Updates from Annals

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Disclosures

- Employee of *Annals of Internal Medicine* and the American College of Physicians
- Patient care (unpaid) – University of Pennsylvania
Coffee and Health

- Many biologically active compounds
- ? higher consumption $\rightarrow$ lower inflammation, insulin resistance, risk for diabetes
- Some studies: higher consumption related to lower mortality
Coffee and Health

- Findings re: CVD risk have been mixed
- Generally not associated with cancer mortality
- Data limited re: digestive and respiratory disease
- **Concerns:**
  - small size of studies
  - variation in coffee drinks and customs across countries
Coffee Drinking and Mortality in 10 European Countries
A Multinational Cohort Study

- Prospective 10 nation cohort: cancer and nutrition
- 521,330 participants
- Mean follow-up 16.4 yrs - 41,693 deaths
- Assess all-cause mortality
- Multivariable analysis (demographics, BMI, smoking, alcohol, physical activity, etc.)

Coffee and Mortality in 10 European Countries

Compared with non-consumers, coffee drinkers had:

- Lower all-cause mortality (men HR 0.83, women 0.91)
- “Dose effect”: lower with more cups/day

- No difference among countries
- Caffeinated and Decaffeinated
Association of Coffee Consumption With Total and Cause-Specific Mortality Among Nonwhite Populations

Song-Yi Park, PhD; Neal D. Freedman, PhD; Christopher A. Haiman, ScD; Loïc Le Marchand, MD, PhD; Lynne R. Wilkens, DrPH; and Veronica Wendy Setiawan, PhD

- Prospective multiethnic cohort; 1993-2012
- ~186,000 African-Americans, Native Hawaiians, Japanese Americans, Latinos, and Whites
- 45-75 yrs old at recruitment
- Avg. follow-up 16.2 years
- Coffee intake assessed at baseline
- Total and cause-specific mortality

Coffee consumption associated with:

- Lower total mortality
  - 1 cup/day: HR 0.88
  - 2 – 3 cups/day: HR 0.82
  - > 4 cups/day: HR 0.82
- Lower mortality from heart disease, cancer, respiratory disease, stroke, diabetes and kidney disease
- Trends same for caffeinated and decaffeinated
- Significant for 4 / 5 ethnic groups
“ Recommending coffee intake to reduce mortality would be premature. However, increasingly evident that moderate coffee intake up to 3-5 cups per day or caffeine intake up to 400mg/day is not associated with adverse health effects and can be incorporated in a healthy diet”

Sedentary Time: Total or Pattern?

Accelerometry

Sedentary: 0 – 49 counts /min
Sedentary break: ≥ 1 minute ≥ 50 counts /min

7985 Adults

Demographics
Comorbidities
Smoking
Alcohol
Moderate-Vigorous PA

4 years
All Cause Mortality

Annals of Internal Medicine
Sedentary behavior accounted for 12.3 hours/day over a 16-hour waking day (77% of awake time!)
Mean sedentary bout length was 11.4 minutes
Is there a threshold?

- Sedentary bout length threshold

Proportion of sedentary bouts lasting <30 min

Least bouts < 30 min (more long bouts)

Most bouts < 30 min (more short bouts)
Cautions

- Observational design (residual confounding)
- Limitation of accelerometer
- Participation bias
- Reverse causality
Implications

- Total sedentary time associated with mortality
- Prolonged, uninterrupted sedentary bouts associated with increased mortality
- Sedentary time accrued in bouts associated with even higher mortality
- Encourage reduction of total sedentary time
- Avoid prolonged sedentary bouts by taking breaks (e.g., every 30 minutes)
Marijuana: Good? Bad? Do We Know?

- Increasing legalization / availability.
- Medical and recreational use
- ? Accepted as safe
- ? Accepted as effective

What are our patients hearing / thinking?
What do we really know?
US population-representative sample (n=9003)

~15% reported past year use

Fall 2017

“What do you believe are the benefits of marijuana?”

“What do you believe are the risks of marijuana?”
Benefits of marijuana

Prevents health problems?

- Edible marijuana prevents health problems: 61.9%
- Vaping marijuana prevents health problems: 69.6%
- Smoking marijuana prevents health problems: 69.8%

Statements:
- Edible marijuana prevents health problems.
- Vaping marijuana prevents health problems.
- Smoking marijuana prevents health problems.
Use During pregnancy?

Marijuana use during pregnancy in the US

- Females ages 12 – 44 y
- Nat’l Survey on Drug Use & Health
- Self-reported “past 30 day use” and pregnancy

*Ann Intern Med. 2017;166(10):763-764*
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Females Aged 12-44 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pregnant (n = 14400) ((95% \text{ CI}), %)</td>
</tr>
<tr>
<td>Overall annual average</td>
<td>3.82 ((3.41-4.23))</td>
</tr>
<tr>
<td>Trimester</td>
<td></td>
</tr>
<tr>
<td>First</td>
<td>6.44 ((5.50-7.53))</td>
</tr>
<tr>
<td>Second</td>
<td>3.34 ((2.76-4.05))</td>
</tr>
<tr>
<td>Third</td>
<td>1.82 ((1.41-2.34))</td>
</tr>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>12-17 y</td>
<td>14.02 ((11.51-16.99))</td>
</tr>
<tr>
<td>18-25 y</td>
<td>6.21 ((5.57-6.92))</td>
</tr>
<tr>
<td>(\geq 26) y</td>
<td>1.77 ((1.32-2.38))</td>
</tr>
</tbody>
</table>
Benefits and Risks: Chronic Pain

Annals of Internal Medicine

The Effects of Cannabis Among Adults With Chronic Pain and an Overview of General Harms
A Systematic Review
Shannon M. Nugent, PhD; Benjamin J. Morasco, PhD; Maya E. O’Neil, PhD; Michele Freeman, MPH; Allison Low, BA; Karli Kondo, PhD; Camille Elven, MD; Bernadette Zakher, MBBS; Makalapua Motu’apuaka, BA; Robin Paynter, MLIS; and Devan Kansagara, MD, MCR

• Literature review to 2016: Chronic Pain
• 13,674 titles reviewed → 22 RCTs in recent SRs + 8 add’l studies
• Most: Visual Analogue Scale; some report % with ≥ 30% decrease
Neuropathic Pain – 13 studies:
  - Risk of bias: Low (11), Unclear (1), High (1)
  - → LOW strength evidence
  - Alleviate chronic pain in some patients

General: no significant benefit on continuous scales
Increased proportion of patients with ≥ 30% reduction
RR 1.43 [95% CI, 1.16 to 1.88]; I² = 38.6%; P = 0.111
# Benefits and Risks: Chronic Pain

<table>
<thead>
<tr>
<th>Condition</th>
<th>Strength of Evidence</th>
<th>Benefit?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuropathic Pain</td>
<td>LOW</td>
<td>Yes</td>
</tr>
<tr>
<td>Multiple Sclerosis</td>
<td>INSUFFICIENT</td>
<td>?</td>
</tr>
<tr>
<td>Cancer</td>
<td>INSUFFICIENT</td>
<td>?</td>
</tr>
<tr>
<td>Fibromyalgia</td>
<td>INSUFFICIENT</td>
<td>?</td>
</tr>
</tbody>
</table>

*Absence of Evidence ≠ Evidence of Absence*
Absent Evidence: Why Important?

- Informed patients / shared decision making
- Lots of anecdotal / misleading information
- Focus of patient energies / false expectations
- Costs to patients
- ? Interferes with focus on proven approaches
- ? Harms (“It couldn’t hurt”)

Annals of Internal Medicine
American College of Physicians
## Benefits and Risks: Chronic Pain

**Harms in General Populations**
11 SRs + 32 add’l primary studies

<table>
<thead>
<tr>
<th>Condition</th>
<th>Strength of Evidence</th>
<th>Harm?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor Vehicle Accidents</td>
<td>MODERATE</td>
<td>Increased risk</td>
</tr>
<tr>
<td>Psychotic Symptoms</td>
<td>LOW</td>
<td>Increased risk</td>
</tr>
<tr>
<td>Short-term Cognitive Impairment</td>
<td>MOD/ INSUFFICIENT</td>
<td>Increased risk</td>
</tr>
</tbody>
</table>
? Decreased CV Risk

Annals of Internal Medicine

Associations Between Marijuana Use and Cardiovascular Risk Factors and Outcomes
A Systematic Review
Divya Ravi, MD, MPH; Mehrnaz Ghasemiesfe, MD; Deborah Korenstein, MD; Thomas Cascino, MD; and Salomeh Keyhani, MD, MPH

Studies through Sept 2017
13 studies on CV risk; 11 on CV outcomes
<table>
<thead>
<tr>
<th>Condition</th>
<th>Strength of Evidence</th>
<th>Benefit?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes</td>
<td>INSUFFICIENT</td>
<td>?</td>
</tr>
<tr>
<td>Dyslipidemia</td>
<td>INSUFFICIENT</td>
<td>?</td>
</tr>
<tr>
<td>Acute MI</td>
<td>INSUFFICIENT</td>
<td>?</td>
</tr>
<tr>
<td>Stroke</td>
<td>INSUFFICIENT</td>
<td>?</td>
</tr>
<tr>
<td>CV Mortality</td>
<td>INSUFFICIENT</td>
<td>?</td>
</tr>
<tr>
<td>All-Cause Mortality</td>
<td>INSUFFICIENT</td>
<td>?</td>
</tr>
</tbody>
</table>

Limitations: recall bias, inadequate exposure assessment, minimal marijuana exposure, low risk cohorts
### Marijuana Use, Respiratory Symptoms, and Pulmonary Function
A Systematic Review and Meta-analysis

Mehrnaz Ghasemiesfe, MD; Divya Ravi, MD, MPH; Marzieh Vali, MSc; Deborah Korenstein, MD; Mehrdad Arjomandi, MD; James Frank, MD; Peter C. Austin, PhD; and Salomeh Keyhani, MD, MPH

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Strength of Evidence</th>
<th>Prospective RR (95% CI)</th>
<th>X-sectional RR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cough</td>
<td>LOW</td>
<td>2.0 (1.0-4.1)</td>
<td>4.4 (1.7-11.2)</td>
</tr>
<tr>
<td>Sputum</td>
<td>LOW</td>
<td>3.8 (1.6-9.1)</td>
<td>3.4 (2.0-5.8)</td>
</tr>
<tr>
<td>Wheezing</td>
<td>LOW</td>
<td>---</td>
<td>2.8 (1.9-4.2)</td>
</tr>
<tr>
<td>Dyspnea</td>
<td>LOW</td>
<td>---</td>
<td>1.6 (1.3-1.8)</td>
</tr>
<tr>
<td>Obstructive lung dz</td>
<td>INSUFFICIENT</td>
<td>?</td>
<td>?</td>
</tr>
</tbody>
</table>
Opioid Use Disorder - Treatment

- Opioid Use Disorder: >2.1 million
- Most do not receive treatment
- 49,000 opioid overdose deaths - 2017
State-wide (MA) linked agency information
- 2012 – 2014; 17,568 adult survivors of OD
- 12 months follow-up
- Receipt of:
  - Methadone maintenance
  - Buprenorphine
  - naltrexone
- After non-fatal OD: 30% received any MOUD
  - 11% methadone (median 5 mo)
  - 17% buprenorphine (median 4 mo)
  - 6% naltrexone (median 1 mo)
B
Cumulative Incidence of All-Cause Mortality, %

Month From Index Nonfatal Overdose

No MOUD
Methadone – AHR 0.47 (CI 0.32, 0.71)
Buprenorphine AHR 0.63 (CI 0.46, 0.87)
Naltrexone AHR 1.44 (CI 0.84, 2.46)

D
Cumulative Incidence of Opioid-Related Mortality, %

Month From Index Nonfatal Overdose

No MOUD
Methadone – AHR 0.41 (CI 0.24, 0.70)
Buprenorphine AHR 0.62 (CI 0.41, 0.92)
Naltrexone AHR 1.42 (CI 0.73, 2.79)
Conclude: marked reductions in all-cause and opioid-specific mortality following non-fatal OD with use of MOUD

- MOUD is not used in ~2/3 of patients
- Missed opportunity
Prior recommendations based on expert opinion

Current research findings conflict with old recommendations / widespread and outdated practice

Evidence:

• FDA policy statements 2017
• Substance Abuse & Mental Health Services Admin 2018
• MEDLINE searches 2014 - 2018
Home induction is safe and effective.

- Since 2003: cohorts, observational and reviews: no adverse effects at home with education/support.
- Methadone may be more complicated/may require closer observation.
Buprenorphine should not be withheld from patients taking benzodiazepines

- Dual prescribing is prevalent, yet:
- Buprenorphine only rarely involved in overdose deaths
- Most OD deaths with IV benzos and heavy EtOH
- FDA: combined buprenorphine + benzos does increase risk – but harms untreated OUD outweigh risks
- Should not be withheld
- Exception: alprazolam (short-acting - benzo most often involved in ODs – best to avoid co-prescribing)
Old: Relapse indicates that the patient is unfit for buprenorphine-based treatment.

- **Current**: Relapse indicates the need for additional support and resources rather than cessation of buprenorphine treatment.

Old: Counseling or participation in a 12-step program is mandatory.

- **Behavioral treatments and support are provided as desired by the patient.**
Old: Drug testing is a tool to discharge patients from buprenorphine Rx or compel more intensive settings.

- **Current:** Drug testing is a tool to better support recovery and address relapse.

Old: Use of other substances is a sign of treatment failure and grounds for dismissal from buprenorphine Rx.

- **Current:** Buprenorphine Rx does not directly affect other substance use, and such use should be addressed in this context.
Old: Buprenorphine is a short-term Rx, prescribed with tapered dosages or for weeks to months.

- **Current:** Buprenorphine is prescribed as long as it continues to benefit the patient.
Public health approach to firearm violence because:

- Is complex and frequent
- Is associated with high morbidity and mortality
- Has major impact on health and safety of U.S. residents
Firearm Injury Prevention: AFFIRMing That Doctors Are in Our Lane

Firearm-Related Injury and Death: A U.S. Health Care Crisis in Need of Health Care Professionals

Ann Intern Med. 2018;169(12):885-886
One patient at a time

• Everyday firearm injury and death are not distributed at random

• Well-recognized **risk factors:**
  • those who commit and
  • those who sustain firearm injury
  • *bring high-risk individuals to health care providers opening the door for targeted firearm injury prevention efforts*
Yes, You Can: What You Can Do

Open the door for targeted firearm injury prevention:

- Ask your patients about firearms
- Counsel them about safety
- Take action when imminent danger is present

IDEAS AND OPINIONS

What You Can Do to Stop Firearm Violence

Annals of Internal Medicine

Garen J. Wintemute, MD, MPH
Yes, You Can: What You Can Do

To reduce firearm injury and death: Focus on prevention

Work to ensure that when firearms are present:

- Patients and loved ones understand risk of firearms
- Take all actions for increasing safety:
  - safe storage
  - control access

I D E A S  A N D  O P I N I O N S

What You Can Do to Stop Firearm Violence

Garen J. Wintemute, MD, MPH

Annals of Internal Medicine

Yes, You Can: **What You Can Do**

- 31% of US households have firearms
- 22% of adults own one or more
- ~1/3 kept loaded, unlocked
  - → opportunity for prevention
Yes, You Can: Patients We See Everyday

Risk factors → contact with healthcare
Clearest for suicide: 45% saw PCP within a month

Older patients – coexisting medical conditions

Unintentional / accidental harm: children, cognitively impaired
Patients We See Everyday - Alcohol

- Est 30% adults affected by alcohol misuse
- USPSTF recommends screening all adults

Alcohol + controlled substance abuse → Risk for firearm violence directed at self and others

With or without concomitant mental illness

Wintemute 2015; Annu Rev Public Health 36:5
www.uspreventiveservicestaskforce.org
Patients We See Everyday: Women ages 14 - 46

Intimate Partner Violence

• Lifetime: 30% of women
• Sexual and other physical violence, stalking, psychological
• Recommended Screening: USPSTF

Abuser’s access to firearms increases risk for Intimate Partner Homicide

State laws prohibiting retention of FAs: 14% lower rate

www.uspreventiveservicestaskforce.org
Patients We See Everyday - Dementia

- Alzheimer disease:
  - 2010: 4.7 million → 2050: 13.8 million

- Guns at home:
  - Est. 60% of persons with dementia

- ? Delusions re: home intruders

- ? Confusion re: identify of family, friends, health aids → access to guns → ? Danger of injury/death

Welcome to What You Can Do, a resource to support health care providers in reducing firearm injury and death.

Did you know:

- in 2016, an average of 105 people in the U.S. died from firearms each day?¹
- mass shootings account for only 1% to 2% of deaths from firearms in the U.S.?²

The Commentary and Commitment

View Dr. Wintemute’s commentary, What You Can Do to Stop Firearm Violence, in *Annals of Internal Medicine.*

[www.ucdmc.ucdavis.edu/vprp/WYCD.html](http://www.ucdmc.ucdavis.edu/vprp/WYCD.html)
Firearm Counseling should:

- Relate clearly to my patient’s health and wellbeing
- Unique to my patient, context-specific
- Acknowledge local customs related to guns and ownership
- Respectful conversation, and when possible within established patient-physician relationship

www.ucdmc.ucdavis.edu/vprp/WYCD.html
Firearm Counseling Should:

- Recognize changing circumstances at home can change firearm injury and death risks
- Is educational, not just information gathering
- Includes appropriate follow-up

www.ucdmc.ucdavis.edu/vprp/WYCD.html
Yes, You Can

What to ask and how:

- “Now I want to ask you a couple of questions about firearms. Are there any firearms in or around your home?”
- “Who has access to them?”
- “Are all the guns and ammunition locked up in some way?”
Yes, You Can

- Basic gun safety and storage
- Trigger locks, gun safes, ammo safes
- Where patients can get safety training
- What to do in an acutely dangerous situation
- More
What You Can Do to Stop Firearm Violence

- How do I approach the topic?
- How can I advise a patient worried about someone else’s access to FAs?
- What laws exist for temporary removal of FAs in crisis situations?
- How can my patient get rid of an unwanted FA?
- Will giving up guns temporarily affect my patient’s ability to own guns in the future?

www.ucdmc.ucdavis.edu/vprp/WYCD.html
Your Voice Is Important

Commit to protecting your patients from firearm-related injury.

Read and sign the declaration today.

Annals of Internal Medicine®
Commitment to help reduce firearm–related injuries and deaths

Annals of Internal Medicine®

MY COMMITMENT: When risk factors for harm to my patients or others are present, I will ask my patients about firearm ownership and safety.

Access the Comments feature on Wintemute's article to see who has committed to talk to their at-risk patients about firearm safety.

Make Commitment
Commit to keeping your patients safe!

www.go.annals.org/commit-now