Substance use among older adults in the peri-operative setting

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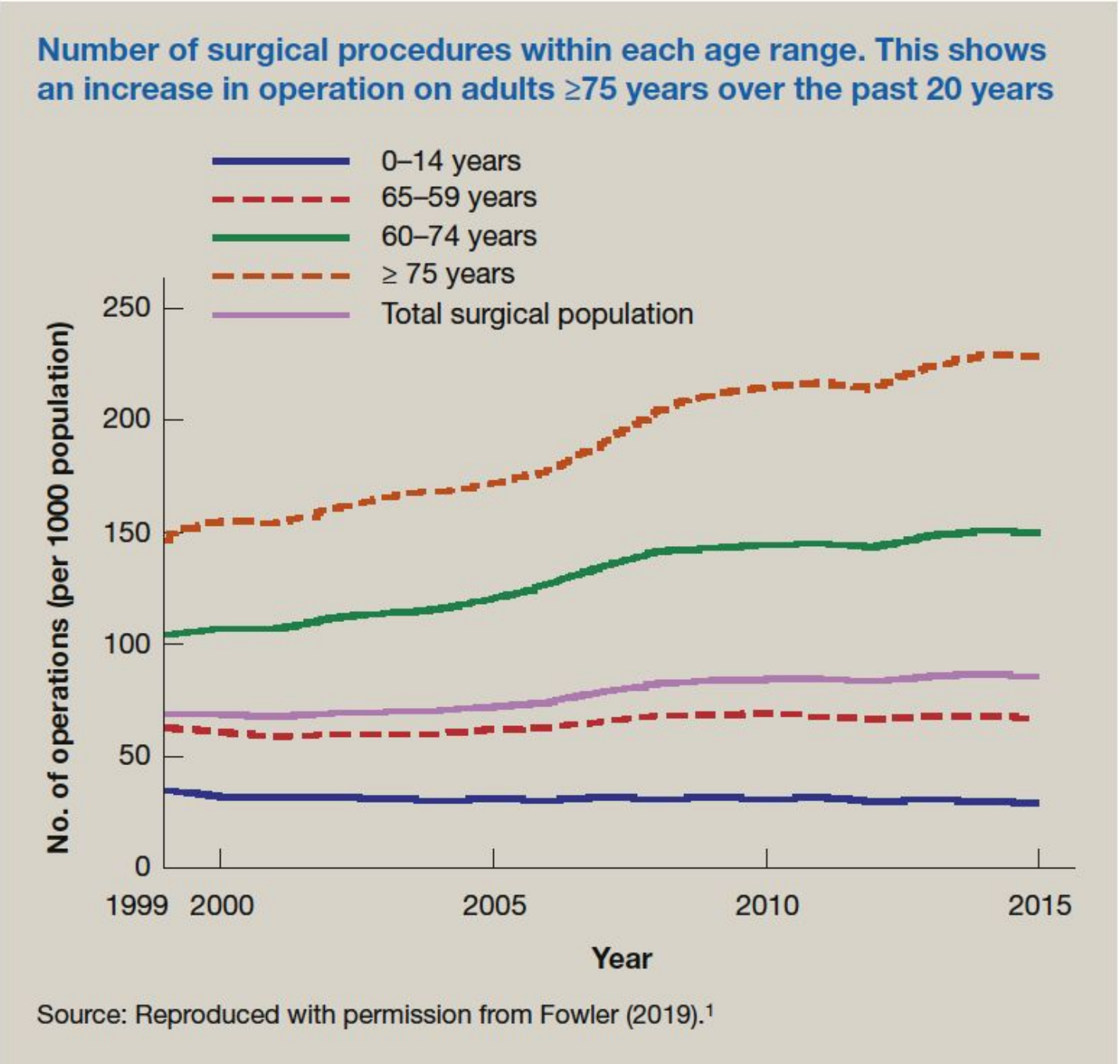
Outline

- Alcohol use in the peri-op setting
- Cannabis use in the peri-op setting
- Benzo use in the peri-op setting

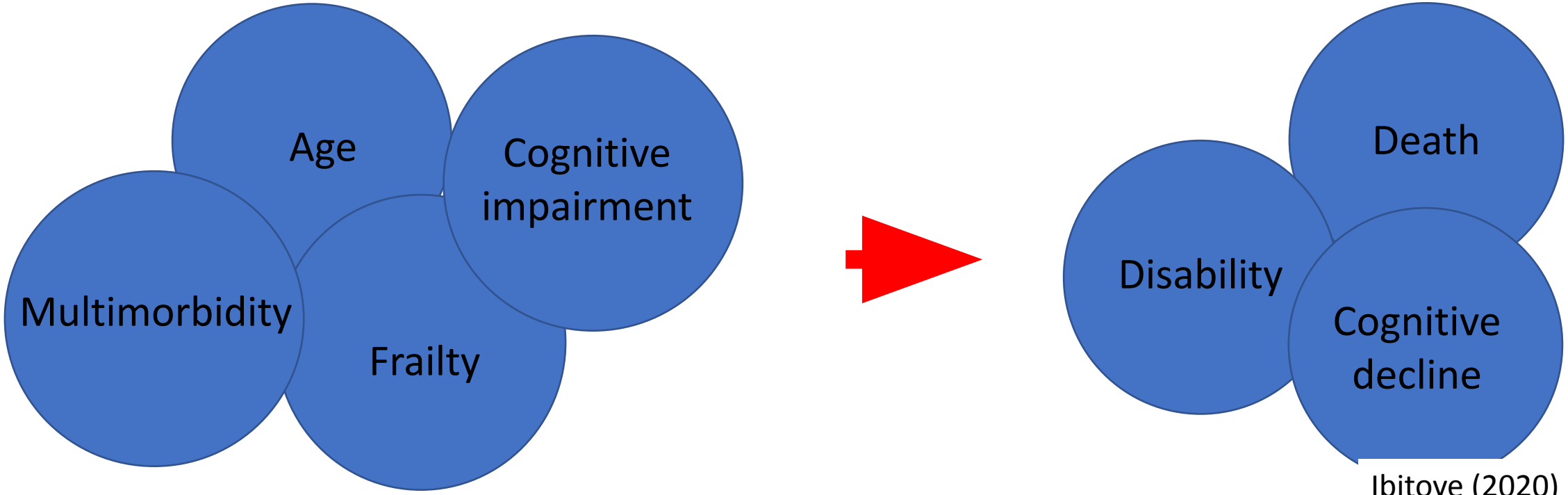
The number of older people undergoing surgery is increasing



Ibitoye (2020)

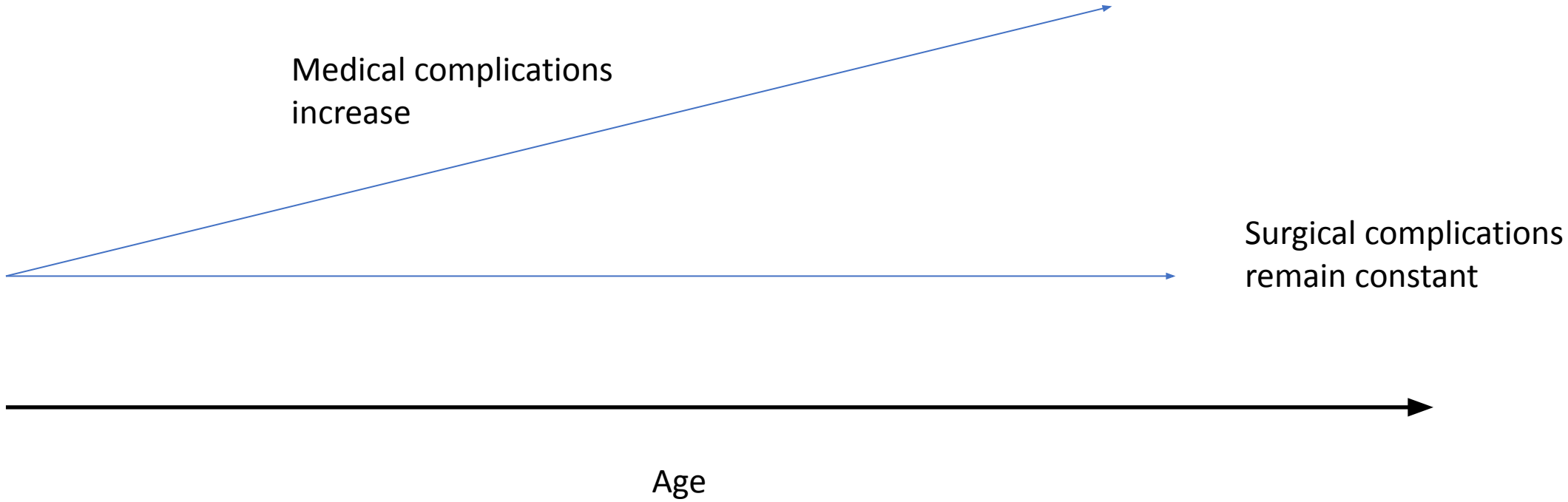
Older adults are more likely to:

- Present for emergency surgery than elective surgery
- Have comorbidities
- Have poor outcomes/complications



Ibitoye (2020)

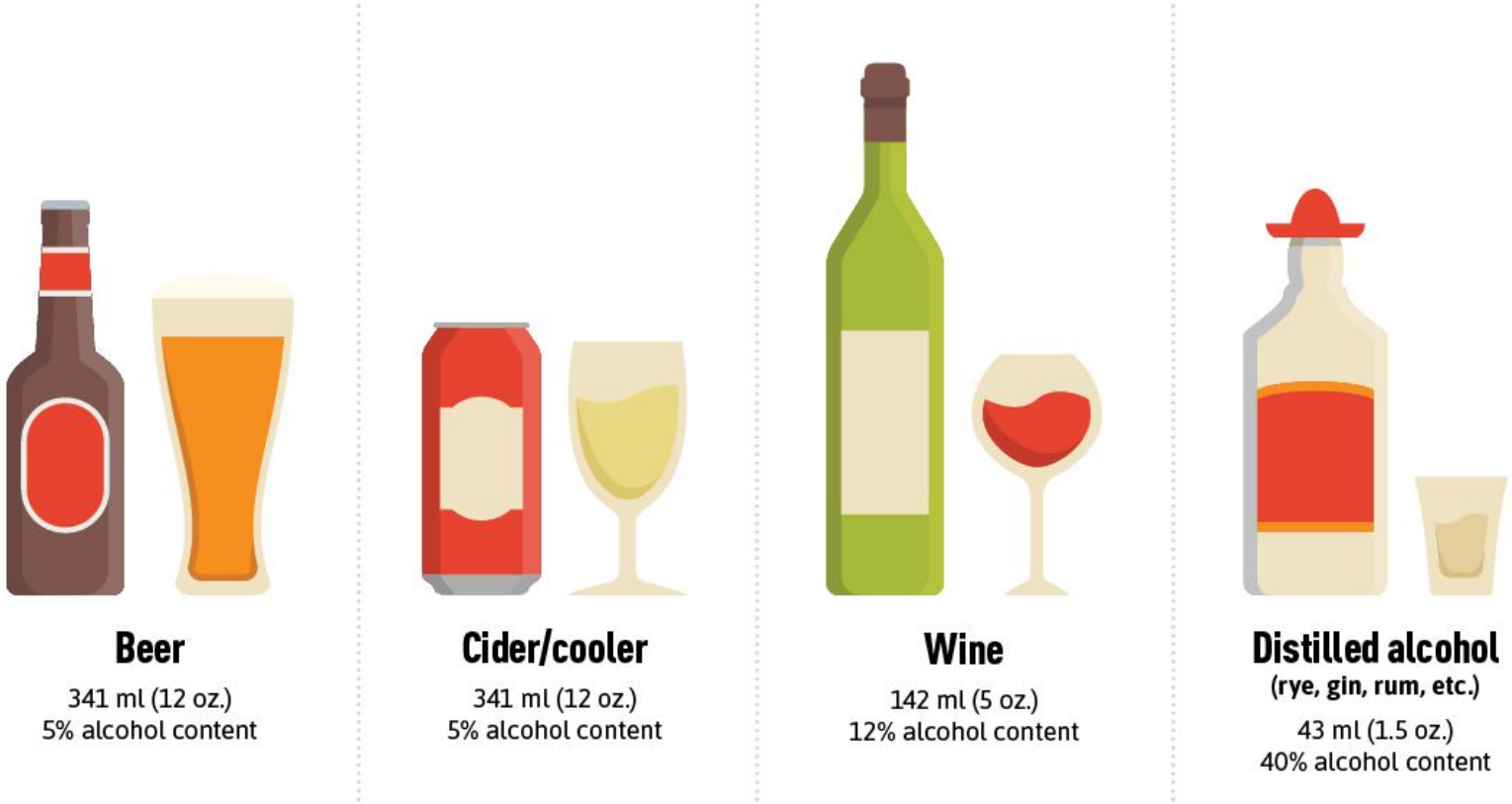
Post-operative complications and age



Ibitoye (2020)

Alcohol

A “standard drink” in Canada:



Alcohol and Surgery

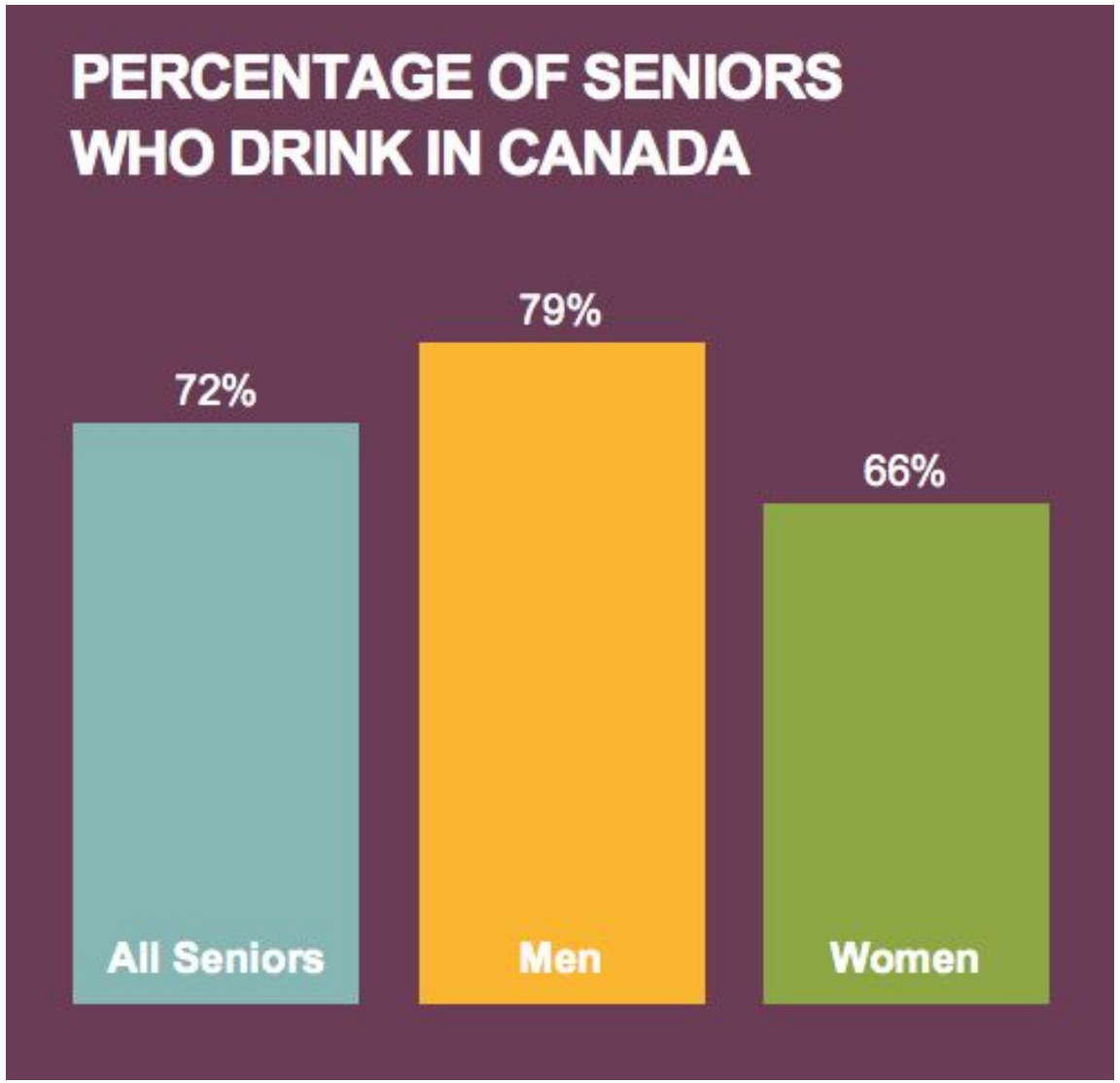
- 7- 49% of patients undergoing elective surgical procedures have risky alcohol consumption
- 14% - 38% of patients undergoing emergency surgical procedures have risky alcohol consumption
- 1-24% of surgical patients with AUD are missed in routine clinical assessment
- Certain categories of surgery have even higher alcohol dependency
  - Aerodigestive tract cancer
  - Injury/trauma

Kork (2010), Subedi (2013)

Prevalence of alcohol use in the elderly

- Alcohol is the most commonly used and misused substance over >65
- Risky alcohol consumption >65 ranges from 1-22%
- ”At-risk” alcohol use: beyond that recommended by low-risk guidelines

CADUMS 2012



Chow (2012), Kuerbis (2014)

Canadian Guidelines on Alcohol use among Older Adults

Canadian Coalition for Seniors' Mental Health: Low-Risk Drinking Guidelines for Older Adults

Recommended drinking limits for adults over the age of 65:

- **FOR WOMEN**, no more than 1 standard alcoholic drink per day, with no more than 5 alcoholic drinks per week in total

- **FOR MEN**, no more than 1–2 standard alcoholic drinks per day, with no more than 7 alcoholic drinks per week in total

Your age, body weight and other health conditions will impact how you respond to alcohol. As you reach your 70s, 80s and 90s, consider decreasing your alcohol consumption below these guidelines and perhaps even not drinking at all, especially if you have a health condition.

Butt (2020)

Unhealthy alcohol use is associated with increased risk of post-op complications

- General morbidity (RR 1.56)
- General infections (RR 1.73)
  - Wound, UTI, pneumonia
- Pulmonary complications (RR 1.80)
- Prolonged hospital stay (RR 1.24)
- Admission to ICU (RR 1.29)

Eliasen (2013), Spies (2001)

Unhealthy alcohol use is associated with increased risk of post-op complications

High alcohol consumption: Post op mortality (RR 2.68)

- >24g/day (women); >36g/day (men)
  - Where 14g = standard drink
- AUDIT >8 or AUDIT-C >4
- Met criteria for alcohol abuse or dependency

Low to mod alcohol consumption:

- Not associated with complications (but few studies)

Eliasen (2013)

Unhealthy alcohol use is associated with increased risk of post-op complications

Wound dehiscence
Severe alcohol withdrawal
Bleeding
Increased incidence of secondary surgery
Arrhythmias, CHF
Hypoxemia
Post-op delirium (↑ older adults)
Unplanned post-op intubation (↑ older adults)

Eliasen (2013), Robinson (2009). Parikh (1995). Nafiu (2011)

Why does alcohol use lead to worse post-op outcomes?

- Preoperative immune suppression (cytokine production, T-cell, delayed hypersensitivity)
- Altered response to surgical stress
- Subclinical cardiomyopathy
- Altered hemostasis (fibrinogen, platelet aggregation, thrombopoiesis)
- Comorbidities (nutritional deficiencies, nicotine use, CAD)

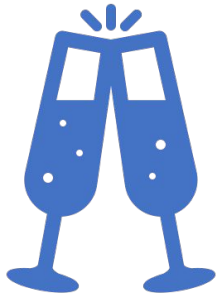
Spies (2001)

Cessation of EtOH pre-op reduces post-op complications

- Reduces post-op arrhythmias
- Improves stress response
- Reverses prolonged bleeding time due to alcohol
- Reduces frequency of hypoxia post-op
- Improves wound healing
- Improves alcohol cardiomyopathy

Egholm (2018), Kork (2020)

Post-op delirium - Alcohol



Alcohol use disorder is an independent risk factor for post-op delirium

-Ever being advised to cut back on alcohol (OR 2.25)

-Not abstaining from alcohol for at least 1 week in the preceding year (OR 2.16)

-MCV >95 (OR 2.23)

Frailty, comorbidities, preceding cognitive dysfunction further increase the risk of post-op delirium

Shah (2012), Ungur (2019)

Post-operative cognitive dysfunction

- Cognitive decline from previous baseline can last weeks-years post-op

- Hudetz et al. case-control study 4 groups: alcohol (surgery and non-surgery), non-alcohol (surgery and non-surgery)
- Cognitive assessment before and 2 weeks after elective surgery in men 55 and older with history of alcohol use disorder
- Alcohol group self-reported 5 weeks of abstinence prior to surgery

Hudetz (2007,2009)

Post-operative cognitive dysfunction

- At baseline, alcohol users had more depression, lower digit span and lower semantic fluency scores
- 2 weeks post-op, alcohol group:
  - ↑ admission to ICU
  - ↓executive function scores
  - ↓visual memory
- Overall, alcohol users had lower scores at baseline AND their scores worsened significantly post-op compared with non-alcohol users

Hudetz (2009)

Alcohol withdrawal post-op

- Alcohol withdrawal may occur beyond the “5 day window” due to anesthetic effects on GABA receptors
- The incidence of alcohol withdrawal is 2-5x higher in hospitalized trauma and surgical patients
- Risk factors associated with severe and prolonged alcohol withdrawal include amount and duration of alcohol use, prior withdrawal episodes, recurrent detoxifications, older age, and comorbid diseases

How do we manage alcohol use in the peri-operative setting?

1

IDENTIFY □ SCREEN

2

INTERVENE PRE-OP

- PREVENT WITHDRAWAL/DELIRIUM

3

TREAT WITHDRAWAL

Screening for Alcohol use

SCREENING FOR ALCOHOL AND SUBSTANCE ABUSE

Modified Version of CAGE[43-46]

Ask the patient the following four questions:

1. *Have you ever felt you should **C**ut down on your drinking or drug use?*
2. *Have people **A**nnoyed you by criticizing your drinking or drug use?*
3. *Have you ever felt bad or **G**uilty about your drinking or drug use?*
4. *Have you ever had a drink or drug first thing in the morning (**E**ye-opener) to steady your nerves or to get rid of a hangover?*

Score of ≥2: 93% sensitive for identifying “excessive drinking” and 91% sensitive for identifying “alcohol use disorder”

Ewing (1984)

Screening for Alcohol Use

CAGE + lab markers increased detection of AUD from 16% to 72% in preop setting

Detection rate ↑ to 91% if seen 3 times before surgery and confronted with the abnormal lab values

Spies (2001)

Screening for alcohol use

- AUDIT – 10 item screening test developed by WHO
- Interview and self-report versions
- Focuses on alcohol intake, potential dependence, alcohol-related harm
- Score 0-40; Score 8 or higher = >90% sensitivity for unhealthy alcohol use.
- AUDIT-C shortened to 3 questions

PATIENT: Because alcohol use can affect your health and can interfere with certain medications and treatments, it is important that we ask some questions about your use of alcohol. Your answers will remain confidential so please be honest.

Place an X in one box that best describes your answer to each question.

Questions	0	1	2	3	4	
1. How often do you have a drink containing alcohol?	Never	Monthly or less	2-4 times a month	2-3 times a week	4 or more times a week	
2. How many drinks containing alcohol do you have on a typical day when you are drinking?	1 or 2	3 or 4	5 or 6	7 to 9	10 or more	
3. How often do you have five or more drinks on one occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
4. How often during the last year have you found that you were not able to stop drinking once you had started?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
5. How often during the last year have you failed to do what was normally expected of you because of drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
8. How often during the last year have you been unable to remember what happened the night before because of your drinking?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily	
9. Have you or someone else been injured because of your drinking?	No		Yes, but not in the last year		Yes, during the last year	
10. Has a relative, friend, doctor, or other health care worker been concerned about your drinking or suggested you cut down?	No		Yes, but not in the last year		Yes, during the last year	
					Total	

Saunders (1993)

AUDIT-C

Please circle the answer that is correct for you.

1. How often do you have a drink containing alcohol?					SCORE
Never (0)	Monthly or less (1)	Two to four times a month (2)	Two to three times per week (3)	Four or more times a week (4)	_____
2. How many drinks containing alcohol do you have on a typical day when you are drinking?					
1 or 2 (0)	3 or 4 (1)	5 or 6 (2)	7 to 9 (3)	10 or more (4)	_____
3. How often do you have six or more drinks on one occasion?					
Never (0)	Less than Monthly (1)	Monthly (2)	Two to three times per week (3)	Four or more times a week (4)	_____
TOTAL SCORE Add the number for each question to get your total score.					_____

Maximum score is 12. A score of ≥ 4 identifies 86% of men who report drinking above recommended levels or meets criteria for alcohol use disorders. A score of > 2 identifies 84% of women who report hazardous drinking or alcohol use disorders.

Screening for alcohol use: AUDIT-C

- (AUDIT-C): A score of ≥ 5 in the year before surgery has been associated with:
  - increased postoperative complications
  - hospital length of stay
  - more ICU days
  - increased probability to return to the operating room
- The 10-item AUDIT created by the WHO is a sensitive indicator for AUD and is also recommended pre-operatively
- The quantity of EtOH consumption is more important to determine pre-op as high EtOH consumption confers risk even if they don't meet criteria for AUD

Bradley (2011), Spies (2001)

Screen positive – Now what??

History:

- Drinking history details Do they meet DSM criteria for AUD?
- Screen for other drugs of abuse

Physical exam:

- Signs of CLD abdominal ultrasound
- Liver enzymes, LFTs, CBC
- Signs of CHF Echo (?dilated cardiomyopathy)

Cognitive exam:

- 1 in 10 of those with AUD will develop alcohol-related dementia

Brothers (2021), Ridley (2013)

They meet criteria for AUD – Now what??

- Thiamine and multivitamins daily
- No specific dose (thiamine doses range from 100-500mg daily pre-op)

Other Recommendations

- Vitamin supplementation for alcohol-related malnourished patient: B12 and folate,[21] thiamine.

- Goal: prevent Wernicke's/Korsakoff

Chow (2012)

Intervention: Predict withdrawal risk "PAWSS"

PAWSS ≥4: 93.1% sensitivity, 99.5% specificity for predicting severe withdrawal (CIWA-Ar ≥15 or withdrawal symptoms requiring benzodiazepines)

PAWSS is not technically validated in outpatient care settings and patient populations

Wood (2018), Moldonado (2015)

Intervention: PAWSS

- Outpatient withdrawal management if PAWSS <4
- If PAWSS>4: consider inpatient admission to hospital before surgery and involvement of Addictions

Patients at low risk of severe complications of withdrawal (i.e., PAWSS<4) who have no concurrent conditions that would require inpatient management should be offered outpatient withdrawal management.

Quality of Evidence: HIGH	Strength of Recommendation: STRONG

Remarks

- In addition to a PAWSS score<4, candidates for outpatient withdrawal management should meet the following criteria:
  - No contraindications such as severe or uncontrolled comorbid medical conditions, serious psychiatric conditions, concurrent severe substance use disorders other than tobacco use, and/or pregnancy.
  - Ability to commit to daily medical visits for first 3-5 days, or to participate in an appropriate remote mode of medical follow-up when in-person visits are not feasible.
  - Ability to take oral medications.
  - Stable accommodation and reliable caregiver for providing support and monitoring symptoms during acute withdrawal period (i.e., 3-5 days).
- Patients who do not meet these criteria should be referred to inpatient treatment.

BCCSU (2020)

RECOMMENDATION #22:

Peri-operative elective surgical management should include medically supported withdrawal or alcohol use taper pre-operatively, with post-operative treatment and consideration of anti-craving medication.

[GRADE: Evidence: Low; Strength: Strong]

Butt (2020)

Outpatient withdrawal management

- Can surgery be delayed?
- Monitored alcohol taper

Recommendation #17

As a harm reduction strategy for older adults in controlled environments, where medical withdrawal is not available or deemed appropriate, it is recommended that a managed alcohol taper be considered. Individualize the taper by 1 standard drink every 3 days (aggressive tapering), weekly (moderate tapering), or every 2–3 weeks (mild tapering) with CIWA-Ar monitoring to keep the withdrawal symptom score < 10. The approach should be individualized, incremental, and with an indeterminate timeline. [Consensus]

Butt (2020)

Outpatient withdrawal management

Monitored alcohol taper	Arrange frequent follow-ups. Follow-ups can be conducted remotely (i.e. telephone and video calls)
	Inform patients of possible withdrawal symptoms including tachycardia, pyrexia, tremor, nausea, vomiting, sweating, agitation, anxiety, and insomnia
	Ensure that the patient has the basic resources they need to undergo withdrawal
	For patients who lack necessary resources, connection to outreach workers, shelters, or other appropriate resources should be considered

BCCSU (2020)

Outpatient withdrawal management

- St. Paul's Rapid Access Addictions Clinic
- START program
- vch.ca substance use services
- Older Adult Mental Health and Addictions Services
- Fraserhealth.ca -> Older adult substance use services

PUBLIC AND PROFESSIONAL REFERRAL LINE FOR VANCOUVER RESIDENTS

604-709-6785

Monday to Friday
8:00 a.m. – 6:00 p.m.

Pre-op alcohol cessation

Cochrane review 2018 (3 RCTs: 2017, 2002, 1999)

- Total 140 pts who drank ≥ 3 AU/day
- Intensive alcohol cessation intervention vs. usual care
- Duration: 6 weeks, 4 weeks, 3 months pre-op
- Motivational counselling
- Disulfiram 400mg/week -800mg twice weekly
- Prophylactic chlordiazepoxide

Egholm (2018)

Pre-op alcohol cessation

- Intervention group RR 0.62 for post-op complication
- More success in quitting alcohol in intervention group than control group
- No change in in-hospital or 30 day mortality or length of hospital stay

Caveats:

- Long duration of pre-op intervention
- Older studies (disulfiram) and all from Denmark

Egholm (2018)

Peri-operative intervention

- Advise high consumers to “reduce consumption pre-op”
- Motivational counselling
- Prophylactic benzos

Diazepam (Valium) dosing		
Day	**Prescribe**	**Total Daily Dose**
Day 1	10mg QID	40mg
Day 2	10mg BID	20mg
Day 3	10mg BID	20mg
Day 4	10mg HS	**10mg**
Note: Risk for non-medical use. If selected for outpatient withdrawal, benzodiazepines should be prescribed in shorter intervals and in blister packages, with frequent monitoring (see Considerations for Medication Delivery, below)		

Spies (2001), BCCSU (2020)

Peri-operative intervention

- Naltrexone and acamprosate are first line agents for AUD in BC
  - Acamprosate two 333mg PO TID
- Naltrexone not used peri-operatively because prevents opioid use for peri-operative pain
- Acamprosate and disulfiram are better choices for treating alcohol use disorder preoperatively (but acamprosate not studied preoperatively either)

Spies (2001)

Naltrexone in peri-op setting

- Naltrexone is an opioid antagonist
- Stop naltrexone 72 hours pre-op (50% of opioid blockade was gone after 72 hours)
  - If depot naltrexone -> postpone surgery by 1 month
- If emergency surgery: stop naltrexone and involve anesthesia/pain service
  - Ask anesthesia about regional anesthetic options and non-opioid alternatives
- Restart naltrexone 7-10 days after patient is off opioids (or longer if extended release) to avoid opioid withdrawal

Alford (2015)

Pre-op alcohol cessation

- “Although disulfiram is the only pharmacotherapy for alcohol use disorder that has been specifically studied in randomized controlled trials in the perioperative period, the total body of evidence regarding disulfiram does not support its routine use as first-line pharmacotherapy given safety concerns regarding alcohol–disulfiram reactions and low adherence rates”

Brothers (2021)

How to prevent alcohol withdrawal peri-op

- Gabapentin prophylaxis – not yet studied in peri-op setting

Gabapentin dosing

Approx. day	Daytime Dosing	Evening Dosing	PRN Dosing	Total daily dose
Day 1	300mg TID	600–1200mg HS	300mg PRN	Up to 2400mg
Day 2-3	Titrate quickly as tolerated: 600mg TID	600-1200mg HS	If symptoms persist: Additional 300mg TID PRN + 600–1200mg HS PRN	Up to 3600mg
Day 4	When symptoms resolve, taper to 600mg TID	600–900mg HS	—	Up to 2700mg
Day 5 +	Taper to zero over next 3-5 days by 600mg per day	—	—	—

Note: Risk for non-medical use. If selected for outpatient withdrawal, gabapentin should be prescribed in shorter intervals and in blister packages, with frequent monitoring through telehealth visits or other remote means (see Considerations for Medication Delivery, below).

To determine whether additional gabapentin is needed for treatment of breakthrough withdrawal symptoms, the patient can be instructed to use the Short Alcohol Withdrawal Scale (SAWS) to determine PRN dosing. Regardless of whether the patient is at 300mg or 600mg TID regular, additional doses of gabapentin 300mg TID PRN can be taken if SAWS scores are ≥12 or the patient is experiencing craving, insomnia, or irritability. Drowsiness indicates that the patient should not increase their dose.

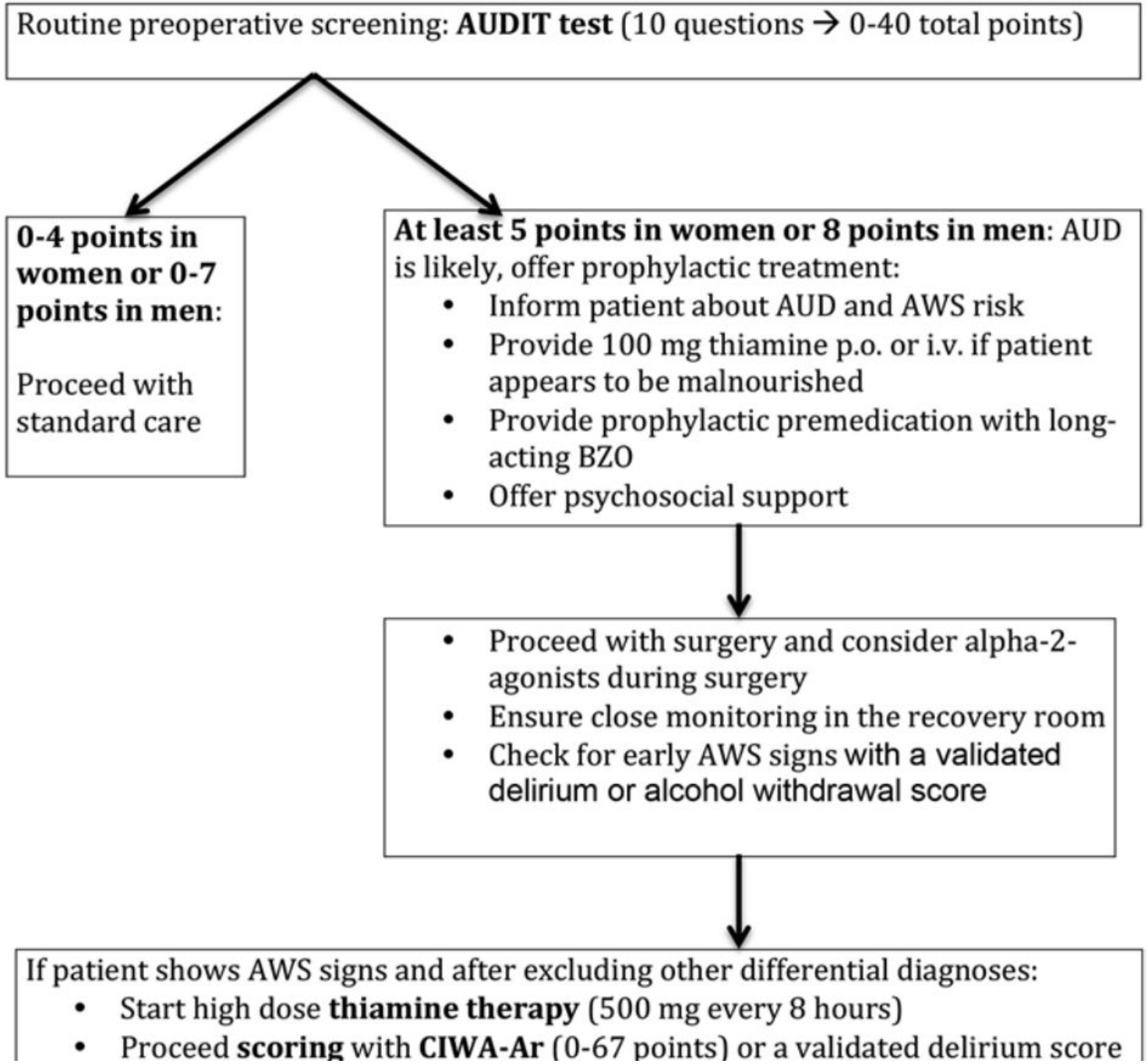
BCCSU (2020)

Management of alcohol withdrawal in peri-op setting

- Broad differential diagnosis of symptoms post-operatively
  - Especially in the elderly
- CIWA-Ar – lorazepam typically safer in older adults

Butt (2020)

Alcohol withdrawal prevention/ management in peri-op setting



Ungur (2019)

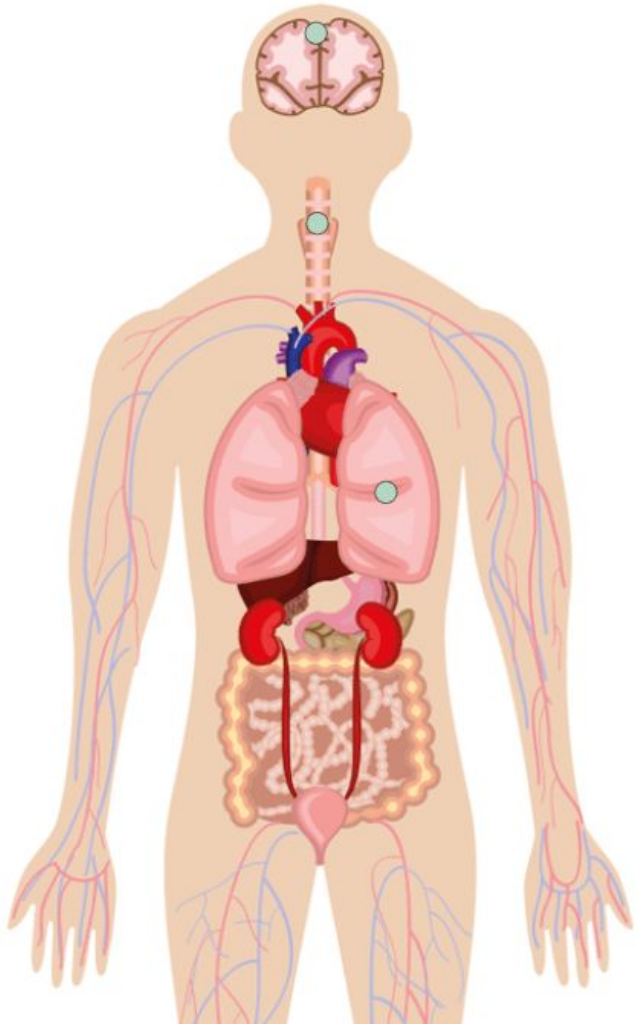
Alcohol in the peri-op setting: Summary

- At risk alcohol use can be missed in older adults leads to significant post-op complications and can be missed
- Screen everyone pre-op with CAGE or AUDIT-C
- Calculate PAWSS to determine outpatient vs. inpatient tapering
- Consult Addictions for pharmacotherapy (not naltrexone)
- Manage alcohol withdrawal with CIWA-Ar

CANNABIS

CANNABIS

- BRAIN:
  - Cerebral vasodilation (CB1 receptor)
  - Under stress (e.g. hypercapnia, hypoxia), can get reduction in cerebral blood flow
- CARDIO:
  - ↑ HR, ↑CO
  - Orthostatic hypotension –> falls (heavy acute or chronic use)
  - Myocardial infarction
- LUNGS:
  - Increased airway reactivity



Benowitz (2018)

Cannabinoids and anesthesia

- Inadequate depth of anesthesia
- Higher induction doses of propofol
- Higher post-op pain, require more rescue analgesics
- Worse post-op sleep
- Post-op shivering

Alexander (2019)

Cannabis and perioperative risks

Retrospective cohort analysis ≥27 000 patients 18-65 y.o.

No difference in composite peri-operative outcome between those with self-reported cannabis use disorder and those without

Post-op MI: adjusted OR 1.88 (CUD)

Goel et al. 2020

Cannabis and older adults

Table 1: The table below lists common adverse effects of cannabis in older adults***

PROBLEM AREA	SYMPTOM
CENTRAL NERVOUS SYSTEM	Dizziness, drowsiness, perceptual alterations, sensory alterations, driving impairment, headaches, short-term memory impairment, attention and problem-solving impairment, falls, decreased reaction time
PSYCHIATRIC	Psychoactive effects such as increased anxiety, paranoia, euphoria, depression; increased risk for psychosis
RESPIRATORY	Chronic bronchitis and bronchial irritation (inhaled formulation), bronchospasm
CARDIOVASCULAR	Palpitations, arrhythmias, tachycardia, bradycardia, postural hypotension
GASTROINTESTINAL	Changes in bowel habits, appetite changes, dry mouth, nausea, vomiting

*** Please note that the majority of existing literature describing adverse effects of cannabis use is focused on the impact of THC. There are common side-effects applicable to both THC and CBD, however much of the information pertains to THC-based products. It is important to note that adverse effects can be experienced with both acute and chronic use, and also vary depending on formulation, concentration, and dose (MacCallum & Russo, 2018).

2019 systematic review on cannabis and cognition in older adults

- Few human studies, low-quality
- “Evidence of modest negative effects on cognition”

Scott (2019)

RECOMMENDATION #1:

Cannabis should generally be avoided by older adults who have:

a. A history of, or are currently experiencing, mental health disorders, problematic substance use, or Substance Use Disorder (SUD). [**GRADE: Evidence: Moderate; Strength: Strong**]

b. Cognitive impairment, cardiovascular disease, cardiac arrhythmias, coronary artery disease, unstable blood pressure, or impaired balance. [**GRADE: Evidence: Moderate; Strength: Strong**]

RECOMMENDATION #9:

Clinicians should counsel patients on the potential long-term effects of frequent cannabis use including respiratory problems, precancerous epithelial changes, and cognitive impairment. Patients should also be counselled on the risk of exacerbation of mental health conditions with CUD, especially when high THC strains are used. [**GRADE: Evidence: Moderate; Strength: Strong**]

c. The potential adverse effects of cannabis use in older adults, such as changes in depth perception risking balance instability and falls, changes in appetite, cognitive impairment, cardiac arrhythmia, anxiety, panic, psychosis, and depression. [**GRADE: Evidence: Moderate; Strength: Strong**]

RECOMMENDATION #15:

Assessment of CUD in older adults should evaluate:

a. Modes of use: i.e., ingesting, smoking, vaping, use of extracts, topicals, nabilone, and nabiximols, etc., and consider the risks/benefits/harms of all that apply to the patient. [**GRADE: Evidence: High; Strength: Strong**]

b. Frequency and dosage. [**GRADE: Evidence: High; Strength: Strong**]

Canadian guidelines on cannabis use in older adults (2020)

Bertram (2020)

Perioperative management of cannabis

BJA

British Journal of Anaesthesia, 126 (1): 304–318 (2021)

doi: 10.1016/j.bja.2020.09.026
Advance Access Publication Date: 29 October 2020
Special Article

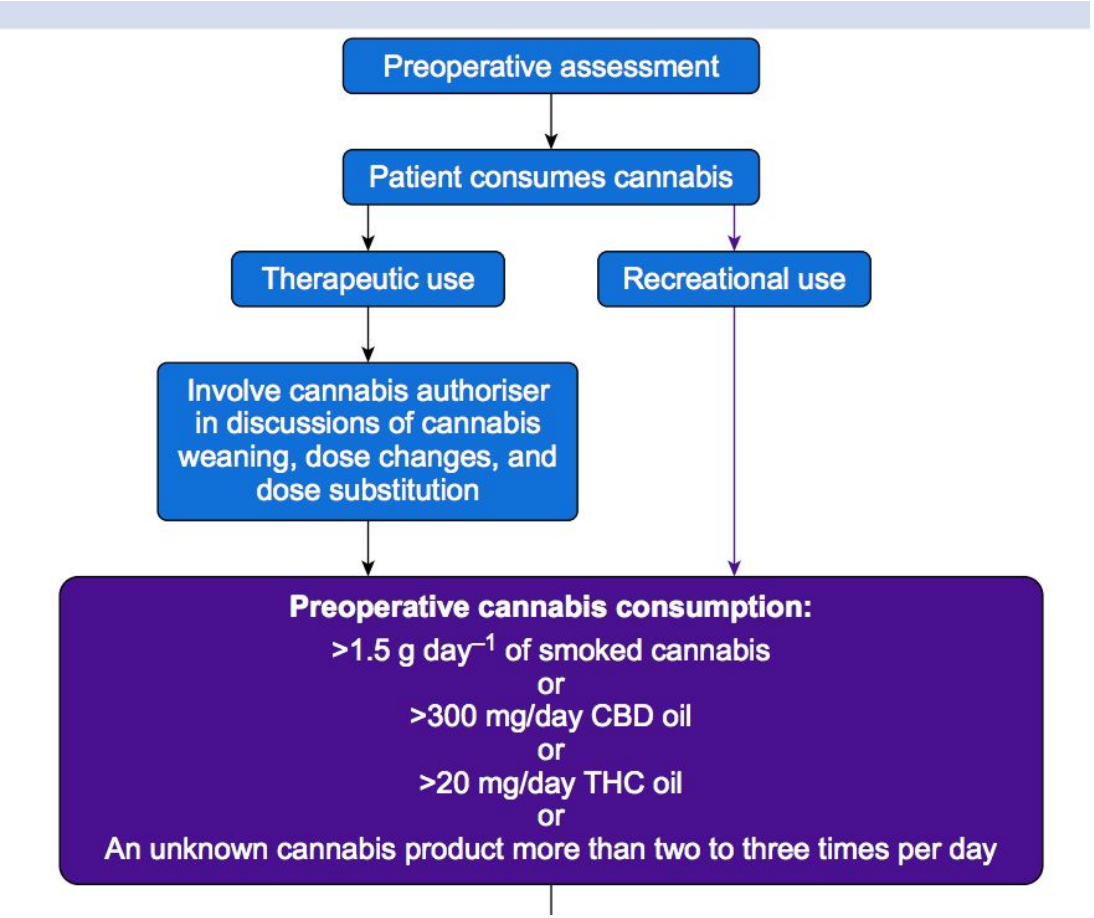
PAIN

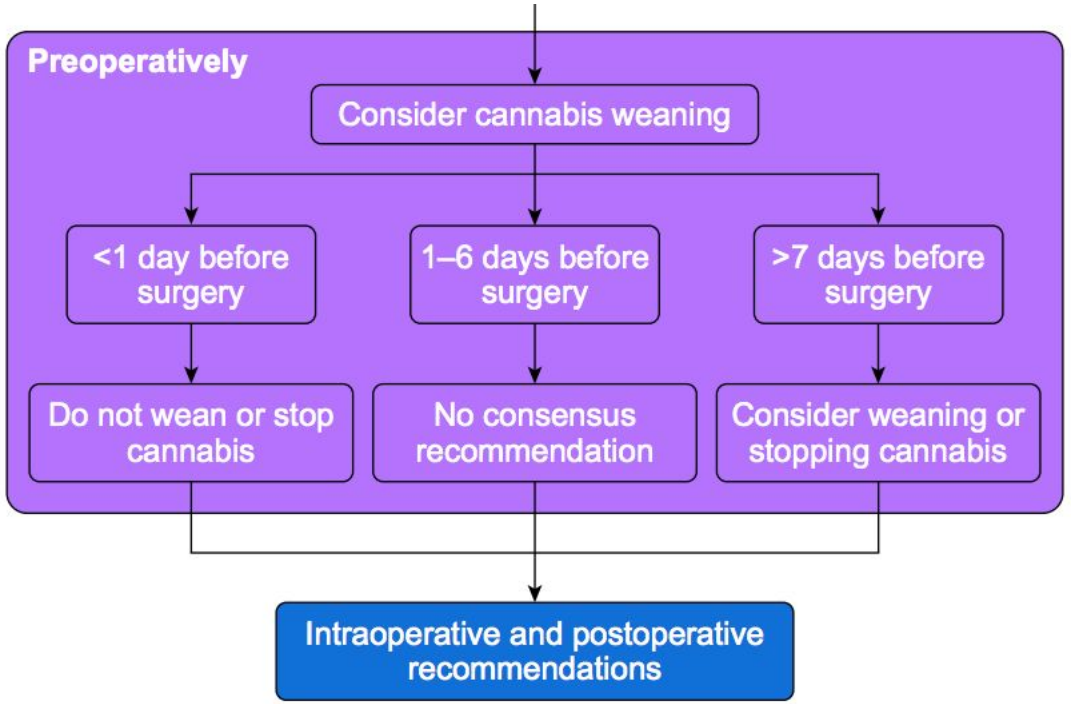
Perioperative Pain and Addiction Interdisciplinary Network (PAIN): consensus recommendations for perioperative management of cannabis and cannabinoid-based medicine users by a modified Delphi process

- 1) Is the product THC or CBD predominant?
  - Based on concentration.
  - If CBD:THC > 10:1 □ then CBD dominant
  - If CBD: THC < 10:1 □ then THC dominant
- *Nabilone is synthetic THC

Ladha (2021)

Perioperative management of cannabis





Ladha (2021)

Perioperative management of cannabis

- Screen all patients in pre-op clinic for cannabis use
  - method
  - duration of use
  - frequency of use
  - estimate daily intake in g/day
- Screen for CUD if use > once/day (Revised Cannabis Use Disorder Identification Test aka CUDIT-R)

Have you used any cannabis over the past six months? **YES / NO**

If **YES**, please answer the following questions about your cannabis use. Circle the response that is most correct for you in relation to your cannabis use over the past six months:

1.	**How often do you use cannabis?**				
	Never	Monthly or less	2-4 times a month	2–3 times a week	4 or more times a week
	0	1	2	3	4
2.	**How many hours were you "stoned" on a typical day when you had been using cannabis?**				
	Less than 1	1 or 2	3 or 4	5 or 6	7 or more
	0	1	2	3	4
3.	**How often during the past 6 months did you find that you were not able to stop using cannabis once you had started?**				
	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
	0	1	2	3	4
4.	**How often during the past 6 months did you fail to do what was normally expected from you because of using cannabis?**				
	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
	0	1	2	3	4
5.	**How often in the past 6 months have you devoted a great deal of your time to getting, using, or recovering from cannabis?**				
	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
	0	1	2	3	4
6.	**How often in the past 6 months have you had a problem with your memory or concentration after using cannabis?**				
	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
	0	1	2	3	4
7.	**How often do you use cannabis in situations that could be physically hazardous, such as driving, operating machinery, or caring for children:**				
	Never	Less than monthly	Monthly	Weekly	Daily or almost daily
	0	1	2	3	4
8.	**Have you ever thought about cutting down, or stopping, your use of cannabis?**				

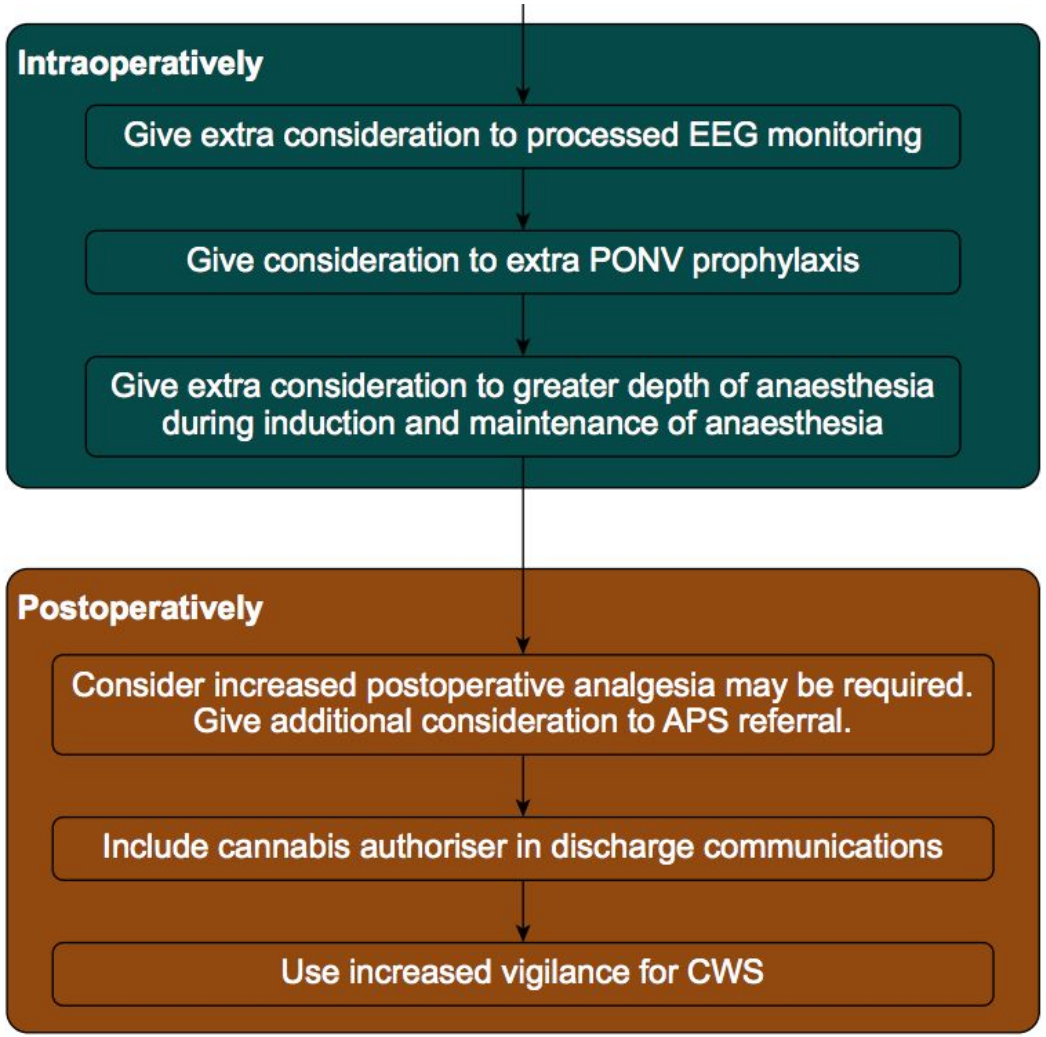
Adamson (2010)

Perioperative management of cannabis

- Wean to less than the inclusion doses for weaning.
- e.g. if smokes 2g/day -> wean to 1.5g/day (initial target)
- Very minimal evidence regarding weaning in peri-operative setting

Ladha (2021)

Perioperative management of cannabis



Ladha (2021)

Cannabis summary

1

Cannabis use can lead to falls, cognitive impairment and post op MI

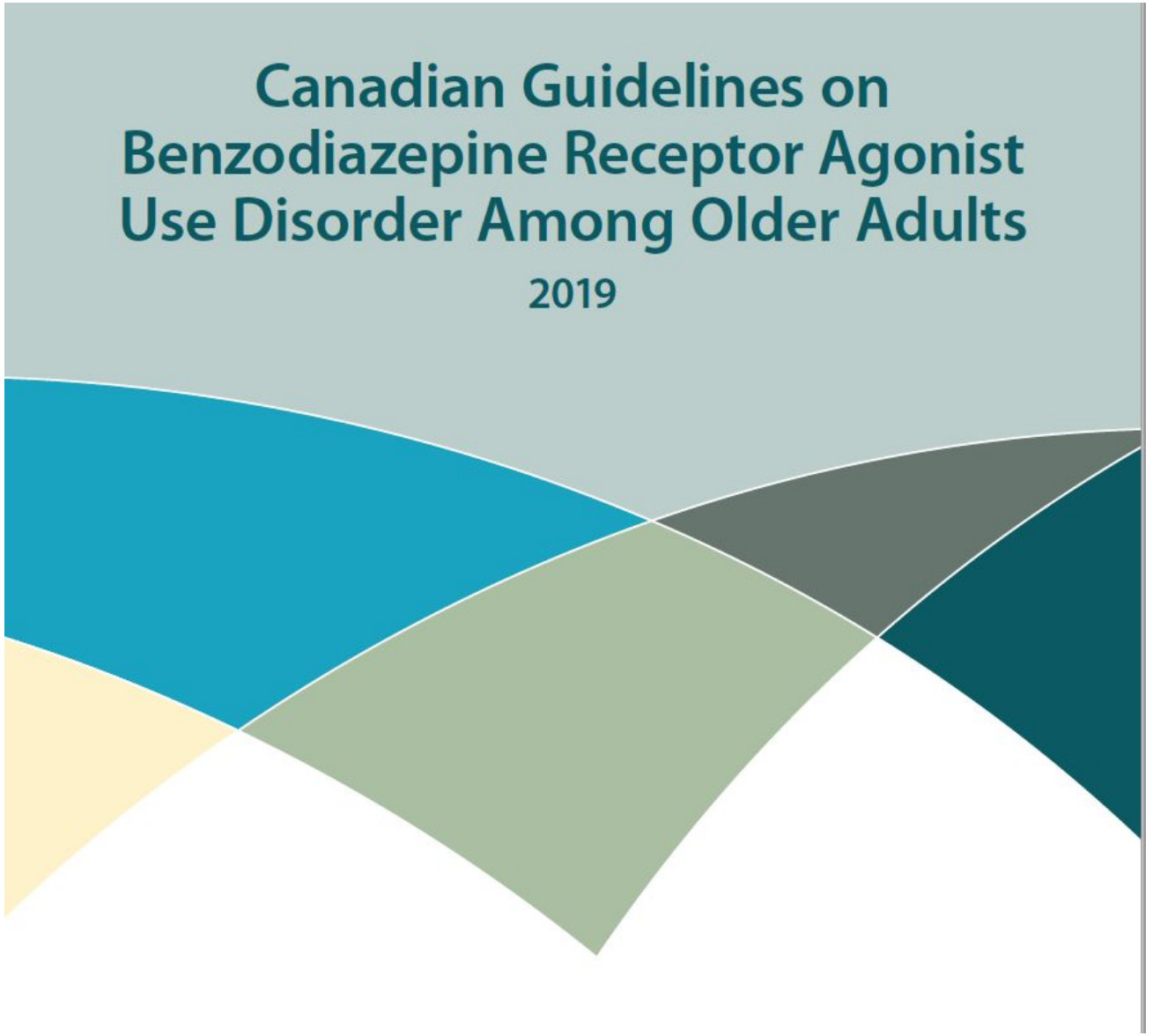
2

Consider pre-op weaning if uses equivalent of >1.5g/day smoked marijuana

3

Watch for increased post-op pain

Benzodiazepines



Benzodiazepines in older adults

RECOMMENDATION #1:

Long-term use of BZRAs (> 4 weeks) in older adults should be avoided for most indications because of their minimal efficacy and risk of harm. Older adults have increased sensitivity to BZRAs and decreased ability to metabolize some longer-acting agents, such as diazepam. All BZRAs increase the risk of cognitive impairment, delirium, falls, fractures, hospitalizations, and motor vehicle crashes Alternative management strategies for insomnia, anxiety disorders, and the behavioural and psychological symptoms of dementia (BPSD) are recommended. [**GRADE: Evidence: Moderate; Strength: Strong**]

- 15% of regular benzo users become dependent at 4 months
- 50% of regular benzo users become dependents after 2 years

Paul (2012), Conn (2020)

Benzodiazepine use disorder

- DSM-V criteria can be challenging to apply in older adults but is still the gold standard
- SDS: >6 □ benzodiazepine dependence

Severity of Dependence Scale (SDS)

Circle the answer that best applies to how you have felt about your use of _____ over the last twelve months.

	Never/ Almost Never	Sometimes	Often	Always/ Nearly Always
Do you think your use of (substance) was out of control?	**0**	**1**	**2**	**3**
Did the prospect of missing a fix, shot or dose make you feel anxious or worried?	**0**	**1**	**2**	**3**
Did you worry about your use of (substance)?	**0**	**1**	**2**	**3**
Did you wish you could stop?	**0**	**1**	**2**	**3**

	Not Difficult	Quite Difficult	Very Difficult	Impossible
How difficult did you find it to stop or go without (substance)?	**0**	**1**	**2**	**3**

Conn (2020)

Benzodiazepines in perioperative setting

- Patients who used benzodiazepines in the 90 days before surgery were more likely to have new persistent opioid use post-op (OR 1.24)
- New benzodiazepine use perioperatively is associated with persistent post-op benzodiazepine use (20%)
- Even stronger association in those ≥70
- Abrupt discontinuation of benzodiazepines lead to more post-op delirium than continuation of benzodiazepines
- Older adults with benzodiazepine use may require higher doses of anesthetic for induction

Santosa (2020), Rishel (2020)

Benzodiazepines in the perioperative setting

- No guidelines (yet)
- Ensure no abrupt cessation of benzodiazepines
- Monitor for post-op delirium
- Open discussion around risks of benzodiazepine use
- Consider eventual tapering

Benzodiazepines in older adults

- Gradual dose reduction recommended

DURATION OF USE	RECOMMENDED TAPER RATE	RECOMMENDED TAPER DURATIONS	COMMENTS
< 2 to 4 weeks	N/A	N/A	Tapering may not be required unless there are signs of (or multiple risk factors for) withdrawal syndrome
4 weeks to 6 months	10% to 25% of current BZRA dose every 1 to 2 weeks (consider slower rate at end)	1 to 3 months	Factors to be considered in deciding on rate of tapering include current BZRA dose, half-life of the agent, severity of substance use disorder or other BZRA adverse effects, emergence of withdrawal symptoms, presence of polysubstance use, drug formulation and ease of dividing/ compounding, and patient preference
> 6 months	10% of current BZRA dose every 2 to 4 weeks (slower rate at end)	3 to 6 months	

Conn (2020)

Benzodiazepines in older adults

Gradual dose reduction results in mild or absent withdrawal symptoms

Dose reductions are usually better tolerated in the early stages, often needs to be slowed in the later stages

Can take up to 6 months to successfully wean an older adult from benzodiazepines

Santosa (2020)

RECOMMENDATION #20:

The routine switching of a short half-life BZRA with one having a long half-life to aid in withdrawing BZRAs is not generally recommended in older adults. Switching may have a role in certain situations, such as when withdrawal is being hindered by a limited number of available BZRA pill strengths or when alprazolam is the agent of dependence or misuse. [GRADE: Evidence: Moderate; Strength: Strong]

Benzodiazepine use in older adults

- Older adults are prone to drug accumulation with long half-lives
- Avoid replacing short-acting benzo with long-acting benzo UNLESS the patient is on alprazolam
- Alprazolam is highly potent, rapidly absorbed, shorter duration of action higher misuse liability
- Switch alprazolam to clonazepam

Conn (2020)

Benzodiazepine summary

- Benzos increase risk of delirium, cognitive impairment, falls in older adults
- Increased post-op persistent opioid use if pre-op benzo use disorder
- Very gradual taper important

Takeaways

- Alcohol use disorder leads to worse post-op outcomes. Alcohol cessation leads to better post-op outcomes
- Always screen for alcohol and other substance use in the pre-op setting
- Cannabis and benzodiazepine use disorders are associated with higher doses of anesthetic for induction and increased post-op pain needs
- Gradual benzo taper is important

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