

Take Home Messages in General Internal Medicine

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 - Clinical focus: Internal Medicine

No conflicts of interest and nothing to declare

End of Life Care

Dr. Lisa S. Lehman

What is Advance Care Planning (ACP)?

- A *process* of making decisions about the care patients would want if they become unable to speak for themselves
 - An advance directive is one outcome of process
- Based on personal values, preferences, & discussions with their loved ones and doctors



Clinical Indications for Advance Care Planning

- Routine indications
 - Hospitalized patient with Covid-19
 - Discussing poor prognosis
 - Discussing treatment with low probability of success
 - ***MD would not be surprised if the patient died in 6-12 months***
 - Reviewing health care maintenance with patient
- Urgent indications
 - Imminent death
 - Patient talks about wanting to die
 - Recently hospitalized for severe progressive illness
 - Severe suffering and poor prognosis
 - Machine learning identifies patients at high risk of death

Benefits of Advance Care Planning

- Promotes patient autonomy
 - Gives voice to patients' preferences even when they cannot speak
 - Gives patients peace of mind that their preferences will be respected
- Benefits for healthcare providers
 - Avoids future confusion and conflict
- Benefits for family
 - Decreases family angst about end-of-life decisions
 - Diminishes family guilt if treatment is limited

Clinical Outcomes & Advance Care Planning

- Decreased ICU admission
- Improved quality of life
- Increased hospice use
- Improves family bereavement outcomes
- Does not hurt therapeutic relationship

-Wright AA et al. [JAMA](#). 2008;300(14):1665-7.
-Temel JS et al. N Engl J Med 2010;363:733-42.
-Wright AA et al. JAMA. 2016;315(3):284-292.
-Fenton JJ, et al. JCO. 2018;36(3):225-230

Make a Recommendation

- Does not undermine patient autonomy
- Base on clinical situation, goals of care, & patient values
 - "I am hearing that what is most important to you is..."
- Offers guidance and relieves patients & families of some of the burden of decision-making

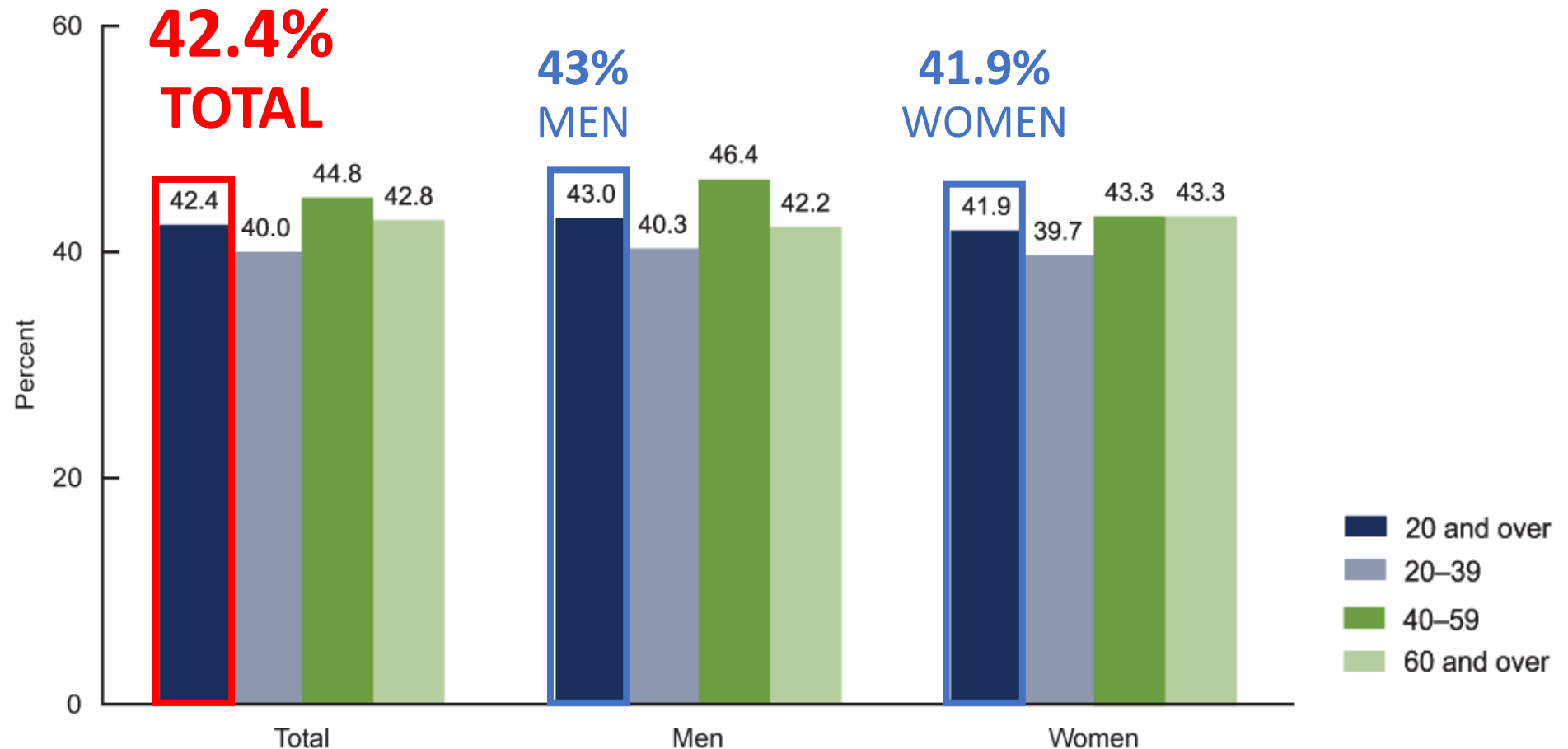


Obesity

Dr. Caroline M. Apovian

U.S. Prevalence of Obesity, 2017-2018

Adults $\geq$
20 years,
Obesity =
BMI $\geq$ 30



Designation of Obesity as a Disease

Medical Associations and Societies¹

- American Association of Clinical Endocrinologists
- American Academy of Family Physicians
- American College of Cardiology
- American College of Surgeons
- American Medical Association
- American Society for Reproductive Medicine
- American Urological Association
- The Endocrine Society
- The Obesity Society
- The Society for Cardiovascular Angiography and Interventions

Obesity is a disease:
leading obesity
groups agree
June 19
2013

World / National Health Organizations^{1,2}

- World Health Organization
- Food and Drug Administration
- National Institutes of Health

1. ASMBS, TOS, ASBP, AACE Joint Statement. Obesity is a disease: leading obesity groups agree. June 19, 2013.
<http://asmbs.org/2013/06/obesity-is-a-disease-leading-obesity-groups-agree/>. Accessed September 11, 2013.

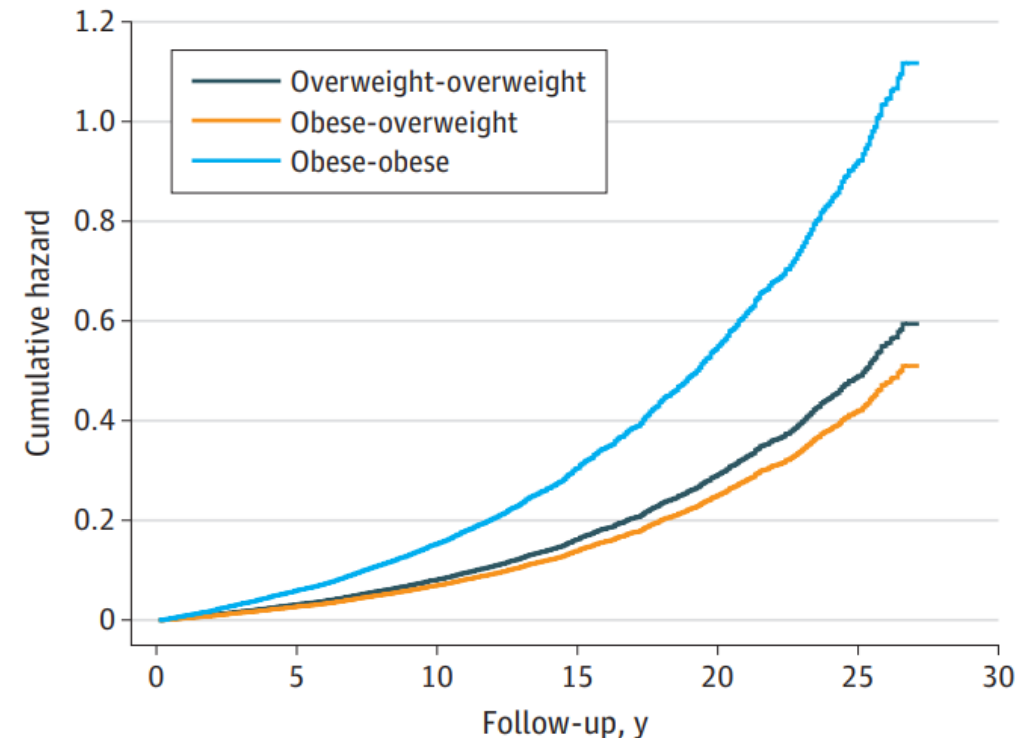
2. American Medical Association. AMA Resolution No. 420 (A-13). June 19, 2013.
www.ama-assn.org/assets/meeting/2013a/a13-addendum-refcomm-d.pdf.

All-cause Mortality for Weight Change Patterns

Estimated **12.4% OF EARLY DEATHS** may be attributable to having weight in excess of the normal BMI range at any point between early and mid-adulthood (95% CI, 8.1%-16.5%)

For all participants, maintaining an obese BMI from early adulthood to midlife increased the risk of all-cause mortality vs. stable normal weight, with an HR of 2.17 (95% CI, 1.85-2.53)

- Weight gain from a normal to overweight BMI was not associated with risk, normal-obese (HR, 1.32; 95% CI, 1.15-1.52)
- Overweight to obese (HR, 1.47; 95% CI, 1.28-1.69)
weight changes were associated with elevated mortality risks



No. at risk						
Overweight-overweight	2836	2142	1328	701	426	148
Obese-overweight	215	168	99	44	26	4
Obese-obese	1415	962	535	267	154	34

Obesity Guidelines: Recommendation 3

2013 AHA/ACC/TOS Guideline for the Management of Overweight and Obesity in Adults

Prescribe a diet to achieve reduced calorie intake for obese or overweight individuals who would benefit from weight loss, as part of a comprehensive lifestyle intervention. Any one of the following methods can be used to reduce food and calorie intake:

- 1,200–1,500 kcal/d for women
- 1,500–1,800 kcal/d for men
(*adjust for individual's body weight*);
- 500 or 750-kcal/d energy deficit

**Prescribe
SET NUMBER OF
CALORIES/DAY**

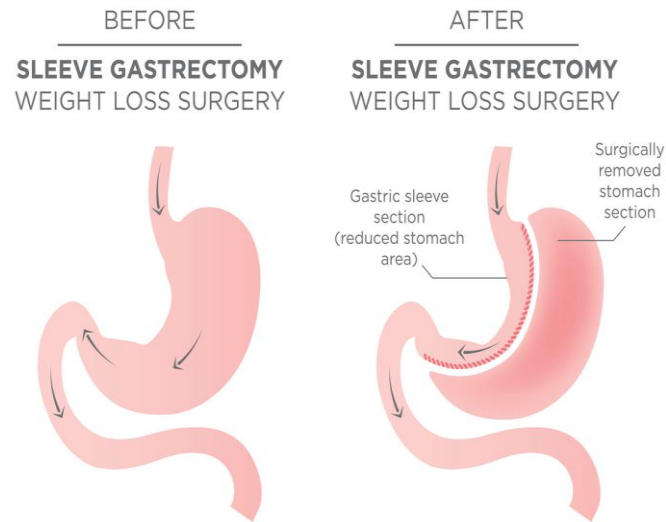
- Prescribe one of the **evidence-based diets that restricts certain food types** (such as high-carb foods, low-fiber foods, or high-fat foods) in order to create an energy deficit by reduced food intake

**Choose an
evidence-based diet –
there is NO IDEAL DIET**



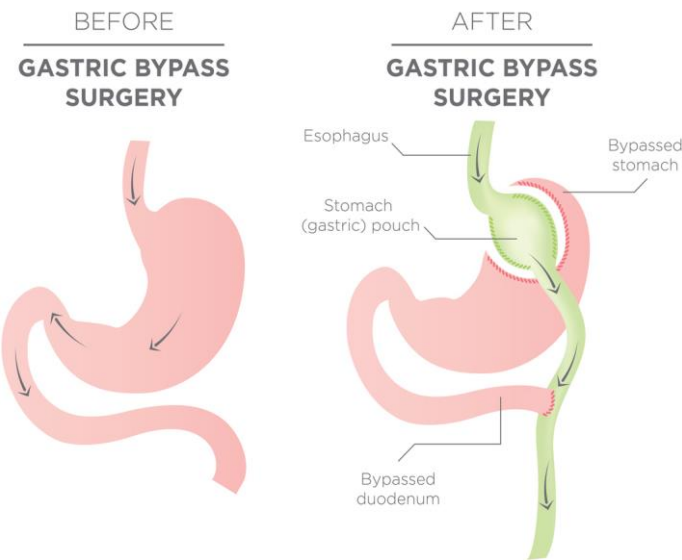
Bariatric Surgery Procedures

Sleeve Gastrectomy



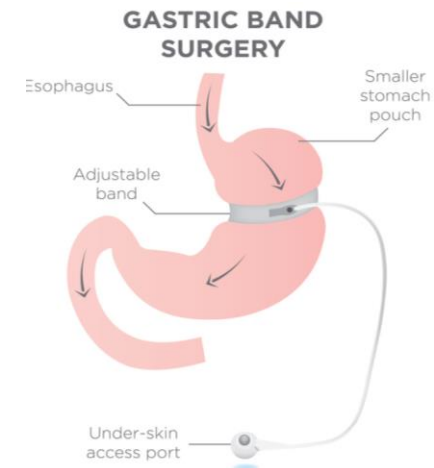
- Average weight loss:
 - 25% of total weight
- Surgery takes about 60 minutes
- 1 day in hospital
- Limits ingestion of food and changes hunger signals
- Non-reversible

Gastric Bypass



- Average weight loss:
 - 30% of total weight
- Surgery takes about 90-120 minutes
- 1-2 days in hospital
- Limits ingestion of food and changes hunger signals
- Reversible in extreme cases

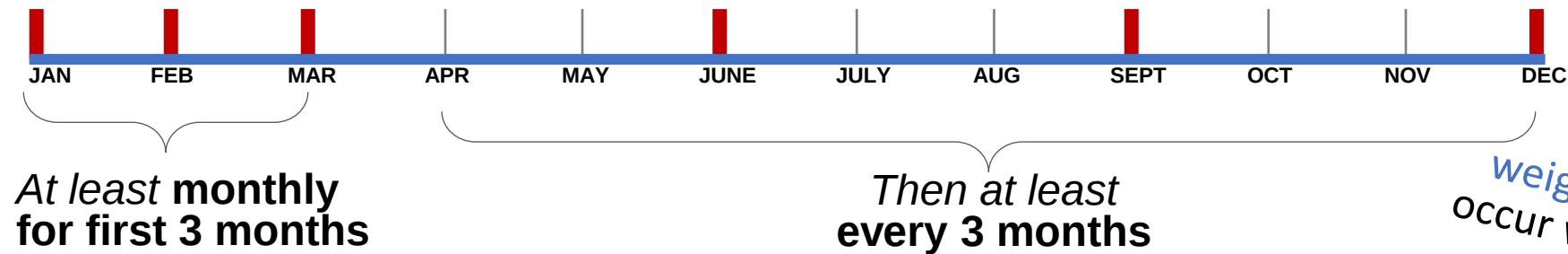
Gastric Band (LAP-BAND)



- Not commonly performed as weight loss results have not been optimal in the long-term
- Our team will consider this operation on a case-by-case basis

Frequent Patient Follow-up is Key

All patients prescribed weight loss medications:



BEST weight loss outcomes occur with frequent face to face visits

- **16 visits per year average**

Centers for Medicare & Medicaid Services coverage:

Month 1 Four visits (1 per week)

Months 2-6 One visit per month

Month 7-12 *if 3 kg (6.6 lbs) lost, then:*
One visit per month

15 visits per year



Bariatric Surgical Patients Require Lifelong Follow-up Visits

Encourage

All patients are encouraged to **drink water** long-term

Consumption of **lean protein** sources is encouraged

Vitamin and mineral supplementation should be reinforced at every visit to avoid micronutrient deficiencies

Routine **exercise** should be encouraged

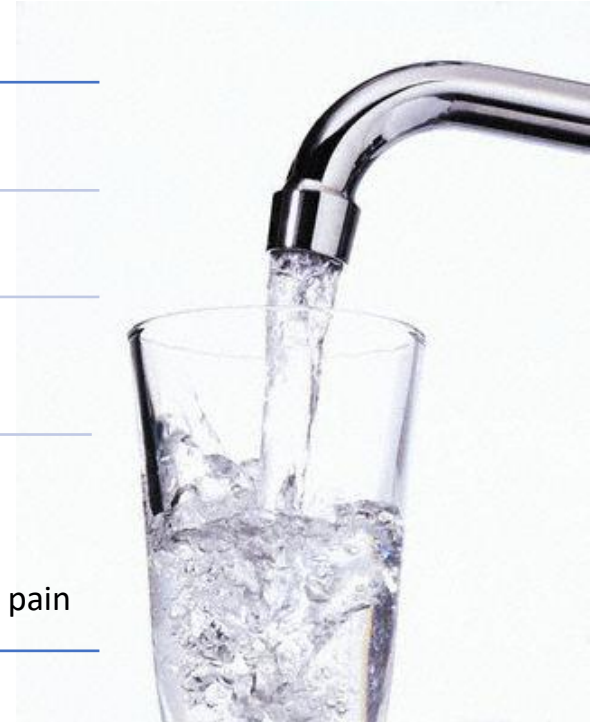
- Walking is an appropriate way to start exercising
- Patients with degenerative joint disease may benefit from aquatic exercise to reduce joint pain

Discourage

Caffeinated beverages should be avoided because of the diuretic effect

Processed snack foods and **sweetened beverages** are discouraged because they increase calorie intake unnecessarily

Carbonation and straws because of the risk of gastric bloating



Summary/Take Home Points

- 42.4% of U.S. Adults have obesity
- 30.7% of U.S. Adults are overweight
- Lifestyle interventions can be effective with long-term follow-up
- Bariatric surgery is the most effective form of long-term weight loss
- Weight regain occurs in 17-30% of RYGB patients at two years post-op
- Anti-obesity medications are effective at increasing post-op weight loss and preventing weight regain
- New GLP-1 agonist, semaglutide, shows promise to help fill BMI-mid-range treatment gap

Hyperlipidemia

Jorge Plutzky MD

2013 AHA/ACC Cholesterol Guidelines

ASCVD

- Age $\leq$ 75 – High-intensity statin[†]
- Age > 75 – Moderate-intensity statin

LDL $\geq$ 190

- High-intensity statin

Age 40-75 with
diabetes

LDL 70-189

- 10-year risk $\geq$ 7.5% - High-intensity statin
- 10-year risk < 7.5% - Moderate-intensity statin

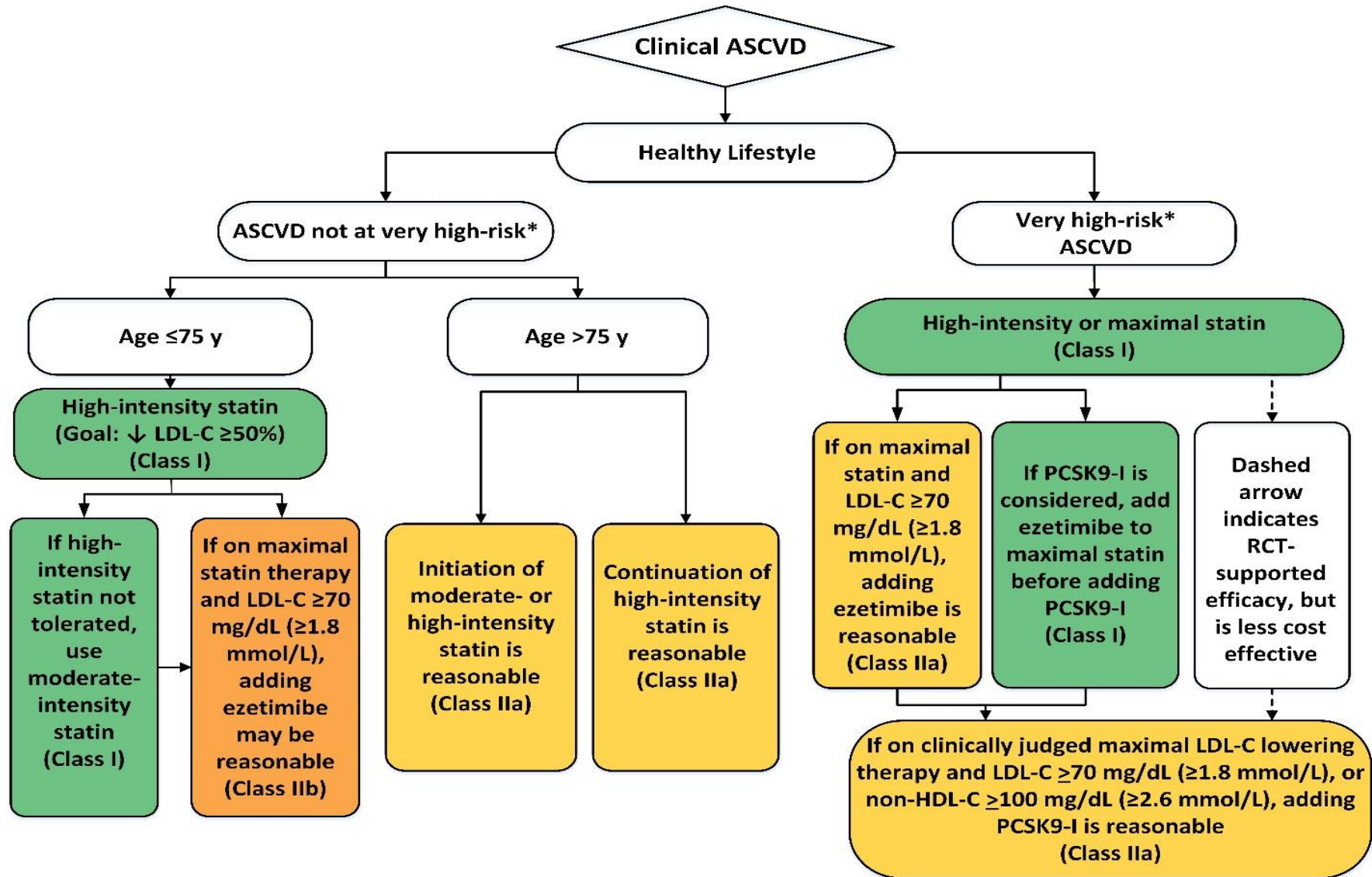
Age 40-75 without
ASCVD or diabetes

10-year risk $\geq$ 7.5%

- Moderate- to high-intensity statin

Don't treat to LDL target

Secondary Prevention



Multiple major ASCVD events

One major ASCVD event
+
Multiple high risk conditions

Major ASCVD Events
Recent acute coronary syndrome (within the past 12 months)
History of myocardial infarction (other than recent acute coronary syndrome event listed above)
History of ischemic stroke
Symptomatic peripheral arterial disease (history of claudication with ankle brachial index <0.85, or previous revascularization or amputation)
High-Risk Conditions
Age ≥65 years
Heterozygous familial hypercholesterolemia
History of prior coronary artery bypass surgery or PCI outside of the major ASCVD event(s)
Diabetes Mellitus
Hypertension
Chronic kidney disease (eGFR 15-59 mL/min/1.73 m ²)
Current smoking
Persistently elevated LDL-C (LDL-C ≥100 mg/dL (≥2.6 mmol/L)) despite maximally tolerated statin therapy and ezetimibe
History of congestive heart failure

Biostatistics

Dr. Julie Buring

“Criterion of positivity” influences both **sensitivity and specificity** of the screening test:

↓ Criterion of positivity → ↑ sensitivity
↓ specificity

↑ Criterion of positivity → ↓ sensitivity
↑ specificity

PV+ affected by sensitivity and specificity, but increased mainly by increase in **underlying disease prevalence** (like screening a higher risk group).

Prevalence = $\frac{\text{number of existing cases at a point in time}}{\text{total population}}$

Incidence = $\frac{\text{number of new cases during a period of time}}{\text{population at risk}}$

The proportion of the population that has a disease at a point in time (**prevalence**) depends on both the rate of development of the disease in the population (**incidence**) as well as the **duration** of the disease from onset to termination (death or cure). Under steady state (no epidemic, no breakthrough treatment), $P = I \times D$.

Thus, a **change in prevalence** can reflect a change in **incidence**, a change in **duration**, or **both**.

- **Chance:** role of sampling variability (test of significance, p-value)
- **Bias:** any source of systematic error in the determination of the association.
- **Confounding:** mixture of effect between the association under study and a third variable, which may be responsible in part or totally for the association seen.

- If $P \leq 0.05$, reject H_0 , association is statistically significant at 0.05 level.
- If $P > 0.05$, cannot reject H_0 , association is **not** statistically significant at 0.05 level.
- P-value does **not mean** due to chance, or mean chance is ruled out - relates to **likelihood** of chance being an explanation of the findings.

Take Home Points

- **Limited number of biostatistical principles that need to know.**
- **Important thing is to be a critical consumer, to adjust your way of thinking.**
- **Trust your instincts!**

Topics in Geriatrics

Suzanne Salamon, MD

Myths about Aging

1. Depression is more prevalent in Old Age

-Research shows emotional well-being improves until the 70's, when it levels off, even among centenarians

2. Cognitive Decline is Inevitable.

-Except in dementia, knowledge and wisdom help people more in real-life than on tests. To improve memory and processing speed, learning new skills (quilting, using an iPad, etc, learning a language.)

3. Older Workers are Less Productive.

- People >60YO make up 15% of the US labor force
- No relationship between age and job performance

4. Loneliness is More Likely

-Older people report better marriages, better friendships, higher rate of close ties

5. Creativity Declines with Age

Mark Twain, Cezanne, Frank Lloyd Wright, Robert Frost, Virginia Woolf, Robert Redford, Clint Eastwood, etc

Hearing loss and falls



Falls are the leading cause of fatal and nonfatal injuries among older adults.



People with hearing loss have a higher risk of falling than the general population.



The more severe the hearing loss, the higher the risk.



Prevent falls by wearing hearing aids and eyeglasses (if needed), using assistive devices, staying active, and fall-proofing your home.



Healthy Hearing

www.healthyhearing.com

What older adults did with leftover opioid medications*

Among those who had a prescription for opioids in the past two years



86%

Saved for
later use/kept
at home



13%

Returned to
approved
location**



9%

Disposed,
threw in trash,
or flushed
down toilet

July/August 2018 Report: Older Adults' Experiences with Opioid Prescriptions

*Respondents could select more than one response; **Pharmacy, health care provider, law enforcement, or community takeback event

Results

- Among women with an intact uterus, the risks of stroke, invasive breast cancer, colorectal cancer, endometrial cancer, and pulmonary embolism/deep vein thrombosis were **not different** between vaginal estrogen users and nonusers
- Risks of CHD, fracture, all-cause mortality, were lower in users than in nonusers, with or without hysterectomy providing reassurance about the safety of treatment.

Vaginal Estrogen Formulations

- Vaginal ring-every 3 months. Slow, steady release of estrogen
- Estrogen cream-1-2 times/week
- Estrogen tablets 1-2 times/week



Opioid Use Disorder

Dr. Sarah E. Wakeman

Take Home Points

Increased access to opioid use disorder treatment across healthcare settings is needed to address overdose crisis

Opioid use disorder is a treatable, good prognosis condition

Like other chronic conditions, it can be diagnosed, treated, and managed in general medical settings



Screening



Diagnosis



Initiate
treatment



Retain in
treatment

Similar to Management of Diabetes or HIV

Goal to prevent acute and chronic complications

Patient-centered and directed treatment plans and goals

Treatment options include some combination of:

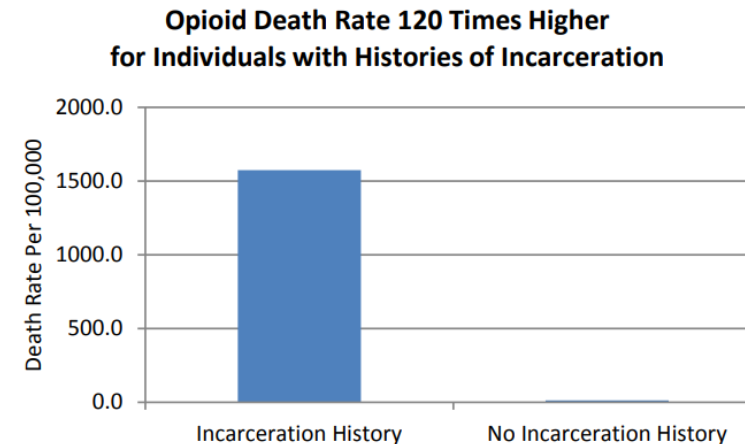
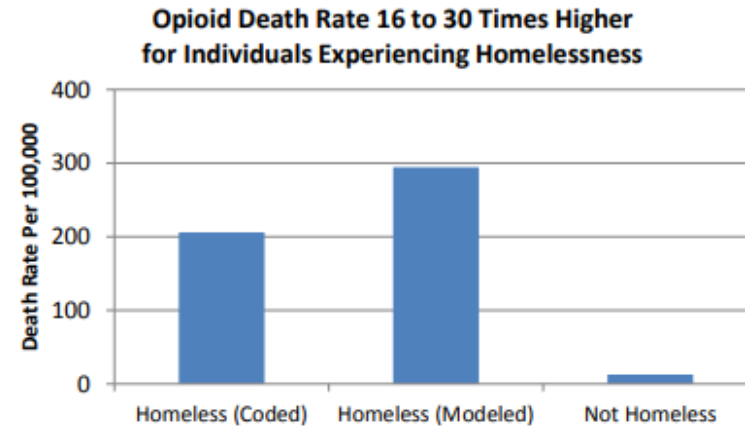
- Medication
- Behavioral support
- Lifestyle changes
- Regular monitoring

Goal of Medications for OUD

Relieve	withdrawal symptoms
Block	effects of other opioids
Reduce	cravings
Prevent	overdose

Overdose *Does* Discriminate

- Those at greatest risk of death often most marginalized
- People experiencing incarceration & homelessness have markedly higher rates of overdose death
- Treatment models not designed with these populations in mind



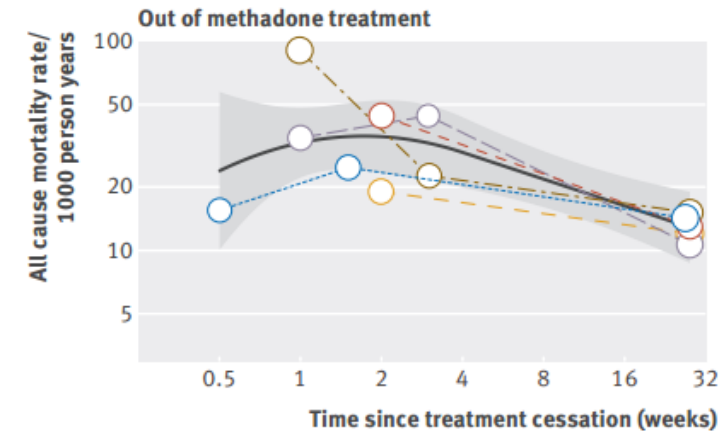
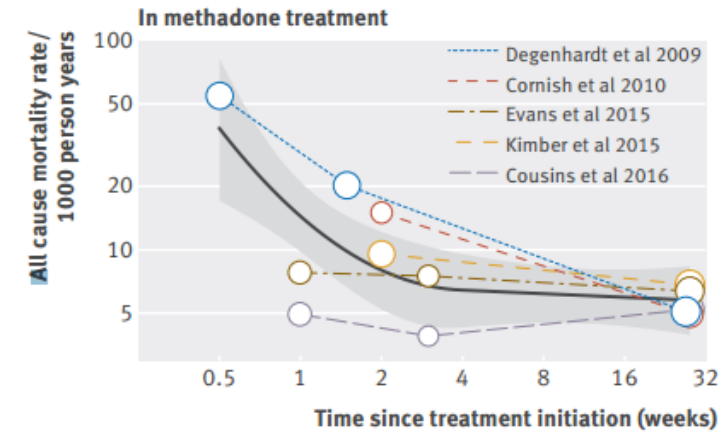
Methadone and buprenorphine reduce mortality

- **All cause mortality rates (per 1000 person years):**

- In methadone treatment: 11.3
- Out of methadone treatment: 36.1
- In buprenorphine treatment: 4.3
- Out of buprenorphine treatment: 9.5

- **Overdose mortality rates:**

- In methadone treatment: 2.6
- Out of methadone treatment: 12.7
- In buprenorphine treatment: 1.4
- Out of buprenorphine treatment: 4.6





Using Hospitalization as a Reachable Moment

- Initiating methadone in hospital:
 - 82% present for follow-up addiction care
- Initiating buprenorphine vs withdrawal management:
 - Buprenorphine: 72.2% enter into treatment after discharge
 - Withdrawal only : 11.9% enter treatment after discharge

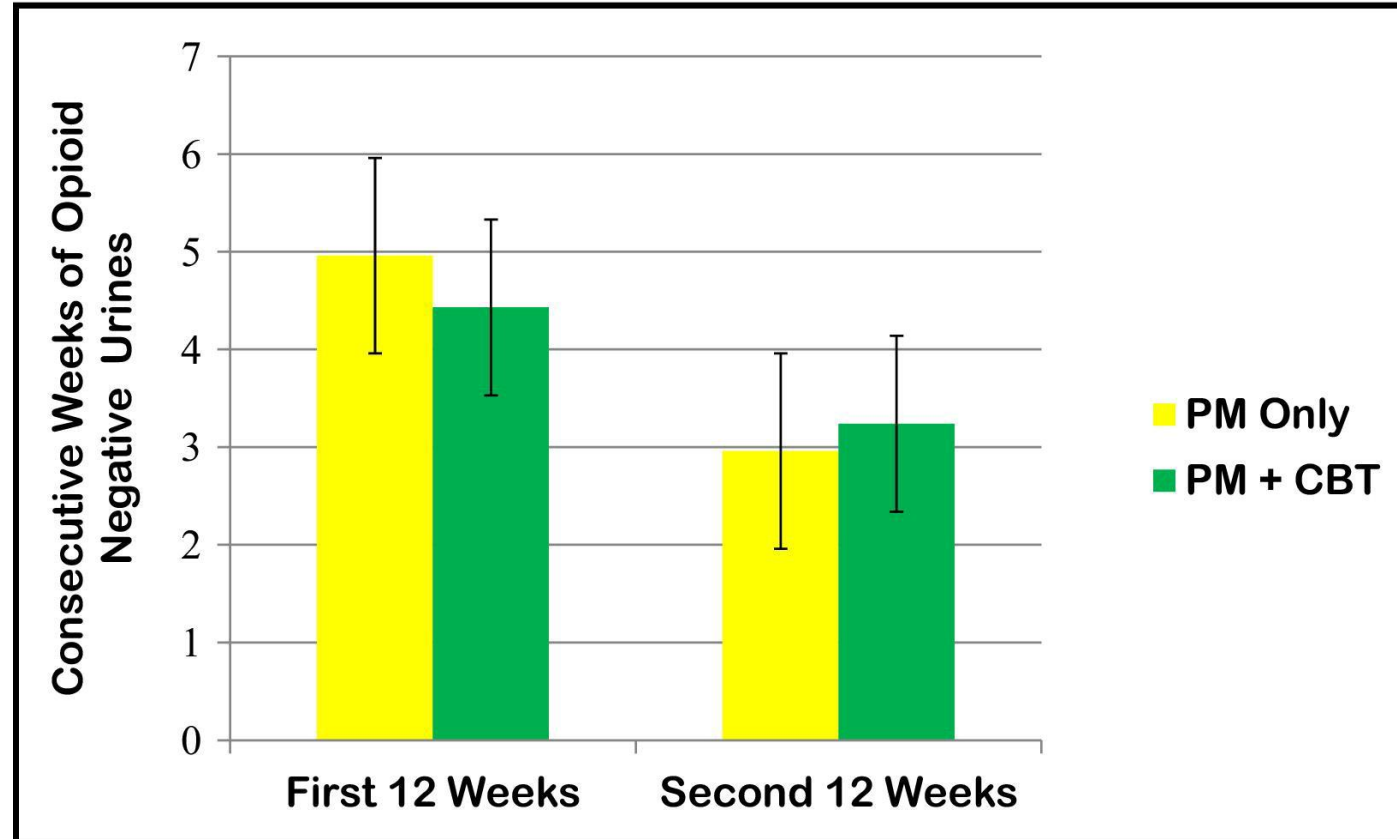
Treatment in the ED is Feasible and Effective

Table 2. Baseline and 30-Day Secondary Outcome Measures Among Opioid-Dependent Patients Treated in the Emergency Department^a

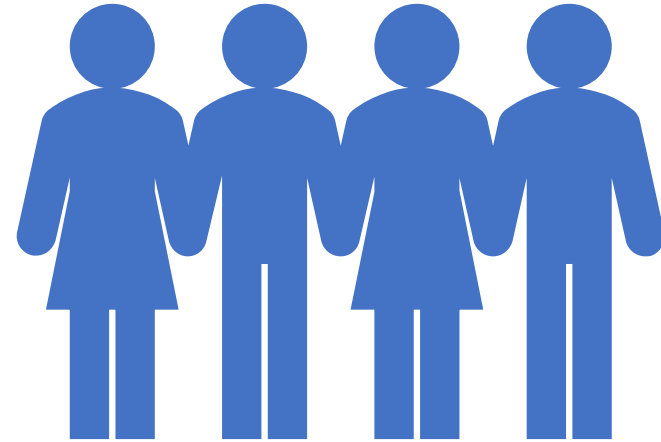
	Referral	Brief Intervention	Buprenorphine	P Value ^b
Days of Self-reported Illicit Opioid Use in the Past 7 Days, Mean (95% CI)				
Baseline	5.4 (5.1-5.7)	5.6 (5.3-5.9)	5.4 (5.1-5.7)	<.001, Treatment effect <.001, Time effect .02, Interaction effect
30 d	2.3 (1.7-3.0)	2.4 (1.8-3.0)	0.9 (0.5-1.3)	

- Three arm RCT: Referral vs BI vs buprenorphine
- 78% vs 37% engaged in buprenorphine treatment
- Fewer days of self-reported opioid use among those initiated on buprenorphine

Treatment in Primary Care is Feasible, Effective, & Rewarding



Structure & Delivery of Care Crucial for Retention



- Patients fall out of care when they are not welcomed back:
 - “You could only miss 14 days in a row...to stay on it. And I came back like the 15th day. So they told me I was no longer eligible.”
- Patients report staff who “worked with” them and were “nice,” “caring,” & “respectful” offered support and encouragement were important factors in sticking with treatment:
 - “They showed me that there’s a light at the end of that tunnel. There’s hope. You hear that? There’s hope!”

Thank you! Good luck on the Boards

No conflict of interest and nothing to declare.