



Prof .Gerardo Nigro

Perché è importante studiare la sleep apnea in Cardiologia



Principali fattori di rischio

Obesità

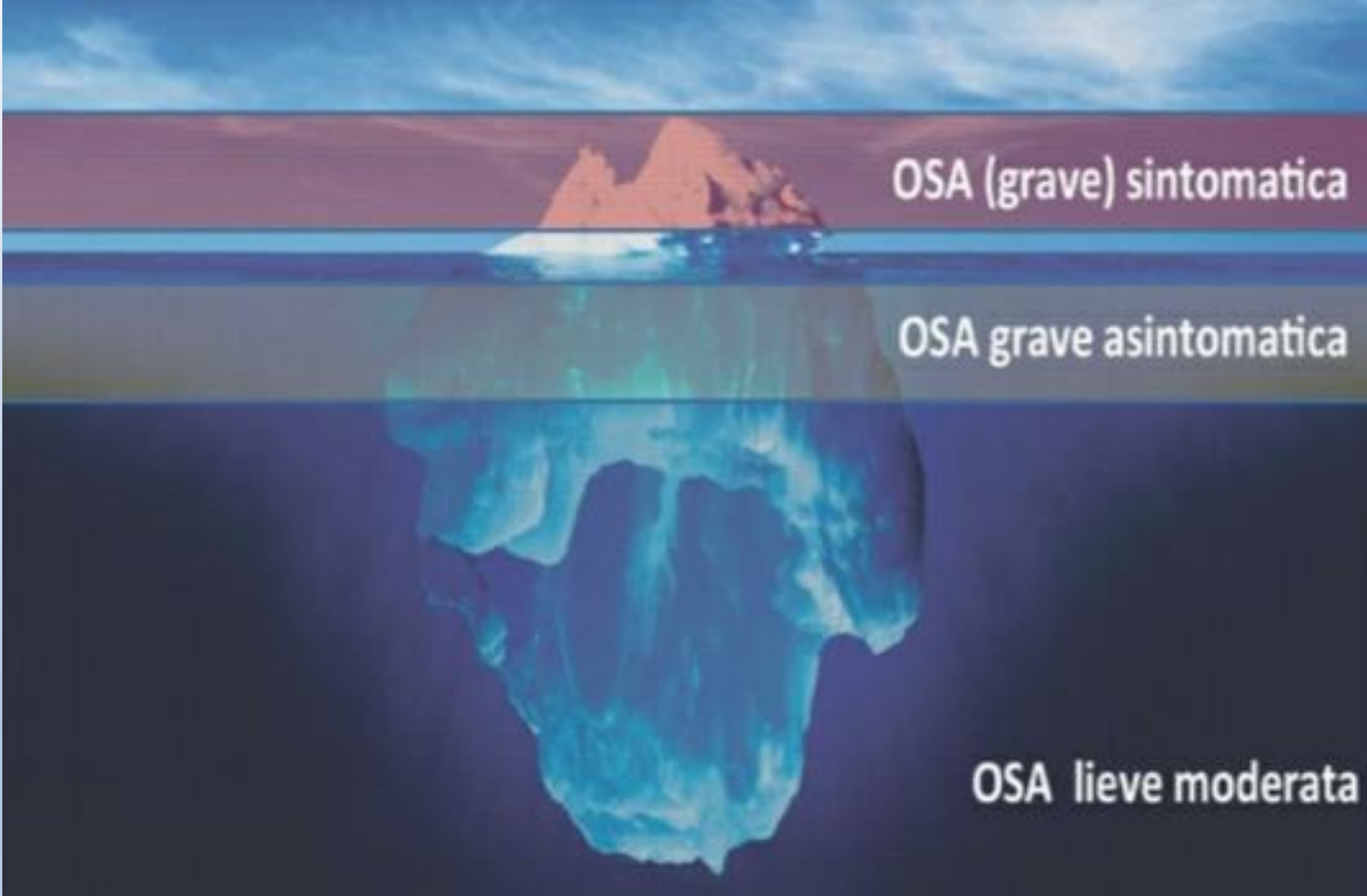
**Circonferenza
del collo**

- >43 cm (M)
- >41 cm (F)

**Sesso
maschile**

Età (40-60 anni)





OSA (grave) sintomatica

The image is a conceptual diagram using an iceberg to represent the prevalence of Obstructive Sleep Apnea (OSA). The iceberg is divided into three horizontal sections. The top section, which is the smallest and visible above the water line, is colored red and labeled 'OSA (grave) sintomatica'. The middle section is a thin layer of water, colored light blue. The bottom section, which is the largest and submerged, is colored dark blue and labeled 'OSA lieve/moderata'. The label 'OSA grave/asintomatica' is placed in the water layer between the red and dark blue sections. The background shows a blue sky with white clouds.

OSA grave/asintomatica

OSA lieve/moderata

Sintomi Notturni

- ✖ Russamento intenso
- ✖ Sonno non riposante
- ✖ Apnee riferite dal partner
- ✖ Ripetuti risvegli con sensazione di soffocamento (choking)
- ✖ Nicturia

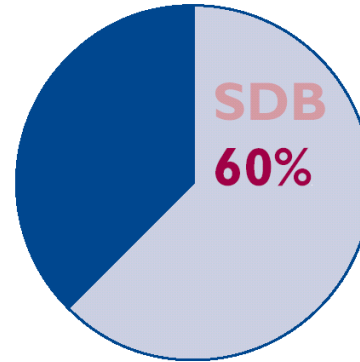


Sintomi Diurni

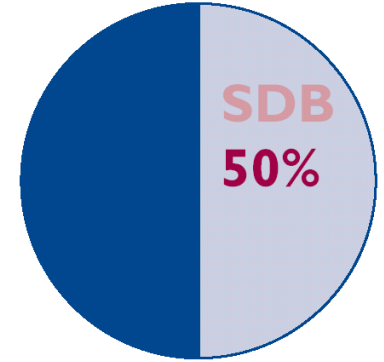
- ✖ Eccessiva sonnolenza diurna
- ✖ Cefalea (mattutina), Astenia
- ✖ Riduzione memoria, difficoltà di concentrazione, rallentamento tempi di reazione, decadimento funzioni psicocognitive
- ✖ Depressione, irritabilità
- ✖ Disfunzione erettile, riduzione della libido



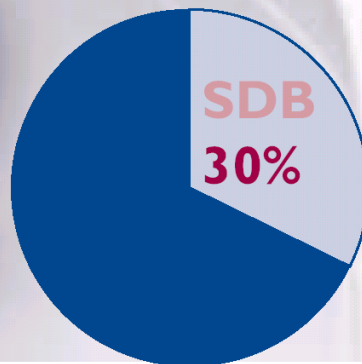
Prevalence of SDB
among key
cardiovascular
disease groups



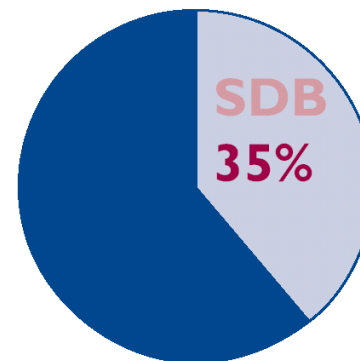
Stroke



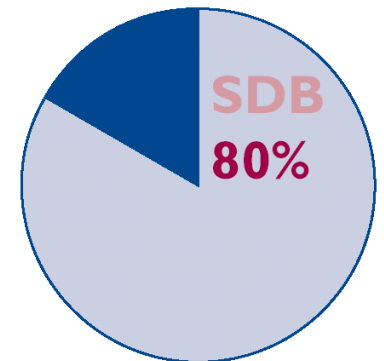
Congestive heart failure



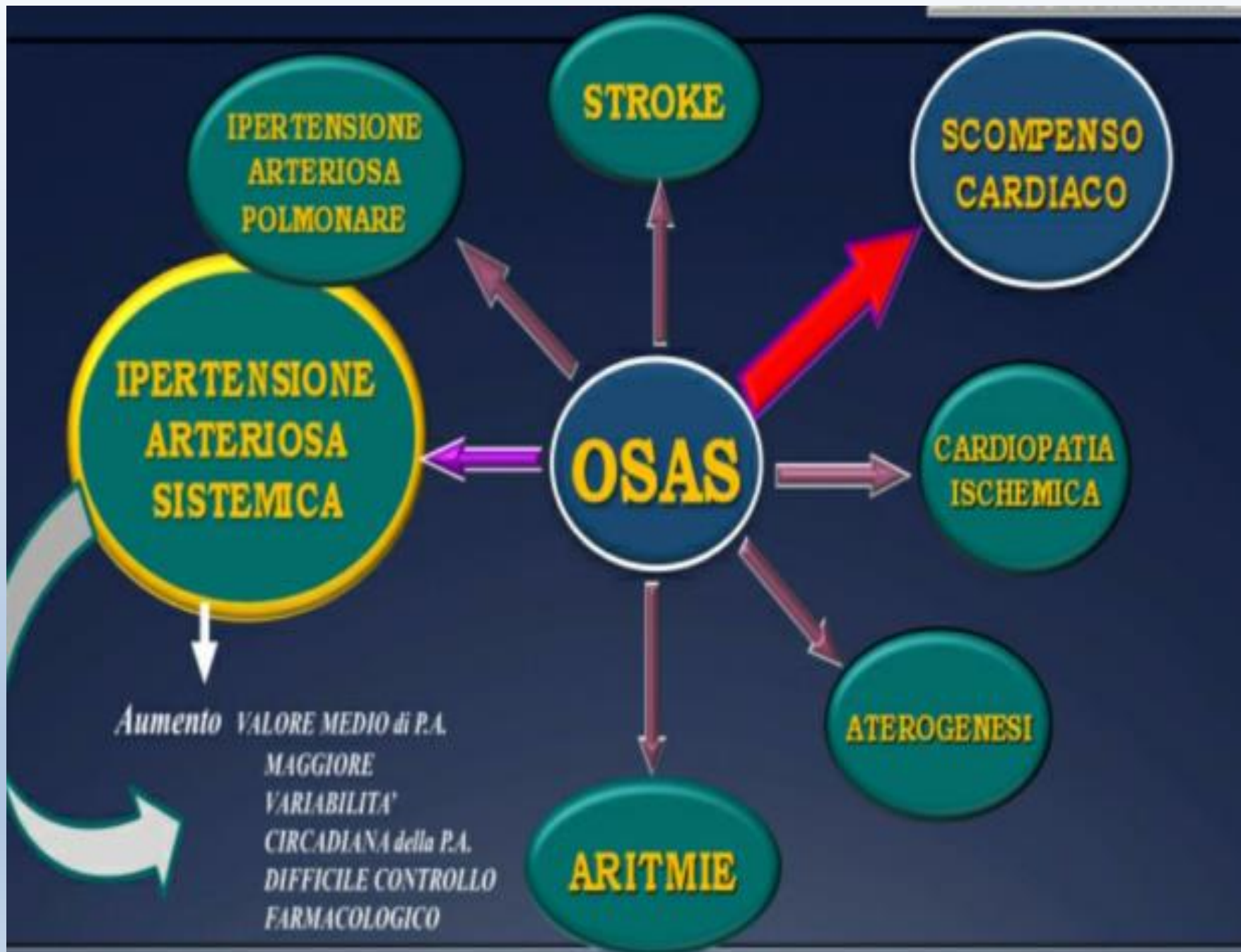
Coronary artery disease



Hypertension



Drug-resistant hypertension



THEORETICAL REVIEW

Sleep apnea is a manifestation of the metabolic syndrome

Alexandros N. Vgontzas^{a,*}, Edward O. Bixler^a, George P. Chrousos^b

^a*Department of Psychiatry H073, Penn State College of Medicine, 500 University Drive, Hershey, PA 17033, USA*

^b*Pediatric and Reproductive Endocrinology Branch, National Institutes of Health, Bethesda, MD, USA*

A.N. Vgontzas et al.

In conclusion, accumulating evidence provides support to our model of the bi directional, feed forward, pernicious association between sleep apnea, sleepiness, inflammation, and insulin resistance, all promoting atherosclerosis and cardiovascular disease.

Rilevanza clinica dei fenomeni pressori nelle 24 ore

Pressione notturna più alta

Minore Δ giorno/notte

Eccessivo aumento pressorio mattutino

Aumento della variabilità pressoria

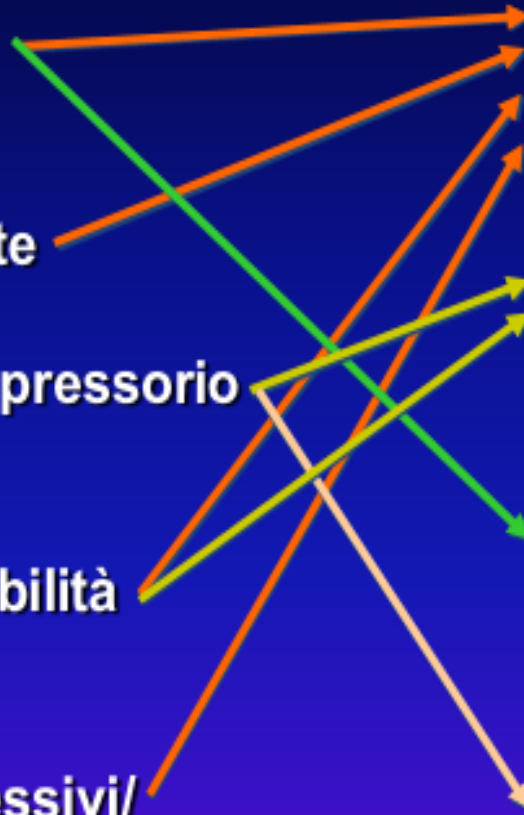
Picchi pressori eccessivi/numerosi

Danno d'organo

Rischio cardiovascolare

Progressione a nefropatia diabetica

Associazione con un picco mattutino degli eventi cardiovascolari



Obstructive Sleep Apnea

Hypoxemia

Reoxygenation

Hypercapnia

Intrathoracic pressure changes

Arousals

Intermediary Mechanisms

Sympathetic Activation

Vasoconstriction

Increased catecholamines

Tachycardia

Impaired cardiovascular variability

Endothelial Dysfunction

Vascular Oxidative Stress

Inflammation

Increased Coagulation

Metabolic Dysregulation

Leptin resistance

Obesity

Insulin resistance

Risk of Cardiovascular Disease

Hypertension

Congestive Heart Failure

Systolic dysfunction

Diastolic dysfunction

Cardiac Arrhythmia

Bradycardia

Atrioventricular block

Atrial fibrillation

Cardiac Ischemia

Coronary artery disease

Myocardial infarction

Nocturnal ST-segment depression

Nocturnal angina

Cerebrovascular Disease

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STATE-OF-THE-ART PAPER

Obstructive Sleep Apnea and Heart Failure

Pathophysiologic and Therapeutic Implications

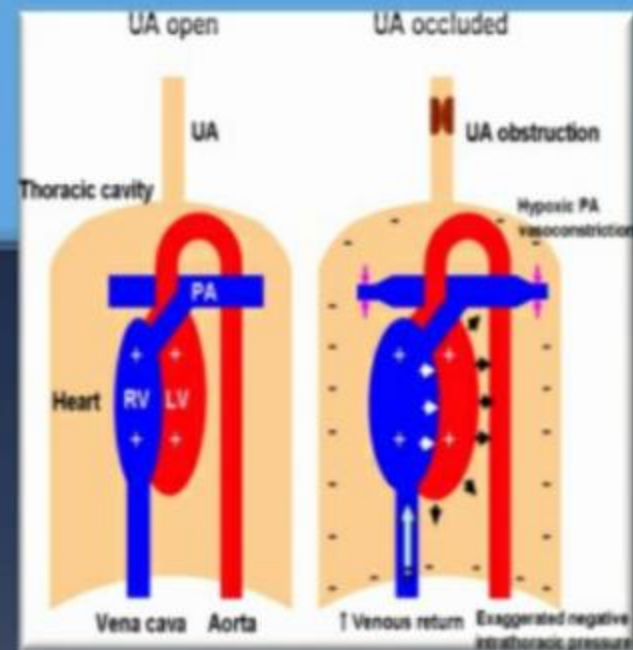
Takatoshi Kanai, MD, PhD,*† T. Douglas Bradley, MD*††

Toronto, Ontario, Canada

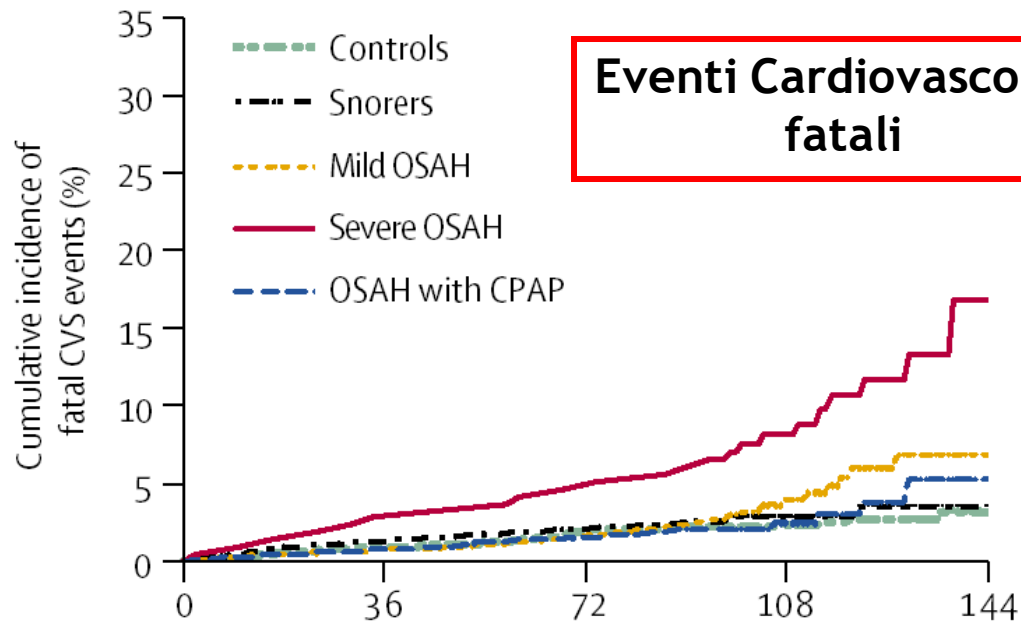
IPOSSIA
STRESS OSSIDATIVO
INFIAMMAZIONE SISTEMICA
AUMENTO DELLA PRESSIONE NEGATIVA INTRATORACICA
IPERATTIVAZIONE SIMPATICA
AUMENTO DELLA PRESSIONE ARTERIOSA



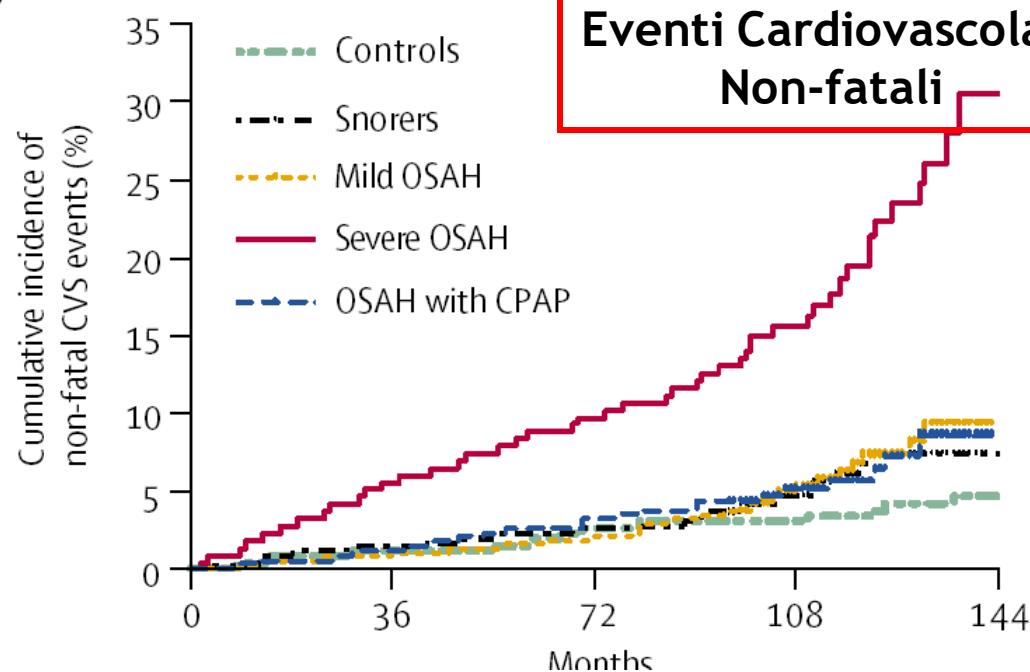
DEPRESSIONE DELLA
CONTRATTILITA
CARDIACA



A



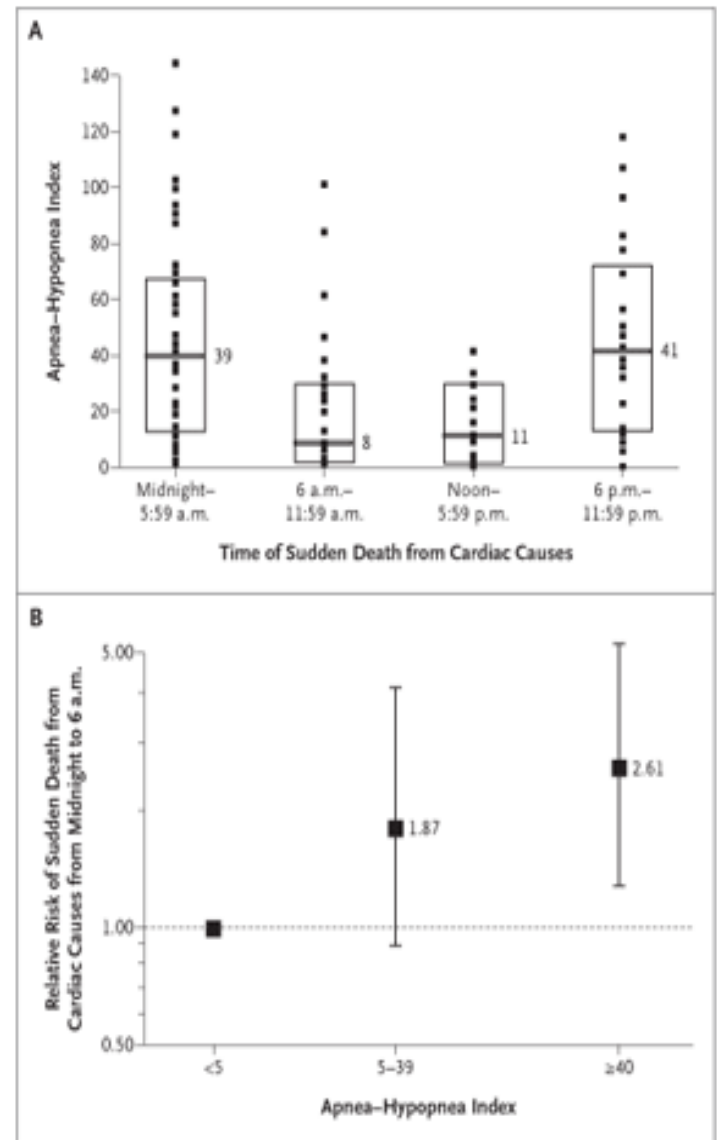
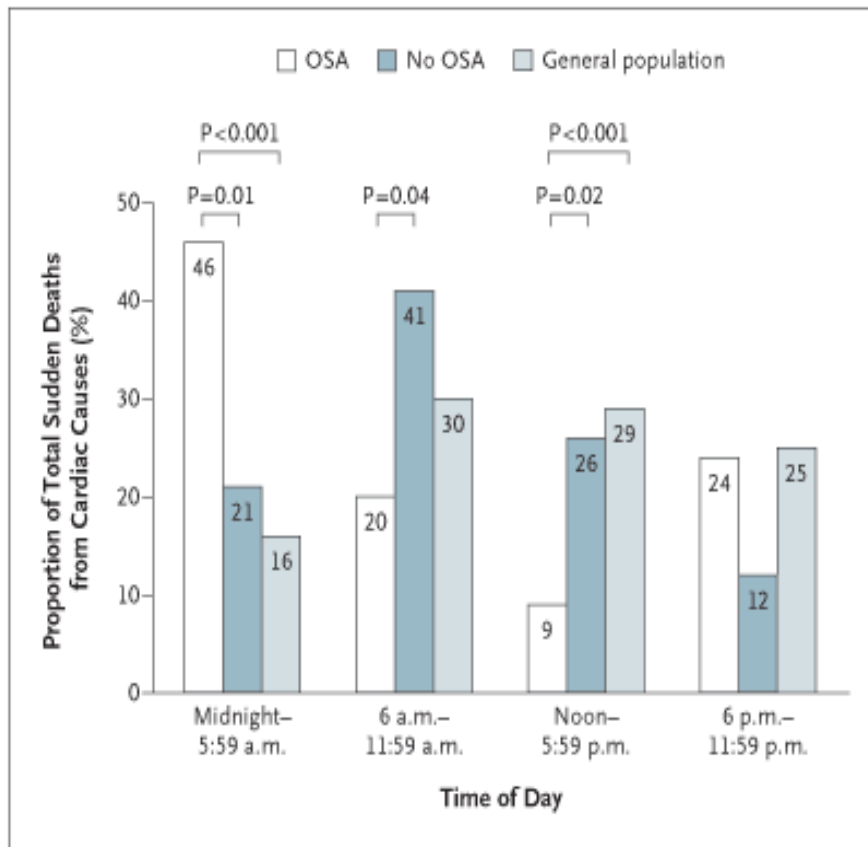
B



In pazienti con OSA non trattata il fattore di rischio

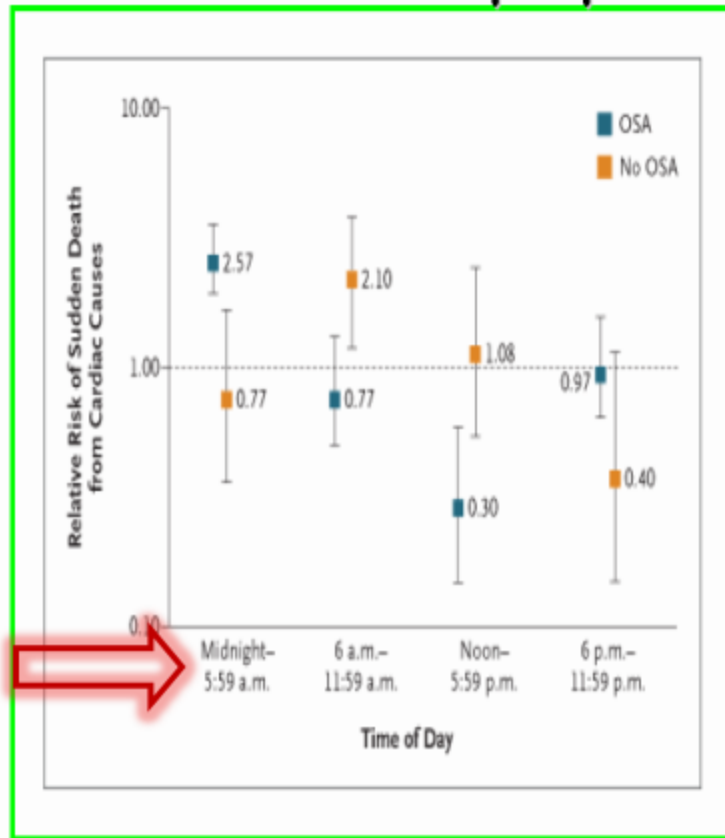
1. per morte per malattie cardiovascolari=2,87;
2. Per eventi cardiovascolari non fatali= 3,17
3. Il russamento non è un fattore di rischio significativo
4. Il trattamento con nCPAP modifica la morbilità e la mortalità

Morte improvvisa in pazienti con OSA



Gami As et al. - N Engl J Med. 2005 24;352:1206-14

Day-Night Pattern of Sudden Death in Obstructive Sleep Apnea



I soggetti affetti da OSAS presentano un aumento della mortalità per cause cardiache durante le ore comprese tra le 24 e le 5 del mattino

Gami AS et al., N Engl J Med. 2005;352:1206-14

MISURE COMPORTAMENTALI

- ✦ Riduzione del peso
- ✦ Abolizione del fumo
- ✦ Evitare una vita sedentaria
- ✦ Evitare pasti serali abbondanti
- ✦ Evitare l'uso di farmaci ipoiducenti
- ✦ Evitare l'assunzione di alcoolici (*specie dopo cena*)
- ✦ Evitare la posizione supina nel sonno
- ✦ Curare le allergie delle vie aeree
- ✦ Trattare il reflusso gastroesofageo



GRAZIE !

