

Study finds breast milk has longer shelf life than previously thought

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Breast milk can be safely stored in a refrigerator for four days without the threat of bacterial contamination or loss of nutritional value, Long Island scientists have found in a groundbreaking study.

The small research project at Schneider Children's Hospital of the North Shore-Long Island Jewish Health System essentially asked a question that had not been asked before: Can [breast milk](#) remain potent and germ-free for four days?

Prior to the analysis, which involved 36 new mothers whose [premature babies](#) were being treated in the neonatal intensive care unit, doctors at most hospitals would not allow the milk to remain in storage for more than 72 hours.

Dr. Richard Schanler, chief of neonatal medicine at Schneider Children's Hospital, said there were even stricter rules at his institution.

"We didn't like to store it longer than 48 hours and that prompted us to do this study, and we found there really weren't many changes (in nutritional integrity or bacterial presence) up to 96 hours," he said.

He hopes the discovery will lead to a paradigm shift for hospitals everywhere.

Human milk management and storage are huge concerns in neonatal intensive care units, Schanler said. Previous studies have addressed these

issues, but they mostly focused on the amount of bacteria in stored milk.

Although the new research focused on hospital milk storage, Schanler said it also is relevant for working moms who must balance infant feedings and a job away from home.

The research, which suggests maintaining human milk in glass containers or plastic ones free of bisphenol A (BPA), is reported in the January issue of The [Journal of Pediatrics](#). Schanler and his colleagues recommend a temperature of 39 degrees Fahrenheit, or cooler, and placing milk in the rear of the refrigerator.

He said the analysis was designed to answer many of the pressing questions about milk storage and usage in neonatal intensive care units where premature infants are treated. New moms must routinely pump milk for feedings and the milk is refrigerated.

Freezing has been an additional approach. But the freezing of breast milk causes the destruction of key infection-fighting cells that can protect the milk from bacterial colonization, Schanler said. There also are nutritional losses when breast milk is frozen.

"Certain immune components, proteins and enzymes are decreased in frozen milk," Schanler said.

The Human Milk Banking Association of North America has suggested that human milk remains viable refrigerated for up to eight days, but that long-term storage raises serious health questions in hospitals.

Schanler and Dr. Meredith Slutzah, also of Schneider Children's Hospital, tackled the storage issue because there were questions beyond that of bacteria, such as human milk's nutritional value.

In the study, scientists from Schneider's and Yeshiva University's Albert Einstein College of Medicine required the mothers to collect milk with a breast pump. Researchers stored the milk at 39 degrees Fahrenheit and tested it after 24, 48, 72 and 96 hours. Even after the 96 hours, there was virtually no [bacterial contamination](#), Schanler said, because the other components in the milk remained viable.

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