

## A WHOLARA GUIDE

Loving your liver, *every day*.

Your liver runs over 500 essential jobs — detoxifying, metabolizing hormones, regulating blood sugar, producing bile, storing nutrients. It is also remarkably regenerative. The most effective way to support it is not a cleanse; it is a small set of daily habits, repeated.

Seven daily moves for a *happier liver*.

Each is supported by clinical or mechanistic research. None require a special diet, expensive supplements, or perfect adherence — they simply work better when you do them consistently.

## 01 SPICE THINGS UP

Cook with turmeric a few times a week. Curcumin (its active compound) is shown across multiple meta-analyses to lower elevated ALT and AST liver enzymes and reduce oxidative stress. Pair with black pepper and a healthy fat for absorption.

*Frontiers Pharmacol. 2024; Phytother Res. 2024*

## 02 GO GREEN

Aim for 2–3 cups of green tea daily. The catechin EGCG reduces hepatic fat, modulates lipid metabolism, and lowers inflammation markers in NAFLD. Effective doses in trials: 500–800 mg EGCG daily.

*Medicines (Basel). 2022; J Funct Foods. 2024*

## 03 BEFRIEND ONIONS, GARLIC &amp; CRUCIFERS

Sulfur compounds in garlic, onions, broccoli, kale, and Brussels sprouts upregulate the liver's Phase II detox enzymes. Garlic supplementation improved hepatic steatosis in 12–15 week clinical trials.

*Br J Nutr. 2020; Diabetes Metab Syndr Obes. 2020*

## 04 EAT CITRUS &amp; POLYPHENOL-RICH FRUIT

Grapefruit, oranges, lemons, berries, and pomegranate provide flavonoids (naringenin, hesperidin, anthocyanins) shown to reduce hepatic fat storage and improve insulin sensitivity — a major driver of fatty liver.

*Nutrients. 2023; Crit Rev Food Sci Nutr. 2024*

## 05 SIDESTEP ALCOHOL &amp; ADDED FRUCTOSE

The two clearest dietary drivers of liver fat. Fructose (in sweetened drinks and ultra-processed foods) is metabolized almost entirely by the liver. Even moderate alcohol crowds out detox capacity.

*J Hepatol. 2018; Nutrients. 2022*

## 06 GO NUTS FOR WALNUTS

Walnuts deliver plant-based omega-3 (ALA), L-arginine, and glutathione precursors. A daily handful (about 30 g) is associated with lower liver enzymes and improved cardiometabolic markers tied to NAFLD.

*PLOS One. 2016; Cureus. 2024 (15-RCT meta-analysis)*

## 07 JUST EAT (REAL FOOD)

Restrictive cleanses and prolonged fasts can backfire — your liver needs amino acids, choline, B-vitamins, and antioxidants to actually detoxify. Consistent whole-food meals do more than any juice fast.

*Nutr Res Rev. 2021*

## KEEP READING

Eight more *research-backed* strategies →

coffee, sleep, exercise, hydration, bitter greens, milk thistle, NAC, and the gut–liver axis.

## GO DEEPER

**Beyond the basics: *eight more* liver-loving strategies.**

These are the strategies that consistently show up in peer-reviewed liver research — most outside the usual conversation about "detox foods."

08	Drink your coffee	Possibly the most consistently liver-protective beverage studied. Meta-analyses of 2.2+ million participants link 2–3 cups of coffee daily to roughly 35–40% lower risk of hepatocellular carcinoma and a strongly reduced risk of chronic liver disease and cirrhosis. Effect holds for both caffeinated and decaffeinated.
<i>Aliment Pharmacol Ther. 2017 (meta-analysis, 26 studies); Eur J Cancer Prev. 2017</i>		
09	Prioritize sleep & a regular schedule	The liver runs on a circadian clock. Short sleep (<6 hrs), irregular schedules, shift work, and obstructive sleep apnea are independently associated with elevated liver enzymes, increased NAFLD risk, and faster progression to NASH. Aim for 7–9 hours and consistent sleep/wake times.
<i>Sci Rep. 2016; Front Endocrinol. 2023; J Hepatol. 2024</i>		
10	Move daily — any modality	Network meta-analyses of 40+ RCTs show aerobic, resistance, HIIT, and mind-body exercise all reduce liver fat, ALT, and AST in NAFLD — even without weight loss. Aerobic activity alone has been shown to reduce hepatic fat by 20–30%. Mind-body practices (yoga, tai chi) show some of the largest enzyme reductions.
<i>Sci Rep. 2024; Front Physiol. 2024 (network meta-analysis)</i>		
11	Hydrate (and skip sweetened drinks)	Adequate water supports bile flow and the kidneys' role in clearing what the liver processes. Equally important: replacing sweetened beverages (soda, juice, sweet tea) with water is one of the highest-leverage moves for hepatic fat — sugar-sweetened beverages are independently linked to NAFLD incidence and progression.
<i>Nutrients. 2022; J Hepatol. 2018</i>		
12	Add bitter greens to support bile	Dandelion, arugula, endive, radicchio, watercress, and artichoke leaves contain bitter compounds (sesquiterpene lactones, cynarin) that stimulate bile production and gallbladder emptying — essential for fat digestion and the elimination of fat-soluble waste. Artichoke leaf extract trials show consistent ALT/AST reductions in NAFLD.
<i>Phytother Res. 2018; Clin Nutr Res. 2022</i>		
13	Consider milk thistle (silymarin)	A 2023 PRISMA systematic review of 29 RCTs (3,846 participants) found silymarin supplementation improves liver enzyme levels across diverse hepatic conditions, with a strong safety profile. Standard dose: 140 mg, 2–3× daily. Check with your provider — silymarin can interact with certain medications.
<i>Cureus. 2023 (29-RCT systematic review); Food Sci Nutr. 2024</i>		
14	Replenish glutathione precursors	Glutathione is the liver's master antioxidant. The body builds it from cysteine, glycine, and glutamate — which means foods like whey protein, eggs, sulfur-rich vegetables, and quality protein matter. N-acetylcysteine (NAC) is the most well-studied direct precursor and has shown hepatoprotective effects in clinical trials.
<i>Clin Nutr ESPEN. 2023; WHO Essential Medicines (NAC)</i>		

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## Tend the gut–liver axis

Roughly 70% of the liver's blood supply arrives from the gut via the portal vein, carrying everything the gut absorbs — including microbial metabolites. A diverse, fiber-fed microbiome protects the liver; gut dysbiosis and increased intestinal permeability ("leaky gut") drive NAFLD progression. Fiber, fermented foods, polyphenols.

*Nature Rev Gastroenterol Hepatol. 2023; Front Endocrinol. 2024*

EQUALLY IMPORTANT

## What your liver wishes you would *stop doing*.

Removing what burdens the liver is at least as important as adding what supports it. These are the patterns most consistently linked to liver dysfunction.

<p><b>ULTRA - PROCESSED FOOD</b></p> <p>Industrial seed oils, additives, and refined carbs drive insulin resistance and inflammation — the soil NAFLD grows in.</p>	<p><b>SUGAR - SWEETENED DRINKS</b></p> <p>Liquid fructose hits the liver fast and is metabolized almost entirely there. Independently linked to NAFLD risk.</p>	<p><b>MORE THAN MODERATE ALCOHOL</b></p> <p>Even "moderate" alcohol crowds out other detox capacity. For active liver concerns, less is meaningfully better than more.</p>
<p><b>RANDOM "DETOX" PROTOCOLS</b></p> <p>Juice cleanses, colonics, and extreme fasts have no evidence of benefit — and your liver actually needs nutrients to detox.</p>	<p><b>OTC OVERUSE</b></p> <p>Acetaminophen is the leading cause of acute liver failure in the US. Stay within label dose, and never combine with alcohol.</p>	<p><b>CHRONIC POOR SLEEP</b></p> <p>Under-6-hour nights and irregular schedules disrupt the hepatic circadian clock and predict elevated liver enzymes.</p>

### The Wholara take.

Your liver does not need a cleanse. It needs *fewer obstacles* and *more raw materials*. Drop the worst inputs (added sugar, excess alcohol, ultra-processed food, chronic sleep debt), add the best ones (color, fiber, sulfur compounds, protein, polyphenols, water, movement), and stay consistent. The research is remarkably aligned on this.

*If you want personalized recommendations built around your labs, symptoms, and life — that's what Wholara is here for.*

EVIDENCE BASE

### Where this came from.

This one-pager synthesizes findings from 25+ peer-reviewed studies (2016–2025), including systematic reviews and meta-analyses published in: *Frontiers in Pharmacology, Journal of Hepatology, British Journal of Nutrition, Phytotherapy Research, Cureus, PLOS One, Scientific Reports, Nutrients, Aliment Pharmacol Ther, European Journal of Cancer Prevention, Clinical Nutrition Research, and Diabetes Metab Syndr Obes*. Where dose ranges or population specifics are given, they reflect the most consistent finding across multiple trials — not a clinical prescription. Individual recommendations should always be guided by your own healthcare provider.