

# A Guide to Cooking with Fats and Oils

*Some fats and oils can be used when cooking over high temperatures, while others are better suited for use over low or no heat. The following guide lists preferred cooking oils, their smoke points, and their best uses.*

**Tip:** Avoid heating a fat or oil above its smoke point when cooking. The smoke point of a fat or oil is the temperature at which the oil will burn and become damaged. Smoke points for a fat or oil can vary depending on the quality and variety of the source ingredients and whether the fat or oil has been refined.

## Preferred Fats and Oils: Smoke Points and Best Uses

### Avocado Oil

- Smoke point: 375°F (unrefined) or 520°F (refined)
- Best uses: Dressing or finishing if unrefined; high-heat cooking if refined

### Butter, Ghee

- Smoke point: 300°F (butter) or 480°F (clarified butter or ghee)
- Best uses: Topping, baking, or high-heat cooking (ghee)
- Notes: Ghee is butter with the animal solids removed. Some people who are sensitive to dairy may not be sensitive to ghee.

### Coconut Oil

- Smoke point: 350°F (unrefined or virgin) or 450°F (refined)
- Best uses: Baking, sautéing, or high-heat cooking (if refined)
- Notes: Coconut oil is solid at room temperature. If it is sold as a liquid, it has been blended with another oil or specially processed.

### Duck Fat

- Smoke point: 375°F
- Best uses: High-heat cooking

### Lard (pork, bacon fat)

- Smoke point: 375°F
- Best uses: Baking and frying
- Notes: Source should be pasture-raised, sustainably-raised, and organic

### Macadamia Nut Oil

- Smoke point: 410°F (unrefined)
- Best uses: Dressing, finishing, or low-heat cooking

### Olive Oil

- Smoke point: 400°F (extra-virgin) or 465°F (light, refined)
- Best uses: Dressing, finishing, or low-heat cooking if unrefined; high-heat if refined
- Notes: Olive oil will lose its flavor if heated too high

**Tip:** For more specific guidance on the best uses and heat tolerance of oils, check the label on the bottle of oil.

Preferred Fats and Oils: Smoke Points and Best Uses ( <i>continued</i> )
<b>Peanut Oil</b> <ul style="list-style-type: none"><li>· Smoke point: 320°F (unrefined) or 450°F (refined)</li><li>· Best uses: High-heat cooking if refined</li><li>· Notes: Easily damaged; prone to rancidity</li></ul>
<b>Rice Bran Oil</b> <ul style="list-style-type: none"><li>· Smoke point: 415°F (unrefined)</li><li>· Best uses: Dressing, finishing, or low-heat cooking</li></ul>
<b>Sesame Oil</b> <ul style="list-style-type: none"><li>· Smoke point: 350°F (unrefined) or 410°F (light, refined)</li><li>· Best uses: Dressing or finishing if unrefined; sautéing if refined</li><li>· Notes: Sesame oil has a high antioxidant content</li></ul>
<b>Tallow (beef fat)</b> <ul style="list-style-type: none"><li>· Smoke point: 400°F</li><li>· Best uses: High-heat cooking</li></ul>
<b>Walnut Oil</b> <ul style="list-style-type: none"><li>· Smoke point: 320°F (unrefined)</li><li>· Best uses: Dressing or finishing</li></ul>

### *What About Other Fats and Oils?*

Most of the following fats and oils have high smoke points and seem safe for cooking, but these fats and oils undergo heavy processing. These processing methods counteract potential health benefits. These fats and oils are also high in omega-6 fatty acids, which can contribute to chronic inflammation in the body. Because of this, regularly consuming fats and oils from this list is not recommended. If you do occasionally consume these fats and oils, be sure to choose brands that are certified organic and made from non-GMO crops.

- Canola oil (rapeseed oil)
- Corn oil
- Cottonseed oil
- Grapeseed oil
- Safflower oil
- Soybean oil
- Sunflower oil
- Vegetable shortening

### *What Does It All Mean?*

There are many different ways to describe oils, and deciphering food labels with these different words can be confusing. Some common descriptors found on packaging include the following:

- **Refined:** Oils that are extracted and treated with heat or chemicals to remove flaws. This process can also destroy the beneficial properties of oils. Refined oils are generally more stable than unrefined oils, so they are better choices for most high-heat cooking. "Light" oils are examples of refined oils.

- **Unrefined:** Oils that are not treated with chemicals or heat during processing. These oils retain the minerals, vitamins, and phytonutrients of the source ingredient. Virgin and extra-virgin oils are in this category.
- **Cold-Pressed:** Oils that are mechanically extracted from their source using pressure under controlled temperatures. Chemicals and heat are not used in this process. This helps the oils retain the nutritional benefits of their source.
- **Extra-Virgin:** Oils that are unrefined, cold-pressed, and from the first “pressing” (extraction) of the source ingredient. These oils can be fragile, so they are generally best for dressing, drizzling, and dipping. Note that olive oil must meet specific low-acidity requirements to be labeled “extra-virgin.”
- **Virgin:** Oils that are unrefined and cold-pressed but have some minor flavor defects. These oils are also fragile and should be reserved for low-heat cooking, dressing, and drizzling. Virgin oils must pass standards for taste and quality, but the standards are not as rigid as those for “extra-virgin.”

### *Tips for Buying and Storing Fats and Oils for Cooking*

Fats and oils can become damaged by contact with light, heat, air, or plastics. Many fats and oils sold in grocery stores are poorly packaged, which increases the risk that the fat will be damaged before you consume it. To maximize the health benefits of fats and oils and help you make sure you are consuming high-quality products, follow these tips:

#### **DO THE FOLLOWING:**

- Purchase oils that are packaged in dark glass bottles.
- Purchase oils that are packaged in containers with a tight-fitting lid.
- Store fats and oils away from the stove and other heat sources.
- Store fats and oils in a dark place, such as a cupboard.
- Measure and separate cooking fats and oils from their containers before placing them in a hot pan.

#### **AVOID THE FOLLOWING:**

- Purchasing oils that are packaged in plastic containers.
- Purchasing oils that are packaged in containers with a loose-fitting lid.
- Storing fats and oils next to the stove or other heat source.
- Storing fats and oils in a place that gets a lot of artificial or natural light.
- Pouring oils directly from the bottle or container into a hot pan. The heat can damage the oil in the bottle.

### **REFERENCES**

1. Brown AC. Fats and Oils. In: *Understanding Food: Principles and Preparation*. 6th ed. Cengage Learning; 2018:428-450.
2. Comparing cooking-oil choices. *Tufts Health & Nutrition Letter*. Updated September 17, 2019. Accessed May 26, 2022. <https://www.nutritionletter.tufts.edu/special-reports/comparing-cooking-oil-choices/>
3. Koohikamali S, Alam MS. Improvement in nutritional quality and thermal stability of palm olein blended with macadamia oil for deep-fat frying application. *J Food Sci Technol*. 2019;56(11):5063-5073. doi:10.1007/s13197-019-03979-0.
4. Katragadda H, Fullana A, Sidhu S, Carbonell-Barrachina A. Emissions of volatile aldehydes from heated cooking oils. *Food Chemistry*. 2010; 120(1):59–65. doi.org/10.1016/j.foodchem.2009.09.070.
5. de Alzaa F, Guillaume C, Ravetti L. Evaluation of chemical and physical changes in different commercial oils during heating. *Acta Scientific*. 2018;2(6):2-11.

