What Are Molds?

Molds are microscopic fungi that live on plant or animal matter. No one knows how many species of fungi exist, but estimates range from tens of thousands to perhaps 300,000 or more. Most are filamentous (threadlike) organisms and the production of spores is characteristic of fungi in general. These spores can be transported by air, water, or insects.

Unlike bacteria that are one-celled, molds are made of many cells and can sometimes be seen with the naked eye. Under a microscope, they look like skinny mushrooms. In many molds, the body consists of:

- root threads that invade the food it lives on
- a stalk rising above the food, and
- spores that form at the ends of the stalks.

The spores give mold the color you see. When airborne, the spores spread the mold from place to place like dandelion seeds blowing across a meadow.

Molds have branches and roots that are like very thin threads. The roots may be difficult to see when the mold is growing on food and may be very deep in the food. Foods that are moldy may also have invisible bacteria growing along with the mold.

Where Are Molds Found?

Mold is everywhere, all the time. Molds are found in virtually every environment and can be detected, both indoors and outdoors, year-round. Mold growth is encouraged by warm and humid conditions. Outdoors, they can be found in shady, damp areas or places where leaves or other vegetation are decomposing. Indoors, they can be found where humidity levels are high. Molds form spores which, when dry, float through the air and find suitable conditions where they can start the growth cycle again.

We do not live and should not try to live in a "mold free" environment. It is interesting to note that the incidence of asthma was found lowest among children of farmers whose environment contained very high levels of exposure to mold and other airborne allergens. Seeking to protect our children by placing them in a "too-clean" environment in many instances increases the ultimate risk to their health from subsequent exposure to common mold and bacteria against which they will have developed no resistance.

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Are Any Food Molds Beneficial?

Yes, molds are used to make certain kinds of cheeses and can be on the surface of cheese or be developed internally. Blue veined cheese such as Roquefort, blue, Gorgonzola, and Stilton are created by the introduction of P. roqueforti or Penicillium roqueforti spores. Cheeses such as Brie and Camembert have white surface molds. Other cheeses have both an internal and a surface mold. The molds used to manufacture these cheeses are safe to eat.

Why Can Mold Grow in the Refrigerator?

While most molds prefer warmer temperatures, they can grow at refrigerator temperatures, too. Molds also tolerate salt and sugar better than most other food invaders. Therefore, molds can grow in refrigerated jams and jelly and on cured, salty meats — ham, bacon, salami, and bologna.

How Can You Minimize Mold Growth?

Cleanliness is vital in controlling mold. Mold spores from affected food can build up in your refrigerator, dishcloths, and other cleaning utensils.

- Clean the inside of the refrigerator (walls, fan guards, etc.) every couple of months with 1 tablespoon of baking soda dissolved in a quart of water. Rinse with clear water and dry. Scrub visible mold (usually black) on walls, ceilings and door gaskets using 3 teaspoons of bleach in a quart of water.
- Keep dishcloths, towels, sponges, and mops clean and fresh. A musty smell means they're spreading mold around. Discard items you can't clean or launder.
- Keep the humidity level in the house below 40%.

Are Molds Only on the Surface of Food?

No, you only see part of the mold on the surface of food -- gray fur on forgotten bologna, fuzzy green dots on bread, white dust on Cheddar, coin-size velvety circles on fruits, and furry growth on the surface of jellies. When a food shows heavy mold growth, "root" threads have invaded it deeply.

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Inspecting Food for Mold

Inspect foods for mold before you distribute them. Check food in glass jars, look at the stem areas on fresh produce, and avoid badly bruised produce. If the majority of a tote of produce has mold on it then it may be very difficult and time consuming to try to find produce that is completely free of mold.

Fresh meat and poultry are usually mold free, but cured and cooked meats may not be. Examine them carefully. Exceptions: Some salamis — San Francisco, Italian, and Eastern European types — have a characteristic thin, white mold coating which is safe to consume; however, they shouldn't show any other mold. Dry-cured country hams normally have surface mold that must be scrubbed off before cooking.

How Can You Protect Food from Mold?

- When storing and serving food, keep it covered to prevent exposure to mold spores in the air. Use plastic wrap to cover foods you want to stay moist — fresh or cut fruits and vegetables, and green and mixed salads.
- Empty opened cans of perishable foods into clean storage containers and refrigerate them promptly.
- Keep potentially hazardous foods refrigerated at 41 F.
- Use leftovers within 3 to 4 days so mold doesn't have a chance to grow.

How Should You Handle Food with Mold on It?

Distributing and using foods quickly can help prevent mold growth. But when you see moldy food:

- Don't sniff the moldy item. This can cause respiratory trouble. If someone is highly allergic to mold they should not handle it without the use of personal protective equipment.
- If food is covered with mold, DISCARD IT. Put it into a small paper bag or wrap it in plastic and dispose in a covered trash can that children and animals can't get into.
- Clean the refrigerator or pantry at the spot where the food was stored.
- Check nearby items the moldy food might have touched. Mold spreads quickly in fruits and vegetables

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Moldy Food: When to Use, When to Discard.

Molds on Food		
FOOD	**HANDLING**	**REASON**
Luncheon meats, bacon, or hot dogs	Discard	Foods with high moisture content can be contaminated below the surface. Moldy foods may also have bacteria growing along with the mold.
Hard salami and dry-cured country hams	Use. Scrub mold off surface.	It is normal for these shelf-stable products to have surface mold.
Hard cheese (not cheese where mold is part of the processing)	Use. Cut off at least 1 inch around and below the mold spot (keep the knife out of the mold itself so it will not cross-contaminate other parts of the cheese). After trimming off the mold, re-cover the cheese in fresh wrap.	Mold generally cannot penetrate deep into the product.
Cheese made with mold (such as Roquefort, blue, Gorgonzola, Stilton, Brie, Camembert)	Discard soft cheeses such as Brie and Camembert if they contain molds that are not a part of the manufacturing process. If surface mold is on hard cheeses such as Gorgonzola and Stilton, cut off mold at least 1 inch around and below the mold spot and handle like hard cheese (above).	Molds that are not a part of the manufacturing process can be dangerous.
Soft cheese (such as cottage, cream cheese, Neufchatel, chevre, Bel Paese, etc.) **Crumbled, shredded, and sliced cheeses** (all types)	Discard	Foods with high moisture content can be contaminated below the surface. Shredded, sliced, or crumbled cheese can be contaminated by the cutting instrument. Moldy soft cheese can also have bacteria growing along with the mold.
Yogurt and sour cream	Discard	Foods with high moisture content can be contaminated below the surface. Moldy foods may also have bacteria growing along with the mold.
Jams and jellies	Discard	The mold could be producing a mycotoxin. Microbiologists recommend against scooping out the mold and using the remaining condiment.
Fruits and vegetables, firm (such as cabbage, bell peppers, carrots, etc.)	Use. Cut off at least 1 inch around and below the mold spot (keep the knife out of the mold	Small mold spots can be cut off fruits and vegetables with low moisture content. It's difficult for mold to penetrate dense

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	itself so it will not cross-contaminate other parts of the produce).	foods.
Fruits and vegetables, soft (such as cucumbers, peaches, tomatoes, etc.)	Discard	Fruits and vegetables with high moisture content can be contaminated below the surface.
Bread and baked goods	Discard	Porous foods can be contaminated below the surface.
Peanut butter, legumes and nuts	Discard	Foods processed without preservatives are at high risk for mold.

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