

## ALCOHOL

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This handout is meant to provide some information and resources about alcohol. This does not serve as an endorsement of alcohol use. The decision to use or not use alcohol must be safely determined for each individual.

### Diet Doctor: 7 Things You Need to Know About Alcohol and a Low-Carb or Keto Diet

These are the topics covered in this article. Click the blue link above to read more.


1. Moderation is key.
2. Moderate drinkers: fundamentally different?
3. Can't easily stop? It's your brain chemistry.
4. An adaptive trait that helps, now harms.
5. Fatty liver? Lay off the booze until it heals.
6. Lower tolerance, worse hangovers.
7. The keto diet can reduce alcohol cravings and may even help curb alcoholism.

### Fatty Liver Disease

Fatty liver can result from excessive alcohol consumption - but can also result from excessive use of high-carb foods, fructose (fruit sugar) and high fructose corn syrup. Here is an article that explains more: [How Fat is Your Liver?](#) And here is a calculator you can use to assess for fatty liver: [Fatty Liver Index](#). Note that if you do have fatty liver, alcohol is not for you, at least until you heal your liver.

### Diet Doctor: Low Carb Alcohol - The Best and the Worst Drinks

This article provides information regarding the best and the worst options in wine, beer, spirits, and coolers. Handy visuals and tables are available in each category. It ends with a list of the top 5 low-carb alcoholic drinks. Example of list and visuals provided for the "Spirits" category below.

| Carb amounts per standard drink:  | Visual provided:   |
|---|--|
| <p>Whiskey: 0 grams of net carbs<br/>           Brandy: 0 grams of net carbs<br/>           Tequila: 0 grams of net carbs<br/>           Dry martini: 0 grams of net carbs<br/>           Vodka &amp; soda water: 0 grams of net carbs<br/>           Bloody Mary: 7 grams of net carbs<br/>           Margarita: 8 grams of net carbs<br/>           Cosmopolitan: 13 grams of net carbs<br/>           White Russian: 14 grams of net carbs<br/>           Gin &amp; tonic: 14 grams of net carbs<br/>           Vodka &amp; orange juice: 18 grams of net carbs<br/>           Rum &amp; coke: 22 grams of net carbs</p> |  |


### **BBC Documentary: “[The Truth About Alcohol](#)”**

Alcohol is explored from a variety of angles - including discussions with selected experts, via laboratory analysis, sleep studies and even pseudo-scientific experiments - to bring some of the myths, assumptions and questions about alcohol to light. This documentary was produced following the release of revised European guidelines for alcohol consumption in 2016, which tightened up the recommended weekly allowance from 21 units alcohol to 14 units. Alcohol’s association with cancer and liver disease are two of the reasons for this revision. This documentary explores a variety of interesting questions and topics about alcohol:

- Tolerance for alcohol (how quickly we feel its effects) is related to the amount of water in the bloodstream; a “heavyweight” drinker has more body water, and often more muscle, than a “lightweight” drinker. (This may be one explanation of why tolerance for alcohol on a low carb diet is reduced; with reduced insulin levels, the body will hang on to less body water, so the concentration of alcohol relative to body water content is increased);
- Pain tolerance is improved with alcohol, which could work for or against you, depending on the circumstance;
- Alcohol affects food intake; we tend to eat more calories without being aware of it;
- Polyphenols in a variety of alcoholic beverages are measured to reveal the greatest concentration in darker wines; however, several food items (walnuts, dark chocolate, tea, almonds, coffee, blueberries and cranberries) were shown to have equivalent amounts of these protective polyphenols - so we don’t “need” to drink wine to get them;
- The fact that alcohol disrupts sleep is explored;
- Potential hangover remedies are compared;
- A substance in alcohol that may lead to greater hangovers, “[congeners](#)”, is explored; vodka and gin are noted to contain zero congeners, which makes them “cleaner” forms of alcohol.
- The fact that alcohol modulates hormone levels - causing estrogen levels to increase- is also discussed. This estrogen effect may be a reason for its link to cancer promotion.

It could truly be worth an hour of your time to view this documentary, to help you consider some of these aspects of alcohol as you contemplate whether or not to include it in your life. It is quite entertaining and thought-provoking.

### **Zevia Mixers**

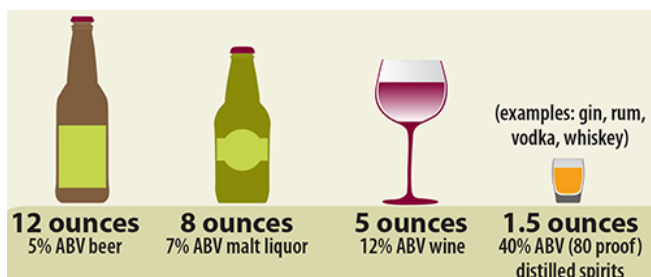
|   |  |
|---|--|
|  | <ul style="list-style-type: none"> <li>❖ Zevia mixers are a low-carb solution for mixed drinks.</li> <li>❖ Options: Tonic Water, Lemon/Lime with Bitters, and Ginger Beer.</li> <li>❖ Some of their soda products like ginger ale, cola and sparkling waters may also work as mixers.</li> <li>❖ Stevia is the sweetener, as opposed to sugar or sucralose in most other options.</li> <li>❖ Available online @ <a href="http://www.zevia.com">www.zevia.com</a> and Amazon.</li> <li>❖ Some groceries also sell them; check Whole Foods, Publix and other retailers to find locally.</li> </ul> |
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## OXIDATIVE PRIORITY

| Meal Input                                 | Alcohol | Exogenous Ketones | Protein                    | Carbohydrate              | Fat           |
|--|---------|-------------------|----------------------------|---------------------------|---------------|
| Oxidative Priority                         | 1       | 2                 | 3                          | 4                         | 5             |
| Storage System                             | —       | —                 | Limited [plasma AA]/tissue | Blood [glucose], glycogen | Adipose (fat) |
| Storage Capacity                           | Zero    | Zero              | 360–480 calories           | 1,200–2,000 calories      | Unlimited     |
| Postprandial [Blood]                       |         |                   |                            |                           |               |
| DIT [Thermogenesis] (4–6 hours after meal) |         |                   |                            |                           |               |

“Oxidative priority” is another aspect of alcohol to consider. This topic is nicely addressed in the book “Keto” by Craig and Maria Emmerich. Oxidative priority explains the rank order in which our body deals with food substrates that enter the bloodstream. Substrates are prioritized based on several factors, including **whether or not we have storage capacity for them, as well as how toxic they are to us**. For reference, they are dealt with in this order: alcohol, exogenous ketones, protein, carbohydrate and fat (see orange bar in chart above). A great discussion of this topic appears on pages 55–58 of “Keto”, but Craig Emmerich has a guest spot on Mark Sisson’s blog that you can check out [here](#). You can also listen to Maria Emmerich in a YouTube presentation [here](#). Her discussion about oxidative priority begins about 4 ½ minutes into the video (she first shares some off-the-cuff information about her family while waiting to begin her presentation). Oxidative priority will help you see why alcohol has the first position in terms of being “dealt with” once it enters our bodies, and why food (especially if we consume lots of it with the alcohol) can end up being shuttled to fat storage. Having SOME food with alcohol is good, because it slows down the alcohol absorption rate; but having too much works against us, because we pack on the pounds.

Images below from the CDC; a great reminder about what one serving of alcohol is equivalent to, depending on the form of alcohol, and a caution regarding how much is considered “moderate”. Click the link for the [Dietary Guidelines for Alcohol](#).



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### **DRINKFOX TOOL: How Long Does Alcohol Stay in Your System?**

Have you ever wondered how long it takes to metabolize alcohol? Or how to assess your level of intoxication based on the number of drinks consumed? Answers to these questions and more can be found [here](#). And you can use [this tool](#) to calculate the amount of time it will take your body to come back to baseline, having fully metabolized the alcohol consumed (based on gender, weight, the type of alcohol, amount, and how long since you took a sip).

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### **Sleep Interference**

It is true that alcohol can plummet you into sleep more quickly. However, the **quality of sleep** is what will suffer most. Shawn Stevenson details this nicely in his book “Sleep Smarter” in Chapter 14 titled “Go Easy on the Bottle”. This is a fascinating book to consider purchasing anyway, to learn how to optimize sleep. One tip he provides at the conclusion of the chapter is to “wrap up the drinks at least 3 hours before hitting the sack”. This and his other tips are great rules to live by. You can learn more about his book @ [www.sleepsmarterbook.com](http://www.sleepsmarterbook.com).