Dear Alice,

We have a five month old baby, and we are concerned we have been using the microwave too much to warm his milk bottles and baby food. Is there any danger in this?

?Radiating

Answer

Dear Radiating,

The amount of radiation emitted from a microwave is set and monitored by the U.S. Food and Drug Administration (FDA) for a standard that is said to be safe for home use. The radiation itself is non-ionizing, which makes it less harmful than the radiation of X-rays. Radiation exposure from a home microwave does not pose any risks to your baby as long as your microwave’s safety mechanisms function properly. There is the potential of radiation leakage if the seal is cracked or caked with food, if the microwave has been dropped, or if a fire has occurred inside. In any of these cases, the microwave should be replaced. However, if your microwave is in good working order and you want to be extra safe, standing four feet away from the oven dramatically reduces radiation exposure to just 1/100th of the maximum amount considered safe. As long as you keep your baby away from the radiation contained within the oven, you have nothing to worry about. Radiation cannot seep into the food or beverages you microwave.

However, there is a very real danger of serious burns from hot containers, overheated foods, and injury from exploding foods. The main precaution to take after heating milk in the microwave for babies is to be sure that there are no "hot spots." "Hot spots" are developed when microwaves heat foods unevenly, causing some sections to become much hotter than others. When the milk is checked for heat level, it may feel fine, although there may be some portions that are burning hot. It is recommended that you shake the bottle and let it stand for thirty seconds before checking the temperature. Other sources suggest not using the microwave to heat infant foods ? neither bottles of formula nor baby food ? because the uneven heat can severely burn a baby?s mouth.

According to the FDA, there is no additional damage to milk proteins or sugars when heated with a microwave rather than conventional oven or stove. In general, microwaves cook food faster and destroy fewer vitamins than conventional cooking methods. You may have read about research that shows a possible loss of human milk's immunologic qualities after
microwaving, but further studies are necessary to support this. There is also the option of heating milk the old-fashioned way, on the stovetop.

If you do use the microwave, here are a few tips:

- Prick cooking pouches and foods that have tight skins (e.g., tomatoes, hot dogs) to release steam as they cook.
- Never cook eggs in the shell. If you crack an egg open to cook in the microwave, be sure to prick the yolk before cooking.
- Remove lids and caps from containers, and cover with microwaveable plastic wrap (don't let it touch food), waxed paper, or parchment paper for cooking.
- Arrange the food evenly and add liquid if necessary. Steam helps to destroy harmful bacteria and encourages uniform heating.
- Never use foam trays, empty plastic containers (such as yogurt cartons), or takeout containers in the microwave. These materials can overheat and become warped, which will allow harmful chemicals to penetrate your food. Only use cookware that is specifically labeled as "microwave safe."
- Never turn on an empty microwave. Try keeping a glass of water or a box of baking soda in the oven just in case.
- Regularly clean the inside walls, the door, and the seal of your microwave with a mild detergent and water.
- Never operate the oven when something is caught in the door.
- Remove metal twist ties from bags. They act as antennae and can cause a fire.
- Never use brown paper bags for popping popcorn. They can catch fire, too.

(Adapted from Environmental Nutrition)

If you have further questions about microwave safety or child food preparation, you can contact your child's pediatrician. Generally, however, you can rest assured that as long as your microwave works properly, your baby will not ingest harmful radiation.

Alice!

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