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## Freezing and Food Safety

### What Can You Freeze?

You can freeze almost any food. Some exceptions are eggs in shells or canned food. Once food (such as a ham) is out of the can, however, you may freeze it. Being able to freeze food and being pleased with the quality after defrosting are two different things. Some foods just don't freeze well. Examples are mayonnaise, cream sauce, and lettuce. Raw meat and poultry maintain their quality longer than their cooked counterparts because moisture is lost during cooking.



### Is Frozen Food Safe?

Food stored constantly at 0°F will usually be safe. Quality, however, may suffer with lengthy freezer storage. Freezing keeps food safe by slowing the movement of molecules, causing microbes to enter a dormant stage. Freezing preserves food for extended periods because it slows and sometimes prevents the growth of microorganisms that cause food spoilage and foodborne illness.

### Does Freezing Destroy Bacteria & Parasites?



Freezing to 0 °F inactivates any microbes -- bacteria, yeasts and molds - - present in food. Once thawed, however, these microbes can again become active, multiplying under the right conditions to levels that can lead to foodborne illness. Since they will then grow at about the same rate as microorganisms on fresh food, you must handle thawed items as you would any perishable food. Trichina and other parasites can be destroyed by sub-zero freezing temperatures. However, very strict government-supervised conditions must be met. It is not recommended to rely on home freezing to destroy trichina. Thorough cooking will destroy all parasites.

### Freshness & Quality

Freshness and quality at the time of freezing affect the condition of frozen foods. If frozen at peak quality, foods emerge tasting better than foods frozen near the end of their useful life. Freeze items you won't use quickly sooner rather than later. Store all foods at 0° F or lower to retain vitamin content, color, flavor and texture.



## Nutrient Retention

The freezing process itself does not destroy nutrients. In meat and poultry products, there is little change in nutrient value during freezer storage.

## Enzymes

Enzyme activity can lead to the deterioration of food quality. Enzymes present in animals, vegetables and fruit promote chemical reactions, such as ripening. Freezing slows the enzyme activity that takes place in foods and does not halt these reactions which continue after harvesting. Enzyme activity does not harm frozen meats or fish and is neutralized by the acids in frozen fruits. Most vegetables that freeze well are low acid and require a brief, partial cooking to prevent deterioration. This is called "blanching." For successful freezing, blanch or partially cook vegetables in boiling water or in a microwave oven. Then, rapidly chill the vegetables prior to freezing and storage. Consult a cookbook for timing.

## Packaging

Proper packaging helps maintain quality and prevent "freezer burn." **It is safe to freeze meat or poultry**



**directly in its supermarket wrapping**, but this type of wrap is permeable to air. Unless you will be using the food in a month or two, overwrap these packages as you would any food for long-term storage using airtight heavy duty foil, (freezer) plastic wrap or freezer paper, or place the package inside a (freezer) plastic bag.

Use these materials or airtight freezer containers to repackage family packs into smaller amounts. It is not necessary to rinse meat and poultry before freezing. Freeze unopened vacuum packages as is. If you notice that a package has accidentally been torn or has opened while food is in the freezer, the food is still safe to use; merely wrap over or rewrap it.

## Freezer Burn

Freezer burn does not make food unsafe, merely dry in spots. It appears as grayish-brown leathery spots and is caused by air reaching the surface of the food. Cut freezer-burned portions away either before or after cooking the food. Heavily freezer-burned foods may have to be discarded for quality reasons.



## Color Changes

Color changes can occur in frozen foods. The bright red color of meat as purchased usually turns dark or pale brown depending on its variety. This may be due to lack of oxygen, freezer burn or abnormally long storage.

Freezing doesn't usually cause color changes in poultry, however, the bones and meat near them can become dark. Bone darkening results when pigment seeps through the porous bones of young poultry into the surrounding tissues when the poultry meat is frozen and thawed. The dulling of color in frozen vegetables and cooked foods is usually the result of excessive drying due to improper packaging or over-lengthy storage.

### **Refrigerator – Freezers**

If a refrigerator freezer compartment cannot maintain 0°F or if the door is opened frequently, use it for short-term food storage. Eat those foods as soon as possible for best quality.

Use a free-standing freezer set at 0° F or below for long-term storage of frozen foods. Keep a thermometer in the freezer to check the temperature.



### **Refreezing**

**Once food is thawed in the refrigerator, it is safe to refreeze it without cooking**, although there may be a loss of quality due to the moisture lost through defrosting. After cooking raw foods which were previously frozen, it is safe to freeze the cooked foods. If previously cooked foods are thawed in the refrigerator, you may refreeze the unused portion. Previously frozen meat, poultry or fish purchased at a retail store may be refrozen if it has been handled properly.