I do not have relevant disclosures

BODY MASS INDEX AND CARDIOVASCULAR RISK

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CV Risk 2017 / Sinergy

OBESITY / ALCOHOL
SMOKE / PERICARDIAL FAT

AGE
Renal Dissease

Insulin-resistance DM.TII

Hypertension /Pulse pressure

Renal Function / CF / Hepatic Function

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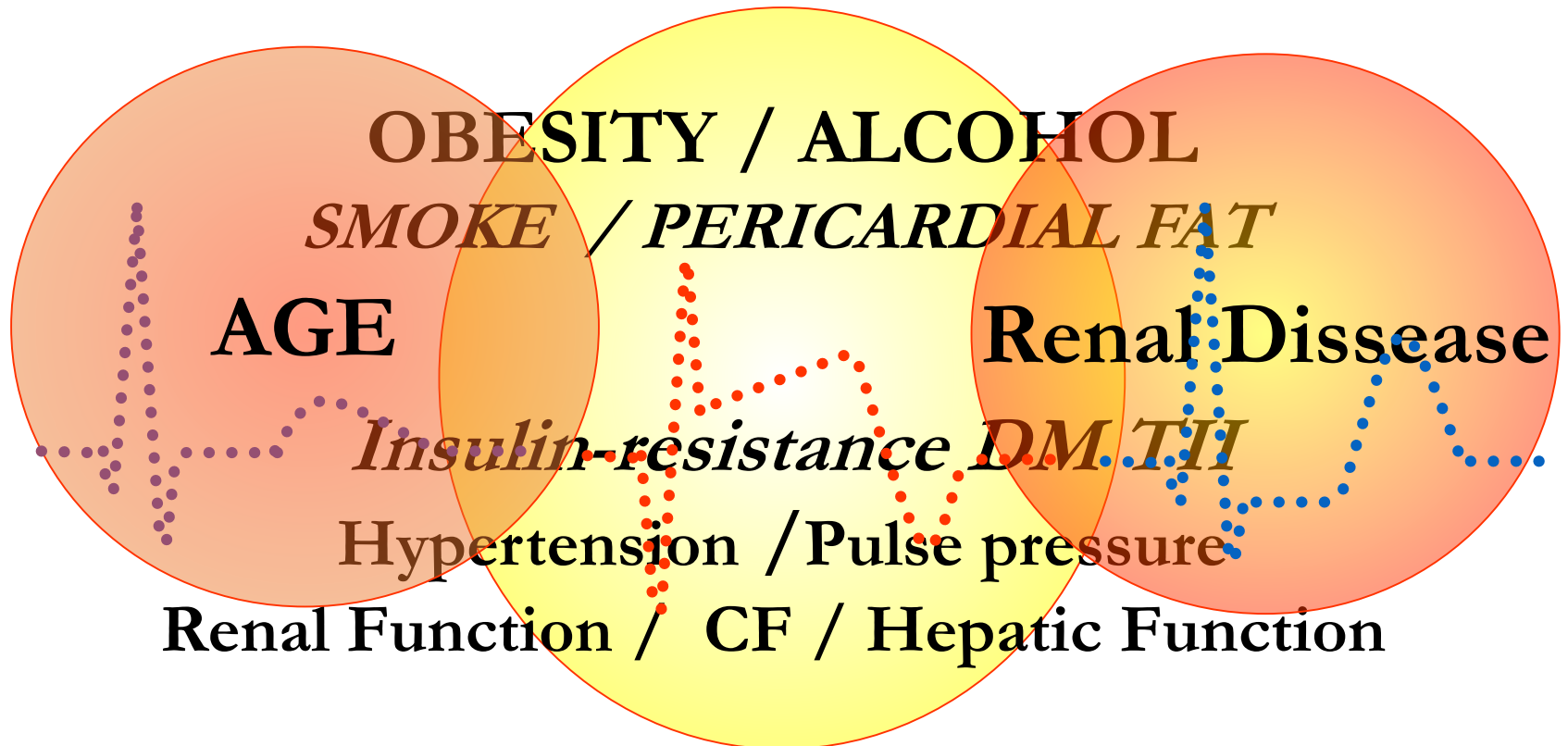
CARDIOVASCULAR EVENTS

Stage III

Obesity

Hypertension

Dyslipidemia

Diabetes T2

EDSR STROKE Cardiac HF Myocardial Infarction

Microangiopathy **Visceral Obesity** **Pericardial Fat** **Macroangiopathy**

Hypertension *DM2* Dyslipidemia

Clinical Horizon

Vascular Remodelation Postpandrial Hyperglicemia LDL small particles

Stage II

Obesity /

Overweight

Hypertension

Dyslipidema

Abnormal Glucose Test

Vascular Resistance ↑ Glucose Production HDL

Cardíac Output ↓ GlucoseTransport VLDL Tryglicerides Apo-B

N. S. Simpátic SRAA ACTIVITY ↓ Insulin Secretion Free Fatty Acid

↑ Na y H$_2$O Cs β Disfunction Lypolisis

Stage I

Obesity Overweight

Blood pressure "normal"

Probable Dyslipidemia

Abnormal Glucose Test

Atherogenesis **Inflammation, Oxidative Stress**

Endotelial Disfunction

Insulin Resistance & Hyperinsulinemia

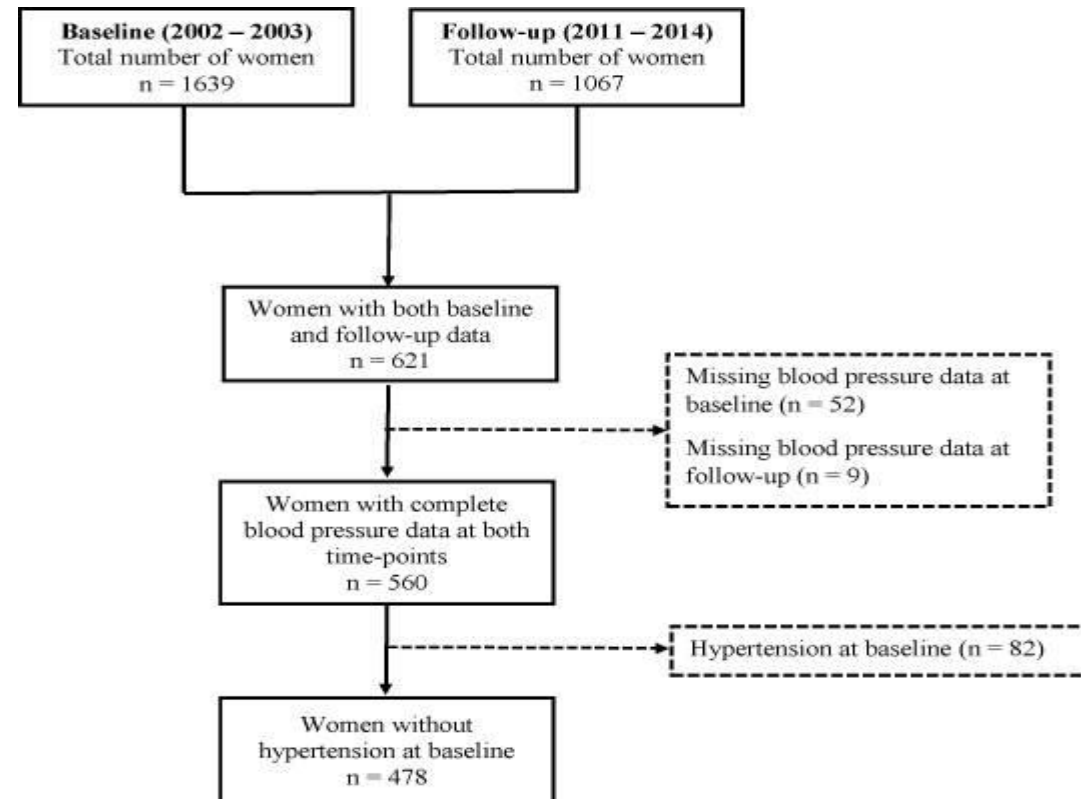**Genetic Disorder   RAAS Activity**

TIEMPO

Factors

Environmental

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Natural History Metabolic Syndrome

Developing countries are disproportionately affected by hypertension,
Black women being at greater risk, probably due to differences in body fat distribution

Baseline (2002 – 2003)	Follow-up (2011 – 2014)
Total number of women	Total number of women
n = 1639	n = 1067

Women with both baseline and follow-up data
n = 621

Missing blood pressure data at baseline (n = 52)
Missing blood pressure data at follow-up (n = 9)

Women with complete blood pressure data at both time-points
n = 560

Hypertension at baseline (n = 82)

Women without hypertension at baseline
n = 478

The Role of Body Fat and Fat Distribution in Hypertension Risk in Urban Black South African Women

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Obesity / Organ damage

- 30.01% Diabetes / Hypertension
- 36.5% Hypercholesterolemia
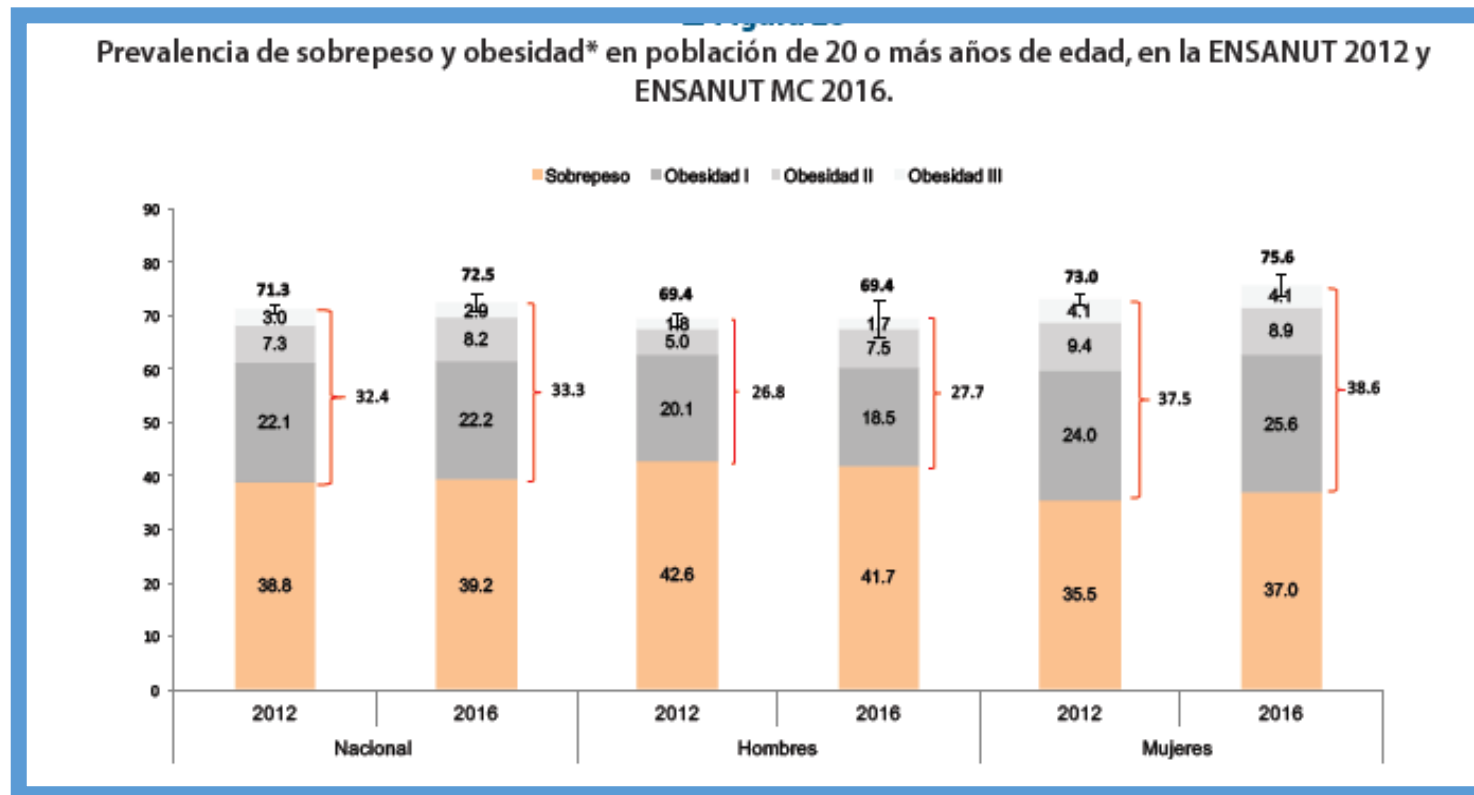- 51.7% Hypertrigliceridemia
- 78% Obesity / Overweight

ENSANUT 2016

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Overweight and Obesity
ENSANUT México 2012 - 2016

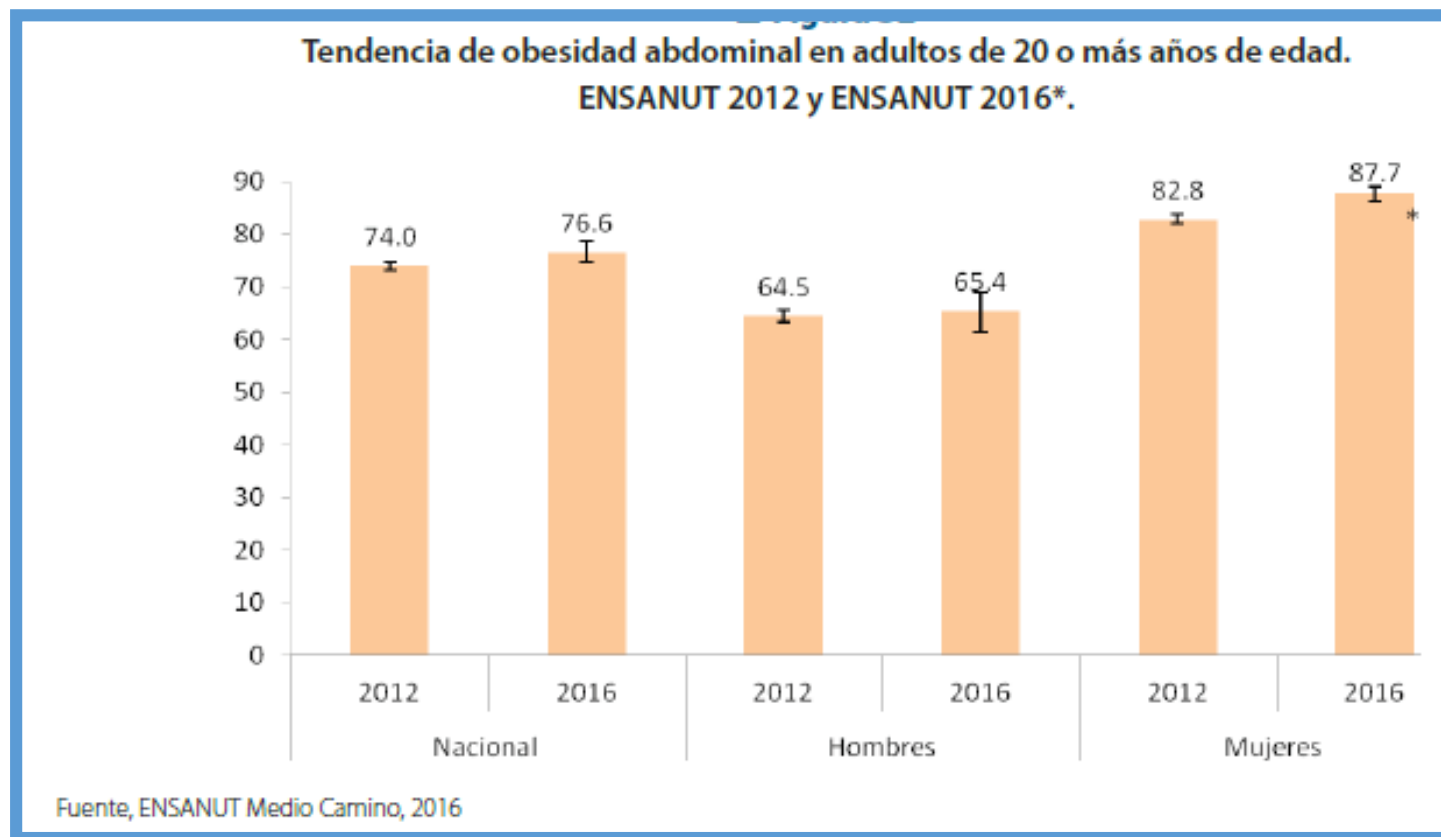Prevalencia de sobrepeso y obesidad* en población de 20 o más años de edad, en la ENSANUT 2012 y ENSANUT MC 2016.
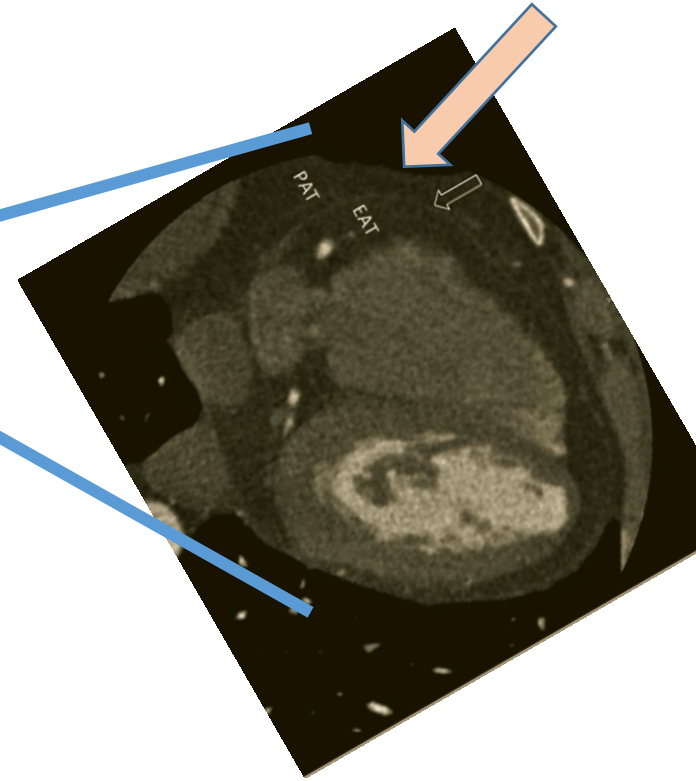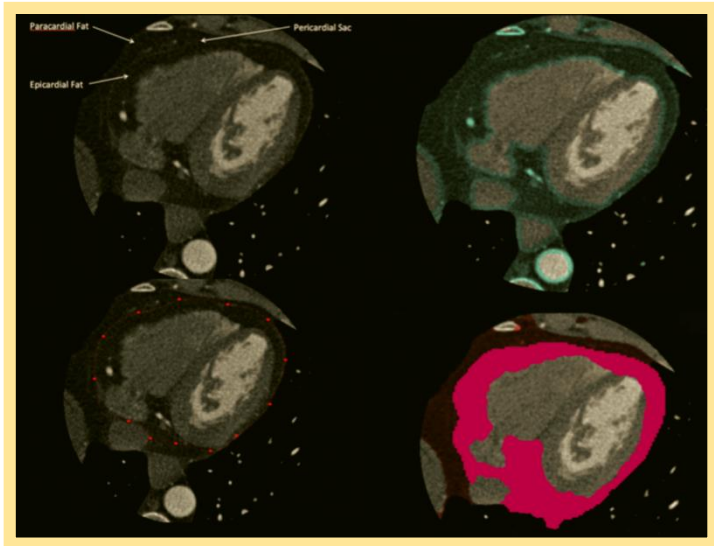
Fuente: ENSANUT 2012 y ENSANUT MC 2016.
* Clasificación de IMC descrita por la OMS: sobrepeso = 25.0-29.9 kg/m², obesidad grado I = 30.0-34.9 kg/m², obesidad grado II = 35.0-39.9 kg/m², obesidad grado III ≥ 40.0 kg/m²

ENSANUT 2012 / ENSANUT 2016

Tendencia de obesidad abdominal en adultos de 20 o más años de edad.
ENSANUT 2012 y ENSANUT 2016*.

Fuente, ENSANUT Medio Camino, 2016
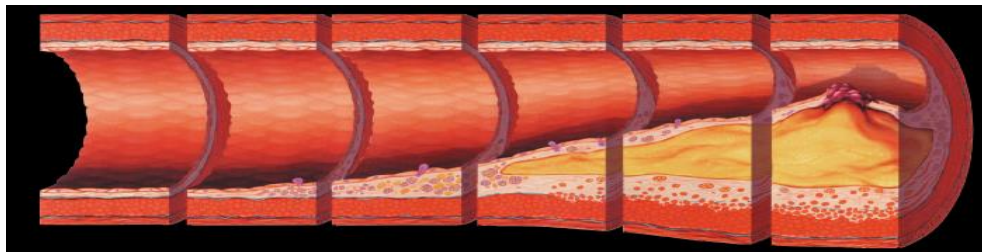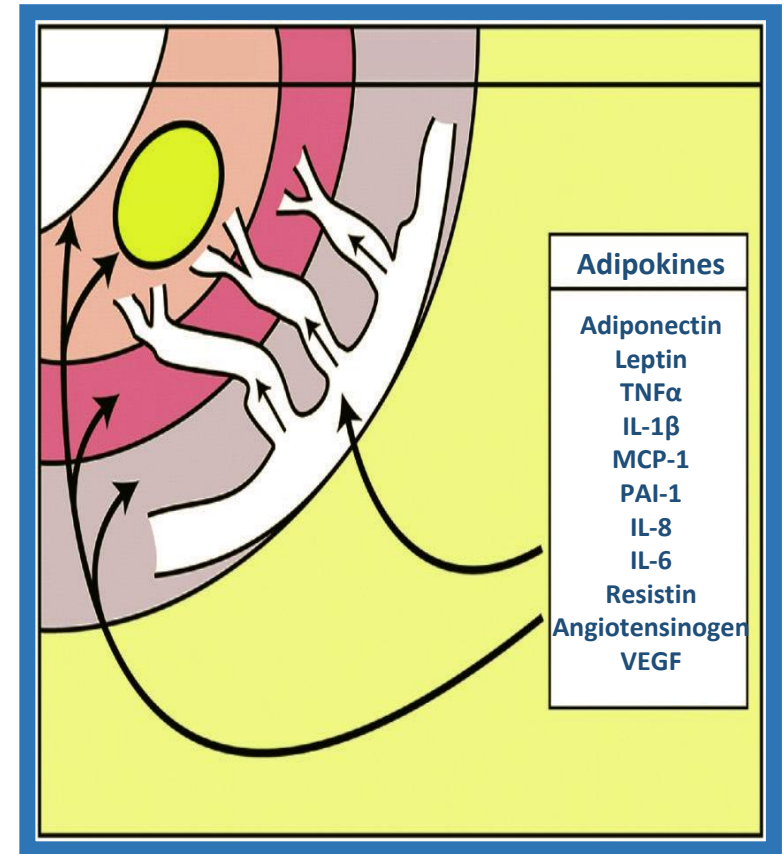
Epicardial Fat: More than deposit

PERICARDIAL FAT

*EPICARDICAL Adipoquines
(Vascular inflammation)*

ATHEROGENIC Mechanisms

Role in coronary atherogenesis

a) **Paracrine signaling : adipokines inside coronary artery wall.**

b) **Vessel signaling transverse inside vasa vasorum adventicia (trasnsport Cs intima-media) atherosclerotic plaque.**

Adipokines
Adiponectin
Leptin
TNFα
IL-1β
MCP-1
PAI-1
IL-8
IL-6
Resistin
Angiotensinogen
VEGF

Cardiovasc Diagnostic Ther.
2014;4(6):416-429

Conclusion

➤ **Body mass index was an excellent predictor of elevated CVD risk factors in our population.**

➤ **Prevalence of the majority of these factors increased at low BMIs as 23-24.9 kg/m2 suggesting a need to investigate risk factors and CVD events as a function of BMI in larger studies of Mexican men and women.**
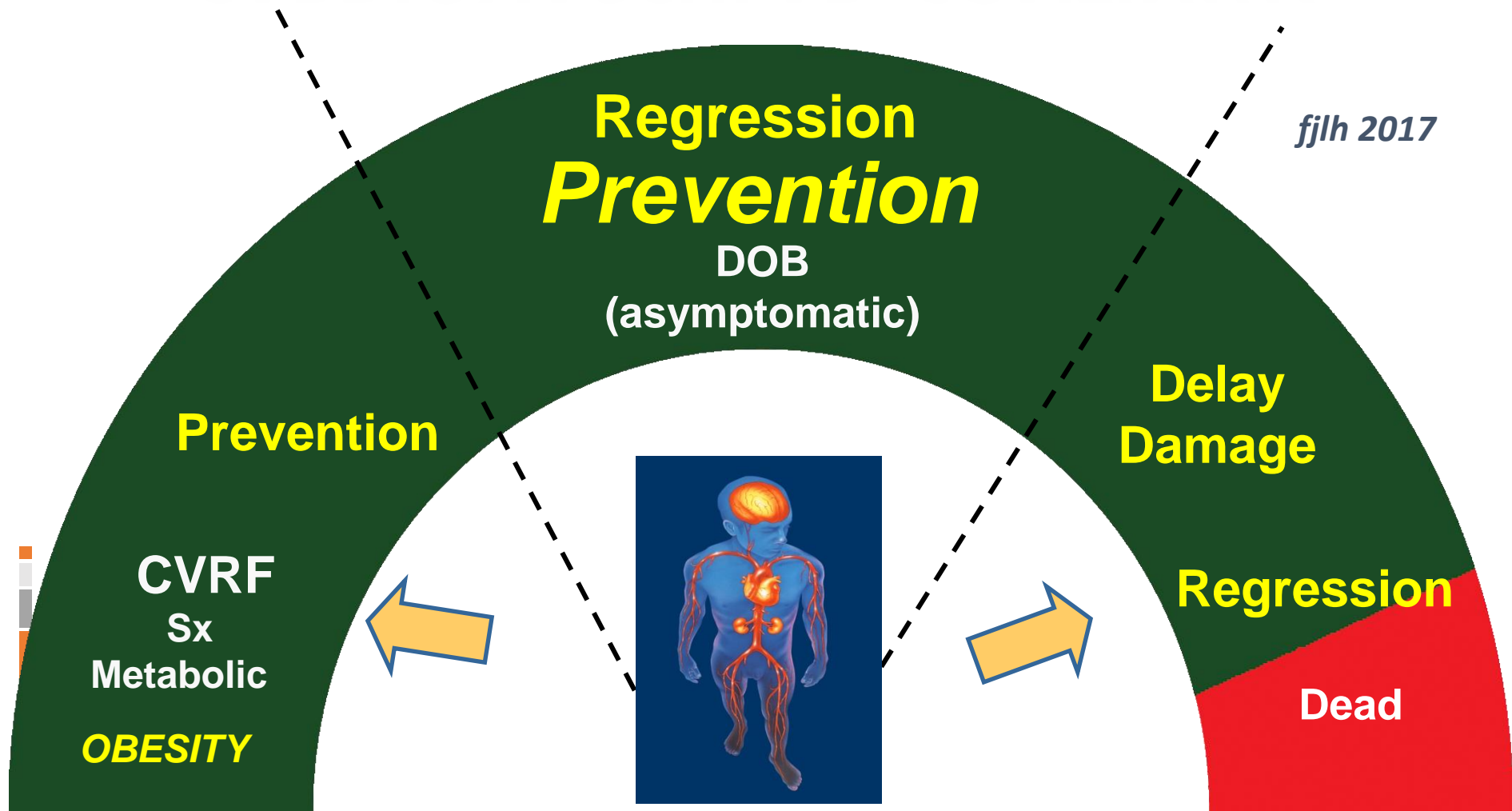
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Conclusion

Anthropometric-derived measure vs. (A) total adiposity and (B) central adiposity as predictors of hypertension.

IN THE PAST PERICARDIAL FAT WAS CONSIDERED AS AN OBESITY SINDROME COMPANION .

NOW WE NEED TO CONSIDER IT AS A TOXIC CARDIOVASCULAR CORONARY RISK FACTOR.

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CARDIOVASCULAR *CONTINUM*

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Regression
Prevention
DOB
(asymptomatic)

Prevention

Delay
Damage

CVRF
Sx
Metabolic

OBESITY

Regression

Dead

Modificated from Dzau & Braunwald. Am Heart J 2015;121:1244–63

Thank you for your attention

Francisco J. León Hernández MD
ANCAM President 2016-2018