Lifestyle Medicine in medical curricula.

Why do we need it?

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“What conflict of interest?! I work here in my spare time.”
THE MAIN MESSAGE
LEADING CAUSES OF DEATH IN THE US

![Pie chart showing leading causes of death in the US in 1900.](chart.png)

- Tuberculosis: 11.3%
- Pneumonia: 5.1%
- Diarrhea: 4.5%
- Heart disease: 5.2%
- Liver disease: 8.0%
- Injuries: 8.1%
- Stroke: 5.2%
- Cancer: 10.2%
- Bronchitis: 3.7%
- Diphtheria: 2.6%
- Other: 2.3%
LEADING CAUSES OF DEATH IN THE US

1900
- Tuberculosis: 11.3%
- Pneumonia: 4.5%
- Diarrhoea: 3.7%
- Heart disease: 10.2%
- Liver disease: 8.1%
- Injuries: 8.1%
- Stroke: 5.2%
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- Bronchitis: 4.5%
- Diphtheria: 2.6%

1997
- Heart disease: 31.4%
- Cancer: 23.3%
- Stroke: 6.9%
- Chronic lung disease: 4.7%
- Unintentional injuries: 4.1%
- Pneumonia / influenza: 3.7%
- Diabetes: 3.7%
- Suicide: 1.3%
- Chronic kidney disease: 1.3%
- Chronic liver disease: 1.1%
THE WORLD HAS CHANGED
THEN: SIMPLE UNIFACTORIAL DISEASE
NOW: COMPLEX SYSTEMS DISEASES
The Unrelenting March Of Diabetes

% prevalence and number of adults with diabetes by WHO region in 1980 and 2014*

* Millions of people and % of total regional population
Source: World Health Organization
GLOBAL NCD DEATH RATE

NCD death rates (per 100,000 population)

- <400
- 401–500
- 501–600
- 601–700
- 701–800
- 801–900
- >900

* Data not available
* Not applicable

* deaths due to noncommunicable diseases
COSTS OF GLOBAL HEALTH CARE

Average spending on health per capita ($US PPP)

Total expenditures on health as percent of GDP
ETIOLOGY
ETIOLOGY OF NCD
**ENVIRONMENT IS KEY**

<table>
<thead>
<tr>
<th>Population grouping</th>
<th>Region</th>
<th>Percentage prevalence</th>
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<td>Europeans</td>
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<td>Australia (1961)</td>
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<td>Australia (2002)</td>
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<td>United States</td>
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NCD IS AVOIDABLE

Willett WC, Science 2002
DIET IS KEY....


Forouzanfar MH et al, Lancet 2015
BUT THERE IS MORE TO IT

Physical activity

Social context

Purpose

Nutrition

Stress

Purpose

Social context
MISPERCEPTION 1

Cell damage
MISPERCEPTION 1/2
MISPERCEPTION 2

![Graph showing survival rates and age distribution. The graph compares control (n=57) and restricted (n=60) groups. At age 40 months, 78% of the control group and 38% of the restricted group remain alive.]
CASE HISTORY
WIM & SAÏDA

2007

83 kg  125 kg

2016

63 kg  85 kg
LIFESTYLE MEDICINE: WHAT IS IT?
MEDICAL EDUCATION
WHAT DO WE NEED?
KNOWLEDGE OF LINKS BETWEEN LIFESTYLE AND DISEASE
HOLISTIC APPROACH

environment

biology

behavior

spirituality
COMMUNICATION SKILLS
The Stages of Behavior Change

- Precontemplation (unaware of the problem)
- Contemplation (aware of the problem and of the desired behavior change)
- Preparation (intends to take action)
- Action (practices the desired behavior)
- Maintenance (works to sustain the behavior change)
PHILOSOPHY OF SCIENCE
International, clinically oriented master course in lifestyle medicine

Primary target group: medical master students

Online

Short video’s, related text, references

Assignments, scientific and practical

Parallel course for patients (empowerment!)
LEYDEN ACADEMY OF LIFESTYLE MEDICINE

DIABETES
DEPRESSION
IBD
CVD
CANCER
PSORIASIS

CASE
ETIOLOGY
PATHOPHYSIOLOGY
INTERVENTION
FOLLOW-UP

COOKING
BEHAVIOR CHANGE
MEDITATION
COMMUNICATION
SCIENCE
VIRTUAL EXCHANGE
The disease burden has changed, medicine should change as well.

Our way of life is at the root of many non-communicable diseases.

Lifestyle medicine tackles the roots of the etiology.

Patient empowerment is key.

Modern doctors are advisors, no more no less.