

Cardiac Rehabilitation:

Past – Present – Future

Pravit Tanprasert, M.D.

Definition

Cardiac Rehabilitation

“Comprehensive, long-term programs involving

medical evaluation, prescribed exercise, cardiac

risk factor modification, education & counseling.

Limit physiological & psychological effects of cardiac

illness, reduce the risk of sudden death or reinfarctⁿ

control cardiac symptoms, stabilize or reverse the

atherosclerotic process.”

Multiple Drugs

Smoking

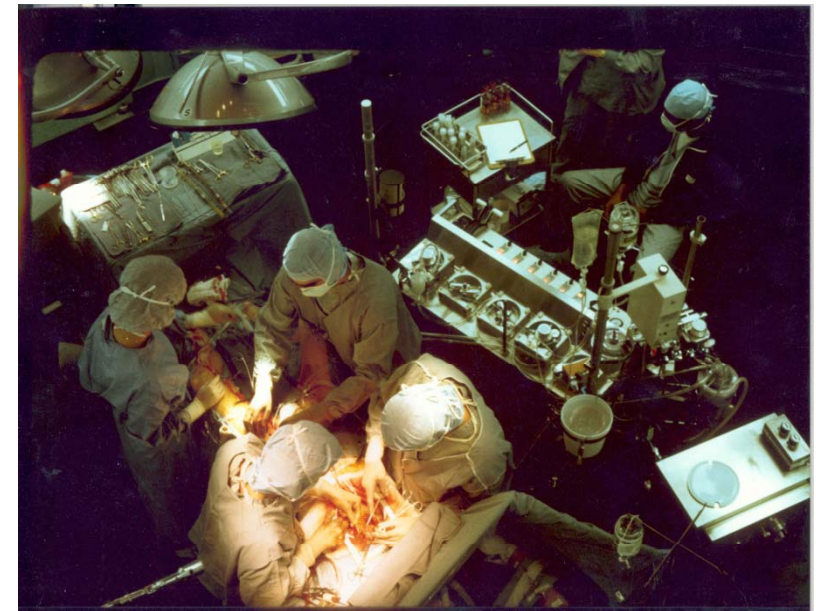
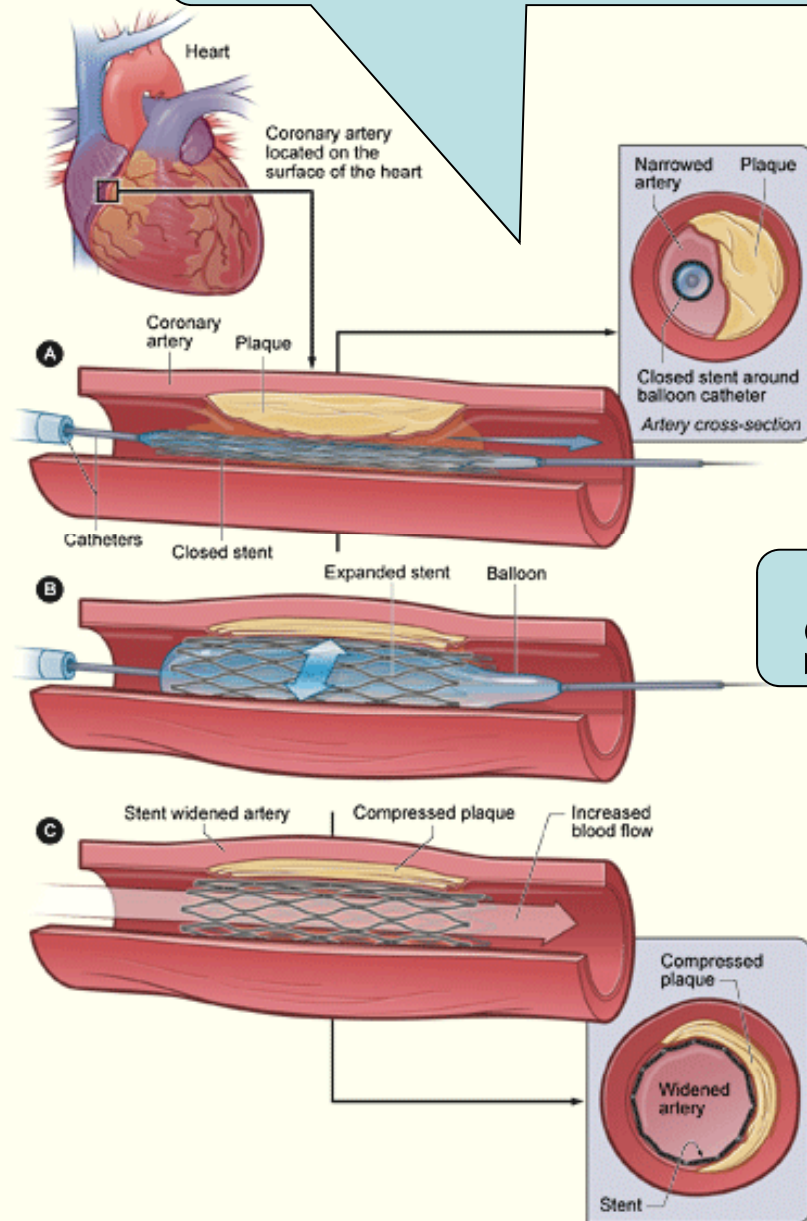
Hypertension

DM

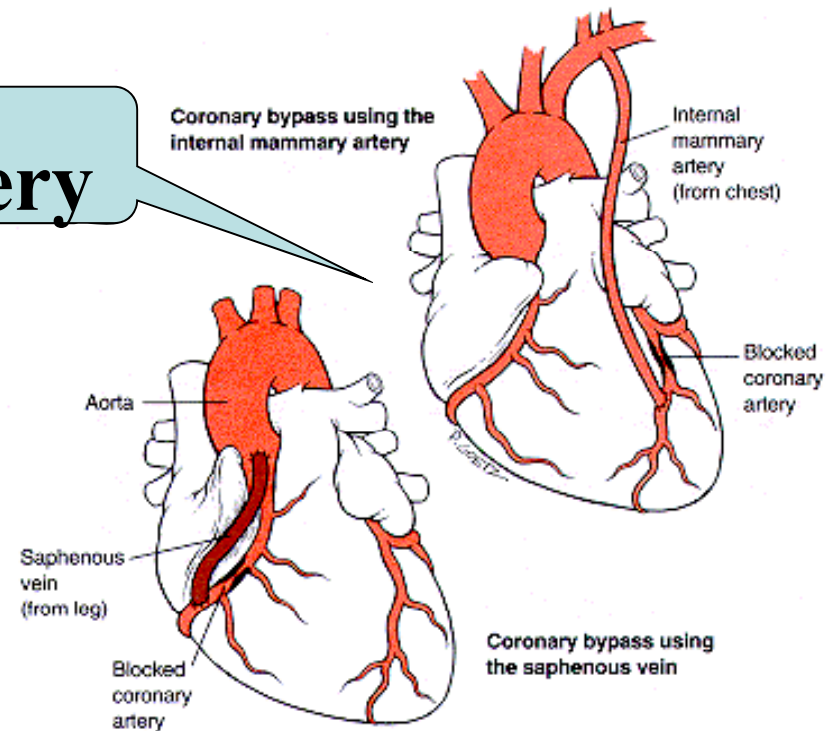
Lipid



Balloon angioplasty



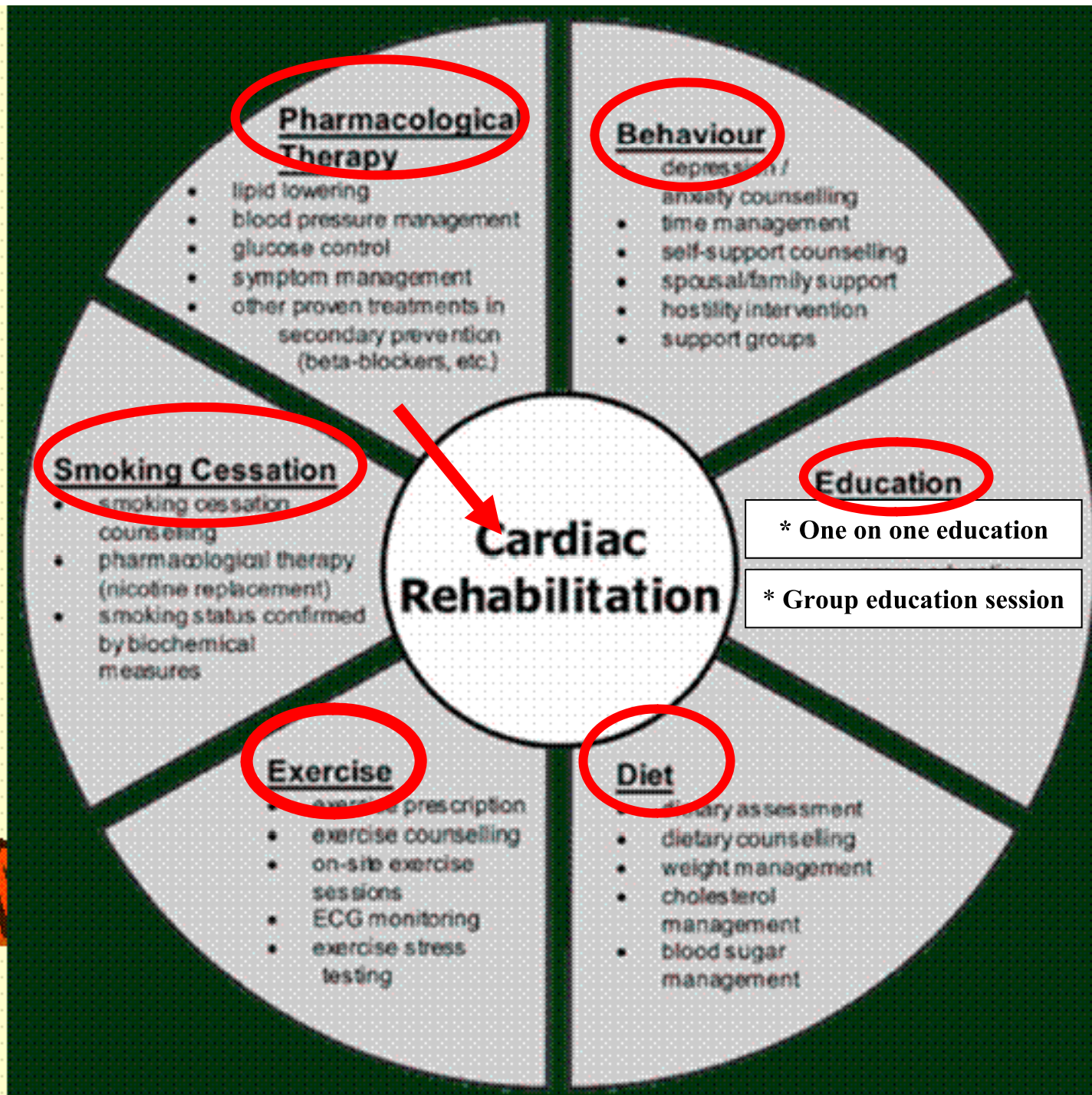
Surgery



We don't know how to **cure** heart
disease. **Drugs & procedures** just
make us feel better, they don't cure.

Change our lifestyle, live a **healthy life**
& have a **healthy diet**, the chances of
develop disease is much less.

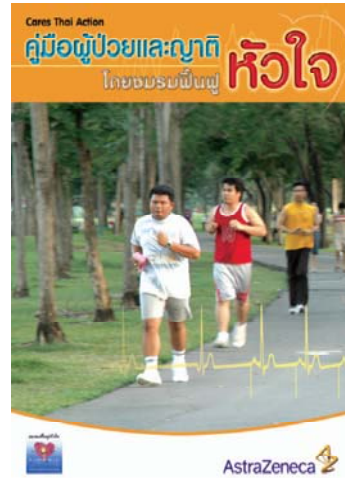
Prof. Louis J. Ignarro, M.D.



Benefits of Cardiac Rehabilitation and Secondary Prevention

- **Reduction in overall and cardiovascular mortality**
Oldridge 1988, O'Connor 1989, Joliffe 2001, Taylor 2003
- **Slowing of atherosclerotic process**
Ornish 1990, Schuler 1992, Haskell 1994, Wenger 1995, Niebauer 1997
- **Decrease of rates of subsequent coronary events and rehospitalisation**
Haskell 1994, Ornish 1999

Policy of the Hospital



Euro Heart Survey Programme

ESC Quality Assurance Programme to Improve Cardiac Care in
Europe

The EUROASPIRE Surveys Time trends in lifestyle, risk
factor and therapeutic management of coronary patients

1995 – 2007 Lessons learned from the Euro Heart Survey
Programme

Professor David A Wood on behalf of the Survey Expert Committee
and all investigators participating in the Euro Heart Survey on
Preventive Cardiology

Conclusions

- No change in prevalence of smoking and continuing adverse trends in prevalence of obesity and central obesity

Conclusions

- No change in blood pressure control despite increased use of anti-hypertensive medications
- *61% above therapeutic target*
- *(BP < 140/90 mmHg)*
- Continuing improvement in lipid control with increased use of statins
- *42% above the 2003 therapeutic target (TC < 4.5 mol/l)*

Conclusions

- Increasing prevalence of diabetes, both self reported and undetected, and deteriorating therapeutic control
- *[93%] above the therapeutic target of < 6.1 mmol/l*
- Increased use of anti-platelets, beta- blockers, ACE/ARB's, statins and diuretics with a lower use of CCB's.

Conclusions

- Only 31% of coronary patients accessed cardiovascular prevention and rehabilitation programmes in the EUROASPIRE III survey
- Professional comprehensive multidisciplinary ambulatory preventive cardiology programmes should be available for all coronary patients
- *“Prevention Centres”*

**The KEY To maintaining
This PROCESS**

is

**Individual patient – physician
interaction linked to evidenced
base guidelines**

World Heart Day 2008

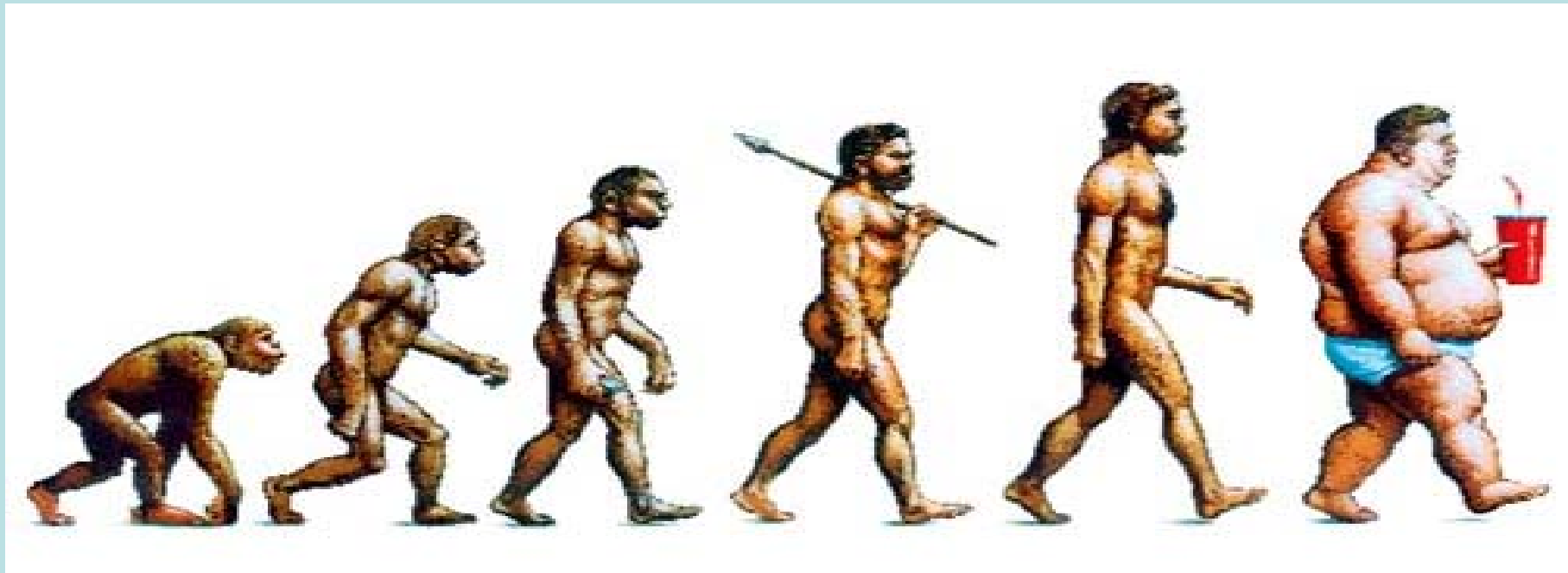
Do you know your risk?



สาเหตุสำคัญของการเกิดโรค
ที่มาพร้อมกับความเจริญ

การไม่ออกกำลังกาย-การบริโภคอาหารที่ไม่ดี

THRIFTY GENE

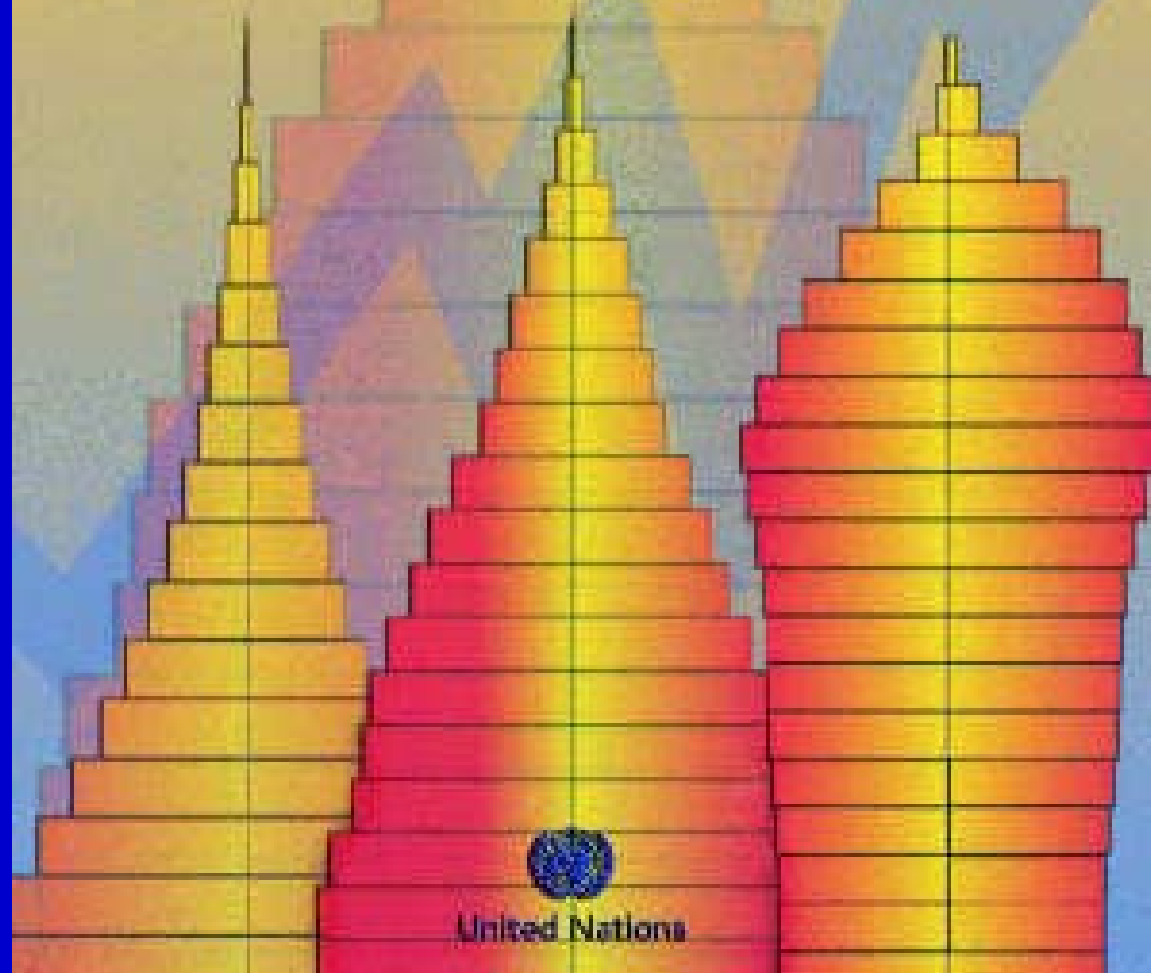


How We G

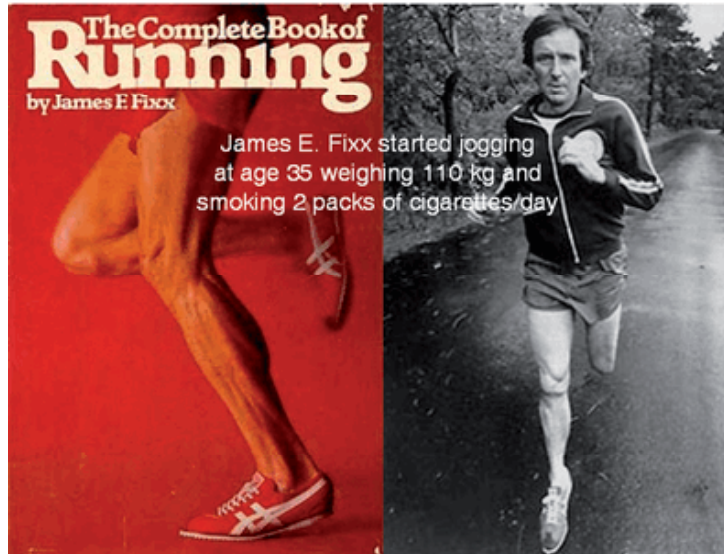


Economic & Social Affairs

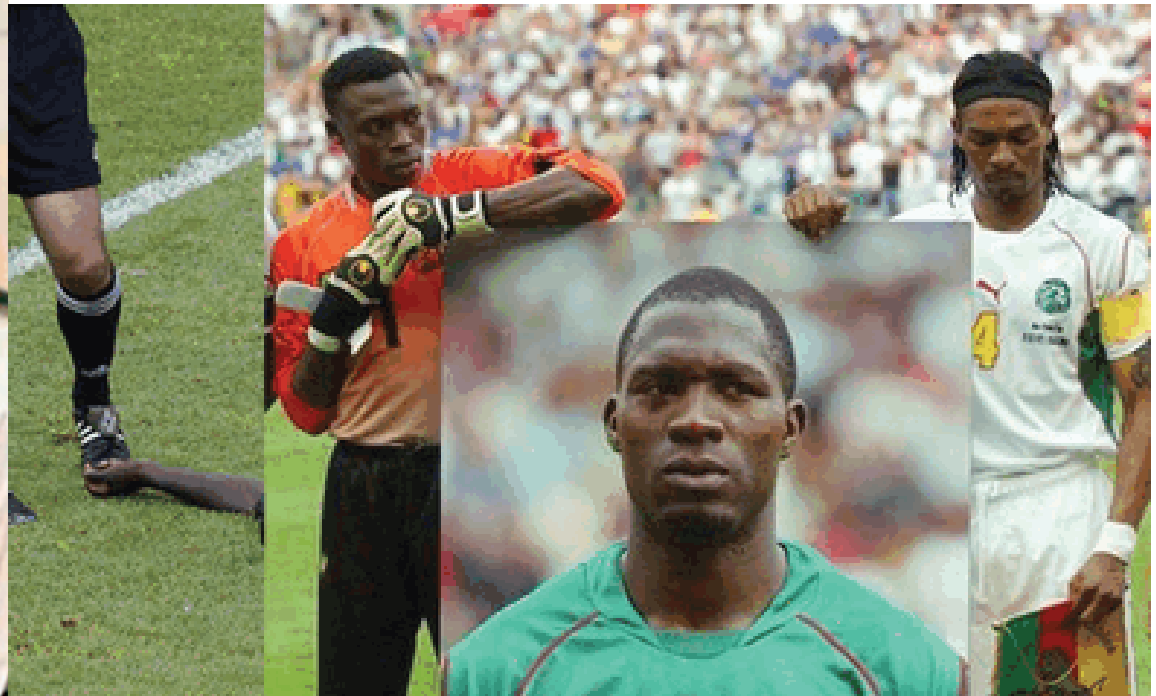
World Population Ageing 1950-2050



James E. Fixx –
the Pioneer of Jogging



Died Of Heart Attack
At 52 During His daily
running



พฤติกรรม

การลดความเสี่ยงโรคหลอดเลือด

หยุดบุหรี่

ลดความเสี่ยง 50-70 %

ลดโคเลสเตอรอล

1 % ของการลดโคเลสเตอรอลจะลดอัตราเสี่ยง
2-3%

ควบคุมความดันโลหิต

1 mm,hg ของความดันโลหิตที่ลดลงจะลด
ความเสี่ยงได้ 2-3 %

ออกกำลังกายสม่ำเสมอ

ลดอัตราเสี่ยง 45%

ควบคุมน้ำหนัก

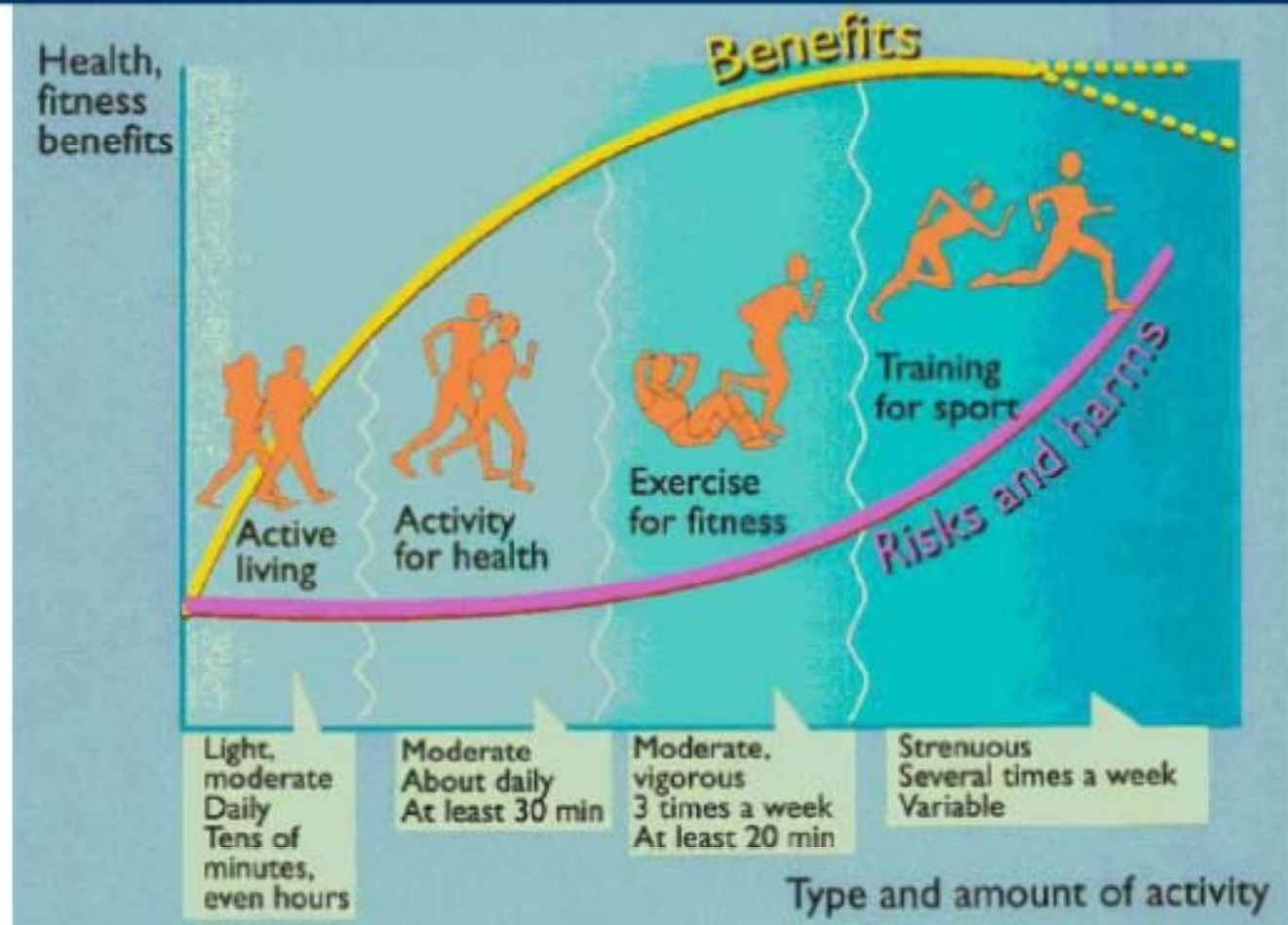
ลดอัตราเสี่ยง 35-55 %

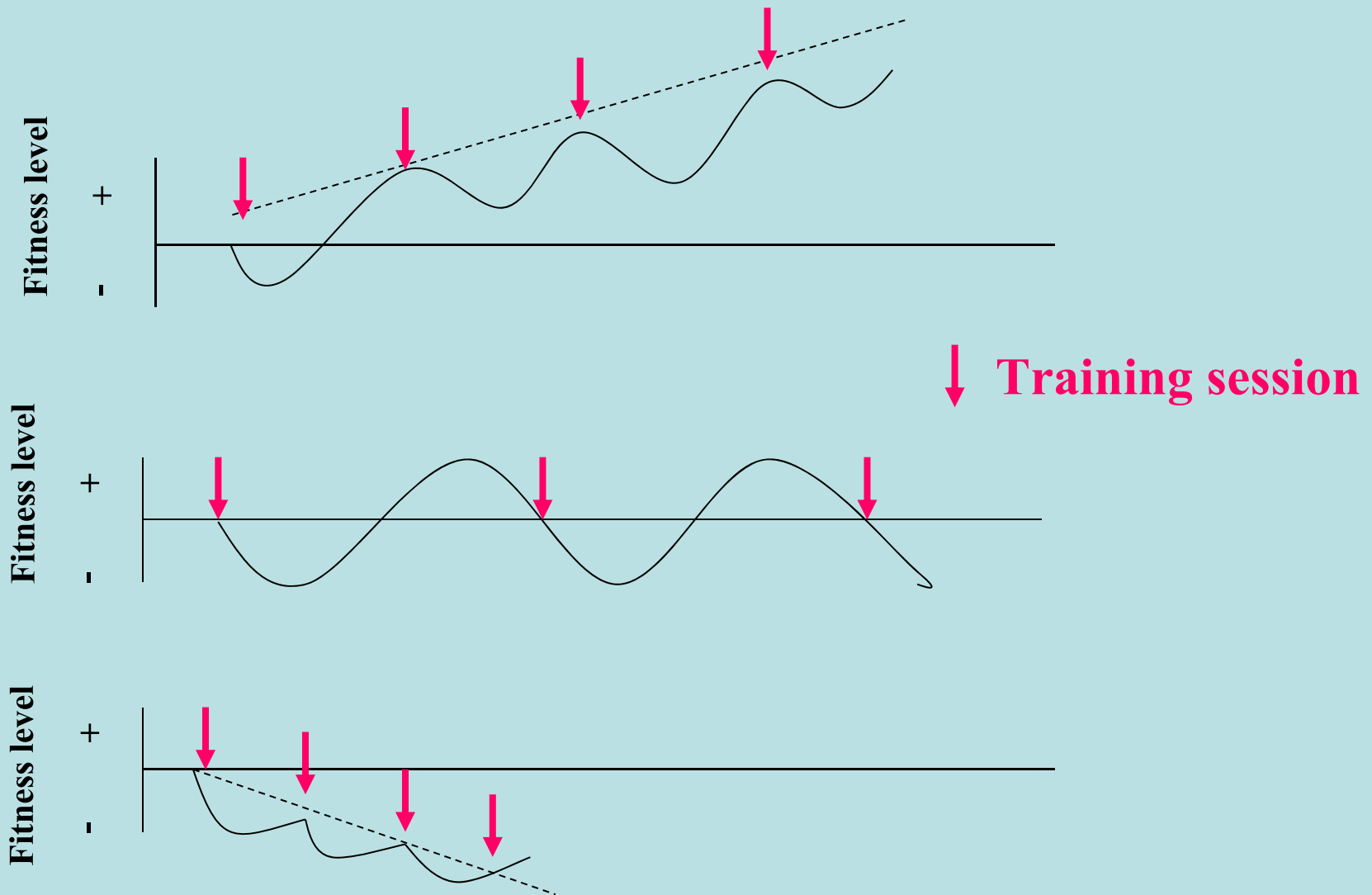
**It is clearly understood and
accepted that an isolated exercise
programme is not CR, physical
activity and exercise training must be
recognized as the core components
from which to build a comprehensive
CR programme.**

Physical Activity

- Promote weight loss
- Preserve lean body mass
- Improve metabolic parameters: insulin, glucose, and lipid
- Improve mood, quality of life and body composition
- Decrease risk of diseases
- Regular exercise is the best predictor of successful weight maintenance
- Initiate slowly, increase gradually to goal 150-200 min/wk

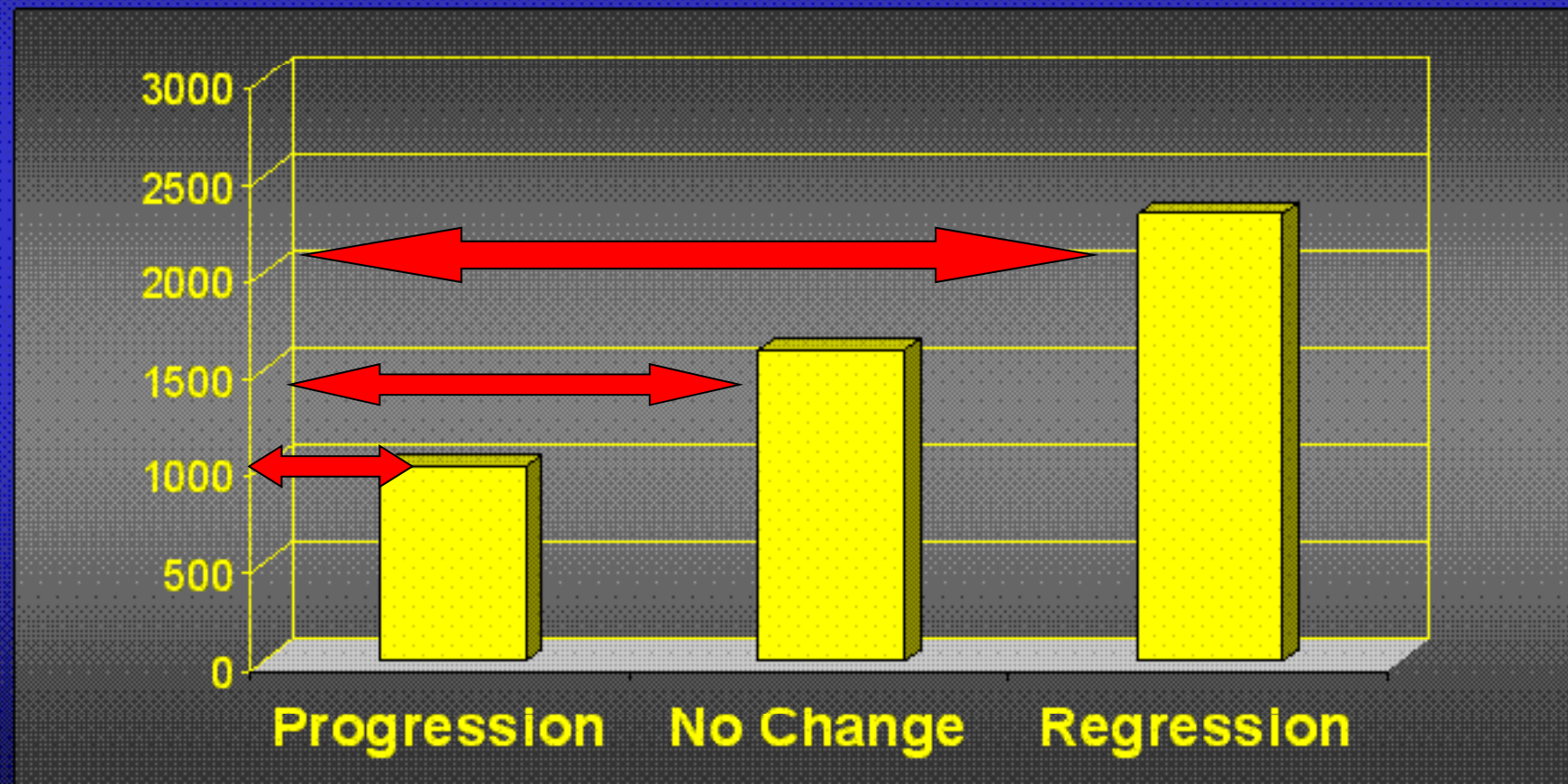
Risks versus Benefits





Timing of the training session is very important

Various intensities of leisure time physical activity in patients with CAD: effects on cardiorespiratory fitness and progression of coronary atherosclerotic lesion

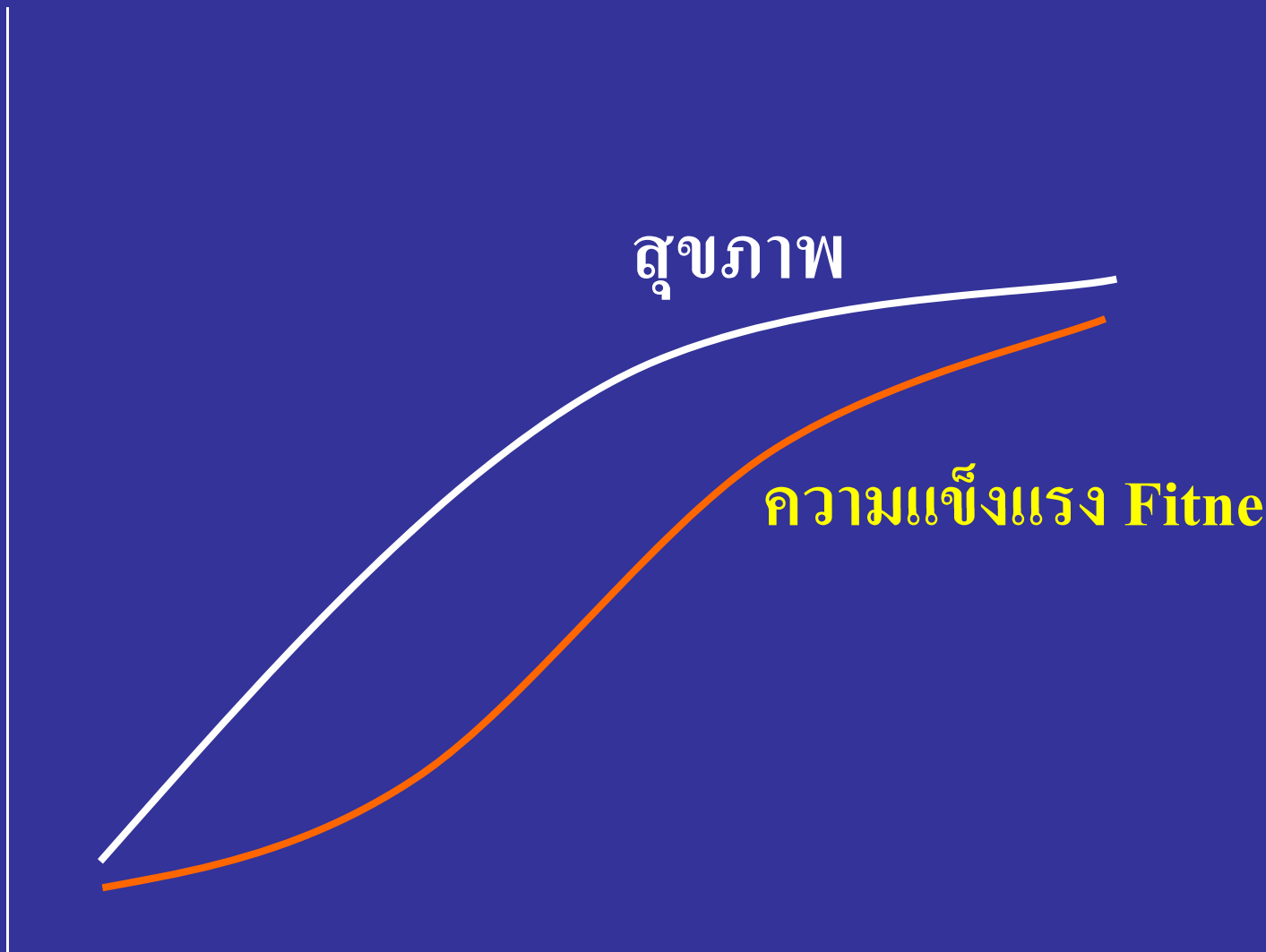


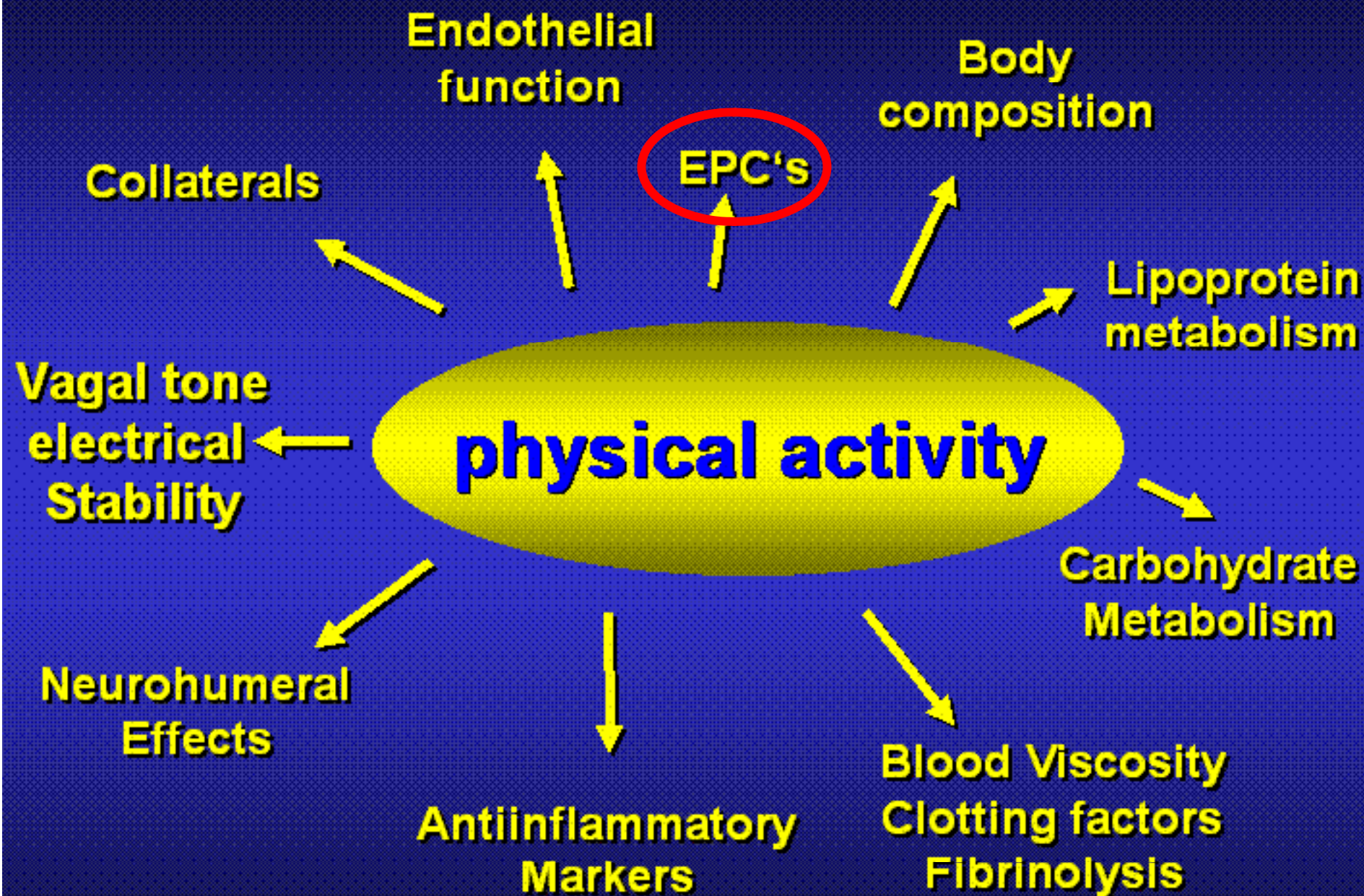
ประโยชน์

สุขภาพ

ความแข็งแรง Fitness

ความหนัก(แรง)ของการออกกำลังกาย





Prof. Hambrecht “ If you get PCI and stent, you are free of symptoms within a few minutes, whereas exercise takes months or years to achieve the same benefits.”

“ What they fell to appreciate is that stent treats only 15 to 20 mm. of the coronary tree, but exercise benefits the entire vascular bed”

STRESS

Is relived by **EATING**

Esp. CHO rich Food

Feeling better

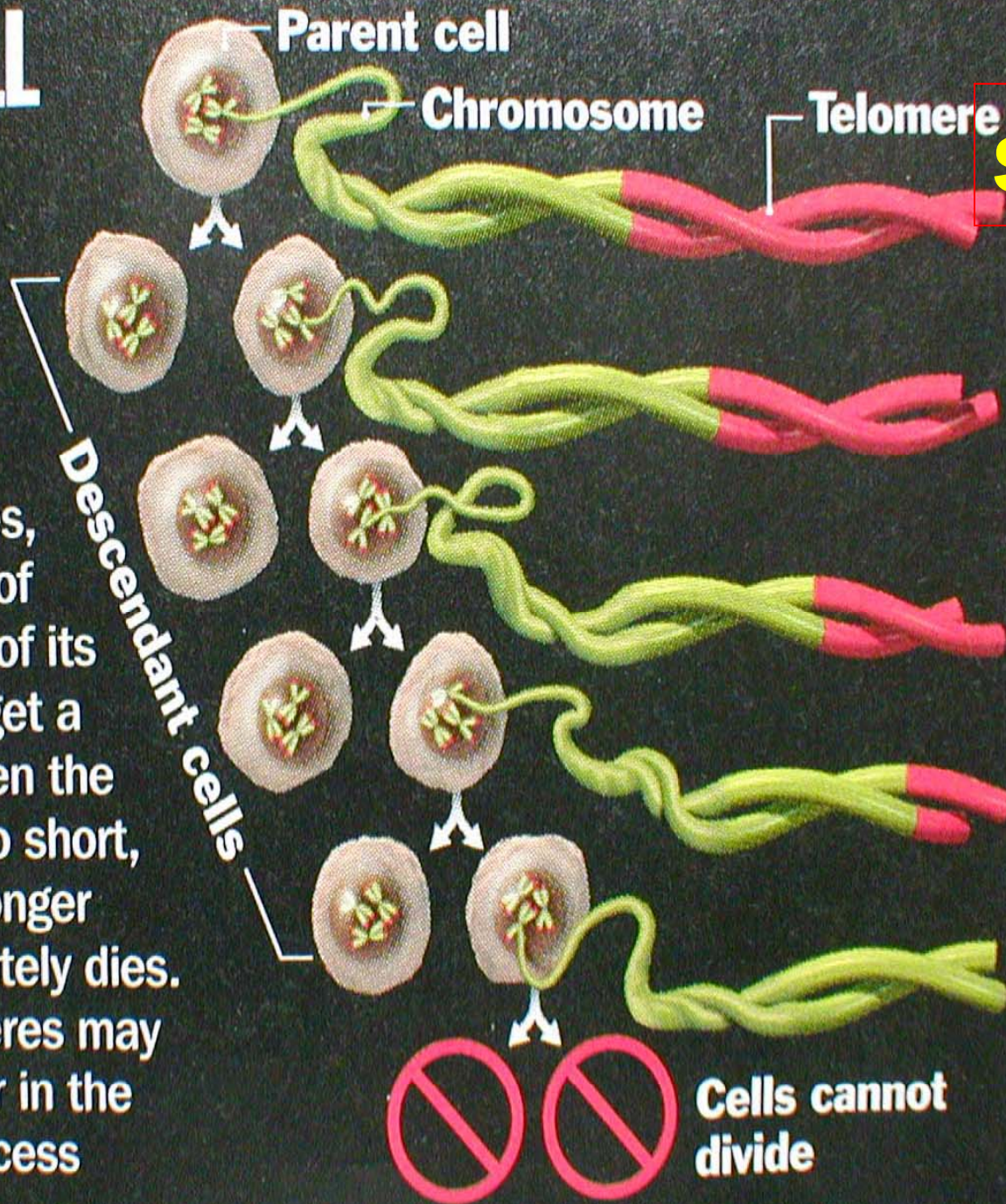
Stimulate

SEROTONIN

Minimize stress

HOW A CELL SHOWS ITS AGE

Each time a normal cell divides, telomeres—bits of DNA at the ends of its chromosomes—get a little shorter. When the telomeres get too short, the cell can no longer divide and ultimately dies. Dwindling telomeres may be a major factor in the body's aging process



stress

Is he fit enough for sex?

- Sex is not an Olympic sport!
- During **intercourse** the heart behaves as in any mild-to-moderate aerobic exercise
- **Contraindications for resuming sexual activity are the same as C/I for resuming other similar levels of exercise**



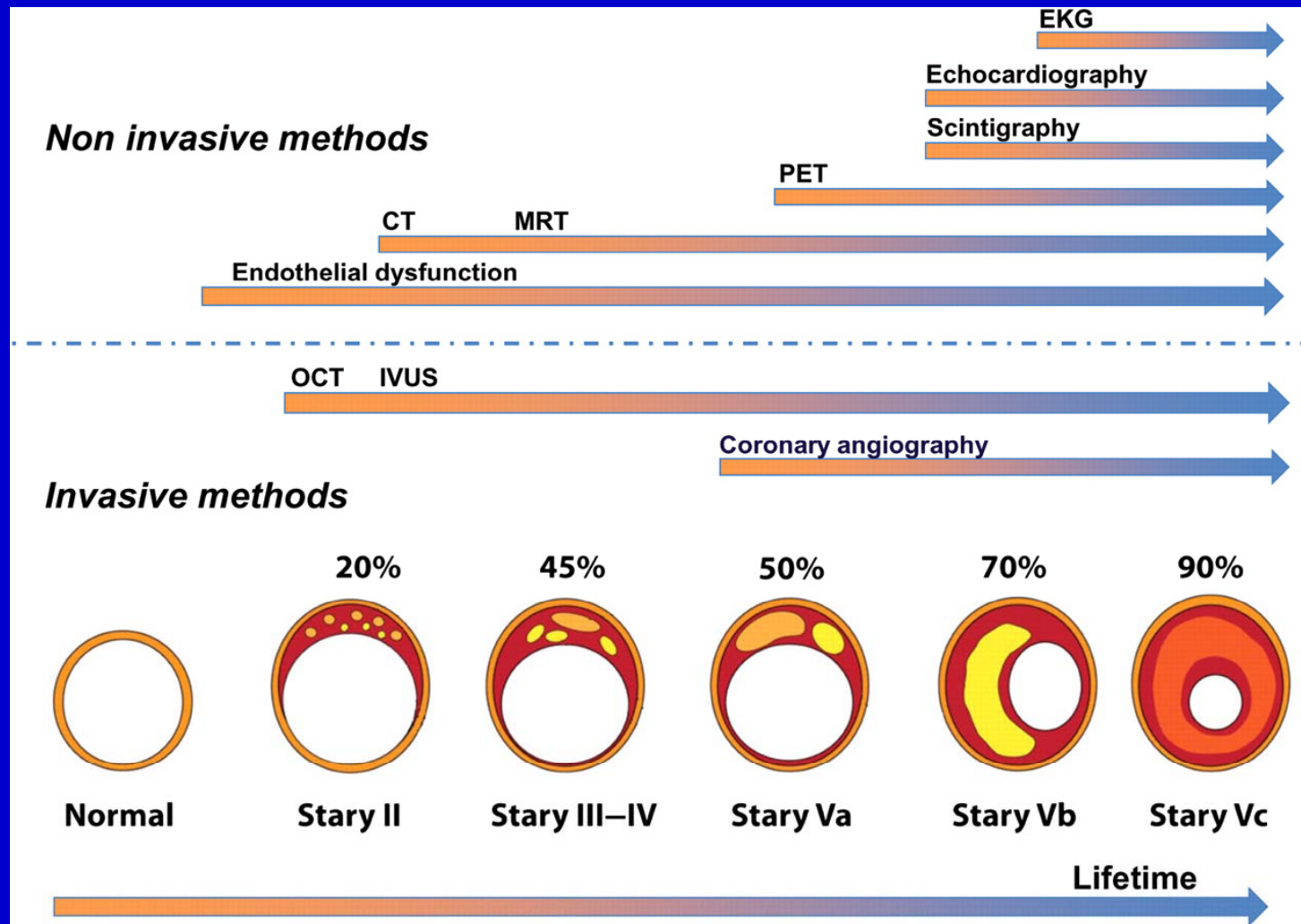
Integrative Medicine

Integrative medicine, the field that aims not only the disease but it is the holistic approach or the designed approach of treating the person instead of just only the disease. This including the concept of setting good cooperation as a partnership between the patient and the doctor emphasizing the goal of treating the mind or soul, body and spirit all at the same time. It combines conventional western medicine with alternative or complimentary treatments such as herbal medicine, acupuncture, massage biofeedback, yoga, taichi and stress reduction techniques.

The challenge of primary prevention

We must not wait until individuals declare themselves as having CVS risks by developing symptoms or cardiovascular event. **Many cases of sudden cardiac death and acute MI occur without warning.**

Schematic drawing of the development of coronary arteriosclerosis including positive remodelling during plaque burden increase and the listing of invasive and non-invasive methods concerning their ability to detect signs of atherosclerosis starting with endothelial dysfunction and ending with signs of ischaemia in the EKG. Modified according to Erbel et al.86.



Erbel R , Budoff M Eur Heart J 2012;33:1201-1213

Goals for primary & secondary prevention

Lifestyle change:



Stop smoking



Healthy diets



Physically active



Control Risk factors:

Blood pressure

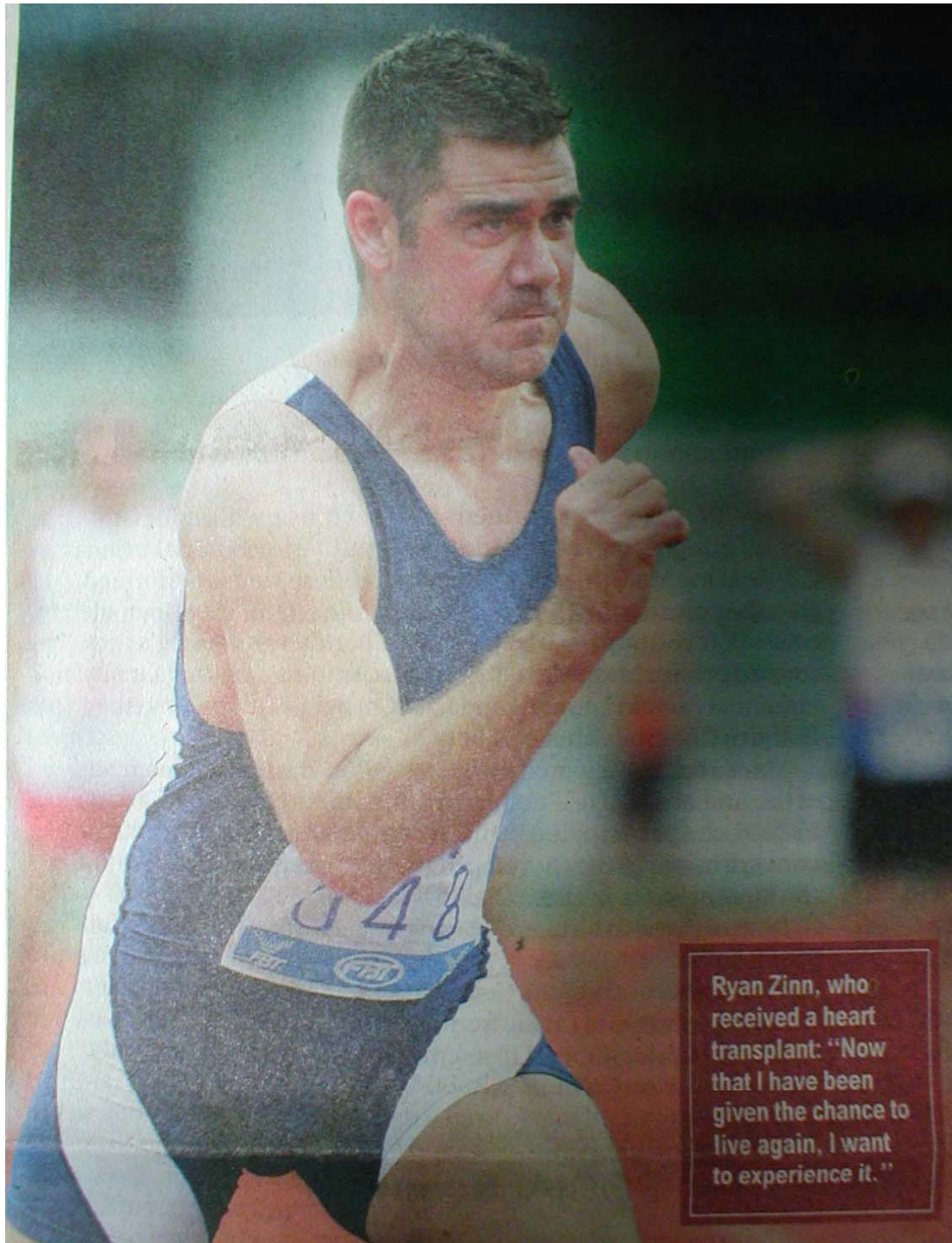
Diabetes Mellitus

Hyperlipidemia

Medications:

Antiplatelet, B. blocker,

ACE-I, ARB



**Post heart trans-
plant, still active
in sport: swim-
ming, basketball**

Cares Thai Action

คู่มือผู้ป่วยและญาติ หัวใจ

โดยชมรมฟื้นฟูหัวใจ



AstraZeneca

Cares Thai
Action

คู่มือ
ผู้ป่วยและญาติ
โดย
ชมรมฟื้นฟูหัวใจ

คณะกรรมการชมรม

- | | | |
|-----------------------------|----------------|---------------|
| 1. พลเอก นายแพทย์ประวิทย์ | ต้นประเสริฐ | ประธานกรรมการ |
| 2. แพทย์หญิงจิรัฐธา | จิตประไพ | รองประธาน |
| 3. พันเอก นายแพทย์ภัทรารุส | อินทระกานนท์ | เลขาธิการ |
| 4. แพทย์หญิงปิยะบุร | รักภักดี | เหรัญญิก |
| 5. แพทย์หญิงสุรจันทร์ | พจนประไพ | กรรมการ |
| 6. แพทย์หญิงรักเย็น | สวัสดิ์พาณิชย์ | กรรมการ |
| 7. แพทย์หญิงวรรณด | บำรุงสุข | กรรมการ |
| 8. แพทย์หญิงสมพร | บุญะจัตเว | กรรมการ |
| 9. แพทย์หญิงศุภา | ธำรงศิริ | กรรมการ |
| 10. นายแพทย์ปิยะมิตร | ศรีธรา | กรรมการ |
| 11. แพทย์หญิงคุณหญิงนันทิกา | วรรณโมโรจ | กรรมการ |
| 12. นายแพทย์สุพจน์ | ศรีมหาโชค | กรรมการ |
| 13. นายแพทย์วิศาล | คันธารัตนกุล | กรรมการ |
| 14. นายแพทย์ระพีพร | บุญชู ณ อยุธยา | กรรมการ |

Henny Youngman



"I read about the evils of drinking ...

Henny Youngman



"I read about the evils of drinking so I gave up reading."



“If you are going through hell, keep going.”

Winston Churchill



Figure 1. Patient with acute stroke walking on electromechanical Gait Trainer® (Reha-Stim, Berlin, Germany) with minimal assistance from physiotherapist.

Golden Rules for Marriage

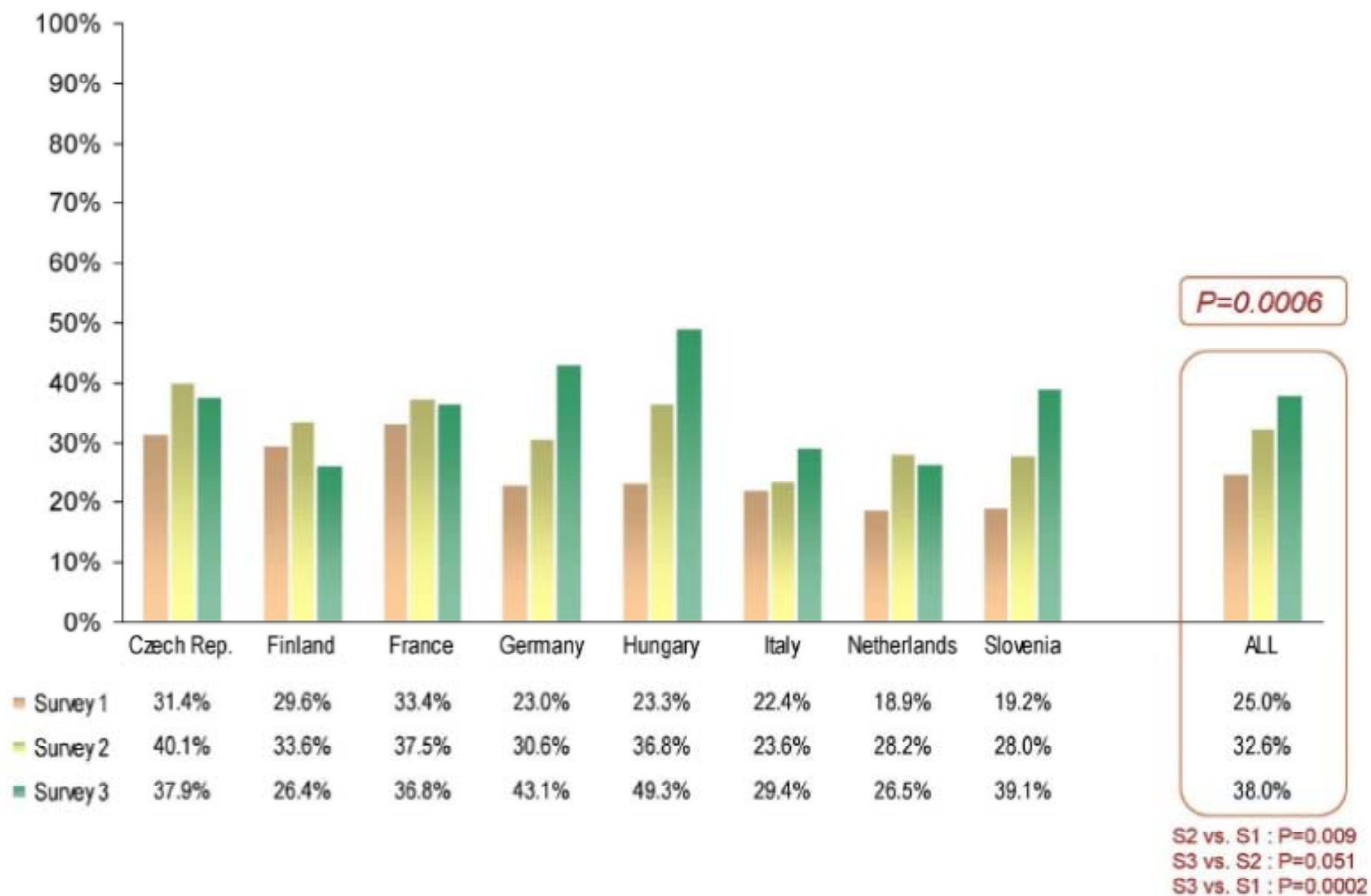






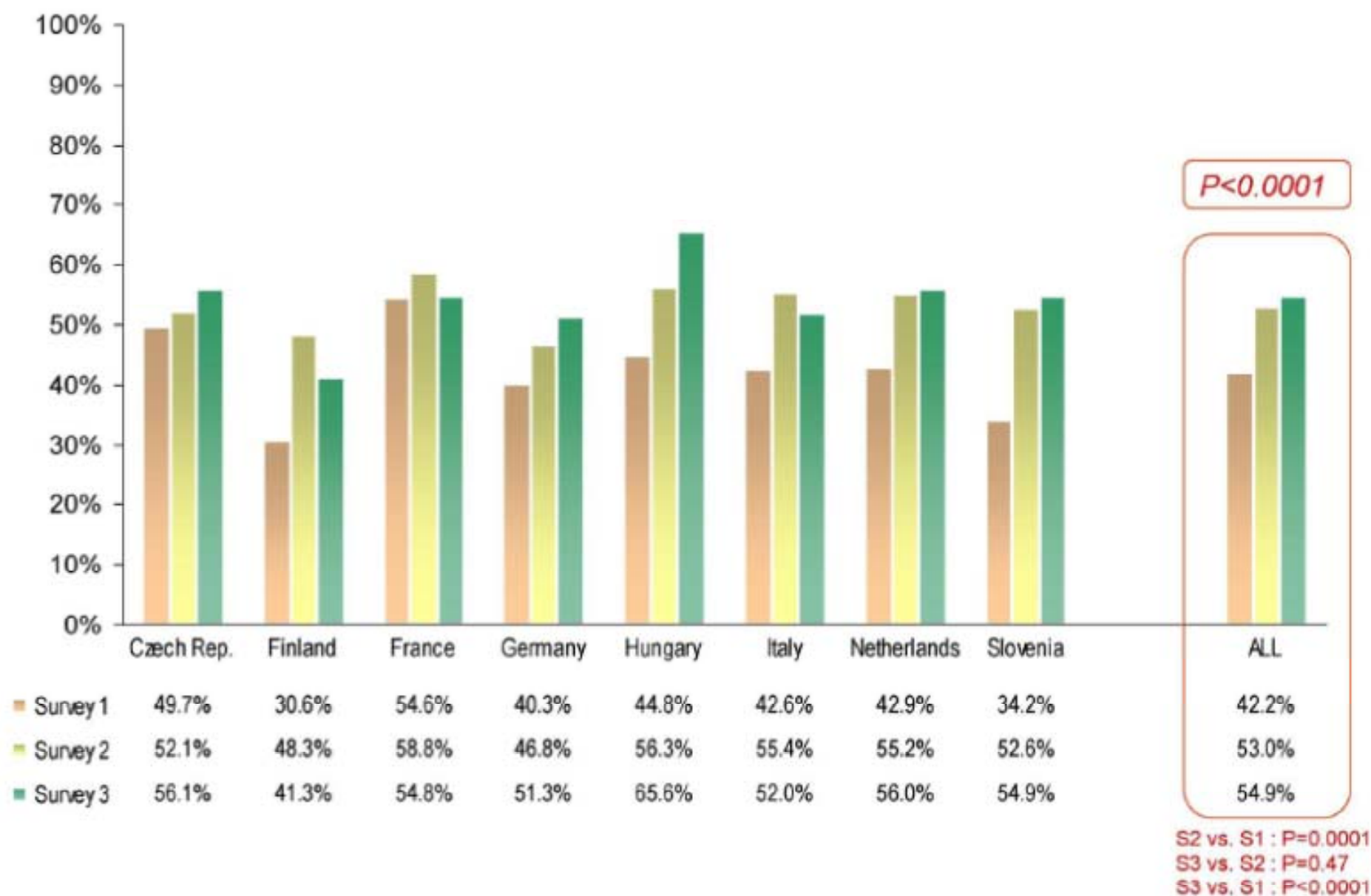


Prevalence of Obesity*





Prevalence of Central Obesity*

* Waist circumference ≥ 100 cm in men and ≥ 88 cm in women



Prevalence of Diabetes*

