



Physical Exercise & Heart Health

Ms Christina Desira
B.Sc. (Hons) Physiotherapy
Primary Health Care

Ms Christina Desira. Heart Health Seminar 2018 PHC



General Benefits of Regular Exercise

- Increase in aerobic capacity
- Reduction in body weight
- Reduction in blood pressure
- Reduction in bad (LDL and total) cholesterol
- Increase in good (HDL) cholesterol
- Increase in insulin sensitivity



Modifiable & Non-Modifiable Risk Factors for CVD

- ▶ Non-modifiable risk factors: age, male gender, ethnicity, family history & socioeconomic status
- ▶ Amendable to intervention:
 - ▶ elevated blood pressure
 - ▶ abnormal blood sugar
 - ▶ high cholesterol
 - ▶ obesity
 - ▶ excessive stress
 - ▶ high fat and high calorie diet
 - ▶ smoking



Demographics

- ▶ CVDs are the number 1 cause of death globally (WHO, 2017)
- ▶ CVD accounts for 37% of all deaths in the EU. (European CVD Statistics 2017)
- ▶ Locally, heart disease causes 20% of deaths. (Xuereb, R., 2017, Dept. of Cardiology)
- ▶ Of the total cost of CVD in the EU (€210 billion a year),
 - ▶ around 53% (€111 billion) is due to health care costs,
 - ▶ 26% (€54 billion) to productivity losses
 - ▶ 21% (€45 billion) to the informal care of people with CVD



Physical Fitness

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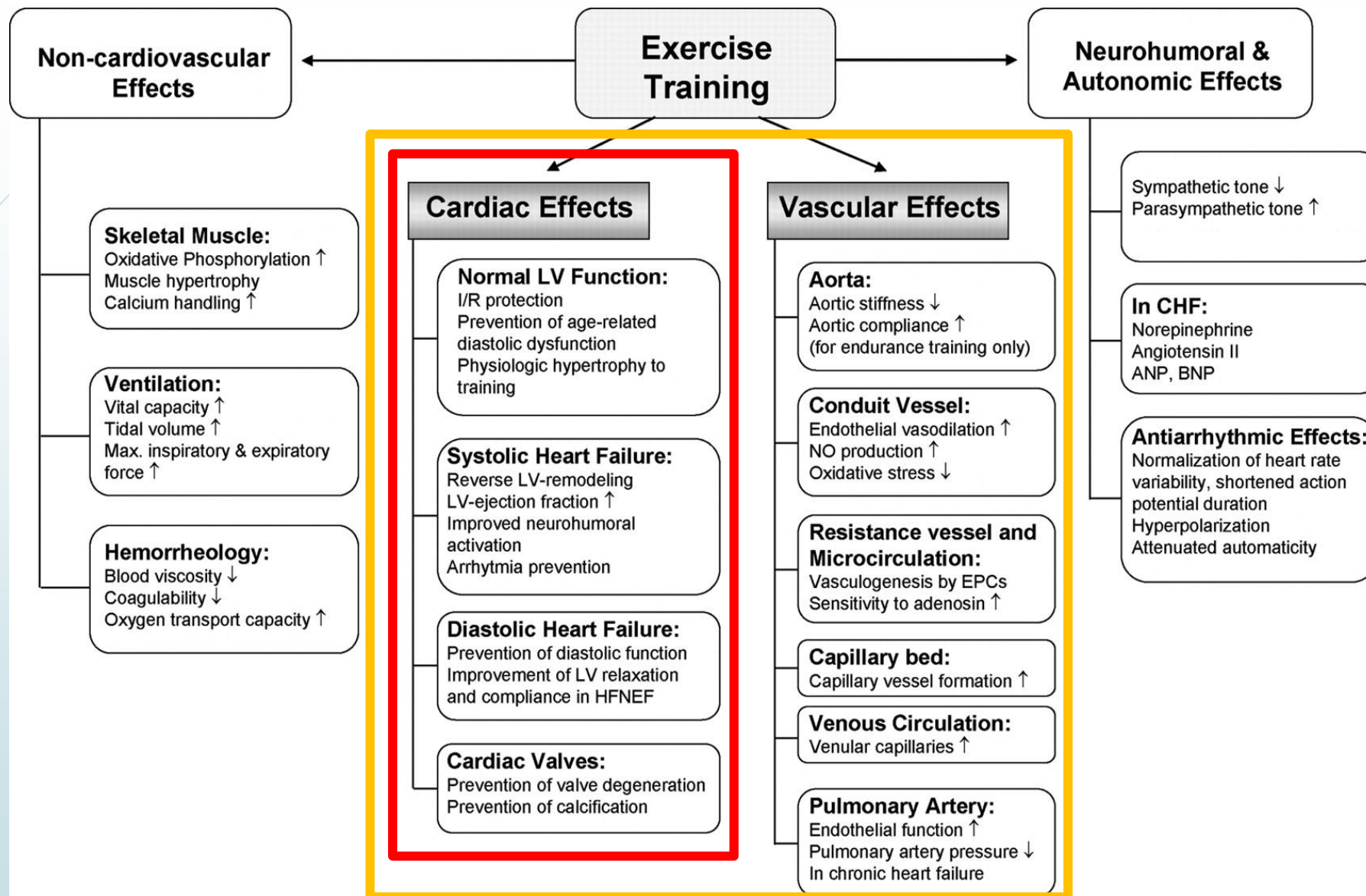
PHYSICAL FITNESS

is divided into five **HEALTH-RELATED** and six **SKILL-RELATED** components.





Physiological Effects of Cardiorespiratory Fitness on the Heart





Recommendations of Physical Activity for Cardiorespiratory Fitness

European Society of Cardiology (ESC)

American Heart Association (AHA),

Centres for Disease Control and Prevention (CDC)

American College of Sports Medicine Consensus (ACSM)

For Overall Cardiovascular Health:

At least **30** minutes of moderate-intensity aerobic activity **At least 5 days** per week for a total of **150** minutes



OR

At least **25** minutes of vigorous aerobic activity **At least 3 days** per week for a total of **75** minutes



or a combination of the two

AND


Moderate to **HIGH INTENSITY** muscle-strengthening activity **At least 2 days** per week for additional health benefits



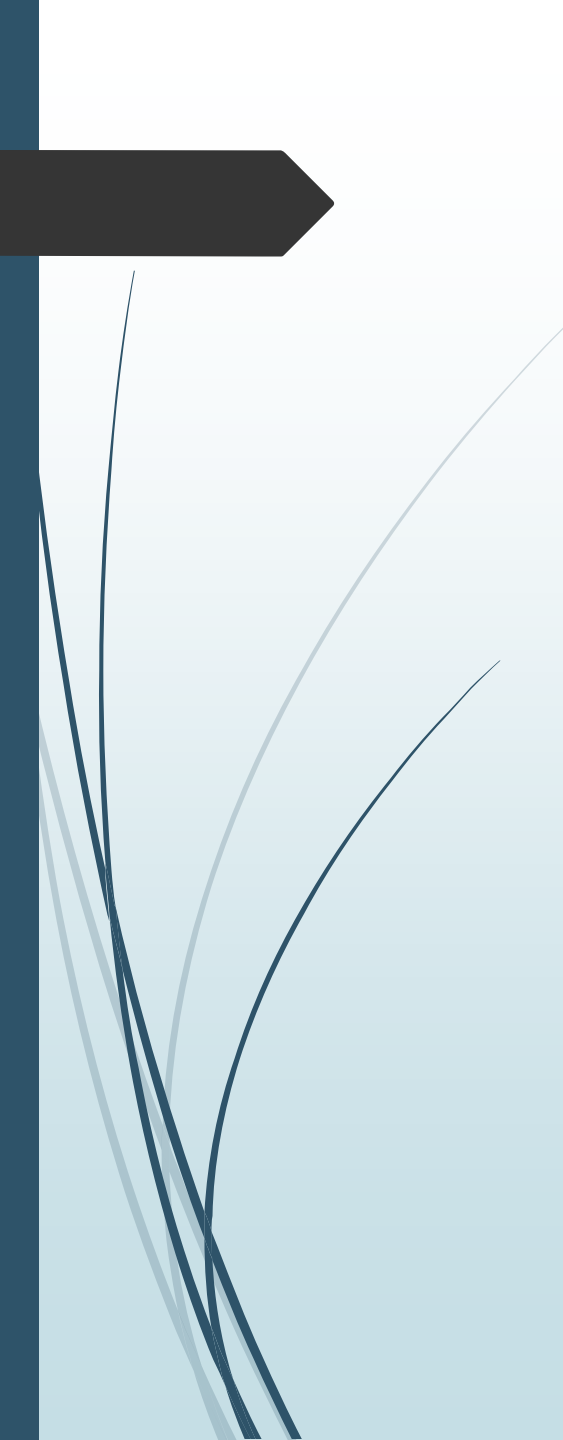
For Lowering Blood Pressure and Cholesterol:

An average of **40** minutes of moderate- to vigorous-intensity aerobic activity **3-4 days** per week





Objective Measurements for Cardiorespiratory Fitness



Test	Setting	Difficulty Level
VO2 max	Clinical: treadmill/ stationary bike, breathing mask	Variable
12 minute Run test	Field: Distance/ stopwatch	Suitable for high fitness levels
3min step test	Field/ clinic/ gym: Step/ HR pre & post/ stopwatch	Variable
6 minute Walk test	Field/ clinic/ gym: Distance/ stopwatch/ pulse oximeter	Suitable for moderate to severe heart/lung disease



Studies

Incidence* of coronary heart disease, per 1,000 men per year, 1949–1952, age-standardized rates (4)

	Sudden death [†]	Total incidence
London: Double-decker busmen		
Ages 35–64		
Conductors	0.5	1.9
Drivers	1.1	2.7
National Government Service		
Ages 35–64		
Postmen	0.4	1.8
Telephonists [‡]	0.8	2.4

*Incidence: First clinical appearance of the disease.

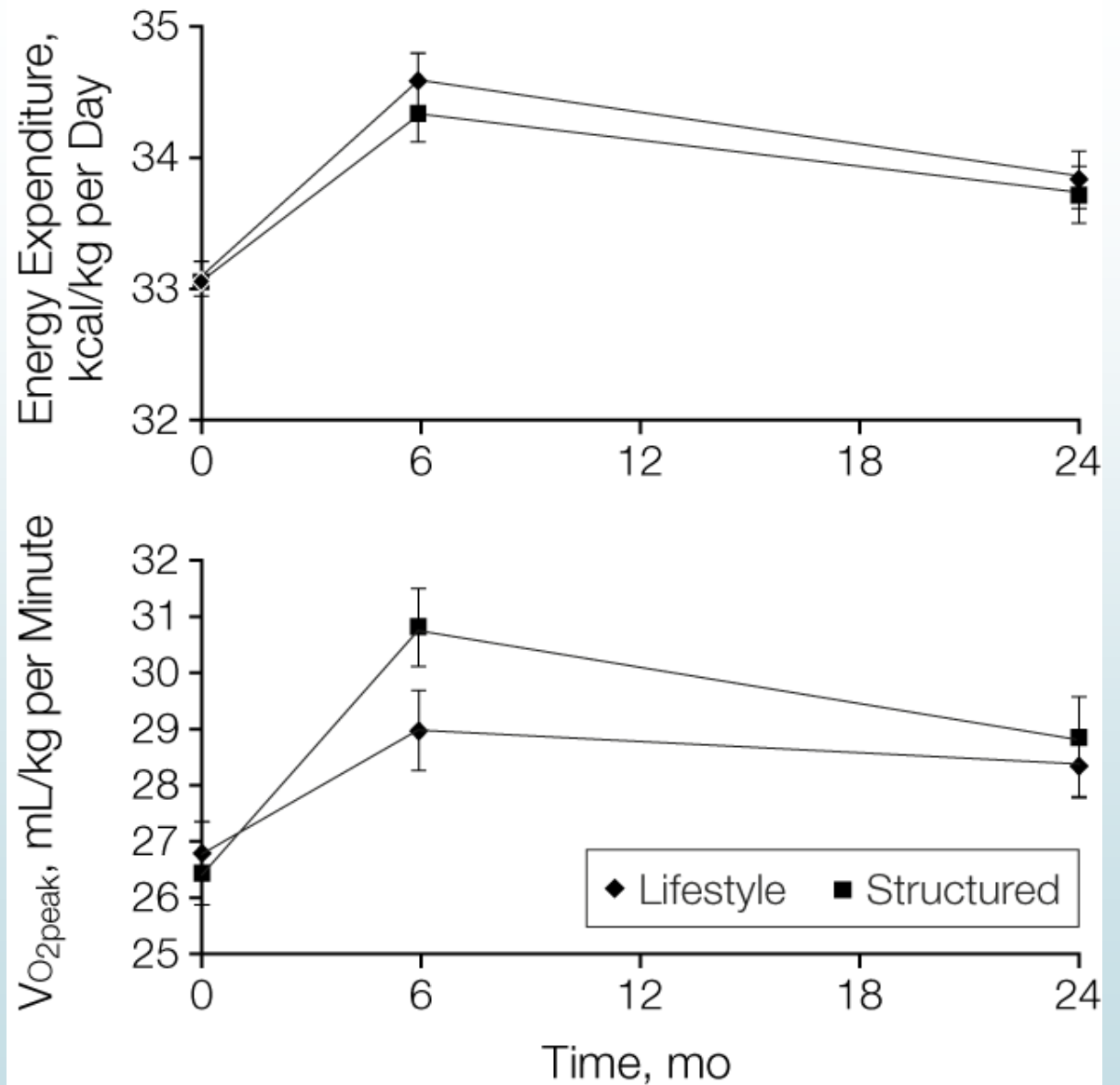
[†]First appearance of the disease with no preceding sickness-related absence from work.

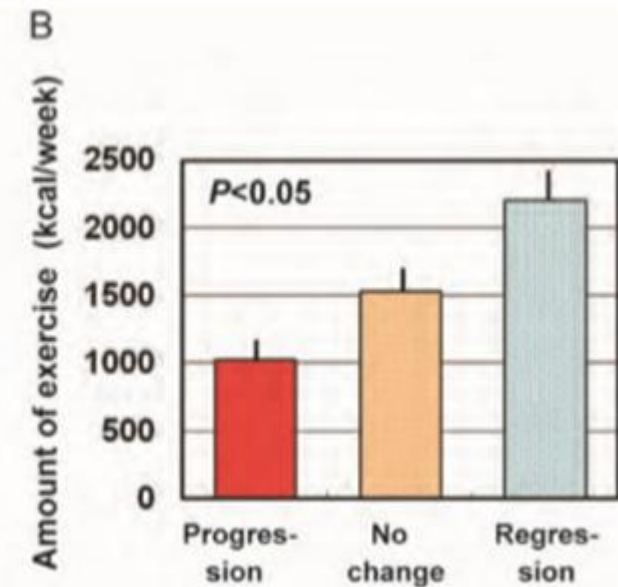
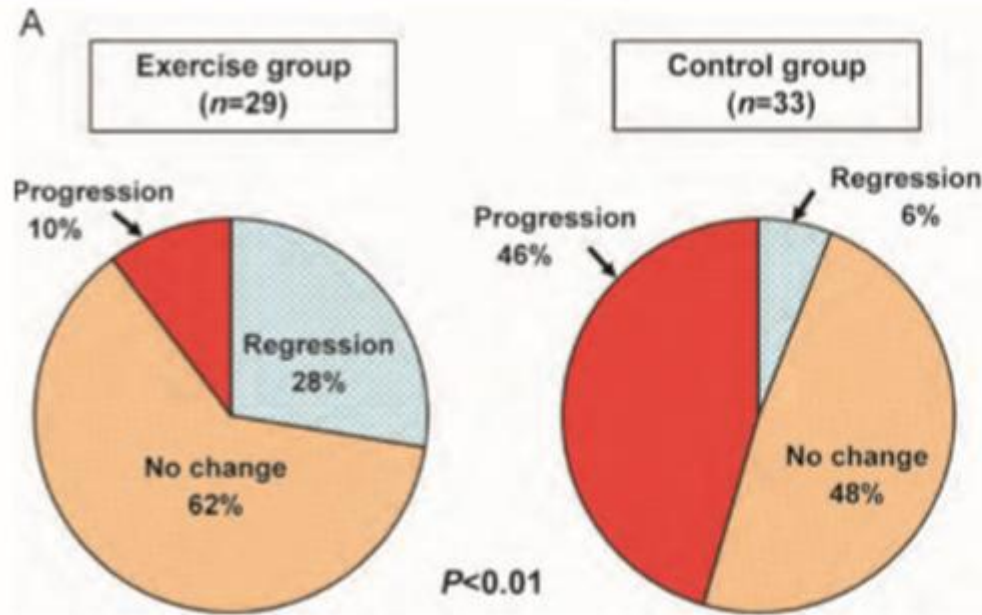
[‡]Men working mainly in Security and Foreign Office.

Blair, S.N. & Morris, J.N., 2009.

In previously sedentary healthy adults, a lifestyle of **physical activity intervention** was found to be as effective as a structured exercise program in improving physical activity, cardiorespiratory fitness, and blood pressure.

(Dunn, A.L. et al., 1999)





- A) Attenuation of progression of coronary atherosclerotic lesions by a 12-month physical activity in pts with coronary artery disease.
- B) Relation between amount of exercise and changes in coronary lesions. Higher levels of exercise were associated with a halt of progression or even regression of coronary lesions. (Suaya. et al, 2009)



Promoting Prevention of Heart Problems

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The American Heart Association Recommendations for Physical Activity in Kids

At least 60 minutes of *moderate- to vigorous-intensity* aerobic activity **Every day**



© 2016 Learn more at heart.org/KidsActivityRecommendations.



ACSM & AMA 2007



LOVE HATES
ACTIVITY EXERCISE
Do more of what you love with physio

CSP – July 2018

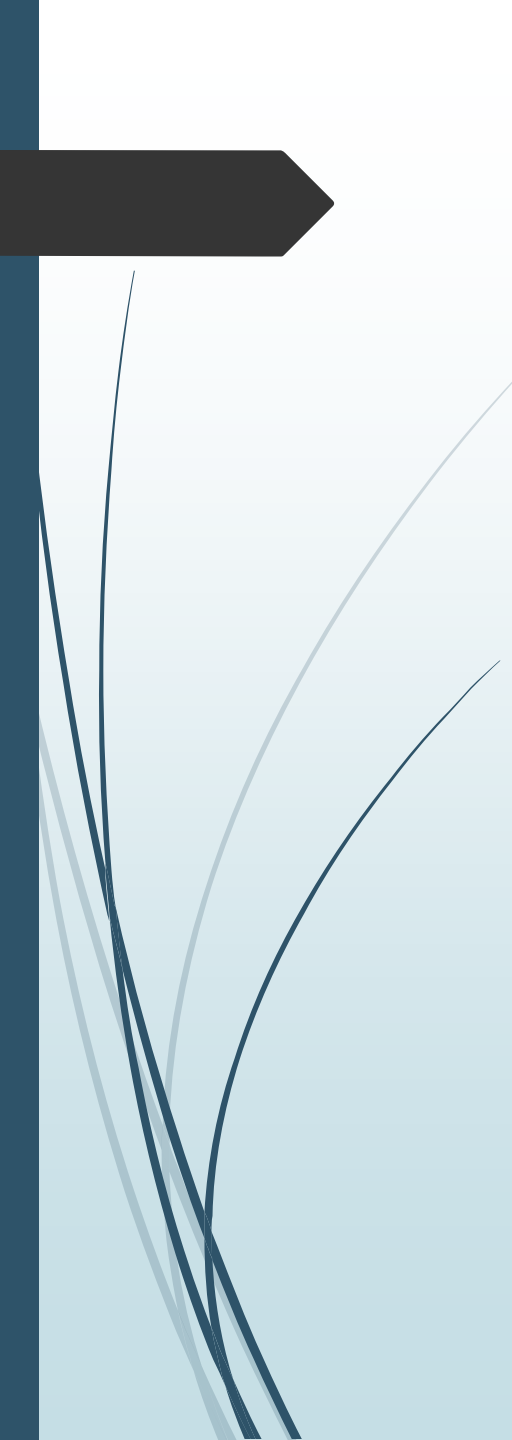
“If we had a pill that contained all the benefits of exercise, it would be the most widely prescribed drug in the world”

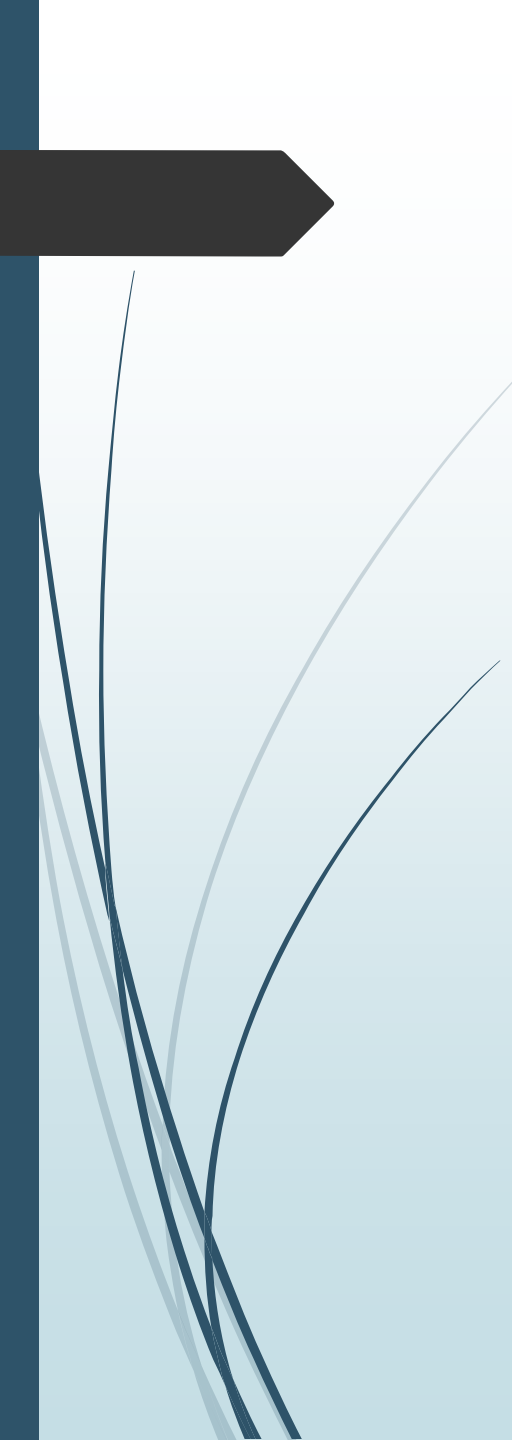
Ronald M. Davis, M.D. President AMA



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