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# Sleep Better, Feel Better, Live Better

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Montefiore Medical Center  
Bronx, NY

Otolaryngology & Sleep Medicine

Otorhinolaryngology –  
Head and Neck Surgery

# Sleep Problems

- Not enough sleep
- Can't fall asleep or can't stay asleep
- Breathing problems during sleep

# New York Times Health Article

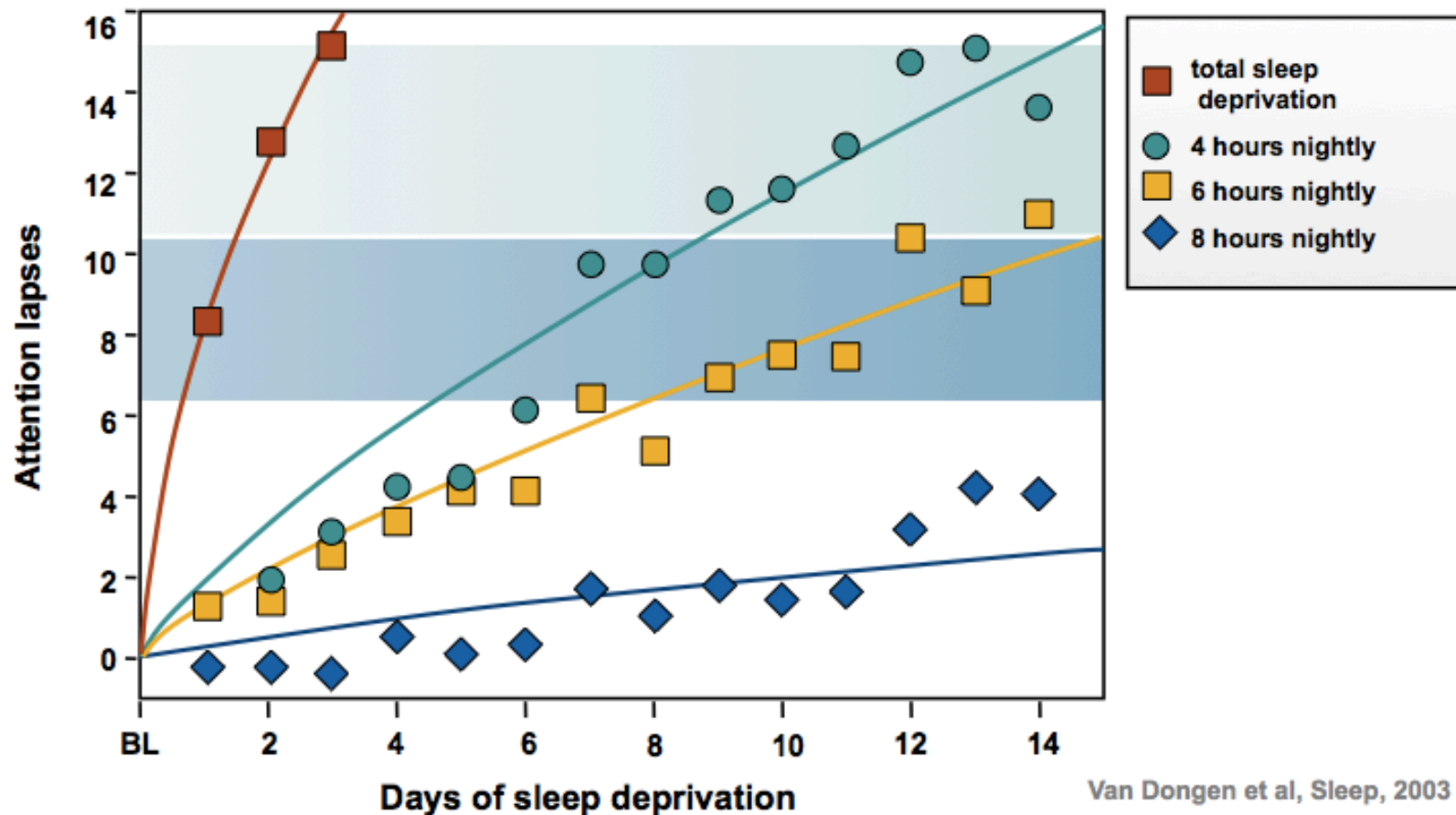
- Poor sleep is associated with
  - Higher risk of depression, anxiety and substance abuse
  - Memory problems
  - Heart disease
  - Increased diabetes risk
  - More weight gain
  - 3 x more susceptible to colds

# Obstructive Sleep Apnea

- Sleep Apnea is associated with
  - Increased diabetes risk
  - Increased risk of heart disease, heart attack and stroke
  - Higher rates of ADHD
  - Lowers life expectancy by 20 years
  - 10X higher risk of car accidents
  - Increased risk of memory loss and dementia
  - 5 times increased risk of dying from cancer

# Sleep Deprivation

## Sleep Deprivation Decreases Attention



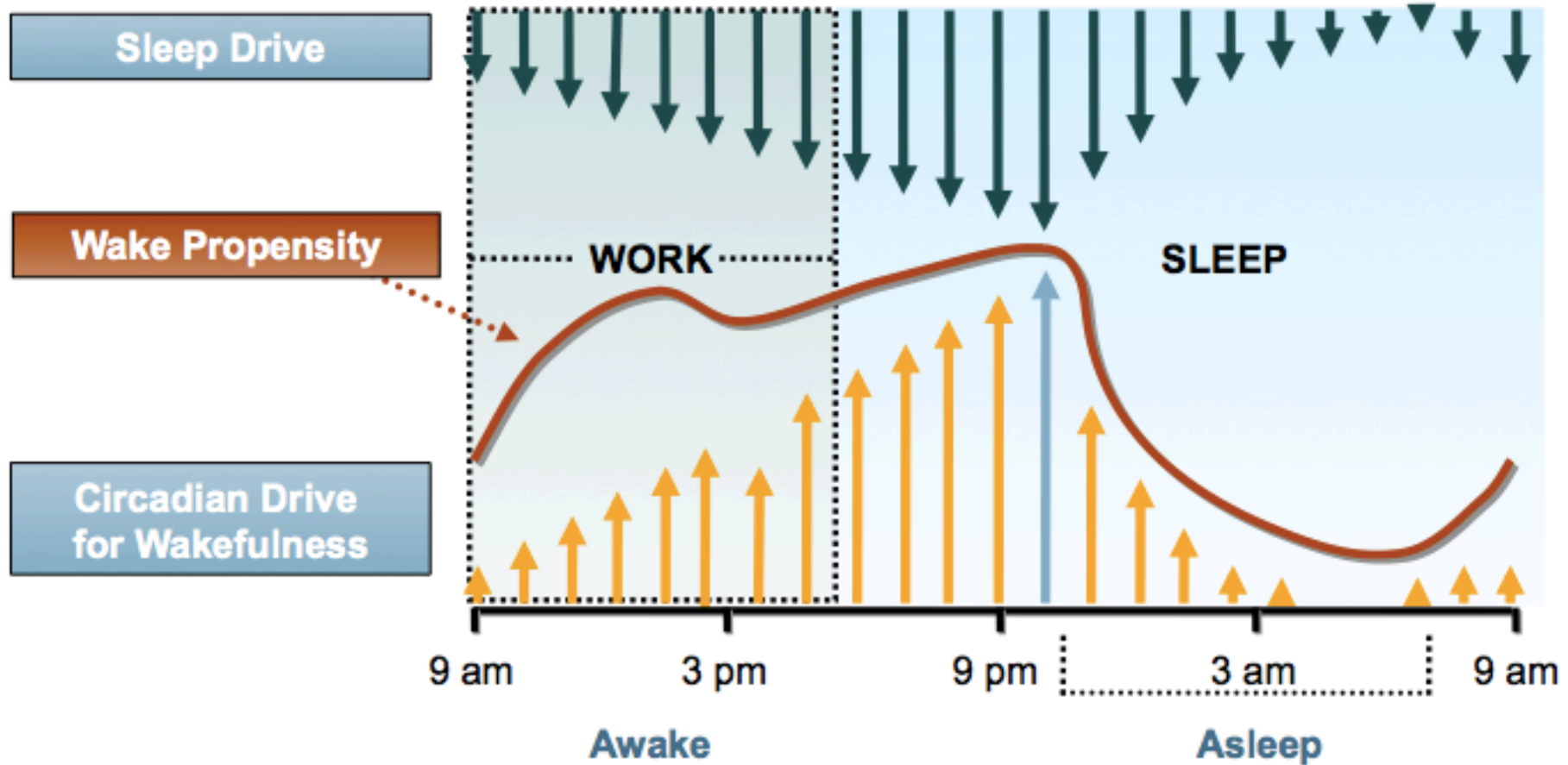


# Shift Work

- Higher rates of
  - Depression
  - Heart disease
  - Breast and colon cancer in women

# Physiologic Determinants of Sleepiness

## Normal Sleepiness



Adapted from: Kryger MH, et al. Principles and Practices of Sleep Medicine. 2000.

# Consequences of Poor Sleep

- Physiologic stress response
- Hormonal imbalance
- Appetite changes—makes you more hungry
  - craving sugary, fatty, salty, starchy foods
- Weight gain
- Narrow throat
- More reflux



# Glamour Magazine Experiment

- 8 women (25 to 35 y.o.), mildly overweight
- Asked to sleep minimum 7.5 hours for 10 weeks
- 6/7 lost 6 to 15 pounds
- 1/7 no change in weight, but lost 2.5 inches off her waist, hips and bust



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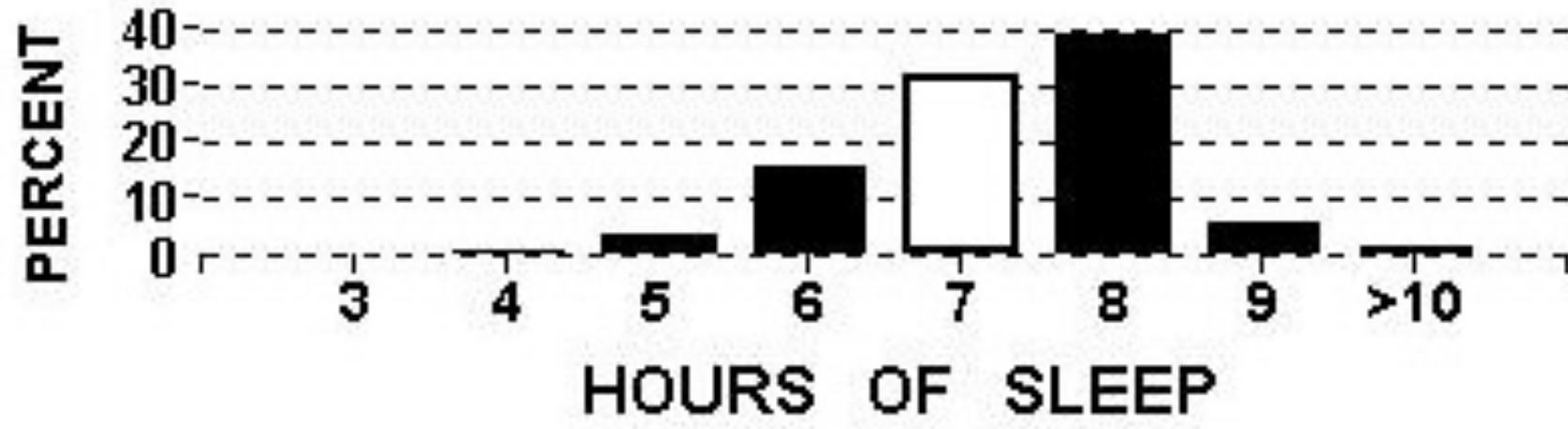
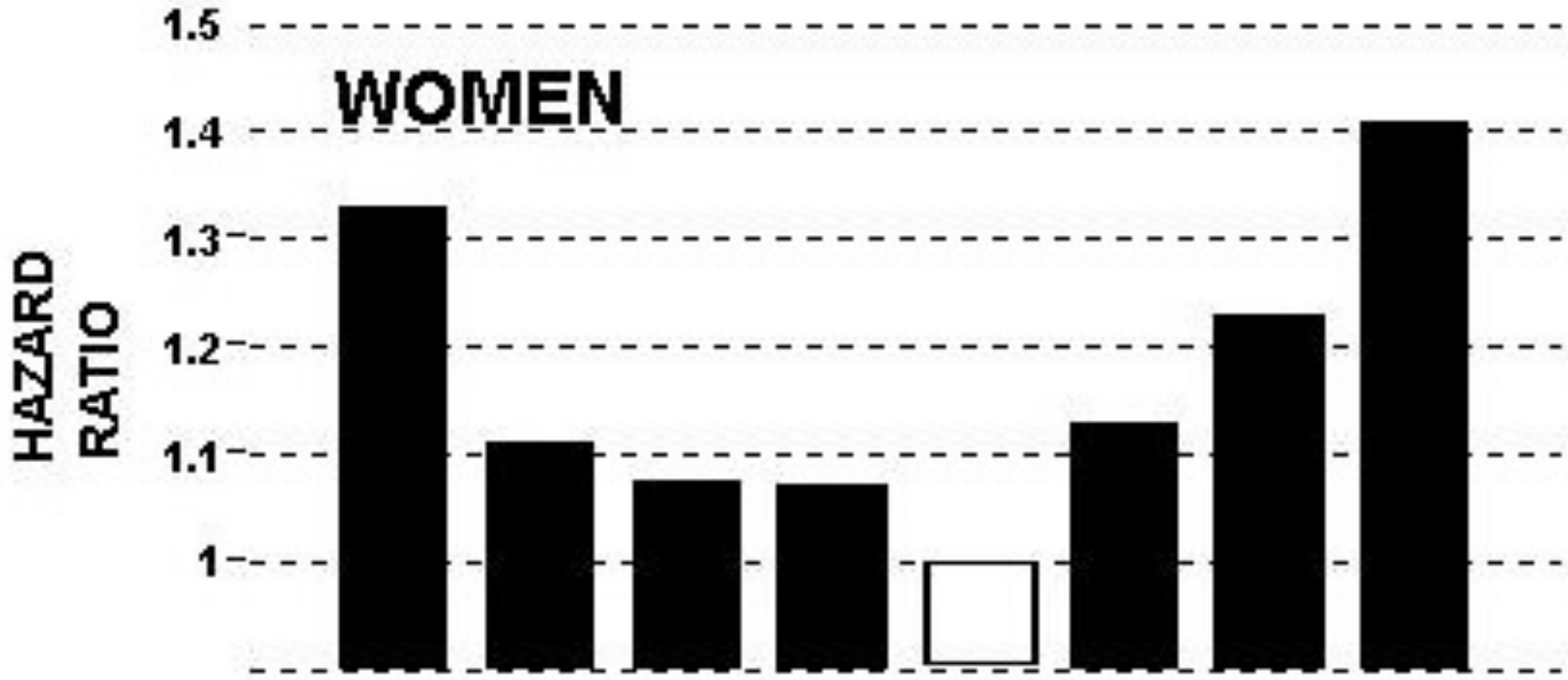
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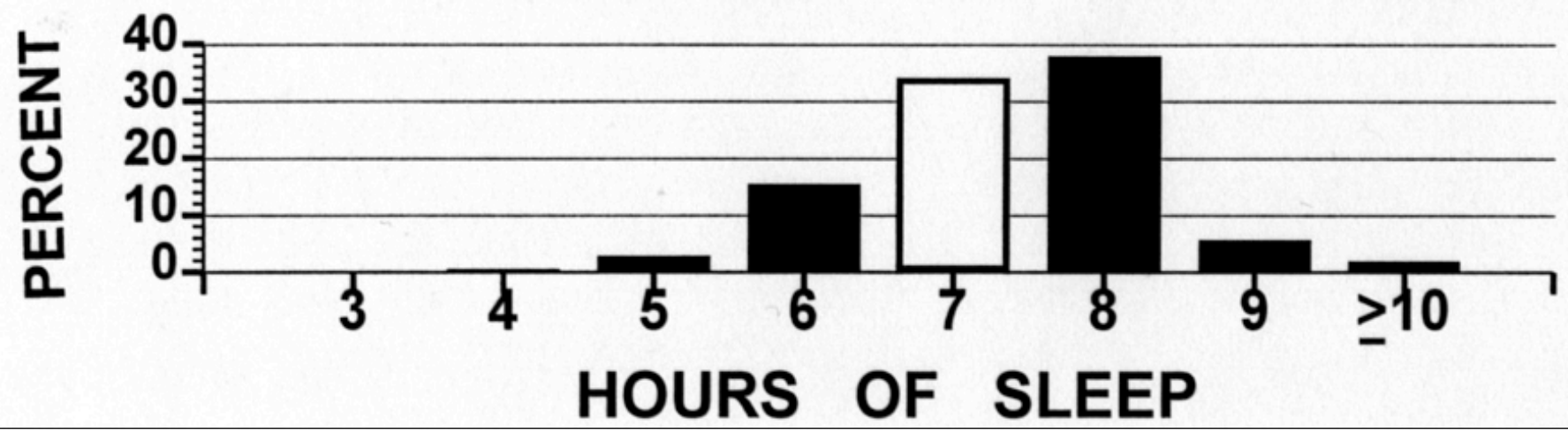
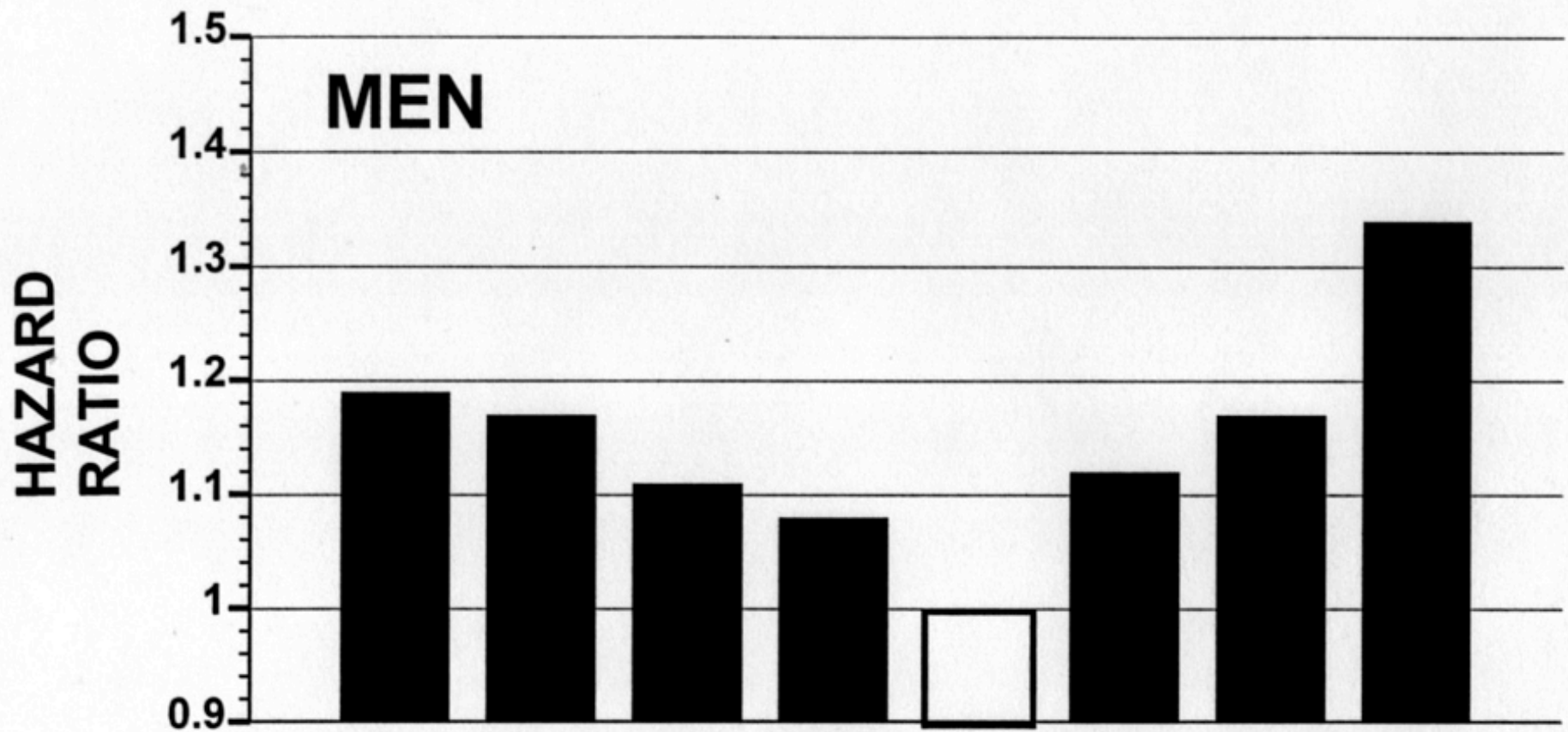
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# Consequences of Short Sleep

- Cleveland Clinic study: Women who sleep < 5 hours are 30% more likely to gain 30 pounds
- Short sleep < 6 hours increased risk of
  - Diabetes
  - High blood pressure
  - Heart disease
  - Metabolic syndrome
  - Depression & anxiety
  - Dying

# WOMEN







# Insomnia

- Sleep onset insomnia
- Sleep maintenance insomnia
- Hyperarousal theory
- Spellman's 3 Ps of Insomnia
  - Predisposing
  - Precipitating
  - Perpetuating



# Common Tips for Better Sleep

- Stick to regular schedule
- Don't go to bed hungry or stuffed
- Avoid caffeine, alcohol or exercise just before bedtime
- Bedtime ritual that's relaxing
- Don't use an electronic screen before bed
- Cool bedroom
- Comfortable mattress and pillow
- No daytime naps

# Common Tips for Better Sleep

- Manage stress
- Regular exercise
- Soothing relaxing music
- Aromatherapy
- Don't smoke
- Dark, quiet room
- Don't stay awake in bed for more than 30 minutes
- Avoid pets, children
- Warm milk, tea, etc.

# Sleep-Related Breathing Problems

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# Attractive?

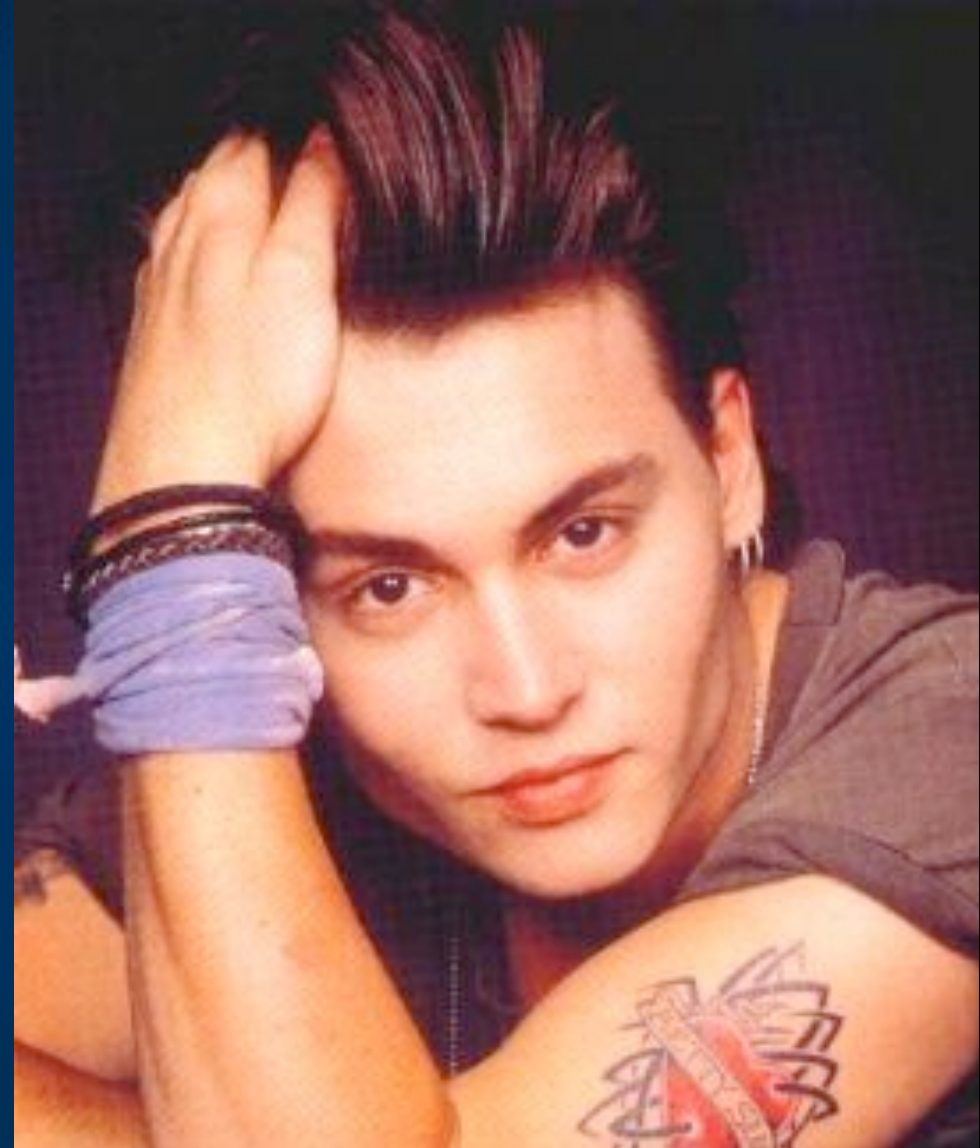


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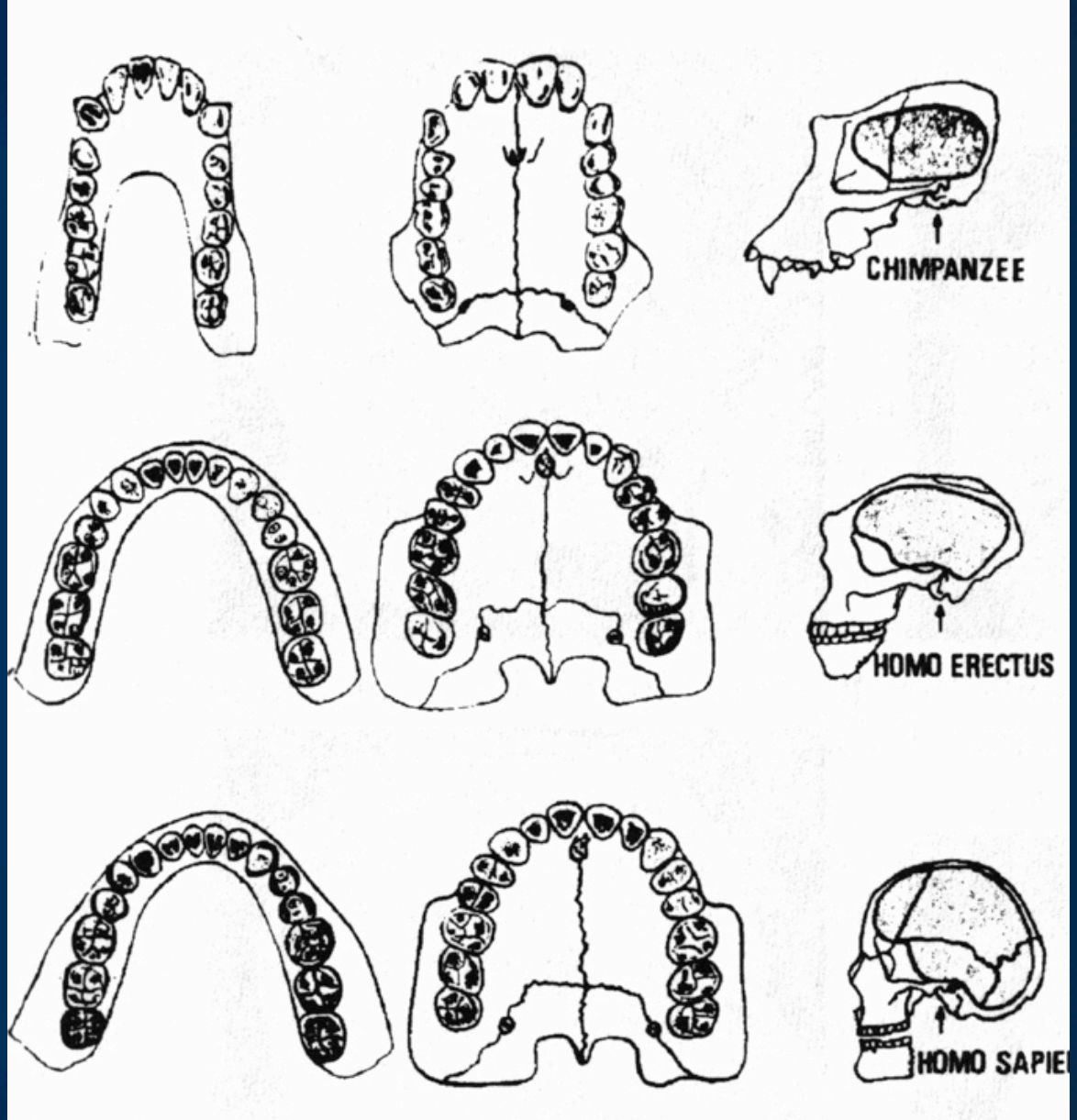
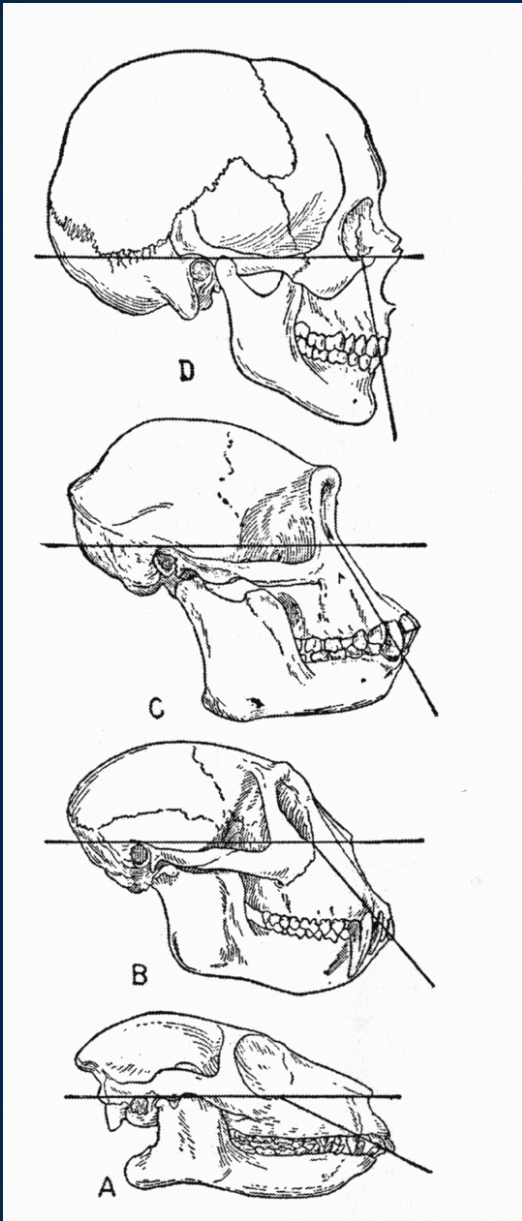


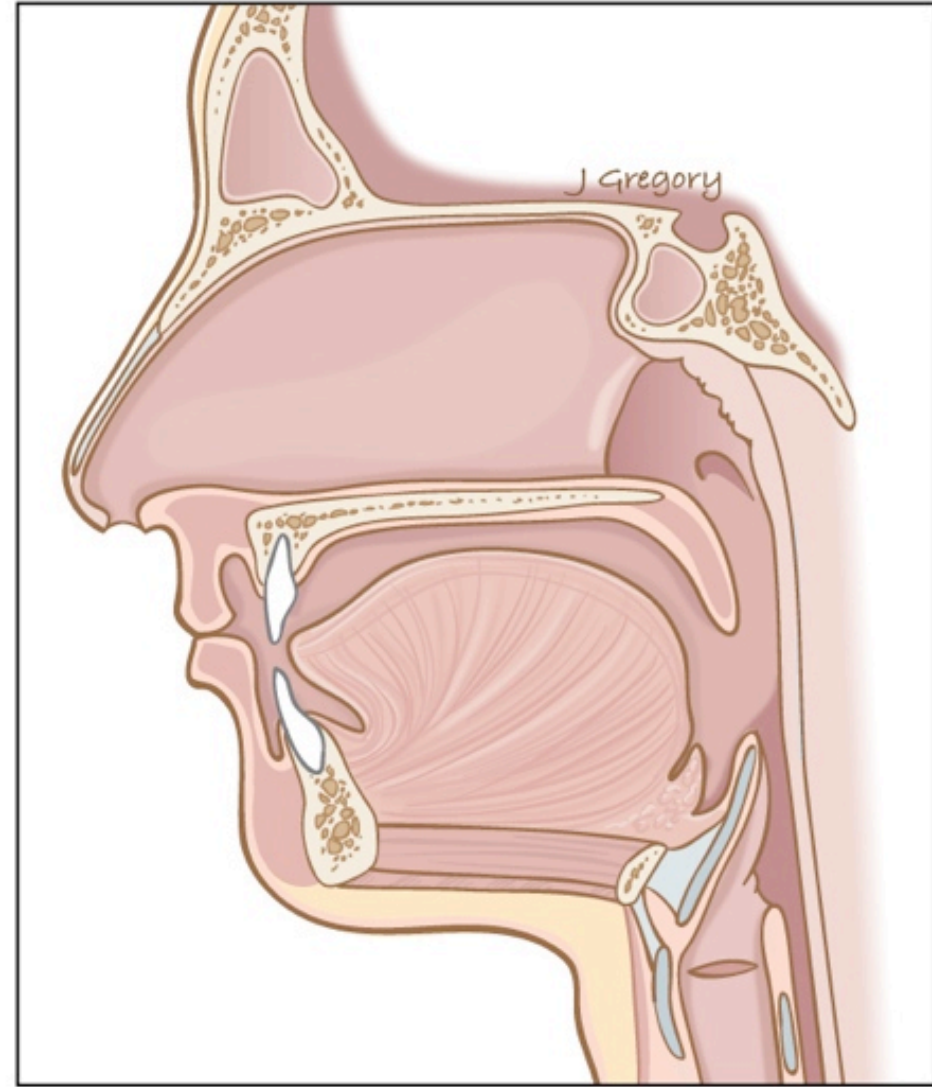
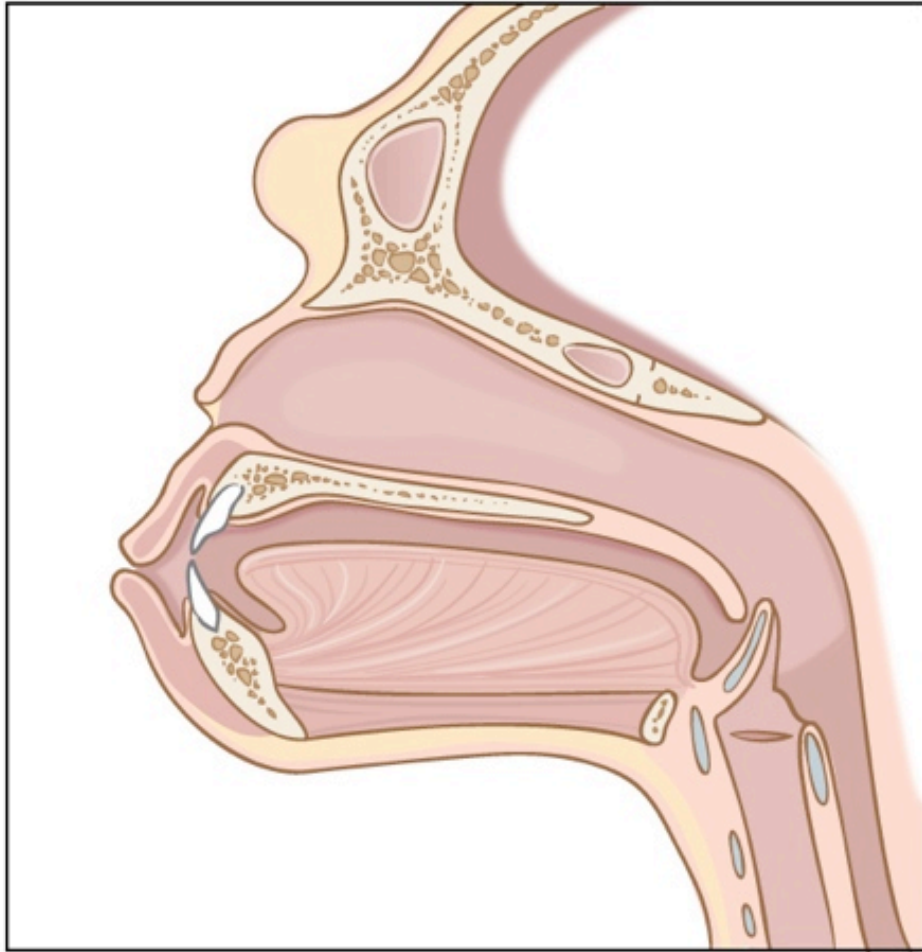
# Sleep Disordered Breathing & Evolution

- Humans only:
  - sleep disordered breathing
  - complex speech
  - true oropharynx

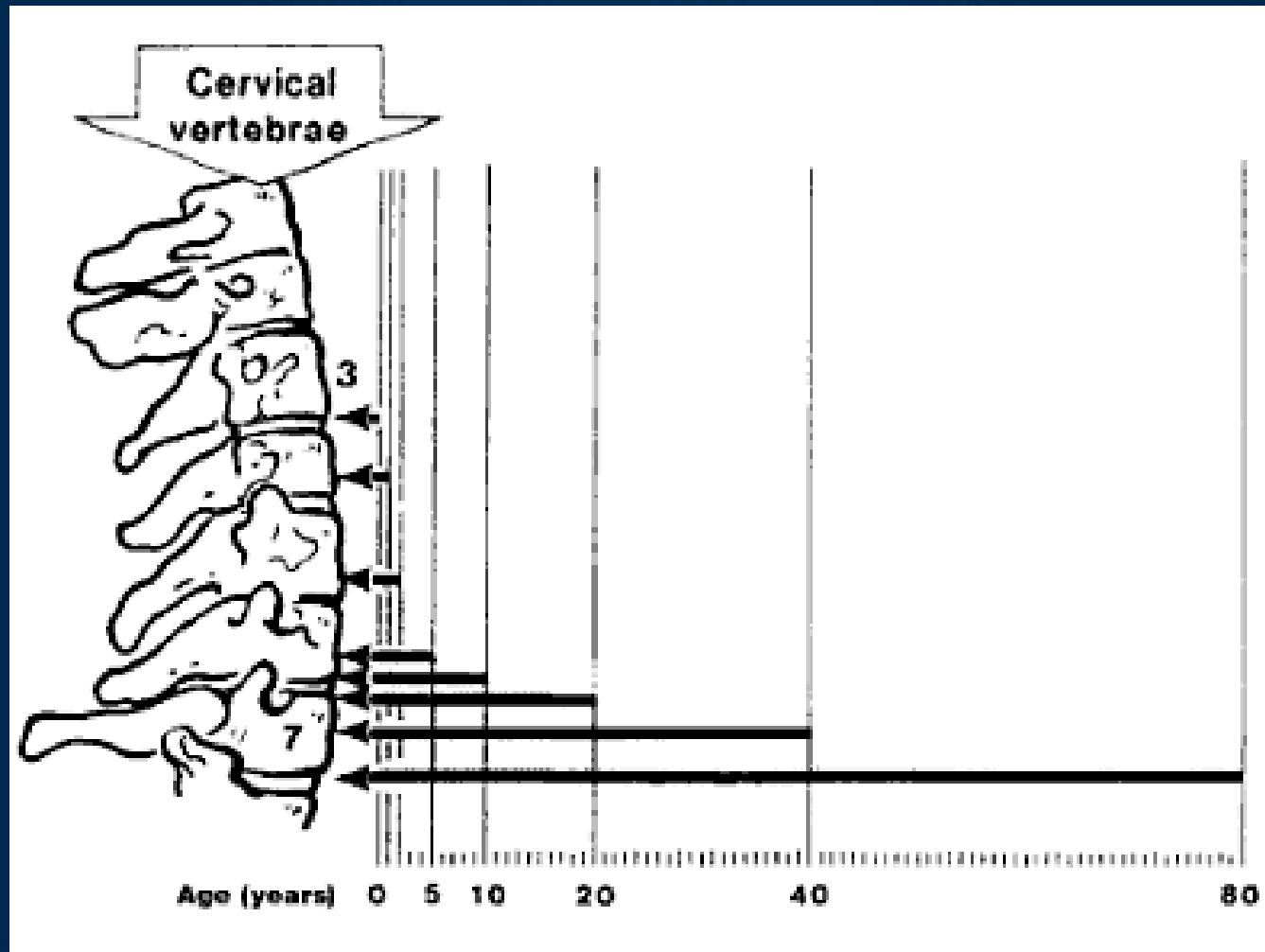
# Evolutionary / Anatomic Changes

- Klinorhynch
- Anterior migration of foramen magnum
- Laryngeal descent and loss of epiglottic – soft palate lock-up





# Vertical Descent of Larynx

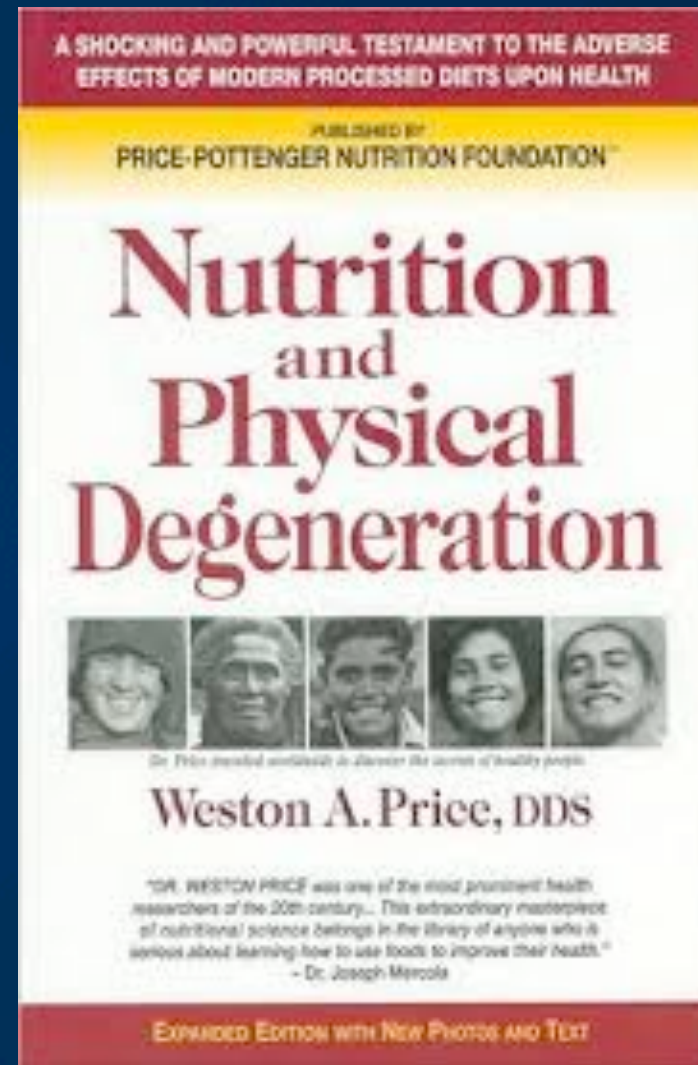


Aronson, E and Bless, D, Clinical Voice Disorders. 2009.



# Dental Theories

- Weston Price – Nutrition & Physical Degeneration



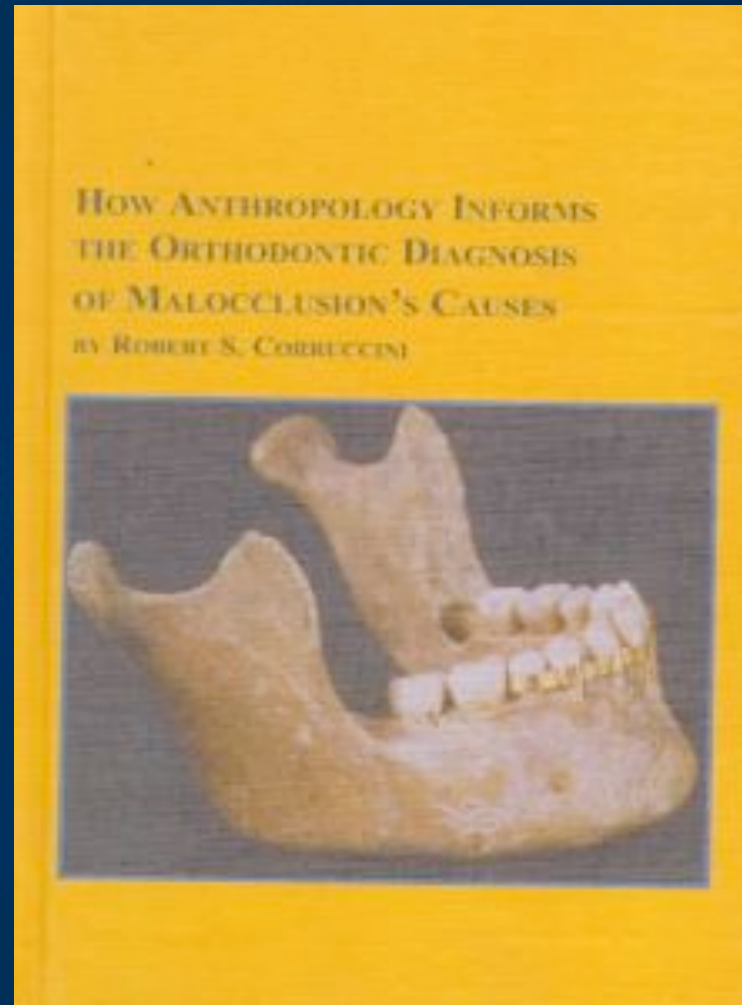
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# Dental Theories

- Robert Corruccini
  - How Anthropology Informs the Orthodontic Diagnosis of Malocclusion's Causes
    - Consistency of food

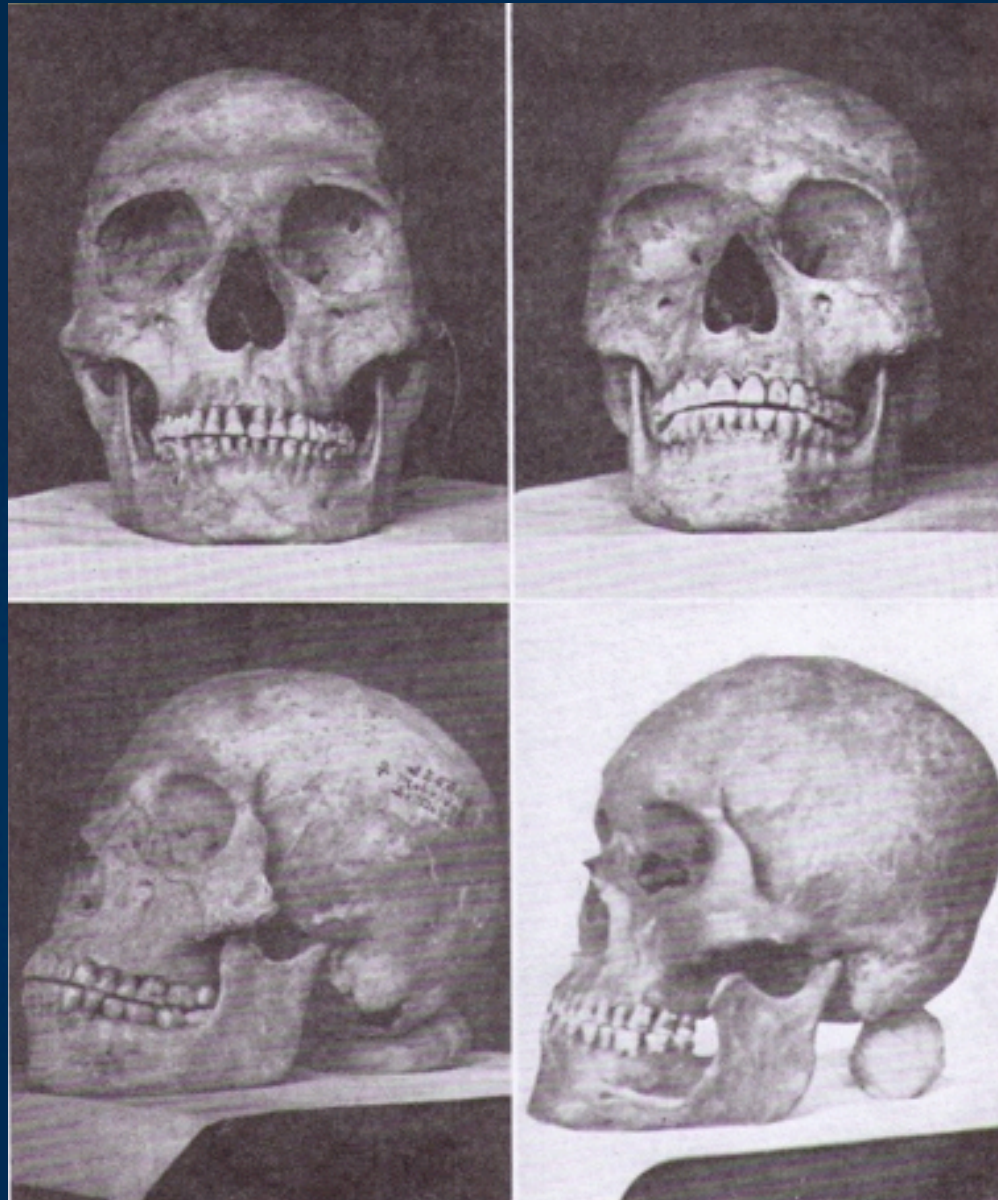


# Dental Theories

- Brian Palmer – [brianpalmerdds.com](http://brianpalmerdds.com)
  - Bottle-feeding aggravates malocclusion







Price, WJ. Nutrition and Physical Degeneration. 6th ed. La Mesa: Price-Pottinger, 1945.

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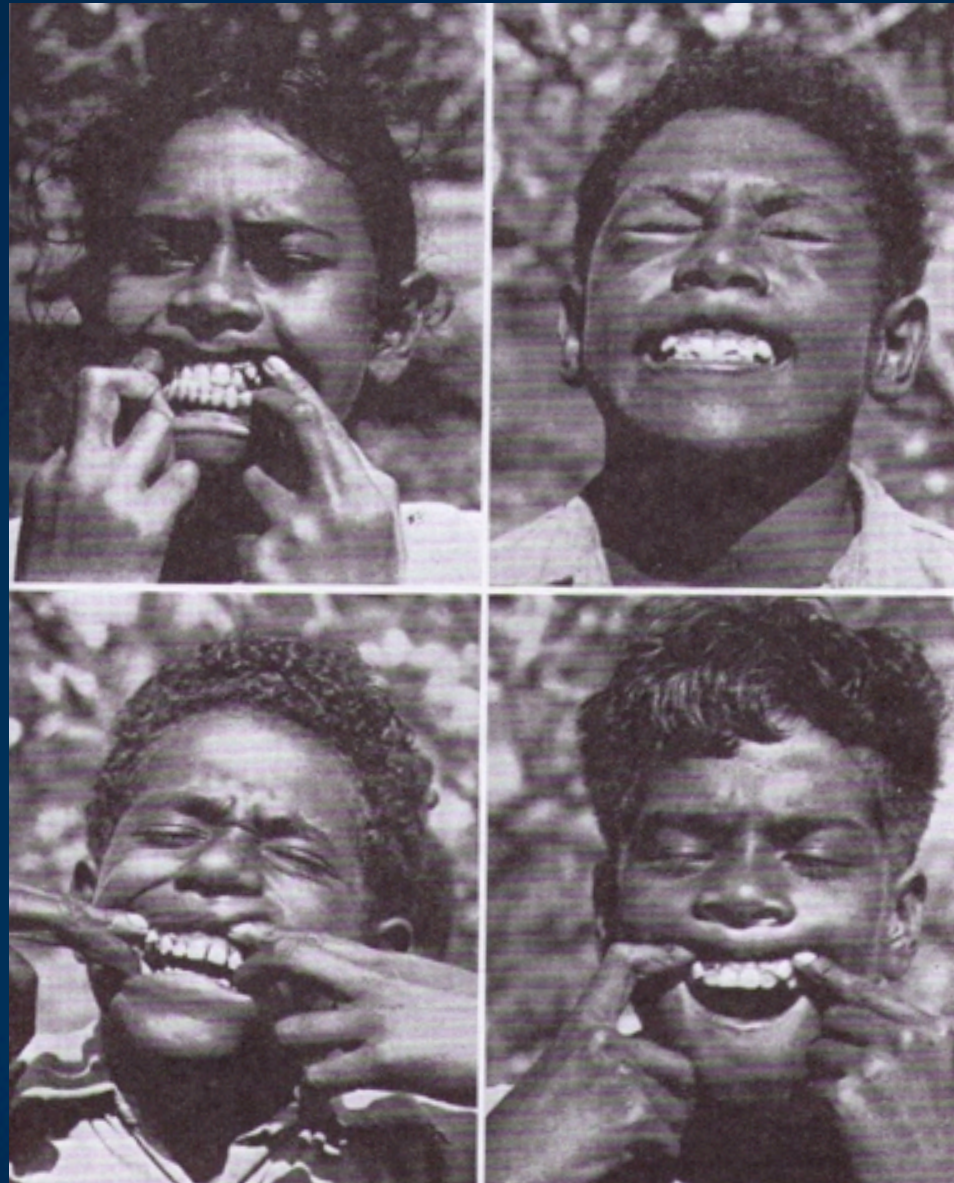
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# Sleep Disordered Breathing

- Maxillofacial narrowing can lead to
  - Facial wrinkles
  - TMJ
- The future?



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# Obstructive Sleep Apnea

- Repetitive pauses in breathing while sleeping
- Loud snoring
- Unrefreshing sleep
- MOOS (male, older, overweight, snoring)
- Daytime somnolence
- > 70 Million with OSA—90% undiagnosed





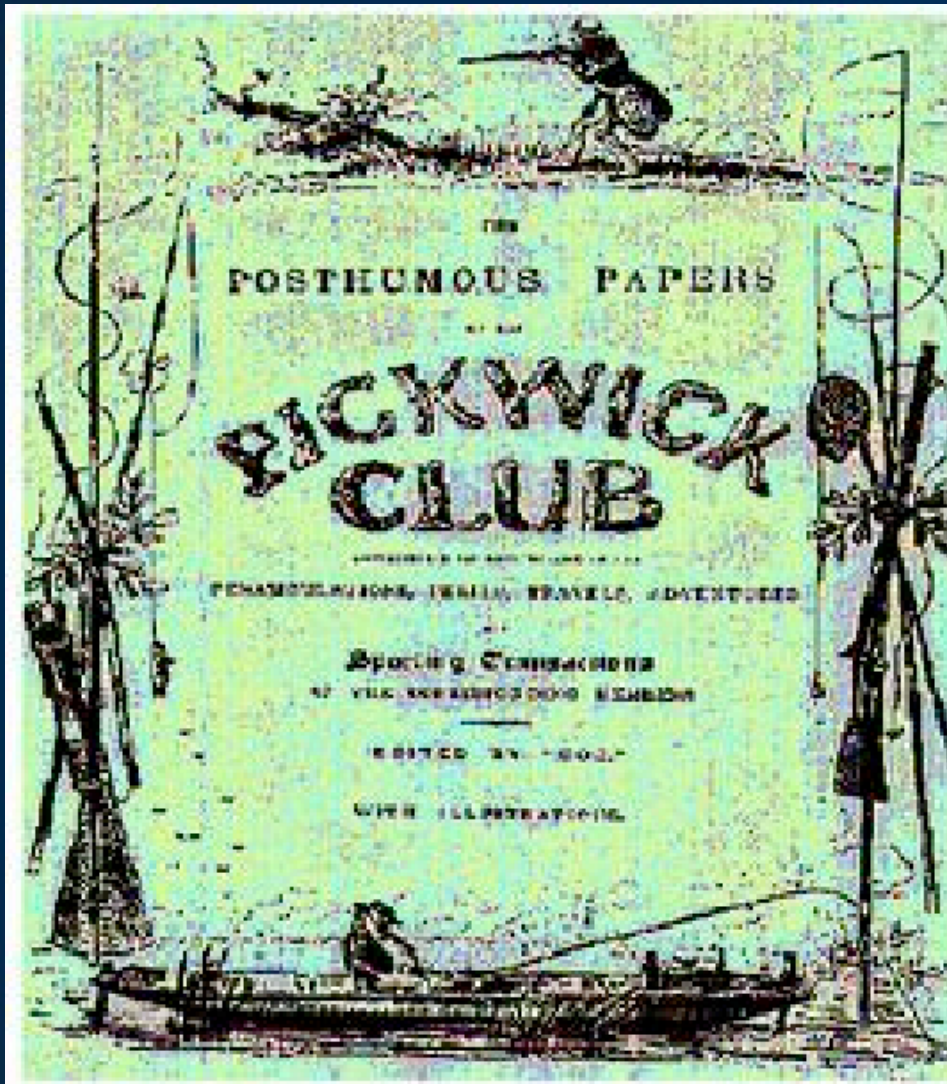
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# Sleep Related Breathing Disorders

- Young, thin women that don't snore can have significant obstructive sleep apnea
- You can stop breathing 20 to 30 times every hour and not officially have OSA



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# Obstructive Sleep Apnea

- Hypertension
- Depression
- Diabetes
- Heart disease
- Cancer
- Increased rate of MI and CVA
- Increased risk of sudden death
- Motor vehicle accidents



# Obstructive Sleep Apnea

- Seizures
- Preeclampsia
- Nocturia
  - ~50% increased rate of death for 2 or more trips to the bathroom
  - 90% for post-menopausal women
- Numerous eye conditions including glaucoma

# Sleep Related Breathing Disorders

- Very prevalent in all ages and both sexes
- OSA is a craniofacial problem
- Dynamic upper airway
  - airflow, weather changes, emotions, anatomy, gravity, neurologic innervation, hormonal status, etc.

# But...

- 25 obstructions and arousals per hour, but only 1–9 seconds long
  - What's the AHI?

# Upper Airway Resistance Syndrome

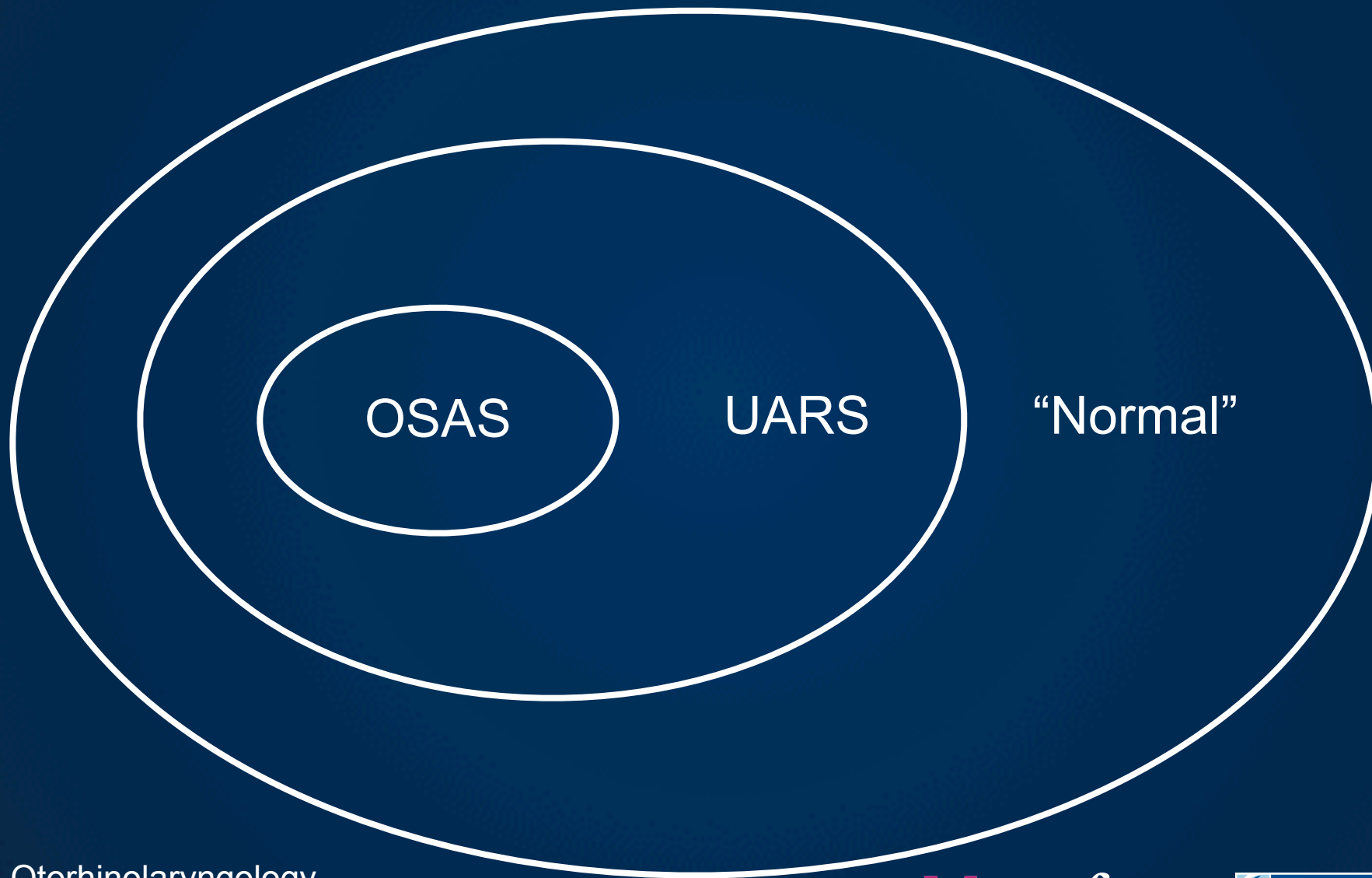
- 23% low blood pressure
- Lightheaded, dizzy
- Female > male
- Chronic fatigue
- Somatic syndromes
- Insomnia
- Migraines, headaches, TMJ
- Cold or numb extremities



# Prevalence Of Sleep–Breathing Disorders

- 4% in men, 2% in women using strict criteria
- 24% in men, 9% in women using loose criteria
  - Based on population studies in 80s
- Recent study in women ~50%
- Elderly (>65 y.o.) 62% (AHI>10)
- UARS?

# UARS & OSAS



# Significant Changes in Sleep–Breathing Status

- 3–4 months
- 3–6 years
- Colds, allergies
- Adolescence
- Monthly periods
- Pregnancy
- Menopause

# Procedures That Can Aggravate OSA/UARS

- Rhinoplasty
- Nasal surgery
- Dental extractions
- Dental headgear
- Jaw surgery
- Thyroglossal duct cyst
- Hysterectomy
- Breast implants
- Any other surgery that forces you to sleep supine





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# Implications

- Cognitive effects / dementia
- Depression / anxiety
- ADHD
- Post traumatic stress disorder (PTSD)
- Chronic insomnia
- Peri-menstrual disorders
- Pregnancy-related complications
- Menopause
- Cancer
- Chronic pain

# Treatment

- Conservative
  - Diet, lifestyle, behavioral, allergies, etc.
  - Full medical evaluation
- Cognitive behavioral Therapy for Insomnia
- Formal treatment for OSA/UARS
  - CPAP
  - Mandibular advancement device
  - Functional appliances
  - Surgery



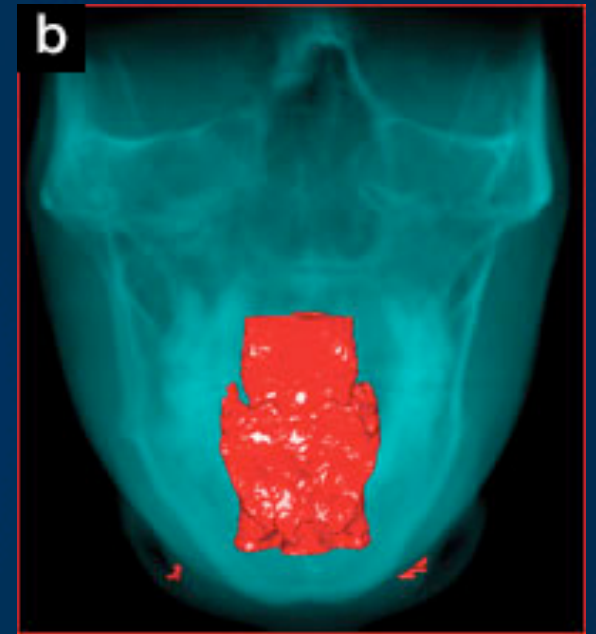
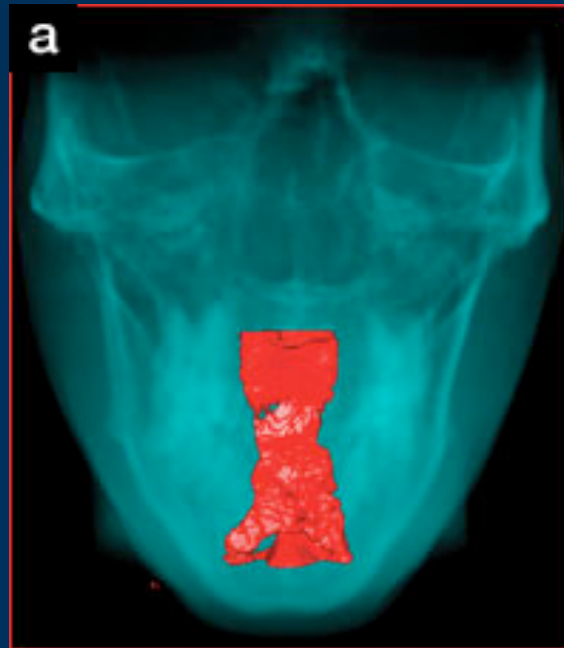
# Case Example

- 35 y.o. woman with years of chronic fatigue, insomnia, depression (on antidepressant), cold hands and feet, low BP, daily migraines, IBS
  - AHI 14
  - Tried CPAP and dental appliance
  - Underwent multilevel OSA surgery
  - Post-op AHI .4
  - Total resolution of all her symptoms

# Functional Appliance

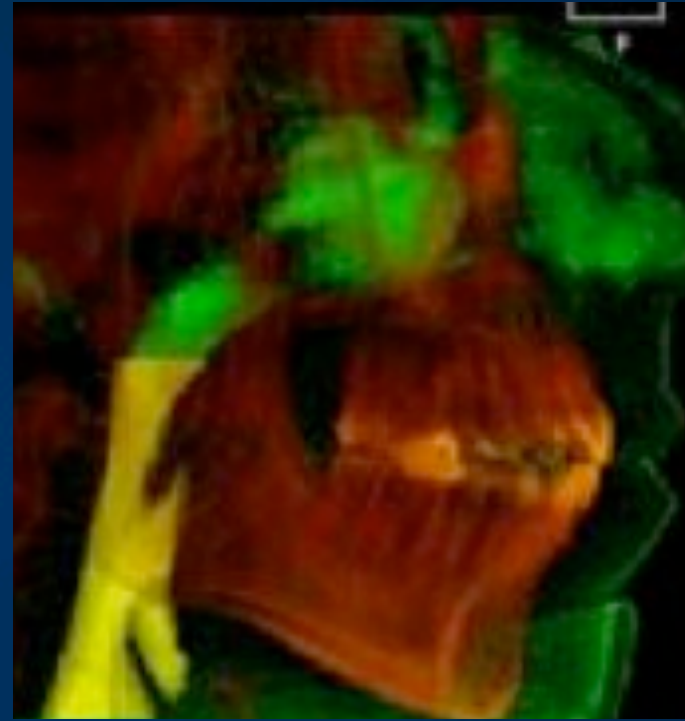


# DNA Appliance



RDI from 24 to 0 in 10 months  
Upper airway increased 59%

# Homeoblock



RDI (45.2 to 10.5) after 9 months



# Sleeping Pills

- Over the counter options
  - antihistamines
- Prescription options
  - Ambien, Lunesta, Sonata
  - Antidepressants, antianxiolytics

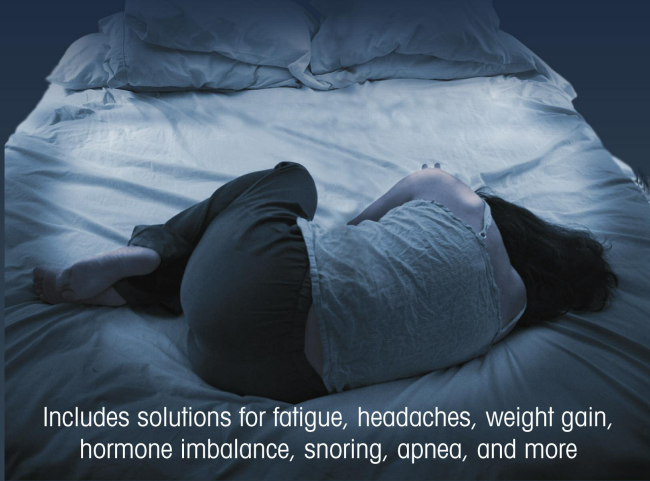
# Practical Tips

- Don't eat within 3–4 hours of bedtime
- Don't drink alcohol within 3–4 hours of bedtime
- Sleep 7 to 8 hours
- Improve nasal breathing
- Sleep position
- Head position
- Migraine triggers
- Relaxation / breathing techniques

"...fresh, original, and medically accurate." – Christiane Northrup, M.D.

# SLEEP, INTERRUPTED

A physician reveals the #1 reason why  
so many of us are sick and tired



Includes solutions for fatigue, headaches, weight gain,  
hormone imbalance, snoring, apnea, and more

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