# How Substances Affect the Body with Diabetes

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## Alcohol and Recreational Drug Use

- Many adults with diabetes safely enjoy alcohol and (legal) recreational drug use
- There is a growing body of evidence about alcohol and marijuana use in people with diabetes
- Evidence for other illegal mind-altering substances is minimal



#### Alcohol

- •Liver releases glucose all day
- If processing alcohol, does not give glucose
- Basal insulin/Pump don't get signal to lower insulin
  - = risk of low blood sugar



#### Drinking Safely with Diabetes

- 1. Make sure people know you have diabetes
- 2. Know your drinks carbs and proof
- 3. Eat while you drink
- 4. Monitor glucose levels



#### Drinking Safely with Diabetes

- 5. Prevent lows after
  - 1. Eating food and taking less insulin
  - 2. Reducing basal rate
  - 3. Remember that glucagon may not be effective!





# Knowing your Drinks – Proof/Strength

- Not all drinks are created equally
- •60 minutes to process 1 oz of alcohol
  - 5 oz wine
  - 1.5 oz shot of liquor
  - 12 oz beer



#### Knowing your Drinks – Carbs in the Drinks

- •Mixing with Liquor
  - Can choose things like diet soda
- Beer and Wine have carbohydrates
  - Some have more than others i.e. sweeter wines vs. dry wines



Beverage	Serving Size	Calories	Carbs (g)
Beer			
Regular beer	12 oz	150	12
Light beer	12 oz	100	5
Non-alcoholic beer	12 oz	60	12
Wine			
Champagne	4 oz	100	4
Sweet wine	5 oz	130	6
Dry White, Red, Rose	5 oz	100	trace
Sweet kosher wine	5 oz	165	15
Wine cooler	12 oz	215	30
Appetizer/Dessert Wine			
Sherry	2 oz	74	2
Sweet Sherry, Port	2 oz	90	7
Cordials, Liqueurs	1 ½ oz	160	18
80-proof Gin, Rum, Vodka, Whiskey, Scotch	1 ½ oz	100	trace
Dry Brandy, Cognac	1 oz	75	trace
Cocktails			
Bloody Mary	8 oz	130	9
Daiquiri	8 oz	240	32

Beverage	Serving Size	Calories	Carbs (g)
Gin and Tonic	6 oz	174	11
Margarita	8 oz	240	36
Martini	2 ½ oz	156	trace
Pina Colada	8 oz	436	56
Tom Collins	8 oz	120	3
Whiskey Sour	4 oz	186	16
Shooters			
Amaretto Sour	1 ½ oz	118	19
Fuzzy Navel	1 ½ oz	120	7
Kamikazi	1 ½ oz	150	2
Mud Slide	1 ½ oz	160	17
Turbo	1 ½ oz	110	3
Mixers			
Non-caloric mixers (mineral water, sugar-free tonic, club soda, diet soda)	any	0	0
Tonic water	4 oz	41	11
Tomato juice (Bloody Mary mix)	4 oz	25	5
Juice (orange, grapefruit, pineapple)	4 oz	60	15



#### Taking Advantage of Alcohol

- Pairing wine with higher carbohydrate meals such as pizza, pasta, etc.
- •Effectively an extended bolus effect (for some)
- Ability to reduce the mealtime bolus when consuming alcohol



#### **Everyone is Different**

- Diabetes is a science experiment
- •A + B does not always = C
- Determine how your body reacts to different types of alcoholic beverages and make adjustments as needed
- •Oh, and by the way, it may change over time
  - Thanks, Diabetes (middle finger emoji)



## Marijuana (THC)

- Legalized in many parts of the U.S. now
- The drug itself does not cause changes in blood glucose levels
- Possible Bright Side:
  - No risk for hypoglycemia like alcohol



#### Marijuana (THC)

- Challenges:
  - The Munchies
  - Cannabis Hyperemesis Syndrome
  - Increased risk for DKA per T1D Exchange data

#### Psychedelic Mushrooms (Psilocybin)

- Legalized in some parts of the U.S.
- No research on the effects on diabetes or blood glucose
  - If someone is not in their normal mental state, managing blood glucose may be challenging or the person may forget to address glycemic changes



#### Psychedelic Mushrooms (Psilocybin)

- Increasingly used in mental health treatments
  - Substance abuse disorder
  - Post-Traumatic Stress Disorder (PTSD)
  - Depressive disorders
  - Still experimental and supervised by medical professionals in many cases



#### Other Illicit Drugs

- Cocaine has shown to increase the risk of DKA in one study in NYC
- One case study of a 19-year-old who went into DKA after MDMA use
- Not nearly enough research
- If you cannot care for yourself, who will manage your diabetes?

#### Tobacco



- Increased risk of cardiovascular disease, amputation, and erectile dysfunction
- Can cause high blood sugars due to abnormal secretion of cortisol + growth hormone
- Vaping risk recalls, inhalation risks, etc.



#### References

- Nyenwe, E.A., Loganthan, R.S., et al, Active use of cocaine: an independent risk factor for recurrent diabetic ketoacidosis in a city hospital, *Endocrine Practice*, 2007, 13(1): 22-9
- Kinney, G.L., Akturk, H.K., et al. Cannabis Use is Associated with Increased Risk for Diabetic Ketoacidosis in Adults with Type 1 Diabetes: Findings From the T1D Exchange Clinic Registry, *Diabetes Care*, 43(1): 247-249
- Arturk, H.K., Snell-Bergeon, J., et al, Differentiating Diabetic Ketoacidosis and Hyperglycemic Ketosis Due to Cannabis Hyperemesis Syndrome in Adults with Type 1 Diabetes, *Diabetes Care*, 2022, 45(2): 481-483
- Bajaj, H.S., Barnes, T., et al, Diabetes Canada Position Statement on Recreational Cannabis Use in Adults and Adolescents with Type 1 and Type 2 Diabetes, *Canadian Journal of Diabetes*, 2019, 43(6): 372-376
- Gilbert, J. D. and Byard, R.W., Fatal Diabetic Ketoacidosis A Potential Complication of MDMA (Ecstasy) Use, *Journal of Forensic Sciences*, 2018, 63(3): 939-941
- Potter, K., Virtanen, H., et al. Knowledge and practice of harm-reduction behaviours for alcohol and other illicit substance use in adolescents with type 1 diabetes, *Paediatric Child Health*, 2019, 24(1): e51-e56

#### Thank you!



