

## What is Fatty Liver?

---

Fatty liver, also known as MAFLD (Metabolic dysfunction-associated fatty liver disease), is the buildup of extra fat in the liver.

- This is **not** caused by drinking alcohol.
- It can be improved with diet and lifestyle changes.
- If it gets worse, it can lead to:
  - MASH (Metabolic dysfunction-associated steatohepatitis) - fat deposits cause inflammation and damage to the liver
  - Cirrhosis - end-stage liver disease

## How Can I Help My Liver?

---

### Eat healthy foods

- Avoid sugary foods and beverages and limit starchy foods (bread, pasta, rice, potatoes)
- Reduce saturated and trans fats
- Avoid alcohol
- Increase fiber intake
- Increase black coffee intake (3 cups per day)

### Move your body

- Try to get at least 150 minutes of movement each week (or 30 minutes 4 times a week)
- Brisk walking, biking or water aerobics (anything to raise your heart rate)
- Strength train 2–3 times a week

### Lose weight if needed

- Losing 5-10% of your body weight can help your liver
- A healthy rate of weight loss is 1-2 pounds/week

### Manage other diseases

- Improving control of other metabolic diseases such as diabetes, high blood pressure and high cholesterol can help your liver

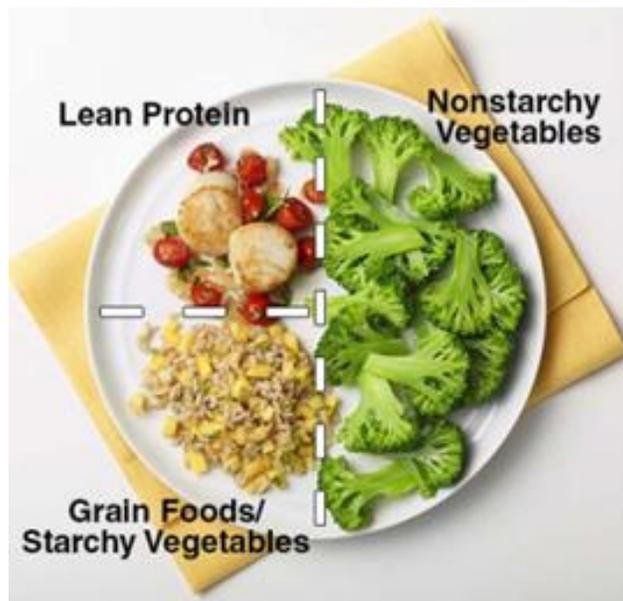
- Eat Regularly: Have 3 meals and 1–2 snacks every day. Don't skip meals.
- Watch Your Portions: Don't eat too much. Stop when you feel comfortably full.
- Avoid Binge Eating: Eat slowly and use small portions to help stay in control.

 Best Choices	 Avoid or Limit
Fresh fruits and vegetables Whole grains (brown rice, oats, quinoa, whole wheat bread) Lean proteins (chicken, fish, eggs, beans) Healthy fats (olive oil, avocado, nuts) Unsweetened drinks (water, tea, black coffee)	Fried foods and fast foods Ultra-processed foods (packaged snacks, frozen meals, chips) Sugary snacks and drinks White bread, white rice, and white pasta Processed meats (bacon, sausage, hot dogs) Too much salt (aim for <2,000 mg/day) Alcohol

## What does a healthy plate look like?

Try to have a lean protein, complex carbohydrate, non-starchy vegetable every time you eat.

- Fill  $\frac{1}{4}$  of the plate with a lean protein
- Fill  $\frac{1}{4}$  with a complex carbohydrate (whole grain, fruit, starchy vegetable)
- Fill  $\frac{1}{2}$  with a non-starchy vegetables (all except peas, corn, potato, and squash)
- Add healthy fats in moderation



Let's break it down....

Eating enough protein helps protect your liver and may lower fat in the liver.

- Spread protein out during the day (not all at once).
- Choose plant-based proteins often.

## How Much Protein Do I Need?

- Most people with fatty liver need **80–100 grams of protein each day** but your needs might be different.
- A dietitian can help determine what is right for you.

## What Counts as a Serving of Protein?

One serving = about **7–21 grams of protein**, depending on the food.

- 2–3 ounces cooked chicken, fish, or meat (size of a deck of cards) → ~21 g
- 2 eggs → ~12 g
- ½ cup cooked beans or lentils → ~7–9 g
- ½ cup tofu or tempeh → ~8–10 g
- 1 cup Greek yogurt (plain, low-fat) → ~15 g
- 2 tablespoons peanut butter → ~7 g
- Protein shake (varies by brand) → 15–30 g

## Choose Lean Proteins

Pick meats and plant-based proteins that are lower in fat. Look for 90% lean (less than 10% fat).

 Best Choices	 Avoid or Limit
Skinless chicken or turkey Fish and seafood Lean beef or pork (trim off any fat) Eggs or egg whites Beans, lentils, and other legumes Tofu and tempeh Nuts and nut butters Unsweetened yogurt or milk Protein Powders* Ready-to-drink protein shakes*	Fatty cuts of beef or pork Poultry with skin Deep fried meat Processed meats (bacon, sausage, hot dogs, brats, bologna, salami, etc.)

\*Protein powders or ready-to-drink shakes can help if you need extra protein. Talk to your healthcare provider or Dietitian before adding to your diet.

**Examples:** Fairlife Nutrition Plan, Fairlife Core Power, OWYN, Orgain, Ripple, Glucerna, TumLove, Ensure Max, and IsoPure

Eating the **right types** of carbohydrates can help your liver stay healthy.

## How Much Carbohydrate Do I Need?

- Most people with fatty liver should eat **5 servings per day** from high-fiber, whole foods.
- Try to eat **2 servings (30 grams) at each meal** and **0–1 serving (less than 15 grams) for snacks** if you have diabetes or need to follow a low carb diet.
- Your needs might be different. A dietitian can help you figure out what’s best for you.

## What Counts as a Serving of Carbohydrate?

One serving = ~15 grams

### Examples of 1 Carb Serving:

- 1 slice bread
- ¼ large bagel
- 1 tortilla (6-inch)
- ½ hamburger or hotdog bun
- ½ cup cooked cereal
- 1/3 cup cooked rice or pasta
- ¾ cup dry cereal
- 5–6 crackers
- ½ cup starchy vegetables (potato, peas, corn, squash)
- ½ cup beans (also a protein)
- 1 cup or 1 small piece fruit
- 2 tablespoon dried fruit
- ½ cup fruit juice
- 1 cup milk or soy milk (also a protein)
- ½ cup plain yogurt (also a protein)

## Choose Complex Carbohydrates

- Choose foods with **at least 3 grams of fiber** per serving.
- Look for labels that say: “Whole grain”, “Whole wheat”, “Sprouted grain”, “High fiber”
- Pick options with **less than 8 grams of sugar** per serving.

 Best Choices	 Avoid or Limit
Fresh & frozen fruit, canned fruit in fruit juice Fresh & frozen vegetables, low sodium or “no salt added” canned vegetables Whole grains (brown rice, oats, quinoa, whole wheat bread) Beans and lentils Unsweetened yogurt Milk or soy milk	White bread, white rice, white pasta Candy, cookies, ice cream, pastries, sweetened snacks Foods or drinks with high fructose corn syrup Sweetened fruit juice or canned fruit in syrup French fries and fried potatoes Sweetened yogurt

## Non-Starchy Vegetables

---

Non-starchy vegetables are low in calories and high in fiber and nutrients.

- Fill 1/2 your plate with non-starchy vegetables at meals.
- They help keep your liver healthy, support digestion, and help you feel full.
- No limit—eat as many as you like!

### Examples

- Leafy greens: spinach, kale, lettuce, Swiss chard, arugula, collard greens
- Cruciferous veggies: broccoli, cauliflower, cabbage, Brussels sprouts, bok choy
- Other vegetables: zucchini, carrots, cucumber, bell peppers, green beans, asparagus, celery, mushrooms, onions, leeks, garlic, tomatoes, radishes, eggplant, okra, summer squash

### Tips for eating more

- Fill half your plate with non-starchy vegetables at meals.
- Eat them raw, steamed, roasted, or stir-fried with a little olive oil.
- Add them to salads, soups, omelets, pasta, or grain bowls for extra flavor and nutrition.
- Mix different colors and types to get a variety of nutrients.

## Fats

---

Fats are part of a healthy diet. Most people with fatty liver should aim for about **25–35%** of calories from fat, mostly from healthy sources like plant-based oils, nuts, seeds, and fatty fish.

### Include healthy fats with meals and snacks

- Examples of 1 serving:
  - 1 tablespoon olive, avocado oil, or sunflower oil
  - 1 ounce nuts or seeds
  - ½ avocado
  - 1 ounce cheese
  - 1 tablespoon nut butter

### Unhealthy fats

- Limit saturated fats - fatty cuts of meat, skin of poultry, whole fat dairy, butter, lard, beef tallow.
- Avoid trans fats- found in fried foods, cookies, cakes, and packaged snacks that say “partially hydrogenated” on the label.

## Dairy & Dairy Substitutes

---

Pick low-fat or fat-free options. Watch for added sugars in yogurt and milk alternatives.

### Good choices

- Low-fat milk (skim or 1%)
- Low-fat cottage cheese
- Low-fat sour cream
- Plain Greek yogurt
- Cheese
- Unsweetened almond, coconut, or soy milk

## Sodium (salt)

---

Too much salt can be unhealthy. Try to eat less processed or packaged foods.

- Try to eat less than 2000 mg per day.
- Taste foods before adding salt — your taste buds will adjust over time.
- Use herbs and no-salt seasonings instead of salt.
- Eat fewer fast foods, snack foods, and processed foods. Check labels for sodium.
- Choose low-sodium or salt-free canned and packaged foods.
- Foods high in sodium: processed meats (bacon, ham, sausage, and deli meats), cheese, sauces, canned and boxed foods.

## Sugar

---

Eating too much sugar can make your liver store extra fat.

### Added Sugar

- Aim for less than 25 grams per day (about 6 teaspoons).
- Avoid sugar-sweetened drinks (soda, sweet tea, energy drinks, fruit juice).
- Limit sweets, candy, desserts, and processed foods with added sugar.

### Natural Sugar

- Fruit is fine in moderation because it contains fiber, vitamins, and minerals.
- Whole fruit is better than fruit juice or sweetened fruit products.

### Practical Tips

- Read food labels to check sugar content.
- Choose water, unsweetened coffee or tea, or sparkling water instead of sweetened drinks.
- Swap desserts for fruit or yogurt when possible.

## Sample Meal ideas

---

Each meal provides 20+ grams protein and 30 grams or fewer carbs

### Breakfast / Brunch

#### Omelet & Toast:

2 eggs, ¼ cup cheddar, ½ cup bell peppers, 1 slice toast, ½ small banana

#### Breakfast Burrito:

2 eggs, ½ cup black beans, ½ cup roasted veggies, ¼ avocado, 2 tbsp salsa, 1 carb-balance tortilla

#### Avocado Egg Toast:

2 eggs, 1 slice toast, ¼ avocado, ½ cup berries

#### Yogurt Parfait:

1 cup Greek yogurt, 1 tbsp chia seeds, ½ cup raspberries, ¼ cup high-fiber cereal

#### Protein Smoothie:

1 scoop whey protein, ½ banana, 1 cup 2% milk, 1 tbsp peanut butter

#### Waffle & Cottage Cheese:

1 whole-grain waffle, ¾ cup cottage cheese, ½ cup berries, 1 tsp almond butter

#### Oatmeal (vegan):

½ cup rolled oats, ½ cup berries, 2 tbsp walnuts, ½ cup milk of choice

#### Tofu Scramble (Vegan):

½ block firm tofu, ½ cup sautéed spinach, peppers, mushrooms, 1 slice toast, 1 tsp nutritional yeast

### Lunch / Dinner

#### Turkey Sandwich or Wrap:

2–4 oz lean turkey, 2 slices whole-grain bread or 1 wrap, 1 slice cheese, lettuce, tomato, mustard

#### Pork Chop Meal:

4 oz pork, small baked potato, 1 cup green beans

#### Southwest Chicken Salad:

4 oz chicken, ¼ cup black beans, ¼ cup corn, ¼ avocado, salsa

#### Egg Salad:

3 eggs, 1 tbsp mayo/yogurt, 2 slices whole wheat bread, lettuce/microgreens

#### Salmon & Spinach Salad:

4 oz salmon, 2 cups greens, cherry tomatoes, cucumber, 1 tbsp vinaigrette, 1 small wheat roll, ½ cup melon

#### Shrimp Meal:

4 oz shrimp, ½ cup cooked quinoa, ¾ cup sautéed veggies

#### Cheeseburger Meal:

4 oz lean beef or turkey patty, 1 slice cheese, whole grain bun, lettuce, tomato, red onion, ¼ avocado, 1 cup steamed vegetables, 1 tsp mustard

#### Cottage Cheese Plate:

1 cup cottage cheese, 1 cup raw veggies, 7 crackers, 1 small apple

#### Farro Grain Bowl (Vegan)

½ cup cooked farro, ½ cup chickpeas, 1 cup steamed broccoli & carrots, 1 tsp tahini, sprinkle of pumpkin seeds, 1 tsp lemon-tahini dressing

#### Tofu Stir-Fry (Vegan):

3–4 oz firm tofu, 1 cup mixed vegetables, ½ cup cooked brown rice, 1 tsp sesame oil, soy sauce

## Cooking Suggestions for Vegetables

---

### Roast:

- Uses high heat to crisp vegetables
- Set oven to 400-425 degrees
- Use 1 tablespoon oil for 1 pound of raw vegetables
- Do not overcrowd vegetables
- Cook for 15-20 minutes
- Great for: Brussel sprouts, broccoli, cauliflower, zucchini, asparagus, sweet potato, carrots

### Sauté:

- Uses high heat with minimal oil on stove top
- Dice or thinly cut vegetables
- Just enough oil to lightly coat pan, once oil hot, add vegetables
- Cook to doneness, slightly browned
- Great for: green beans, mushroom, snap peas, broccoli, asparagus, bell peppers, spinach

### Grill:

- Medium to high heat directly on grill (or vegetable basket)
- Cut vegetables to similar thickness/size
- Lightly coat vegetables with oil and seasoning
- Grill 3-5 minutes per side or to liking
- Great for: onions, tomato, eggplant, zucchini, broccoli, cauliflower, asparagus, bell peppers

### Season:

- Mrs. Dash salt-free seasonings
- Fresh herbs
- Extra virgin olive oil (rich taste)
- Fresh ground black pepper
- Chimichurri (puree of fresh herbs, garlic, vinegar, olive oil and sometimes chilis)
- Pesto
- Balsamic vinegar

## Resources

---

### Books

- *Skinny Liver* by Kristin Kirkpatrick, MS RD RD and Ibrahim Hanouneh, MD
- *Regenerative Health* by Kristin Kirkpatrick, MS RD RD and Ibrahim Hanouneh, MD

### Cookbooks

- *The Complete Mediterranean Cookbook* by Americas Test Kitchen
- *The Good Carb Cookbook* by Sandra Woodruff MS, RD
- *The Insulin Resistance Diet Plan & Cookbook* by Tara Spencer
- *Mediterranean Meal Prep Cookbook* by Kay Tuthill
- *The 30-Minutes Mediterranean Diet Cookbook: 101 Easy, Flavorful Recipes for Lifelong Health* by Serena Ball MS RDN & Deanna Segrave-Daly RDN
- *Mediterranean Diet Cookbook for Dummies* by Meri Raffetto RDN & Wendy Jo Peterson MS RDN
- *Prevention Mediterranean Table: 100 Vibrant Recipes to Savor and Share for Lifelong Health* by Jennifer McDaniel MS RDN and Mary Grave Taylor
- *The Real Food Table Cookbook* by Jessica Beacom & Stacie Hassing
- *The Healthy Meal Prep Cookbook* by Toby Amidor, MS RD CSN
- *Plant-Powered for Life: 52 Weeks of Simple, Whole Recipes and Habits to Achieve Your Health Goals* by Sharon Palmer RDN

### Food Tracking apps

- My Fitness Pal: <https://www.myfitnesspal.com/>
- Cronometer: <https://cronometer.com/>
- MyMacros: <https://www.getmymacros.com/#about>
- FITDAY: <https://www.fitday.com/>