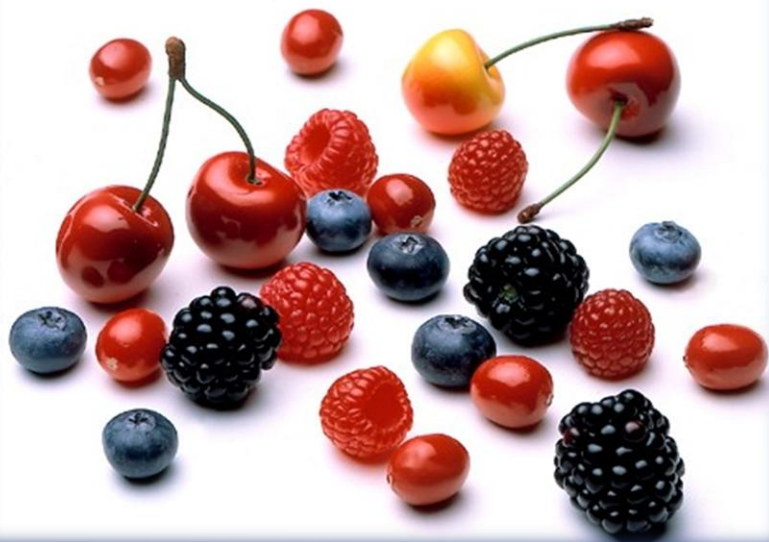




Live Better, Longer with OPCs
Market Australia

OPCs: Vital nutrients for our health



Pycnogenol®

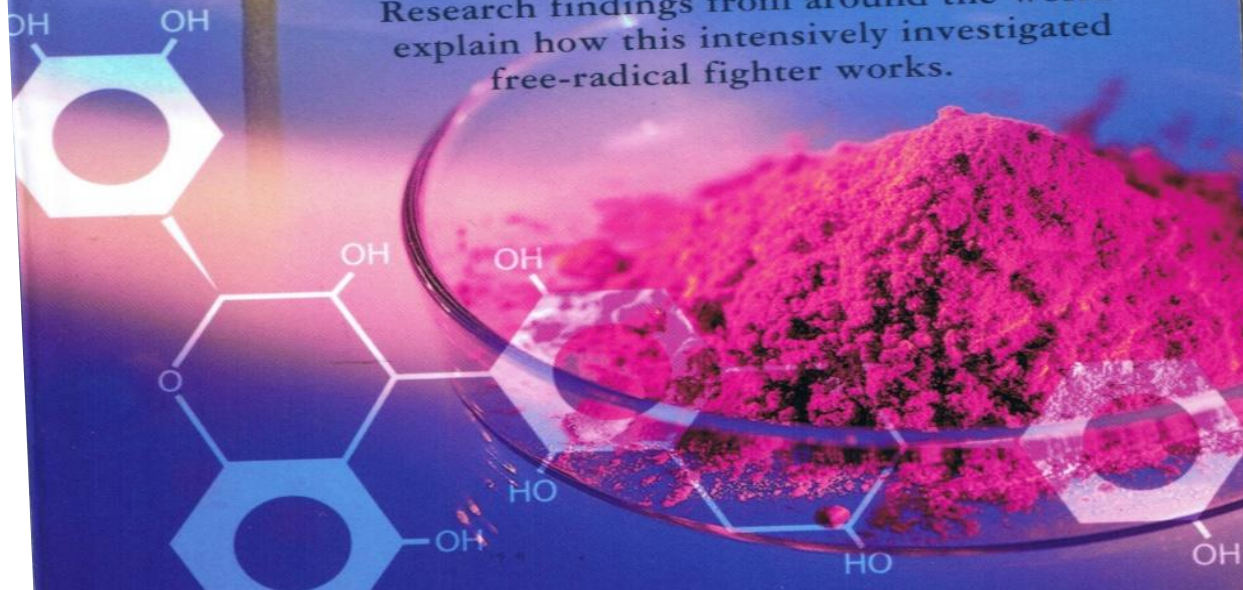


ONE OF THE MOST REMARKABLE NATURAL ANTIOXIDANTS EVER DISCOVERED!

Live Better, Longer

The Science Behind
the Amazing Health Benefits of OPC
(*Oligomeric Proanthocyanidins*)

Research findings from around the world
explain how this intensively investigated
free-radical fighter works.



OPCs for the heart and circulation



Improvement in Circulation and in Cardiovascular Risk Factors With a Proprietary Isotonic Bioflavonoid Formula OPC-3

Maria R. Cesarone, MD, Andrea Di Renzo, Silvia Errichi, MD, Frank Schönlau, PhD, James L. Wilmer, PhD, and Julian Blumenfeld, MD

This study investigates the efficacy of isotonic bioflavonoid supplementation, OPC-3 on 61 individuals presenting with risk factors meeting the criteria for metabolic syndrome. Subjects were supplemented with a proprietary isotonic bioflavonoid OPC-3 or placebo over 2 months. Plasma oxidative stress status was significantly lowered by 10.1% with OPC-3. All major cardiovascular risk factors were improved with blood pressure, total cholesterol, and fasting blood glucose lowered. OPC-3 significantly improved endothelial function as evaluated by increased vasorelaxation in reactive hyperemia and enhanced diastolic carotid artery flow. Cardiac

ultrasound scanning revealed a significant increase of left ventricular ejection fraction. Skin microcirculation was enhanced, and better tissue perfusion led to significantly increased transcutaneous oxygen partial pressure and decreased $p\text{CO}_2$. With OPC-3 a dramatic and significant plasma C-reactive protein decrease by 52.1% occurred. Individuals may improve key cardiovascular risk factors by daily supplementation with the bioflavonoid OPC-3 as an important part of a healthier lifestyle.

Keywords: bioflavonoid; OPC-3; metabolic syndrome; isotonic; cardiovascular risk factors; Pycnogenol

Angiology
Volume XX Number X
Month XXXX xx-xx
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<http://ang.sagepub.com>
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<http://online.sagepub.com>

Cardiovascular risks and metabolic syndrome represent major health

of cardiovascular

"Improvement in circulation and in cardiovascular risk factors with a proprietary isotonic bioflavonoid formula OPC-3[®]"

Cesarone et al., Angiology 2008

61 subjects with signs of metabolic syndrome

- blood pressure >130/85 mmHg <140/95 mmHg
- HDL <40 mg/dL
- total cholesterol >200 mg/dL <240 mg/dL
- fasting glucose >100 mg/dL <125 mg/dL

**Criteria for pre-diabetes according to
The American Diabetes Association**

"Improvement in circulation and in cardiovascular risk factors with a proprietary isotonic bioflavonoid formula OPC-3[®]"

Cesarone et al., Angiology 2008

Clinical Chemistry:

- **Significant lowering of oxidative stress**
- **Lowered blood glucose**
- **Lowered LDL and total cholesterol**
- **Increased HDL**
- **Significantly lowered CRP levels**

"Improvement in circulation and in cardiovascular risk factors with a proprietary isotonic bioflavonoid formula OPC-3®"

Cesarone et al., Angiology 2008

Blood micro-circulation in the skin:

- **Better blood perfusion of the skin**
- **Significantly better supply with oxygen**
- **Better waste removal (CO₂)**

"Improvement in circulation and in cardiovascular risk factors with a proprietary isotonic bioflavonoid formula OPC-3®"

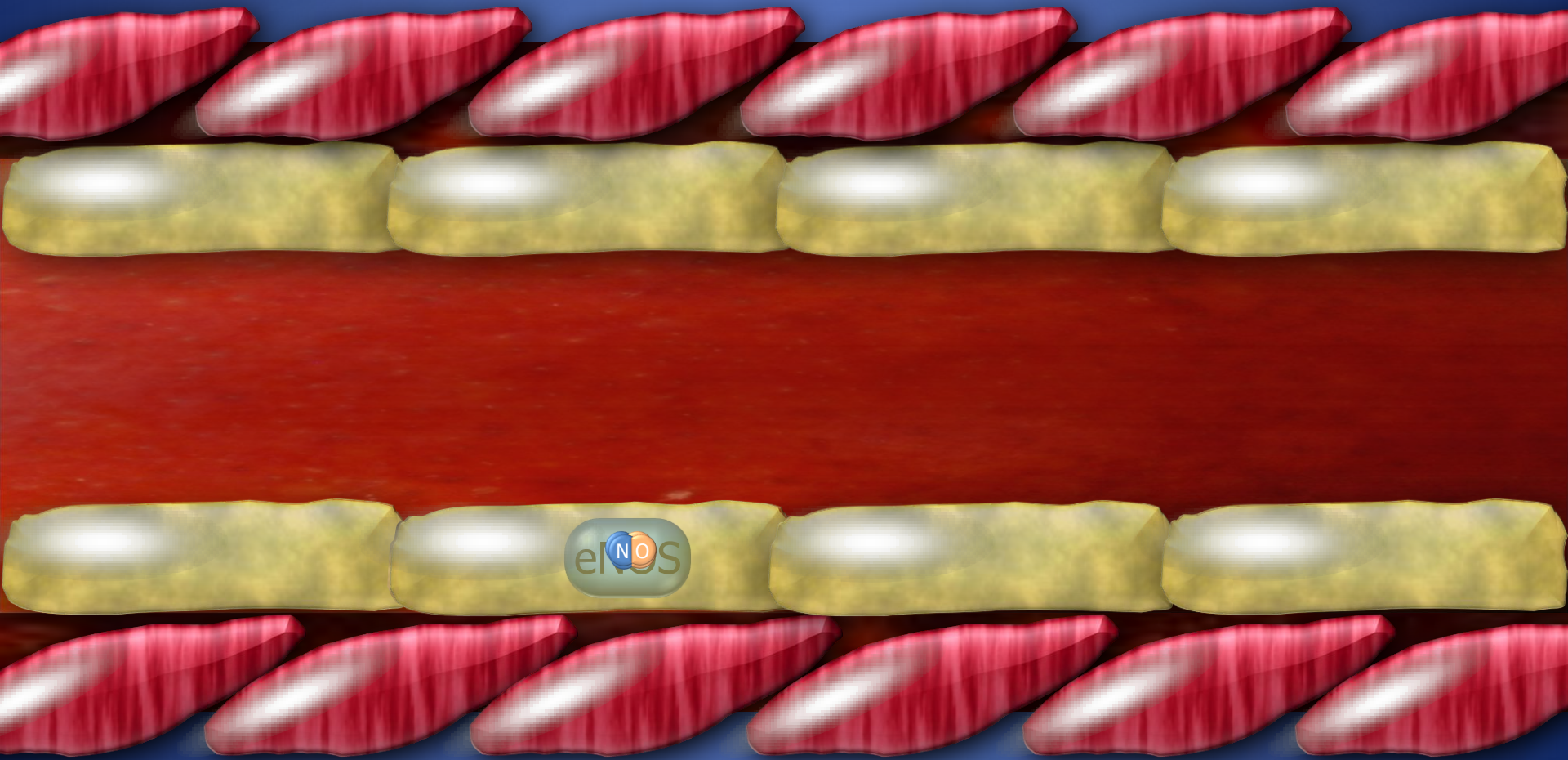
Cesarone et al., Angiology 2008

Heart Health:

- **Blood pressure lowered**
- **Significantly improved artery relaxation**
- **Carotid artery blood flow improved**
- **Significantly improved heart performance**

OPCs Keep Blood Flowing & Blood Vessels Relaxed

Pycnogenol® supports blood flow

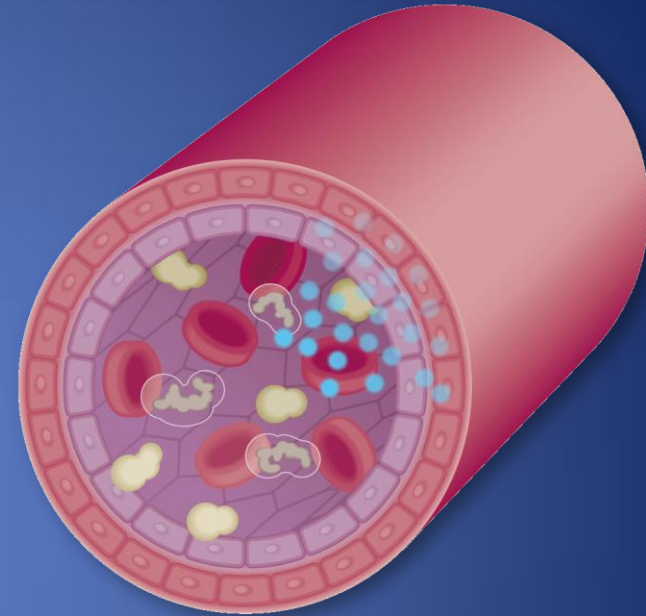
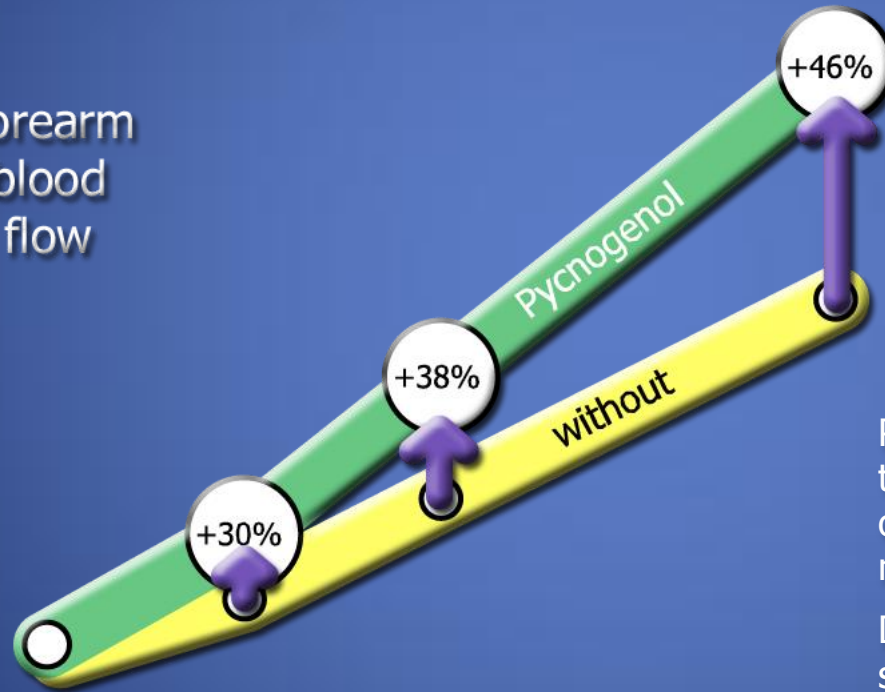


Nishioka et al., Hypertens Res 30: 775-780, 2007

Pycnogenol® enhances blood vessel function

Pycnogenol enhances NO generation

Forearm
blood
flow



Pycnogenol® enhances vasorelaxation triggered by intra-venous injection of increasing amounts of the neurotransmitter acetylcholine.

Double blind, placebo controlled study with 16 young, healthy men.

Vasodilation triggered by acetylcholin

Nishioka et al., Hypertens Res 30: 775-780, 2007

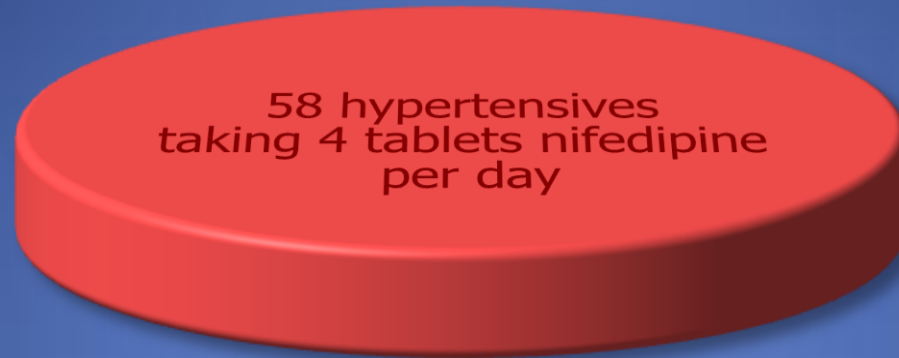
Pycnogenol® lowers high blood pressure



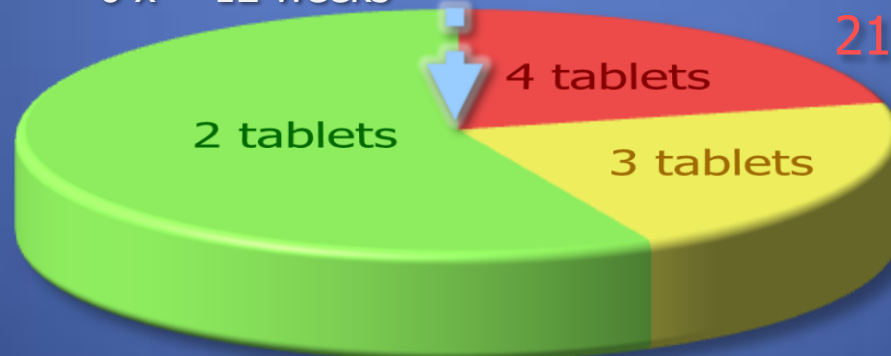
Several clinical studies showed Pycnogenol® lowers blood pressure.

Hosseini et al., Nutrition Res 21: 1251-1260, 2001
Liu et al., Life Sciences, 74: 855-862, 2004

Pycnogenol® allows to lower nifedipine medication



Nifedipine dose adjustment
Target SBP <130 mmHg
Every two weeks
6 x = 12 weeks



57% of patients

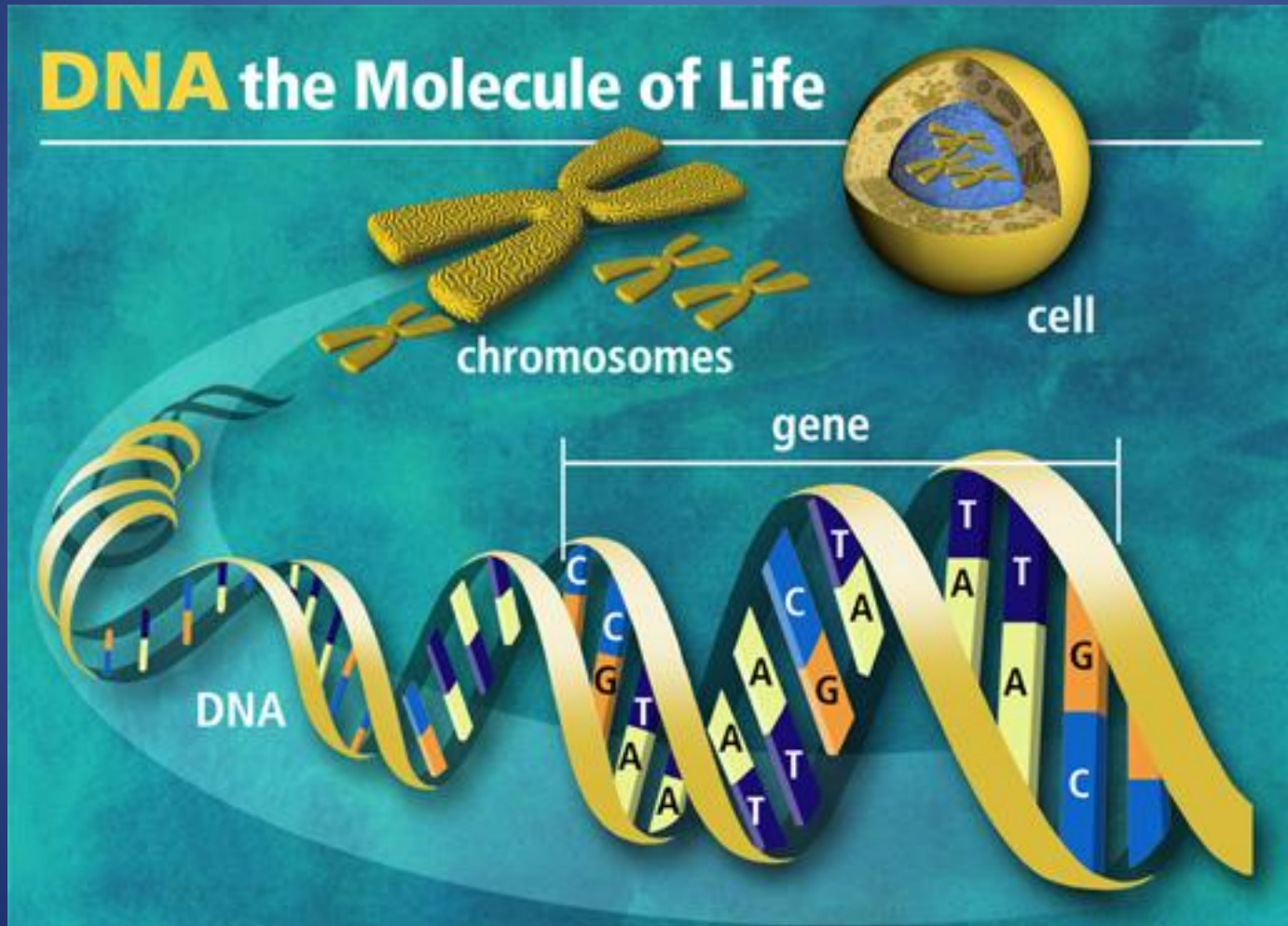
21% of patients

22% of patients

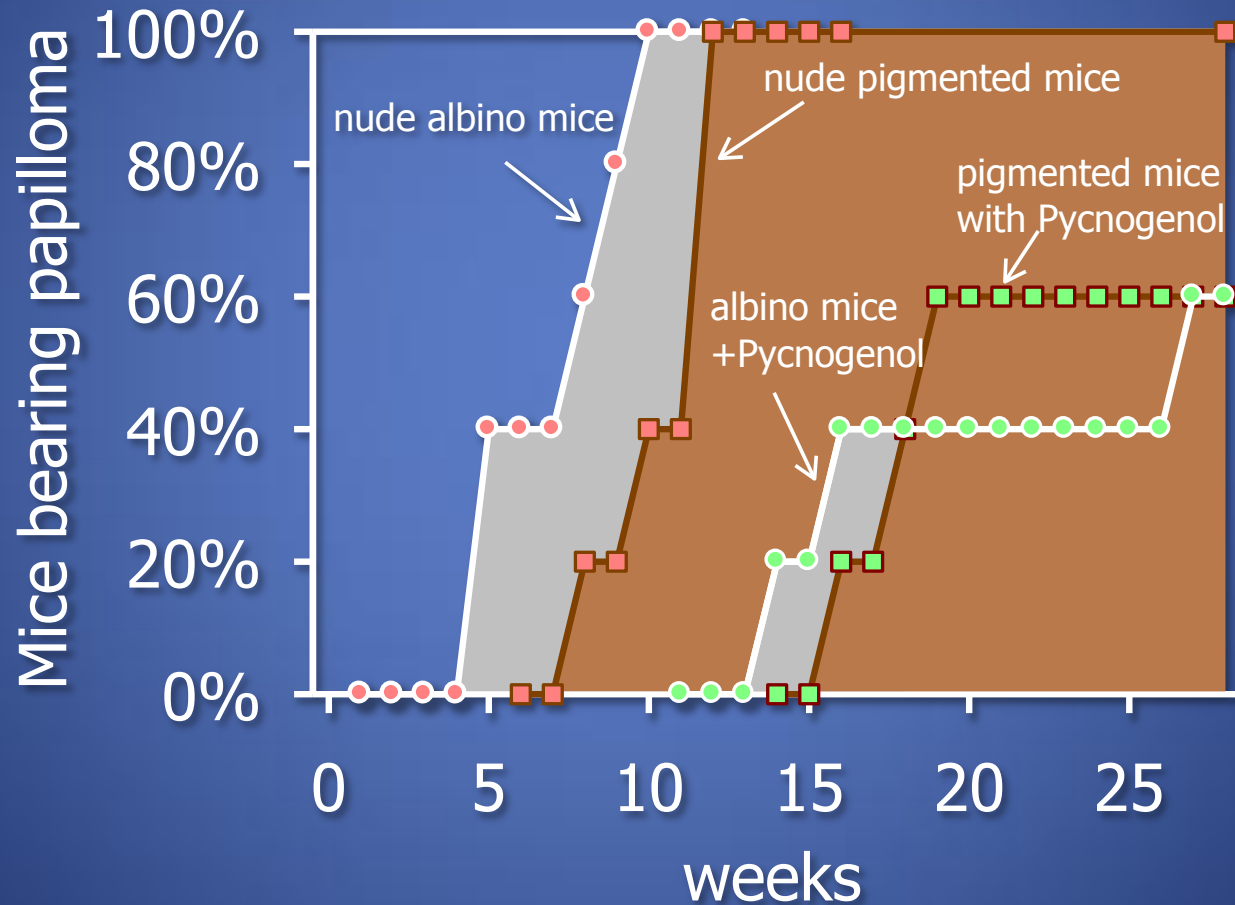
OPCs for healthy cells throughout the lifetime



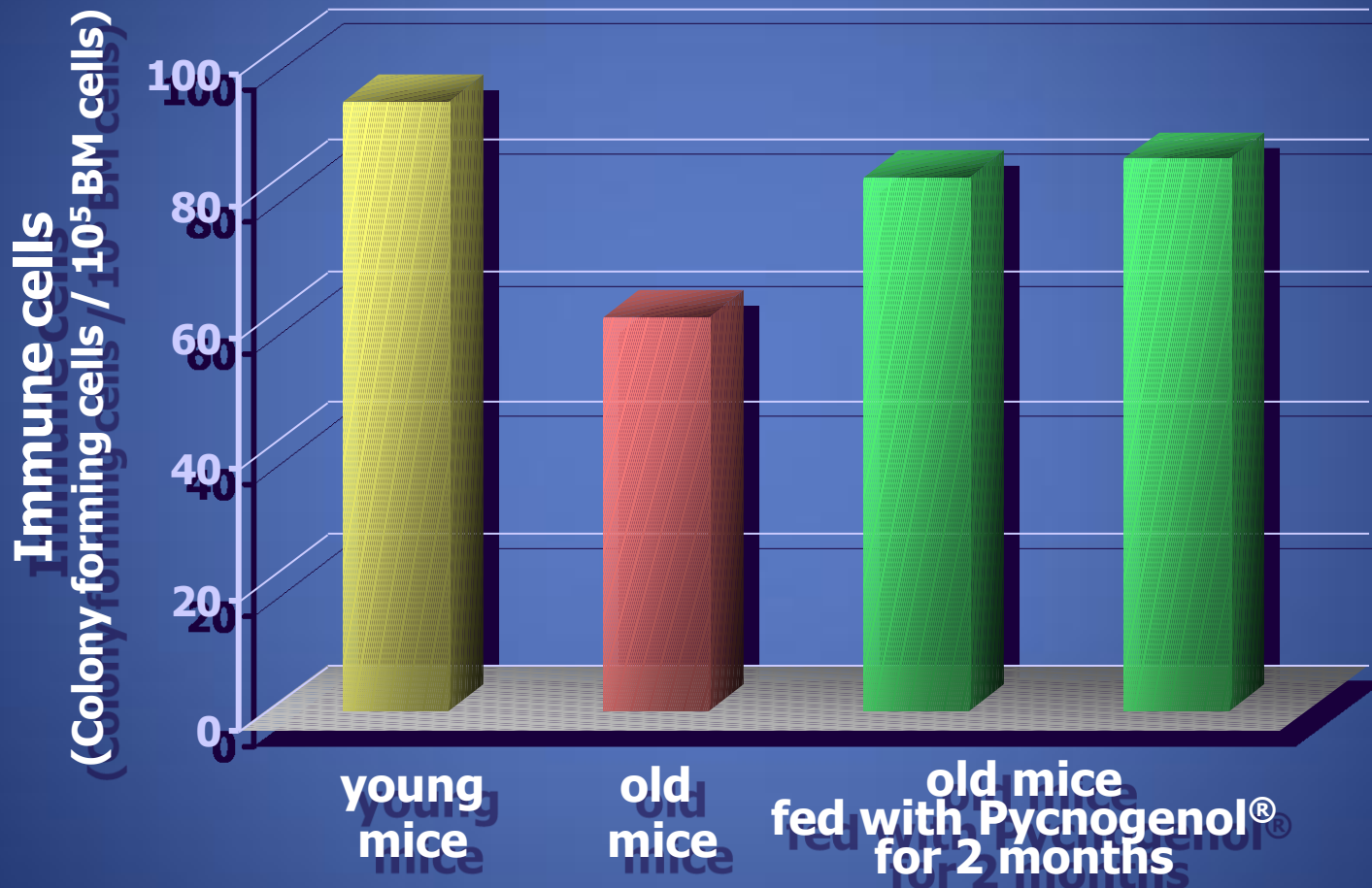
OPCs in Pycnogenol® protects DNA from oxidative damage



Pycnogenol® protection in chronic UV exposure



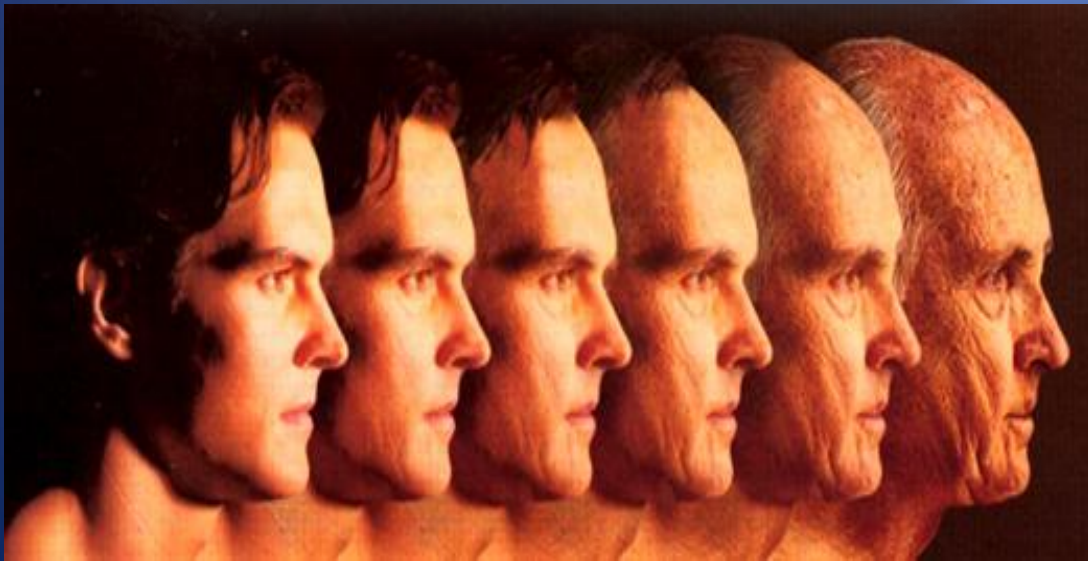
Pycnogenol[®] defies age-related weakness of immune system



Epidemiology on flavonoid intake and cancer risk

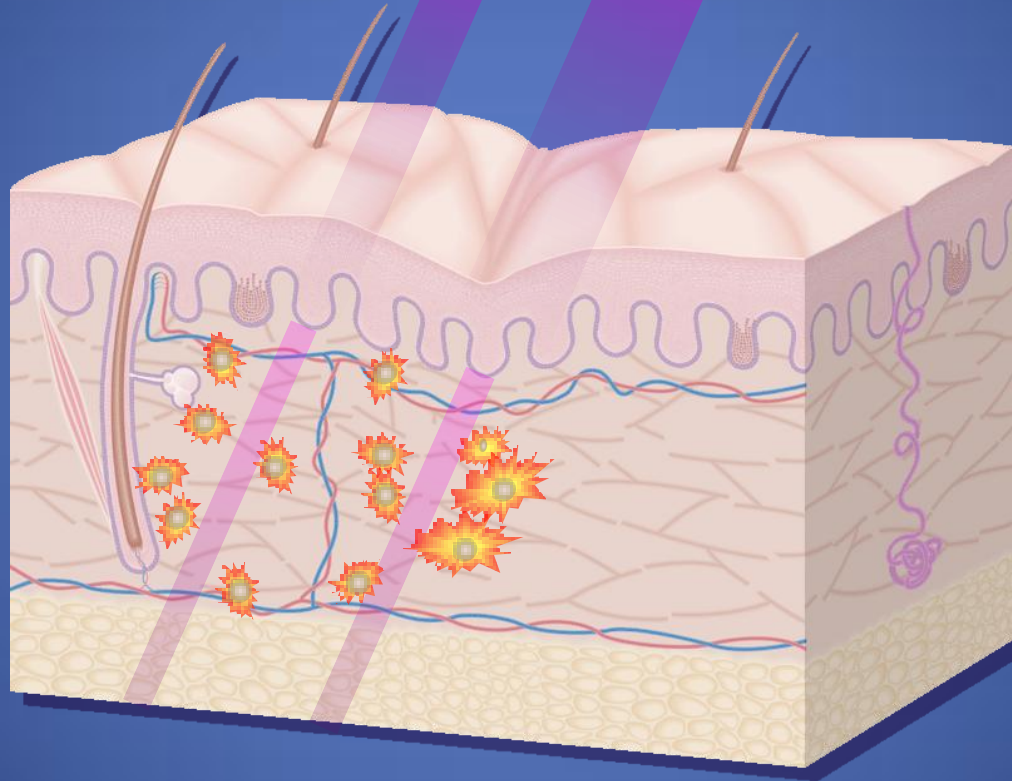
- **Long Island breast cancer study (1434 + 1440 cases)**
Intake of flavonoids is associated with lowered risk
(Fink et al., Am J Epidemiol 165: 514-523, 2007)
- **Italian esophageal cancer study (304 + 743 cases)**
Intake of flavonones (citrus) associated with lowered risk
(Rossi et al., Int J Cancer 120: 1560-1564, 2007)
- **Shanghai colorectal cancer study (162 + 806 cases)**
High presence of epicatechin in urine associated with lowered risk
(Yuan et al., Int J Cancer 120: 1344-1350, 2007)
- **Italian ovarian cancer study (1031 + 2411 cases)**
Intake of flavonoids associated with lowered risk
(Rossi et al., Int J Cancer 123(4): 895-898, 2008)

Slowing the aging process with OPCs



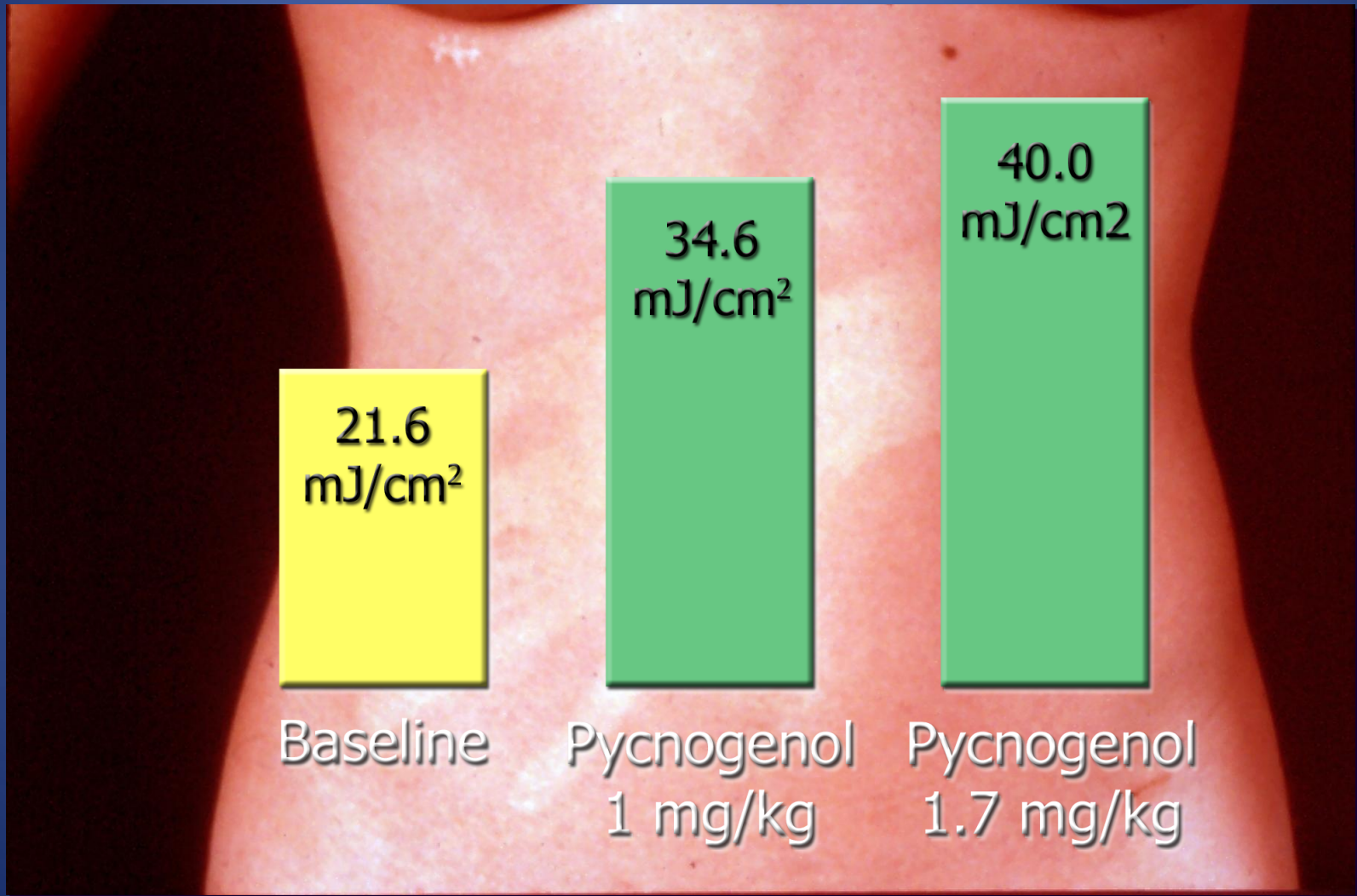
Sunlight exposure increases free radicals in the skin

UV light causes serious damage to skin cells



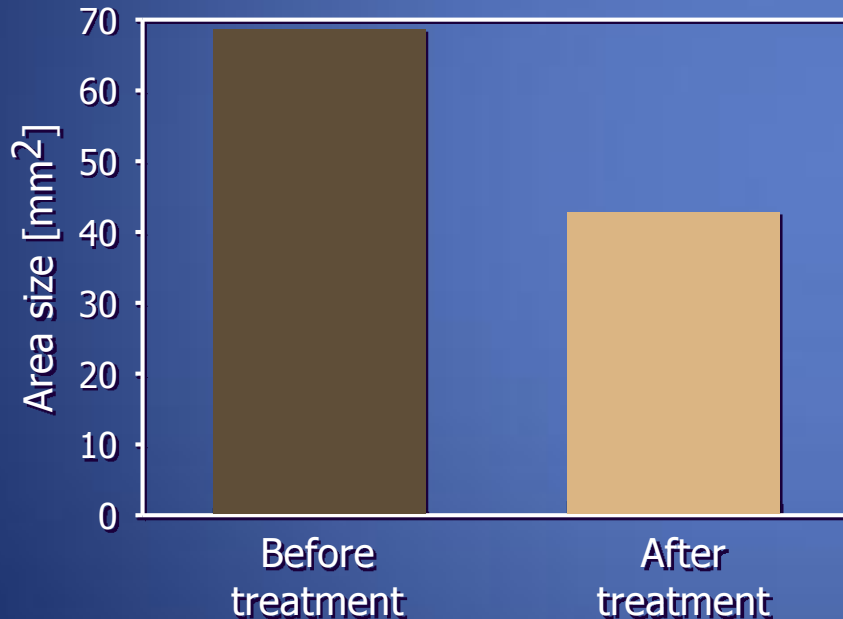
Compare skin of your hands and face with skin under your arms

OPCs in Pycnogenol® protects skin from sun damage



Pycnogenol[®] is helpful for skin hyper-pigmentation

Mean pigmented area size: - 37.7 %
Mean intensity index: - 22.4 %

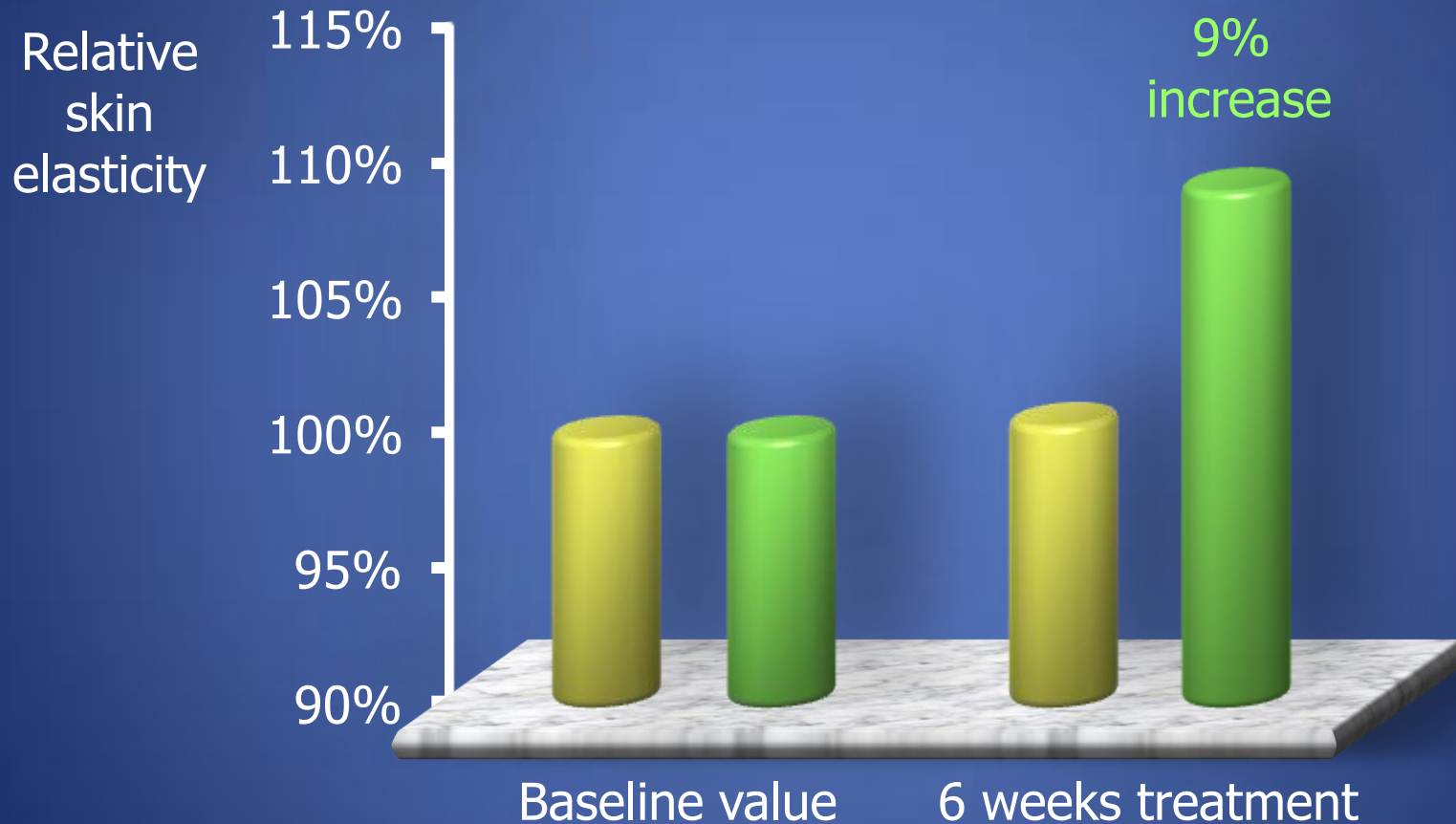


Hyper-pigmentation

30 women with hyperpigmentation:
25 mg Pycnogenol[®] 3x daily for 30 days

Pycnogenol[®] improves skin elasticity

Clinical study with 60 women aged 45-73 years



Pycnogenol® improves skin smoothness

Clinical study with 60 women aged 45-73 years



baseline

4 weeks

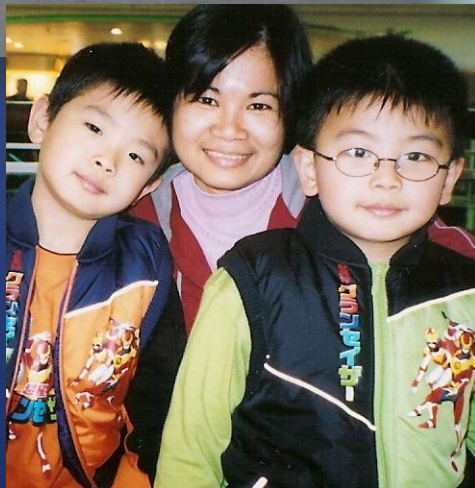
8 weeks

12 weeks

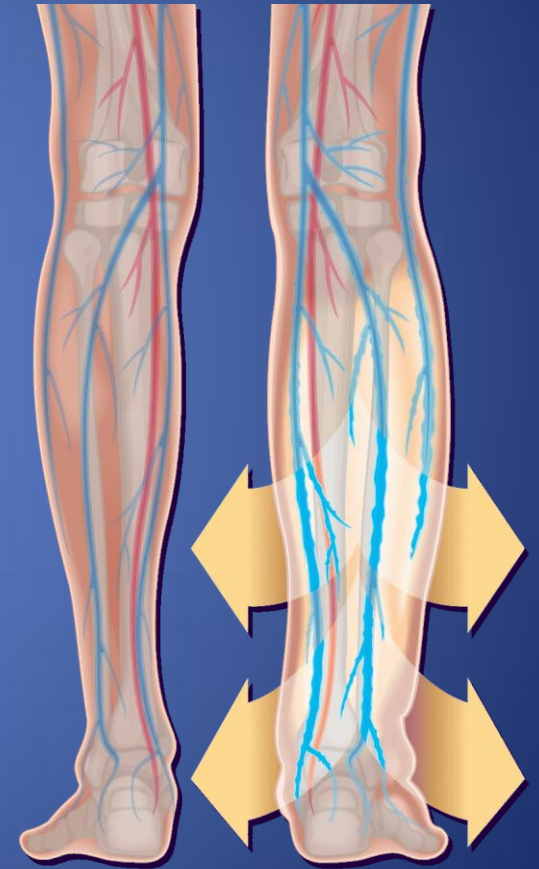
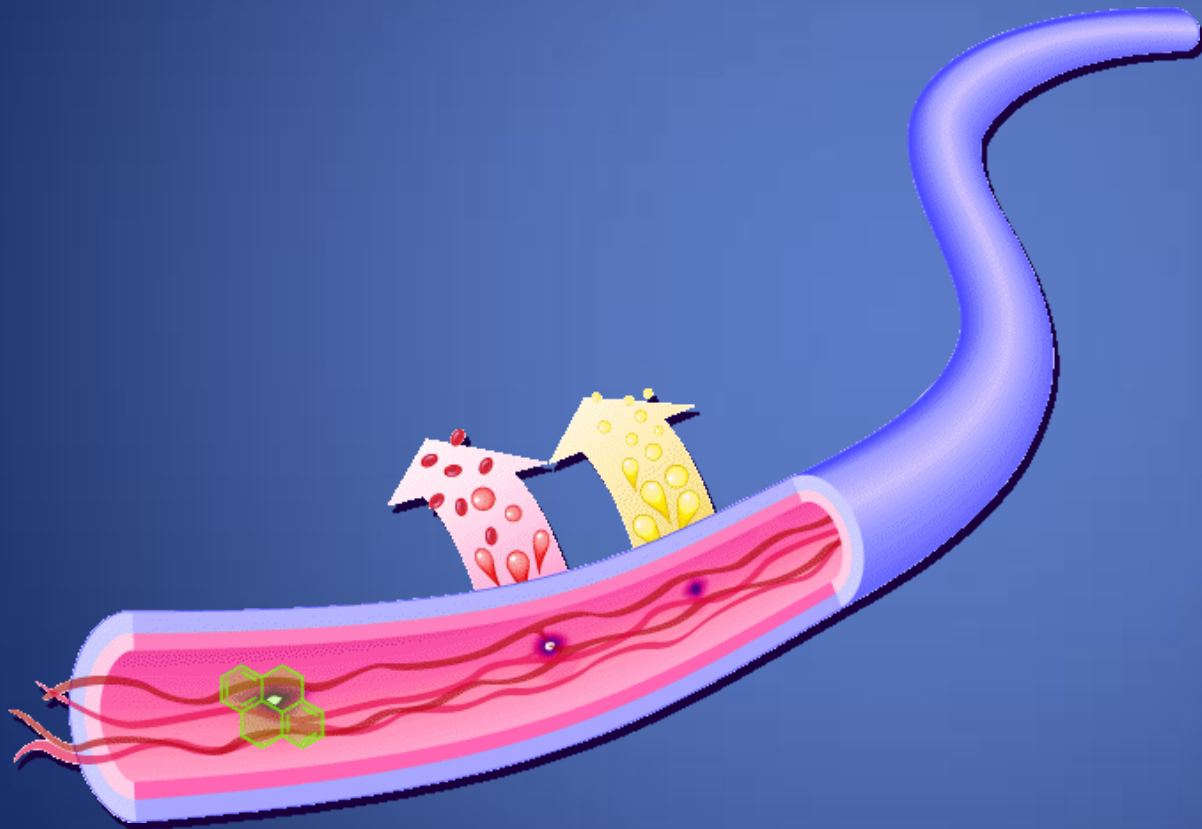
Menopause



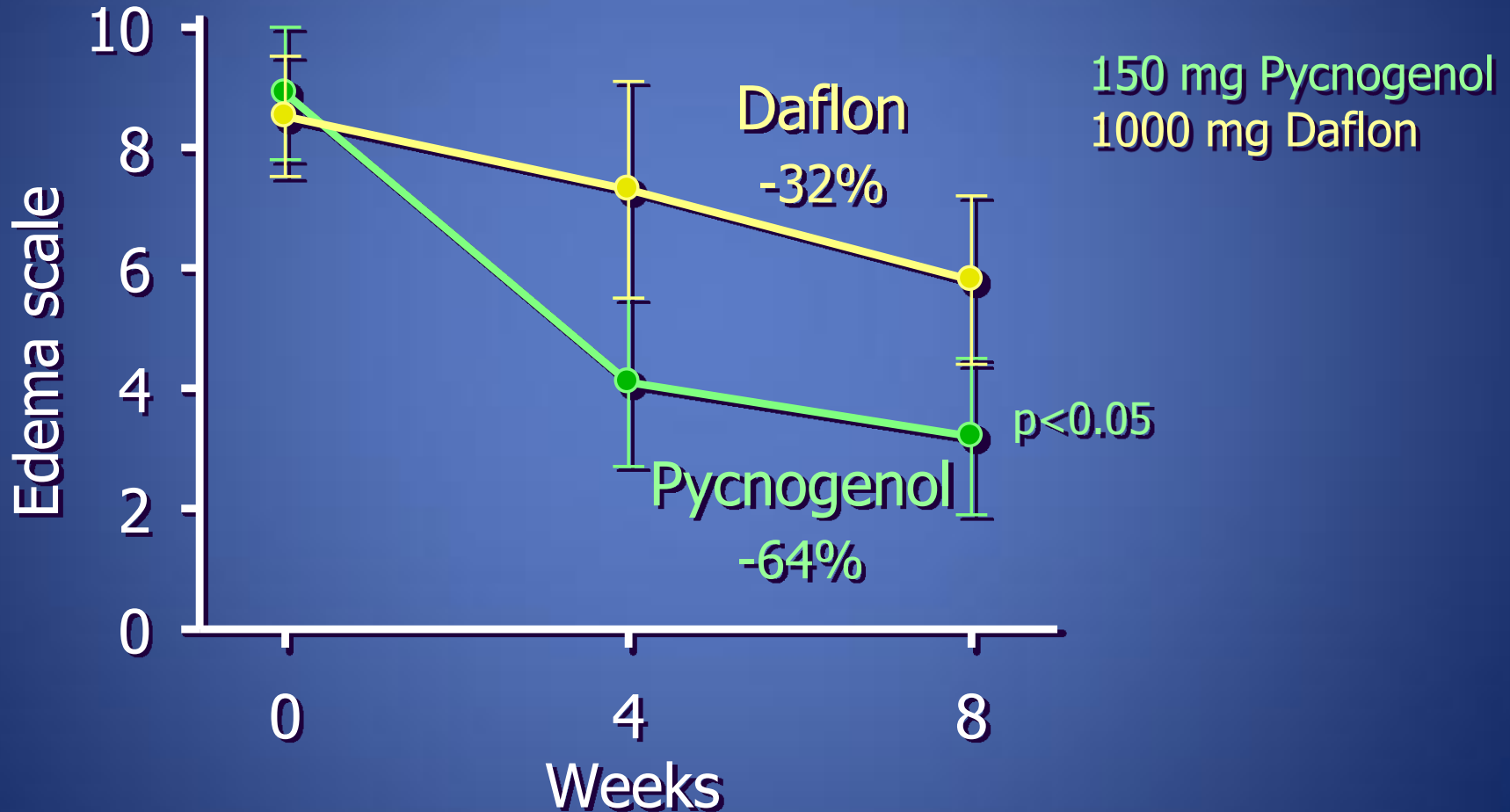
Age-related memory function decline



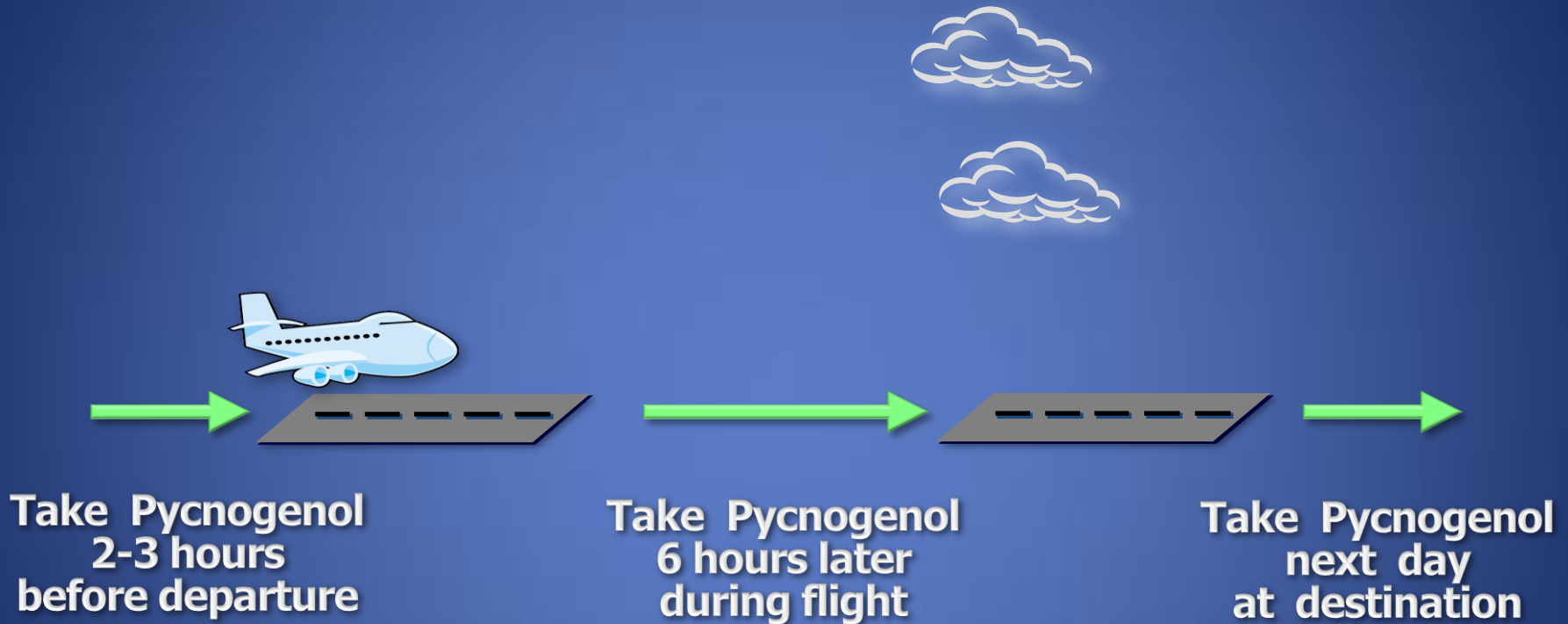
Blood vessel health with OPCs



Pycnogenol® more efficient than Daflon in reducing swelling



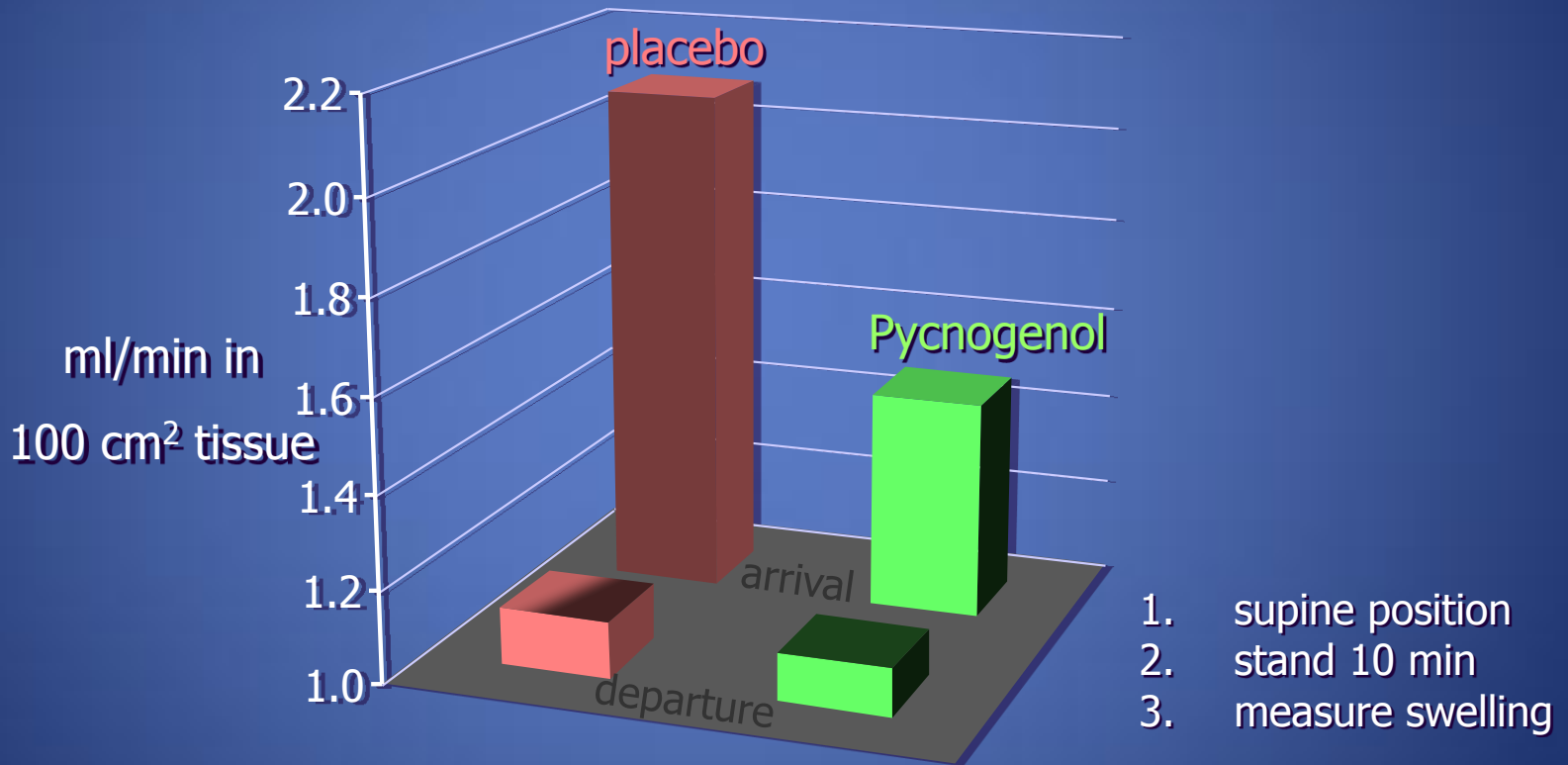
Pycnogenol® prevents thrombosis in flight passengers



**Study with 200 passengers showed:
Pycnogenol protected from thrombosis
Pycnogenol protected from swellings**

Pycnogenol[®] lowers swellings on long-haul flights

strain gauge plethysmography



Cesarone et al., Clin Appl Thromb Hemost 11(3): 289-294, 2005

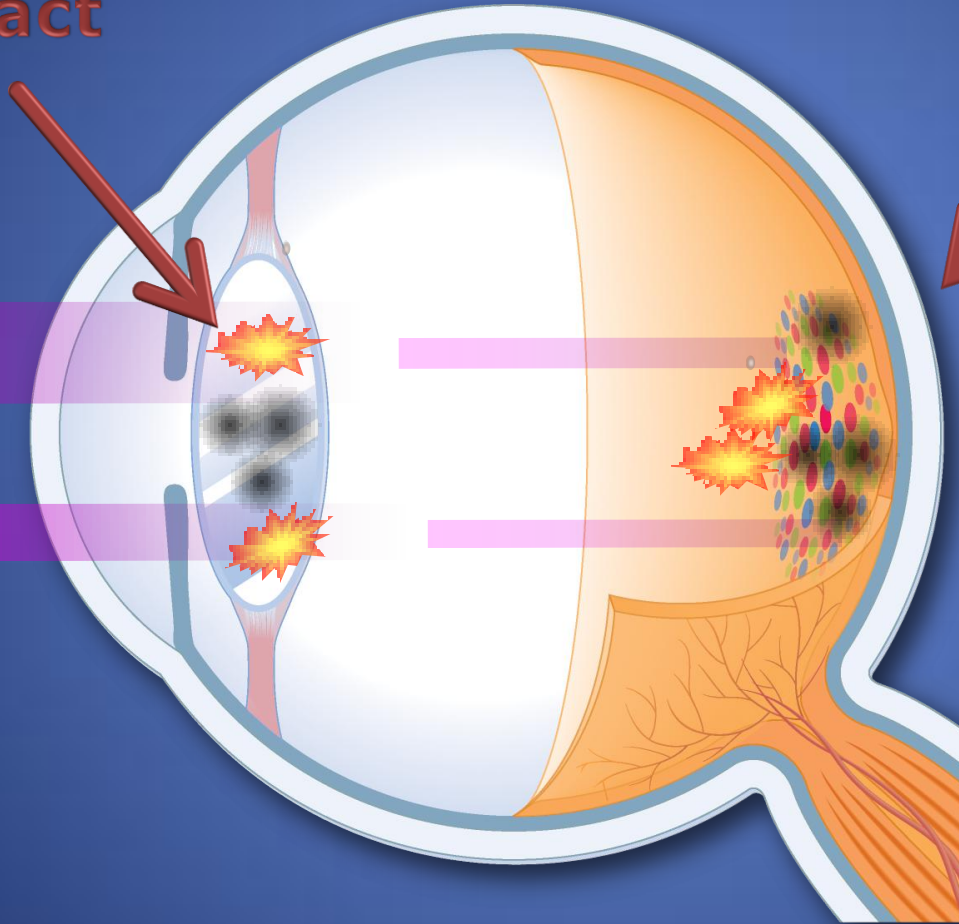
Preserving Eye Health with OPCs



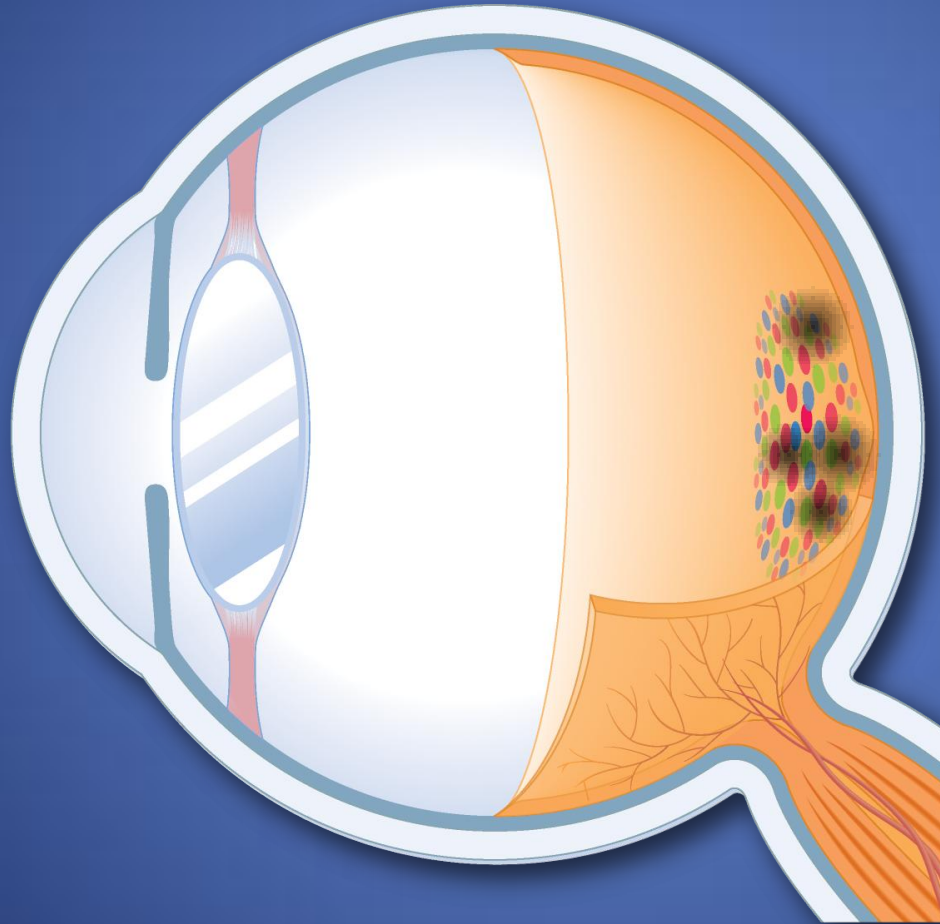
OPCs prevent free radicals damage

Cataract

Retinopathy
AMD



In retinopathy the capillaries of the retina bleed

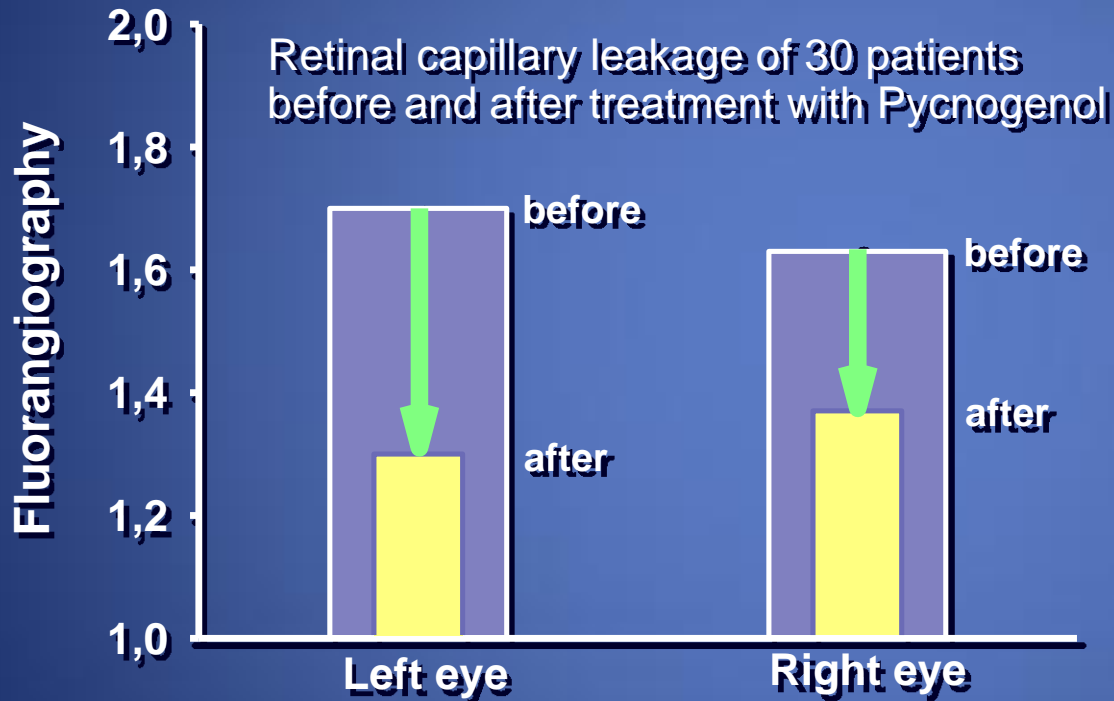


Light receptors
decay causing
vision loss



bleedings

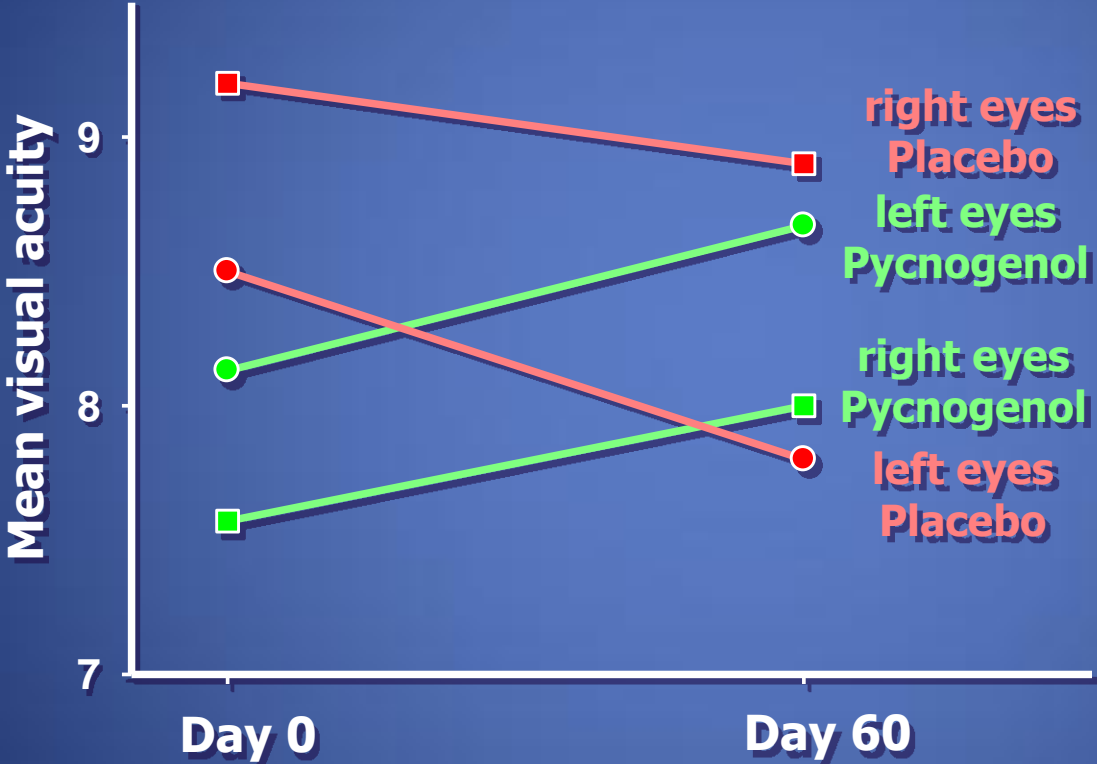
Pycnogenol® seals leaky retinal capillaries



Fluorescence shows current bleedings

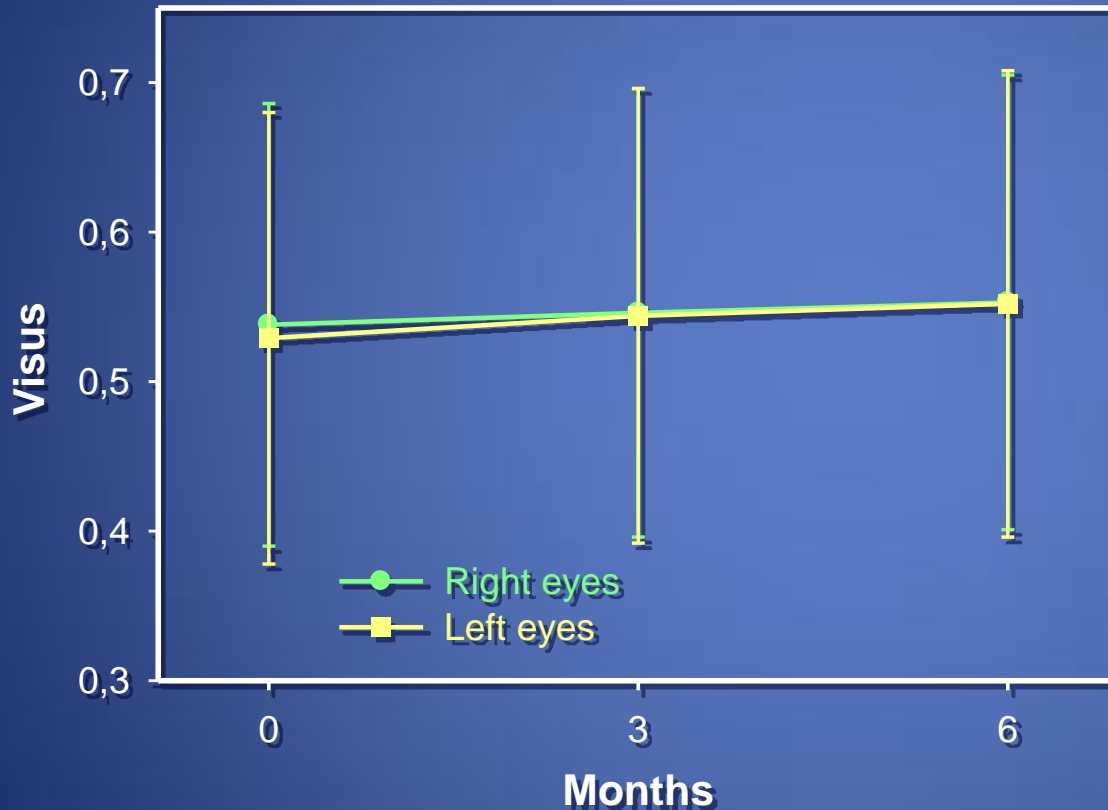
n = 40
150 mg/day
60 days

Pycnogenol® restores vision in retinopathy



Spadea & Balestrazzi, Phytother Res 15: 219-223, 2001

Pycnogenol® maintains eye sight in retinopathy



**1169 patients,
mean age 65.2 years
diabetes type I and II,
since 11 years in average**

**Retinopathy since 2-3 years
on average
Previous treatment in 49 % of
the cases.**

Pycnogenol® 20-160 mg a day

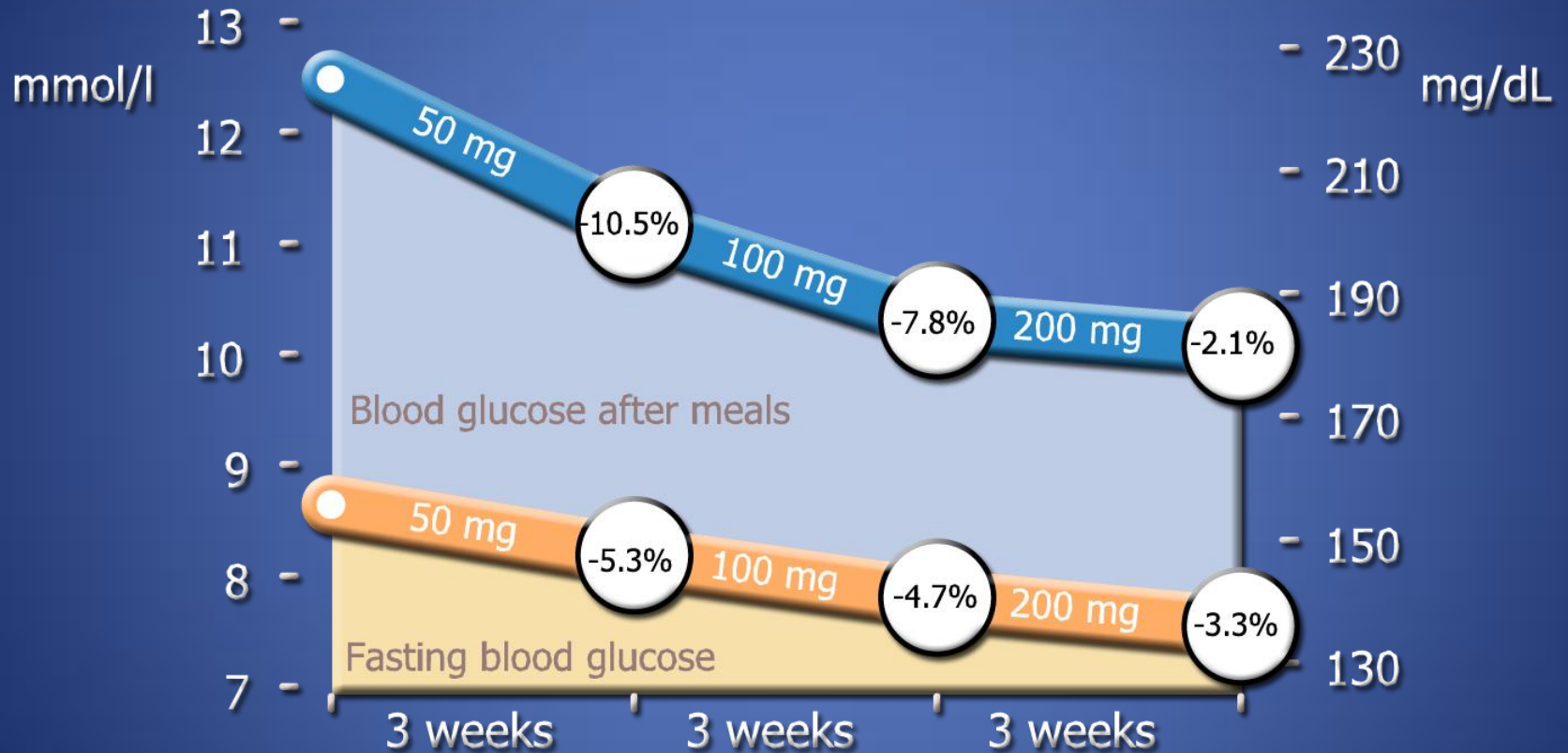
Helping protect against more than age-related diseases



Diabetes
Arthritis
Fertility
Menstrual Pain



Pycnogenol[®] lowers blood sugar



Liu et al., Diabetes Care 27: 839, 2004

Pycnogenol® for heart health & diabetes

University of Arizona, USA

- ✿ 48 type II diabetes patients (40-75 years)
double-blind, placebo controlled, 12 weeks treatment
- ✿ They are on medication: sulfonylurea, metformin, glitazones
but fasting blood is still high: >140 mg/dL (120 is healthy)
- ✿ Patients are medicated with ACE-inhibitors
But patients have borderline hypertension
(average 137 mmHg)

Pycnogenol[®] lowers fasting blood glucose

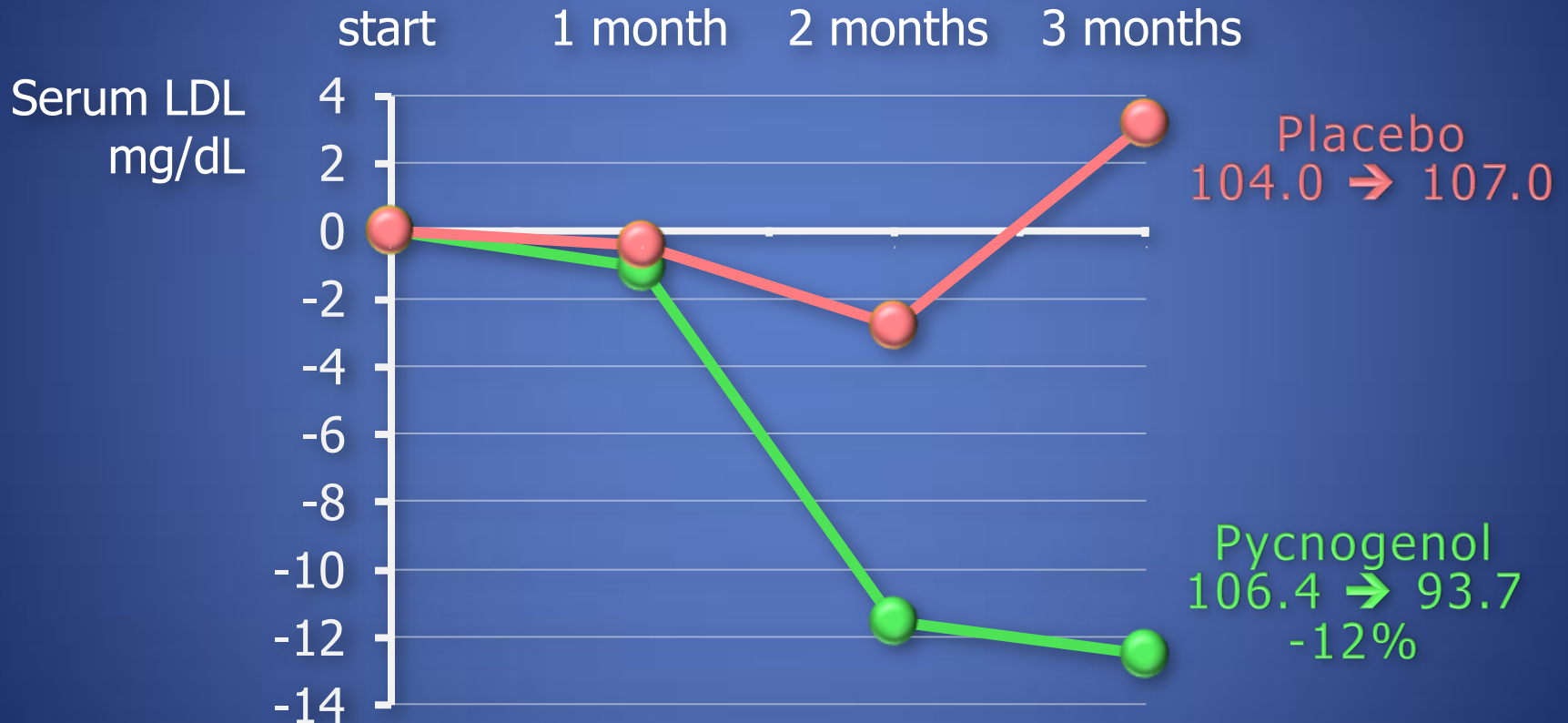


Pycnogenol[®] lowers blood glucose



Zibadi et al., Nutr Res 28: 315-320, 2008

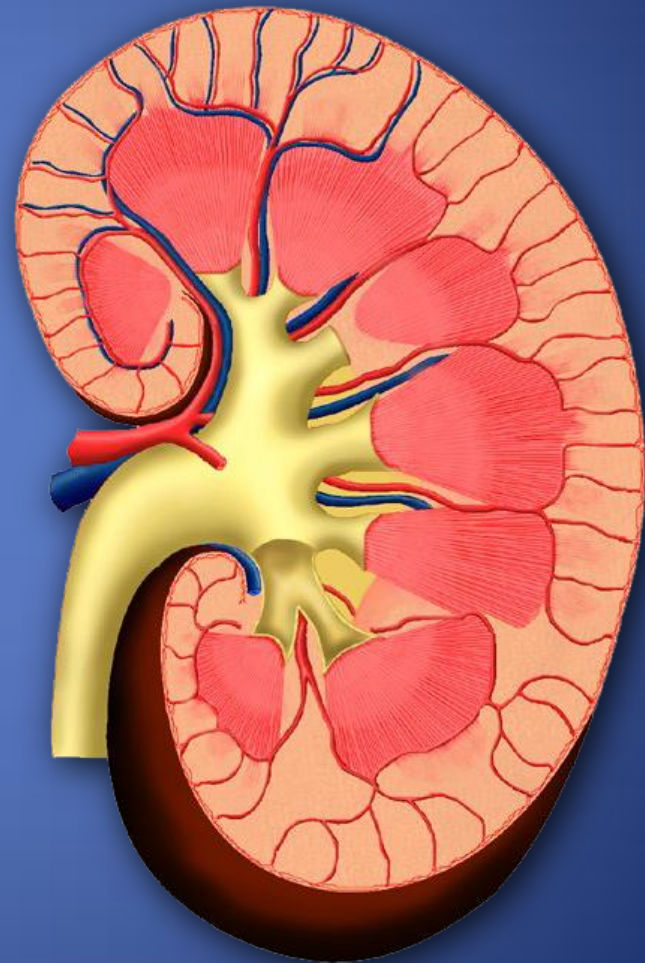
Pycnogenol[®] lowers LDL cholesterol



Zibadi et al., Nutr Res 28: 315-320, 2008

OPCs and kidney function

- Filtration of waste
- pH balance
- Electrolyte balance
- Plasma volume
- Blood pressure
- Impaired in diabetes



Pycnogenol® improves kidney function of type II diabetes patients



Zibadi et al., Nutr Res 28: 315-320, 2008

OPCs for Heart Health, Diabetes and Metabolic Syndrome:



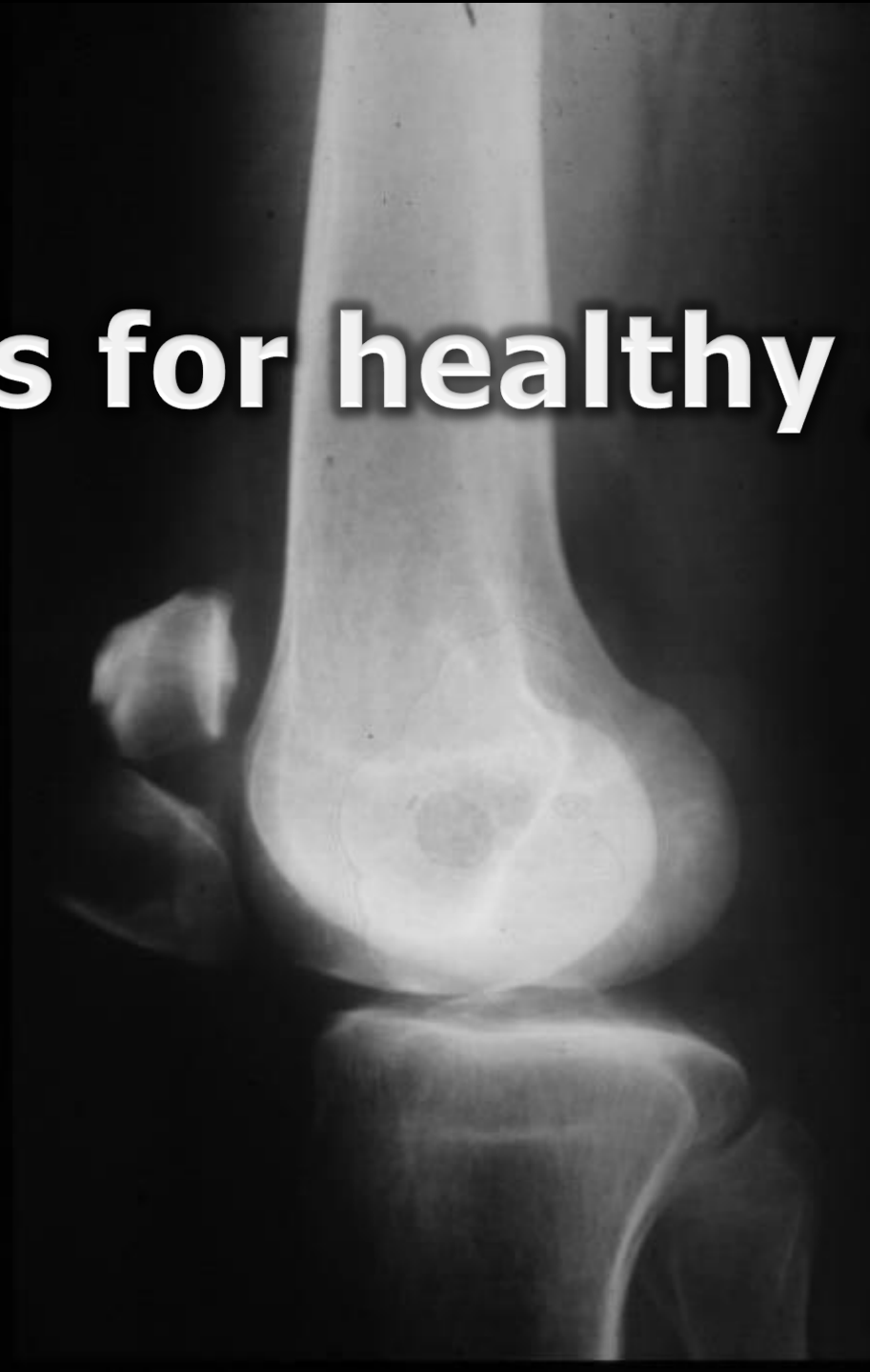
- ❁ Blood sugar
- ❁ Blood pressure
- ❁ Blood circulation
- ❁ Cholesterol
- ❁ Kidney function

Also...

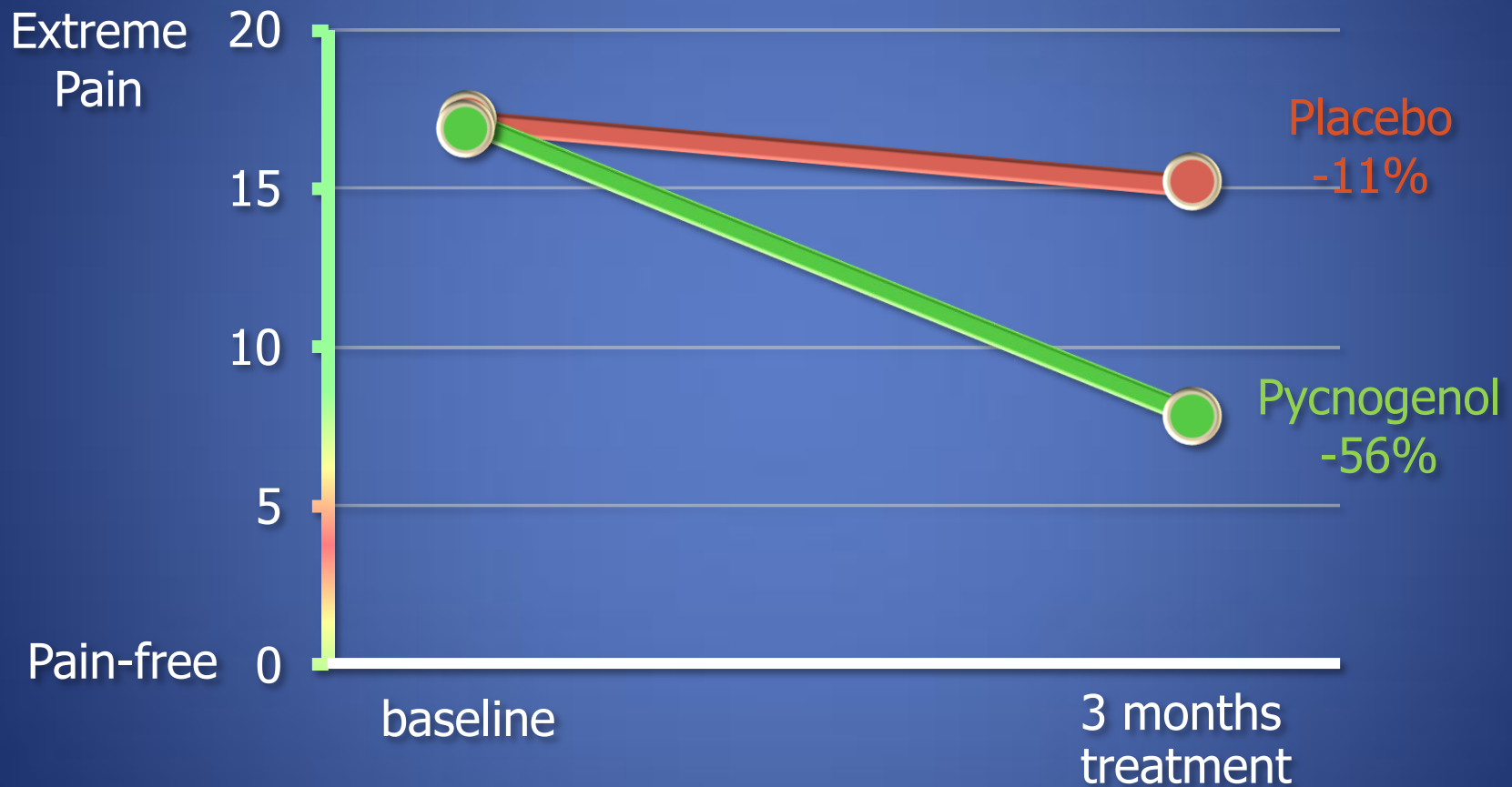
- ❁ Retinopathy
- ❁ Diabetic ulcers



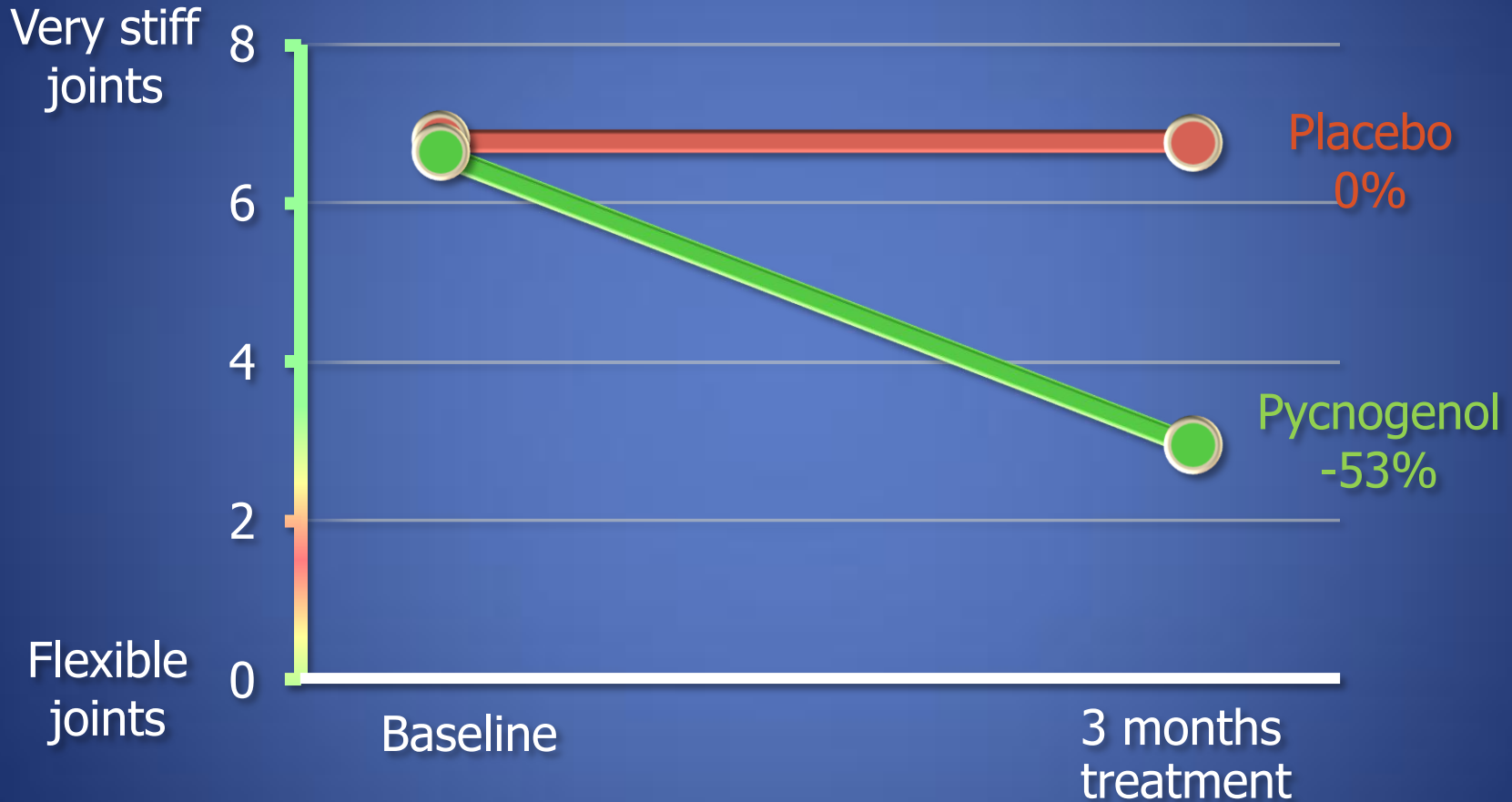
OPCs for healthy joints



Pycnogenol® study with 156 arthritis patients



Pycnogenol[®] improves joint stiffness in 156 patients



Better mobility of arthritis patients with Pycnogenol®

Walking distance on treadmill (0.8km/h 10%)

	Pycnogenol	Placebo
baseline	68 m	65 m
3 months	198 m	88 m

Conclusion on Pycnogenol® for joint health



- OPCs in Pycnogenol provide potent anti-inflammatory activity
 - Stops cartilage degeneration
 - Soothes pain
 - Helps restore mobility
- Cartilage rebuilding
 - Pycnogenol sets the stage for cartilage rebuilding with nutrients such as e.g. glucosamine

Improvement in Sperm Quality and Function with French Maritime Pine Tree Bark Extract

Scott J. Roseff, M.D.

OBJECTIVE: To determine the effects of Pycnogenol® (French maritime pine tree bark extract) on sperm parameters and function in subfertile men.

STUDY DESIGN: Prospective, nonrandomized, clinical study in a private infertility practice. Nineteen subfertile men were given 200 mg Pycnogenol® daily orally for 90 days. Semen samples were analyzed before and after treatment for sperm count, motility score and strict morphology before and after capacitation, and mannose receptor binding.

RESULTS: The mean sperm morphology following Ham's F-10 capacitation increased by 38% following Pycnogenol® treatment, and the mannose receptor binding assay scores improved by 19%.

CONCLUSION: Pycnogenol® therapy resulted in improved capacitated sperm morphology and mannose receptor binding. The increase in morphologically and

count; sperm motility; sperm morphology following Pycnogenol®.

Up to 60% of infertile couples

The increase in morphologically and functionally normal sperm may allow infertile couples diagnosed with teratozoospermia to forgo IVF and donor sperm insemination....

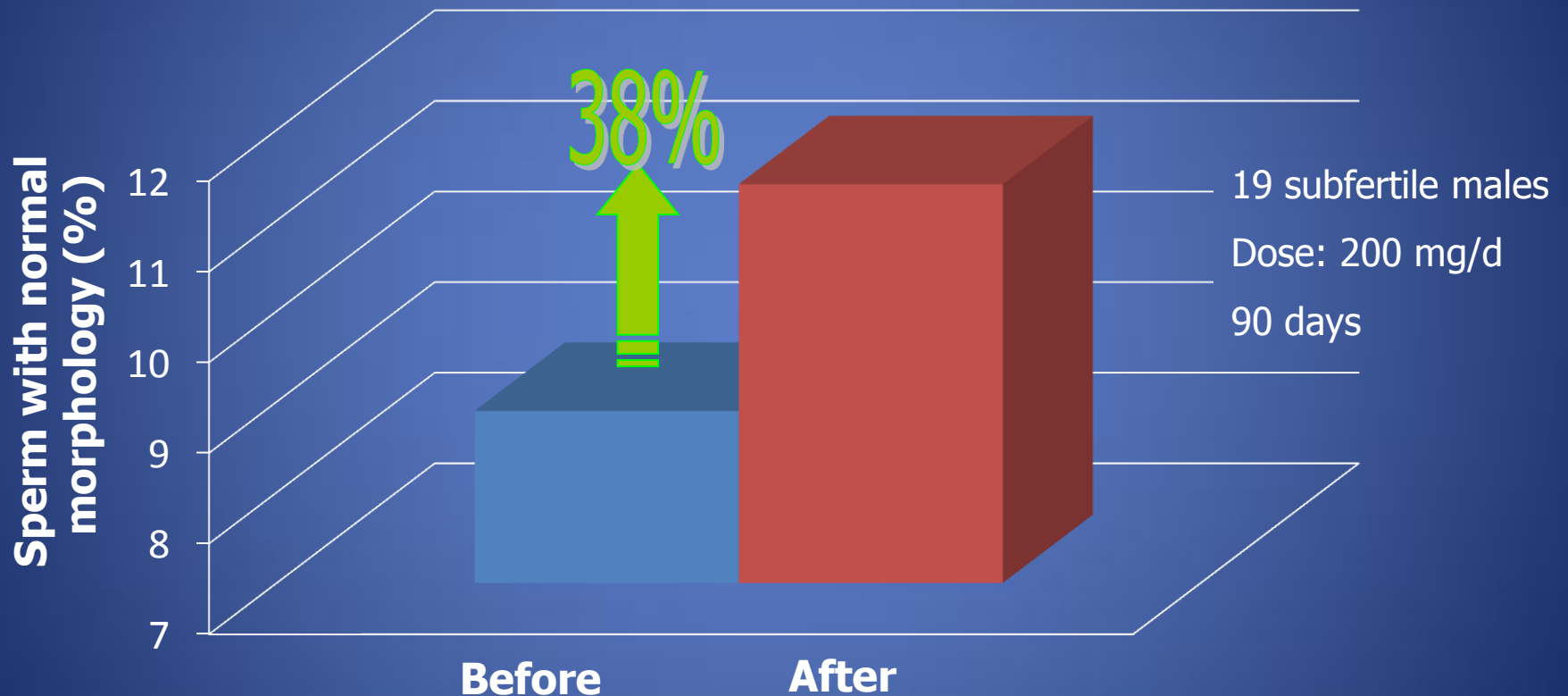


cent of infertile couples are thought to have teratozoospermia. The production of small quantities of reactive oxygen species (ROS) is thought to be involved in many facets of human male infertility.¹ Sperm

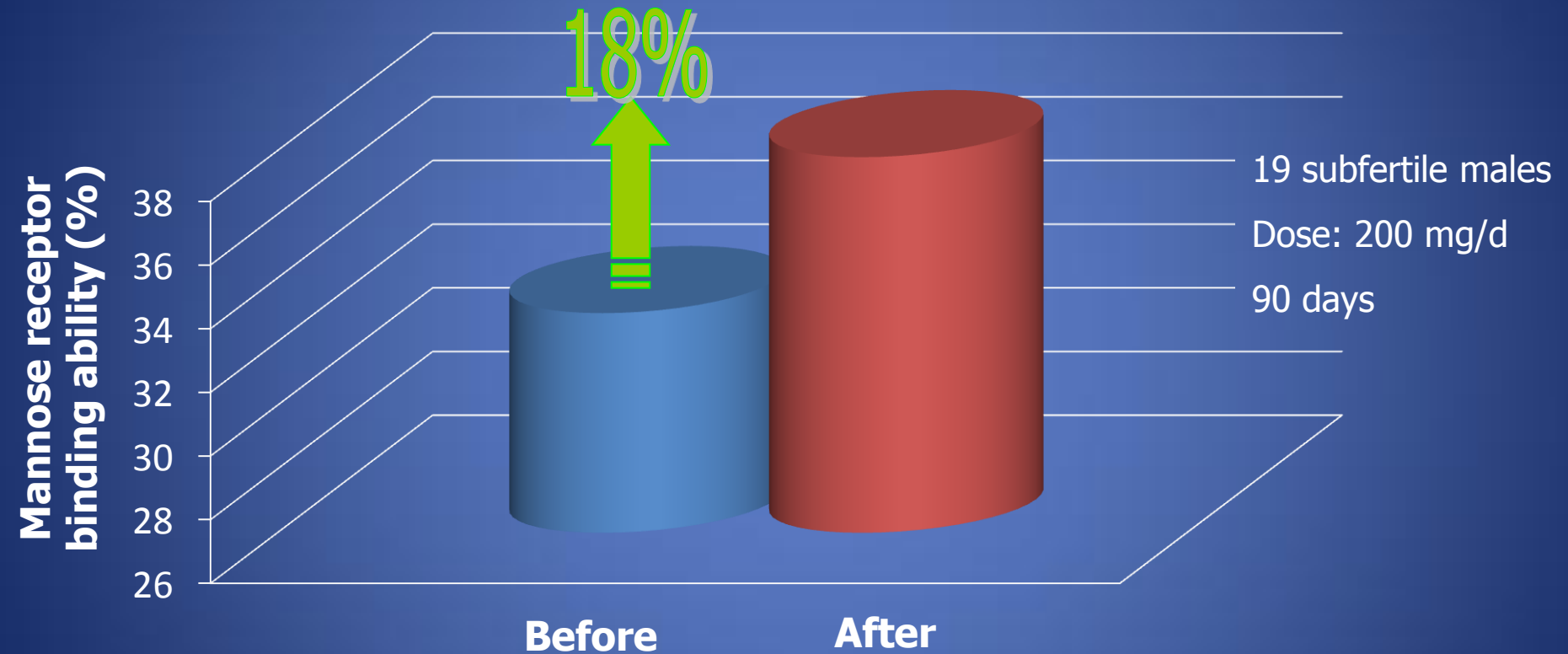
exposed to superoxide anions are apparently rendered dysfunctional by lipid peroxidation and altered membrane function, along with impaired metabolism, morphology and motility.²⁻⁴ The formation of reactive oxygen species has been associated with decreased sperm-egg interaction and reduced fertility.⁵

Vitamin C has been given to infertile men for

Quality of sperm improves with Pycnogenol®



Binding ability of sperm improves with Pycnogenol®



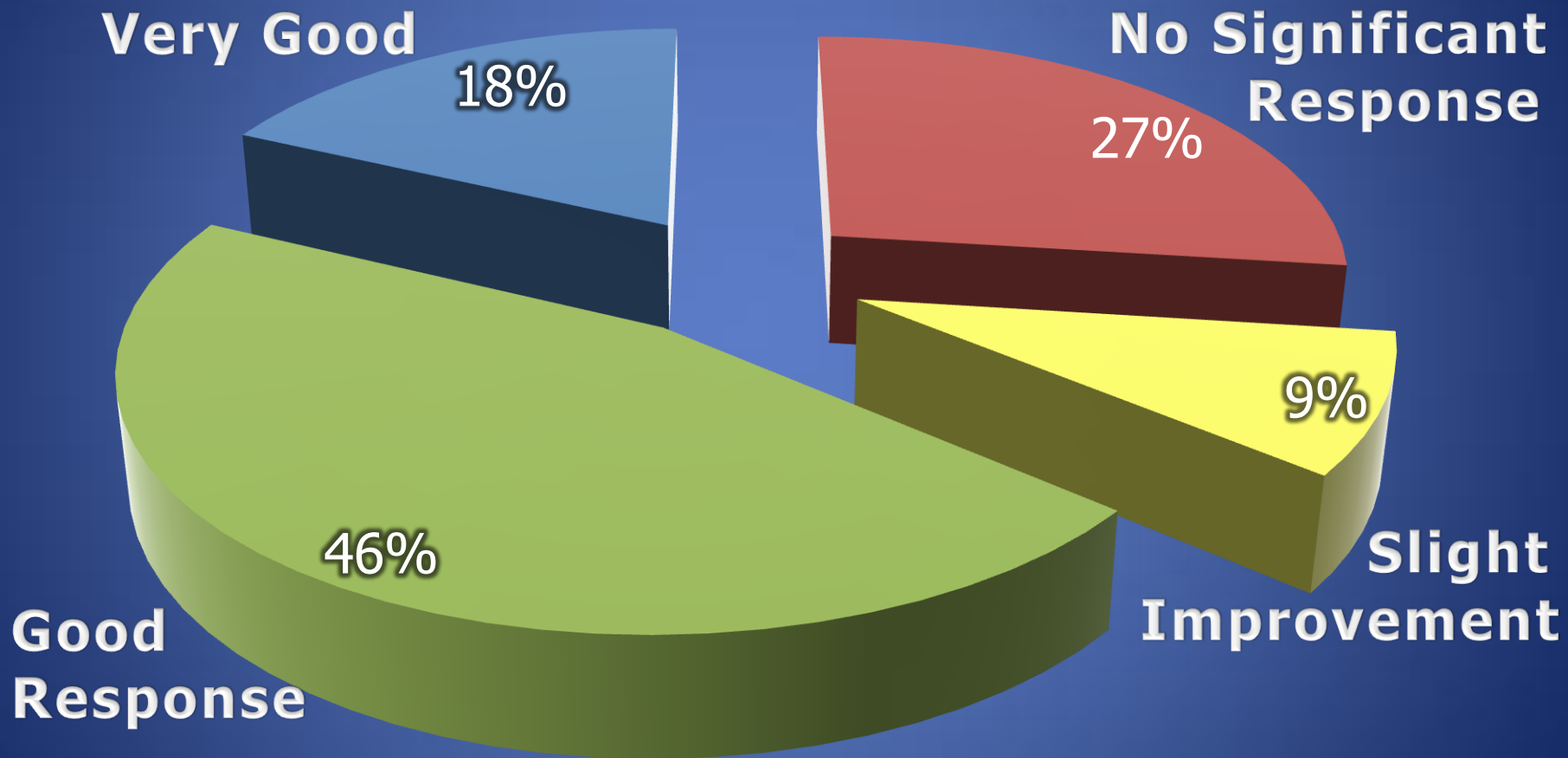
OPCs for menstrual pain



#1 medical reason for women to miss work.

Pycnogenol® helps relieve menstrual pain

Cramping Pain

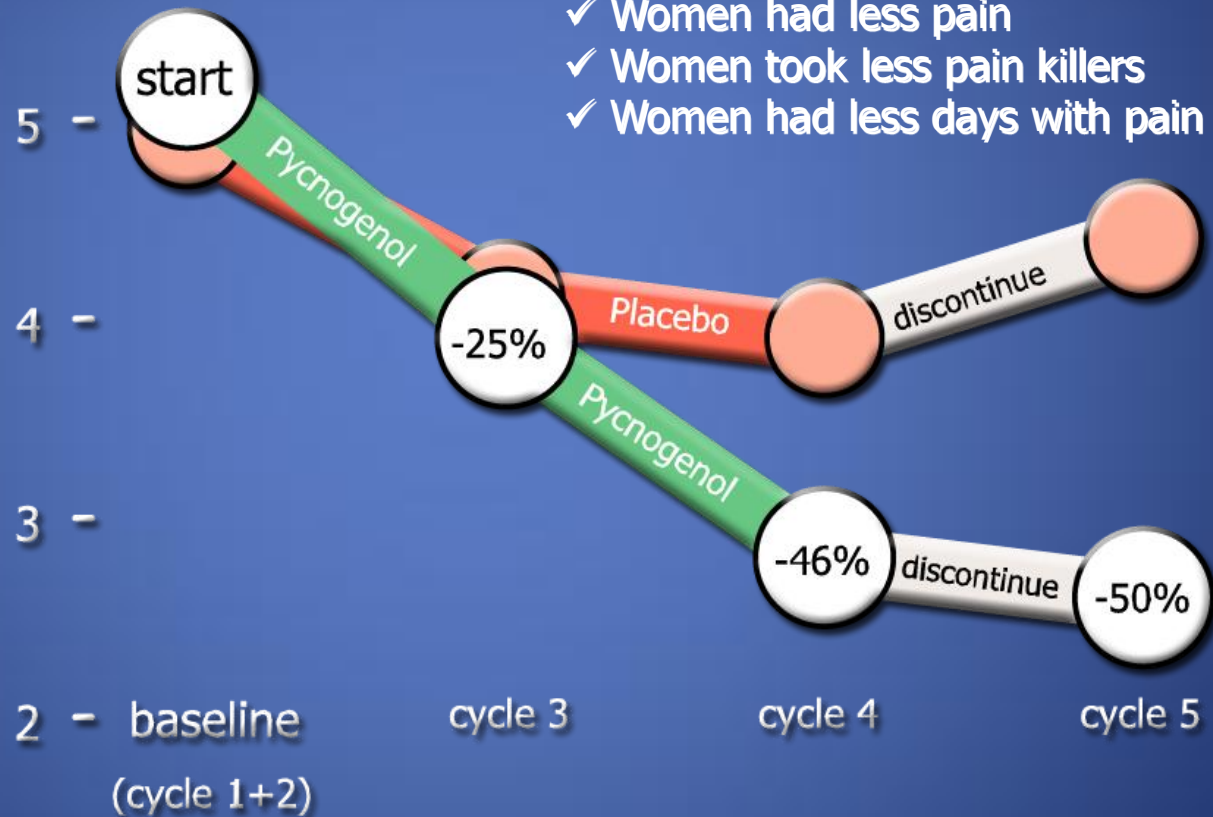


Pycnogenol® helps relieve menstrual pain

Multi-center field study in Japan

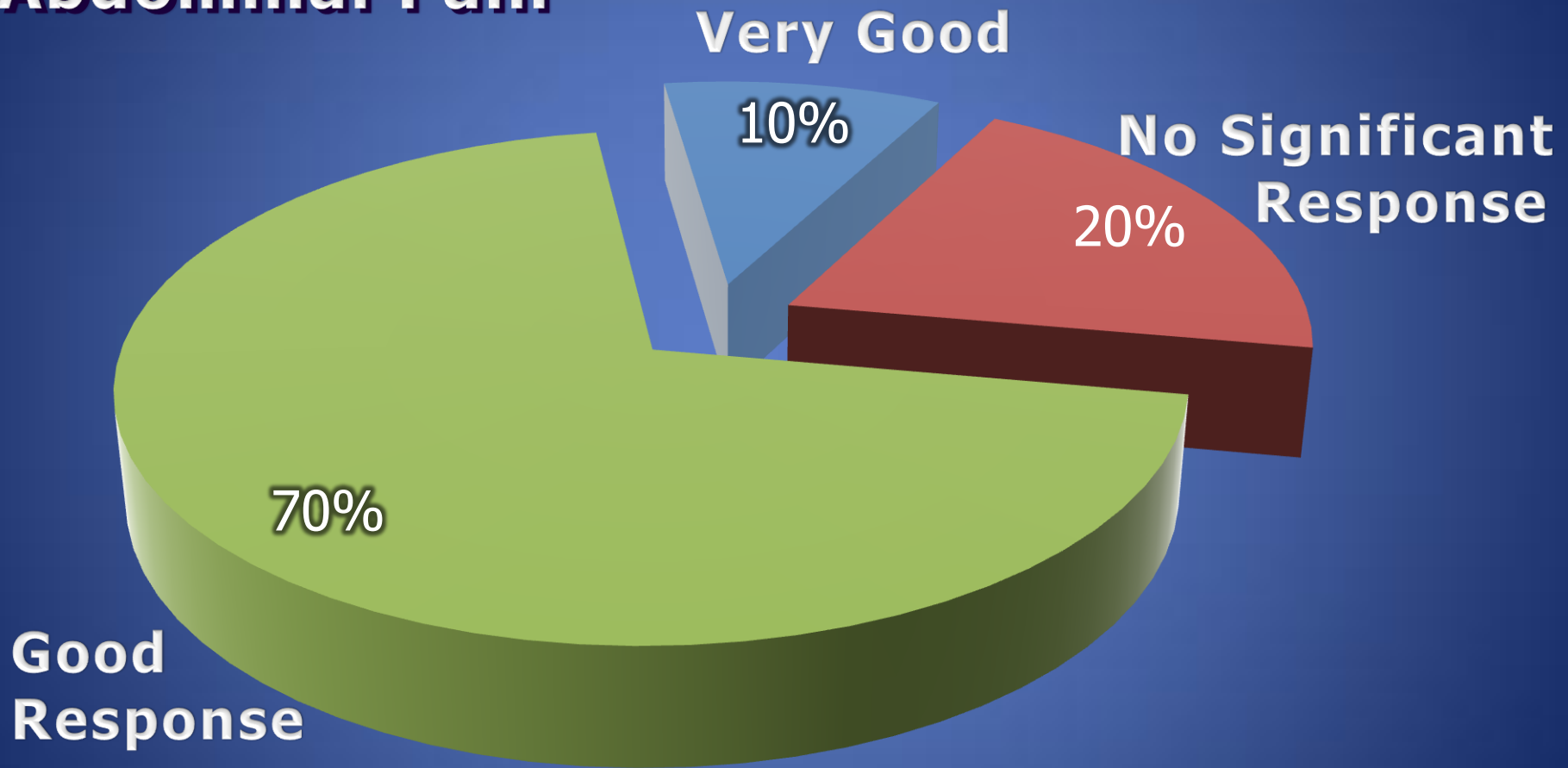
- ✓ Women had less pain
- ✓ Women took less pain killers
- ✓ Women had less days with pain

NSAIDs
tablets



Pycnogenol® helps relieve severe menstrual pain

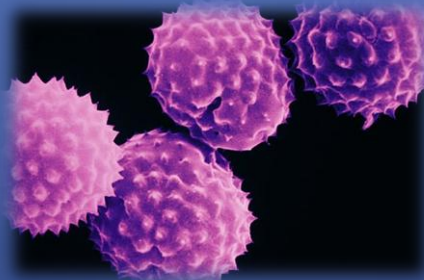
Abdominal Pain



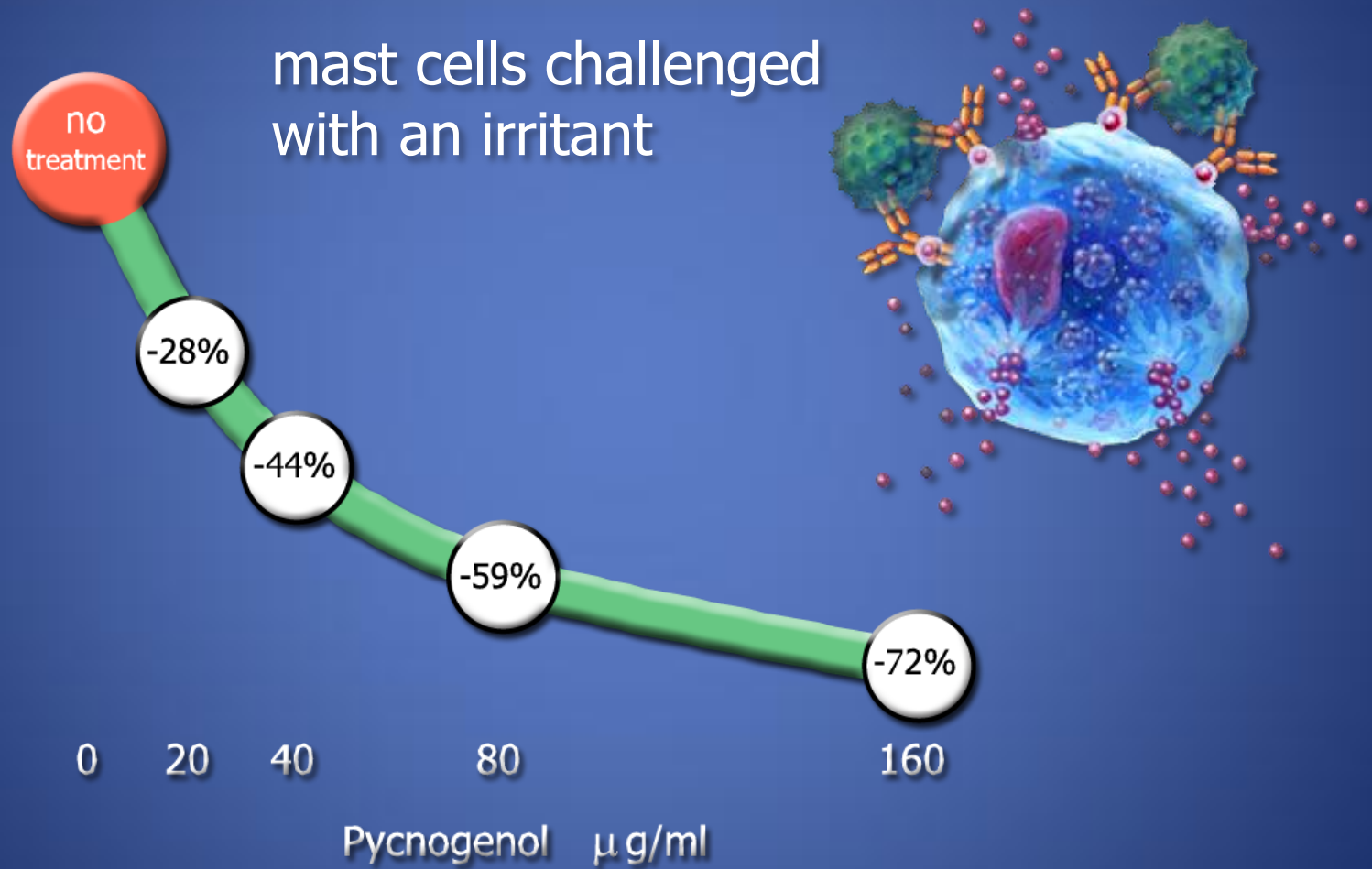
OPCs for Hay Fever and Asthma

Taiwan:

- ❖ 3 million people have hay-fever (10% population)
- ❖ 1.7 million children have asthma (7.4% population)



OPCs in Pycnogenol[®] block histamine release



Inflammatory leukotrienes cause lasting symptoms

- Leukotrienes cause local tissue inflammation
- Airway constriction (impaired breathing)
- Mucous secretion
- Coughing and sneezing



Mucous secretion
and inflammation

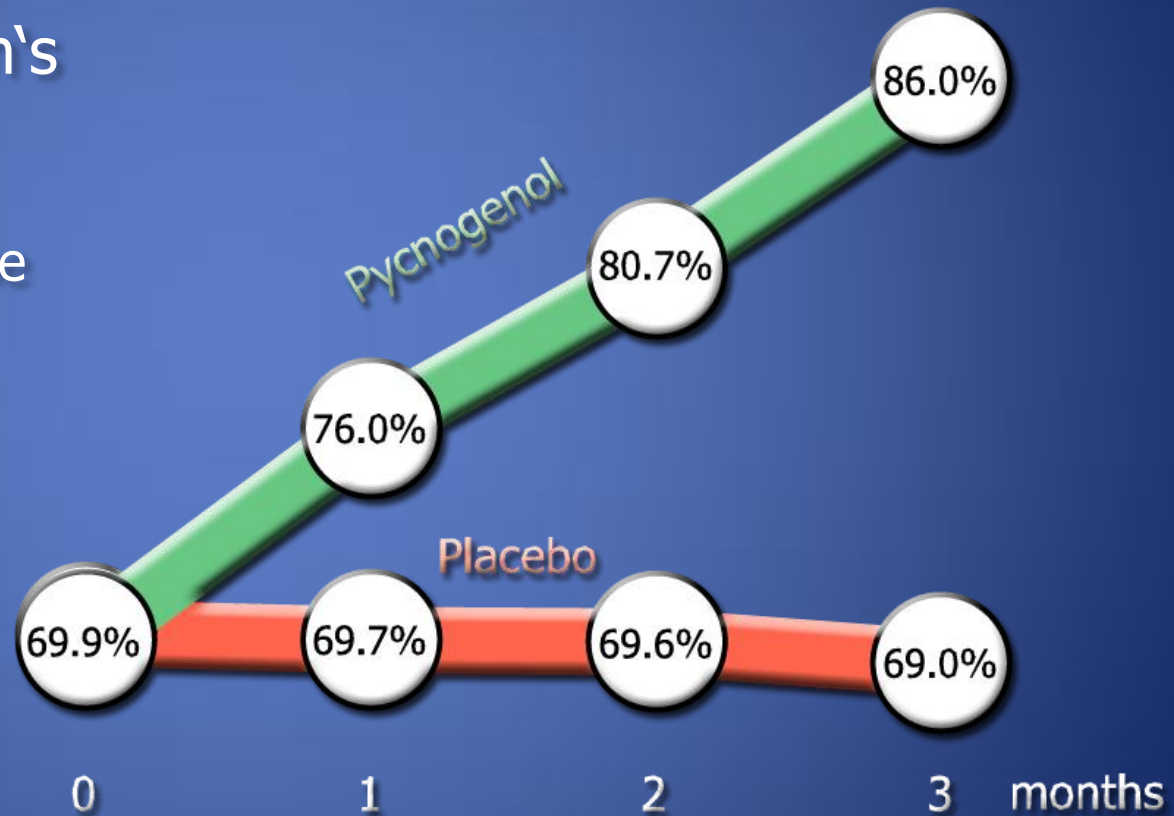
Healthy bronchial
tube

Pycnogenol® improves breathing in asthmatic children

Estimation of children's breathing ability:

«Forced expiration volume in 1 second»

The percentage of the lung volume which a child can exhale within 1 second



Pycnogenol® lowers leukotrienes in children

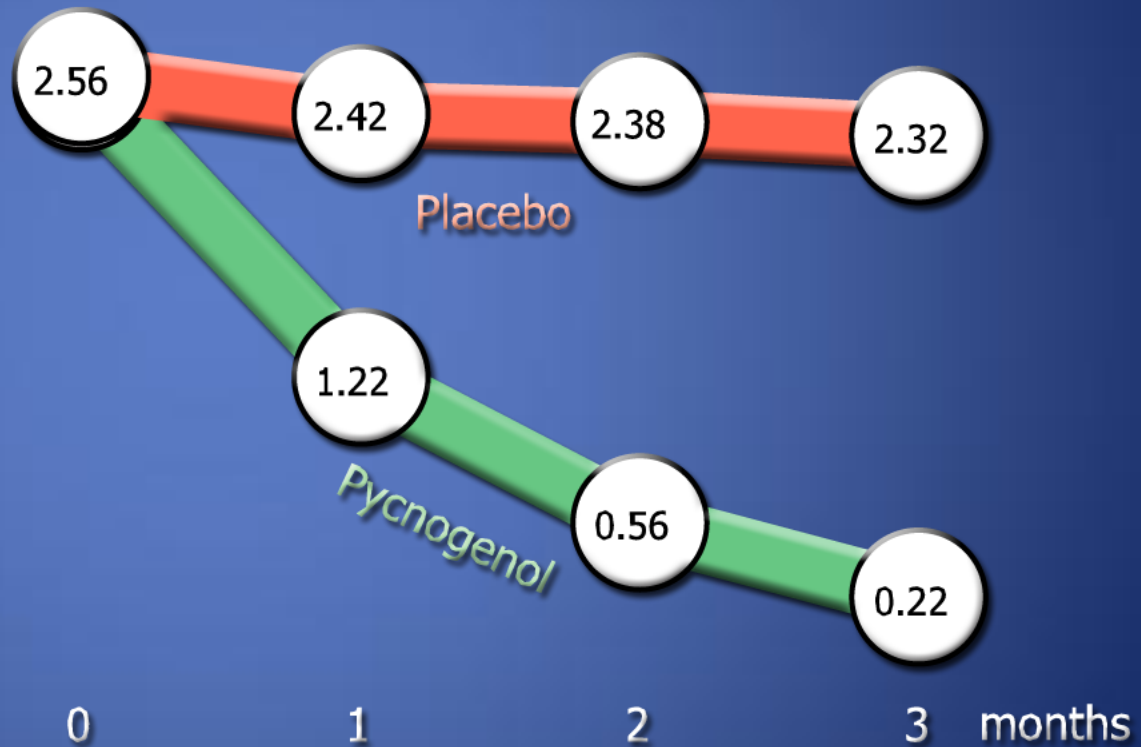
Pycnogenol® significantly lowers Leukotrienes, inflammatory mediators, in the children's urine



Lau et al., J Asthma 41: 825-832, 2004

Asthmatic children require less rescue inhalers

Average number of albuterol puffs required per 24 hours



Lau et al., J Asthma 41: 825-832, 2004

Attention Deficit Hyperactivity Disorder



Pycnogenol® shown to be helpful for ADHD

- Center for Disease Control and Prevention in Atlanta:
- 7.8% of children were diagnosed with ADHD in 2003
 - Rate of diagnosis increased 3% per year between 1997 and 2006.



Pycnogenol® shown to be helpful for ADHD

Psychiatric Investigations



Parents



Teachers

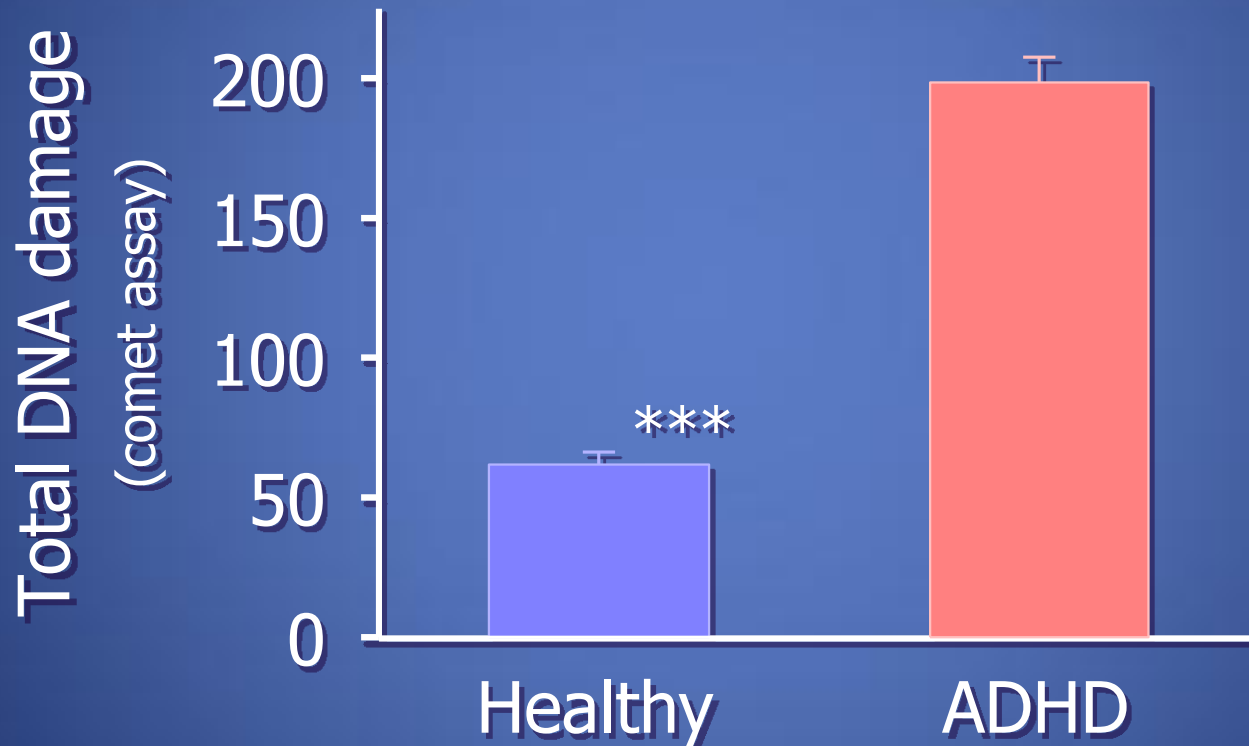
Inattention score -14.4%

-10%

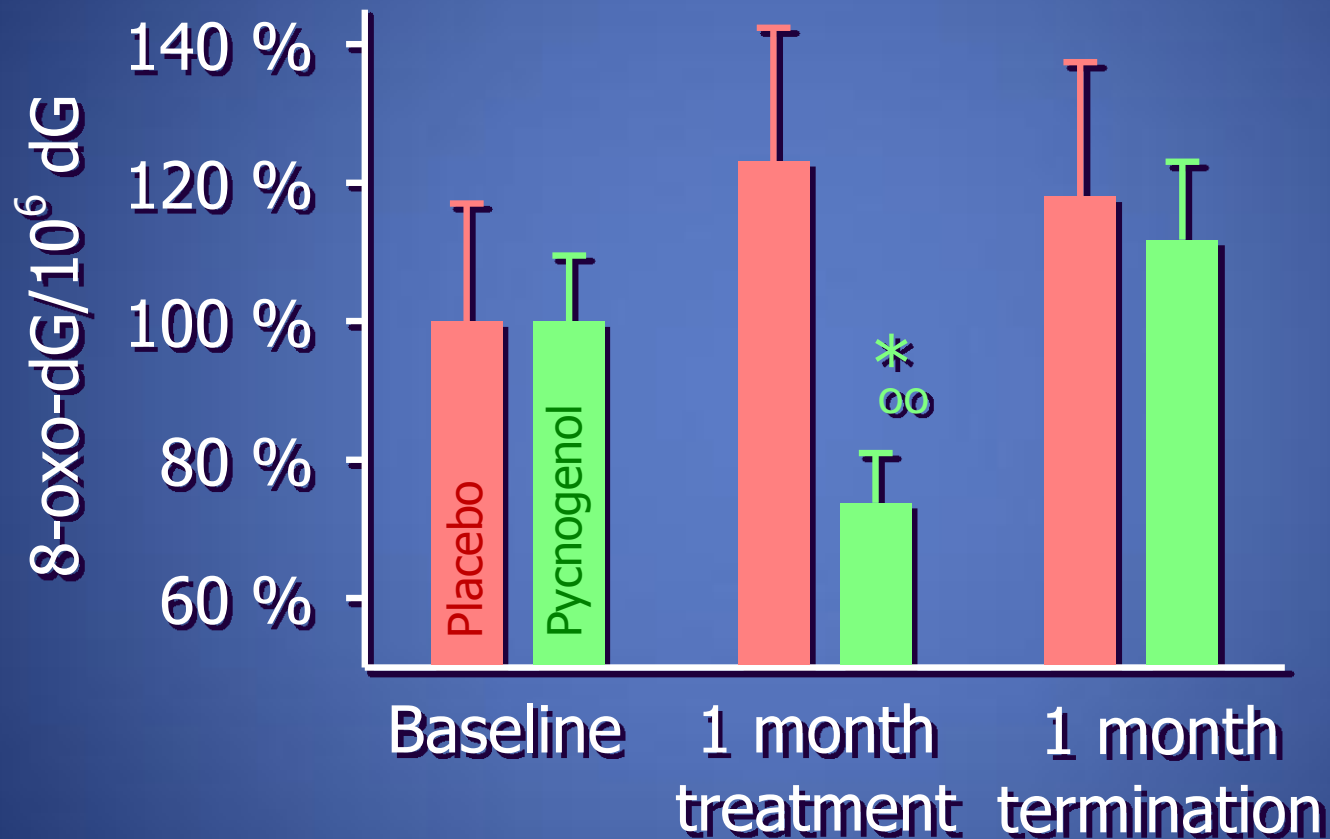
Hyperactivity score -18.3%

-16.5%

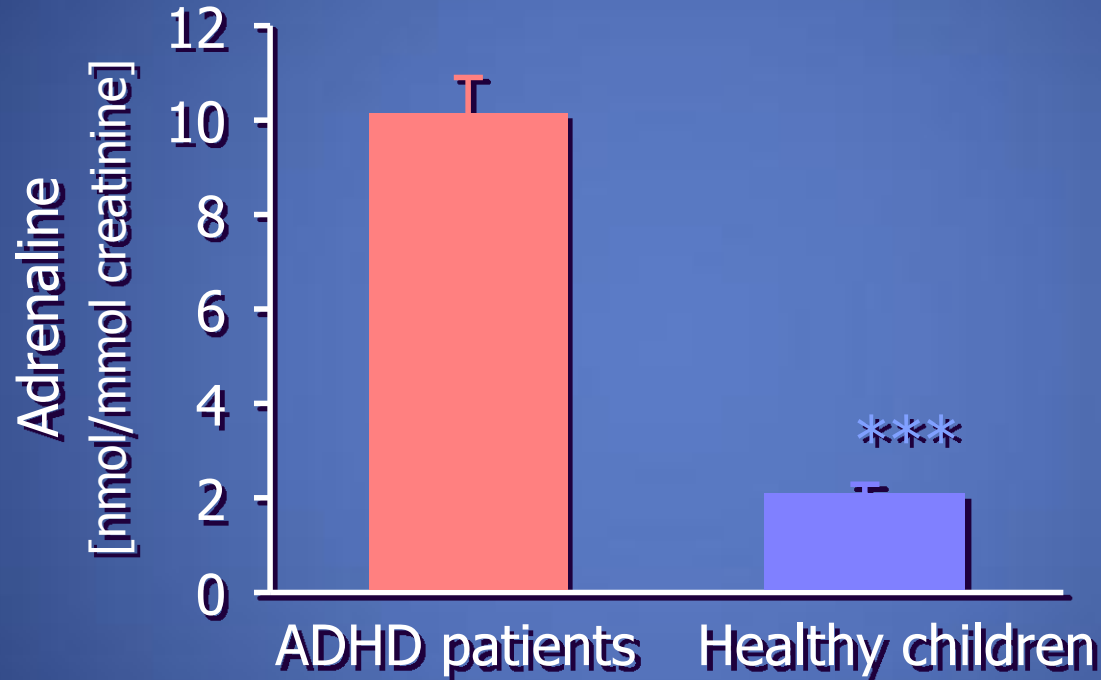
ADHD increases oxidative stress



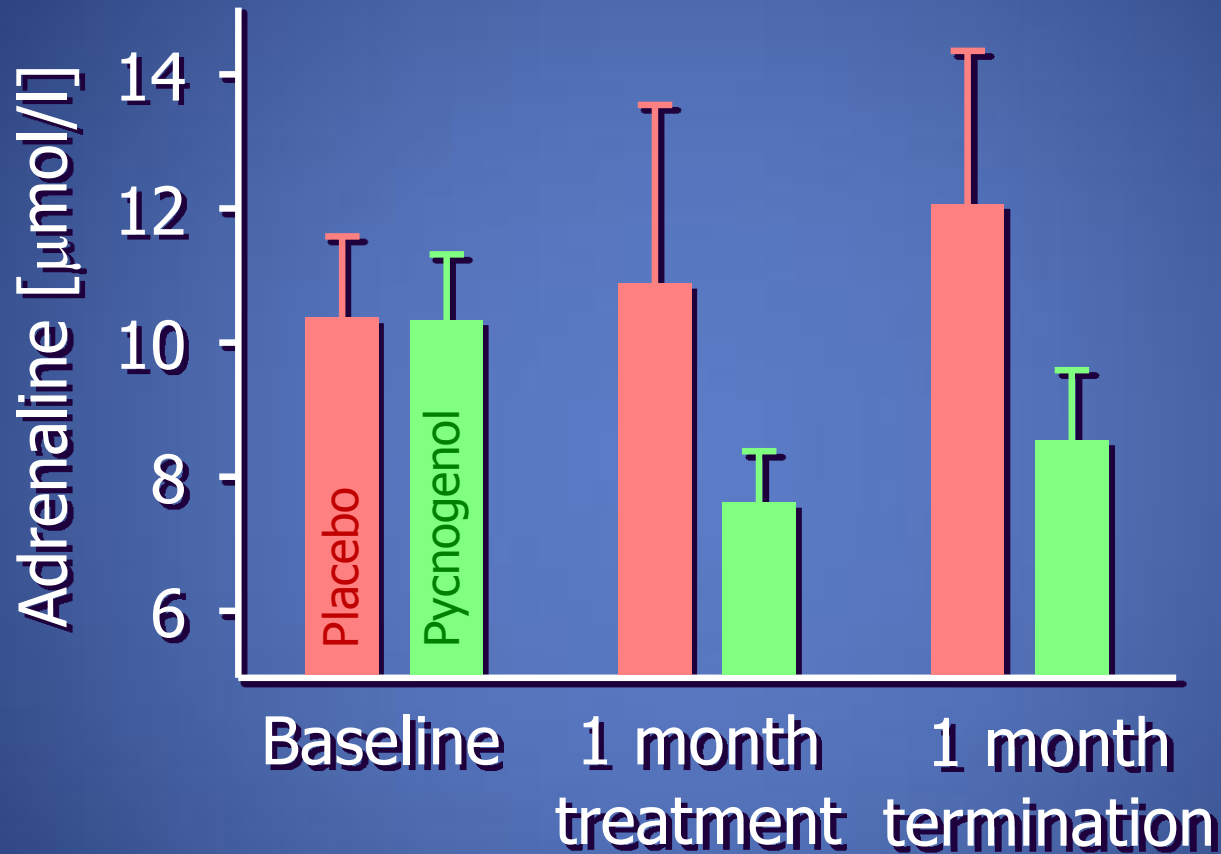
Pycnogenol® protects DNA from oxidative damage



ADHD elevates stress hormones

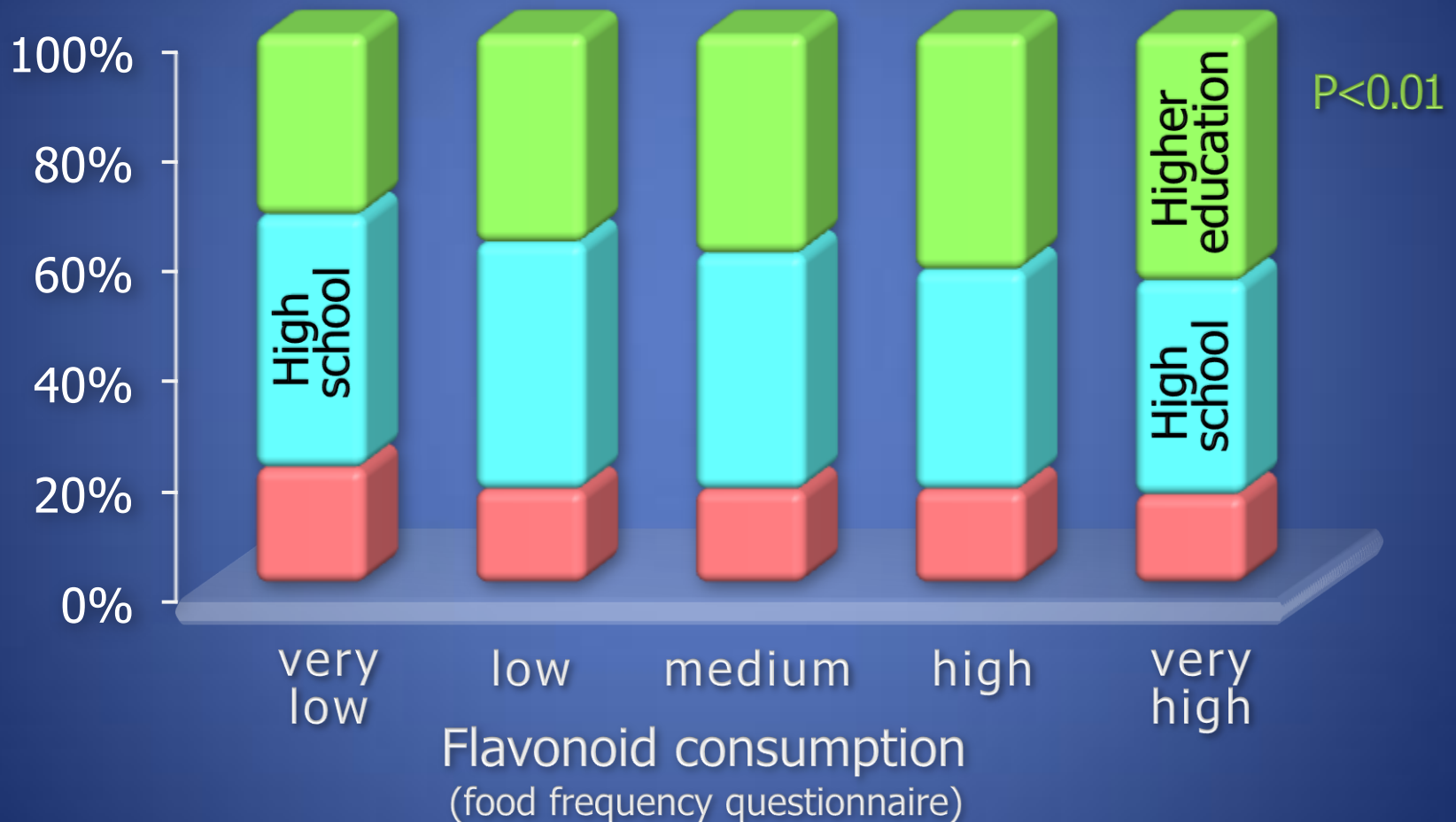


Pycnogenol® lowers stress hormones in ADHD patients



Epidemiology: Education and flavonoid (OPC) consumption

Epidemiologic study with 34,489 postmenopausal women



Live Better, Longer with OPCs

Heart Health
Blood Flow
Blood Vessel Health
Healthy Aging
Skin Health
Eye Health
Fertility
Menstrual Health
Cognitive Function



Keep well
every day

