

# REKREACIJA

## prava mera fizičke aktivnosti



*Koliko je zaista mlado vaše  
srce*

*prof. dr Dušan Mitić*

*Fakultet sporta i fizičkog vaspitanja*

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# PRENASELJENOST

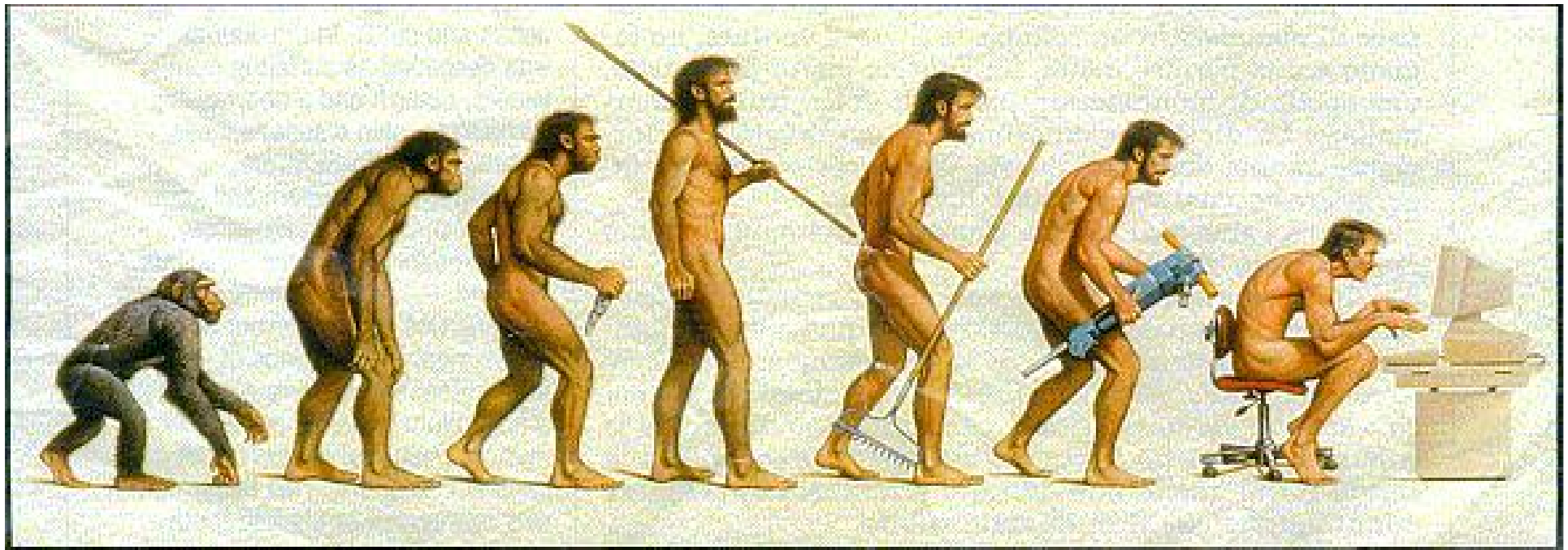


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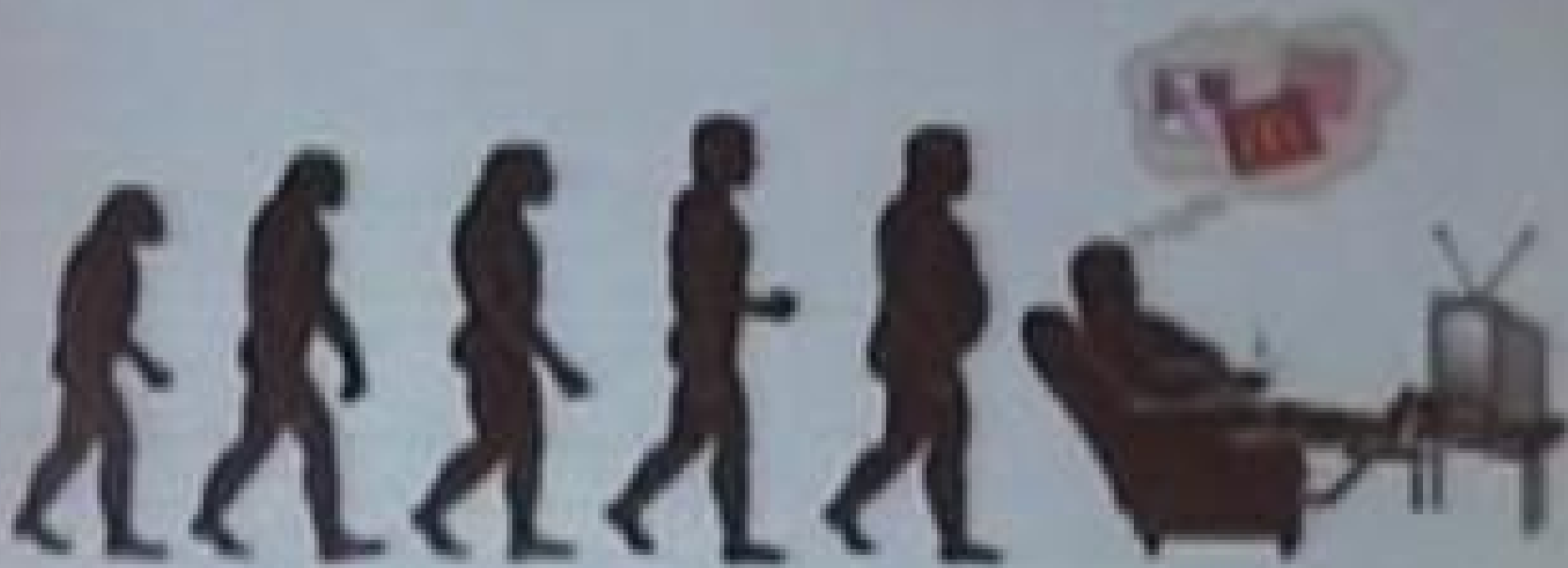
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**2,5 miliona godina**

**50 godina**

Chronic Diseases  
Gene-Environment  
Lifestyle Interaction

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# NEKRETNANJE

samostalni riziko-faktor



- 2,5 opšta smrtnost
- 3,5 kardiovaskularna
- 3 pojedini karcinomi

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Voda  
Vatra  
vetar

# MIŠIĆNO ANGAŽOVANJE

95%

1850

5%

**Druzi izvori energije**

*Vodena para*

*Nafta*

1%

*Benzin*

*Dizel*

1950  
*gas*

*Struja*

0.5%

1980

99.5%

*Atomska*

*Sunčeva*

*Plima*

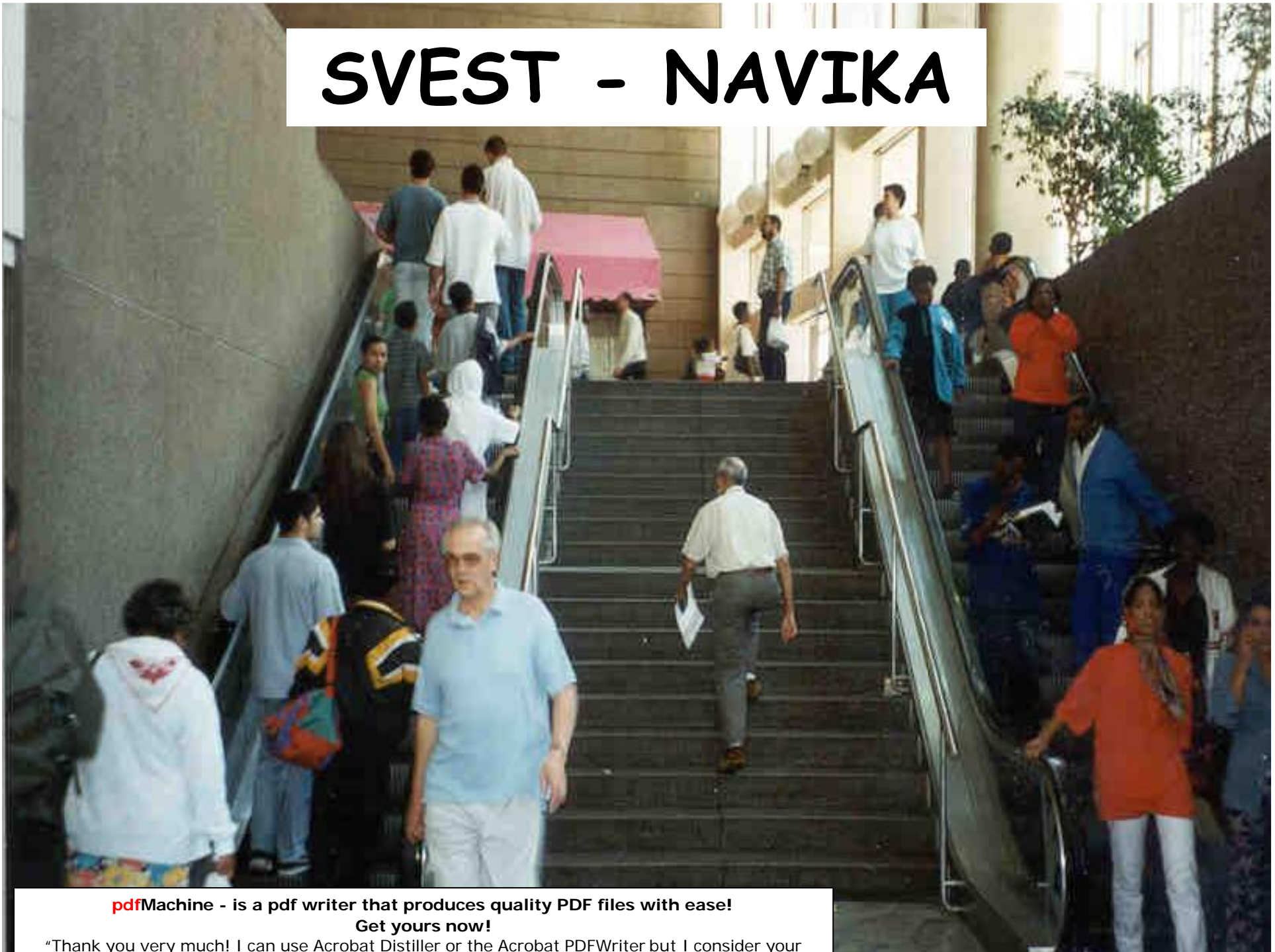
*Bio-gas*

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# SVEST - NAVIKA



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# US

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Lični režim života i životni stil imaju 50% važnosti za zdravstveni status, dok drugu polovinu čine

- ***ekološki uslovi sa 21%,***
- ***genetički faktori 21%,***
- ***a lekarska briga utiče sa skromnih 8%***

*Hrčka, 1990*

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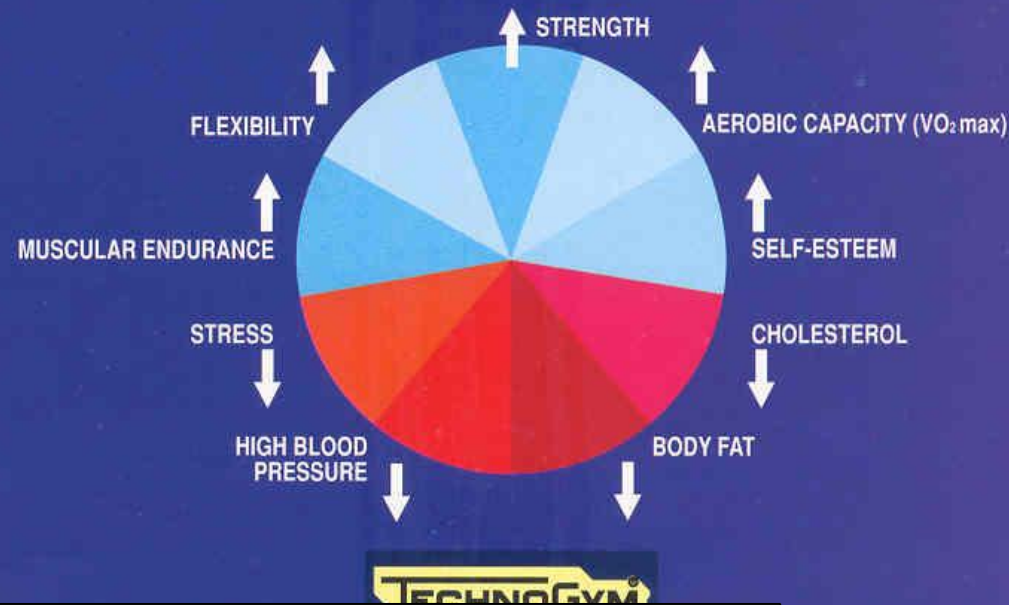
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# THE ROAD TO 'WELLNESS'



# BENEFITS OF PHYSICAL ACTIVITY



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# KAKO I KOLIKO VEŽBATI



**3 - 5 puta nedeljno**

**20 - 60 minuta dnevno**

**60-90% od max HR**

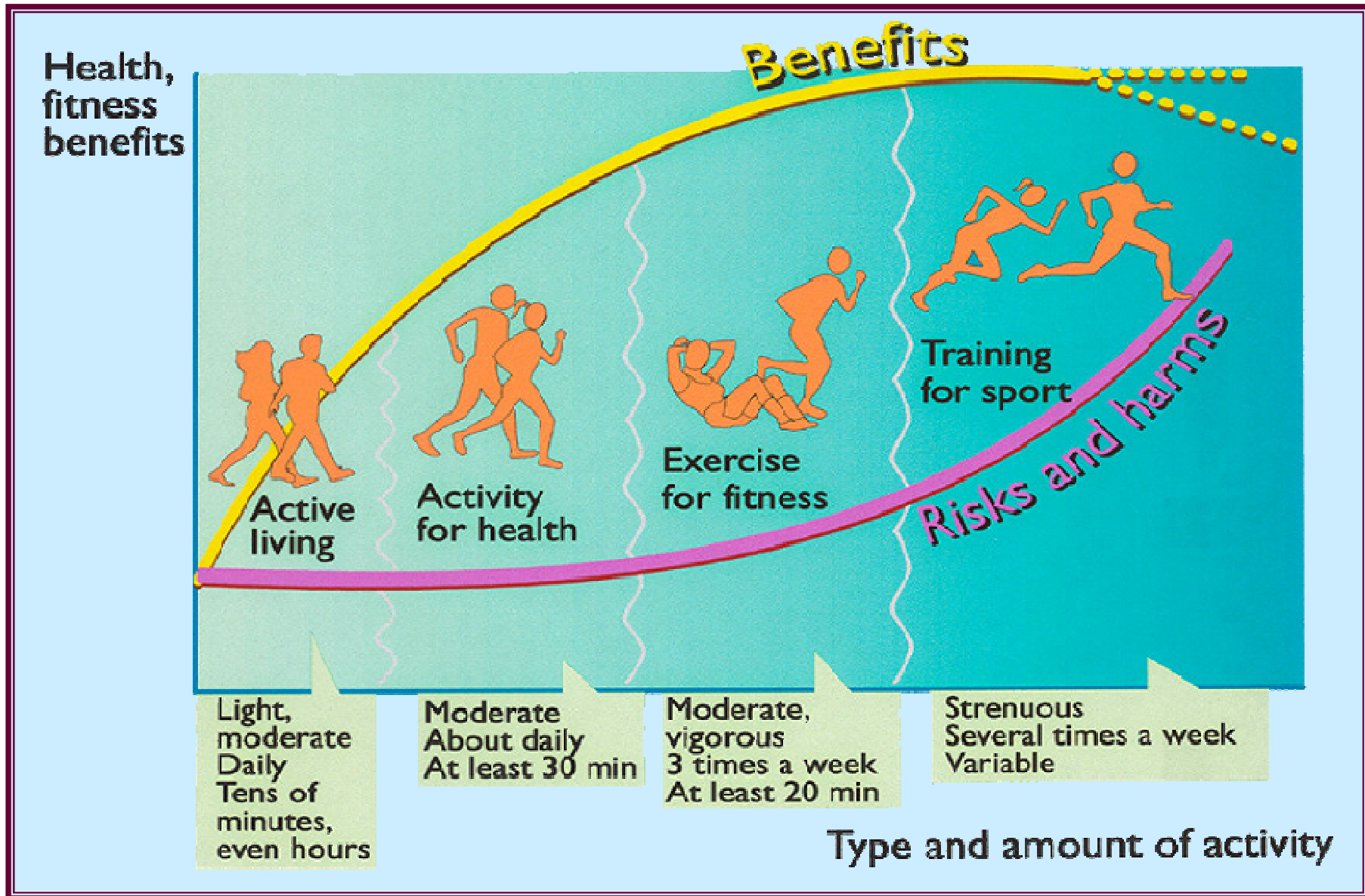
**50-85% od VO2max**

***WHO 1995.***

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**Prof. J. Vuori, UKK Institute, Tampere University, Finland**

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# KORAKA DNEVNO

# 10.000

# DO 14.000

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# RECOMMENDATION FROM THE SURGEON GENERAL:

**30 minutes** of moderate  
intensity physical activity on most, or  
preferably all, days of the week.

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Washing and waxing a car	45-60minutes
Washing windows or floors	45-60minutes
Gardening	30-45minutes
Wheeling self in wheelchair	30-40minutes
Walking 1 3/4 miles	35minutes
Raking leaves	30minutes
Bicycling 5 miles	30minutes
Dancing fast	30minutes
Water aerobics	30minutes
Pushing a stroller 1 1/2 miles	30minutes
Swimming laps	20minutes
Playing basketball	15-20minutes
Shoveling snow	15minutes
Jumping rope	15minutes
Running 1 1/2 miles	15minutes
Stair walking	15minutes

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*150 kcal dnevno*

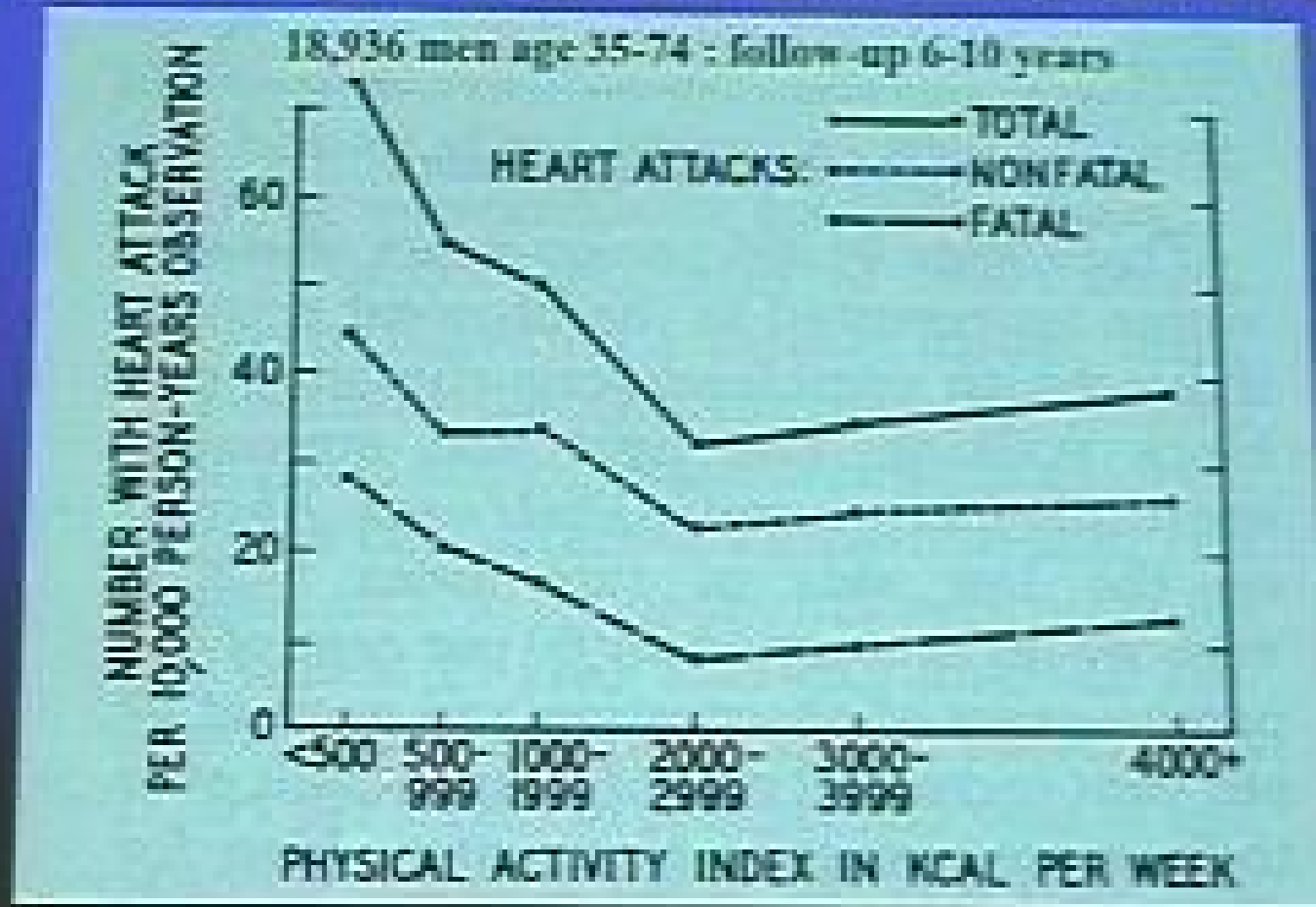
**1050 kcal nedeljno**

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## Physical Activity as an Index of Heart Attack Risk in Men



*Ruffenberger, et al. Am J Epidemiology 1975; 103:167-175*

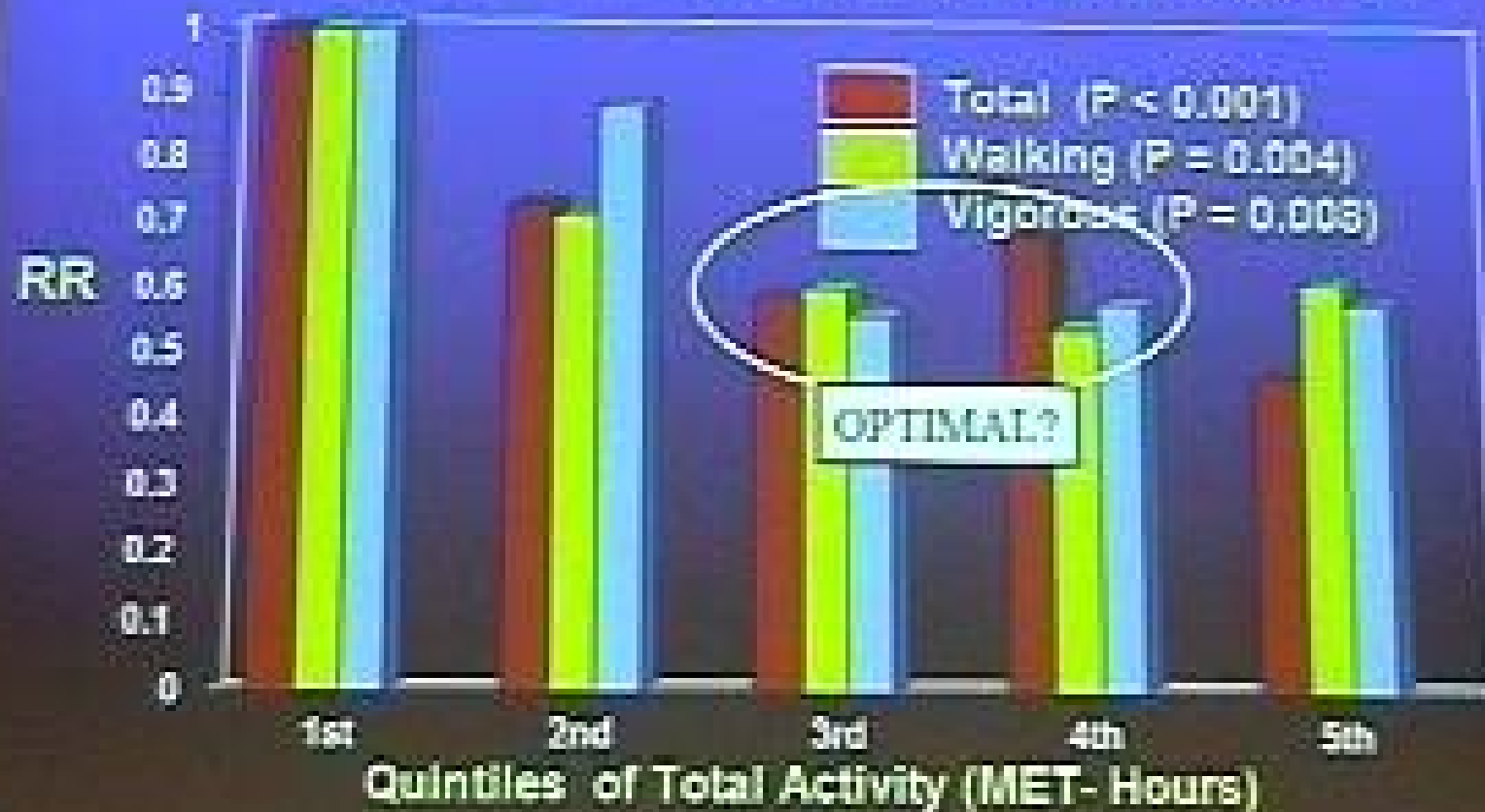
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Total Activity: Walking and Vigorous Activity - CHD Events  
Leisenow et al. NEJM 347:716-725, 2002

Women Health Initiative (OS): N = 73,743  
50-79 years; Follow-up = 3.2 years; 345 new CHD events



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Preko 60 godina života

60

min dnevno F.A.

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# Koliko dnevno vežbati

# Koliko godina

# toliko minuta vežbanja

# u doku dana

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# STUDIES RELATED PHYSICAL ACTIVITY PRACTICE AND HEALTH (II)

## Canadian Public Sanitary System:

Estimates that 60 % of population is not active or not active enough

**1 \$**

**Promotion of physical activity practice**

Long term



**11 \$**

**Saving for Public health system**



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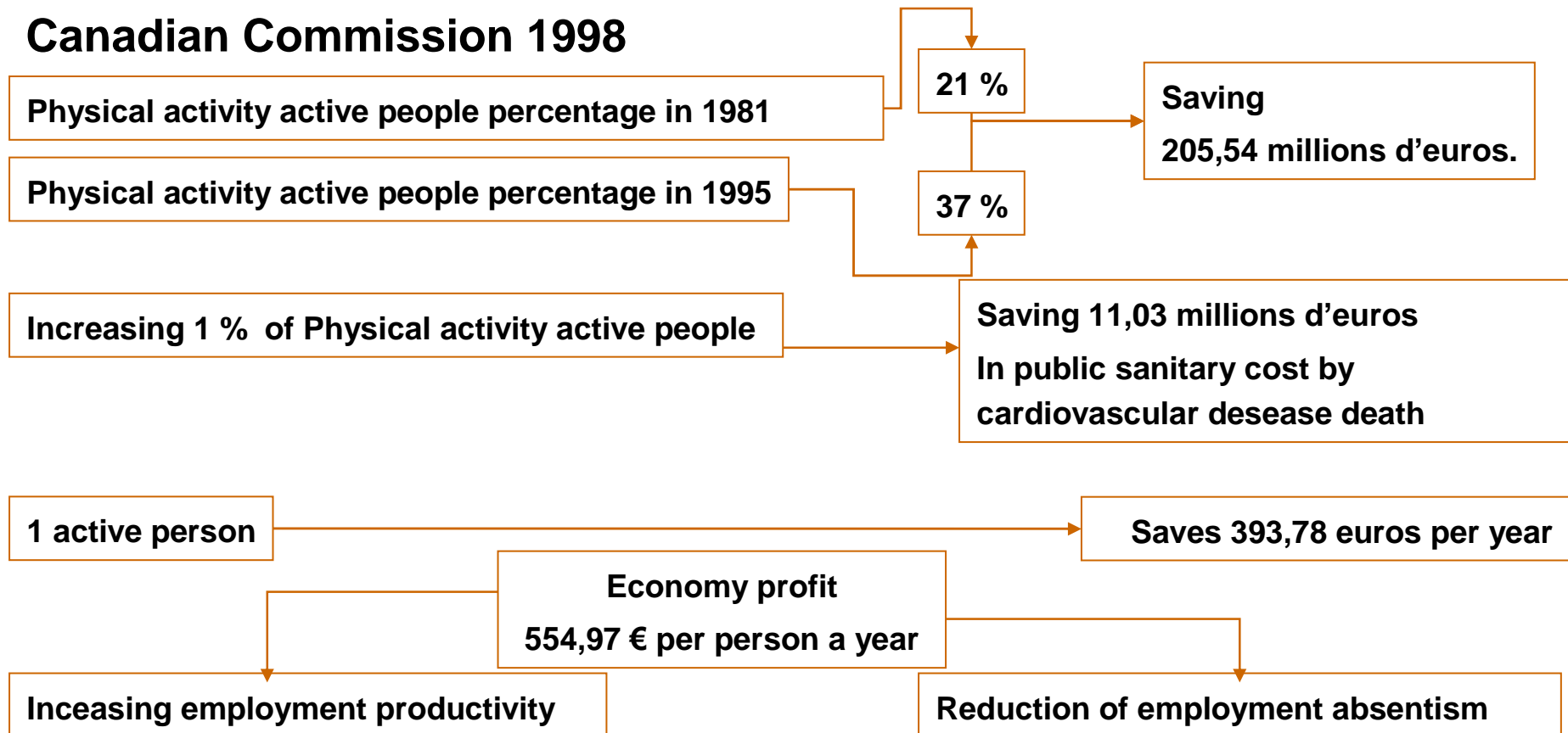
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# STUDIES RELATED PHYSICAL ACTIVITY PRACTICE AND HEALTH (III)

## Canadian Commission 1998



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**Vežbanje može da zameni ili pomogne dejstvo mnogih lekova, ali ni jedan lek ne može da zameni dejstvo kretanja.**

*Tiso, XVII vek*



**ZDRAV NAČIN ŽIVOTA**

**FIJUNKCIJA RAZVILJA ORGAN**

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# Systemic vs Local effect

One leg is  
being  
trained

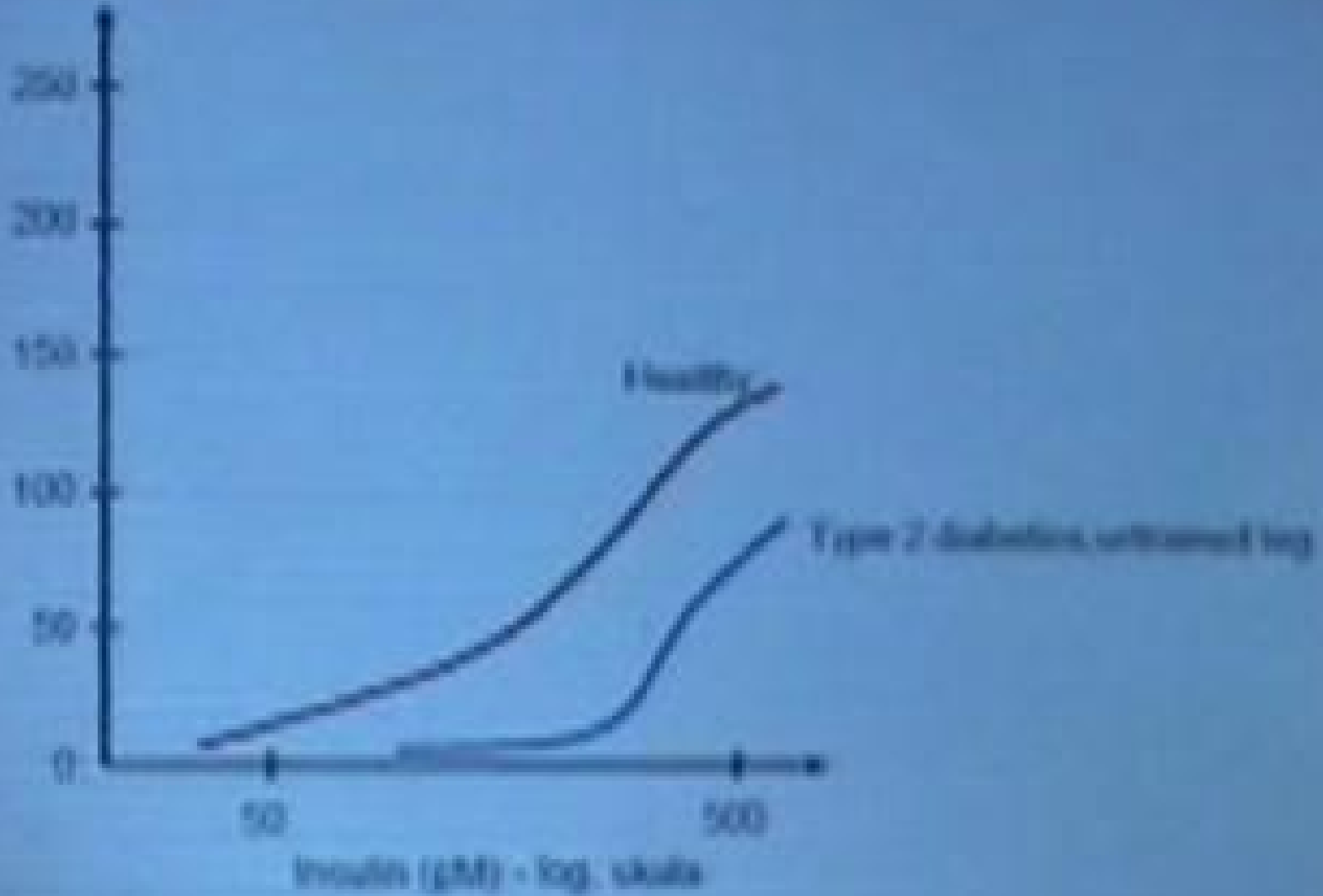


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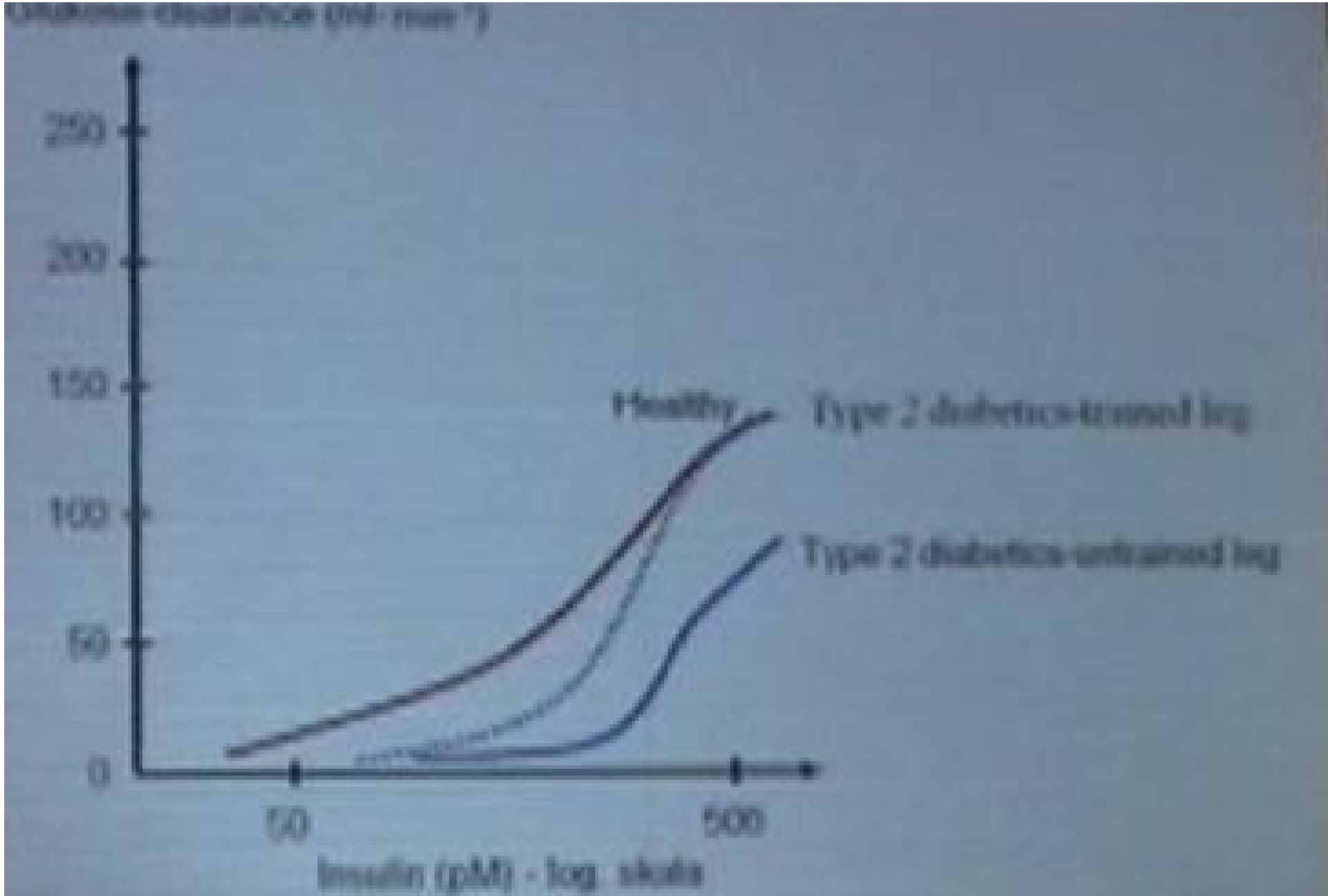
Oral clearance (ml min<sup>-1</sup>)



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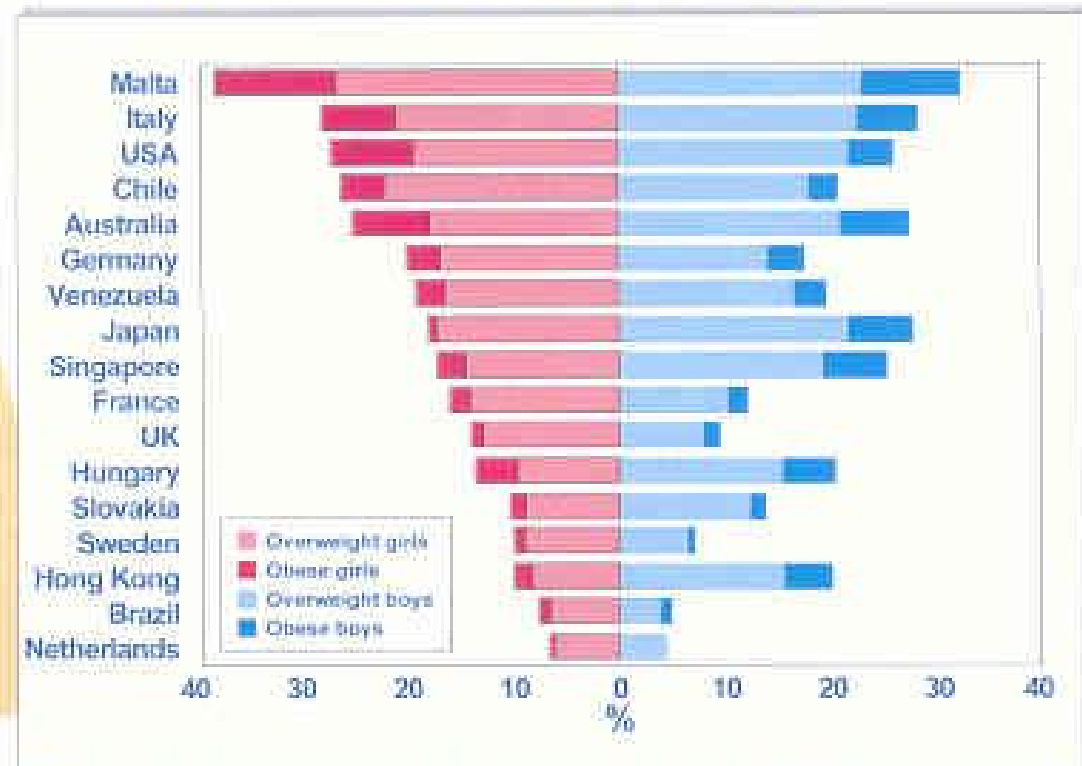
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## Prevalence of obesity and excess weight in boys and girls aged 10 years

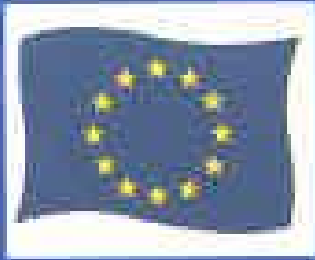
The table shows the alarming situation of obesity in children. This pathology has assumed all the hallmarks of an epidemic, and is afflicting the countries with the highest income



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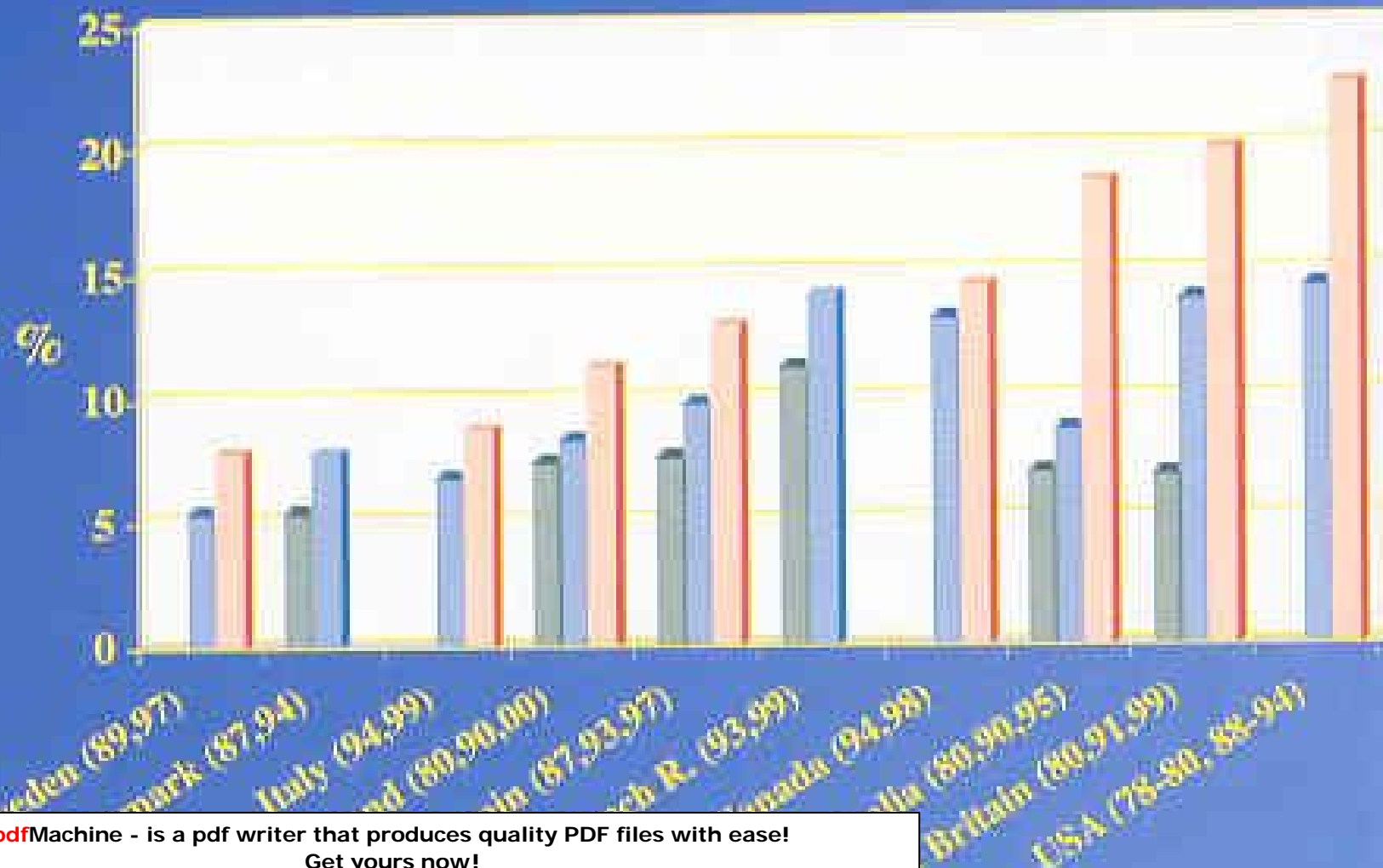
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# Obesity Trends

(population > 15 years with BMI > 30, in % )  
(source: OECD 2001)



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-Steen is the active brother. He rides his bicycle forth and back to work  
- he plays soccer  
-he runs a halfmarathon  
-Every year



8-50-07

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Stens' aerobic  
fitness:  $\dot{V}O_2\text{max}$   
= 4.5 l/min  
= 36 ml/kg min

BP = 110/60



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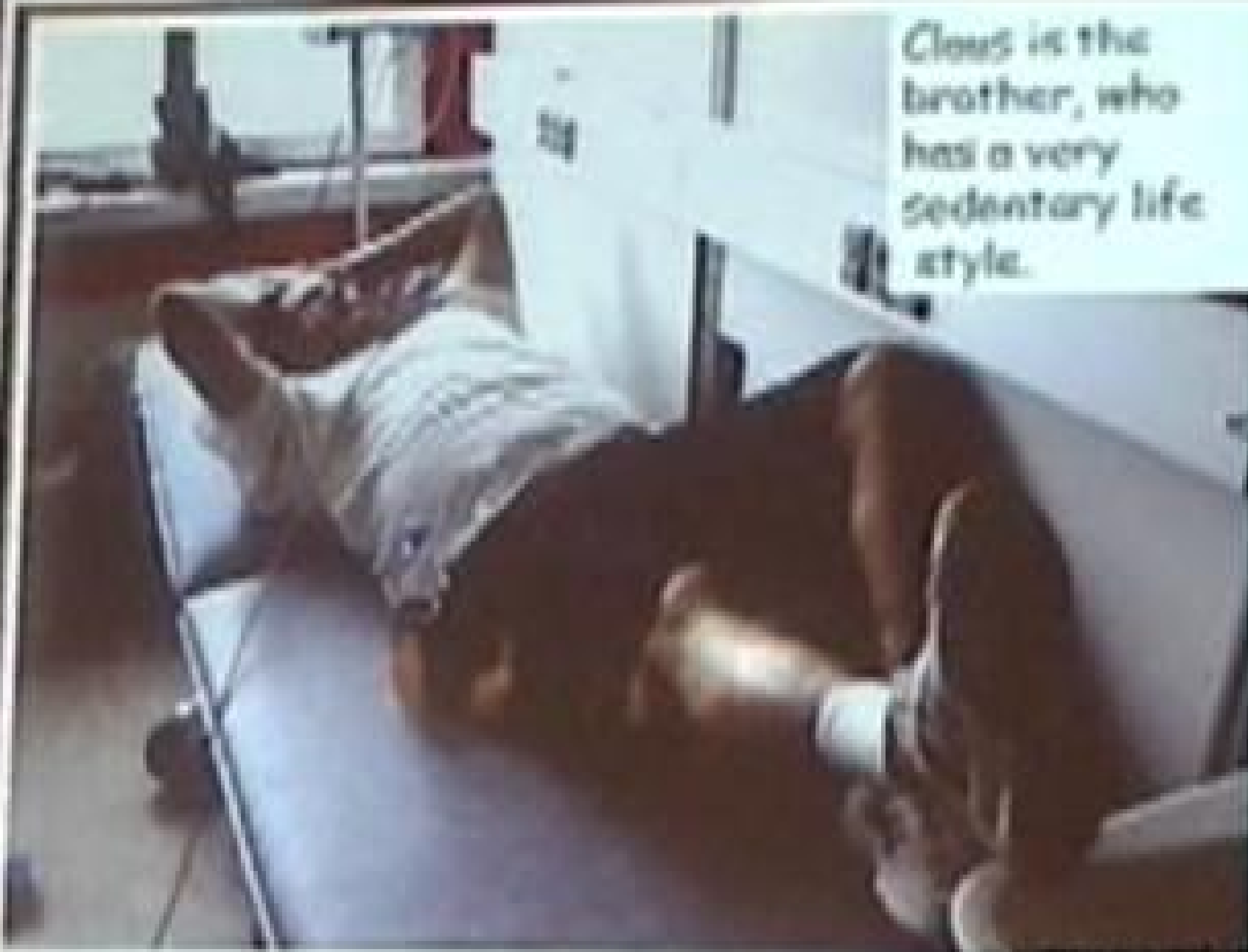


Cloud is 46 years old  
Weight = 110 kg  
BMI = 27

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Clay is the brother, who has a very sedentary life style.

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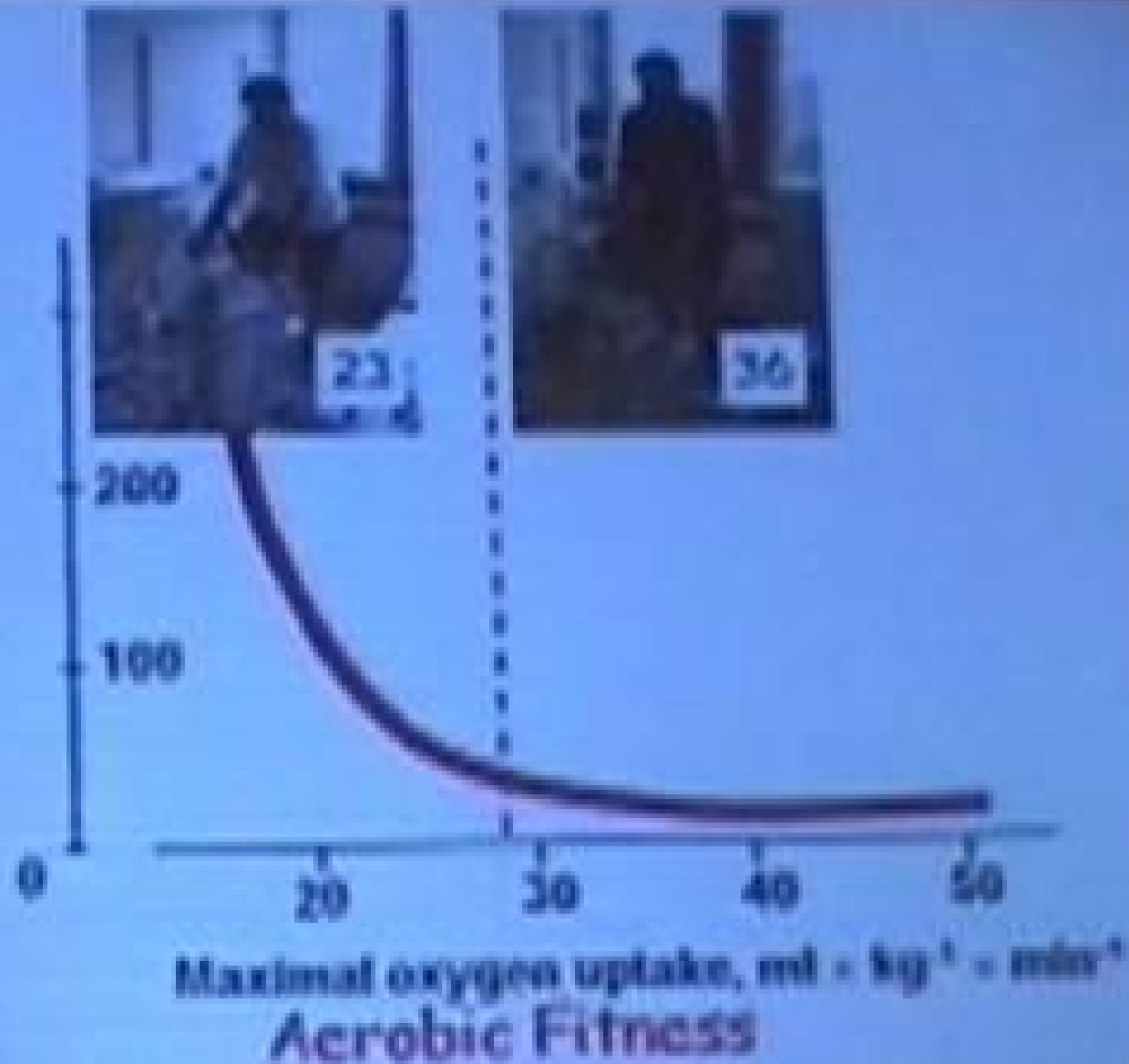
Claus had a  
VO<sub>2</sub>max =  
2.5 l /min =  
23 ml /kg min



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Clous:

Type 2 diabetes in an age of 40 years

Hypertension

Colon cancer?



RMT:32 vo2max-23

8-51-10

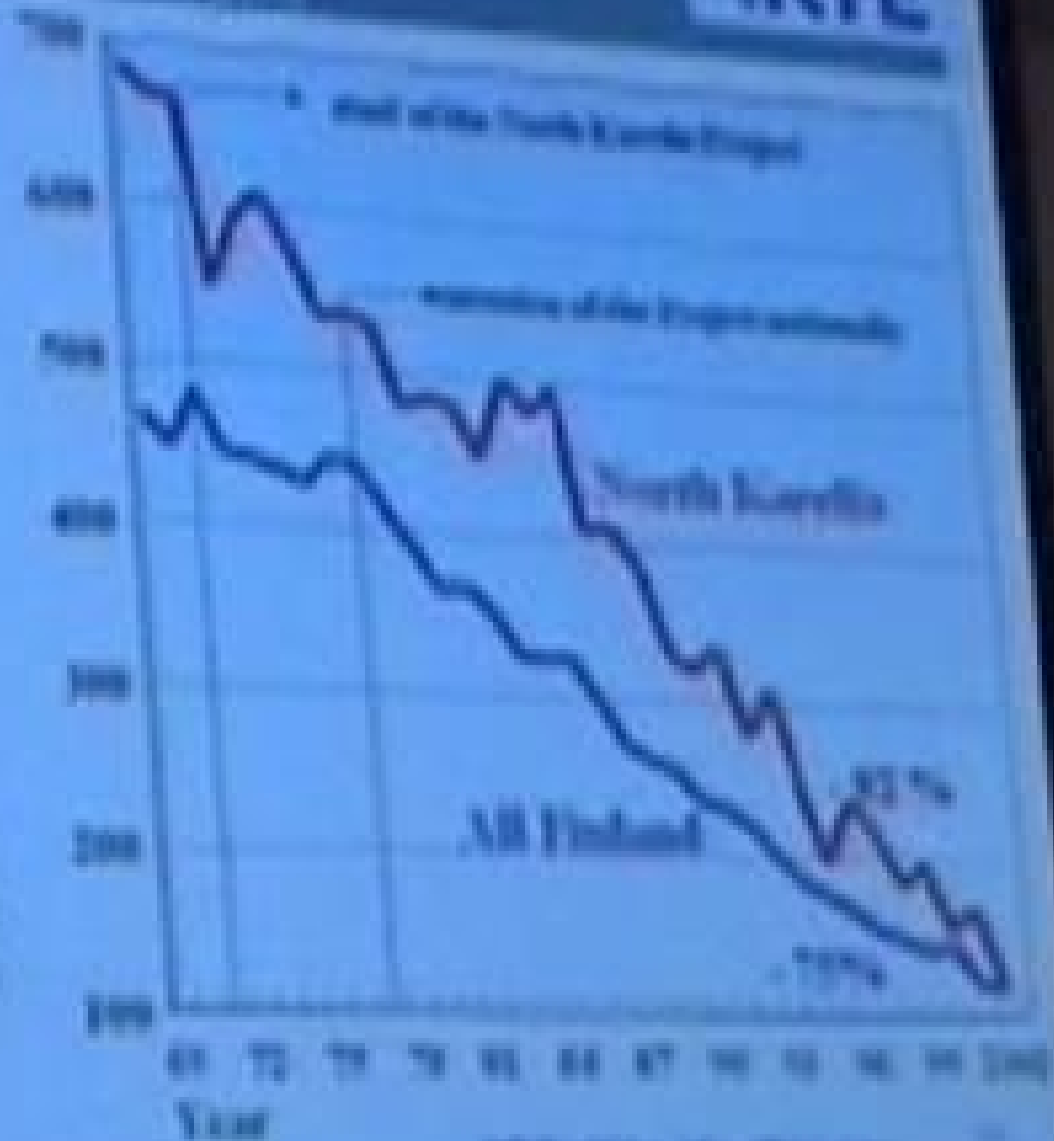
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and the whole of  
Finland among  
Males aged  
35-64 years  
from 1969  
to 2002.

Mortality per  
100 000  
population



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**Stopa smrtnosti od KBS podešena prema dobi u Sjevernoj Kareliji i cijeloj Finskoj kod muškaraca dobi od 35–64 g. od 1969. do 2002. g.**

**Smrtnost na 100 000 osoba**



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# penzionerke planinarke

*žene preko 65 godina starosti*

*Bratislava Karalić,  
radna verzija magistarski rad  
Transferzalno istraživanje*

## Sačuvani:

- vitalnost
- pokretljivost
- visok nivo kardiorespiratornih funkcija
- Motorika
- Mentalna svežina
- Dobro raspoloženje

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**mr Zoran Gortnar**  
**doktorska teza u radu**



**Odbojkaši penzioneri**  
**planinari penzioneri**

**Vazduhoplovna brigada**  
**uzrasta 40 do 50**

**Iako su stariji 20 godina, NEMA**  
**STATISTIČKI ZNAČAJNIH RAZLIKA:**

- pokretljivost
- nivo kardiorespiratornih funkcija
- motoričke funkcije

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# Nivo opterećenja

N = 66 ispitanika

34 kontrolna

*dr Stanimir Stojiljković*

*disertacija 2003*

## Osam nedelja trčanja

*individualno doziranje u dva mikrociklusa*

E1 = 15 u zonama ispod anaerobnog praga

E2 = 17 u zonama ispod i 13% iznad  
anaerobnog praga

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# EFEKTI

- $VO_{2maks}$  sa 52,8 na 57,06 ml/kg/min
- anaerobni prag sa 34.77 na 41.3

## Telesna kompozicija

- smanjena telesna masa
- smanjena količina masnog tkiva
- povećan procenat mišićne mase

***dr Stanimir Stojiljković***

***disertacija 2003***

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$$E1 = E2$$

Požuri polako

*dr Stanimir Stojiljković*

*disertacija 2003*

# Bez bola do forme

*Fizička radna sposobnost se može povećati i bez ulaska u petu zonu inteziteta, koja nosi i rizik jer se vežba maksimalnim intezitetom*

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SMISLA  
JOŠ UVEK  
VEŽBATI...

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**Any gray  
mark**

KEISER 250

International distribution opportunities available. For more information, contact Anthony Peterson, Vice President Intl. Sales at (425) 402-8509 or by fax at (425) 498-8342

Strength Training and Aging

The advertisement features a photograph of an elderly man with white hair and glasses, wearing a blue tank top and black shorts, sitting on a red and white KEISER 250 leg press machine. He is smiling and looking towards the camera. The background is a textured, light-colored wall. The text 'Any gray mark' is written in a stylized font at the top. A yellow starburst graphic contains contact information for Anthony Peterson. A small inset image shows a book titled 'Strength Training and Aging' with a picture of a person on a similar machine.



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# Šifra zdravlja



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# HVALA ZA PAŽNJU



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