  
**Measurable** - How much time, how many sessions?  
**Attainable** - Do you have what it takes to follow through?  
**Realistic** - What can you actually do? (Improvement over perfection)  
**Time-Connected** - How frequent? How long will you commit?

#### Helpful resources:

American Sleep Association:  
[sleepassociation.org](http://sleepassociation.org)

Sleepeducation.org

#### Recommendations for Optimal Health

Infants\* 4 months to 12 months:  
12 to 16 hours per 24 hours


Children 1 to 2 years of age:  
11 to 14 hours per 24 hours (including naps)

Children 3 to 5 years of age:  
10 to 13 hours per 24 hours (including naps)

Children 6 to 12 years of age:  
9 to 12 hours per 24 hours

Teenagers 13 to 18 years of age:  
8 to 10 hours per 24 hours

Adults:  
7-9 hours of sleep per 24 hours

  
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# Activity

- Recommendation of 150-300 minutes of moderate (75-150 minutes vigorous) activity per week<sup>1</sup>
- Activities:
  - ☐ Walking/jogging/running
  - ☐ Hiking/biking/lawn care
  - ☐ Basketball/soccer/tennis
- Aerobic – running/swimming/sports
- Strength – weightlifting/body weight exercises
- Flexibility – stretching/yoga
- Balance – tai chi/yoga

1. U.S. Department of Health and Human Services, 2018.



**Lifestyle Activity**

**Moderate Activity**

- Brisk walking
- Heavy cleaning (washing windows, vacuuming, mopping)
- Mowing lawn (power mower)
- Light bicycling
- Recreational badminton
- Tennis doubles

**Vigorous Activity**

- Hiking
- Jogging
- Shoveling
- Carrying heavy loads
- Bicycling fast
- Basketball game
- Soccer game
- Tennis singles

\*A disclaimer on leaving activities this way is that it does not consider the fact that some people have a higher level of fitness than others. It is important to take your activity to your own fitness level.

**Guidelines**

The recommendation for adults 18-64 years old is to do at least 150-300 minutes of moderate intensity or 75-150 minutes of vigorous intensity activity weekly along with two or more days weekly of strength training. The more physical activity, the more benefit, but any amount of exercise is better than none. Working with a certified exercise specialist such as a kinesiologist, exercise physiologist, physical therapist, or certified personal trainer is the safest and most reliable way to begin an exercise program.

**Activity Types**

**Aerobic or endurance activities** include running, swimming, biking, hiking, playing sports, dancing and brisk walking.

**Strength or resistance activities** include weight lifting, pushing a wheelbarrow/stroller, kettlebells and body weight exercises such as squats, lunges, pushups, sit-ups etc.

**Flexibility activities** include stretching and some forms of yoga.

**Balance activities** include tai chi, qi gong and some forms of yoga.

Warning/Disclaimer: always talk to your doctor before starting a new activity

**Activity Goals**

Setting a goal is a great way to get started with physical activity. It's easier to achieve positive goals. An example of a positive activity goal is, "I will walk with a friend or family member for at least 20 minutes after dinner, every weekday for the next two months."

**Specific** - What specific activity would you like to add/change?  
**Measurable** - How much activity, how many sessions?  
**Attainable** - Do you have what it takes to follow through?  
**Realistic** - What can you actually do? (know your limits, start small, build)  
**Time-Connected** - How frequent or how long will you do the activity?

**Helpful resources:**

- exerciseismedicine.org
- Walk With a Doc: walkwithadoc.org
- CDC: cdc.gov/physicalactivity
- Find a Trainer Near You: usreps.org
- 2019 Physical Activity Guidelines: health.gov/paguidelines/second-edition/pdf/Physical\_Activity\_Guidelines\_2nd\_edition.pdf
- ACE Exercise Library: acefitness.org
- american college of Lifestyle Medicine: [lifestylemedicine.org](http://lifestylemedicine.org)

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# Nutrition

- Whole food and plant strong
- Eat this:
  - ☐ Veggies/Fruits/Whole grains/Legumes/Nuts/Seeds
- Not this:
  - ☐ Sugary drinks/processed foods/sweets
- Limit this:
  - ☐ Dairy/animal products (meat)/poultry
- Have a plan and stick to it. The goal is plant-strong, not everyone is going to eat a completely plant-based diet
  - ☐ Make a conscious choice to improve your current diet and include more plant-based and less processed food



**Lifestyle Nutrition**

The American College of Lifestyle Medicine recommends an eating plan based largely on a variety of minimally processed vegetables, fruits, whole grains, legumes, nuts and seeds. Eating whole plant foods is a great way to get in more nutrition with less harm and is one of the best ways to prevent, treat and even reverse many chronic diseases.

Eat Plenty	Limit/Avoid
<ul style="list-style-type: none"><li>Vegetables</li><li>Mushrooms</li><li>Fruits</li><li>Legumes</li><li>Whole Grains</li><li>Nuts</li><li>Seeds</li></ul>	<ul style="list-style-type: none"><li>Sugary drinks like soda, juice, cocktails, coffee and energy drinks</li><li>Processed meats like sausage, bacon, salami, bologna, deli meat</li><li>Processed snacks like crackers, chips, pretzels</li><li>Cakes, pastries, sweets</li><li>Dairy (especially high-fat types with added salt and sugar)</li><li>Red meats</li><li>Poultry</li><li>Eggs</li></ul>

**Food for Thought**

**Eating Inspiration:**

**Vegetables:** Leafy vegetables (kale, spinach, romaine, swiss chard, collard greens, cabbage), garlic, onions, peppers (all kinds), leeks, parsnips, potatoes (all kinds), radishes, turnips, squash, green beans, tomatoes, carrots, corn, peas, cauliflower, broccoli, cucumbers, eggplant, mushrooms

**Fruits:** Bananas, apples, kiwi, oranges, blackberries, strawberries, raspberries, blueberries, mango, cantaloupe, watermelon, honeydew, plums, pineapple

**Legumes:** Black beans, kidney beans, pinto beans, garbanzo beans, cannellini beans, lentils, lima beans, broad beans, soybeans

**Whole Grains:** Quinoa, brown rice, oats, barley, wild rice, black rice, whole grain tortillas/pasta/breads, couscous, teff, wheat germ

**Nuts:** Almonds, peanuts, pistachios, cashews, brazil nuts, soy nuts, hazelnuts, walnuts

**Seeds:** Chia seed, flax seed, hemp seed, pumpkin seed, sunflower seed

**Nutrition Goals**

Setting goals to improve your eating habits is a great way to eat healthier. An example of a positive nutrition goal is, "I will add 1 cup of berries to breakfast and a small apple or orange as an afternoon snack at least five days this week."

**Specific** - What specific food would you like to add/change?  
**Measurable** - How much or how many will you add or change?  
**Attainable** - Do you have what it takes to follow through?  
**Realistic** - What can you do? (improvement over perfection)  
**Time-Connected** - How often or for how long will you make this change?

**Helpful resources:**  
Academy of Nutrition and Dietetics:  
[www.eatright.org](http://www.eatright.org)  
[vegetariannutrition.net](http://vegetariannutrition.net)  
American Heart Association:  
[www.heart.org](http://www.heart.org)  
American Diabetes Association:  
[www.diabetes.org](http://www.diabetes.org)  
American Institute for Cancer Research:  
[www.aicr.org/reduce-your-cancer-risk/diet/](http://www.aicr.org/reduce-your-cancer-risk/diet/)  
Nutrition Facts:  
[www.nutritionfacts.org](http://www.nutritionfacts.org)  
**AMERICAN COLLEGE OF Lifestyle Medicine**  
[lifestylemedicine.org](http://lifestylemedicine.org)

# Stress

## ■ Stress reduction AND stress management

## ■ Tips:

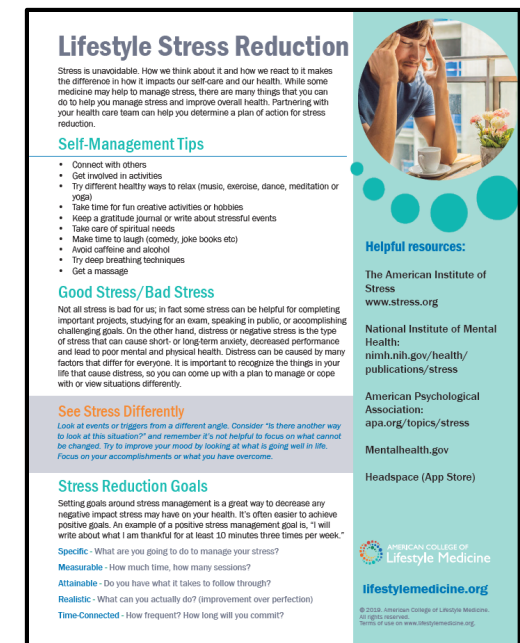
- ☐ Connect with others
- ☐ Activities/hobbies
- ☐ Relaxation (music/reading/yoga)
- ☐ Spiritual activities

## ■ Good and bad stress

- ☐ Some stress helps keep on target
- ☐ Recognize the bad (causes anxiety)
- ☐ Look for bad stress triggers

## ■ Goals:

- ☐ Reduce the negative impact of stress, focus on positive stress to improve performance



**Lifestyle Stress Reduction**

Stress is unavoidable. How we think about it and how we react to it makes the difference in how it impacts our self-care and our health. While some medicine may help to manage stress, there are many things that you can do to help you manage stress and improve overall health. Partnering with your health care team can help you determine a plan of action for stress reduction.

**Self-Management Tips**

- Connect with others
- Get involved in activities
- Try different healthy ways to relax (music, exercise, dance, meditation or yoga)
- Take time for fun creative activities or hobbies
- Keep a gratitude journal or write about stressful events
- Take care of spiritual needs
- Make time to laugh (connect, joke books etc)
- Avoid caffeine and alcohol
- Try deep breathing techniques
- Get a massage

**Good Stress/Bad Stress**

Not all stress is bad for us; in fact some stress can be helpful for completing important projects, studying for an exam, speaking in public, or accomplishing challenging goals. On the other hand, distress or negative stress is the type of stress that can cause short- or long-term anxiety, decreased performance and lead to poor mental and physical health. Distress can be caused by many factors that differ for everyone. It is important to recognize the things in your life that cause distress, so you can come up with a plan to manage or cope with or view situations differently.

**See Stress Differently**

Look at events or triggers from a different angle. Consider "Is there another way to look at this situation?" and remember it's not helpful to focus on what cannot be changed. Try to improve your mood by looking at what is going well in life. Focus on your accomplishments or what you have overcome.

**Stress Reduction Goals**

Setting goals around stress management is a great way to decrease any negative impact stress may have on your health. It's often easier to achieve positive goals. An example of a positive stress management goal is, "I will write about what I am thankful for at least 10 minutes three times per week."

**Specific** - What are you going to do to manage your stress?  
**Measurable** - How much time, how many sessions?  
**Attainable** - Do you have what it takes to follow through?  
**Realistic** - What can you actually do? (improvement over perfection)  
**Time-Connected** - How frequent? How long will you commit?

**Helpful resources:**

- The American Institute of Stress  
[www.stress.org](http://www.stress.org)
- National Institute of Mental Health:  
[nimh.nih.gov/health/publications/stress](http://nimh.nih.gov/health/publications/stress)
- American Psychological Association:  
[apa.org/topics/stress](http://apa.org/topics/stress)
- Mentalhealth.gov
- Headspace (App Store)

**AMERICAN COLLEGE OF Lifestyle Medicine**  
[lifestylemedicine.org](http://lifestylemedicine.org)

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Terms of use on [www.lifestylemedicine.org](http://www.lifestylemedicine.org).

# Social Activity

- Social connections and our relationships affect physical, mental and emotional health. The single most important predictor of happiness and long life is our social connections
- New connections:
  - ☐ Volunteer opportunities/Community
  - ☐ Online groups/chats
  - ☐ Spiritual/religious
- Strengthening connections:
  - ☐ Share new experiences
  - ☐ Positive attitude
  - ☐ Be there (Wingman)
- Goals:
  - ☐ Find activities/hobbies/events that bring enjoyment and then be an active and engaged participant



# Substance Use

■ Tobacco, alcohol, supplements, and more

■ Treatment models:

☐ Therapy (group/individual/online)

☐ Medication

☐ Counseling

■ Goals:

☐ Eliminate tobacco use in all forms

☐ Limit alcohol or eliminate altogether

## Avoidance of Risky Substances

It is well known that tobacco use and drinking too much alcohol increases the risk of many chronic diseases and death. People who are ready can and do quit smoking; there are more former smokers in the world now than there are current smokers. Some treatments work for alcohol abuse. Treatments often take time, different approaches and many attempts. Giving yourself patience as well as getting support from others is an important part of reaching your goals.

## Effective Treatment Models

- Counseling
  - Individual, group, telephone
  - Many quick visits
  - Longer more intensive visits
- Medications (anti-relapse)
- Counseling plus medication is more effective

*Slips and relapses are normal and considered part of the change process. Goal setting, support and persistence is key!*

## Goals for Avoiding Risky Substances

Setting goals around substance use (tobacco, alcohol, or other drugs) is a great way to start making changes. An example of a goal is, "I will swap my morning cigarette with chewing gum at least 5 days this week for the next four weeks. I will ask my partner to help me on track and use the free texting service for more support."

**Specific** - What are you going to do to decrease your substance use?

**Measurable** - How much will you reduce it by?

**Attainable** - Do you have what it takes to follow through?

**Realistic** - What can you actually do? (improvement over perfection)

**Time Connected** - How frequent? How long will you commit?

## Helpful Resources:

National Quit Line 1-800-QuitNow  
Smokefree.gov <https://smokefree.gov/>  
nemi.org

NIAAA Alcohol Treatment Navigator  
[alcoholtreatment.niaaa.nih.gov](http://alcoholtreatment.niaaa.nih.gov)

American Academy of Addiction Psychiatry  
[www.aaap.org](http://www.aaap.org)

American Psychological Association  
[www.apa.org](http://www.apa.org)

American Society of Addiction Medicine  
[www.asam.org](http://www.asam.org)

NAADAP Substance Abuse Professionals  
[www.naadap.org](http://www.naadap.org)

National Association of Social Workers  
[www.helpstartthere.org](http://www.helpstartthere.org)

Substance Abuse Treatment Locator  
[www.findtreatment.samhsa.gov](http://www.findtreatment.samhsa.gov)

Alcoholics Anonymous (AA)  
[www.aa.org](http://www.aa.org)

Moderation Management  
[www.moderation.org](http://www.moderation.org)

Secular Organizations for Sobriety  
[www.sobriety.org](http://www.sobriety.org)

SMART Recovery  
[www.smartrecovery.org](http://www.smartrecovery.org)

Women for Sobriety  
[www.womenforsobriety.org](http://www.womenforsobriety.org)

Al-Anon Family Groups  
[www.al-anon.alateen.org](http://www.al-anon.alateen.org)

Adult Children of Alcoholics  
[www.adultchildren.org](http://www.adultchildren.org)

[www.psychologytoday.com/us](http://www.psychologytoday.com/us)



## Guidelines:

Standard alcoholic drink in U.S.  
12 oz beer  
5 oz table wine  
1.5 oz of 80-proof spirits

Typical Containers  
750 mL wine = 5 drinks  
750 mL spirits = 18 drinks  
1 L spirits = 24 drinks

## Low Risk Drinking Guides by National Institutes of Health

Men  
No more than 4 drinks on any day  
No more than 14 drinks in 7 days

Women  
No more than 3 drinks in any day  
No more than 7 drinks in 7 days

"Binge" Drinking is defined as:  
5 drinks in 2 hours for men,  
4 drinks in 2 hours for women.



[lifestylemedicine.org](http://lifestylemedicine.org)

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# How Is L&PM More Effective?

- Partner with the patient over their health goals
- Indicate that their health sits squarely in their own hands
- Use evidence-based health information
- Address the root cause of their medical condition first
- Use L&PM as the foundation of care
- Function as a health coach (i.e., motivational interviewing techniques)
- Partner with healthcare team players
  - vital that the team “speak the same language”



- Nutritional Medicine
- Counseling/Psychology/Mental Health
- Physical Therapy
- Disease Management
- Sleep Medicine

Graphic Source: Pixabay; <https://pixabay.com/illustrations/hand-hands-shaking-hands-man-hand-861275/>  
<https://pixabay.com/images/search/stethoscope/>

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# How is L&PM Different?

## Traditional/Conventional Medicine:

- Treats individual risk factors
- Patient is a passive recipient; not required to make major changes
- Emphasizes diagnosis and prescription, goal is disease management



Slide content adapted from:  
- ACLM's Lifestyle Medicine 101, 2020.  
- Egger, 2010.

# How is L&PM Different?

## Other Non-Conventional Approaches to Patient Care: (Integrative Medicine / Functional Medicine / Naturopathy / Homeopathy)

- Though widely accepted, not always evidenced-based lifestyle interventions
- Patient may be an active or passive recipient
- Treats symptoms/signs of disease but not always the underlying lifestyle causes



Slide content adapted from:  
- ACLM's Lifestyle Medicine 101, 2020.  
- Egger, 2010.

Graphic Source: Pixabay; <https://pixabay.com/illustrations/search/integrative%20medicine/>



# How is L&PM Different?

## Lifestyle Medicine:

- Treats lifestyle causes
- Patient is an active partner in care, required to make major changes
- Emphasizes motivation and compliance, goal is primary/secondary/tertiary prevention



Slide content adapted from:  
- ACLM's Lifestyle Medicine 101, 2020.  
- Egger, 2010.

Graphic Source: Pixabay; <https://pixabay.com/illustrations/search/prescription%20exercise/>

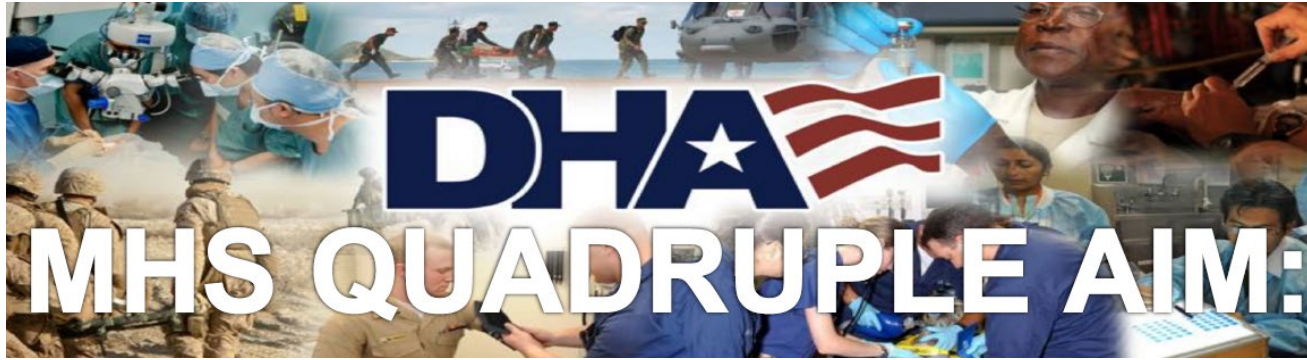


## Polling Question #2



- Do you practice Lifestyle Medicine currently in your clinical care of patients?
  - a) Yes
  - b) No

# L&PM Concepts Align



- Better Health
- Better Care
- Lower Cost
- Increased Readiness<sup>1</sup>



## Cost-Effectiveness of a Weight Loss Intervention: An Adaptation of the Look AHEAD Lifestyle Intervention in the US Military

Karina C. Manz, Teresa M. Waters, Hannah E. Clifton, Mehmet Kocak, Robert C. Klesges, G. Wayne Talcott, Rebecca A. Krukowski

First published: 26 November 2019 | <https://doi.org/10.1002/oby.22681>

**Funding agencies:** The study was funded by the NIDDK (R01 DK097158) of the NIH under the title "Dissemination of the Look AHEAD Weight Management Treatment in the Military" (principal investigators: RCK and RAK). The research represents a Collaborative Research and Development Agreement with the US Air Force (CRADA #13-168-SG-C13001). The opinions expressed in this document are solely those of the authors and do not represent an endorsement by or the views of the US Air Force, the US Department of Defense, or the US Government.

**Disclosure:** The authors declared no conflict of interest.

**Author contributions:** KCM, TMW, and HEC conceived and designed the analysis and contributed to the interpretation of the data. RCK acquired the funding. RCK and RAK oversaw the study. MK assisted with data extraction and management. KCM completed the statistical analysis and drafted the manuscript. All authors contributed to revisions of the manuscript and approved the final version of the manuscript.

**Clinical trial registration:** ClinicalTrials.gov identifier NCT02063178.

Graphic Source: ACLM; <https://lmweek.org/>

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1. DHA, 2019.

2. Manz, 2020.

# Obesity Prevention & Treatment



## USPSTF

Population	Recommendation	Grade
Adults	The USPSTF recommends that clinicians offer or refer adults with a body mass index (BMI) of 30 or higher (calculated as weight in kilograms divided by height in meters squared) to intensive, multicomponent behavioral interventions.	<b>B</b>

“Intensive, multicomponent” means frequent contact, with ancillary support and maintenance avenues, at times with tools supportive of the effort (nutrition apps, scales, pedometers, video content)

Graphic Source: USPSTF; <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/obesity-in-adults-interventions>

USPSTF, 2018.

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# Enter the Blue Zones

- Regions where people live the longest, healthiest lives with high concentration of centenarians (+100 years)
  - SDA of Loma Linda, California
  - Okinawa, Japan
  - Sardinia, Italy
  - Icaria, Greece
  - Nicoya Peninsula, Costa Rica
- Power 9: <https://www.bluezones.com/2016/11/power-9/>
  - *Move naturally*
  - *Sense of purpose*
  - *Down Shift (stress management)*
  - *Stop eating when 80% full*
  - *Beans are cornerstone of diets, only 3-4 ounces of meat eaten 5x/month*



Graphic Source: Pixabay; <https://pixabay.com/photos/beans-lenses-quail-beans-legumes-2014062>  
<https://pixabay.com/photos/sunset-beach-person-dog-companion-5596699/>

# Adventist Health Study (AHS)- 2



- 96,000 Adventists aged 30 to 112 in US and Canada
- Health-conscious individuals with different dietary patterns

Dietary Pattern	Mean BMI	Diabetes Risk
Non-Vegetarian (48%)	28.8	<b>7.6%</b>
Semi-Vegetarian (6%)	27.3	6.1%
Pesco-Vegetarian (10%)	26.3	4.8%
Lacto-ovo Vegetarian (28%)	25.7	3.2%
Vegans (8%)	<b>23.6</b>	<b>2.9%</b>

- Vegetarian diets in AHS-2 are associated with improved health

Tonstad, 2009.

# EPIC – Oxford Study

- Study of common cancer types and chronic disease
- Recruited 1993 – 1999
  - > 65,000 participants from the United Kingdom
  - > 31,500 follow vegetarian or vegan diets
- Lower Body Mass Index (BMI), cholesterol, high blood pressure
- LOV + Vegans - 32% less likely to develop heart disease vs. health-conscious omnivores
- Bone fracture risk – Vegan AND BMI < 22.5, sedentary, low calcium/protein intake



Slide content adapted from:  
- Crowe, 2013.  
- Tong, 2020.  
- EPIC website, n.d.

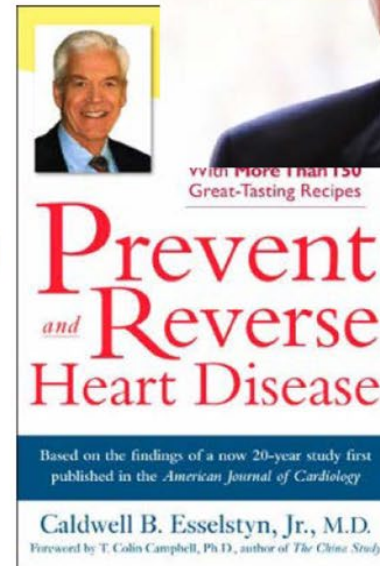
Graphic Source: Pixabay; <https://pixabay.com/photos/blood-pressure-pressure-gauge-1006791/>

# LM REVERSES Disease

## Dr. Caldwell B. Esselstyn

- Former surgeon, now clinician and researcher at the Wellness Institute, Cleveland Clinic
- Whole foods, plant based nutritional therapy- 1985 study
- Research for almost thirty years, reported July 2014

<http://www.dresselstyn.com/site/articles-studies/>



Esselstyn CB. *Prevent and reverse heart disease: The revolutionary, scientifically proven, nutrition-based cure*. Penguin; 2007.

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# LM REVERSES Disease

FIGURE 1

Restoration of myocardial perfusion<sup>2</sup>

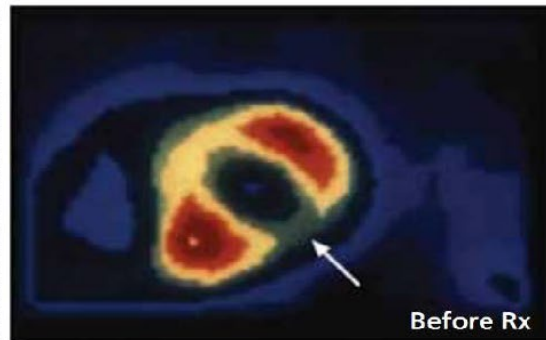
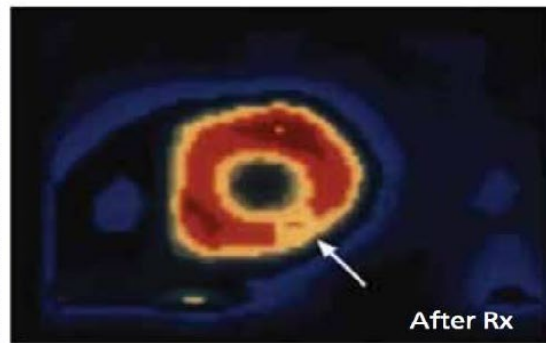


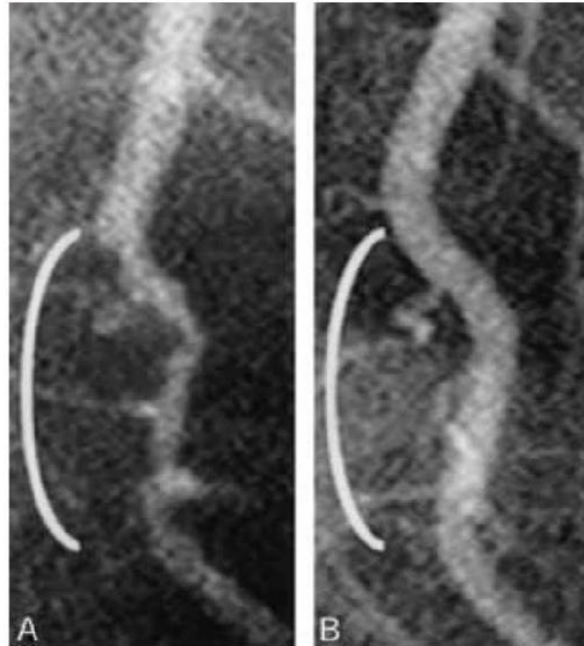
FIGURE 1 FROM: PREVENT AND REVERSE HEART DISEASE BY CALDWELL E. ESSELSTYN, JR., M.D., COPYRIGHT © 2007 BY CALDWELL E. ESSELSTYN, JR., M.D. USED WITH PERMISSION OF AVERY PUBLISHING, AN IMPRINT OF PENGIN GROUP (USA) LLC.



Positron emission tomography performed on a patient with coronary artery disease shows an area of myocardium with insufficient blood flow (top). Following only 3 weeks of plant-based nutritional

FIGURE 2

Reversal of coronary artery disease<sup>4</sup>



Coronary angiography reveals a diseased distal left anterior descending artery (A). Following 32 months of a plant-based nutritional intervention without cholesterol-lowering medication, the artery regained its normal configuration (B).

Graphic Source: Esselstyn, 2014.



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# LM REVERSES Disease

## Dean Ornish, MD

- Internal Medicine- Harvard Medical School / Mass. General Hospital
- Lifestyle is the key to controlling and reversing heart disease



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# Case Study: Initial Evaluation



At 35 years of age:

- ☐ BMI: Overweight
- ☐ Elevated blood pressure (prior visits)
- ☐ Elevated bad cholesterol (LDL = 223)
- ☐ Member was in the range of diabetes (Hemoglobin A1C >6.5 = diabetes)
- ☐ Impaired insulin resistance
- ☐ Chronic fatigue and poor sleep
- ☐ Brain fog
- ☐ Low energy levels
- ☐ **NO LONGER ABLE TO DEPLOY: Waiver and profile required**
  - **Forced to forego 2-month-out deployment tasker due to medical disqualification**

# Treatment Choices

## ■ Plants or Pills? It was his choice



## ■ Incorporated other aspects of Lifestyle Medicine

## ■ Took the Lifestyle & Performance Medicine 7-day Challenge



Graphic Source: Pixabay; <https://pixabay.com/de/vectors/vegan-vegetarische-5455065/>  
<https://pixabay.com/de/images/search/iv%20bag%20fruit/>

# Case Study: Follow-up Evaluation



At 37 years of age:

- ☐ Lost over 35 pounds
- ☐ Normalized blood pressure
- ☐ Bad Cholesterol was normal (LDL <120)
- ☐ Has put his diabetes into remission
  - Hemoglobin A1C <6.5
  - New goal: get to normal lab value (eliminate diabetes)
- ☐ Improved insulin resistance
- ☐ QUALIFIED TO DEPLOY

# Upward Spiral of Effects



- Losing weight
- Elevated energy/less fatigue
- Improved cholesterol
- Improved mental clarity/less brain fog
- Increased exercise capacity and stamina
- Better sleep quality
- Improved general quality of life
- Family started appreciated healthy impact
  - What a great legacy to have started

## Polling Question #3



- Do you see the benefit in integrating Lifestyle Medicine in our clinical care of patients?
  - a) Yes
  - b) No



# The HeRO Report



## NUTRITION

**44.5%**

Healthy Weight

**35.5%**

Consuming Adequate Fruits & Vegetables

**62.3%**

Consuming Sugar Sweetened Beverages

**42.1%**

Taking Potentially Harmful Supplements

## PHYSICAL ACTIVITY

**21.7%**

With Fitness Restrictions

**79.7%**

Meets Guideline for Strength

**79.6%**

Meets Guideline for Cardio

## SLEEP

**35.6%**

Adequate Sleep

**9.8%**

High Risk < 5hrs

**13.0%**

Sleep Affecting Performance

## ADDITIONAL LIFESTYLE INDICATORS

**64.9%**

Perceived Good Health

**7.0%**

Smoking

**3.9%**

Smokeless

**3.1%**

e-Cig

**16.4%**

Potentially Excessive Alcohol Use

**4.6**

Total Estimated Workdays Lost Annually per Person Due to

***DOES THIS  
LOOK  
FAMILIAR?***



NUTRITION



SLEEP



EXERCISE



SUBSTANCE  
ABUSE



STRESS  
MANAGEMENT



HEALTHY  
RELATIONSHIPS

# L&PM in the USAF



## ■ Who?

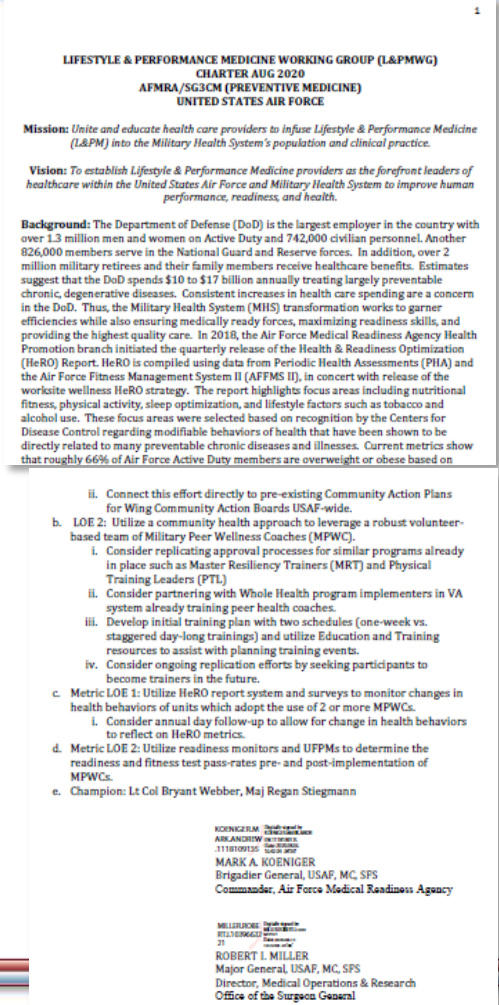
- ❑ L&PM Working Group aligned under AF Preventive Medicine
- ❑ Multiple individuals around the globe (SMEs from primary & specialty care, nutritional med, behavioral health, preventive med – *and continues to grow!*)

## ■ What?

- ❑ Chartered and endorsed by the Air Force Medical Service and Office of the Surgeon General
  - Setting the standards for using Lifestyle Medicine as the foundation of healthcare within the DoD
  - Multi-disciplinary team approach, preventive care, motivational interviewing, patient coaching
- ❑ Developed toolkit using existing methodologies (from a variety of evidence-based sources) for scaling effectively to more sites with the ultimate vision unique to our military population

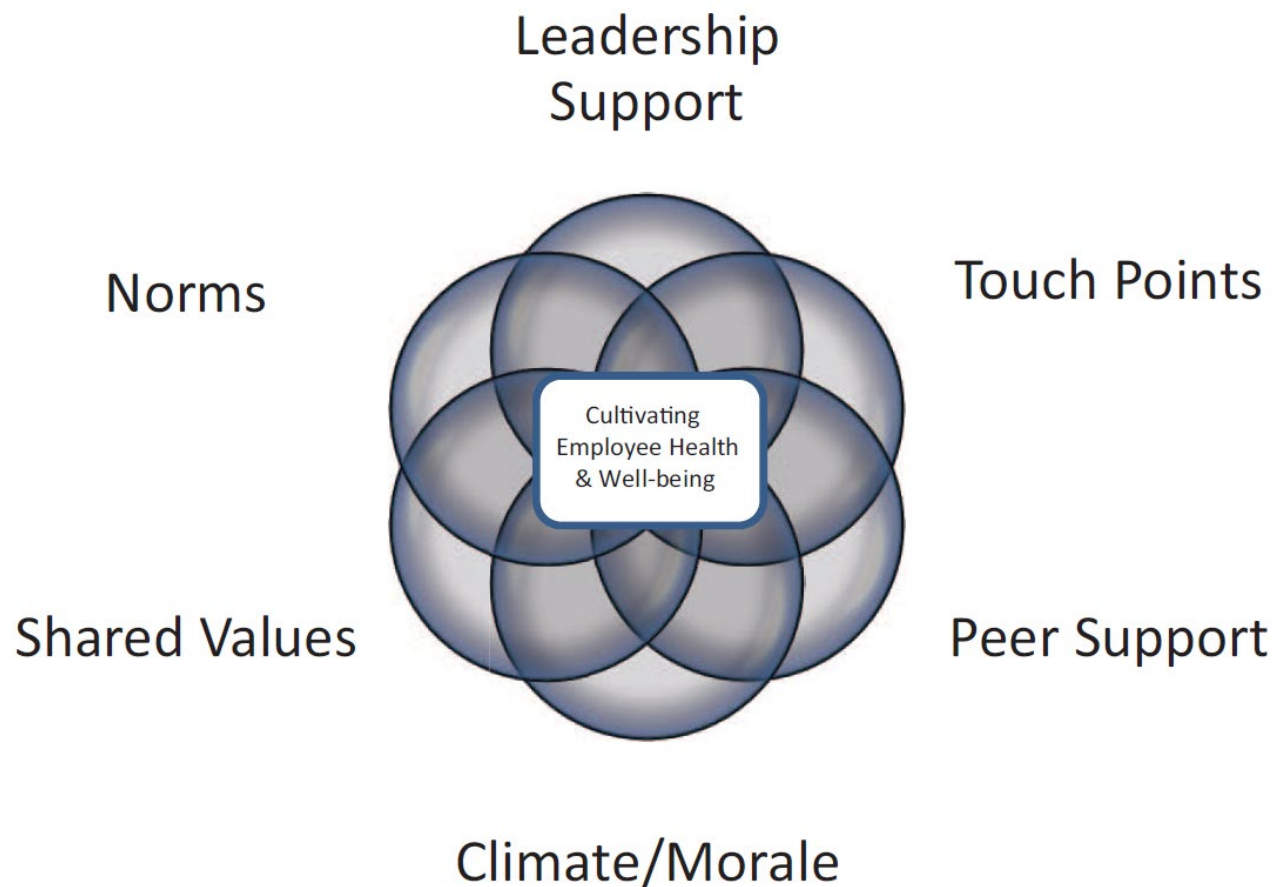
## ■ Where?

- ❑ 5 L&PM Clinics: USAF Academy, Malmstrom AFB, Whiteman AFB, Wright-Patterson AFB, Travis AFB
- ❑ Numerous individuals practicing L&PM independently



***“Medically Ready Force...Ready Medical Force”***

# Goal USAF Culture of Health



***“Medically Ready Force...Ready Medical Force”***

# American College of Lifestyle Medicine



- Founded by Dr. John Kelly in 2004
- Non-profit organization
- Focused on advancing lifestyle medicine
- Many resources available online
- Executive Director Susan Benigas stepped up in 2014
- 500% growth in the last 5 years

[www.lifestylemedicine.org](http://www.lifestylemedicine.org)

A screenshot of the American College of Lifestyle Medicine website. The header features the organization's logo, a navigation menu with links like "ABOUT", "LIFESTYLE MEDICINE", "EDUCATION", "NEWS ROOM", "EVENTS", "PARTNERS", "MEMBERSHIP", and "SHOP", and social media icons. A search bar is located on the right. The main banner shows a doctor in a white coat with the word "DIABETES" written on their chest, crossed out with a red line. Below this, a "NEW Course" is advertised: "Reversing Type 2 Diabetes and Insulin Resistance with Lifestyle Medicine". On the right side, there are buttons for "Monthly Webinars", "COVID-19 Resources", "My Learning Center", and "Become a member". The bottom section is divided into four columns: "What is Lifestyle Medicine?", "Certification", "Program Certification", and "LM101". Each column contains brief information about the respective topic.

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# Resources

Please submit LM 101 curriculum feedback to the ACLM Education Team

## Course Components

### Slide Decks

#### Modules

1. Introduction to Lifestyle Medicine—Understanding Lifestyle Medicine – 160 slides
2. Empowering People to Change – 118 slides
3. Collaborating, Motivating, Goal-Setting, and Tracking – 81 slides
4. Improving Health Through Exercise – 158 slides
5. The Nutrition-Health Connection – 192 slides
6. Sleep Matters – 140 slides
7. Stress and Resilience – 129 slides
8. Peace of Mind With Meditation, Mindfulness, and Relaxation – 146 slides
9. The Power of Connection – 129 slides
10. Positively Positive – 146 slides
11. Substance Use Disorder – 142 slides
12. Staying the Course – 117 slides

### Instructor's Manual

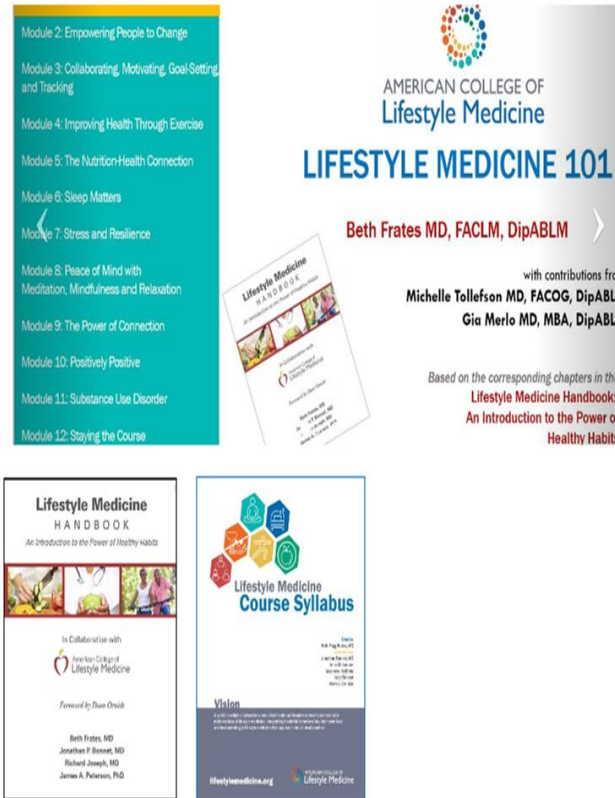
### LM Syllabus

### [Complimentary Download](#)

### Beth Frates' LM Handbook

Available for purchase in the

[ACLM Bookstore](#)



- Presentations for Classes
- Lifestyle Assessment Forms
- Educational Material
- Briefings for leadership and to gain provider support
- [TinyURL.com/MotleyTools](https://www.lifestylemedicine.org/MotleyTools) (Dr. Beth Motley)

[www.lifestylemedicine.org](https://www.lifestylemedicine.org)

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## Polling Question #4

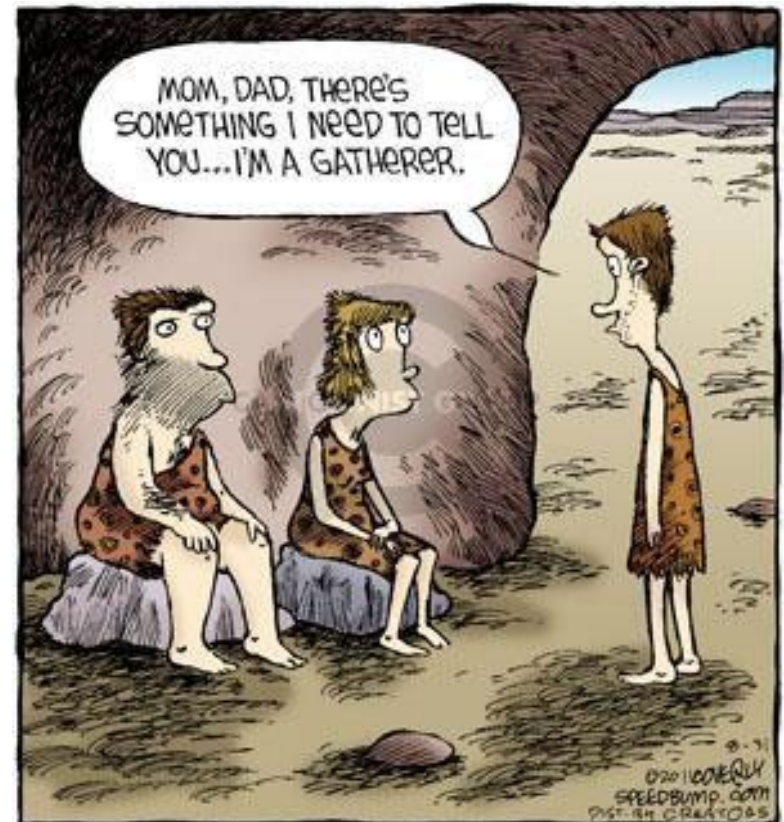


- Which of the following would be a required priority in order for you and your staff to start practicing Lifestyle Medicine?
  - a) Education/Training on Lifestyle Medicine
  - b) Data showing that your patients desire this type of approach
  - c) Change in appointment scheduling/templates to allow more time with patients
  - d) Data showing that the health care team and other support staff desire this type of approach



# Summary

- Lifestyle change leads to health and performance improvement
- Patient-centered, population driven
- Team based and multidisciplinary, patient focused
- Behavioral health changes seem simple, however are challenging
- Prevent and reverse illness
- Lifestyle Medicine is a growing field
- Environment matters- building a culture of health



Graphic Source: Speed Bump by Dave Coverly for August 31, 2011 | GoComics.com  
[https://ar.pinterest.com/pin/50524827043114881/?amp\\_client\\_id=CLIENT\\_ID%28\\_%29&mweb\\_unauth\\_id=&simplified=true&form=MY01SV&OCID=MY01SV](https://ar.pinterest.com/pin/50524827043114881/?amp_client_id=CLIENT_ID%28_%29&mweb_unauth_id=&simplified=true&form=MY01SV&OCID=MY01SV)

# Contacts



## For more information contact the L&PM Working Group:

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  - Chief of AF Medical Home
  - mary.a.kiel.mil@mail.mil
- Lt Col Jennifer Harward, Member
  - Registered Dietician
  - Air Mobility Command Nutrition Consultant
  - jennifer.b.harward.mil@mail.mil

## American College of Lifestyle Medicine (ACLM):

- [www.lifestylemedicine.org](http://www.lifestylemedicine.org)
- Welcomes all health professionals
- Webinars/CEs
- Board Exam Preparation Materials
- Annual Conference – Military Scholarships available for physicians and allied health providers

# Key Takeaways



- The six pillars of Lifestyle & Performance Medicine include whole food, plant-predominant nutrition, sufficient and restorative sleep, regular aerobic and strength-training activity, avoidance of risky substances, stress management, and developing healthy relationships.
- Lifestyle & Performance Medicine differs from other traditional and non-traditional approaches to patient care in that it is evidence-based, providers partner with patients to treat the root causes of disease as the foundation of care, and patients are required to make major changes in lifestyle and habits.

# Key Takeaways



- Lifestyle & Performance Medicine aligns with the Defense Health Agency's Quadruple AIM in that it provides increased readiness, better health, better care, and lower cost.
- Lifestyle & Performance Medicine is an effective approach to overcome our chronic disease epidemic and rising healthcare costs.
- Multiple studies have shown that Lifestyle & Performance Medicine prevents, treats and reverses chronic disease.
  - Key studies include Adventist Health Study 2, EPIC Oxford Study, The Blue Zones, A Way to Reverse Coronary Artery Disease by Dr. Caldwell Esselstyn and Dr. Dean Ornish's Lifestyle Heart Trial

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[hkey=4697cec6-fc2c-4738-834a-2df3cfe2278d.](https://lifestylemedicine.org/ACLM/About/ACLM/About/About.aspx?hkey=4697cec6-fc2c-4738-834a-2df3cfe2278d)

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