Lifestyle IS Medicine

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Learning Objectives

1. Define the 6 pillars of Lifestyle Medicine (LM)

2. State the impact of evidence-based comprehensive LM programs on halting and reversing chronic disease

3. Demonstrate how to integrate LM strategies into clinical practice

4. State the importance of assessing readiness, using motivational interviewing and supporting patients in realistic goal-setting to change lifestyle behavior
What is Lifestyle Medicine?

• **Definition:** The use of evidence-based lifestyle therapeutic intervention as a primary modality

• **Delivery:** Clinicians, trained and certified in this specialty to prevent, treat, and often reverse chronic disease

• **Guidelines:** Almost all clinical practice guidelines for the top chronic diseases recommend Lifestyle Medicine as the first line of treatment
Why Lifestyle Medicine?
Focuses on conditions that drive 80% of healthcare costs

1. Allergies
2. Arthritis
3. Asthma
4. Back Pain
5. Cancer
6. Congestive Heart Failure
7. Coronary Artery Disease
8. Depression
9. Diabetes
10. High Cholesterol
11. Hypertension
12. Kidney Disease
13. Lung Disease (COPD)
14. Obesity
15. Sinusitis

Accounting for 80% of total costs for all chronic illnesses worldwide.
Lifestyle Associated Pathogenesis

- Unhealthy Diet
- Sedentary Lifestyle
- High Stress
- Medications
- Poor Sleep
- Addictions
- Social Isolation

Microbiome Alterations

Epigenetic Changes

Cellular Stress / Injury

Inflammation

Lifestyle Interventions

Lifestyle Interventions

Obesity
Type 2 DM
CVD
Cancer
Depression
Other Diseases
Six Pillars of Lifestyle Medicine

- Activity
- Nutrition
- Sleep
- Risky Substances
- Social Connection
- Stress Management
Nutrition – A Brief Review

A CASE FOR AVOIDING THE STANDARD AMERICAN DIET
What is the Standard American Diet (SAD)?

**Too Much**
Salt, saturated fat, refined grains, ultra-processed foods and calories from fats and added sugars

**Too Little**
Whole vegetables and fruits, whole grains, legumes, nuts & seeds
HEALTHFUL PLANT-BASED DIET

- Low energy-density
  - Low saturated fat, high fiber content
- High dietary fiber
  - Especially cereal fiber
- Appropriate fat composition
  - Low saturated, high unsaturated fat
- High levels of antioxidant nutrients
  - Polyphenols, carotenoids, Vitamins C & E
- High levels of certain micronutrients
  - B-vitamins, Magnesium, Potassium
- Low levels of certain dietary factors
  - Heme iron, nitrates, nitrates

Help with weight loss/maintenance
- Enhance glycemic control
- Improve lipid profile
- Reduce blood pressure
- Improve vascular health
- Decrease inflammation
- Improve gut microbial profile
Physical Activity

THE JOY – AND HEALTH – OF MOVEMENT
The sad facts about activity levels

Less than 5% of US adults participate in 30 minutes of physical activity each day, and only one in three adults get the recommended amount of physical activity each week.

Physical Activity
Exercise as a Vital Sign (EVS)

Several quick, clinical tools have been developed and studied to elevate the importance of discussing exercise in healthcare encounters.

Exercise as a Vital Sign asks two questions:

1) On average, how many days per week do you engage in moderate to strenuous exercise (like a brisk walk)?

2) On average, how many minutes per day do you engage in exercise at this level?

When providers routinely use EVS in clinic visits:

1) Patients are more likely to increase their physical activity.

2) Patients show subsequent improvements in risk factors like BMI and HbA1c.
Stress Management

It’s All in the Mind!
What is “stress”?  
Definition: Stress is the perception of a **real or imagined** threat to your body or your ego.

“Humans are the only creatures that create stress with their own minds”
– Andrew Weil, MD
Health Effects of Chronic Stress

- Cardiovascular Disease
- Immune Dysfunction
- Cognitive Problems
- Digestive Issues
- Weight Gain

Lab rats experiencing chronic stress show clear neuronal atrophy.
Health Impacts of Anger

• Anger isn’t always expressed as rage
  • Hurt, disappointment, sense of betrayal

• Anger increases cortisol, which increases heart rate, BP and CVD risk

• Every time we relive or continue to think about an event or situation that hurt us or made us angry, we experience the physiological effects of anger – over and over again

Short-term risk of CV events in the 2-hr following an outburst of anger

Managing Stress
“Keep Your Boat Afloat”

• **Limit your exposure to things you find stressful** (as much as possible)
  • Learn to say “no”
  • Lower your expectations

• **Clarify your worries**
  • Determine what is in your control
  • Determine where you are putting your attention
  • Talk to someone

• **Stress management strategies**
  • Exercise
  • Progressive muscle relaxation
  • Deep breathing (vagal stimulation)
  • Mindfulness practices
Sleep and Rest

THE POWER OF RESTORATION AND REJUVENATION
HOW SLEEP AFFECTS YOUR HEALTH

SLEEP DEPRIVATION

IMPAIRED COGNITION
Lack of sleep impairs memory and your ability to process information.

INCREASES SYMPTOMS OF DEPRESSION
A lack of sleep disrupts neurotransmitters to the brain which regulates mood.

HIGHER LEVELS OF ANXIETY
Lack of sleep raises the brain’s anticipatory reactions, increasing overall anxiety levels.

INCREASED RISK OF BREAST CANCER
Melatonin decreases when you are exposed to light late at night. A decrease in melatonin disrupts estrogen production which can lead to breast cancer.

STROKE RISK
When you sleep 6 hours or less a night, your chance of a stroke increases 4x.

INCREASED RISK FOR HEART DISEASE
Blood pressure decreases when you sleep.

INCREASED RISK FOR DIABETES
Lack of sleep increases cortisol and norepinephrine, both are associated with insulin resistance.

WEIGHT GAIN
Sleep helps balance hormones that make you feel hungry and full.
Insomnia
A common – and persistent problem in adults

N=3073, mean age 48.1 yr (18-95 yr)

You snooze, you lose

After crunching the numbers on more than 1,000 participants in a study, researchers found that roughly eight hours of sleep correlates with a lower body mass index, lower levels of ghrelin (a hormone that triggers appetite) and higher levels of leptin (a hormone that signals that the body is full).

<table>
<thead>
<tr>
<th>HOURS OF SLEEP</th>
<th>BODY MASS INDEX</th>
<th>LEPTIN</th>
<th>GHRELIN</th>
</tr>
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<tbody>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>increases 3.6 %</td>
<td>decreases 15.5 %</td>
<td>increases 14.9 %</td>
</tr>
</tbody>
</table>
Rest is important, too!

- Alternating periods of activity and rest is essential for health

- Because our culture has overridden these natural rhythms, we need to deliberately re-create them

Four types of rest:
1. Moment rests – “a mindful breath”
2. Daily rests
3. Weekly rests
4. Annual rests – vacations, retreats

“Sustained high performance is achieved by assuming the mentality of a sprinter not a marathoner.” — Loehr and Schwartz
Risky Substances

BEHAVIORAL AND ENVIRONMENTAL CHALLENGES
Addictive Substances Management

• More than 40 million Americans meet criteria for addictive use of nicotine, alcohol or other drugs

• Another 80 million meet criteria for “misuse”

• Risky substance use significantly increases risk for chronic diseases
  • Cardiovascular disease
  • Stroke
  • Diabetes
  • Asthma
  • Arthritis
  • Chronic pain

• Use the “5 A’s” to address tobacco or alcohol use in primary care
  • Ask, Advise, Assess, Assist, and Arrange
Environmental Toxins and Health

Endocrine Disrupting Chemical Exposure
(BPA and Phthalates)

• Associated with Metabolic Syndrome, obesity, asthma

• Impossible to completely eliminate exposure
  • Using BPA-free plastic bottles and cans, avoiding microwaving in plastic, and reducing intake of animal foods and processed foods can significantly reduce exposure

Pesticide Exposure

• Associated with cancers, neurodegenerative diseases and reproductive effects

• A 2019 study found that just 6 days of eating organically-grown food instead of conventionally-grown food reduced pesticide levels in adults and children by an average of 60%

Positive Social Connection

THE UNAPPRECIATED HEALTH BENEFITS OF RELATIONSHIPS
Importance of Relationships for Health

- In one meta-analysis of 148 longitudinal, population-based studies, researchers found a 50% increase in survival of people with robust social relationships, regardless of age, gender, or country of origin.

- People with few social ties are 2-3 times more likely to suffer from major depression than people with strong social bonds.

- Blue Zones
  - Emphasis on community and social relationships.

Research shows that social relationships can have as much impact on health as blood pressure, smoking, physical activity, or obesity.
Evidence-based Lifestyle Medicine Programs

THE IMPORTANCE OF BEING INTENTIONAL
Diabetes Prevention Program (DPP)

- Intensive lifestyle intervention program for individuals with pre-diabetes
- Target: Diet, physical activity and cognitive-behavioral strategies designed to promote up to 7% weight loss
- **58% reduction** in diabetes incidence at 3 years – sustained **31% reduction** at 10 years
- Nationwide DPP implemented through the CDC, reimbursable

Ornish Program
Lifestyle Heart Trial

• RCT of intensive lifestyle medicine intervention (diet, exercise, stress, relationships) for coronary heart disease patients
  • 1-year results – 91% reduction in angina episodes and 3% reversal of stenosis in intervention group vs 165% increase in angina and 3% increased progression of stenosis in controls
  • 5-year results – 7.9% decrease in stenosis in intervention group vs 27.7% increase in controls; intervention group was 2.5 times less likely to have a cardiac event than controls

• CMS reimbursable

D Ornish et al., JAMA 1998; 280(23): 2001-7
Complete Health Improvement Program (CHIP)

- Founded in the U.S. in 1988
- Comprehensive lifestyle intervention using education, behavioral science and social support to address the root cause of chronic disease
- Has served more than 80,000 participants and published more than 40 scientific papers on program design and outcomes
Decrease in risk factor levels after 30d in >5000 CHIP Participants

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Baseline mean (SD)</th>
<th>Mean change</th>
<th>% change</th>
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<tbody>
<tr>
<td><strong>Cholesterol (mg/dl)</strong></td>
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<tr>
<td>Normal (&lt;200)</td>
<td>182.5(15.7)</td>
<td>-17</td>
<td>-9.3</td>
</tr>
<tr>
<td>High (200-239)</td>
<td>215.6(10.5)</td>
<td>-27.1</td>
<td>-12.6</td>
</tr>
<tr>
<td>Very high (&gt;280)</td>
<td>306.6(27.2)</td>
<td>-60.7</td>
<td>-19.8</td>
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<tr>
<td><strong>Triglycerides (mg/dl)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal (&lt;150)</td>
<td>95.5(29.7)</td>
<td>-13.8</td>
<td>-8.1</td>
</tr>
<tr>
<td>Borderline (150-199)</td>
<td>171.9(13.9)</td>
<td>-50.3</td>
<td>-18.6</td>
</tr>
<tr>
<td>Very high (&gt;500)</td>
<td>634.7(114.2)</td>
<td>-279.9</td>
<td>-44.1</td>
</tr>
<tr>
<td><strong>Fasting glucose (mg/dl)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal (&lt;100)</td>
<td>90.7(9.9)</td>
<td>-2.1</td>
<td>-2.3</td>
</tr>
<tr>
<td>Impaired (100-125)</td>
<td>116.1(15.5)</td>
<td>-10.1</td>
<td>-8.7</td>
</tr>
<tr>
<td>Diabetes (&gt;126)</td>
<td>164.0(42.2)</td>
<td>-32.6</td>
<td>-19.9</td>
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Rankin et al., Am J Cardiol 2011
Clinical Results (Average)

- Weight loss of 17 lbs.
- BMI decrease of 6.7 points
- LDL-C dropped 21 mg/dl
- Total Chol. dropped 28 mg/dl
- BP normalized in most cases

Per Participant Economics

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<table>
<thead>
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<tbody>
<tr>
<td>Total Savings</td>
<td>$2,500</td>
</tr>
<tr>
<td>Program Cost</td>
<td>$1,350</td>
</tr>
<tr>
<td>Net Savings</td>
<td>$1,150</td>
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</tbody>
</table>

Initial investment = $37,800

Within 12 months: For every $1 invested, $1.85 saved

12 months post-CHIP intervention health expenditure savings = $70,155*
Putting it into Practice

BEHAVIOR CHANGE:
THE FOUNDATION OF LIFESTYLE MEDICINE
Patient: Doctor, I don't feel well and I'm not sure why.

Doctor: I want you to meditate for 20 minutes, twice a day, exercise for at least 30 minutes a day, avoid processed foods, eat plenty of organic fruit and veg, spend more time in nature and less indoors, stop worrying about things you can’t control and ditch your T.V. Come back in 3 weeks.
Motivation

All providers should be comfortable using basic motivational interviewing techniques

Assess patient’s readiness to change

Build intrinsic (vs. extrinsic) motivation
Motivational Interviewing

Confidence in the ability to make a change is a good predictor of whether a person will enact that change.

Ask open ended questions:

✓ “What matters to you most about this change?”

✓ “How confident are you that you will make this change?”

✓ “How important is it to you to make this change?”

“A collaborative, person-centric form of guiding to elicit and strengthen motivation for change” - Miller and Rollnick
How does habit formation work?

It’s relatively simple: Repeat an action consistently in the same context.
What do you need to build a lasting habit?

- A reason to take action
- Appropriate context and a cue ("trigger")
- Frequency and consistency
Managing the Process of Creating Habits

• The patient should choose the behavior they want to become habitual

• Encourage small, manageable behavior changes first
  • Simpler actions become habits more quickly; builds self-efficacy

• Overtly address lapse and relapse
  • Failure is discouraging unless you normalize it as a healthy part of the process

• Offer encouragement throughout the process
Goal Setting

- Setting clear goals is an essential part of behavior change

- Help patient set SMART goals
  - **S**pecific
  - **M**easurable
  - **A**chievable
  - **R**elevant
  - **T**ime-bound

<table>
<thead>
<tr>
<th>NOT “SMART”</th>
<th>“SMART”</th>
</tr>
</thead>
<tbody>
<tr>
<td>“I’m going to lose 50 pounds.”</td>
<td>“In 2 months, I’m going to lose 6-8 pounds by reducing my portion sizes and taking a daily walk.”</td>
</tr>
<tr>
<td>“I’m going to stop eating meat.”</td>
<td>“Next week, I’m going to prepare 3 vegetarian dinners.”</td>
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</tbody>
</table>
Addressing Common Barriers

• **Barriers to healthy eating**
  - Lack of time to plan/prepare/cook
  - Cost of healthy food (largely a myth)
  - Lack of food availability, i.e., food deserts and swamps
  - Unwilling or unable to cook at home, etc.

• **Barriers to exercise**
  - Lack of time
  - Find exercise aversive or boring
  - Lack confidence/low self-efficacy
  - Injury (or fear of injury)
Lifestyle Medicine in Clinical Practice
Behavioral science and coaching are foundational

- Start with a full assessment of lifestyle behaviors addressing the six domains of LM

- Consider a team approach
  - Health coach, nutritionist, exercise physiologist

- Consider shared medical appointments
  - Mechanism for reimbursement for group education and support sessions
Summary and Conclusion

• Lifestyle Medicine focuses on the root cause of chronic disease – lifestyle behaviors

• There are 6 central behaviors addressed by Lifestyle Medicine

• There is a strong evidence-base for Lifestyle Medicine
  • Both the individual behaviors and comprehensive lifestyle programs

• Behavior change is the foundation of Lifestyle Medicine
  • Providers can become skilled at briefly addressing motivation, habit formation, goal setting and other behavioral techniques during clinic visits, or can partner with health coaches
Q & A

Activity  Nutrition  Sleep  Risky Substances  Social Connection  Stress Management