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Plastics and the Microwave

By Michelle Meadows

Stories about the dangers of chemicals leaching from plastic into microwaved food have circulated on the Internet for years. As a result, the Food and Drug Administration continues to receive inquiries from concerned consumers.

Consumers can be confident as they heat holiday meals or leftovers in the microwave that the FDA carefully reviews the substances used to make plastics designed for food use. These include microwave-safe plastic coverings that keep food from splattering and microwave-safe containers that hold frozen dinners. Even microwavable popcorn bags, which look like paper, actually contain a metalized plastic film that allows them to reach high temperatures so the corn can fully pop.

Under the food additive provisions of the Federal Food, Drug, and Cosmetic Act, new substances used to make plastics for food use are classified as "food contact substances." They must be found safe for their intended use before they can be marketed.

"It's true that substances used to make plastics can leach into food," says Edward Machuga, Ph.D., a consumer safety officer in the FDA's Center for Food Safety and Applied Nutrition. "But as part of the approval process, the FDA considers the amount of a substance expected to migrate into food and the toxicological concerns about the particular chemical." The agency has assessed migration levels of substances added to regulated plastics and has found the levels to be well within the margin of safety based on information available to the agency. The FDA will revisit its safety evaluation if new scientific information raises concerns.

One chemical called diethylhexyl adipate (DEHA) has received a lot of media attention. DEHA is a plasticizer, a substance added to some plastics to make them flexible. DEHA exposure may occur when eating certain foods wrapped in plastics, especially fatty foods such as meat and cheese. But the levels are very low. The levels of the plasticizer that might be consumed as a result of plastic film use are well below the levels showing no toxic effect in animal studies.

Other claims have asserted that plastics contain dioxins, a group of contaminants labeled as a "likely human carcinogen" by the Environmental Protection Agency. "The FDA has seen no evidence that plastic containers or films contain dioxins and knows of no reason why they would," Machuga says.

Machuga says that consumers should be sure to use any plastics for their intended purpose and in accordance with directions. If you don't find instructions for microwave use, you should use a different plate or container that you know is microwave-safe. Such containers are made to withstand high temperatures.

For example, carryout containers from restaurants and margarine tubs should not be used in the microwave, according to the American Plastics Council. Inappropriate containers may melt or warp, which can increase the likelihood of spills and burns. Also, discard containers that hold prepared microwavable meals after you use them because they are meant for one-time use.

Microwave-safe plastic wrap should be placed loosely over food so that steam can escape, and should not directly touch your food. "Some plastic wraps have labels indicating that there should be a one-inch or greater space between the plastic and the food during microwave heating," Machuga says.

Always read directions, but generally, microwave-safe plastic wraps, wax paper, cooking bags, parchment paper, and white microwave-safe paper towels are safe to use. Covering food helps protect against contamination, keeps moisture in, and allows food to cook evenly. Never use plastic storage bags, grocery bags, newspapers, or aluminum foil in the microwave.

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