

Practical Aspects of Nutritional Medicine

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• Nutritional Medicine

- Practical aspects apply equally to clinicians and to patients
- Identify imbalances in:
 - Physiology
 - Metabolism
- Ultimate goal:
 - Optimize function to achieve the highest quality of life by having the highest functional levels of strength, energy levels, and well-being



Five Functional States of Potential Imbalance

- Sleep
- Nutritional Intake
- Hydration
- Activity/Exercise
- Stress Management

Five Functional States of Potential Imbalance

- These functional states are equally important
- Deficits in any one state will likely cause functional deficits in the others



● Malnutrition

- Defined as functional loss from:
 - Underfueling (undereating)
 - Reduced intake of building blocks (proteins, vitamins, minerals, trace elements)
 - Dehydration
 - These occur simultaneously
- Malnutrition is epidemic worldwide, especially in persons with systemic illnesses
- Patients can be overweight/obese and still have severe malnutrition
 - Independent of age
 - Independent of cause of overweight/obesity



Malnutrition

- Acute or prolonged illness -> activation of sympathetic NS -> appetite suppression
- Appetite = sign of anabolism/recovery

WITH
2018
HCUP
DATA

MALNOURISHED HOSPITALIZED PATIENTS ARE ASSOCIATED WITH

POORER OUTCOMES

Malnourished Patients Have:

**3.4x
HIGHER**

In-Hospital Deaths
Than Those Without
Malnutrition



**1.9x
LONGER**

Hospital Stays
Than Than Those
Without Malnutrition



**2.0x
HIGHER**

Discharge Rates
to Long-Term Care or
Rehab Facilities



**1.4x
HIGHER**

**Need for Home
Health Care
Services**



HIGHER ECONOMIC BURDEN

**\$58
BILLION**



Total Costs
Associated with
Malnutrition Stays
(18% Increase
from 2016)



Hospital Costs for Patients
with Malnutrition are

73% HIGHER

Than Those Without Malnutrition

Readmission Stays for Those
Malnourished Add

**\$10,000
MORE**

to Hospital
Stay Cost



HELP STOP MALNUTRITION: nutritioncare.org/malnutrition

Based on 2018 HCUP data.

Guenther P, Abdelmassih R, Anthony R, et al. Malnutrition diagnoses and associated outcomes in hospitalized patients: United States 2018. *Nut Clin Pract*. 2021. <https://doi.org/10.1002/ncp.10771>

Infographic development supported by:

jnum

aspen LEADING THE SCIENCE AND
PRACTICE OF CLINICAL NUTRITION
American Society for Parenteral and Enteral Nutrition

Balanced Eating

- 6 food groups
 - For patients able to eat without need for nutrition support (EN or TPN)
- If not getting 6 groups daily:
 - Loss of nutrient intake
 - Loss of function
 - Malnutrition develops
- Exceptions:
 - Food allergies/intolerances
 - Vegetarian/vegan
 - Alternative strategies can be created
- Applicable for diabetic patients as well

	VEGETABLES	FRUITS	STARCHES	DAIRY	MEAT GROUP	FATS-OILS-NUTS						
PREScribed _____calories	Eat at LEAST _____serving Equiv/day	20 al/ serving equiv.	Eat at LEAST _____serving Equiv/day	40 cal/ serving equiv.	Eat _____ serving Equiv/day	70 cal/ serving equiv.	Eat _____ serving Equiv/day	80 cal/ serving equiv	Eat at MOST _____serving Equiv/day	75cal/ serving equiv	Eat at MOST _____serving Equiv/day	75cal/ serving equiv
	SERVINGS LIST ARE FOR RAW VEGETABLES: ALL COOKED VEGETABLES EQUAL ½ CUP		FRESH, FROZEN SUGAR-FREE		COOKED STARCHES SHOULD REPRESENT AT LEAST ½ OF TOTAL INTAKE		MAY EXCHANGE SERVING FOR SERVING WITH MEAT GROUP		WEIGHT PORTIONS AFTER COOKING			
	Artichoke ½ bud Asparagus ½ c Bamboo shoots ½ c Bean sprouts 1 c Beets 1 med Broccoli 1 c Brussel sprouts 1 c Cabbage 1 c Carrots 1 sm Cauliflower 2/3 c Celery (5") 6 stalks Cucumbers 1 lg Eggplant 1 c Greens 1 c Green Beans 1 c Green Peppers 1 lg Kohlrabi ½ c Lettuce 5 lg Or ½ head Leaves Mushrooms 7 sm Okra 1 c Onions (3" diam) ½ c Radishes 10 small Rutabagas ½ c Salad, mixed 1 c Scallions 3 Spinach 1 c Squash, summer 1 c Tomatoes 1 sm Turnips ½ c Waterchestnut 4 Zucchini 1 c	Apples ½ med Apricots 2 Banana ½ sm Blackberries ½ c Blueberries ½ c Cantaloupe (5" diam) 1/3 c Cherries, red swt 11 med Cherries, red sour 1/3 c Grapefruit (4" diam) ½ Grapes 12 Purple 20 Green 20 Honeydew ½ (5" diam) ½ Mango ½ sm Nectarine 1 med Orange (2½" diam) 1 Papaya 1/3 med Peach 1 med Pear ½ med Pineapple 1 sl or ½ c Plums 2 med Raspberries ½ c Strawberries 10 lg or ½ c Tangeine 2 sm Watermelon ½ c	COOKED Beans, cooked 1/3 c Lentils 1/3 c Kidney 1/3 c Lima 1/3 c Pinto 1/3 c Soy 1/4 c White 1/3c Cereal, cooked ½ c Buckwheat ½ c Millet ½ c Oatmeal ½ c Ralston ½ c Seven Grain ½ c Whealens ½ c Barley ½ c Bulgar ½ c Corn 3" ear On cob 3" ear Kernels ½ c Peas, blackeyed 1/3 c Peas, green 2/3 c Potato 1 med Baked 1 med Boiled 1 med Mashed ½ c Pumpkin ½ c Rice, brown ½ c Squash, winter ½ c Sweet potato ½ med DRY Bread, whole grain 1 sl Cereal, dry 1/3 c All Bran 1/3 c Bran Buds 1/3 c Bran Flakes ½ c Raisin Bran ½ c Shredded wheat ½ c Most ½ c Crackers 4 Rye Crisp 4 Venus Wafers 4 Popcorn, plain 1 ½ c	Skim, nonfat 1 c Buttermilk 1 c Evaporated 1 c Diluted 1:2 1 c Milk powder 1/3 c Milk 1 c Low fat 1-2% 2/3 c Yogurt, plain 2/3 c Whole ½ c Buttermilk ½ c Evaporated ½ c Diluted 1:2 ½ c Milk ½ c Yogurt, plain ½ c	Fish 1 oz Bass 1 oz Catfish 1 oz Cod 1 ½ oz Crabmeat 3 oz Clams 10 med Flounder 1 ½ oz Haddock 1 ½ oz Lobster 2 ½ oz Oysters (raw) 8 med Perch 1 ½ oz Salmon 1 ½ oz Scallops 2 oz Shrimp 20 or 2 ½ oz Snapper 1 ½ oz Tuna (waterpack) 2 oz Poultry Chicken (no skin) 1 ½ oz Turkey (no skin) 1 ½ oz Meat Beef 1 oz Pork 1 oz Lamb 1 oz Veal 1 oz Cheese All hard cheese 2/3 oz Cottage cheese ½ c (non-creamed) Ricotta cheese ½ c (part skim)	Avocado (3¼-4") 1/8 Butter 1 t Regular 1 t Whipped 1 ½ t Cream 2 t Half & Half 2 t Sour 1 ½ t Whipping 1 t Non dairy 3 t Cream cheese 1 t Margarine 1 t Diet 1 t Whipped 1 ½ t Regular 1 t Mayonnaise 1 ½ t Regular 1 ½ t Low calorie 1 t Nuts, unsalted 7 Almonds 2 Brazil 4 Cashew 7 Hickory 9 Peanuts 5 Pecans (halves) 5 Walnut (halves) 1 t Oil 1 t Peanut butter 1 ½ t Salad Dressing 2 t Regular 2-4 t Low Calorie 2-4 t Seeds, unsalted 1 t Pumpkin 1 t Sesame 1 t Sunflower 1 t (see label for calories)						
	Canned vegetables ½ c Pickle, sour 1 lg Sauerkraut 2/3 c Tomato juice 3 oz. V-8 juice 4 oz.	Canned fruit ½ c Applesauce ½ c Fruit Cocktail ½ c Mandarin oranges ½ c Dried Fruit Apricots 2 Dates 1 ½ Figs 1 Prunes 1 ½ Raisins 2T Fruit Juice Apple ½ c Cranberry ½ c Grape ½ c Grapefruit ½ c Orange 1/3 c Pineapple 1/3c Prune ½ c *unsweetened	Angel Food Cake 3/4/1/2" 1 slice Biscuit or Muffin ½ Bread, white 1 slice Cornbread 1 pc.* 2/2/1 ½" Cereal, dry, other Non-sugared label see Cereal, cooked ½ cup Crackers 2½ sq Oyster 20 Soda 5 Pasta, cooked ½ c Rice, cooked ½ c White ½ c Roll, dinner 1 sm. *Count 1 fat		Bologna 2 oz* Cured meats 1 oz Duck ½ oz Egg 1 med Frankfurters 1 ½ oz. Goose ½ oz Luncheon meat 1 ½ oz Organ meat 1 oz Ricotta cheese 2 ½ T Sausage 1 ½ oz *count 1 fat ** count 2 fats	Bacon 1 sl Bacon drippings 1 t Chittlerings ½ c Cracklings 1 t Gravy 2 t Salt Pork ½ oz ALCOHOL, count 2 fats Beer Regular 3 oz Lite 5 oz Liquor ½ oz Wine Dry 2 oz Sweet 1 oz Lite 4 oz						

• “How To...”

- Identify imbalance in function within ourselves and/or patients
- Interview:
 - Chief complaint
 - History of present illness
 - Review of systems
 - Add a nutritional category
 - Weight changes, strength, energy, well-being
 - **Unintentional weight loss = malnutrition**
 - “One minute” nutritional intake assessment
 - Ask about the content of breakfast, lunch, dinner, and snacks on a typical day



“How To...”

- Interview (cont):
 - Physical exam
 - Wasting, loss of muscle mass, weakness, peripheral edema, easy bruising, tenting, hair loss, dryness of oral cavity, others
 - Lab
 - Dehydration (increased BUN:SCr ratio)
 - Albumin does NOT define nutritional status nor the presence of malnutrition
- Review 5 functional states of potential imbalance (if not discovered in ROS)
 - Sleep, nutritional intake, hydration, activity/exercise, stress management

Thank You

A. Kenneth Olson, MD, PHD

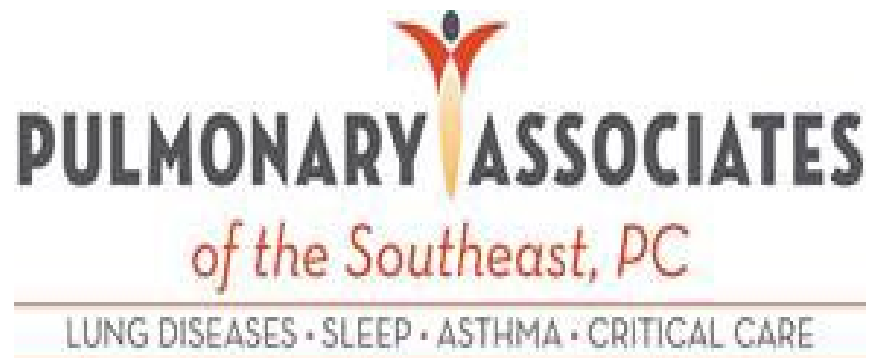
Cell: 205-307-8559

Calls preferred (may text if needed)

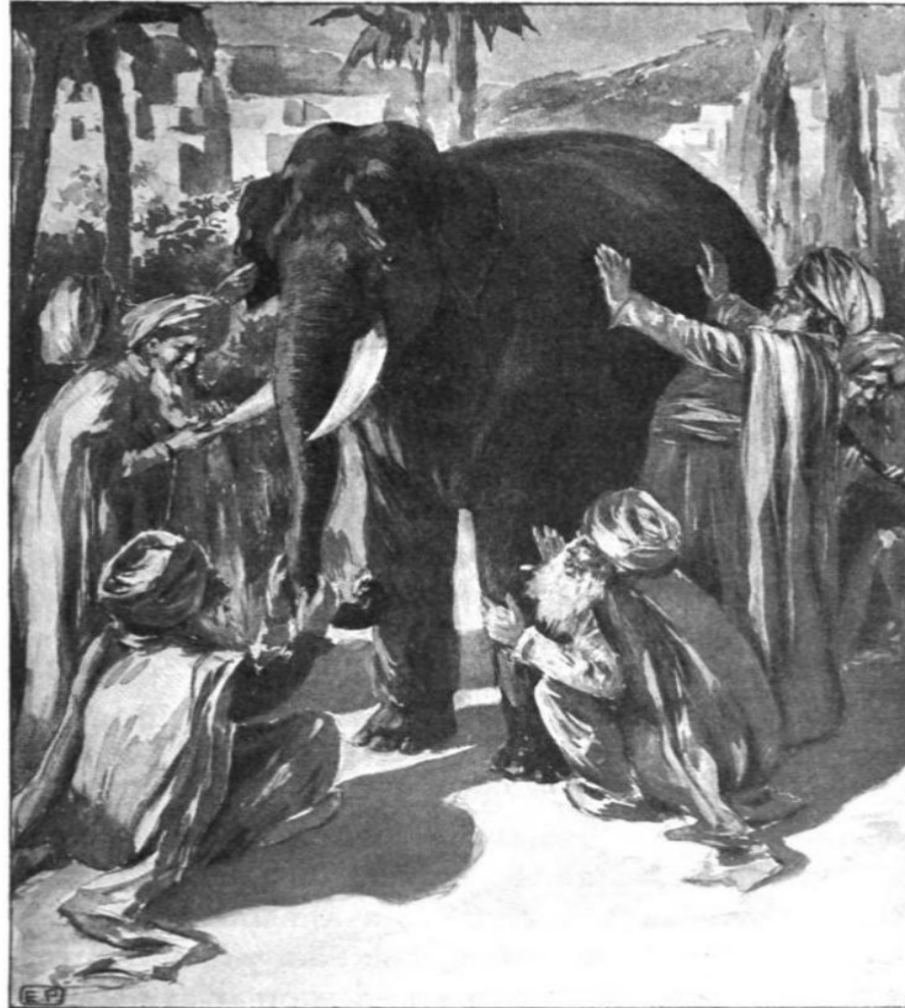
It would be a pleasure for me to be a resource for any further information or clarification.

Effects of Sleep on Men's Health

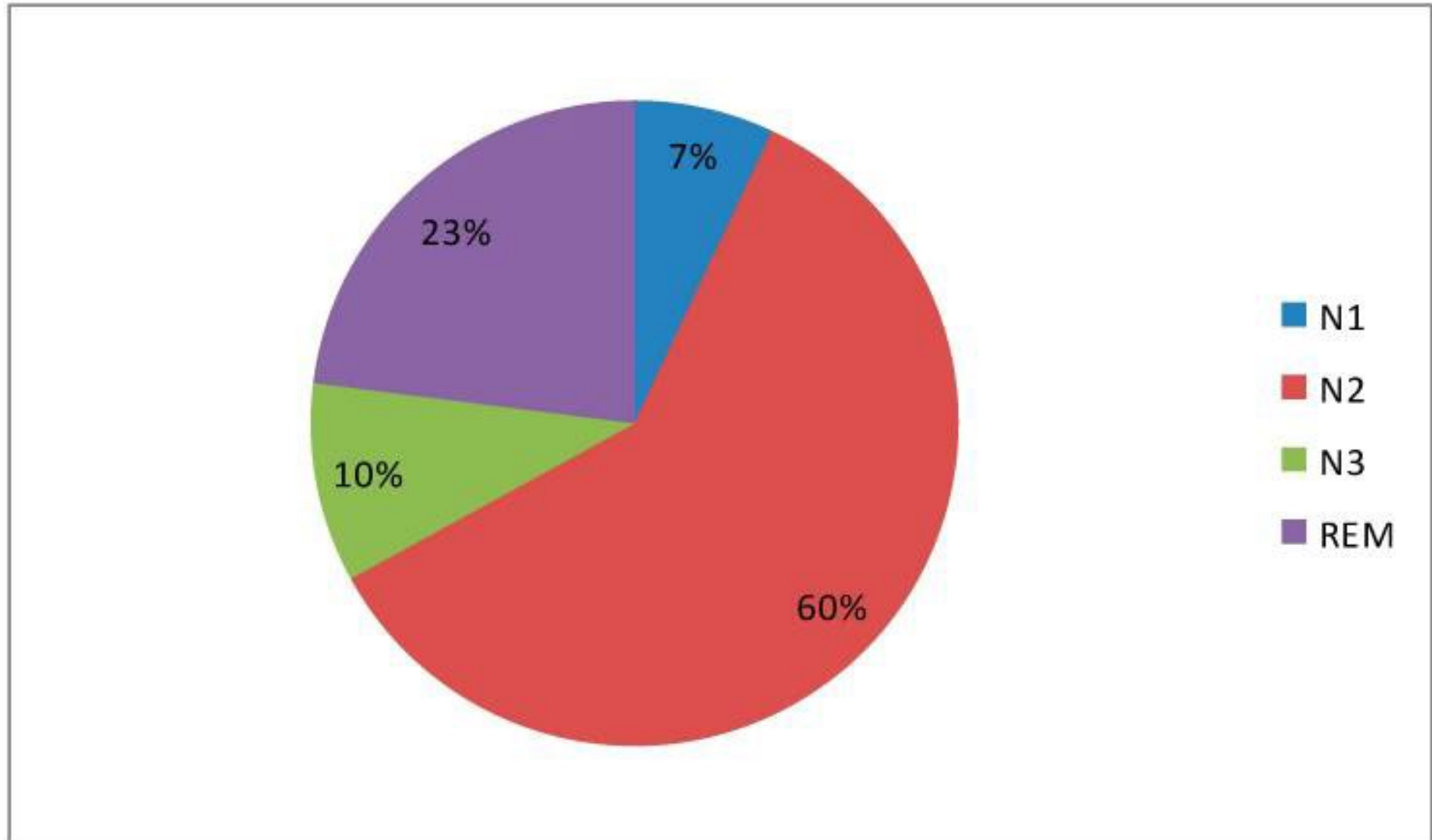
Presented by Dr. David Franco



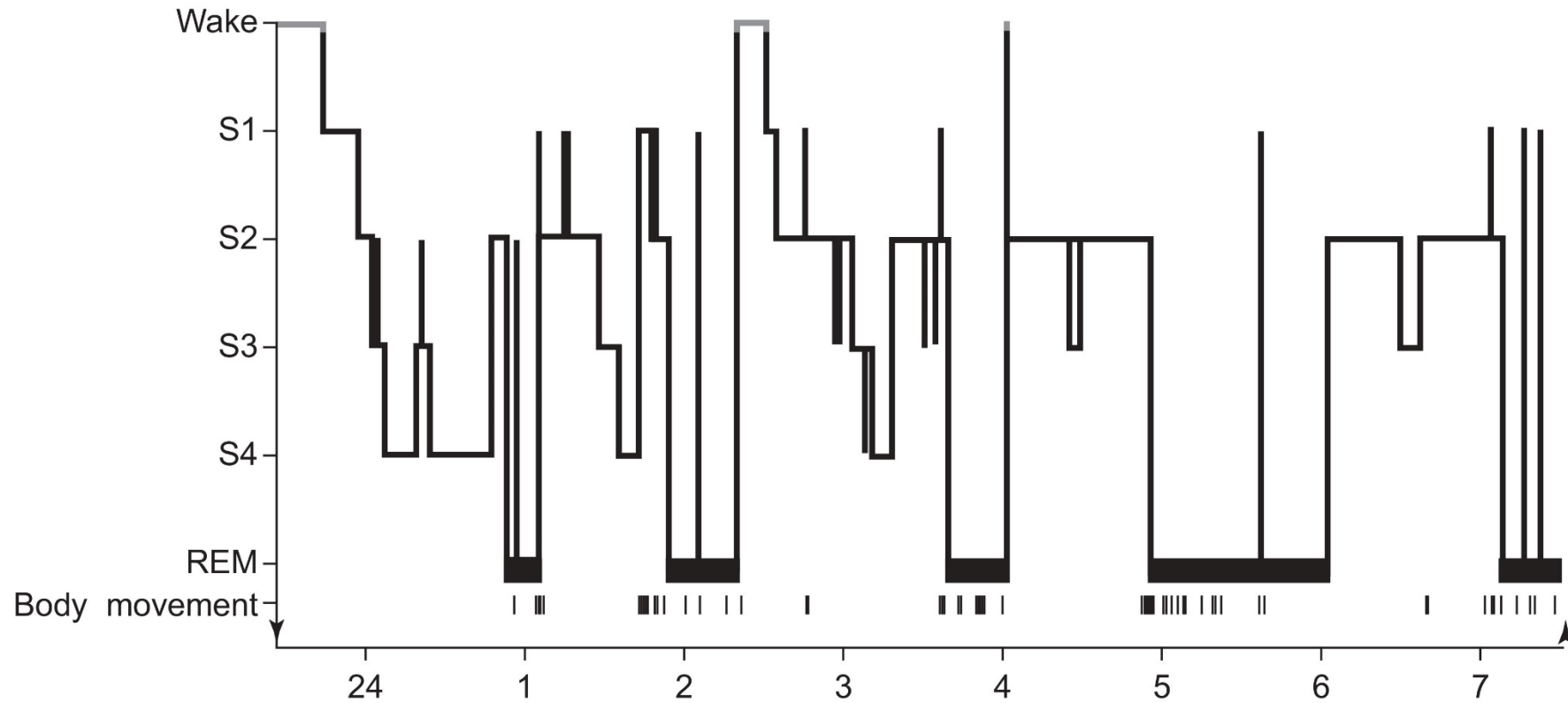
The Blind Men and the Elephant



Normal Sleep Architecture



Normal Sleep Architecture



Reasons For Nocturnal Awakenings

Ancoli-Israel et al.

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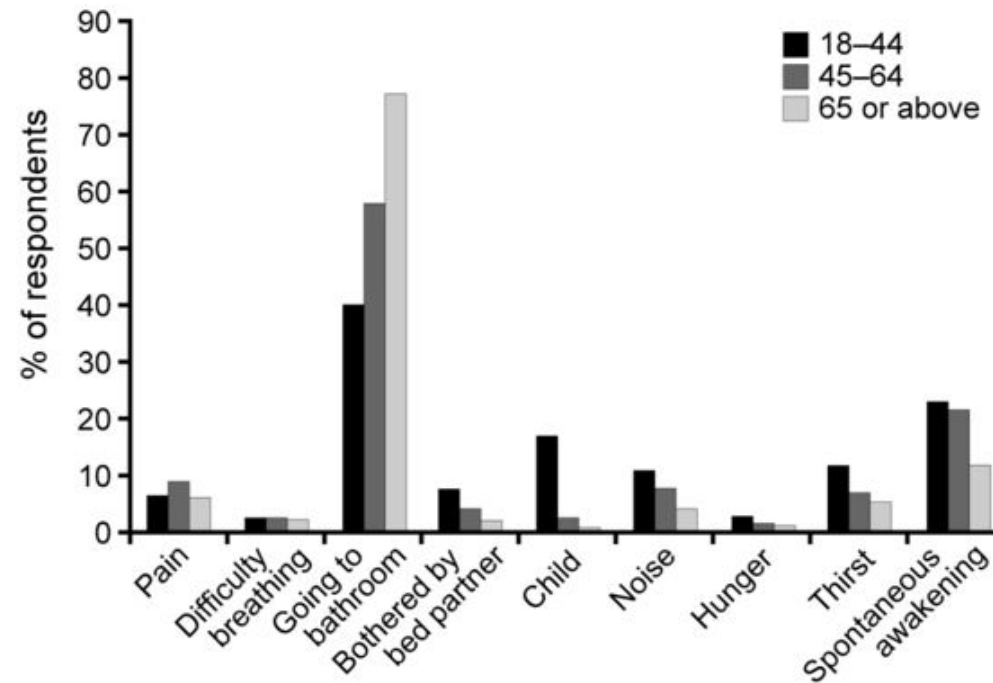
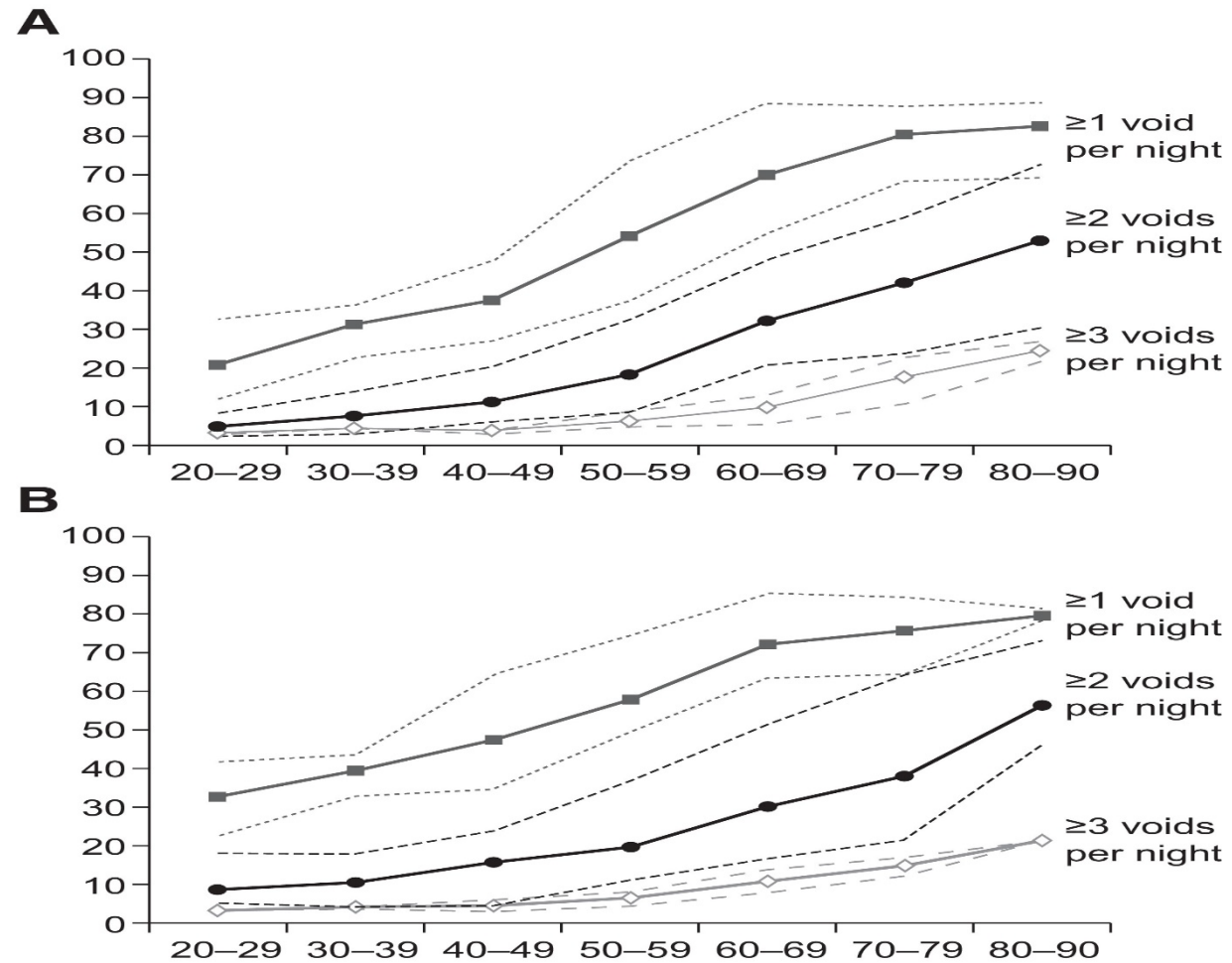


Figure 1.

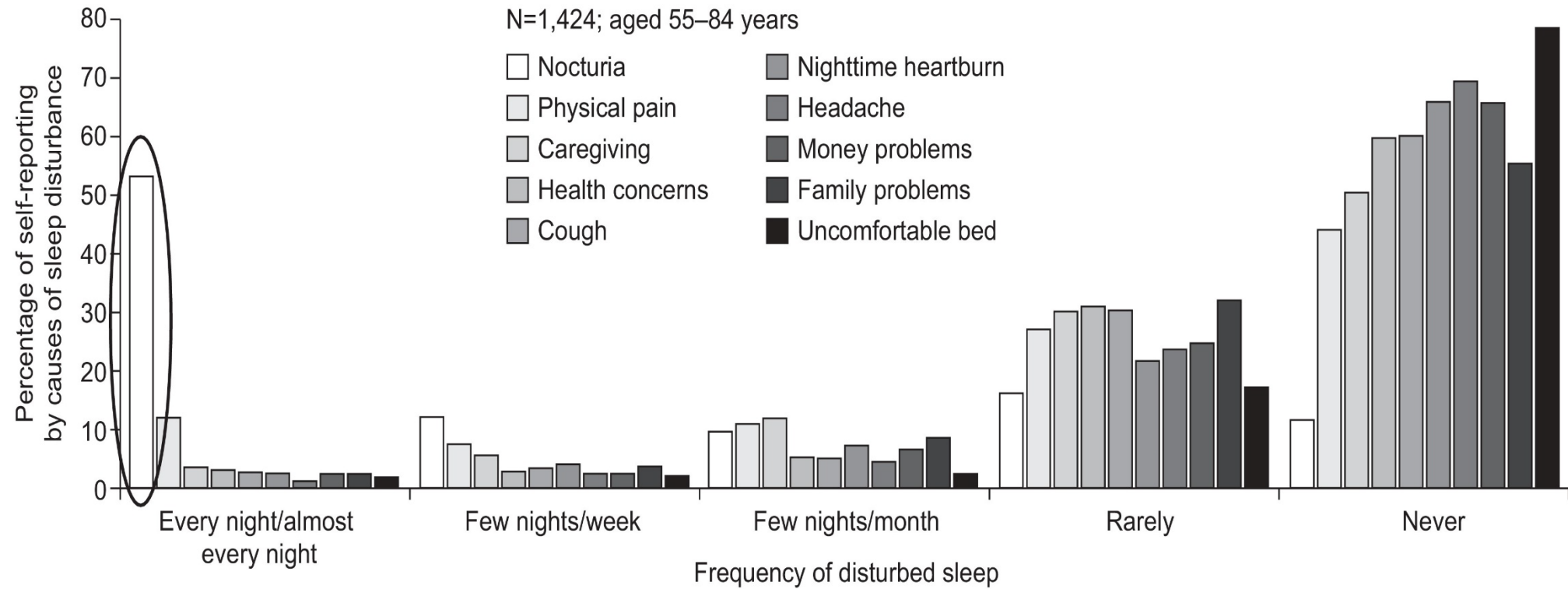
Reasons for nocturnal awakenings among the US general population by age group*⁸

*All reasons were cited as 'often'.

Frequency of Nocturia with Aging



Nocturia -Medical and Social Complaints



Sleep Maintenance Insomnia and LUTS

Scovell et al.

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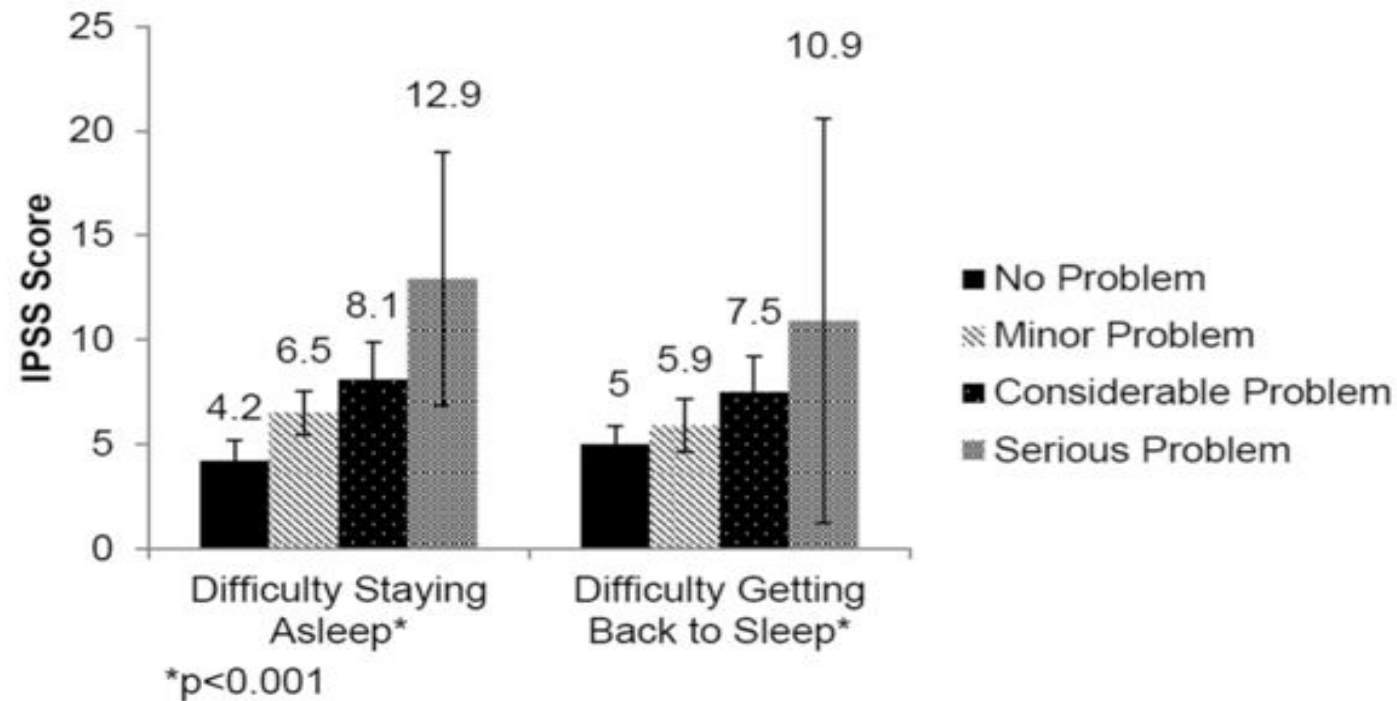


Figure 2.

Relationship between difficulty staying asleep or falling back asleep and LUTS severity (p<0.001).

Effects of Nocturia on Sleep and Health

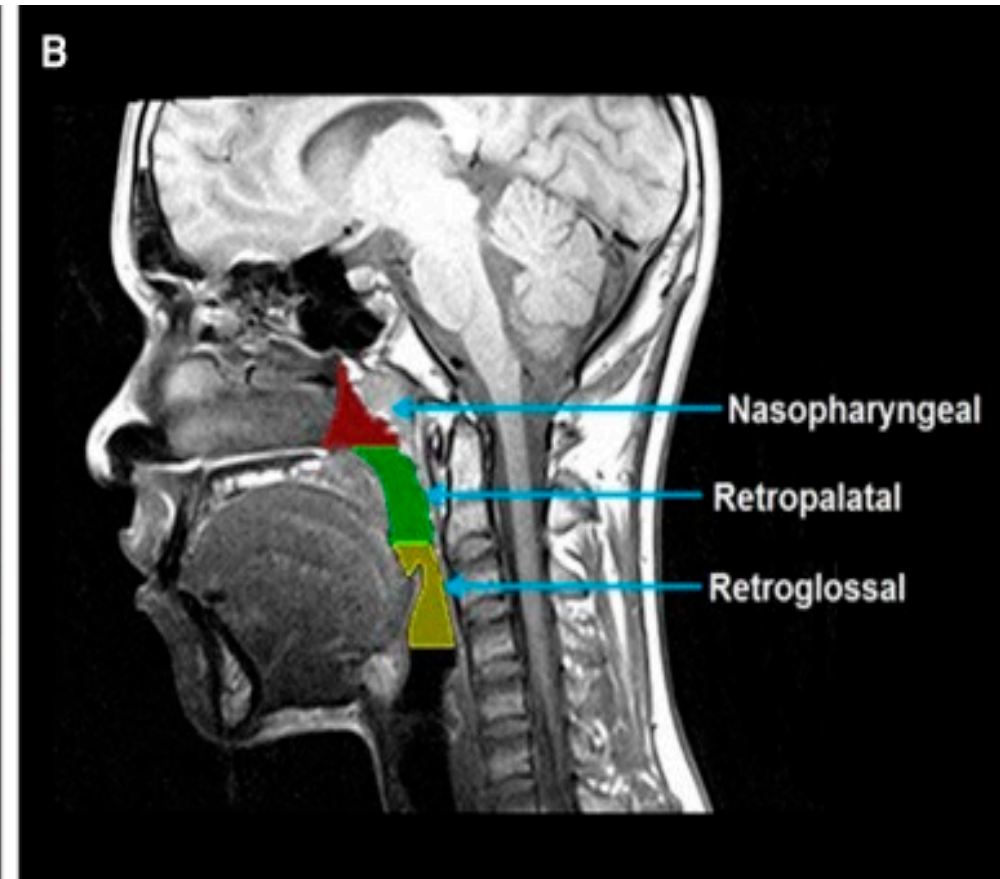
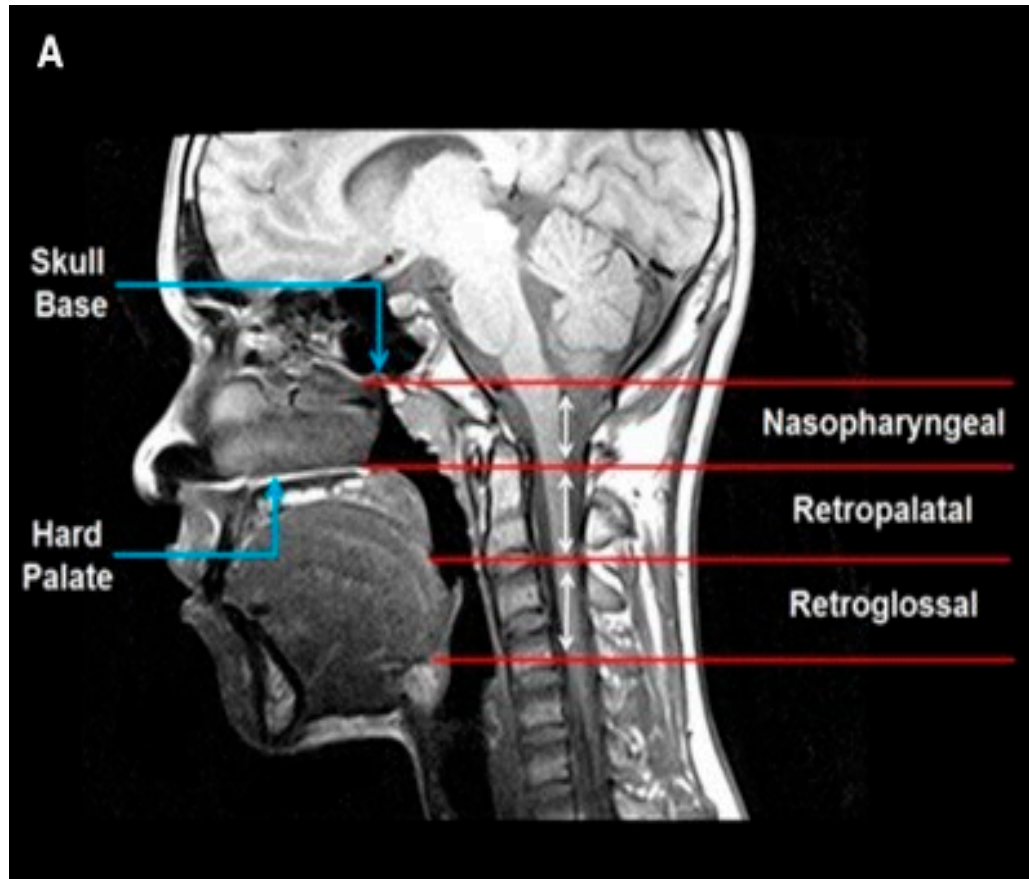
Ancoli-Israel et al.

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Practice points

- Chronic insomnia complaints are very frequent among older adults with nocturia, particularly difficulty falling asleep, fewer total hours of sleep, and difficulty falling back to sleep.
- Nocturia is an independent predictor of insomnia and deterioration of sleep quality
- Sleep apnea is associated with increased nocturia.
- Nocturia is also known to impair functioning, quality of life and productivity.
- Patients with two or more voids a night have a higher risk of mortality after controlling for co-morbidities
- In patients with insomnia co-morbid with nocturia, health care professionals should consider concurrent intervention for both conditions.

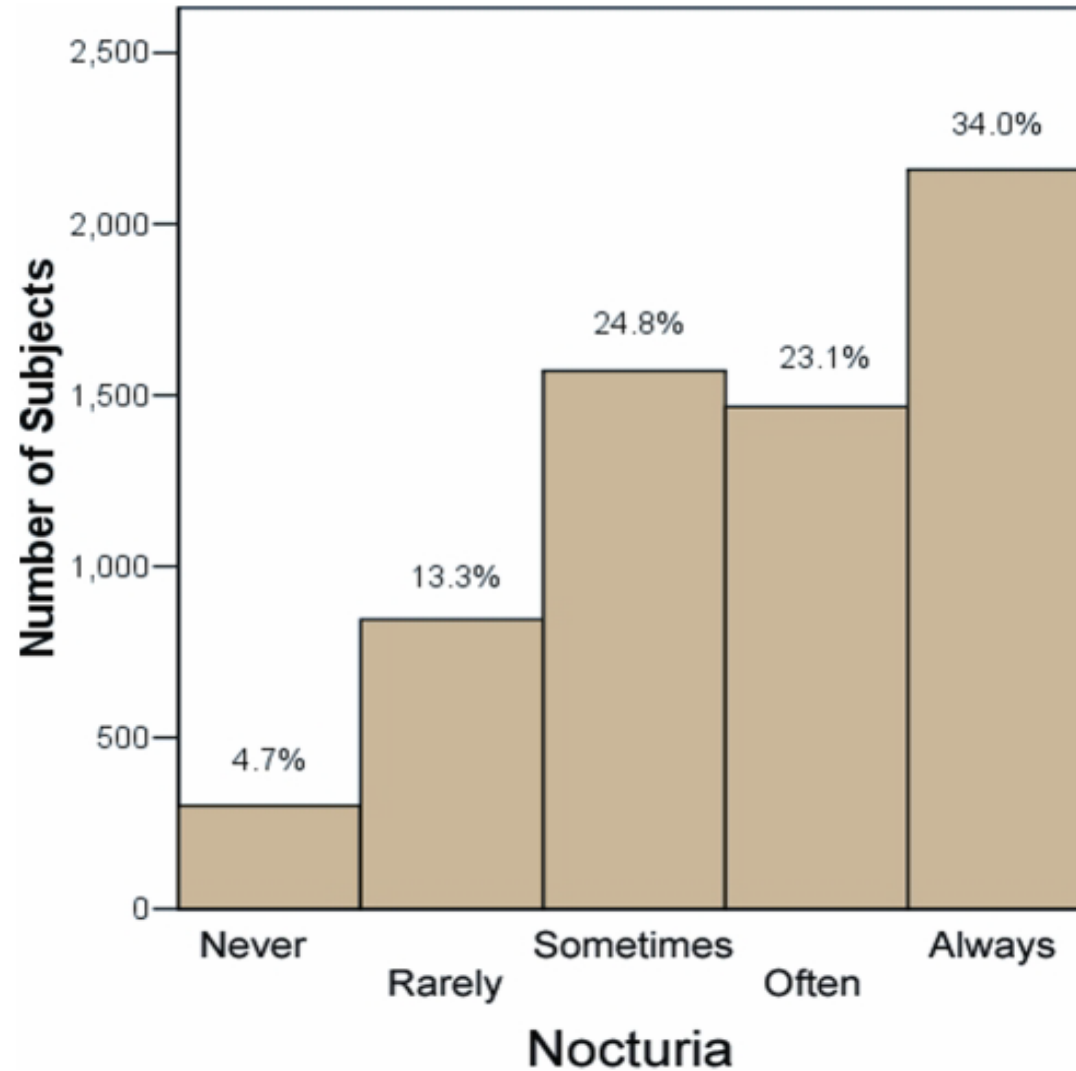
Upper Airway Anatomy



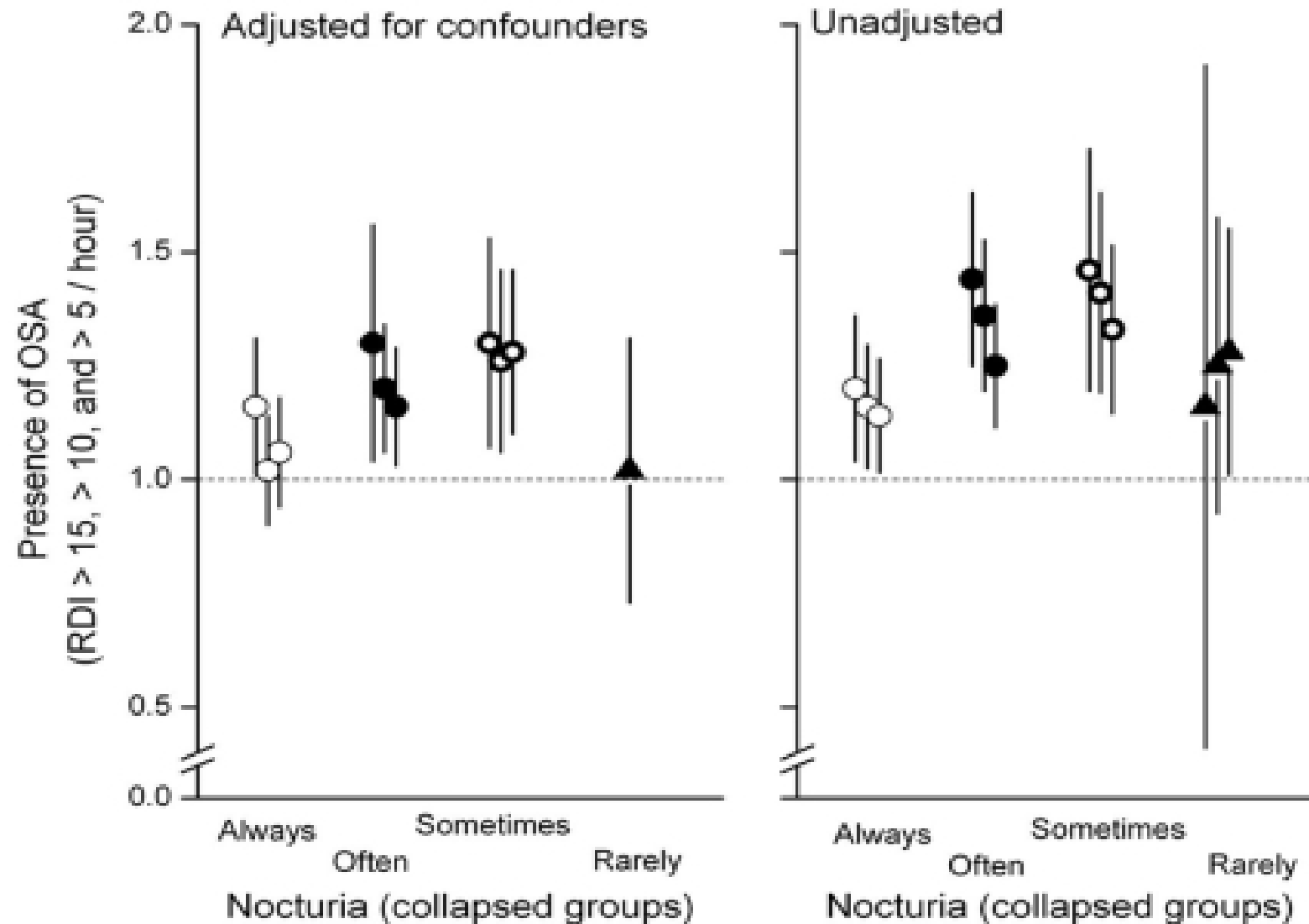
Obstructive Sleep Apnea



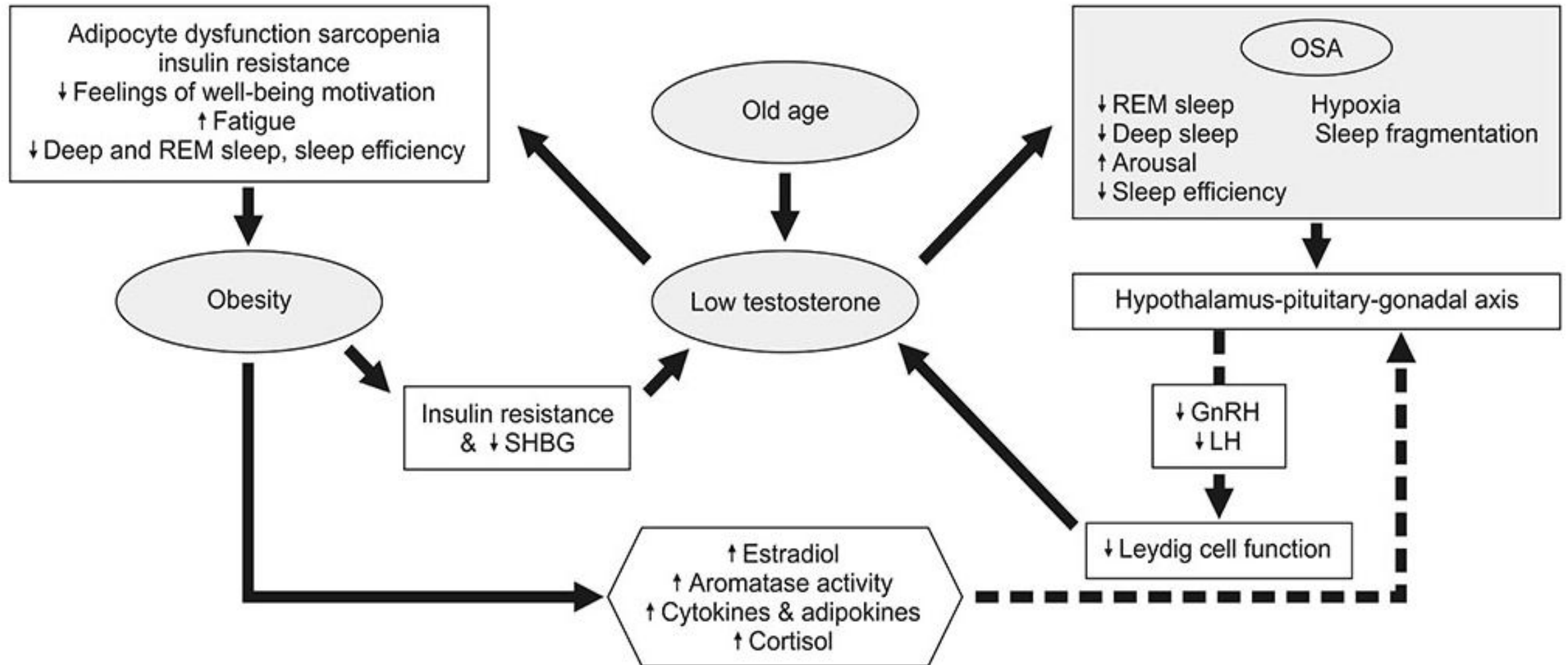
Nocturia in Sleep Heart Health Study



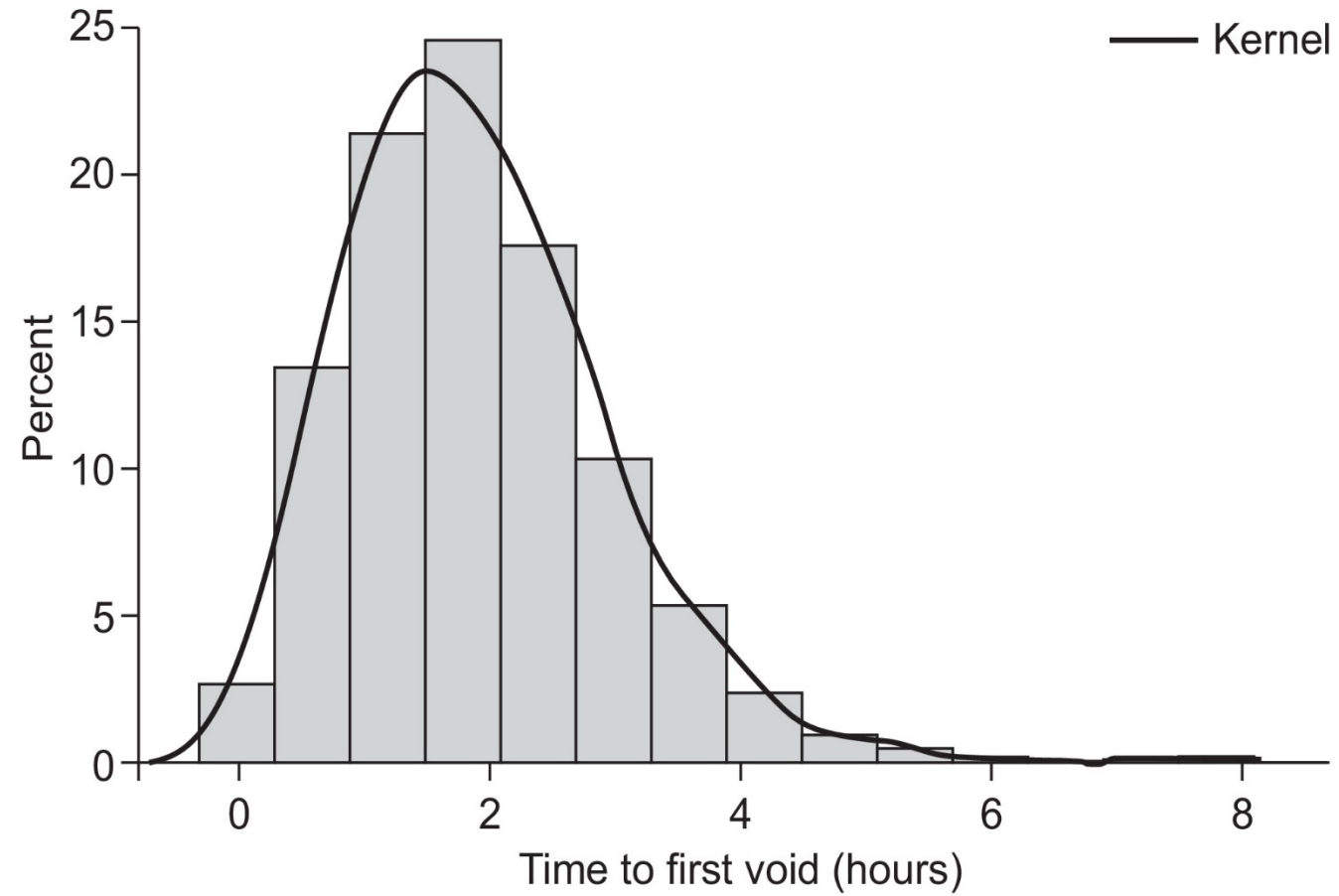
Nocturia and Obstructive Sleep Apnea



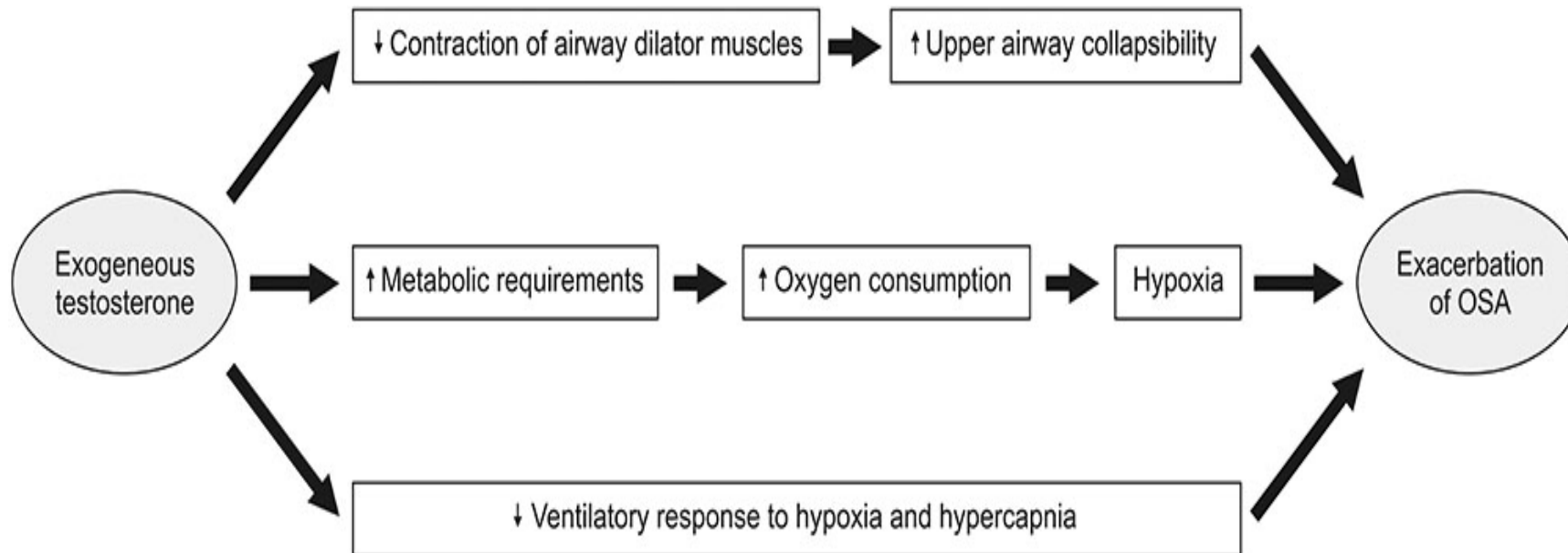
Potential Effects of Obesity and Sleep Apnea on Testosterone Levels



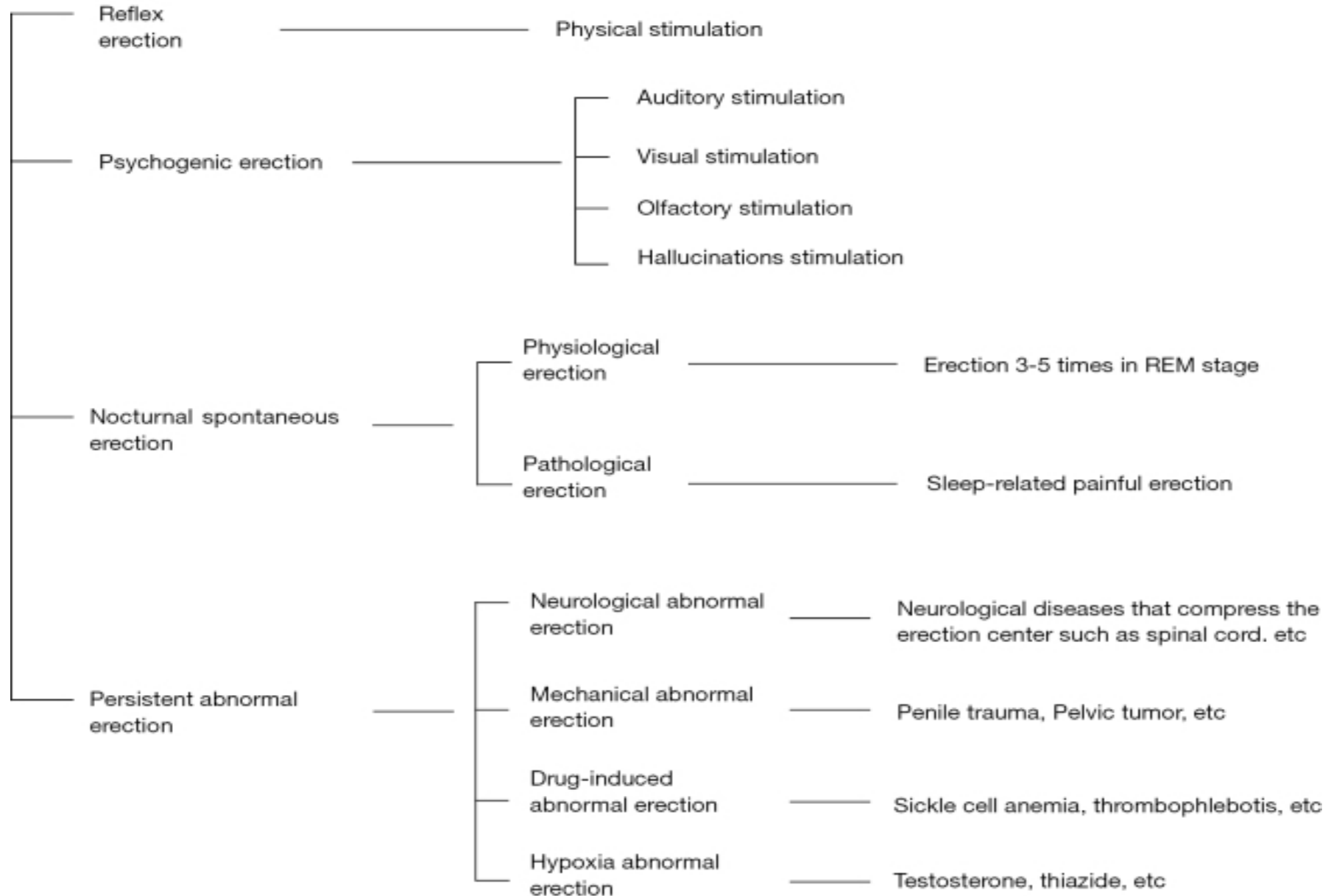
Time to First Void



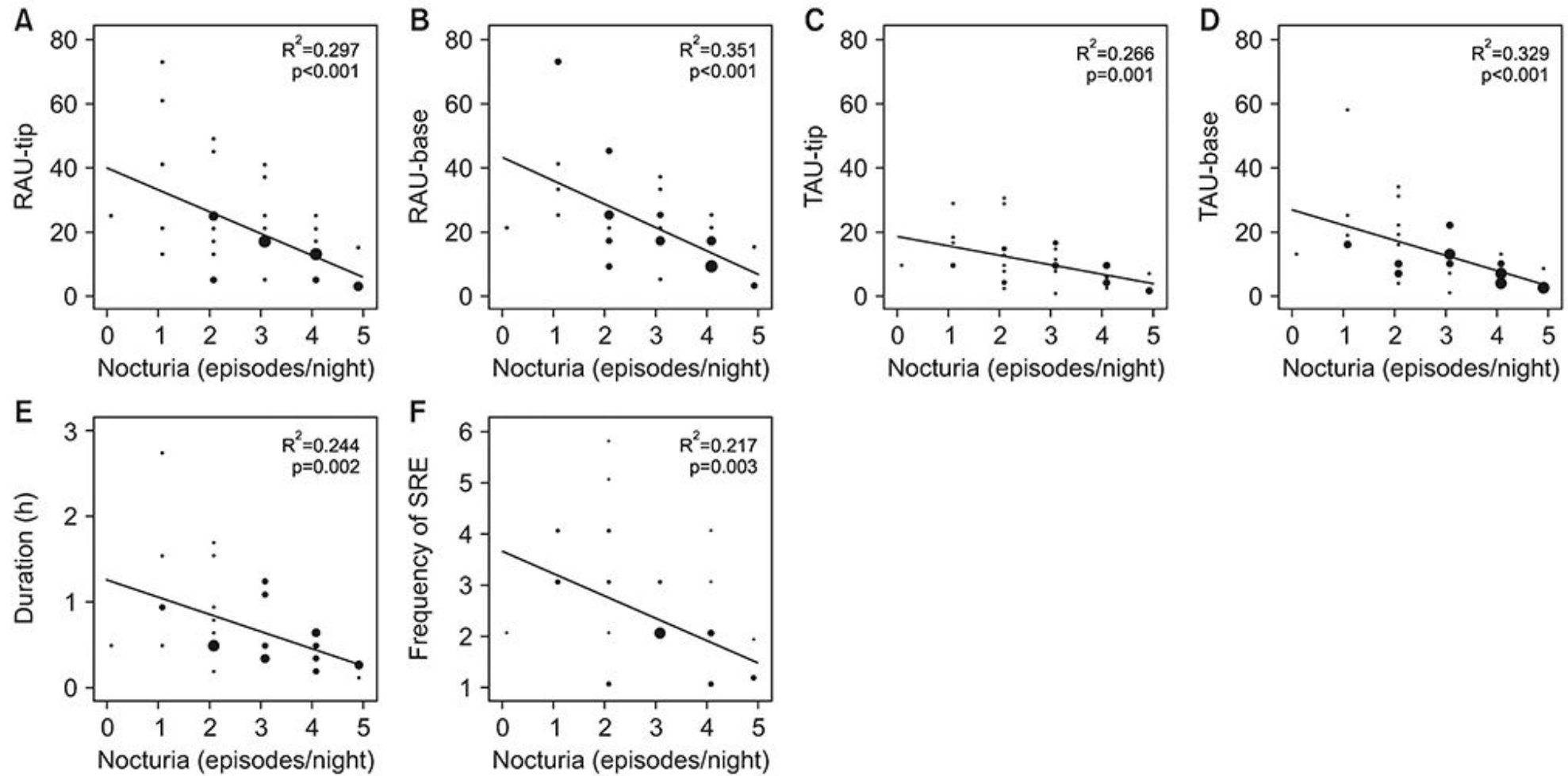
Testosterone effect on Untreated OSA



Etiology of Erections

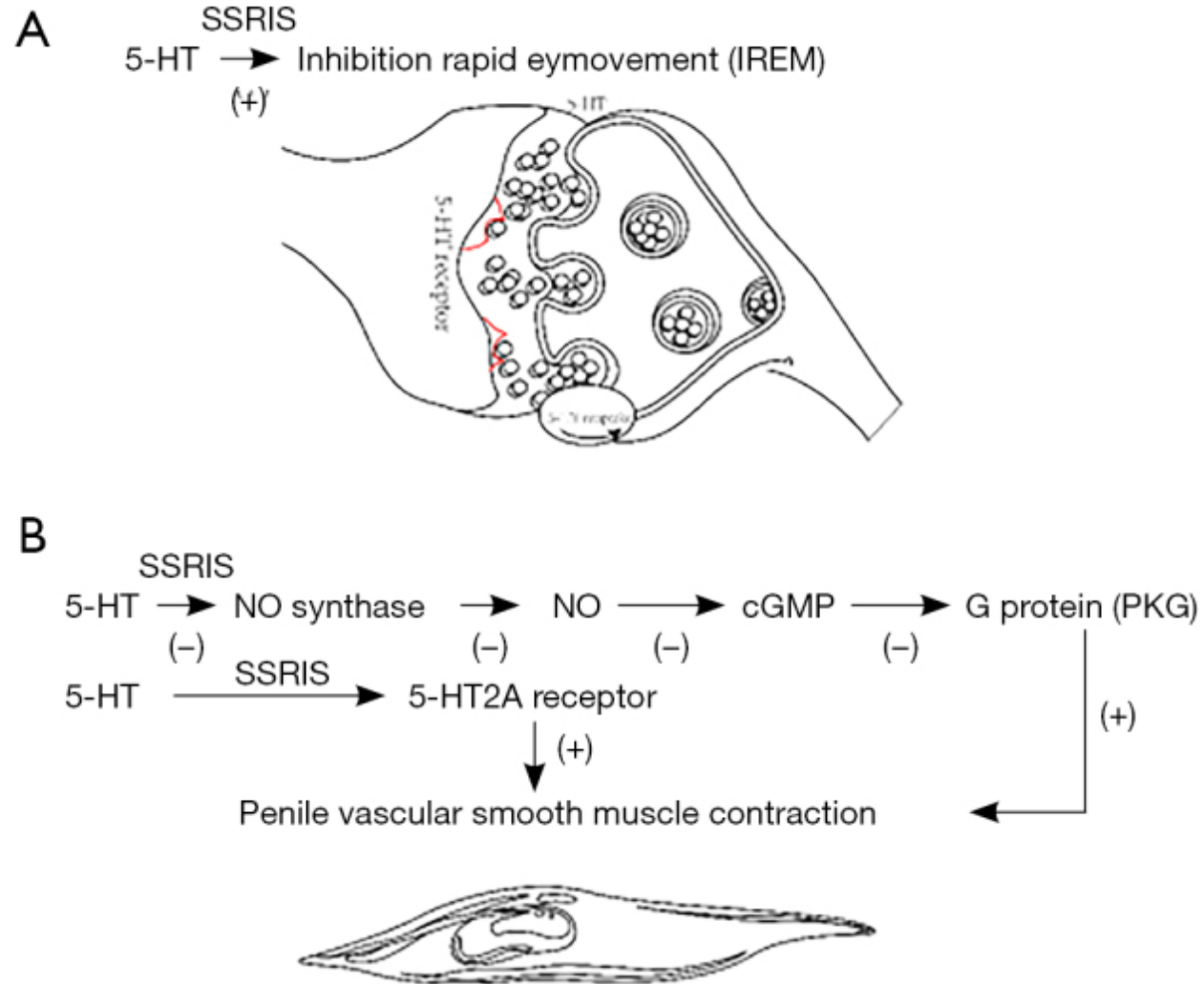


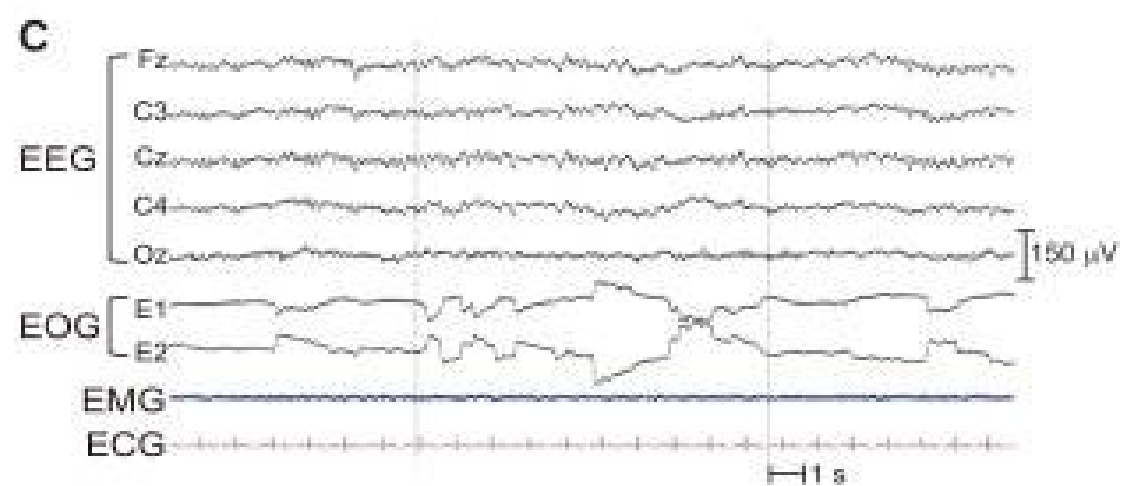
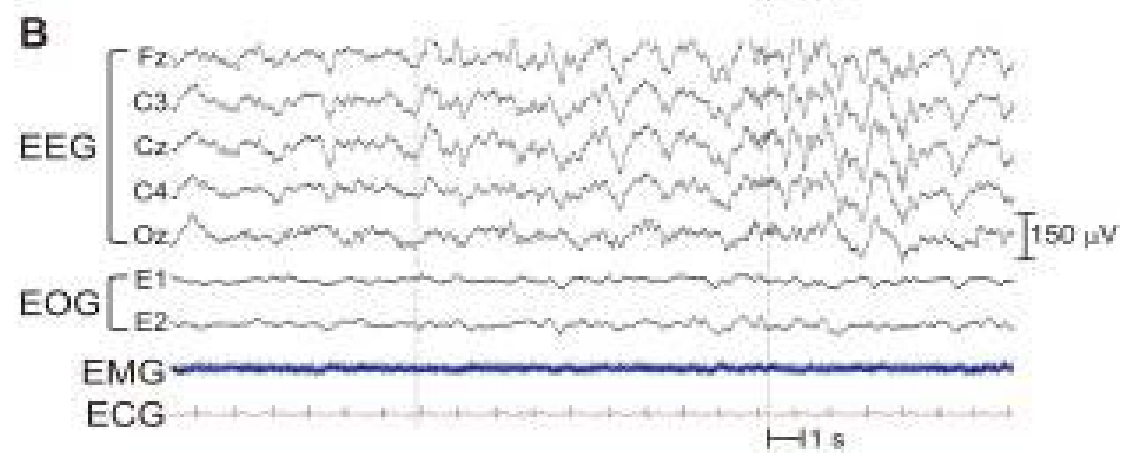
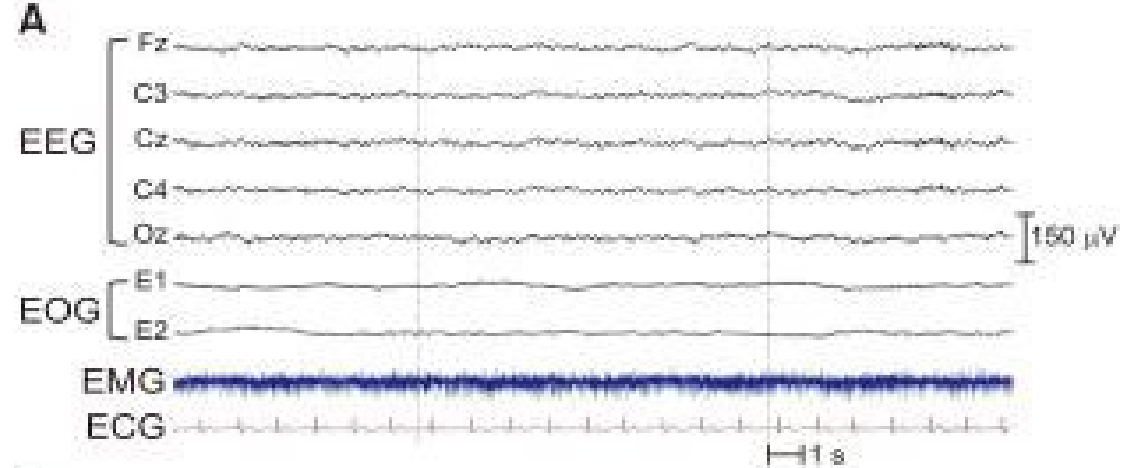
Nocturia and Sleep Related Erections

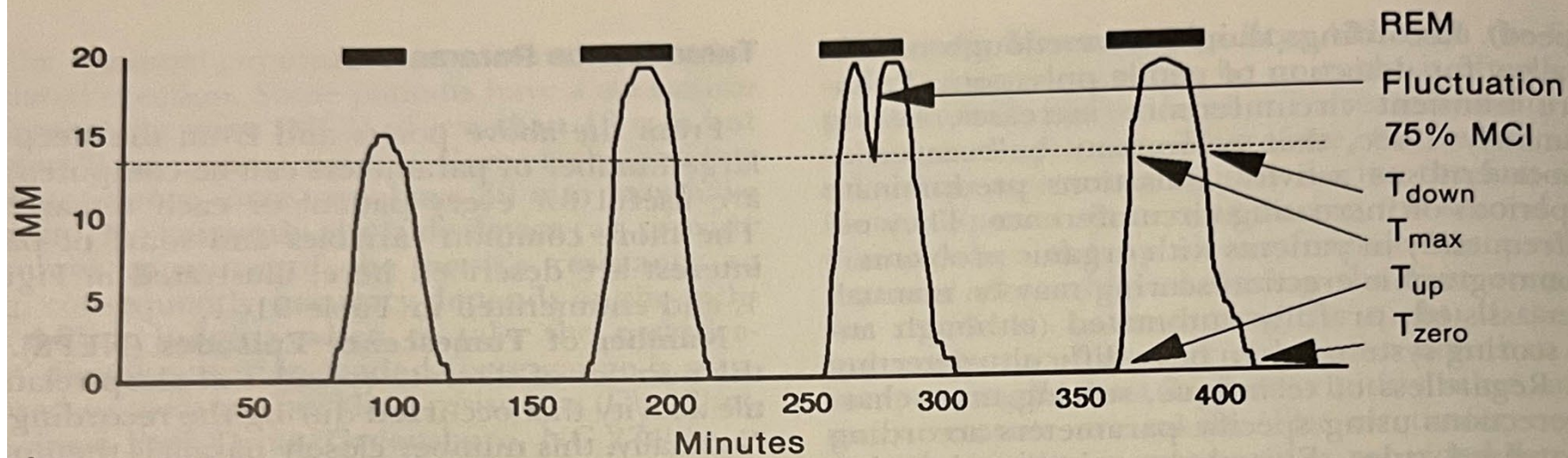


Effect of SSRI on Erection

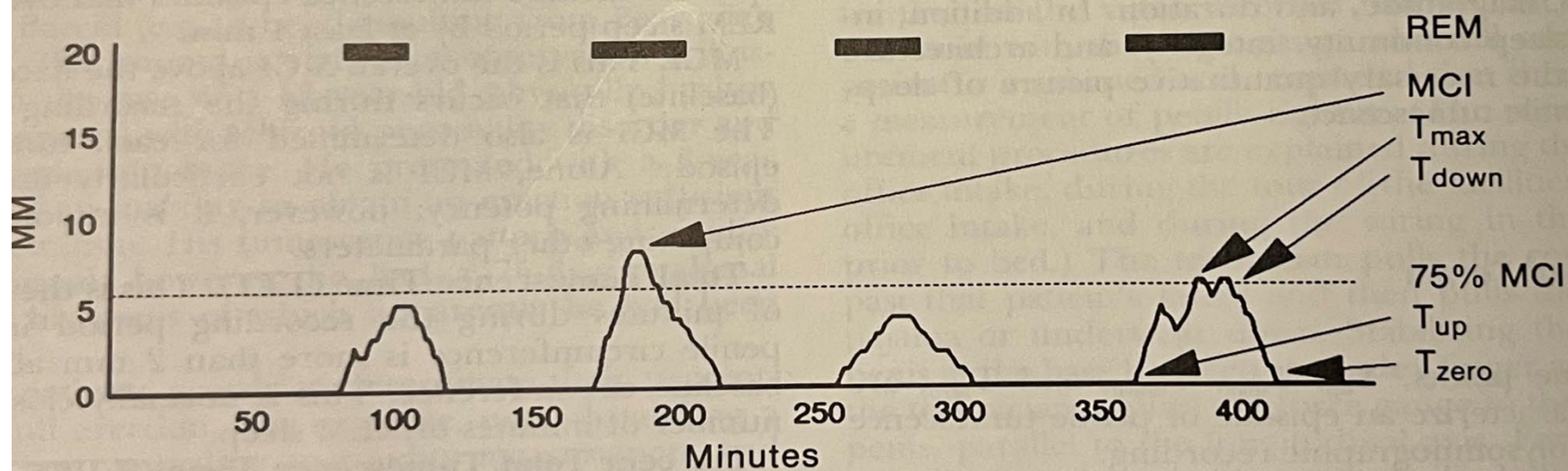
Selective serotonin reuptake inhibitors (SSRIS)







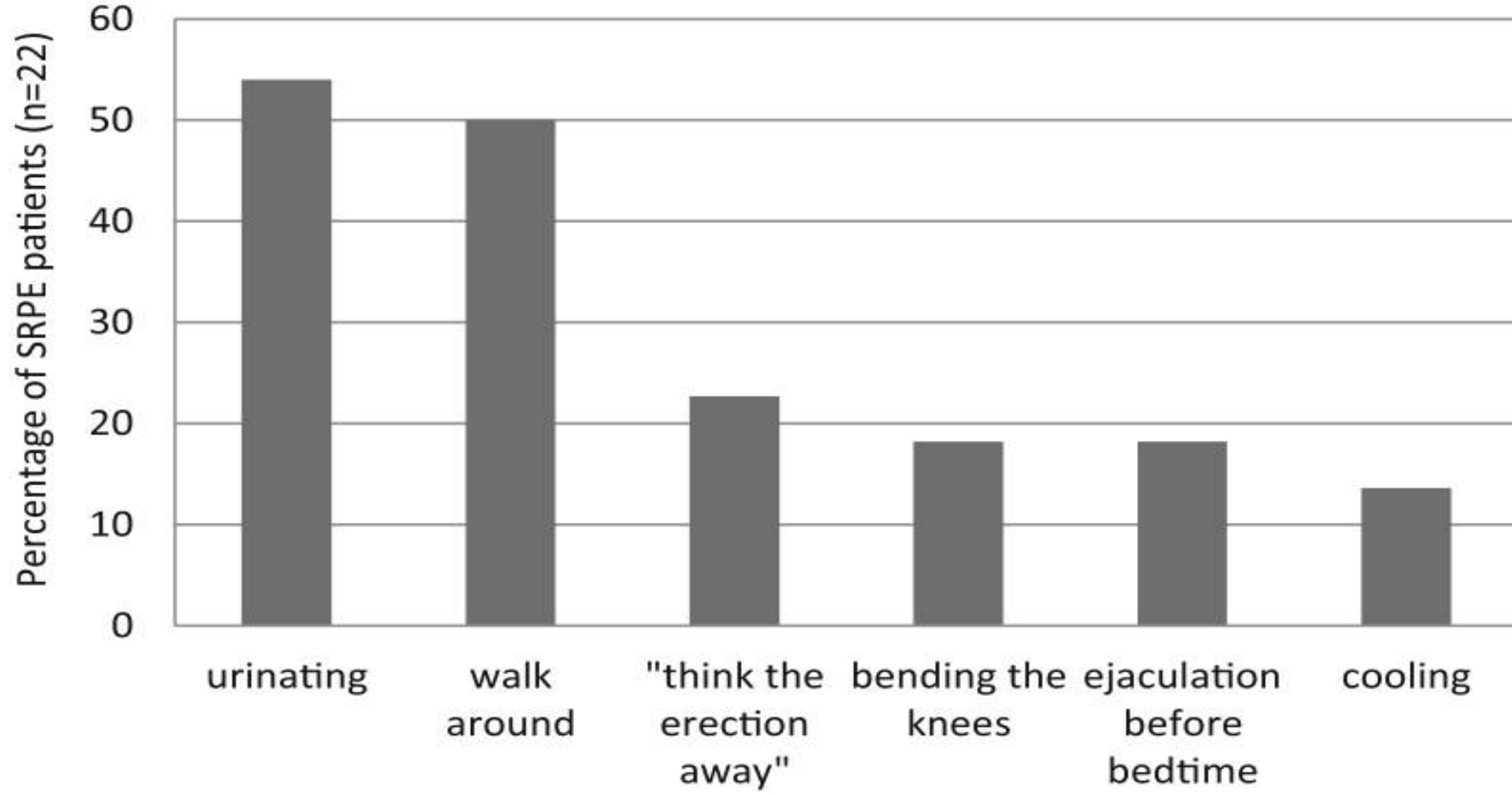
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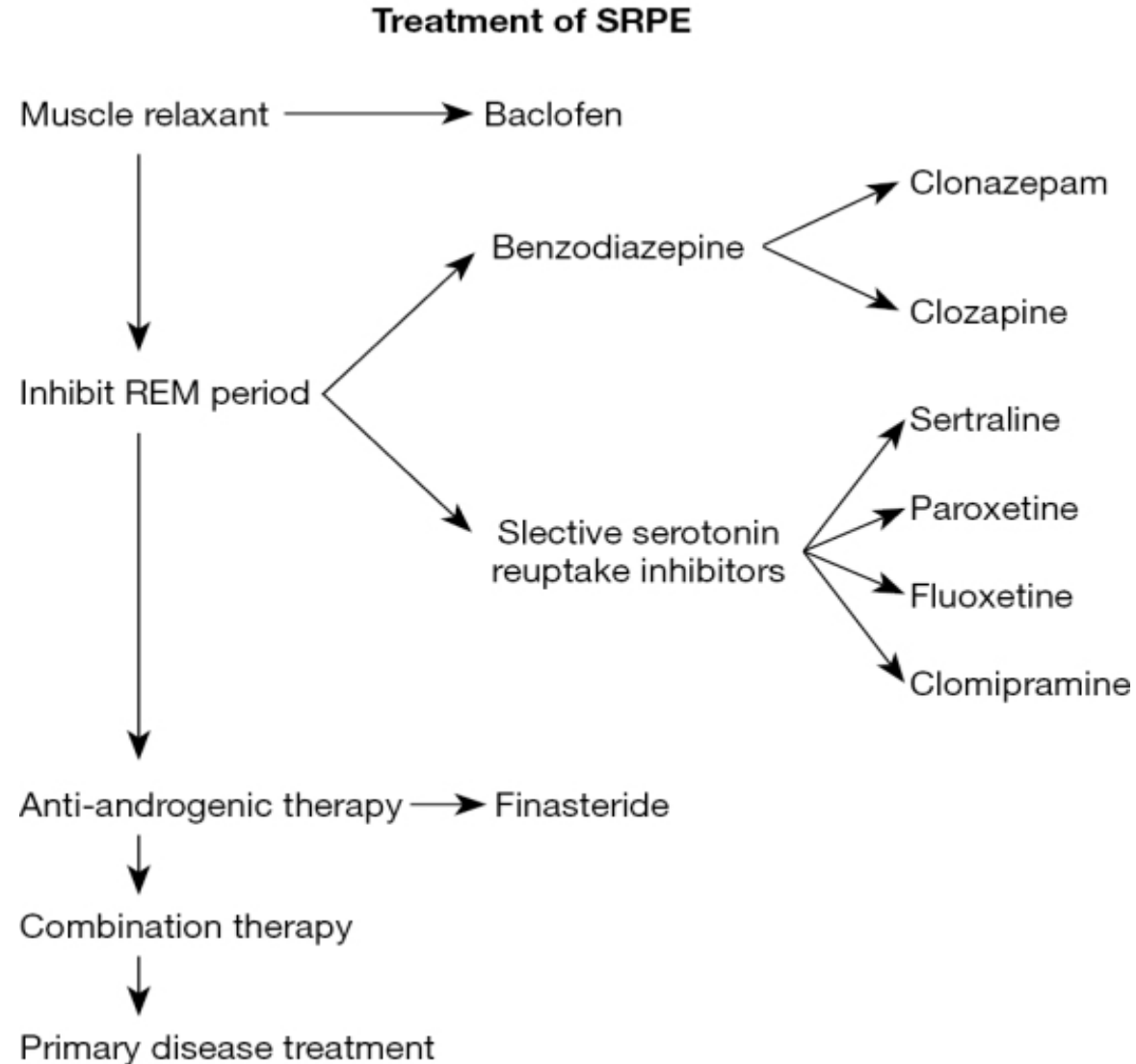
B

-1. A and B, Schematics of a normal sleep-related penile erection pattern from a young adult (*top*) and an abnormal pattern (*bottom*). The y-axis indicates circumference change in millimeters; the abscissas indicate elapsed time in minutes during polysomnography. REM sleep periods are indicated by the four dark bars along the top of the figures. Points (defined in the text) that are important for scoring the erection episodes are indicated by arrows for an erection episode in each figure.

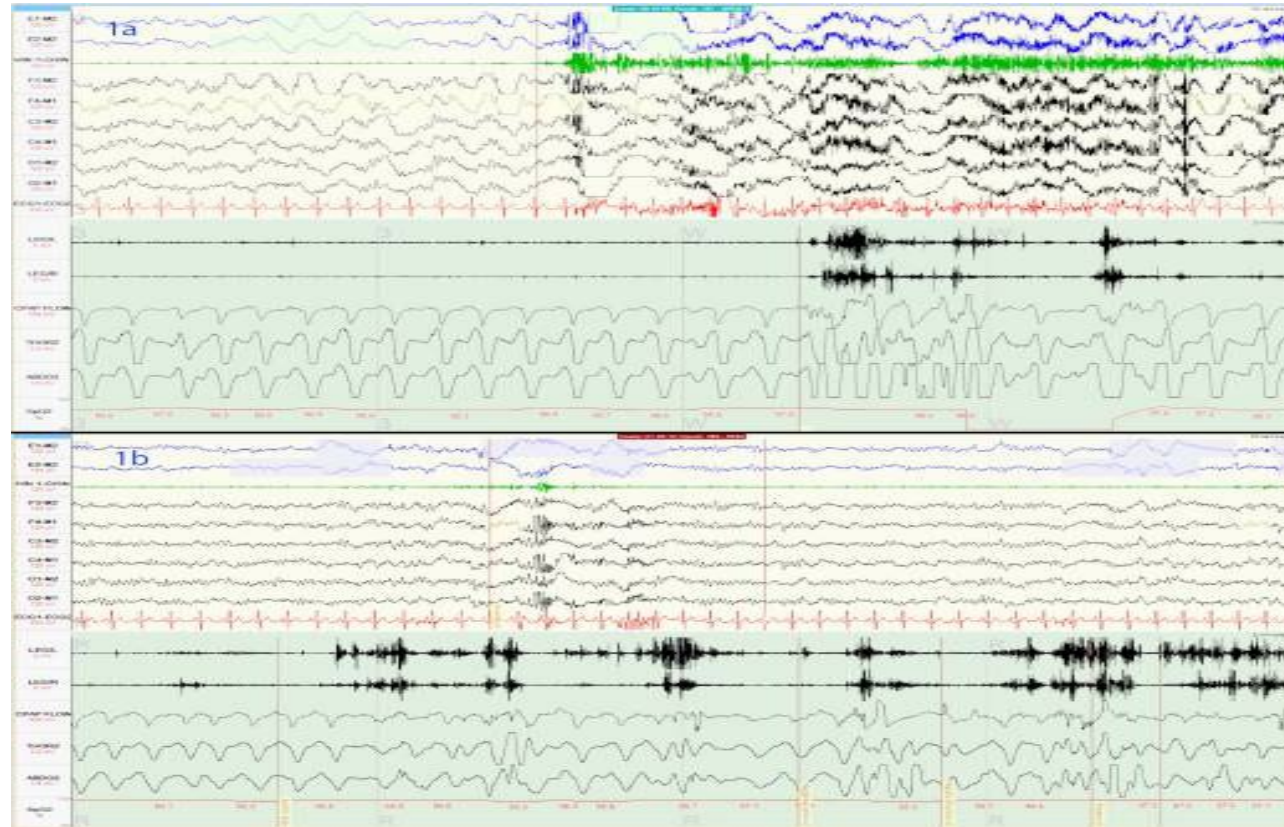
Terminating Sleep Related Painful Erections



Treatment of Sleep Related Painful Erections



Polysomnograph during Sleep Sex



Thank you

Dr. David Franco

