

Ice Cream

and Other Frozen Dairy Products

The delicious frozen dairy products of today evolved from the flavored ices popular with the Romans in the 4th century B.C. The hand-crank freezer, patented in 1846, led to the establishment of the first commercial ice cream plant in Baltimore in 1851. Frozen yogurt was introduced in the late 1960s, and has since enjoyed increased popularity.



Varieties

- **Ice Cream** is made by stirring, while freezing, a pasteurized mix of one or more dairy ingredients - milk, concentrated fat-free milk, cream, condensed milk - sweetening agents, flavorings, stabilizers, emulsifiers and optional egg or egg yolk solids or other ingredients. Federal standards require ice cream to contain a minimum of 10% milk fat (about 7 grams of fat per ½ cup serving) and 20% total milk solids by weight. Some premium ice creams contain 16% milk fat. Added flavoring must be identified on the label as naturally flavored (i.e., raspberry ice cream) or artificially flavored (i.e., raspberry-flavored ice cream or artificially flavored raspberry ice cream).
- **Frozen custard** is similar to ice cream but contains a higher content of egg yolk solids.
- **Reduced-fat ice cream, low-fat ice cream, light ice cream and fat-free ice cream** all contain less fat per serving (½ cup) than regular (full fat) ice cream. Reduced-fat ice cream contains at least 25% less fat than the original product. Low-fat ice cream contains 3 grams or less of fat per serving. Light ice cream contains at least 50% less fat, and fat-free ice cream contains less than 0.5 gram of fat per serving.
- **Sherbet** contains 1 to 2% milk fat and 2 to 5% total milk solids. Water, flavoring (e.g., fruit, chocolate, spices), sweetener and stabilizers are added. Sherbet has more sugar than ice cream.
- **Frozen Yogurt** is made by freezing a mixture of pasteurized milk, with or without other milk products, flavorings, seasonings, stabilizers, emulsifiers and lactic acid cultures. Because there are no specific standards for frozen yogurt, its ingredients and characteristics can vary. Frozen yogurt is pasteurized before freezing so it generally does not contain live, active cultures like many unfrozen yogurts. Non-fat, low-fat and full fat varieties of frozen yogurt are available. Frozen yogurt may be soft (as in cones or sundaes) or hard-frozen.



Nutrition Facts

Ice cream and frozen yogurt have a nutritional advantage over some other desserts because they provide high-quality protein, calcium and other essential vitamins and minerals (though these nutrients are less concentrated in these products than they are in milk, yogurt and cheese). The calorie and fat contents of these dairy foods vary depending on the type of milk used and the addition of cream, egg yolk solids or sweetening agents. Sherbet contains less fat, protein, calcium and vitamins than ice cream. However, the calorie content of sherbet may be similar to that of ice cream due to sherbet's higher sugar content. Refer to the Nutrition Facts panel on product labels for the nutritional content of ice cream, sherbet and frozen yogurt.

Storing and Handling

Store ice cream tightly covered in the freezer at 0° F. To avoid crystallization and volume loss, scoop ice cream, keeping the surface as level as possible. Cover the surface of ice cream with plastic wrap before reclosing and return to the freezer immediately. Similar to ice cream, sherbet and frozen yogurt should be tightly covered and stored in the freezer at 0° F. For ease in serving, soften ice cream by transferring it to the refrigerator for 10 to 20 minutes before serving, or by microwaving* it on HIGH in the carton for the following amounts of time:

1 pint = 10 to 15 seconds

1 quart = 15 to 25 seconds

½ gallon = 30 to 40 seconds

*Since microwave ovens vary, cooking times may differ.

Commonly Asked Questions about Ice Cream and Other Frozen Dairy Products



Why do ice crystals form on ice cream?

Ice crystals form when some of ice cream's water separates from fat and eventually develops into larger ice crystals. The result is a grainy-textured ice cream. As long as water remains trapped in an emulsion with fat in ice cream, the original ice crystals do not get larger. To protect ice cream from developing large ice crystals, do not melt and refreeze ice cream and do not store ice cream well below 0°F for a prolonged period.

Isn't frozen yogurt a healthier choice than ice cream?

Both frozen yogurt and ice cream provide calcium, protein and other essential minerals (though these nutrients are less concentrated in ice cream than they are in milk, yogurt and cheese). The calorie and fat content of frozen yogurt and ice cream may differ, so check the Nutrition Facts panel on product labels. A variety of frozen yogurts and ice creams with different calorie and fat contents is available. It is also important to check portion sizes when making nutritional comparisons of ice cream and frozen yogurt.

If I'm lactose intolerant, can I eat ice cream and frozen yogurt?

Individuals who have difficulty digesting lactose (milk's sugar) generally tolerate ice cream and frozen yogurt about the same as they would tolerate milk with a meal. Ice cream and frozen yogurt contain ingredients that mix with lactose, thereby "diluting" the lactose. Your body may be able to better handle lactose in a diluted form rather than a more concentrated form. Unlike unfrozen yogurt, frozen yogurt does not contain live, active cultures that help to digest lactose. Frozen yogurt is tolerated about the same as ice cream by individuals with lactose intolerance.

What is overrun in ice cream?

Overrun is a measure of the volume of air whipped into the ice cream mix. Overrun does not have to be declared on the label. Quality ice creams have lower overruns than those of reduced quality. Generally the more overrun, the lower the cost of the ice cream.

A Nutritional Look at Ice Cream and Frozen Yogurt				
Food: 1/2 cup	Calories (Kcal)	Fat (g)	Protein (g)	Calcium (mg)
Ice cream				
Vanilla	137	7.0	2	84
Vanilla, light	137	3.5	4	122
Vanilla, fat-free	92	0	3	100
Frozen Yogurt				
Vanilla, soft-serve	114	4.0	3	103
Flavored, low-fat, no sugar added	71	0.5	3	108

Source: USDA Nutrient Database for Standard Reference, 2013.

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