



# Lifestyle Medicine (Modifiable Risk Factors)

## Objectives:

- 1-Define Lifestyle medicine(LM) and recognize its history
- 2-Demonstrate LM pillars and competencies with examples
- 3-Discuss the importance of LM in NCD risk factors
- 4-Present the epidemiology and significance of NCD risk factors globally and in KSA
- 5-Discuss the institutional efforts in LM as a global public health strategy

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- Main text
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## LM Definition:

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.

-Lifestyle is becoming a primary therapeutic modality, not just advice.

-Lifestyle modifications often reverse and induce remission of conditions such as diabetes mellitus. Remission, once a dream, is now a reality.

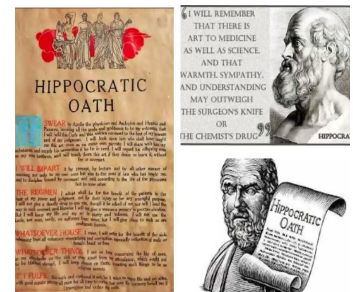
## Lifestyle Medicine cardinal features:

- Emphasis on promoting behaviour changes that allow the body to heal itself.
- Focus on Evidence-based optimal nutrition, stress management and fitness prescriptions.
- Patients are active partners in their care. **Very important that the patient in power to be active.**
- Treats the underlying lifestyle causes of disease. **rather than treating the symptoms or complications**
- Physician/Provider educates, guides and supports patients to make behaviour changes.
- Medications used as an adjunct to therapeutic lifestyle changes.
- Patient's home and community environment are assessed as contributing factors. **this is a linked between lifestyle medicine and community medicine**

## History:

“Just as food causes chronic disease, it can be the most powerful cure.” Hippocrates

“الحمية رأس الدواء والمعدة بيت الداء وعودوا كل جسم ما اعتاد”  
الحارث بن كلدة طبيب العرب



Unfortunately, since conventional medicine brought about a huge revolution in the pharmaceutical industry, it replaced many practices that had been around for ages, specifically preventative measures, all of these measures were marginalized during the pharmaceutical industry revolution. This continued until infectious diseases declined and non-communicable diseases started to rise. Thus, the main causes of death nowadays are non-communicable diseases, which are mainly related to lifestyle behaviors.

# Pioneers of LM:

1970s	1980s	1990s	2000s
Nathan pritikin Longevity center	Dean ornish- the lifestyle heart trial	Caldwell B. Esselstyn Jr Cleveland clinic	John Kelly-American College of LM (2004)
John McDougall program		Hans Diehl Coronary health improvement project	Physician competencies for prescribing LM (2010)
		WHO inaugural report	ABLM (2015)
		James Rippe	IBLM (2016)

## LM Pillars

### 1-NUTRITION

Food is Medicine. choose predominantly whole, plant-based foods that are rich in fiber and nutrient dense. Vegetables, fruit, beans, lentils, whole grains, nuts and seeds.

### 2-EXERCISE

Regular and consistent physical activity that can be maintained on a daily basis throughout life walking, gardening, push ups and lunges-is an essential piece of the optimal health equation.

### 3-STRESS

Stress can lead to improved health and productivity -or it can lead to anxiety, depression, obesity, immune dysfunction and more. Helping patients recognize negative stress responses, identify coping mechanisms and reduction techniques leads to improved wellbeing

### 4-SUBSTANCE ABUSE

The well-documented dangers of any addictive substance use can increase risk for many cancers and heart disease. Positive behaviors that improve health include cessation of tobacco use and limiting the intake of alcohol.

### 5-SLEEP

Lack of, or poor quality sleep can lead to strained immune system. Identify dietary, environmental, and coping behaviours to improve sleep health.

### 6-RELATIONSHIPS

Social connectedness is essential to emotional resiliency. Studies show that isolation is associated with increased mortality. considering a patients home and community environment improves overall health.

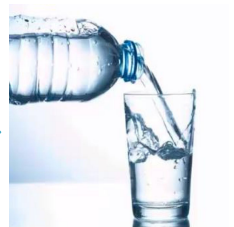
Lifestyle Medicine is an evidence-based approach to treating and reversing disease by replacing unhealthy behaviors with positive ones.

# LM core competencies

We, as physicians (or anyone who practices the LM), need to know the scientific background of these core competencies to help us in assessing patients:

- Lifestyle Medicine Core Competency Skills
- Nutrition
- Physical Activity
- Health & Wellness Coaching
- Sleep Health
- Mental Health & Emotional Well-Being
- Mindfulness
- Tobacco Cessation
- Alcohol Use
- Weight Management

## Examples of LM interventions :



## ★1- Nutrition

## What do all “healthy diets” have in common?

- Low Carb
- Low Fat/Vegetarian or Vegan
- Low Glycemic
- Mediterranean
- Mixed/Balanced
- Paleolithic



all of them they have a consensus of the following

### Common Elements:

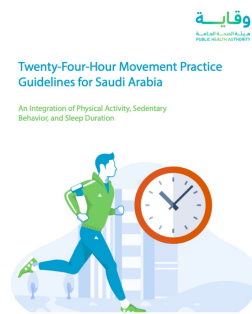
- Limited Refined Starches, added sugars, processed foods and ultra-processed like junk foods.
- Limited Intake Of Certain Fats
- Emphasis On Whole Plant Foods, with or without lean meats, fish, poultry and seafood.

## ★ 2- Exercise

150 minutes of moderate-intensity exercise a week plus two days of muscle-building exercises two times a week. and you need to individualize your advice according to the patient in front of you. So when you ask about what activities they should do, you simply say what fits you. If you have an old lady who has had a knee replacement surgery, you never go ask her to do a squat! You will advise her to swim.

Worldwide, 23% of adults and 81% of adolescents (aged 11–17 years) do not meet the WHO global recommendations on physical activity.

High-income Western countries were found to have the highest levels of insufficient PA (42.3%), while Southeast Asia (17.6%) and sub-Saharan African countries (17.9%) had the lowest prevalence.



## ★ 3- Stress

Stress is an important factor to assess because it plays a role in metabolic dysfunction and contributes to various health conditions, such as weight gain, obesity, hypertension, and hypothyroidism. All of these conditions often have some degree of stress-related background, particularly when the sympathetic nervous system is overly activated.

### Assess stress levels by perceived stress scale:

The first step is to assess stress levels. Various scales can be used to determine if someone has normal or abnormal stress levels. One well-known tool is the **Perceived Stress Scale (PSS)**. This questionnaire can be administered to patients before their appointment, allowing for a preliminary assessment of their stress level (low, moderate, or high). This information provides a valuable starting point for further stress management strategies.

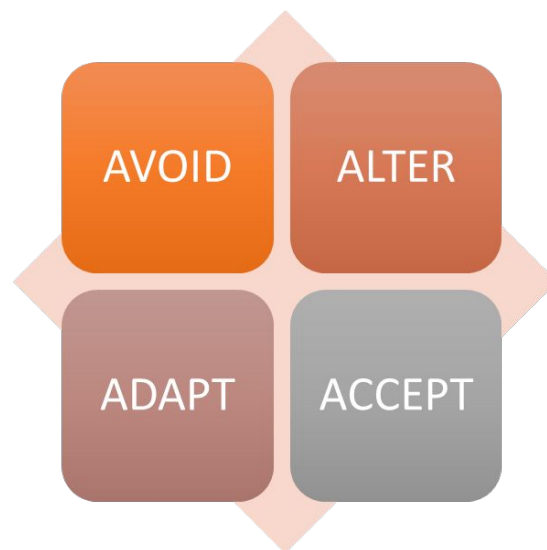
The assessment is a 10-item questionnaire that evaluates symptoms of stress on a scale of 1 (never) to 4 (very often) for the negatively phrased questions (Items 1, 2, 3, 6, 9, & 10) and for the positively phrased questions (Items 4, 5, 7, & 8) the scoring is reversed, never (4) and often (0). The higher the total score, the more perceived stress one is under.

1) Upset because of something that happened unexpectedly
2) Unable to control the important things in your life
3) Felt nervous and stressed
4) Felt confident about your ability to handle your personal problems
5) Felt that things were going your way
6) Could not cope with all the things that you had to do
7) Able to control irritations in your life
8) Felt that you were on top of things
9) Angered because of things that happened that were outside of your control
10) Felt difficulties were piling up so high that you could not overcome them

Scoring of perceived stress	
1) 0 to 13:	low stress
2) 14 to 26:	moderate stress
3) 27 to 40:	high stress

## Stress management techniques (Modalities)

Managing stress, particularly everyday stressors unrelated to psychological illness, is crucial. While some individuals may require referral to a counselor or psychologist for specialized stress management techniques, it is important to never ignore or leave stress unaddressed. Unmanaged stress can significantly impact behaviors, leading to increased food intake, decreased physical activity, and sleep disturbances, ultimately creating a negative feedback loop that worsens health outcomes.



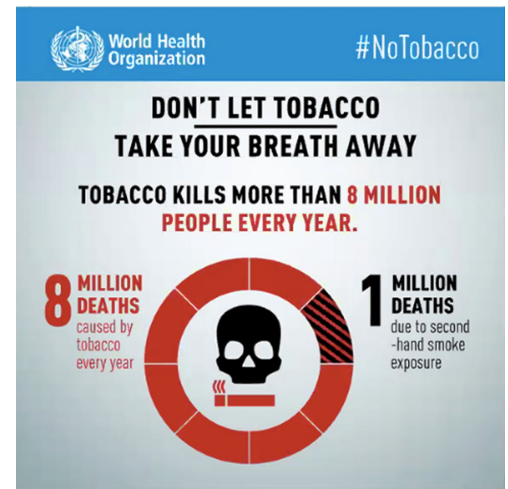
## ★ 4. Substance Abuse

Example of substance abuse: smoking, alcohol, etc.

### WHO response

6 **MPOWER** measures are:

- **M**onitor tobacco use and prevention policies.
- **P**rotect people from tobacco use.
- **O**ffer help to quit tobacco use.
- **W**arn about the dangers of tobacco.
- **E**nforce bans on tobacco advertising, promotion and sponsorship.
- **R**aise taxes on tobacco.

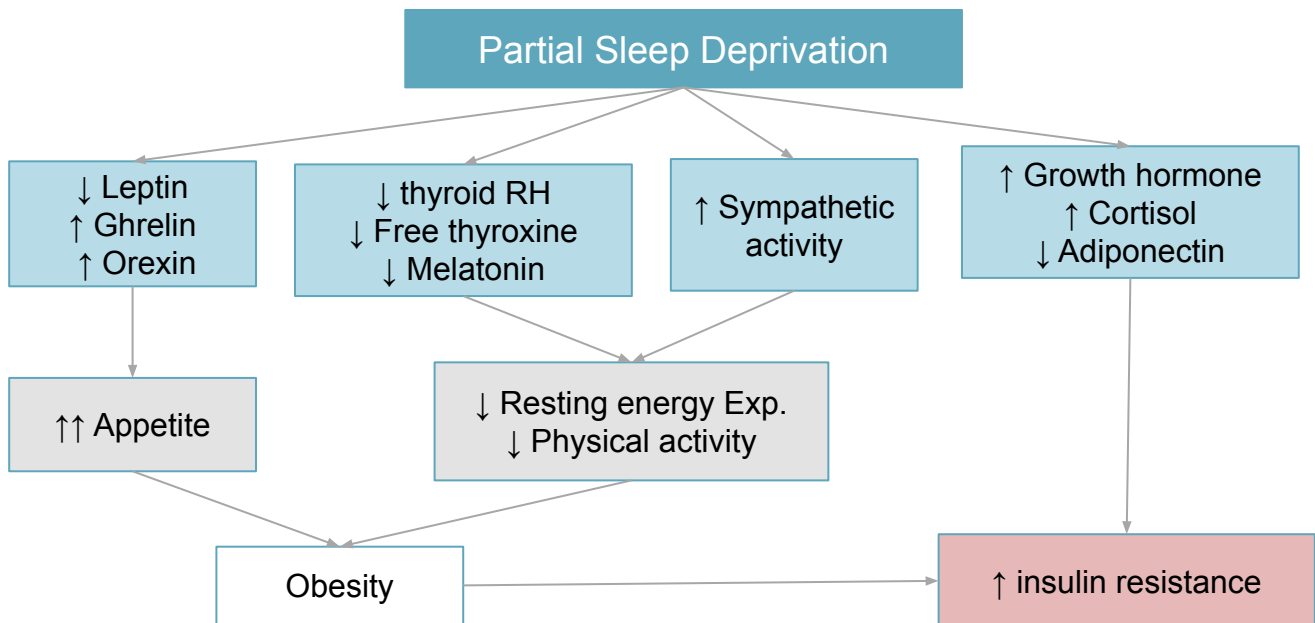


**Structure the Encounter:** to change the behavioral you should do

- **ASK** permission & readiness for change
- **ASSESS** health status (& causes of weight gain)
- **ADVISE** behavior change
- **AGREE** on appropriate goal & willingness to make change
- **ASSIST** in change attempt & **ARRANGE** for follow-up

## ★ 5. Sleep

### Sleep Affects Metabolism



Many studies link sleep and metabolism. Sleep deprivation is now recognized as a major risk factor for insulin resistance, which in turn is part of a vicious cycle of obesity, diabetes, and other chronic conditions. Without adequate sleep, this cycle can never be successfully broken. We have seen many patients who excel in both nutrition and exercise but still struggle with weight management due to poor sleep quality.

# ★ 5. Sleep

Research shows that Sleep duration less than 5 hrs is associated with obesity.

Therefore, assessing sleep quality is crucial. If we suspect any sleep disorders, such as obstructive sleep apnea, we utilize validated scales (e.g., the STOP-Bang score for OSA) for screening. If the screening raises concerns, we refer the patient for a sleep study.

Understanding both the quantity and quality of sleep is essential for promoting optimal health and preventing chronic diseases.

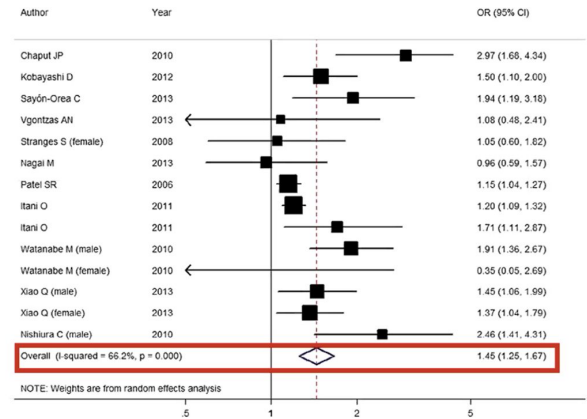
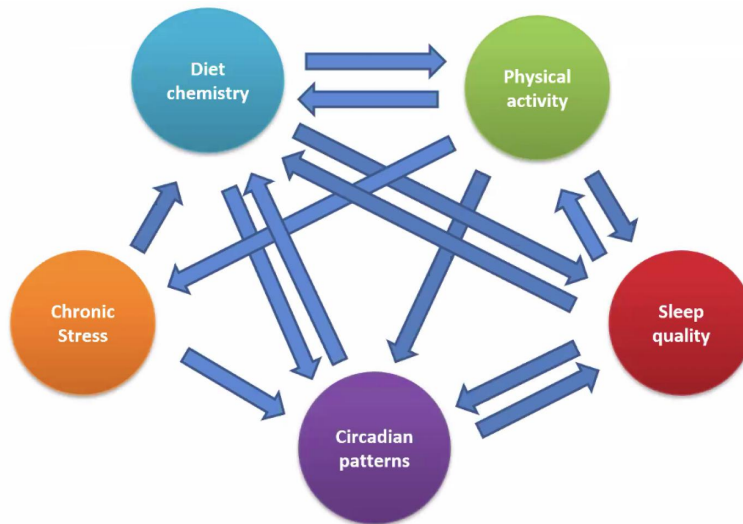


TABLE 1. Recommended sleep duration by age group<sup>39</sup>

Age group	Sleep hours per day
Newborns (0-3 months)	14-17
Infants (4-11 months)	12-15
Toddlers (1-2 years)	11-14
Preschoolers (3-5 years)	10-13
School-age children (6-13 years)	9-11
Teenagers (14-17)	8-10
Younger adults (18-25)	7-9
Adults (26-64)	7-9
Older adults (≥65)	7-8

## Effects of lifestyle changes are interdependent



All these pillars (domains) are well connected and interacting with each others.

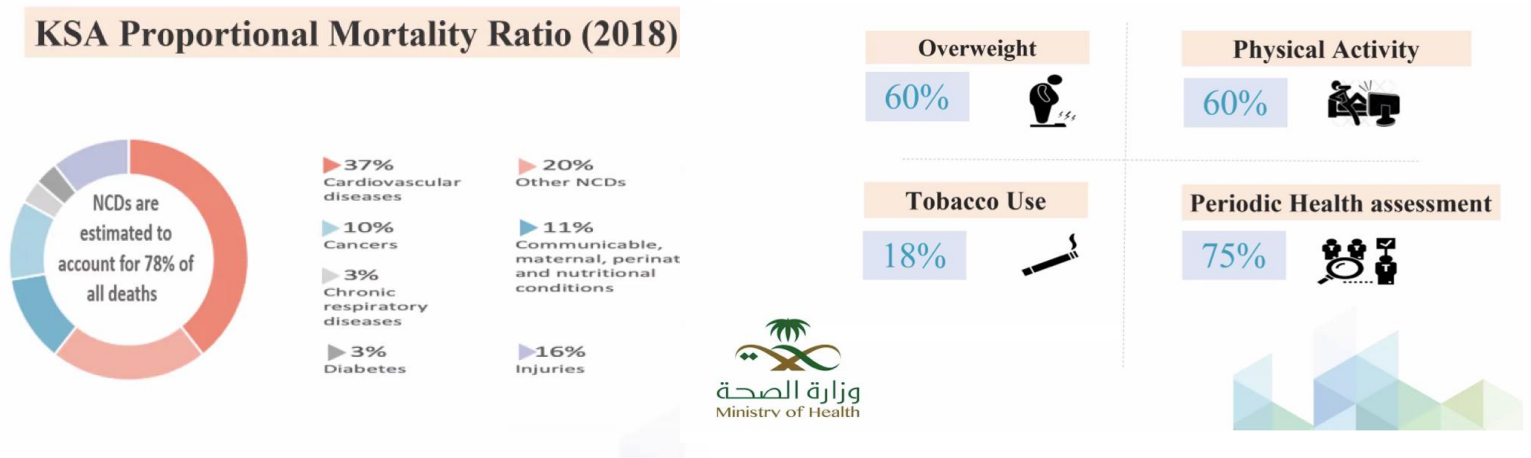
Example: if you have a poor sleep quality, your circadian rhythm in addition to your physical activity will be distorted and vice versa.



# Non communicable diseases-Global Key facts

- Noncommunicable diseases (NCDs) kill 41 million people each year, equivalent to 74% of all deaths globally.
- Of all NCD deaths, 77% are in low- and middle-income countries.
- **Cardiovascular diseases** account for most NCD deaths, followed by cancers, chronic respiratory diseases, and diabetes.
- These four groups of diseases account for over 80% of all premature NCD deaths.
- **Tobacco use, physical inactivity, the harmful use of alcohol and unhealthy diets** all increase the risk of dying from an NCD.
  - NCDs are well linked to unhealthy **behaviors**, that's why we call them behavioral dependent.
  - If we control the roots of a problem, we assume that we can control the problem.
- **Detection, screening and treatment** of NCDs, as well as **palliative care**, are key components of the response to NCDs.
  - NCDs affects the **healthspan**. What's the difference between healthspan and lifespan? Healthspan refers to living longer in a healthy life manner, while lifespan means the actual or chronological time.

## Saudi Arabia at a glance



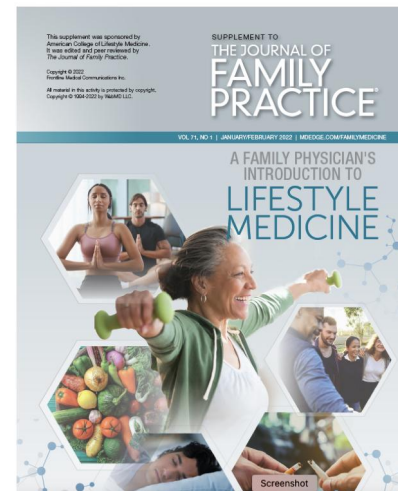
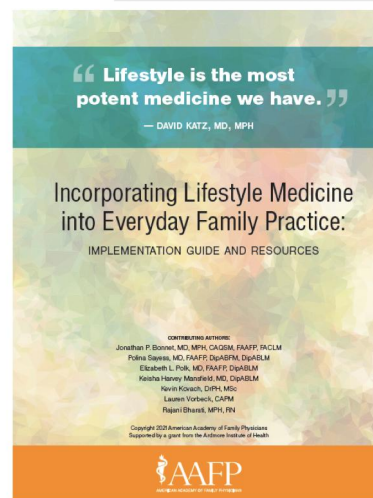
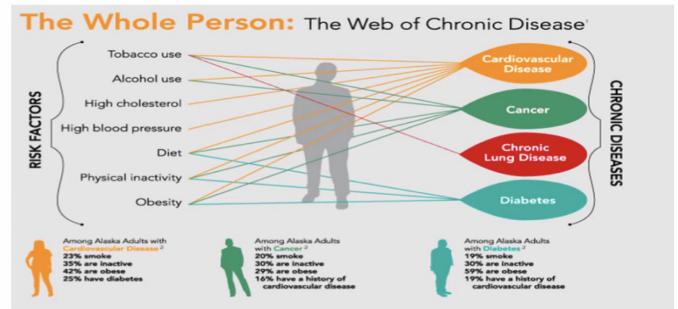
We have scary numbers regarding obesity, overweight, physical inactivity and tobacco use. Additionally, people here don't generally engage in periodic assessment and preventive health measures, that's why we need to work hard for our situation.

# Importance of Lifestyle medicine

80% of heart diseases, stroke and type 2 diabetes and 40% of cancer could be **prevented**, primarily with improvements to diet and **lifestyle** daily habits.

Many medical practices started to adopt lifestyle medicine as a part of their approaches. For instance, family medicine has begun to incorporate lifestyle medicine in their literature, journals, and day to day training .

**But is it only for family medicine? No**, because cardiologist for example are involved, they're doing exactly what we were talking about by managing CVD risk factors. Nowadays, some cardiac centers have teams that include nutritionist, psychologist and endocrinologist.



## LM presence in most of the guidelines

This picture shows you that many guidelines are now adopting lifestyle medicine interventions as a primary recommendation. They also put the lifestyle medicine interventions as the first line for managing conditions like HTN, DM and dyslipidemia.

## LM as a global public health strategy

Globally, many organizations including American college of Lifestyle Medicine are adopting LM as their entity

The WHO has articulated 9 NCDs which can be ameliorated largely through lifestyle habits and practices. Lifestyle medicine organizations have sprung up in numerous countries around the world. Many physicians and other health care workers are now being trained in the principles of lifestyle medicine. Lifestyle medicine modalities can play significant roles in helping to combat NCDs. As NCDs have become it is imperative that physicians and **other** health care workers become knowledgeable and skilled at helping individuals overcome these largely lifestyle related conditions.

**TABLE 1.1**  
Consensus Statements from Various Organizations which feature Lifestyle Modalities

- JNC VIII Guidelines for Hypertension, Prevention and Treatment
- ACC/AHA Guidelines for the Prevention, Detection, Evaluation and Treatment of High Blood Pressure
- NCEP (ATP IV) Guidelines for Blood Cholesterol
- Institute of Medicine Guidelines for Obesity Treatment
- ACC/AHA Scientific Consensus Statement on the Treatment for Blood Cholesterol
- Guidelines from the American Diabetes Association for the Management of Diabetes
- Dietary Guidelines for Americans 2015–2020 and 2020-2015
- American Heart Association Nutrition Implementation Guidelines
- Guidelines from the American Academy of Pediatrics for the Prevention and Treatment of Childhood Obesity
- Guidelines from the American Academy of Pediatrics for the Treatment of Pediatric Blood Pressure
- Guidelines from the American Academy of Pediatrics for the Treatment of Lipids
- Guidelines from the American Heart Association and the American Academy of Pediatrics for the Prevention and Treatment of the Metabolic Syndrome
- American Heart Association Strategic Plan for 2020
- Joint Statement from the American Heart Association and American Cancer Society for the Prevention of Heart Disease and Cancer
- Presidential Advisory from the AHA and American Stroke Association
- AHA/ACC/TOS Guideline for the Management of Overweight and Obesity in Adults
- ACS/ADA/AHA Scientific Statement on Preventing Cancer, Cardiovascular Disease and Diabetes
- Physical Activity Guidelines Advisory Committee Report of 2018.

Rippe JM. Lifestyle Medicine (3rd edition). CRC Press (Boca Raton), 2019.



# Why to teach LSM?

Simply because in order to change, we have to change from the roots.

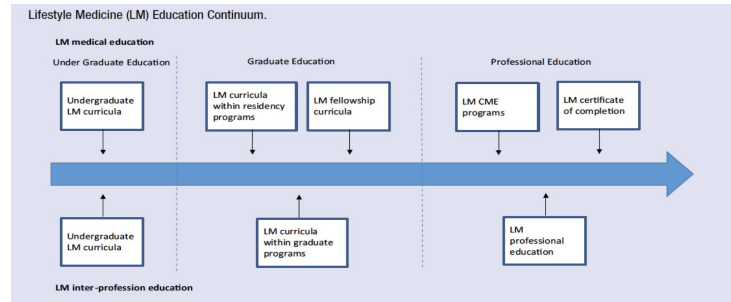
## Lifestyle Medicine Education:

“Medical education in lifestyle medicine is a necessary intervention to allow all health providers to learn how to effectively and efficiently counsel their patients toward adopting and sustaining healthier behaviors”.

Rani Polak, MD, MBA, Rachele M. Pojednic, PhD, EdM, MS, and Edward M. Phillips, MD **ANALYTIC REVIEW**

## Where to teach LSM?

Everywhere, whether it is undergraduate, postgraduate or professional education stage.



## International LSM education



## Physician Competencies for Prescribing Lifestyle Medicine

Liana Lianov, MD, MPH  
Mark Johnson, MD, MPH

patients are advised to lose weight only 36% of the time during regular examinations, a proportion that improves only slightly to 52% if a patient already has obesity-related comorbidities.<sup>7</sup> Furthermore, only 28% of smokers reported that health care professionals had offered them assistance to quit smoking in the past year.<sup>8</sup> Findings such as these reveal 2 important facts: Physicians cannot ascribe the entire responsibility for inadequate lifestyle changes to their

Very important report about physician competencies, part of it we already discussed in the lecture and we're gonna talk about it also in the tutorial

Global and US distribution of Lifestyle Medicine Education Collaborative (LMEd) champions.



## National LSM education

Locally we have now LM fellowship after the preventive medicine board and it will be available for family medicine and maybe also for internist.



**ANALYTIC REVIEW**  
Jennifer L. Trib, PhD, Dennis Muscato, MD, and Rani Polak, MD  
Advancing Lifestyle Medicine Education in Undergraduate Medical School Curricula Through the Lifestyle Medicine Education Collaborative (LMEd)

2016

# Practice Questions

<b>Q1: What is the main focus of lifestyle medicine?</b>			
A. Treating symptoms of chronic conditions	B. Using therapeutic lifestyle changes to treat and prevent chronic conditions	C. Using medication to manage chronic conditions	D. Reducing medication dosage
<b>Q2: How does lifestyle medicine contribute to preventing chronic diseases?</b>			
A. By providing early diagnosis and treatment	B. By developing new medications.	C. By addressing the underlying risk factors through healthy lifestyle choices.	D. By improving the healthcare system.
<b>Q3: Which of the following is NOT a stress management technique?</b>			
A. Avoidance	B. Alteration	C. Acceptance	D. Medication
<b>Q4: Which of the following is NOT a physiological effect of sleep deprivation on metabolism?</b>			
A. Decreased leptin levels	B. Increased ghrelin levels	C. Increased insulin resistance	D. Increased thyroid hormone levels
<b>Q5: Which of the following is a non-communicable disease that is targeted by lifestyle medicine</b>			
A. Asthma	B. Osteoporosis	C. Tuberculosis	D. Type 2 diabetes
<b>Q6: Which of the following is considered a modifiable risk factor for NCDs in lifestyle medicine?</b>			
A. Physical inactivity	B. Age	C. Blood type	D. Vaccination status

Answer 1- B 2- C 3- D 4- D 5- D 6- A

Thanks to all leaders and members  
from team 439 and team 441 🤍🤍



## Team Leaders:

Shahad Alaskar  
Reema Alquraini  
Lina Alyahya

Qusay Alsultan  
Hassan Alabdullatif



## The amazing Members:

Farah alhalafi  
Sara almajed  
Norah Alrashoud  
Hoor aloraini  
Mohammed Alzeer  
Shahad Albukhari  
Walaa AlMutawa  
Meznah alshammari  
deema alqahtani  
Fatima halawi  
raghad alkhodair  
Amani Alotaibi  
Nouf Aldhalaan  
Reema AlJabarin  
Reema Alhussien

Sarah Alzahrani  
Raid almadi  
Rayan alahmari  
Mayssar Alshobaki  
Kadi aldossari  
nora bin hammad  
**Mayssam Aljaloud**  
**Rahaf Almotairi**  
**Lana Alhumaidhi**  
Jana Alhazmi  
Yazeed Alsanad  
Safia Aldkhyyl  
Haifa Almuddahi  
Omar Kadhi  
Saad Alsahli