AMGE
Associazione Multidisciplinare di Geriatria

2019

4 Congresso Nazionale

GERIATRIA E DINTORNI
UN VIAGGIO DI INCONTRI

Presidente: Matteo Grezzana

PROGRAMMA

VERONA

5 - 7 Dicembre 2019
Palazzo della Gran Guardia

SALA CONVEGNI VENERDÌ 6 DICEMBRE

14.30 **SIMPOSIO**
Moderatori **Marco Antonio Bellini** (Siena)
Rodolfo Muzzolon (Belluno)

OSAS: dalla diagnosi alla terapia
Giuseppe Insalaco (Palermo)

Terapia inalatoria di associazione
Claudio Micheletto (Verona)

Nuovi approcci terapeutici nell'anziano riacutizzatore
Guido Polese (Villafranca)

Asma nell'anziano
Nicola Scichilone (Palermo)

Interstiziopatie polmonari
Paolo Spagnolo (Padova)

Uso dei device: l'infermiere primo attore di successo terapeutico
Vincenzo Di Leo, Daniela Di Guardia (Catania)

OSAS: dalla diagnosi alla terapia

IRIB CNR
ISTITUTO PER LA RICERCA E L'INNOVAZIONE BIOMEDICA
CONSIGLIO NAZIONALE DELLE RICERCHE

Giuseppe Insalaco
Palermo

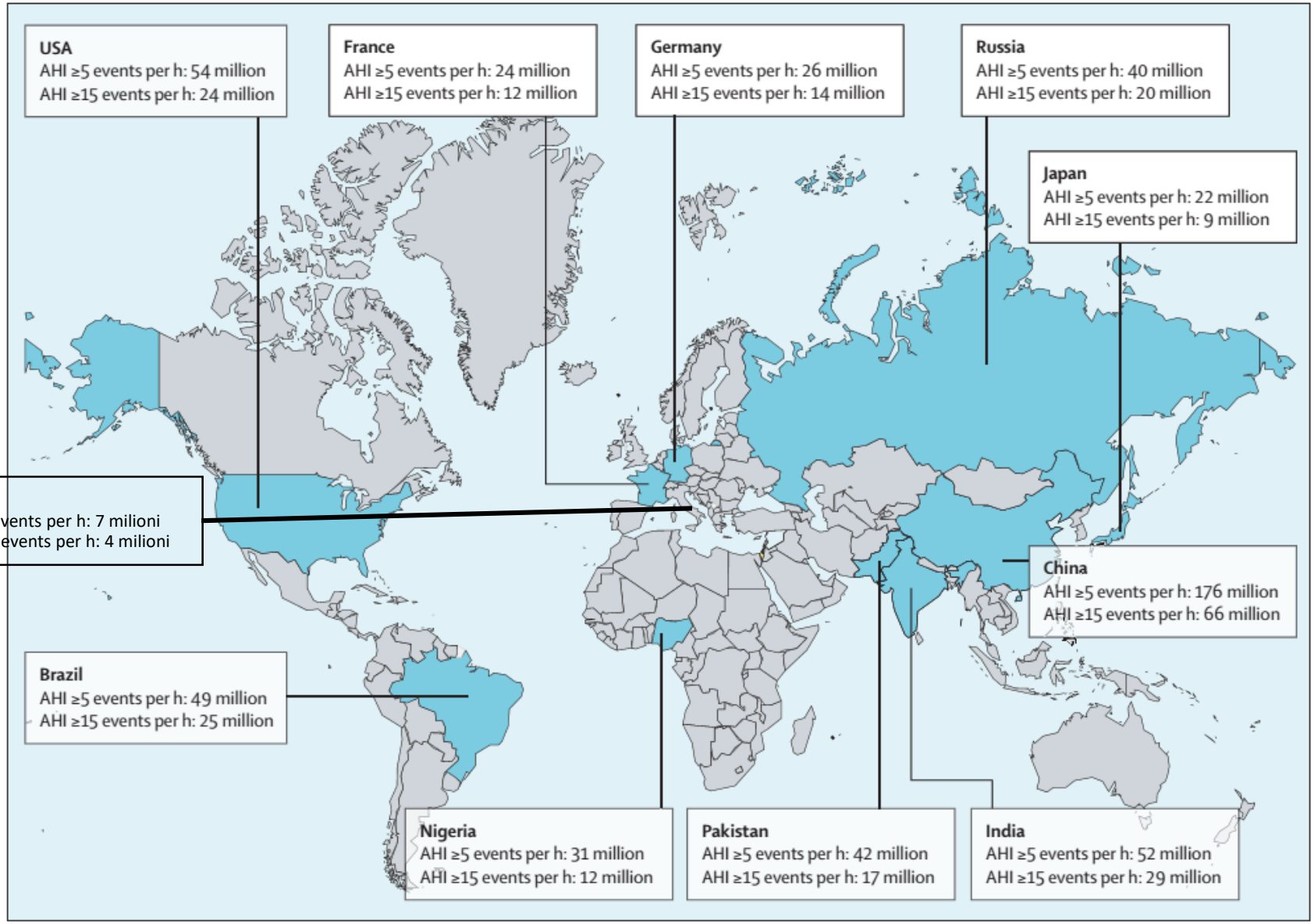


Figure 2: **Top ten countries with the highest estimated number of individuals with obstructive sleep apnoea based on the American Academy of Sleep Medicine 2012 criteria[19]**

AHI=apnoea-hypopnoea index.

Lancet Respir Med 2019

7(8): 687-698

Recognition of Sleep Apnea Is Increasing: An Analysis of Trends in Two Large, Representative Databases of Outpatient Practice

Andrew M Namen, **Arjun Chatterjee**, **Karen E Huang**, **Steven R Feldman**, and **Edward F Haponik**

Visits mentioning a diagnosis of sleep apnea [International Classification of Diseases, 9th revision, clinical modifications (ICD-9-CM) codes 327.10 - 327.26, 780.51–780.57] in the two survey databases.

Table 1: NAMCS/NHAMCS reports of sleep apnea by medical specialty (from 1993-2010).

Visite che riportano diagnosi di OSAS

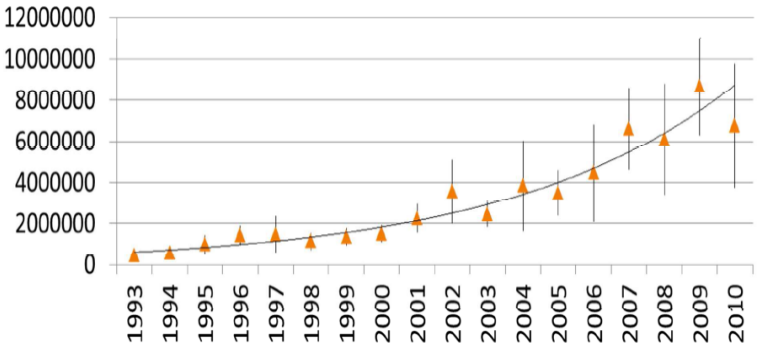


Table 1: NAMCS/NHAMCS reports of sleep apnea by medical specialty (from 1993-2010).

Specialty	1993-1999	2000-2010	P value
Primary Care	36%	34%	NS
Pulmonary	24%	18%	NS
Otolaryngology	20%	10%	<0.001
Neurology	9%	6%	
Other specialties	7%	36%	<0.005
Psychiatry	4%	2%	
Cardiology	1%	5%	<0.001

P values represent difference of specialty percentage of the 100% of all specialties that report

SA between years 1993-1999 versus 2000-2010.

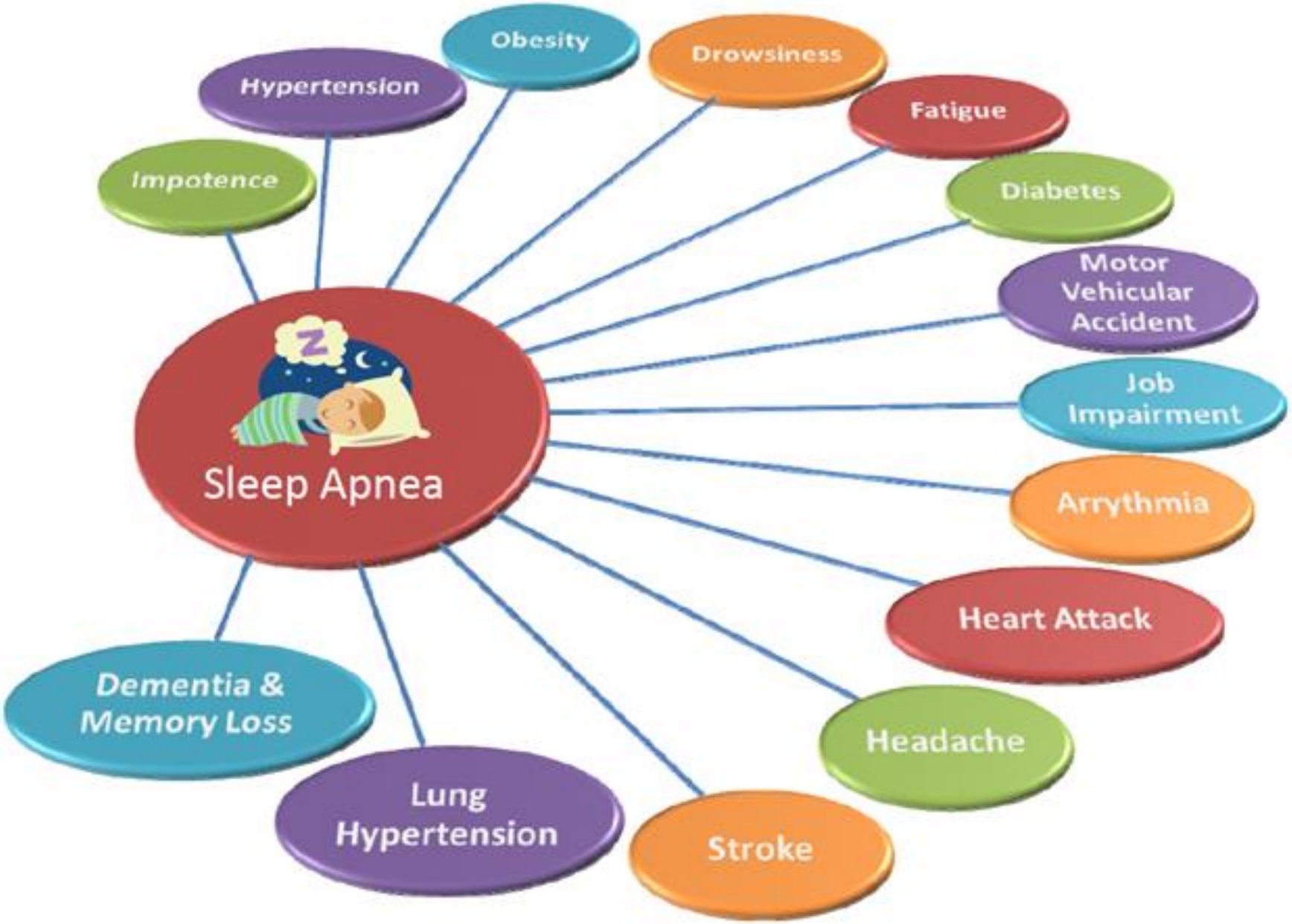
Ann Am Thorac Soc 2016;13(11):2027-2034.

World Health Organization

Obstructive sleep apnoea syndrome is a clinical disorder marked by frequent pauses in breathing during sleep usually accompanied by loud snoring. These pauses cut off the oxygen supply to your body for a few seconds and halt the removal of carbon dioxide. As a result of this, your brain briefly wakes you up, re-opens the airways and re-starts breathing. This can occur many times during the night and makes proper sleep impossible. During the day you may experience excessive daytime sleepiness, difficulty in concentrating or headaches. At night, snoring is the most common feature.

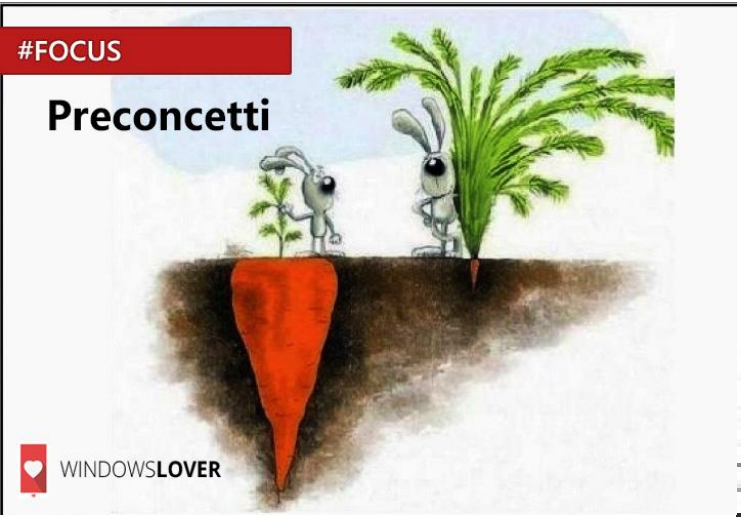
Obstructive sleep apnoea syndrome is diagnosed through polysomnography, a method of recording body activity during sleep; and pulse oximetry, which measures the amount of oxygen in the blood at any time. Obstructive sleep apnoea syndrome **is not a life-threatening condition in itself**, but it can result in serious problems such as cardiovascular and cerebrovascular diseases. The disease can impact on the quality of life, but can be easily managed. One of the treatments is continuous positive airway pressure, which forces air through a mask into the airways so that they do not close.

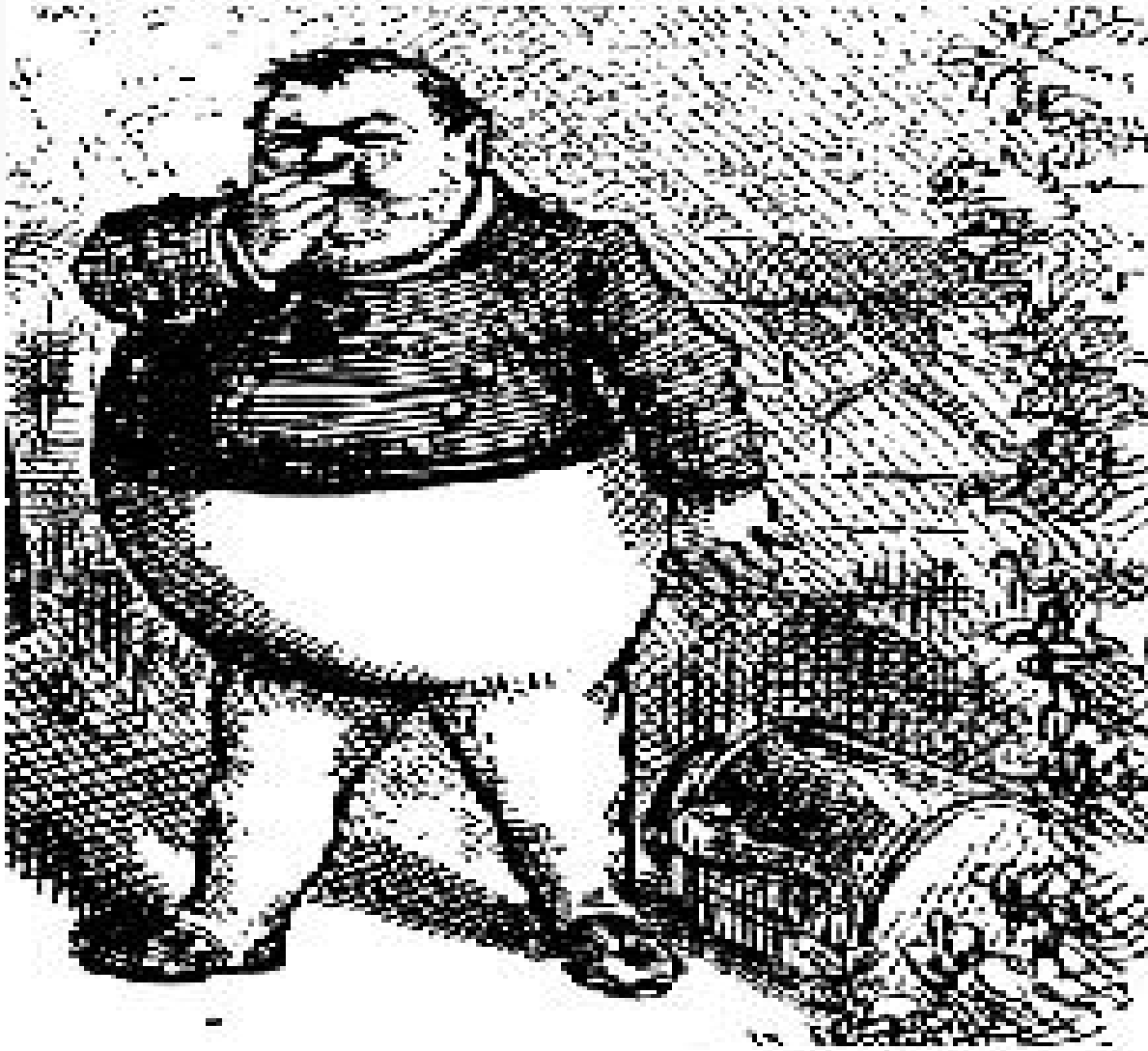
WHO 2009


Obesity
Drowsiness
Hypertension
Fatigue
Impotence
Diabetes
Motor Vehicular Accident
Sleep Apnea
Job Impairment
Arrythmia
Heart Attack
Dementia & Memory Loss
Headache
Lung Hypertension
Stroke

#FOCUS

Preconcetti





Increased Prevalence of Sleep-Disordered Breathing in Adults

Paul E. Peppard*, Terry Young, Jodi H. Barnet, Mari Palta, Erika W. Hagen, and Khin Mae Hla

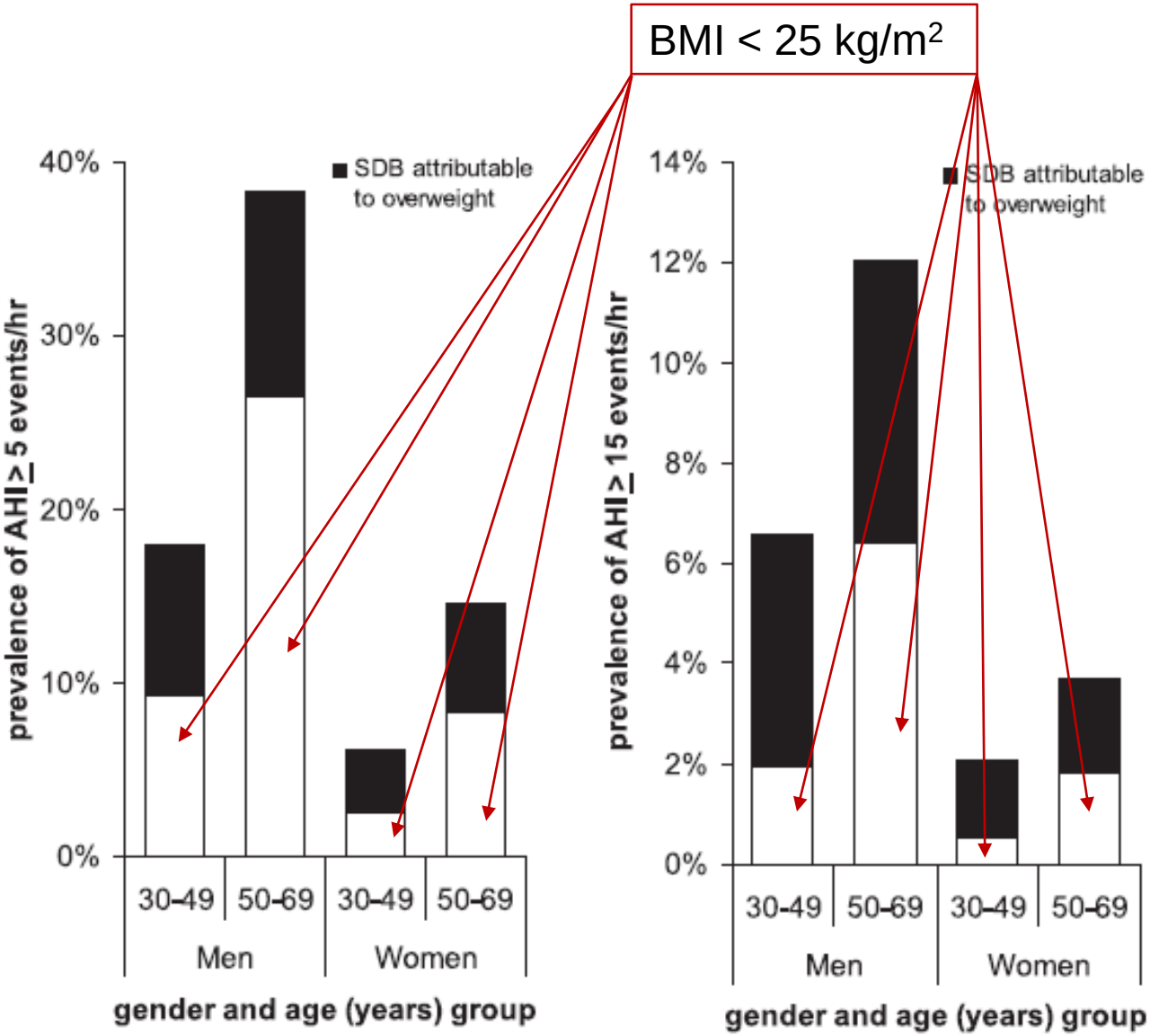
Am J Epidemiol. 2013;177(9):1006–1014

BMI <18=3% 18-25=52% 25-30=35% >30=10%

Partecipanti 1520
PSG 4563

Body Mass Index[b] by Age, years	Estimated Prevalence of AHI[c] ≥5	
	%[d]	95% CI
Men		
30–49		
<25	7.0	5.0, 9.3
25–29.9	18.3	15.2, 21.6
30–39.9	44.6	48.7, 50.2
≥40	79.5	71.1, 86.2
50–70		
<25	18.9	14.8, 23.8
25–29.9	36.6	32.8, 40.3
30–39.9	61.4	57.0, 65.5
≥40	82.8	77.1, 87.7
Women		
30–49		
<25	1.44	0.82, 2.23
25–29.9	4.2	2.7, 5.8
30–39.9	13.5	9.8, 17.7
≥40	43.0	33.0, 54.2
50–70		
<25	9.3	6.8, 12.3
25–29.9	20.2	16.4, 24.4
30–39.9	41.1	35.6, 46.7
≥40	67.9	60.6, 75.1

Body Mass Index[b] by Age, years	Estimated Prevalence of AHI[c] ≥5 and ESS Score >10	
	%[d]	95% CI
Men		
30–49		
<25	2.7	1.5, 4.2
25–29.9	6.8	4.7, 9.1
30–39.9	18.9	14.3, 24.0
≥40	52.9	39.3, 66.6
50–70		
<25	7.7	4.9, 10.9
25–29.9	13.8	11.0, 16.1
30–39.9	24.9	20.7, 29.4
≥40	43.0	33.8, 53.9
Women		
30–49		
<25	0.49	0.19, 0.91
25–29.9	1.26	0.58, 2.20
30–39.9	3.9	2.1, 6.2
≥40	16.4	10.3, 23.8
50–70		
<25	2.8	1.6, 4.4
25–29.9	5.3	3.8, 7.1
30–39.9	10.5	7.8, 13.2
≥40	20.9	15.4, 27.8



Young T et al – J Appl Physiol 2005; 99:1592-9

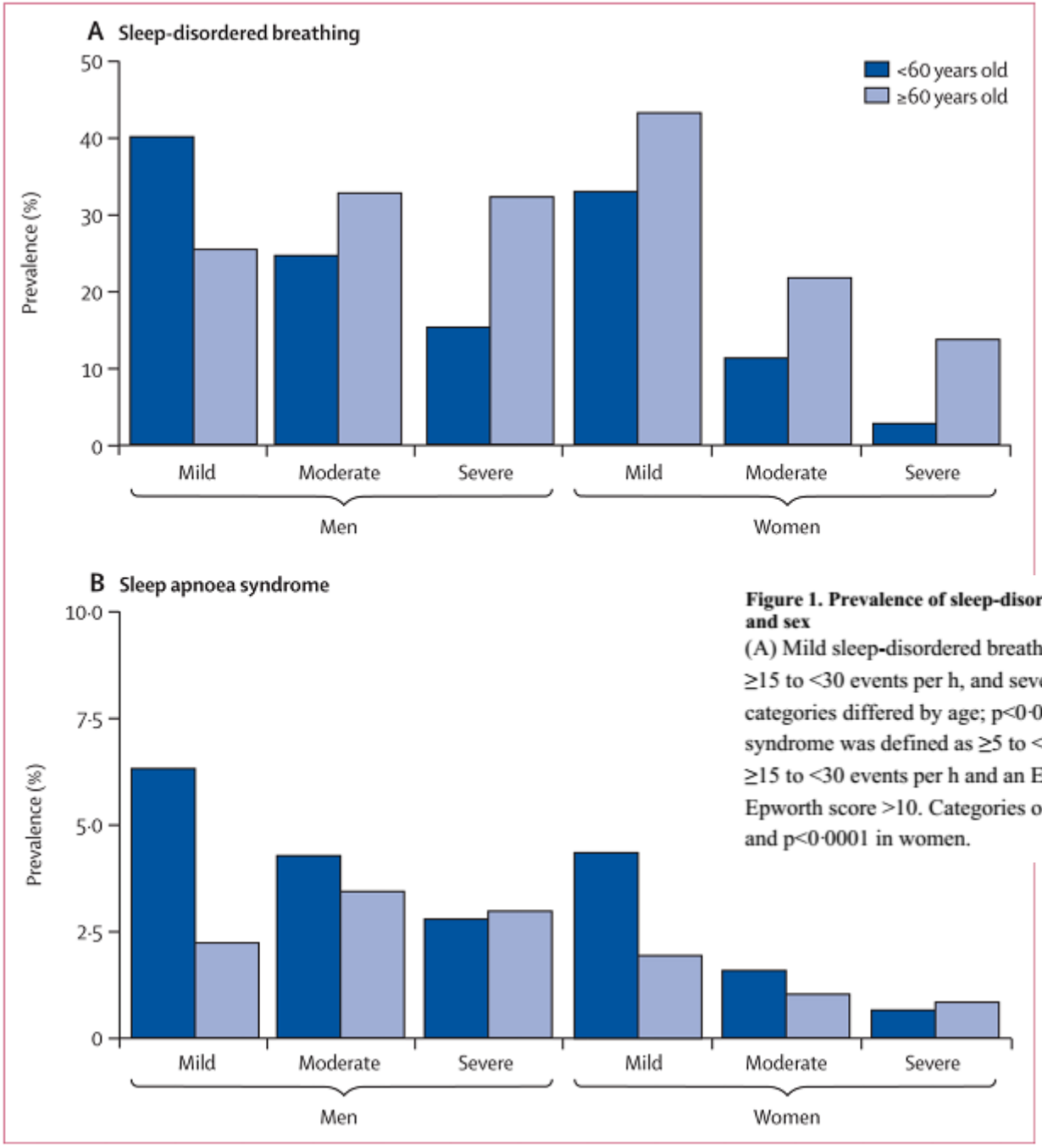


Figure 1. Prevalence of sleep-disordered breathing and sleep apnoea syndrome, according to age and sex

(A) Mild sleep-disordered breathing was defined as ≥5 to <15 events per h, moderate was ≥15 to <30 events per h, and severe was ≥30 events per h. Sleep-disordered breathing categories differed by age; p<0·0001 in men and p<0·0001 in women. (B) Mild sleep apnoea syndrome was defined as ≥5 to <15 events per h and an Epworth score >10, moderate was ≥15 to <30 events per h and an Epworth score >10, and severe was ≥30 events per h and an Epworth score >10. Categories of sleep apnoea syndrome differed by age; p<0·0001 in men and p<0·0001 in women.

Lancet Respir Med 2015; 3: 310–18

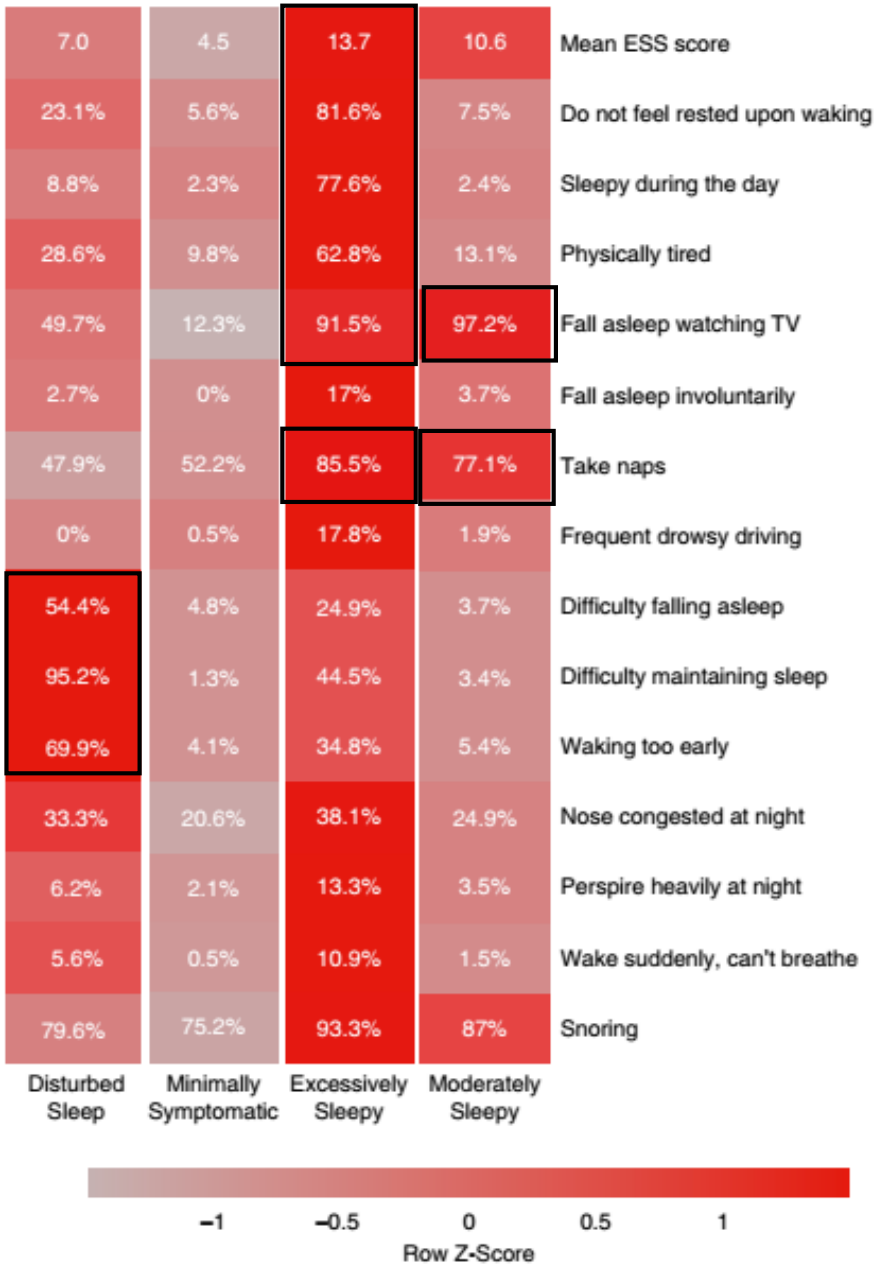
Prevalence of sleep-disordered breathing in the general population: the HypnoLaus study

Riferiscono sonnolenza diurna:

- 14% popolazione maschile
- 10% popolazione femminile

- Quindi meno di 1 paziente su 5-6 con OSA meritevole di trattamento riferisce sonnolenza

Lancet Respir Med 2015; 3: 310–18



The relative proportion of each symptom, and average ESS scores, across the symptom subtypes.

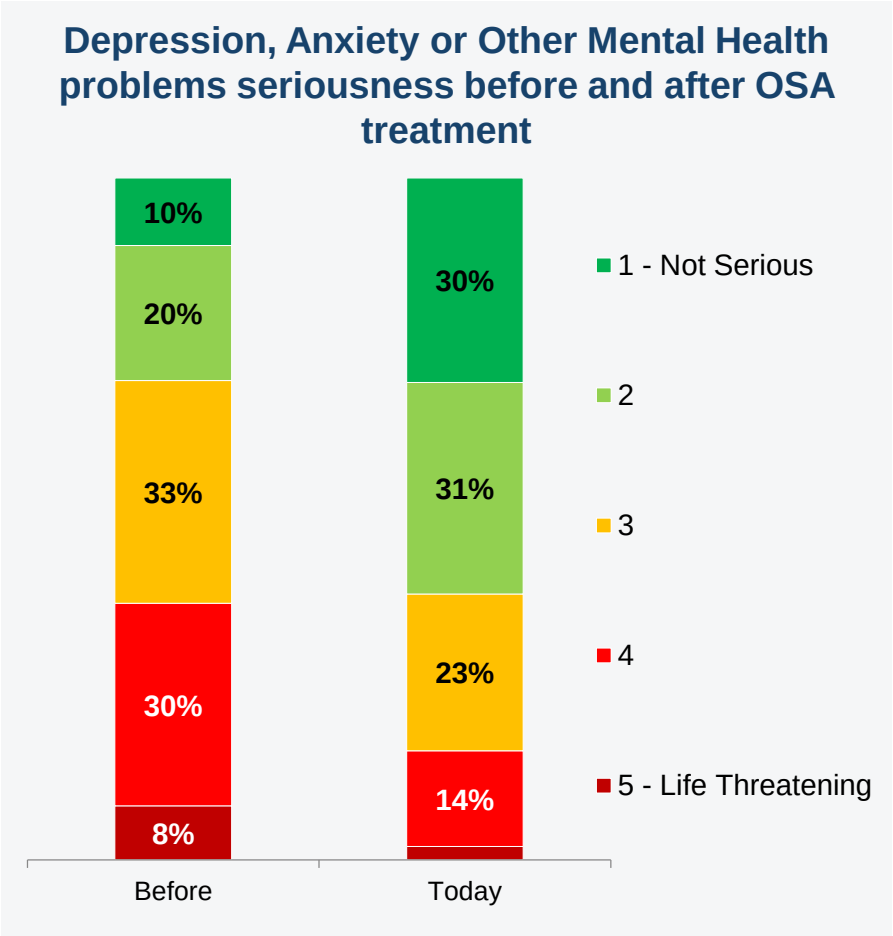
Based on the distribution of observed symptoms, the subtypes were labeled as:

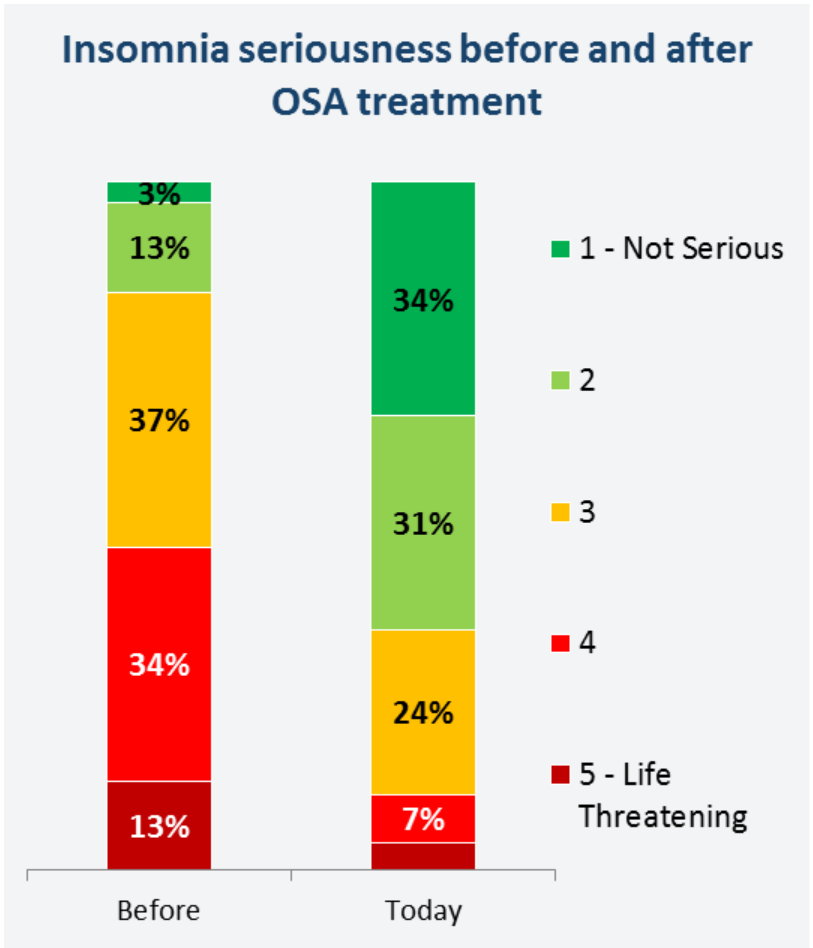
- **disturbed sleep** (n= 147; 12.2%)
- **minimally symptomatic** (n= 394; 32.6%)
- **excessively sleepy** (n= 201; 16.7%)
- **moderately sleepy** (n= 465; 38.5%)

Figure 1. Symptom profile of the identified OSA symptom subtypes in the Sleep Heart Health Study. The relative differences in symptom burden among subtypes are shown by the color scale, which represents the standardized (z-score) symptom proportion or mean EES across groups. Brighter red indicates higher relative symptom burden.

Am J Respir Crit Care Med Vol 200, Iss 4, pp 493–506, Aug 15, 2019

Exploring the Economic Benefits of OSA Diagnosis and Treatment





Obstructive Sleep Apnea: A Risk Factor for Work Disability

Theodore A. Omachi, MD, MBA[1]; David M. Claman, MD[1]; Paul D. Blanc, MD, MSPH[1,2]; Mark D. Eisner, MD, MPH[1,2]

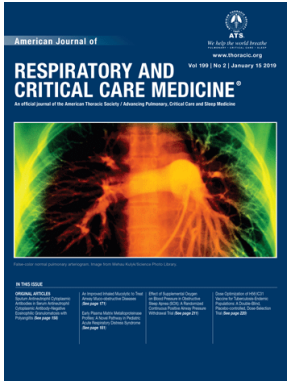
[1]Division of Pulmonary and Critical Care Medicine, and [2]Division of Occupational and Environmental Medicine, Department of Medicine, University of California, San Francisco, CA

Omachi TA, Sleep, 2009

	OSA Absent & EDS Absent* (n = 40) OR [Referent]	OSA Present & EDS Absent* (n = 39) OR (95% CI)	OSA Absent & EDS Present* (n = 27) OR (95% CI)	OSA Present & EDS Present* (n = 44) OR (95% CI)
RECENT WORK DISABILITY, PAST 4 WEEKS				
Complete full missed work day	1.0	2.0 (0.4–11)	1.7 (0.3–9.3)	5.6 (1.3–24)
Partial missed work day	1.0	1.8 (0.6–5.4)	2.9 (1.0–8.5)	5.4 (2.0–15)
Fell asleep on the job	1.0	1.2 (0.2–6.1)	11.0 (2.6–46)	18.1 (4.6–71)
Decreased job effectiveness	1.0	2.7 (1.0–7.2)	2.3 (0.8–6.5)	5.7 (2.1–15)
Any recent work disability	*1.0*	*2.3 (0.8–6.0)*	*8.3 (2.1–33)*	*13.7 (3.9–48)*
LONGER-TERM WORK DUTY MODIFICATION, PAST 5 YRS				
Any longer-term work duty modification†	*1.0*	*2.3 (0.6–9.6)*	*2.4 (0.6–9.1)*	*3.6 (1.1–12)*

Obstructive Sleep Apnea and the Risk of Cognitive Decline in Older Adults

Nadia Gosselin[1,2,3], Andrée-Ann Baril[1,2,3], Ricardo S. Osorio[4,5], Marta Kaminska[3,6], and Julie Carrier[1,2,3]



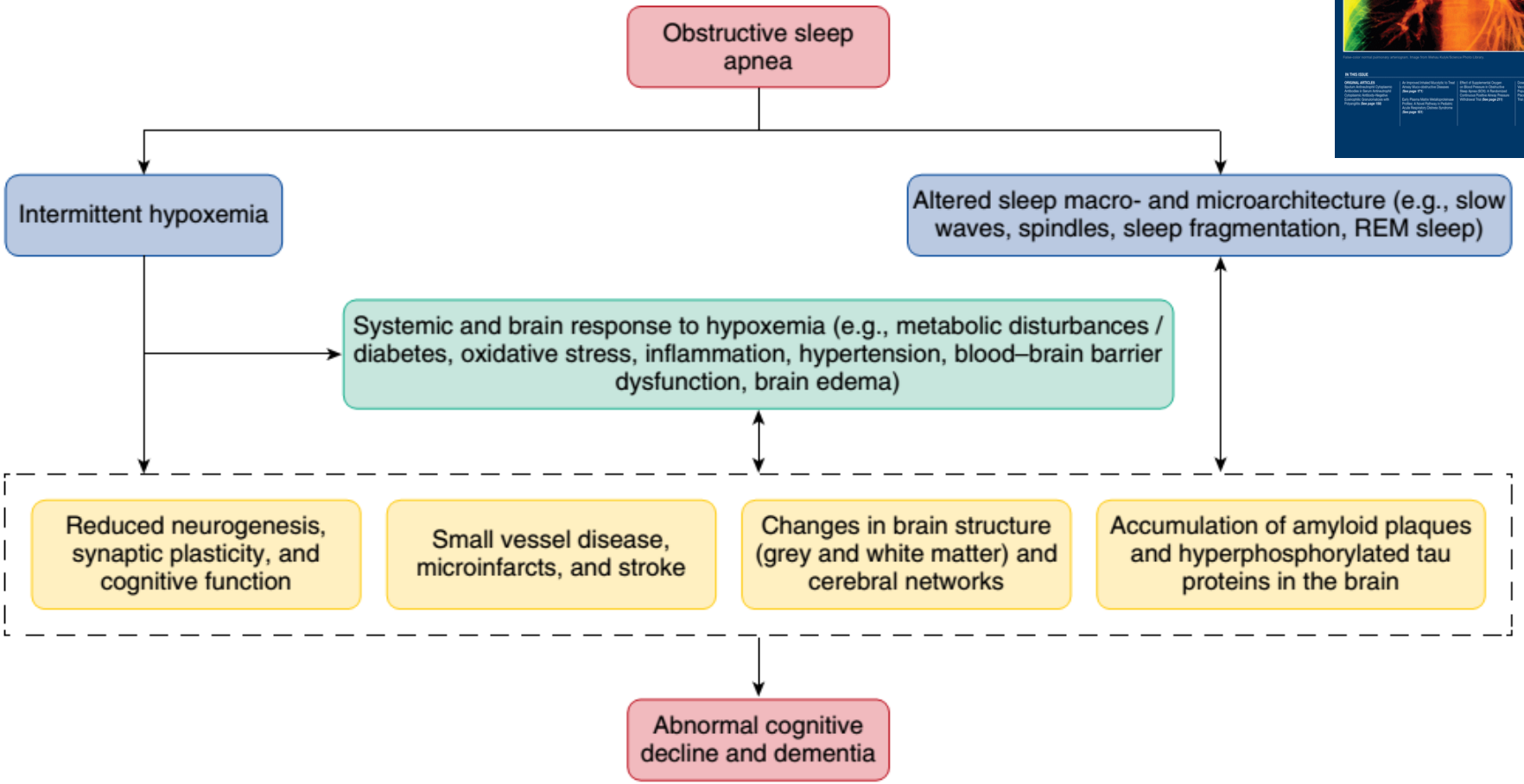
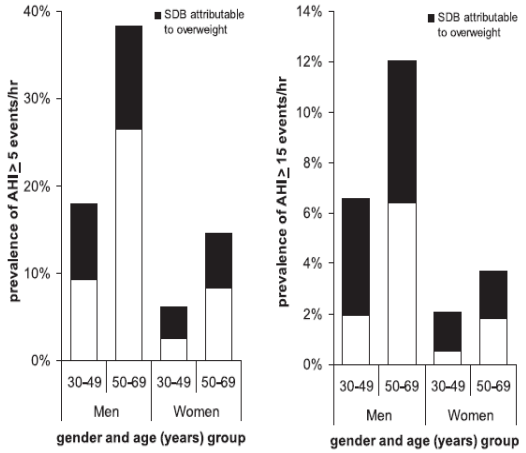


Figure 1. Schematic representation of possible mechanisms linking obstructive sleep apnea to dementia. Obstructive sleep apnea leads to intermittent hypoxemia and changes in sleep macro- and microarchitecture. Intermittent hypoxemia probably causes systemic and brain responses that include metabolic disturbances/diabetes, oxidative stress, inflammation, hypertension, blood–brain barrier dysfunctions, and brain edema. These responses, combined with the altered sleep macro- and microarchitecture, may lead to small-vessel disease, microinfarcts, strokes, reduced neurogenesis, reduced synaptic plasticity, decreased cognitive functioning, changes in brain white and gray matter, changes in cerebral networks, and abnormal levels of Alzheimer's disease biomarkers, which can all be involved in abnormal cognitive decline and dementia. Mechanisms in yellow boxes/dashed rectangle may all interact to create a vicious cycle; they also have the potential to alter sleep architecture and play a role in the systemic and brain responses to hypoxemia.

AJRCCM 2019;199(2):142-148

Fattori coinvolti nell'ostruzione delle vie aeree superiori
Fattori Anatomici

BMI



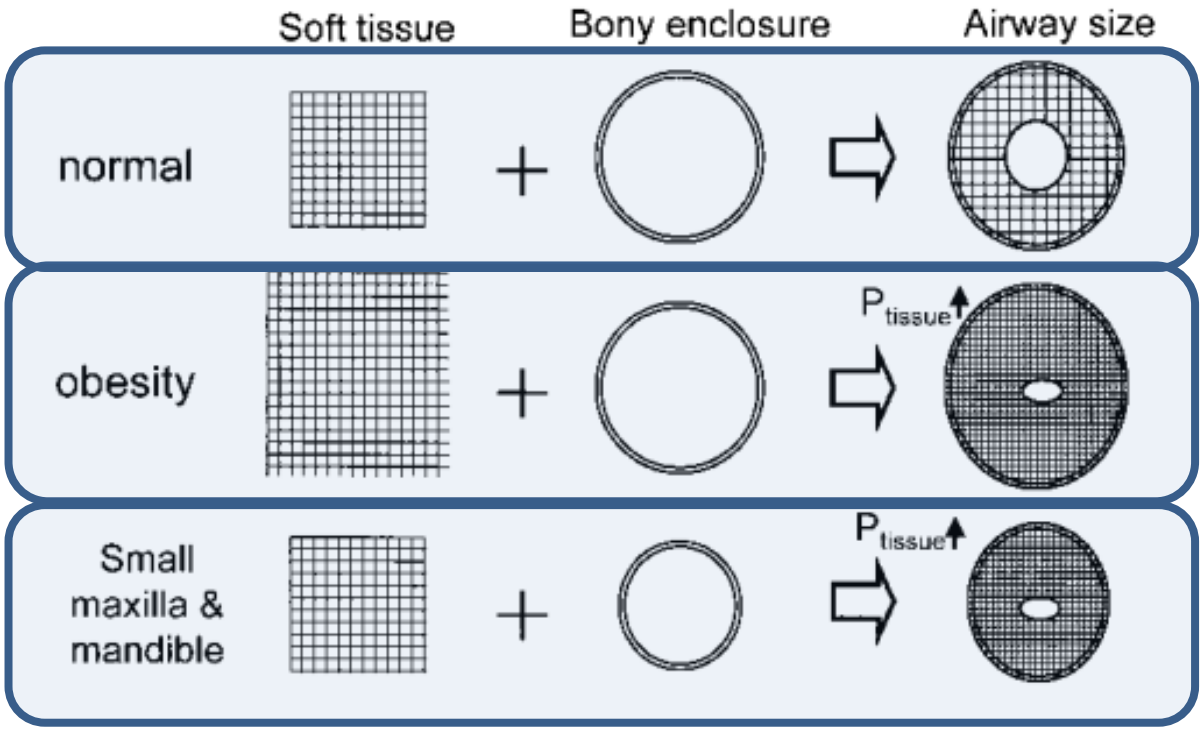
Young T et al – J Appl Physiol 2005; 99:1592-9

ALTERAZIONI ANATOMICHE VAS

- deviazione setto nasale, ipertrofia turbinati
- ipertrofia adenoidi
- ipertrofia ugola, palato molle, tonsille
- macroglossia
- retrognazia

Contribution of Body Habitus and Craniofacial Characteristics to Segmental Closing Pressures of the Passive Pharynx in Patients with Sleep-Disordered Breathing

TOSHIHIDE WATANABE, SHIROH ISONO, ATSUKO TANAKA, HIDEKI TANZAWA, and TAKASHI NISHINO



Am J Respir Crit Care Med Vol 165. pp 260–265, 2002

STATE-OF-THE-ART PAPER

Obstructive Sleep Apnea

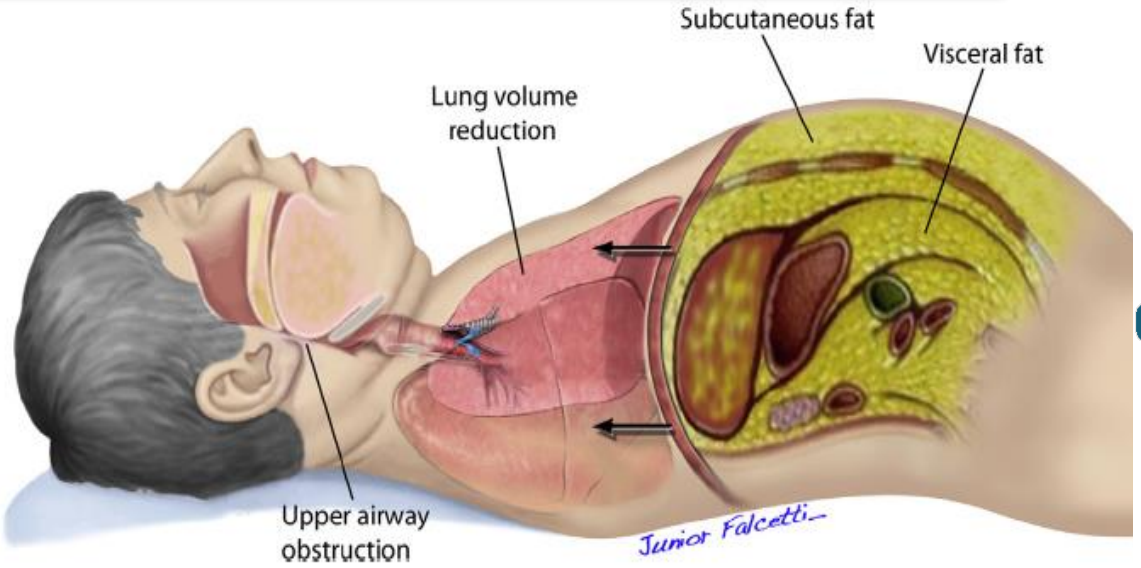
A Cardiometabolic Risk in Obesity and the Metabolic Syndrome

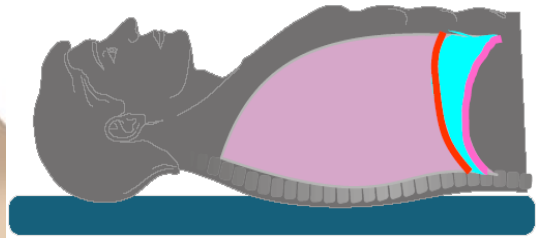
Luciano F. Drager, MD, PhD,* Sônia M. Togeiro, MD, PhD,† Vsevolod Y. Polotsky, MD, PhD,‡ Geraldo Lorenzi-Filho, MD, PhD*

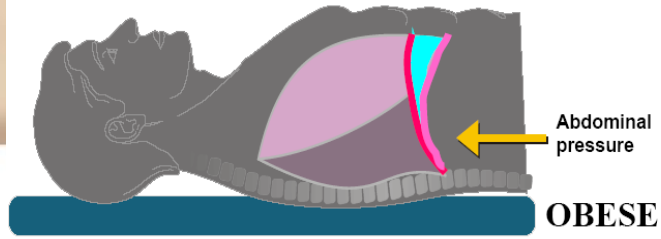
São Paulo, Brazil; and Baltimore, Maryland

OBESITA'

J Am Coll Cardiol 2013;62:569–76

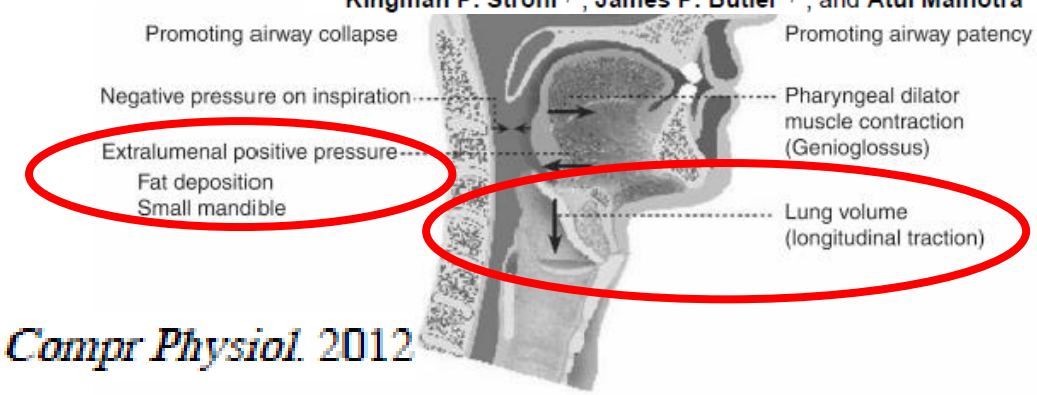






Mechanical Properties of the Upper Airway

Kingman P. Strohl*,1, James P. Butler2,3, and Atul Malhotra3



Compr Physiol. 2012

Contents lists available at ScienceDirect

Sleep Medicine Reviews

journal homepage: www.elsevier.com/locate/smrv

CLINICAL REVIEW

Phenotypic approaches to obstructive sleep apnoea – New pathways for targeted therapy

Sleep Med Rev. 2018;37:45-59

Danny J. Eckert*

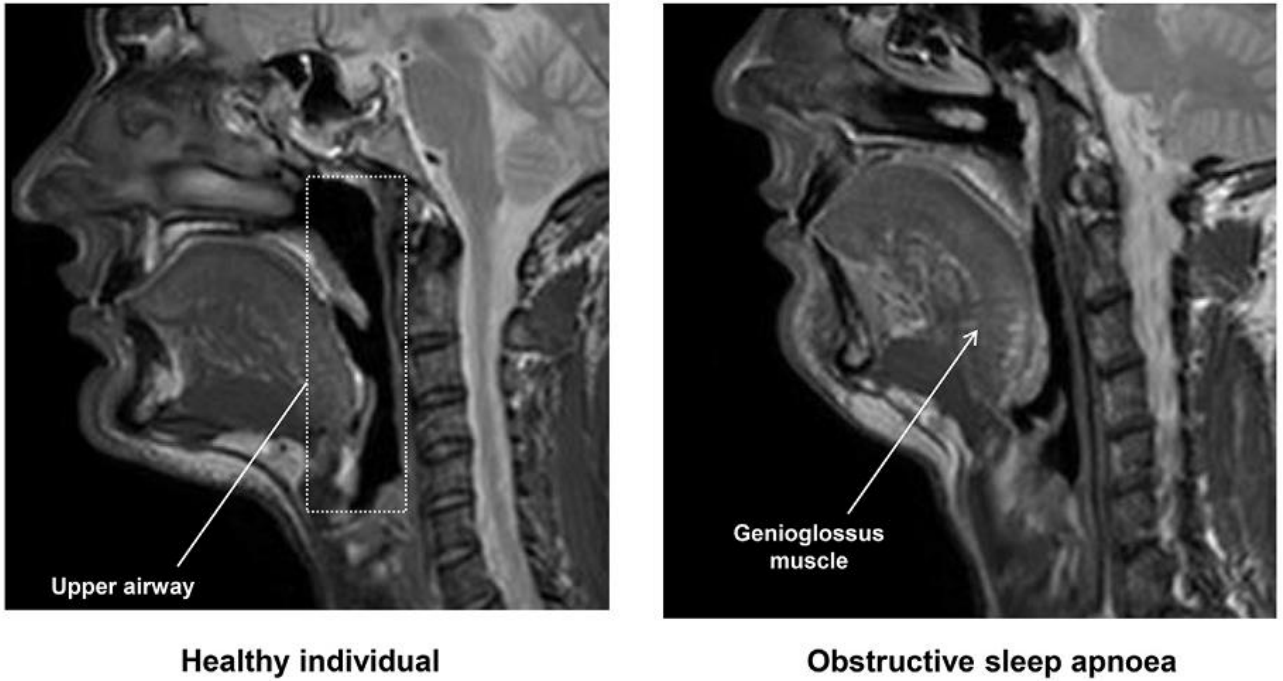
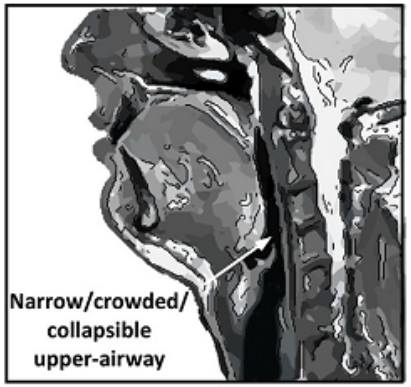


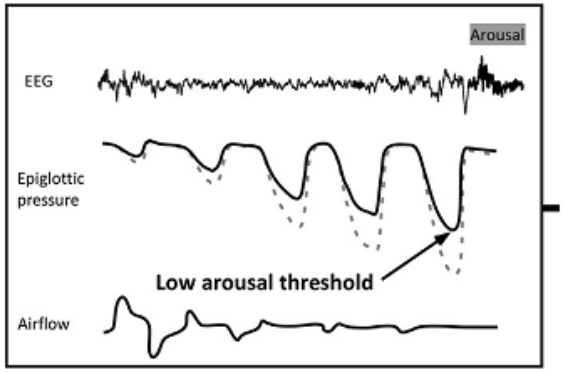
Fig. 2. Sagittal magnetic resonance images from a 33 year old, non-obese (body mass index = 24 kg/m^2), male without obstructive sleep apnoea (Healthy Individual) and a 33 year old male (body mass index = 28 kg/m^2) with obstructive sleep apnoea of moderate severity (apnoea/hypopnoea index = 17 events/h sleep). Note the decreased pharyngeal size in the person with obstructive sleep apnoea and the potential contributing factors (e.g., retrognathia, large tongue volume, differences in genioglossus muscle fibre angulation and increased pharyngeal length).

Fattori coinvolti nell'ostruzione delle vie aeree superiori
Fattori Funzionali

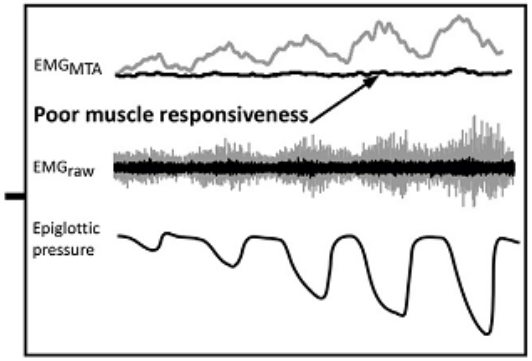


100% anatomical compromise of variable magnitude (23% Severe)

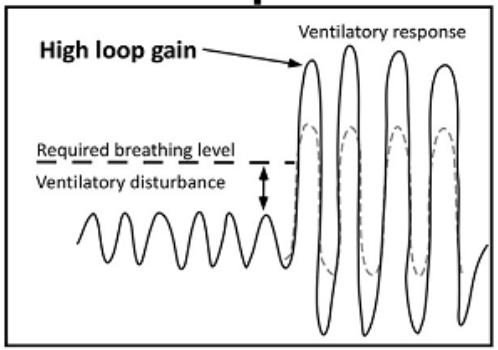
37% low arousal threshold



36% poor muscle responsiveness



OSA

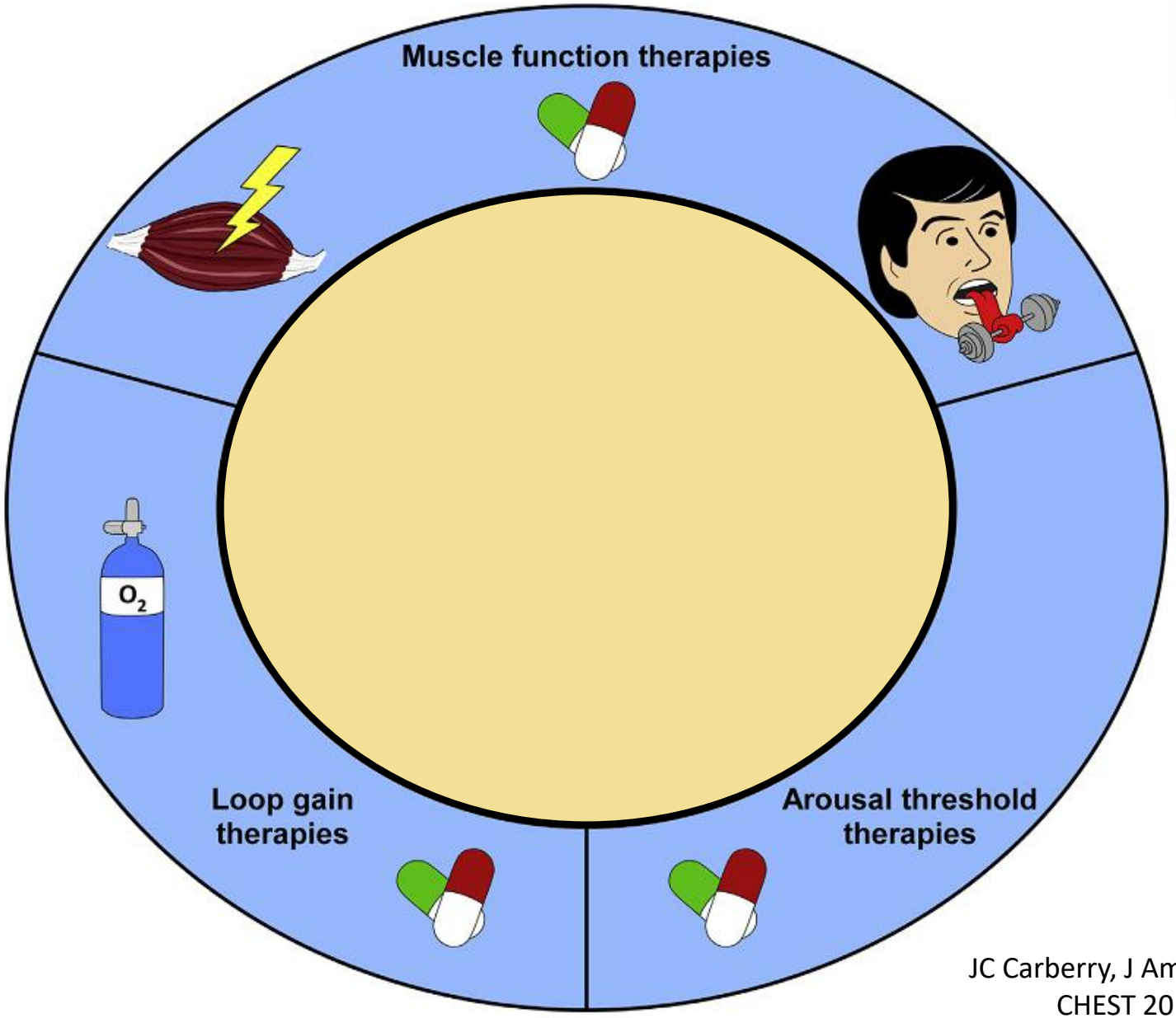


36% unstable respiratory control

Personalized Management Approach for OSA

JC Carberry, J Amatoury, J Eckert
Chest 2018;153(3):744-755

Personalized Management Approach for OSA



JC Carberry, J Amatoury, J Eckert
CHEST 2018;153:744-755

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Sleep Medicine Reviews

journal homepage: www.elsevier.com/locate/smrv

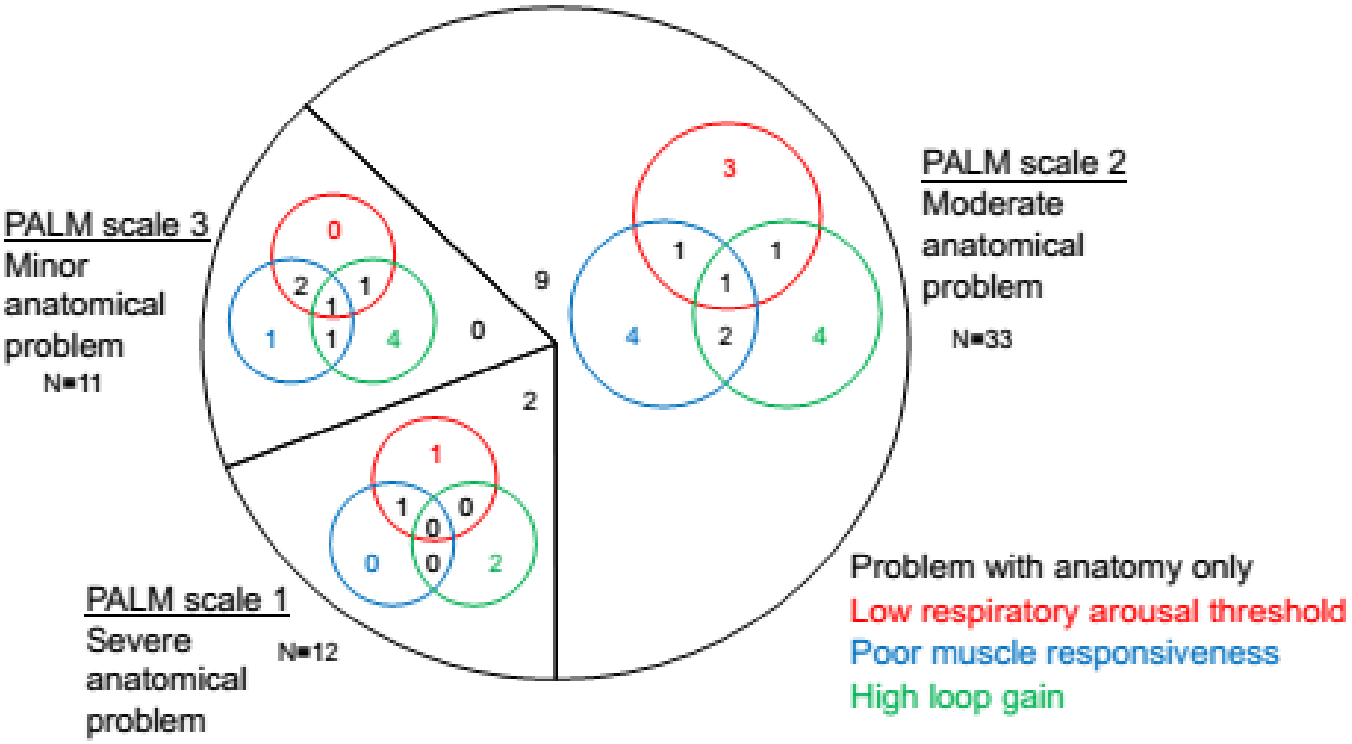
CLINICAL REVIEW

Phenotypic approaches to obstructive sleep apnoea – New pathways for targeted therapy

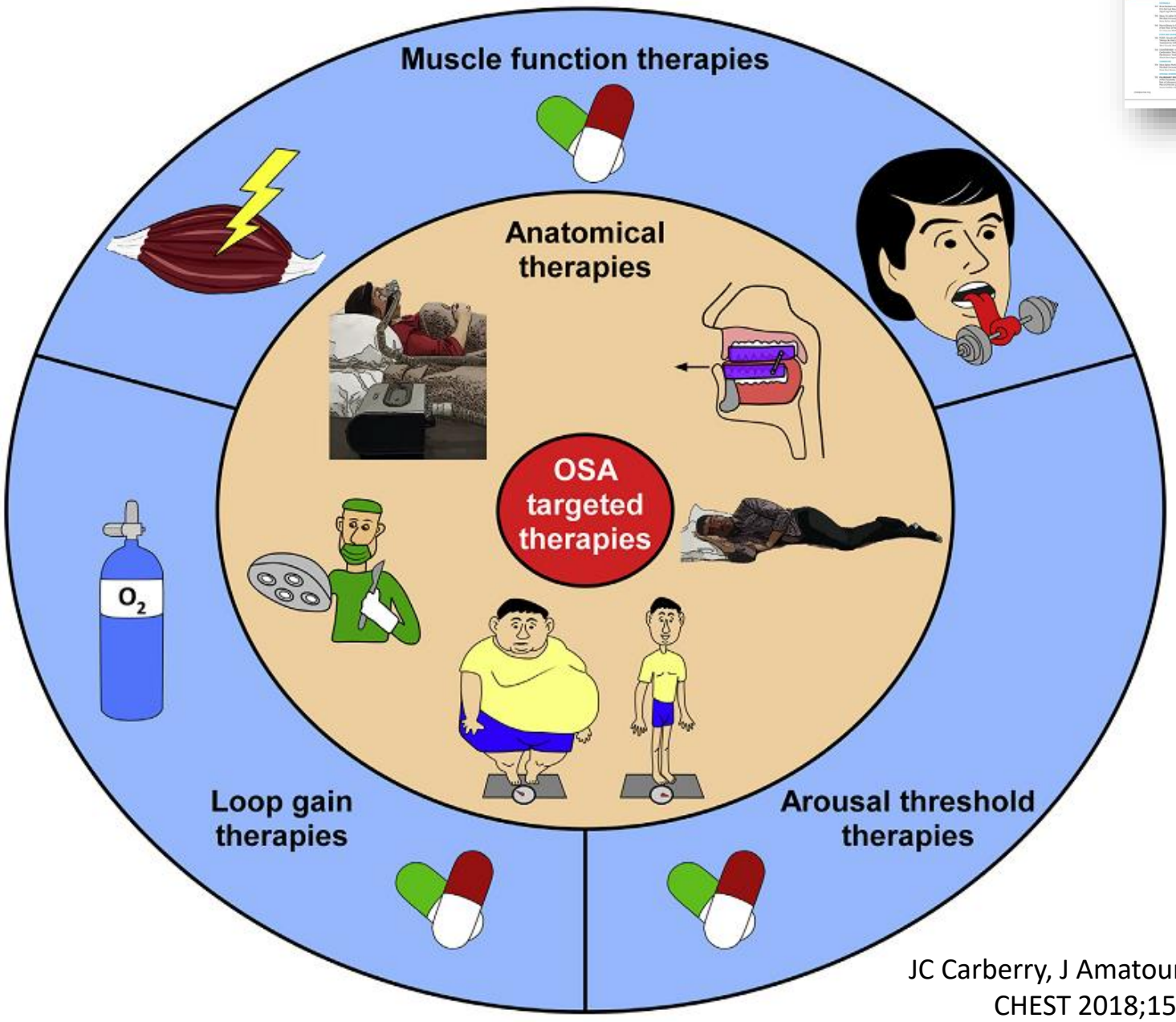
Danny J. Eckert*

Sleep Med Rev. 2018;37:45-59

Diagramma di Venn



Personalized Management Approach for OSA



JC Carberry, J Amatoury, J Eckert
CHEST 2018;153:744-755

OSA Treatment has a Major Impact on Comorbidities

After one year, patients surveyed state OSA treatment delivers…

Hypertension

- 41% report blood pressure improvement
- 17% report decrease in medication usage

Diabetes

- 31% report improved HbA1c
- 14x increase in “good quality” sleep

Asthma & Breathing Conditions

- 54% report improved respiratory function
- 70% increase in patients reporting symptoms as mild
- 8x increase in “good quality” sleep

OSA Treatment has a Major Impact on Comorbidities

After one year, patients surveyed state OSA treatment delivers…

Insomnia

- 7x increase in good quality sleep
- Decline from 54% to 1% reporting “very bad” quality sleep

Depression, Anxiety and Mental Health

- 12x increase in “good quality” sleep
- 4x reduction in reported life threatening mental health condition
- 49% report improved mental health

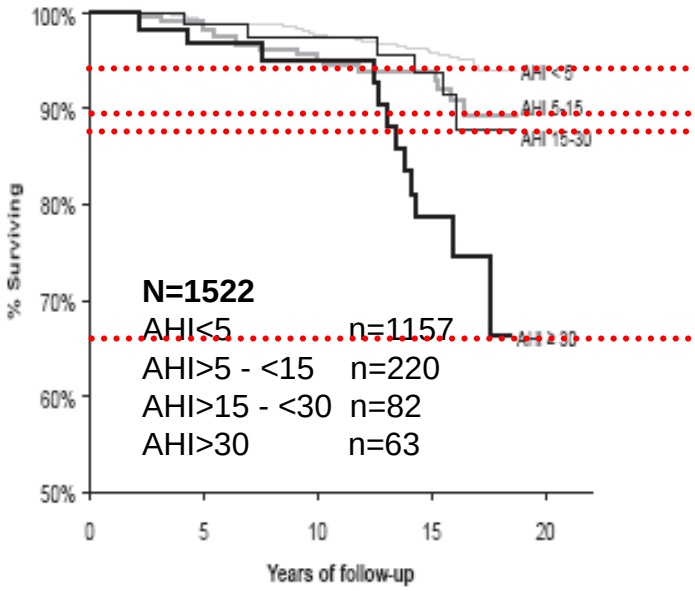
Heart Disease

- 56% report reduced heart disease risk
- 5x decrease in self-reported life-threatening heart disease
- Decline from 50% to 3% reporting “very bad” quality sleep
- Increase from 0% to 26% reporting “very good” quality sleep

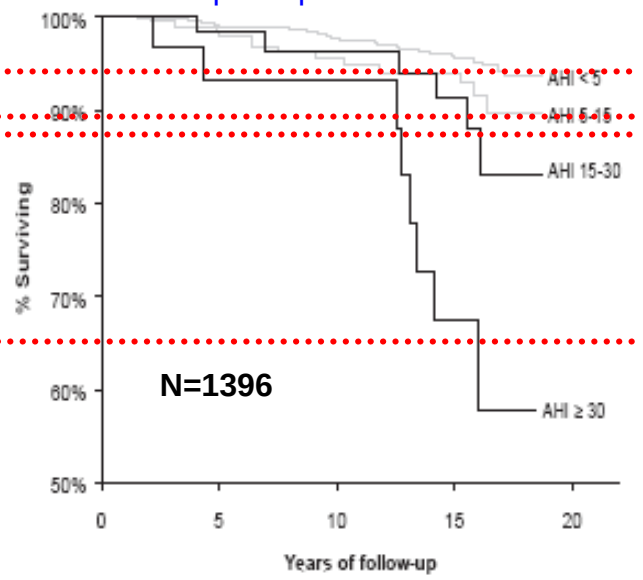
Sleep Disordered Breathing and Mortality: Eighteen-Year Follow-up of the Wisconsin Sleep Cohort

Terry Young, PhD[1]; Laurel Finn, MS[1]; Paul E. Peppard, PhD[1]; Mariana Szklo-Coxe, PhD[1]; Diane Austin, MS[1]; F. Javier Nieto, PhD[1]; Robin Stubbs[1], BS; K. Mae Hla, MD[2]

A) Total sample

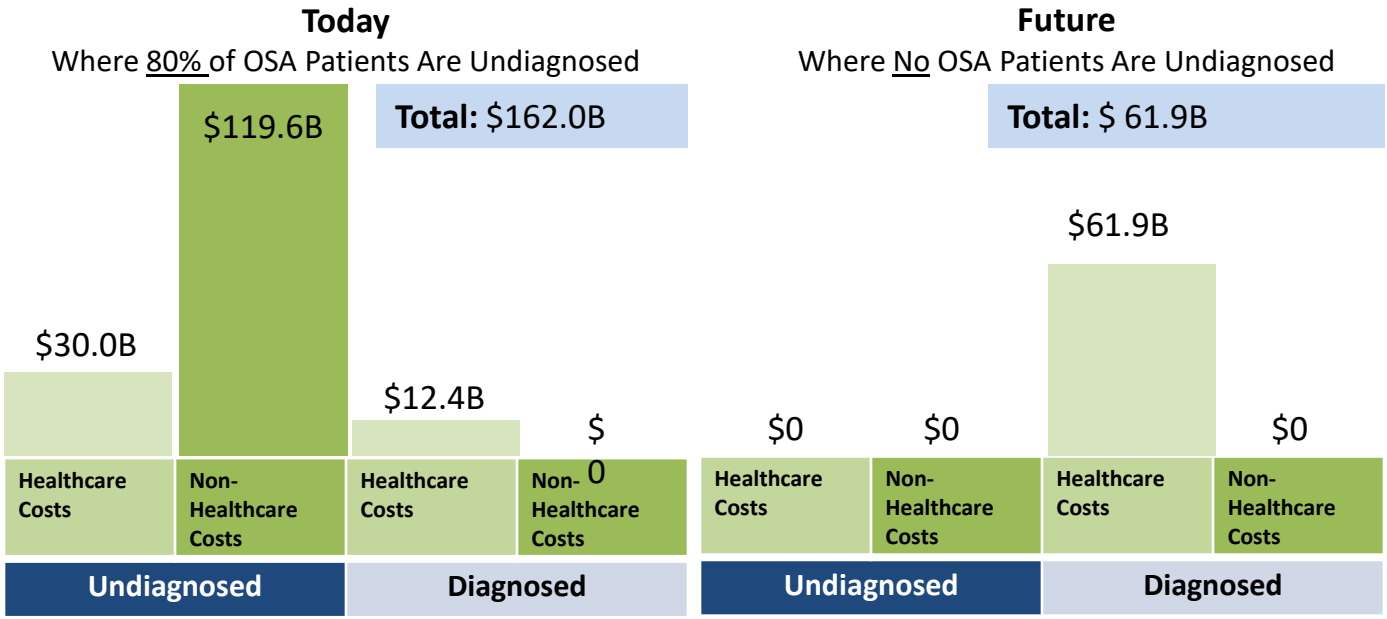


B) Sample excluding 126 CPAP treated participants



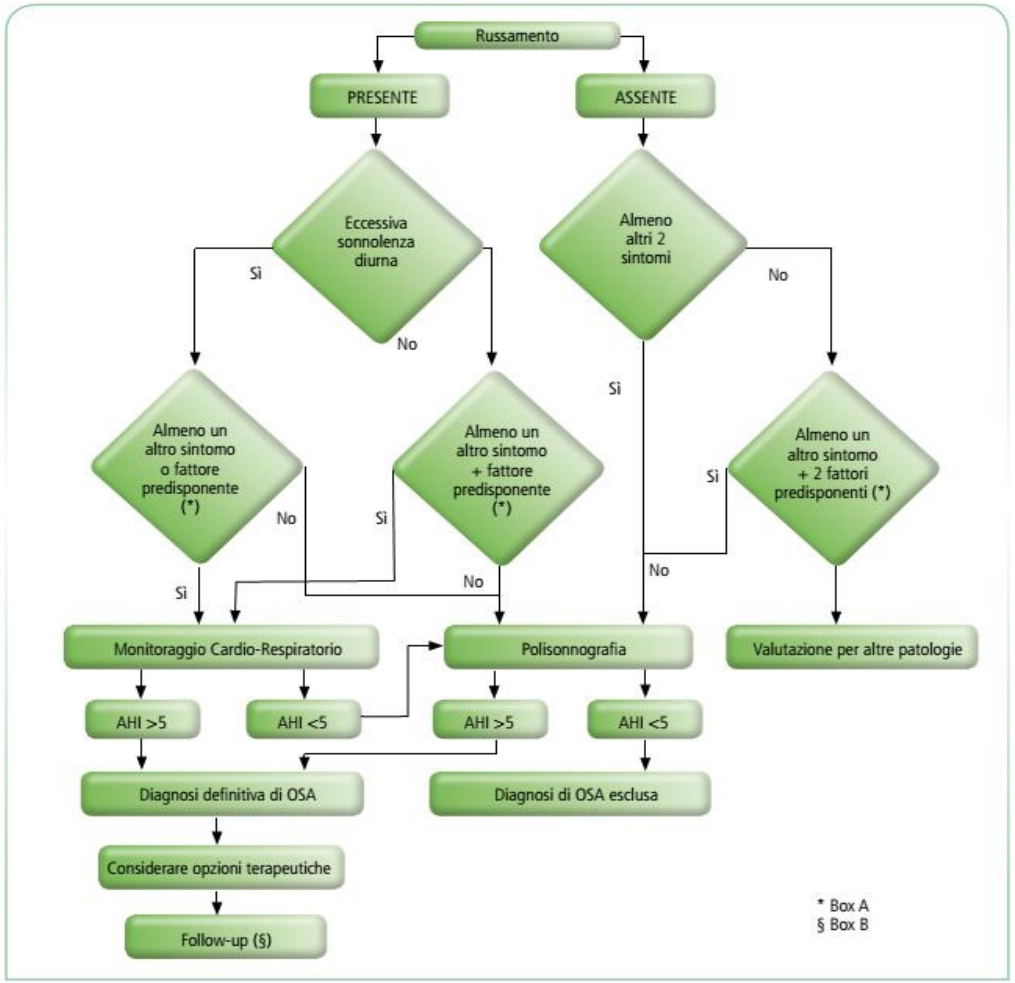
Sleep 2008;31:1071-8

Diagnosing and Treating All 29.4M Americans with OSA Could Save $100.1 Billion



Apnee Ostruttive nel Sonno (OSA):

DR. GIUSEPPE INSALACO
DR.SSA ADRIANA SALVAGGIO
Istituto di Biomedicina e Immunologia Molecolare
Consiglio Nazionale delle Ricerche
Sede di Palermo



Box A

FATTORI PREDISPONENTI	• Ipertrofia tessuti molli VAS
	• Alterazioni cranio-facciali
	• BMI >25
SINTOMI	• Russamento
	• Apnee osservate
	• Eccessiva Sonnolenza Diurna (ESS >10)
	• Soffocamento/Boccheggiamento
	• Nicturia
	• Depressione
	• Irritabilità
	• Cefalea al risveglio
	• Difficoltà di concentrazione
	• Riduzione della memoria
	• Disfunzione erettile
	• Riduzione della libido
	• Reflusso gastro-esofageo

Box B

OUTCOME AL FOLLOW-UP	• Aderenza alla terapia
	• Sonno adeguato
	• Risoluzione sonnolenza
	• Miglioramento della qualità di vita
	• Soddisfazione del paziente
	• Soddisfazione della coppia
	• Riduzione di fattori che peggiorano la patologia

Take-home messages

SLEEP MEDICINE

HARVARD MEDICAL SCHOOL

The Price of Fatigue:
The surprising economic costs of unmanaged sleep apnea

as an educational resource to increase awareness among the general public and with policy makers about the significance of this public health problem.

Economic cost of unmanaged moderate-severe OSA in the US estimated between ~$65B and $165B

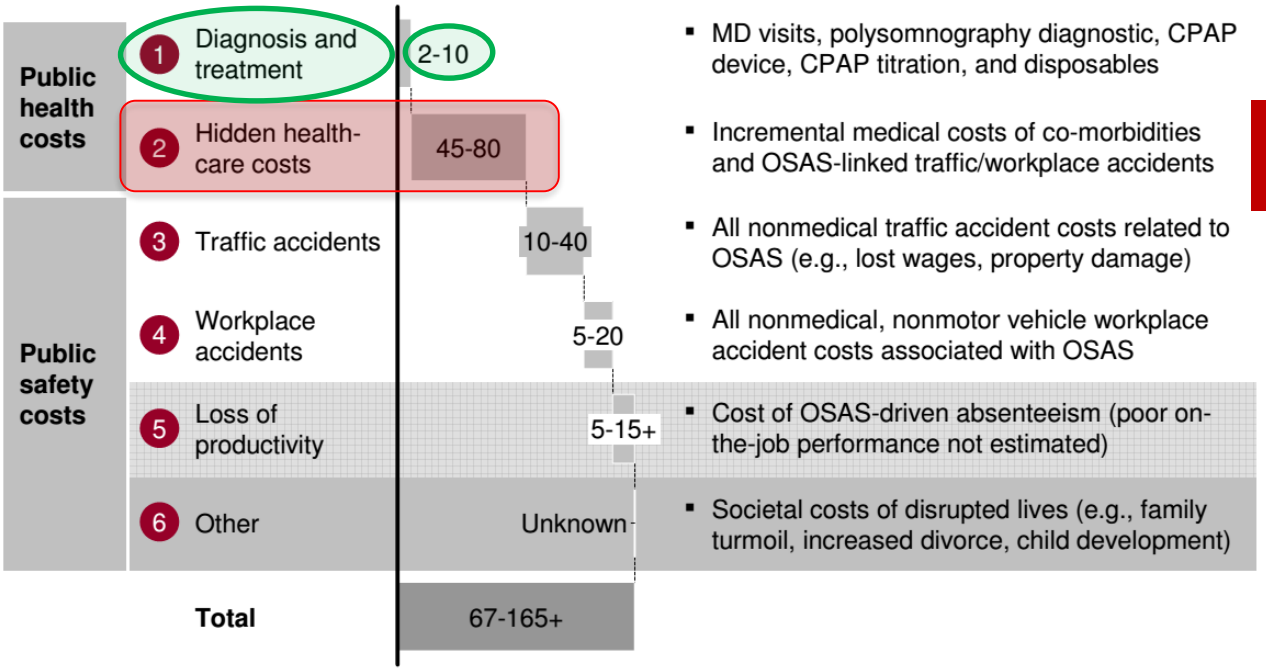
PRELIMINARY

Partially sized

Not sized

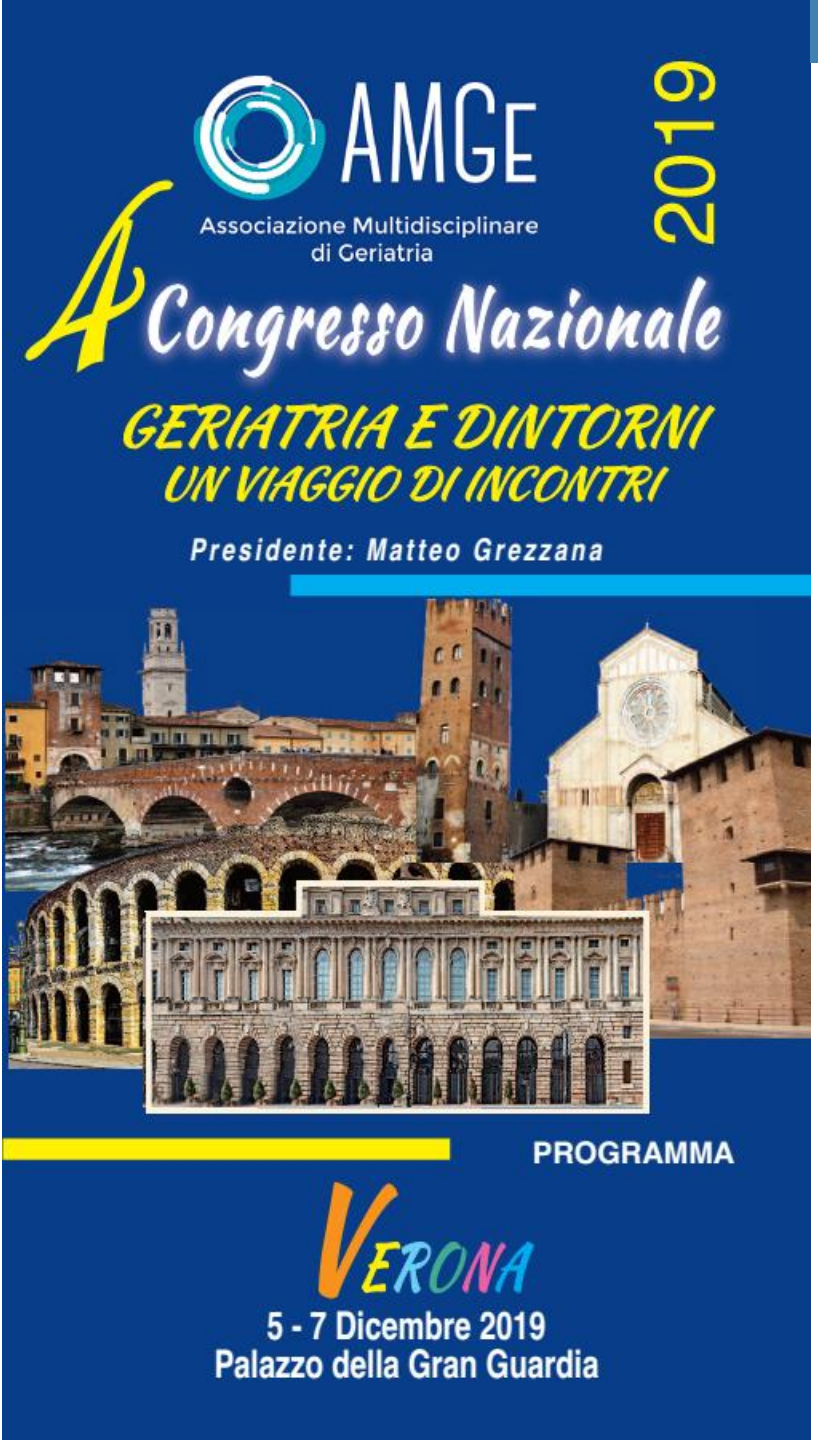
Estimated annual economic cost of OSA/OSAS in the US

$ Billions



COSTI SANITARI NASCOSTI

SOURCE: Academic papers, expert interviews, market reports



SALA CONVEGNI VENERDÌ 6 DICEMBRE

Grazie

per l'attenzione

OSAS: dalla diagnosi alla terapia

IRIB CNR
ISTITUTO PER LA RICERCA E L'INNOVAZIONE BIOMEDICA
CONSIGLIO NAZIONALE DELLE RICERCHE

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