



NORTH AMERICAN OLIVE OIL
ASSOCIATION

A Consumer's Guide to Olive Oil



www.aboutliveoil.org



ABOUT OLIVE OIL

In a world that’s constantly asking you to make tradeoffs, olive oil is a choice that has it all and does it all. It’s one of the healthiest and most delicious foods to eat. It works for every kind of cooking, every kind of cuisine, every kind of diet. ***There’s an olive oil for every taste and budget.*** It’s also simple, natural food, never extracted using chemical solvents, unlike most other cooking oils. And with so many different flavor profiles to choose from, olive oil is a fun and exciting universe to explore. Look for the [NAOOA Certified Seal](#) or [Extra Virgin Alliance](#) seal, and start trying new olive oils today!

In this document, you can learn more about:

- [Olive Oil Grades](#)
- [Health Benefits of Olive Oil](#)
- [How Olive Oil is Made](#)
- [Olive Oil Affordability and Versatility](#)
- [Cooking with Olive Oil at Any Temperature](#)
- [Olive Oil Sustainability](#)
- [Frequently Asked Questions](#)

What Type of Olive Oil Should I Choose?

	Virgin Olive Oil	Olive Oil
Common Names	Extra Virgin Olive Oil	Olive Oil and Light or Light-Tasting Olive Oil
How It’s Made	Naturally extracted without heat or chemicals.	Naturally extracted without heat or chemicals, then refined. Refined olive oil is blended with some virgin oil before bottling.
How It Tastes	Most flavorful, although the notes and intensity vary	Low/neutral flavor
Cold Uses	Drizzling, dipping, dressings, marinades	Dressings, marinades
Hot Uses	Sauteing, grilling, roasting, baking, pan frying	Sauteing, grilling, roasting, baking, pan frying, deep frying
Smoke Point*	350°F - 410°F	390°F - 468°F
Health Benefits	High in heart-healthy oleic acid and high in naturally occurring antioxidants and phenols	High in heart-healthy oleic acid, with relatively small amounts of antioxidants and phenols
Price Point	Highest price point	Lower price point

*Smoke point is not the best indicator of how a cooking oil will perform when heated. Please see the section on [cooking](#) below for more information.

Olive oil is one of the healthiest foods you can eat. It supports heart and brain health and protects against a host of diseases.

- Olive oil is made up of good fat, which is why the FDA recognizes it as a great choice for heart health. A [recent study](#) by the Harvard School of Public Health found that replacing less healthy fats like butter with olive oil resulted in a 15% lower risk of cardiovascular disease and a 21% lower risk of coronary artery disease specifically.
- Olive oil protects your brain. Independent research has shown that olive oil may protect against [memory deficits](#) and Alzheimer's and even slow the decline of Alzheimer's in people with mild cognitive issues. What's more, a recent [study](#) found that higher olive oil intake was associated with a lower risk of dementia-related death, regardless of a person's overall diet quality.
- Research suggests that the [antioxidants](#) and polyphenols (plant-based compounds) only found in olive oil may be protective against a host of chronic diseases like [cancer](#), diabetes and dementia.

Olive oil is simple, natural food.

- Extra virgin olive oil is produced by crushing the olive fruit and separating the oil from the pulp—the same way it's been made for millennia. It's the highest grade of virgin olive oil, which is the least processed olive oil option and contains the highest amount of antioxidants and polyphenols.
- Regular and light-tasting olive oil are a blend of virgin and refined olive oil, giving them an advantage over vegetable oils, which lack such enrichment.
- Chemical solvents are never used in the extraction of any type of olive oil. This is different from the most commonly sold cooking oils like soybean, canola and corn, which are extracted using a petroleum-based solvent called hexane (unless they're labeled "expeller pressed").
- There are no genetically modified olive trees, so all olive oil is non-GMO. However, most commonly sold vegetable oils (e.g., canola, corn and soybean oil) come from genetically modified plants.

Olive oil is affordable, delicious and versatile with options for any budget or taste.

- Olive oil can be substituted for less healthy, less sustainable cooking oils in almost any recipe, and it costs less than you think. Bake a cake by swapping healthy extra virgin olive oil for canola, and for just about 20 cents more per slice, you can have your healthier cake and afford it, too. It's also worth noting the number of servings in a typical bottle, which should give your family weeks of healthy, delicious meals.
- All grades and qualities of olive oil are healthy—loaded with heart-healthy monounsaturated fat—but extra virgin olive oil packs the most flavor and health benefits. It tastes great on its own and enhances the flavors of food you cook with it. Different types of extra virgin olive oil have different flavor profiles, which are fun to explore.
- For people looking for a neutral-flavored oil, regular and light-tasting olive oils are a fantastic alternative to other common neutral-flavored oils like canola, corn and soybean. Regular and light-tasting olive oils have the same heart-healthy good fat as extra virgin olive oil, and they're also less processed than other neutral-flavored oils, which are often extracted using chemical solvents.

Olive oil is great for cooking practically anything. And it makes the food cooked in it more nutritious, too!

- A study published in the journal [ACTA Scientific Nutritional Health](#) found that extra virgin olive oil is the most stable and safest cooking oil—even at high temperatures often used

in frying and baking. In the study, extra virgin olive oil outperformed all other cooking oils, including canola, avocado, peanut and coconut oils.

- Because all olive oil can withstand heat, let flavor preference and budget be your guide when choosing what to buy. You can use olive oil for everything from dipping and salad dressings to baking, frying, grilling and everywhere in between.
- Research has shown that cooking with extra virgin olive oil actually increases the health benefits of our food. The healthy phenols and antioxidants found in olive oil are [transferred](#) to the food it's cooking, making it more nutritious. Olive oil also helps the food it's cooking [release its own bioactive compounds](#) and improves their absorption.

Olive oil is not only good for us, it's also good for the planet.

- Olive oil is produced from a permanent crop—in fact, olive trees are the largest non-tropical permanent crop in the world! Many olive trees are hundreds or even thousands of years old. However, most other commonly sold cooking oils are from crops that are harvested and replanted every year, risking damage to the soil from tillage, such as water runoff.
- Global production of olive oil [absorbs the carbon emissions of a city of 7 million people](#) each year. That's because as a permanent crop, olive groves are carbon sinks, which gives them an environmental advantage over annual oil crops.
- Olive trees are drought-resistant. At a time when water resources are becoming critically low around the world, the cultivation of olive trees uses much less water per liter than other cooking oil crops; over 70% of all olive groves are rain-fed, not irrigated!
- Annual oil crops deplete the soil of nutrients, especially nitrogen and phosphorus, significantly more than olive trees. As a permanent crop, olive trees also promote biodiversity because ground cover, intercropping and even animal grazing between the trees is an option for the farmers.
- Olive oil is also sustainably made, as neither chemical solvents nor energy-intensive high heat are used in the extraction of any type of olive oil, unlike most commonly sold cooking oils, like soybean, canola and corn oils (unless they're labeled "expeller pressed").

Look for the [NAOOA Certified Seal](#) or [Extra Virgin Alliance](#) seal, and start exploring the healthy, delicious world of olive oil today!

Frequently Asked Questions

Can I cook with olive oil? Doesn't it have a low smoke point?

Olive oil is great for cooking practically anything. And it makes the food cooked in it more nutritious, too! A study published in the journal [ACTA Scientific Nutritional Health](#) found that extra virgin olive oil is the most stable and safest cooking oil when heated—even at high temperatures often used in frying and baking. In the study, extra virgin olive oil outperformed all other cooking oils, including canola, avocado, peanut and coconut oils.

Smoke point isn't the best indicator of how a cooking oil will perform when heated, and cooking oils rarely reach their smoke point in home cooking. *The Washington Post* took on this very issue in an article titled, "[What you should know about oil smoke points — and why they're not as scary as you might think](#)," which says:

*We've consistently heard from readers chiding us for recommending roasting food with olive oil in the oven at a temperature above the supposed smoke point...but there's more at play here...there are plenty of other things to absorb the heat and energy — the pan, the food, the moisture of the meat or vegetables. Water or a sauce with the food can help, too. **The oil is not taking the brunt of the heat, and it's unlikely that the temperature of the oil will equalize to that of the oven itself.** If it did, your food would probably be dried out and inedible anyway.*

To demonstrate *The Washington Post's* point about olive oil rarely reaching the smoke point, we filmed a video showing an infrared thermometer being used to measure the temperature of food sautéed in extra virgin olive oil. We turned the heat to high on a gas range, and the food never got close to the smoke point. You can check out the video and read the more detailed post [here](#).

Because olive oil is delicious and can withstand heat, you can use it for everything from dipping and salad dressings to baking, frying, grilling and everywhere in between. The U.S. Department of Agriculture (USDA) even includes olive oil on its [list of recommended oils to safely fry](#) with.

As a bonus, research has shown that cooking with olive oil actually increases the health benefits of our food. The healthy phenols and antioxidants found in olive oil are [transferred](#) to the food it's cooking, making it more nutritious. Olive oil also helps the food it's cooking [release its own bioactive compounds](#) and improves their absorption.

Isn't a lot of olive oil fake?

The idea that U.S. supermarkets are rife with adulterated olive oils is an urban legend. You should have every confidence in the authenticity of the olive oil you buy at the store. A study by the U.S. Food and Drug Administration (FDA), whose [peer-reviewed research](#) was published in the *Journal of American Oil Chemists' Society*, tested 88 extra virgin olive oil samples off the shelves of Washington, D.C.-area retail outlets and found **no confirmed adulteration in any of the samples tested**. The FDA's findings mirror the results of the NAOOA's robust monitoring efforts, which sampled an average of close to 200 olive oils annually directly from retail shelves for 20 years.

But what about news reports from foreign countries about seizures of adulterated olive oil and related arrests?

There's a reason why we hear about those problems in Europe but not here. American consumers can take comfort in knowing European Union (EU) member states aggressively monitor and control exports of olive oil to the U.S., which is their most important market. They want to protect the integrity of one of their most important agricultural products. Anyone found trying to export adulterated olive oil will end up in jail. And the vigilance has paid off. So, if a bad actor in an EU country wants to play games with olive oil, it's a lot easier to get away with it if they keep their scheme within the open EU borders.

What specific controls are in place in exporting countries to protect the integrity of oils coming to the United States?

All olive oil produced in EU member states, which includes more than 80% of the olive oil consumed by Americans, is legally required to undergo risk analysis and is subject to controls to check for authenticity and conformity with labeling rules at every stage of marketing, including before they are exported.

For example, Spain, which produces more than half of the world's olive oil and is the leading exporter to the United States, takes the following steps:

- All exporting companies must be registered in the EU Economic Operators Registration and Identification (EORI) system to be approved to export goods. To ensure accountability, an entity can't have more than one EORI number, which helps maintain an accurate export history database to track performance over time.
- Spain has three different points of inspection and analysis:
 - There are 17 autonomous communities that make up Spain, and they each conduct inspections of olive oil in the manufacturing facilities where it's produced.
 - Spain's Official Service of Surveillance, Certification and Technical Assistance of Foreign Trade (SOIVRE) samples olive oil to be exported and conducts physico-chemical and sensory testing to ensure authenticity and quality. ***Olive oil bound for the United States is specifically targeted for additional testing.*** SOIVRE also checks olive oil to ensure labeling requirements are met.
 - Spanish Customs also collects samples and conducts physico-chemical and sensory testing.

This rigorous process ensures the integrity of olive oil shipped to the United States – Europe's most important export market.

Other exporting countries outside of the EU also have stringent requirements. For example, Morocco has a rigorous process for inspecting and monitoring each batch of olive oil intended for export. Olive oil can only be released for export once it's met the trade standard of the destination market. Morocco also has a network of internationally accredited labs specializing in olive oil analysis, which test for quality and purity.

Why is there so much written about fake olive oil?

Consumers are passionate about olive oil, and nothing gets them more riled up than to have someone tell them that their beloved olive oil is fake. And that presents an opportunity for

people to make money by preying on people's passion and fear of being cheated. So, when you see a claim about fake olive oil, ask yourself, did the source actually perform any laboratory tests or offer any proof? Was the story about fake olive oil something that was discovered in the U.S.? Is the person making the claim selling something like a competing product or a scandalous book, or simply trolling for clicks or views on an article that will bring them ad dollars and followers on social media platforms?

As with wine, beer, coffee and other products, there are good, better and best qualities of olive oil to meet every flavor preference and budget. Shop at retailers you trust and buy brands you know. If you want to try a new brand, as with anything you buy, beware of prices that are too good to be true, and always taste the olive oil as soon as you bring it home. If you don't like it, take it back to the store where you bought it for a refund or exchange it for something you like.

What about olive oil that says it's extra virgin but it's not?

To be clear, adulteration and mislabeling are separate issues. You should have every confidence that your olive oil isn't adulterated, which means mixed with other types of oil. When a bottle labeled extra virgin (the best quality) is found not to live up to that designation, that's a more complex subject. There are a few reasons for this:

- The quality of olive oil changes over time and when it's exposed to light, heat and air. These changes can be outside the producer's control, as they can take place with the retailer or the consumer.
- Taste – which is a key factor in determining the extra virgin grade – is a subjective determination when done by a single taster. For that reason, official grading requires a panel of at least eight expertly trained and calibrated tasters following strict protocols to minimize the impact of subjectivity. Often, sensational journalists claim a bottle of oil is mislabeled without following this protocol and, as a result, many times these claims are unsubstantiated, misleading and overblown.

For consumers wanting to make sure they get the highest-quality olive oil:

- Look for quality seals like the [NAOOA Certified Seal](#) or [Extra Virgin Alliance](#) seal, which ensures the olive oil meets rigorous standards.
- At the store, look for oils in dark or opaque containers, and check the best-by date to make sure you've got time to use it.
- Taste the oil! If it doesn't taste right, you can take it back to the store. Over time, the more you taste, the more you start to understand what olive oils you like. And, as a general rule, the more flavor, the more health benefits.
- When you get home, store the oil in a cool, dark place with the lid on tightly, and once opened, use within 2-3 months.

Are olive oils other than extra virgin worth using?

Absolutely! While extra virgin olive oil may have the most flavor and health benefits thanks to its higher polyphenol and antioxidant count, all olive oil, refined or virgin, has the same high content of monounsaturated "good fat," which is recognized by the FDA as a great choice for heart health. Even the most passionate EVOO user may at times prefer for taste or budget reasons to use a neutral-tasting oil, depending on the dish they are preparing. In that case, regular and light-tasting olive oils are excellent choices because when compared to the most commonly purchased types of neutral-tasting oils (canola, soybean, corn), olive oils are the

least processed (i.e., not extracted with chemical solvents), have the healthiest fatty acid profile, and are enriched with virgin olive oil, which means they also contain healthy olive polyphenols – not nearly as much as in extra virgin olive oil, but more than other cooking oil alternatives which have none.

Even within the extra virgin category there are different qualities, and all may have appropriate uses, depending on your taste preferences and budget. For raw use (like dipping), to finish dishes, or as a condiment, you want the best quality of extra virgin olive oil you can afford. There are many great options in this category, including those in the NAOOA’s [Extra Virgin Alliance](#). When choosing extra virgin olive oil for everyday cooking, you may prefer a less expensive one, since some of the flavor mellows when heated (a full list of NAOOA member brands can be found on our [website](#)).

(It’s important to note that consumer research clearly shows that when consumers who were accustomed to using other neutral-flavored, solvent-extracted seed oils like canola, vegetable, corn, soy, etc., switched to regular or light-tasting olive oil, they not only kept using olive oil, but they were also likely to soon graduate to using healthier extra virgin olive oil, as well.)

What are the main differences between extra virgin olive oil, olive oil and other cooking oils?

The words “virgin” or “unrefined” are key terms for consumers to look for on cooking oil labels. If the label doesn’t say one of these terms, then the oil has been refined, or in the case of products labeled simply “olive oil,” the oil is a combination of refined and virgin olive oil. When it comes to health benefits, the naturally occurring antioxidants and polyphenols in virgin oils are destroyed by the refining process, but the fatty acid profile (see “Cooking Oil Fat Profiles” [chart](#) below) is preserved whether the oil is virgin or refined. If a neutral tasting oil is called for, then refined oils are ideal. For example, in some cases, like making a mayonnaise, a flavorless neutral oil may be important to the recipe. But in many cases, a recipe may indicate a neutral oil due to force of habit when a virgin oil with healthier attributes can be an excellent substitute that functions perfectly well. For example, in many strongly flavored sauces and marinades, a virgin oil will perform as well as a refined oil and may even enhance the flavors in a recipe.

The chart below provides an overview of the main differences among cooking oils:

	Virgin or Unrefined Oils			Refined Oils				
	Extra Virgin Olive Oil	Virgin Avocado Oil	Virgin Coconut Oil	Olive Oil (Regular or Light)	Canola Oil	Vegetable Oil	Avocado Oil	Corn Oil
Extracted using chemical solvents	Never	Never	Never	Never	Always*	Always*	Never	Always*
Percent refined oil	0%	0%	0%	85%-95%	100%	100%	100%	100%
Micronutrient Content**	Highest (100%)	High (100%)	High (100%)	Low (7%-22%)	Negligible	Negligible	Negligible	Negligible
Flavor intensity	Full	Full	Full	Low/ Neutral	Neutral	Neutral	Neutral	Neutral
Amount sold at retail	~75% of olive oil	Low % of avocado oil		~25% of olive oil	Nearly 100%*	Nearly 100%*	Majority of avocado oil	Nearly 100%*
Smoke point***	350-410°F	375-400°F	~350°F	390-468°F	435-455°F	400-450°F	~520°F	400-415°F

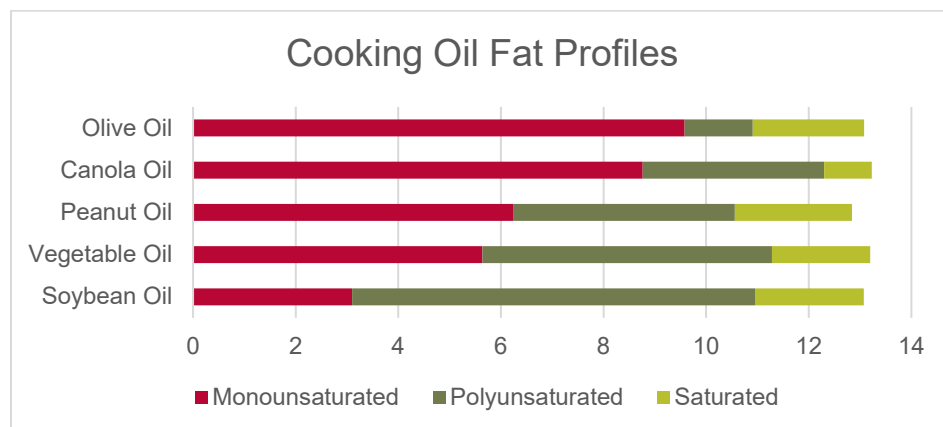
*Unless label says “expeller pressed”

**Percent content of naturally occurring antioxidants, polyphenols and phytonutrients in bottled product

***Smoke point is not the best indicator of how a cooking oil will perform when heated. Please see the section on [cooking](#) above for more information.

How do the fat profiles of different cooking oils compare?

Dietary fats are divided into three principal types of fatty acids: monounsaturated, polyunsaturated and saturated. Of the most commonly used cooking oils, olive oil has the highest percentage of monounsaturated fat. It's for this reason that olive oil has been recognized by the FDA as a great choice for heart health. All grades of olive oil have the same amount of heart-healthy monounsaturated fat.



Grams per 1 tablespoon serving

Source: [U.S. Department of Agriculture FoodData Central](#)

What does the color of olive oil mean?

Color is not a reliable indicator of olive oil flavor or quality. Extra virgin olive oil can range in color from yellow to dark green, depending on variables like the olive variety, where it's grown, climate and harvest timing. Some yellow extra virgin olive oils can be more robust than others that are dark green. So, when it comes to extra virgin olive oil, it's better to taste it and see if you like it! Regular or light-tasting olive oil, however, will typically be pale yellow depending on the amount of virgin oil that is used to enrich the product.

Should I be looking for a harvest date?

A harvest date will tell you when an olive oil was produced (although not necessarily when it was bottled). However, many olive oils don't have a harvest date because the bottle may contain a blend of olive oils from olives that were harvested from different farms, regions, countries or even continents, all with different harvest dates. This blending is done to provide a consistent flavor profile and price point. While it's fine to check out a harvest date when available, "Best if used by" dates, particularly from reputable producers, provide more information because they account for several factors (not just harvest dates) to determine how long the olive oil should last under good storage conditions. You can read more about harvest dates and "best by" dates [here](#).

Is it important to look for "first cold-pressed" on an extra virgin olive oil label?

It may surprise you, but the answer is no! ***That's because all extra virgin olive oil is, by definition, "first cold-pressed."*** The phrase "first cold-pressed" may distinguish extra virgin

olive oil from seed oils (e.g., canola, vegetable, corn, soy, etc.) that are extracted with high heat and/or chemical solvents, but it can't be used to distinguish one extra virgin olive oil from another. Extra virgin olive oil is produced at temperatures below 80.6°F, which is "cold" compared to high-heat extraction. Similarly, with all extra virgin olive oils, there's only one extraction ("pressing"), so the word "first" is redundant. Olive oils produced at higher temperatures or from a second pressing will fail to meet the exacting standards for extra virgin olive oil.

It's also worth noting that the term "pressed" is outdated. It was coined at a time when olive oil was extracted using a hydraulic press. Today, the vast majority of olive oil is extracted using a centrifuge. Click [here](#) to check out a video about how olive oil is made.

What does "product of," "packed in," or "imported from" mean on olive oil labels?

Olive oils have strict country-of-origin labeling requirements that are enforced by U.S. Customs and Border Protection. "Product of XX" refers to the origin of the oils in the bottle, meaning the olive oil was extracted from the olives in that country. "Imported from XX" or "Packed in XX" refers to where the oil was shipped or bottled; it does not mean the olive oil was produced in that country. All labels must include a "Product of" declaration to comply with the law, whether they include a "bottled in" or "packed in" statement or not; if olive oils from several countries are blended in the product, then each of the countries must be listed on the label as the countries of origin. (NOTE: NAOOA's labeling guide recommends that where an "Imported from" or "Packed in" statement is made on the label, it should be in immediate proximity to the country-of-origin statement to avoid confusion.)

All olive oils produced in European Union member states, which includes more than 80% of the olive oil consumed in the U.S., are required to undergo risk analysis and controls to check for authenticity and conformity with labeling rules at every stage of marketing, including before they are exported.

Does the fact that my bottle contains olive oils from different countries mean that it's bad?

Certainly not. There's nothing inherently wrong with blending olive oils from different countries, which is done to maintain a consistent flavor profile and price point. In fact, there's no guarantee that a bottle of oil that comes from a single country will be any better than a multi-country blend. Like blends in the wine industry, olive oil blends are created to achieve desired and even award-winning flavor profiles. In fact, it's not uncommon for blends to win esteemed competitions like the [Mario Solinas Quality Award](#). When choosing your oil, the trustworthiness of the producer is a more important factor than the country of origin; small estate producers and companies with positive brand recognition are most likely to take all steps needed to assure the quality of the oil in their bottles, regardless of where the oil comes from. A good rule of thumb is to judge the oil by tasting it as soon as you get it home. If it doesn't meet your approval, take it back to the store for a refund or substitution.

What kind of packaging should I look for?

The answer to this question depends in some respects on personal preference. And it doesn't have to be complicated – just remember that light and air are the enemy!

As for the different packaging available, glass, lined tin, stainless steel, bag-in-box and PET plastic are all good options to help store and preserve the oil, as long as they have a secure seal or cap to keep air out.

Exposure to light will degrade olive oil over time, so if you plan to keep your olive oil in a glass or plastic bottle on an open shelf or kitchen counter, you'll want to look for darker-colored or opaque packaging. That said, olive oil in a clear bottle that has outer packaging that protects it from extended light exposure before you get it home could be excellent. If you store it somewhere dark, the minimal light it will be exposed to isn't going to harm it in any appreciable way, especially if you tend to use olive oil pretty quickly.

If you're concerned about sustainability, you may be interested in r-PET, which are bottles made from recycled plastics. Plastic packaging is also lighter in general, which helps reduce the carbon footprint of shipping. Increasingly, olive oils are being sold in bag-in-box packaging, which is another good option with a lighter environmental footprint.

Should I store my olive oil in the refrigerator?

It's better to leave the olive oil stored in a cool, dark place outside the fridge. Olive oil will form crystals and start to solidify when subjected to cold temperatures. Once the olive oil is brought back to room temperature, it will return to its liquid state. Some research suggests that repeated thawing and cooling – such as storing it in the fridge between uses – puts stress on the oil and can result in condensation inside the bottle that will negatively impact the quality of the oil and its shelf life. It's also inconvenient to bring the olive oil back to room temperature to use it.

It's also worth noting that some people believe you can use the refrigerator to test the authenticity of extra virgin olive oil. This is simply not true. Extra virgin olive oil will crystallize and/or solidify at a wide variety of time and temperature exposures. All this variance is part of what makes extra virgin olive oil truly special. So, forget the fridge, and focus instead on enjoying the wide variety of flavors found among extra virgin olive oils.