LIFESTYLE MEDICINE for Chronic Disease Management

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Chronic noncommunicable diseases (NCDs) in Europe

5 major NCDs

- 1. Cardiovascular diseases (CVD)
- 2. Diabetes
- 3. Cancer
- 4. Chronic respiratory diseases
- 5. Mental disorders
- ➢ 86% of deaths
- 77% of disease burden





Costs of NCDs in Europe

Healthcare costs for EU health care systems:

- CVD: €111 billion (2015)
- Cancer: €97 billion (2018)
- Diabetes: €181 billion (2017)

Non-healthcare costs (lost productivity due to mortality and morbidity + informal care)

- CVD: €99 billion (€54 + €45; 2015)
- Cancer: €91 billion (€66 + €25; 2018)



Common risk factors for NCDs





Risk factors on the rise





ALARMING

In the WHO/European Region



over 50% of people are overweight or obese





In the WHO European Region





behavioral risk factors

The Causation Pathway for Chronic Disease

UNDERLYING DETERMINANTS

Globalization Urbanization Population ageing Social determinants

COMMON RISK FACTOR

Unhealthy diet Physical inactivity Tobacco and alcohol use Air pollution Age (non-modifiable) Heredity (non-modifiable)

INTERMEDIATE RISK FACTOR

Raised blood sugar Raised blood pressure Abnormal blood lipids Overweight/obesity Abnormal lung function

metabolic risk factors

DISEASES

Cardiovascular disease (Heart disease and stroke) Cancer Diabetes Chronic respiratory disease





Systemic chronic inflammation (SCI)



Furman D, Nature Medicine 2019

But the good news is....

NCDs are largely preventable!

80% of CVD & diabetes type 2 40% of cancer

could be avoided if major risk factors were eliminated

Worldwide in 2017, poor diet was linked to 11 million deaths.

Among those deaths were:

9.5 million deaths from cardiovascular disease

913,090 deaths from cancer

338,714 deaths from diabetes Most diet-related deaths are caused by eating too much sodium and not enough whole grains and fruit.

DIETARY RISK FACTORS RANKED BY NUMBER OF DEATHS, GLOBALLY, IN 2017



Source: GBD 2017 Diet Collaborators. Health effects of dietary risks in 195 countries, 1990-2017: a systematic analysis for the Global Burden of Disease Study 2017. The Lancet. 3 April 2019.





SEFAC project

Table 4. Baseline outcome measures of participants of the SEFAC program for thetotal sample (n=325) and according to pilot site

			Pilot site						
	Total		HR	IT	NL				
	n=325		n=147	n=93	n=85				
Healthy eating									
Fruit, ≥1 portion/d	170	(52.6)	70 (47.6)	59 (64.1)	41 (48.8)				
Vegetables, ≥1 portion/d	138	(42.9)	45 (30.6)	58 (63.0)	35 (42.2)				

Food is medicine

Healthy eating saves lives

Healthier diets could save one in five lives every year.



What's needed*

Daily, eat more:

Fruits"



RECOMMENDED INTAKE 200 to 300 grams per day, equivalent to two to three small apples

ACTUAL INTAKE 94 grams per day,

equivalent to one small apple

3



Whole grains***

RECOMMENDED INTAKE

100 to 150 grams per day, equivalent to three to five slices of 100% whole wheat bread



ACTUAL INTAKE

29 grams per day, equivalent to less than one slice per day

Nuts and seeds[±]

C C C

Dp

RECOMMENDED INTAKE 16 to 25 grams per day, equivalent to eight to 13 walnut halves

ACTUAL INTAKE 3 grams per day, equivalent to one and a half walnut halves

Vegetables[†]



ADD

RECOMMENDED INTAKE

290 to 430 grams per day, equivalent to about five to seven medium carrots

ACTUAL INTAKE

190 grams per day, equivalent to three medium carrots



SEFAC project

Table 3. Baseline characteristics of participants of the SEFAC program for the totalsample (n=325) and according to pilot site

		Pilot site				
	Total n=325	HR n=147	IT n=93	NL n=85		
Age, y	66.9 (7.9)	68.5 (7.5)	67.2 (8.4)	63.8 (7.1)		
Sex, female	259 (79.7%)	132 (89.8%)	71 (76.3%)	65 (65.9%)		
BMI (kg/m²)	27.1 (4.5)	27.0 (3.8)	25.5 (3.9)	29.2 (5.3)		
Type of participant						
With CVD and/or T2DM	109 (33.5%)	36 (24.5%)	25 (26.9%)	48 (56.5%)		
At risk of CVD and/or T2DM	216 (66.5%)	111 (75.5%)	68 (73.1%)	37 (43.5%)		

BMI & all-cause mortality



The Global BMI Mortality Collaboration, Lancet 2016

Exercise is medicine



Lavie CJ, Circ Res 2019

PREDIMED trial

- 7500 persons at high risk for cardiovascular events
 - type 2 diabetes mellitus
 - or at least 3 of the following risk factors: smoking, hypertension, elevated LDL-C, low HDL-C, BMI >25, family history of premature IHD
- Mean age 67 years, BMI 30, 59% women
- 80% hypertension, 50% diabetes, 72% dyslipidemia
- Energy-unrestricted Mediterranean diet supplemented with extra-virgin olive oil or nuts
- Median follow-up 4.8 years
- > 30% relative reduction in CVD (stroke, myocardial infarction or cardiovascular death)

Quality of diet is quality of life



Galilea-Zabalza I, PLoS ONE 2018

Lifestyle Medicine defined

Lifestyle Medicine is the use of evidence-based therapeutic lifestyle interventions as a primary modality, delivered by clinicians trained and certified in this specialty, to prevent, treat, and often reverse chronic disease





LIFESTYLE MEDICINE FOCUSES ON 6 AREAS TO IMPROVE HEALTH



Evidence-based Guideline-directed

Lifestyle Medicine is the foundation of conventional medicine

Lifestyle Medicine addresses the root causes of diseases





Prevention of cardiovascular disease in patients with diabetes and pre-diabetes Lifestyle

- Lifestyle changes are key to prevent DM and its CV complications.
- Reduced calorie intake is recommended to lower excessive body weight in patients with <u>DM</u>.
- A Mediterranean diet supplemented with olive oil and/or nuts reduces the incidence of major <u>CV</u> events.
- Moderate-to-vigorous physical activity of ≥150 min/week is recommended for the prevention and control of <u>DM</u>.

Glucose

- Glucose control to target a near-normal <u>HbA1c</u> (<7.0% or <53 mmol/mol) will decrease microvascular complications in patients with <u>DM</u>.
- Tighter glucose control initiated early in the course of <u>DM</u> in younger individuals leads to a reduction in <u>CV</u> outcomes over a 20 year timescale.
- Less-rigorous targets should be considered in
- olderly patients on a personalized basic and in

How to change a habit?





Impact of LM on health determinants



Team effort



Delivery Model – Systems/Culture

Government agencies Insurance companies Community Schools etc

LM creates sustainable transformation in health care

- Team-Based Care
- Group Visits & Support Groups
- Value-Based Care
- Proven Outcomes
- Improved Patient Satisfaction
- Renewed Physician Passion





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