"Learn About Cronobacter Infection"

Source: CDC.gov/features/cronobacter/index.html

Cronobacter: A group of bacteria found in the environment and foods

Cronobacter (formerly called Enterobacter sakazakii) is a germ found naturally in the environment that can survive in very dry conditions. Cronobacter has been found in dry foods, such as powdered infant formula, powdered milk, herbal teas, and starches. It has also been found in sewer water and may be found in other places, too.

Rare, but Serious Illness in Infants

Getting sick from Cronobacter does not happen very often, but it is often deadly in young infants. It usually occurs in the first days or weeks of life. Typically, CDC is informed of about 4-6 cases of sickness from Cronobacter in infants each year, but reporting isn't required.

Cronobacter bacteria can cause severe blood infections (sepsis) or meningitis (an inflammation of the membranes that protect the brain and spine). Infants 2 months of age and younger are most likely to develop meningitis if they are infected with Cronobacter. Infants born prematurely and those with weakened immune systems are also at increased risk for serious sickness from Cronobacter.

In infants, the sickness generally starts with fever. It usually includes poor feeding, crying, or very low energy. Young infants with these symptoms should be taken to a doctor.

Not Just Infants

Cronobacter can also cause diarrhea, problems in wounds, and urinary tract infections in people of all ages. The elderly and people whose bodies have trouble fighting germs because of a sickness they already have are most at risk.

Illnesses Linked to Powdered Infant Formula

In some outbreak investigations, Cronobacter was found in powdered infant formula that had been contaminated in the factory. In other cases, Cronobacter might have contaminated the powdered infant formula after it was opened at home or elsewhere during preparation. Since Cronobacter lives in the environment, it's likely there have been other sources of this rare sickness.

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Powdered Infant Formula is Not Sterile

Manufacturers report that, using current methods, it is not possible to get rid of all germs from powdered infant formula in the factory. Powdered infant formula can also be contaminated after the containers are opened. Very young infants, infants born prematurely, and infants whose bodies have trouble fighting off germs are at the highest risk.

To best protect your infant, here are some things you can do:

- **Breastfeed.** Breastfeeding helps prevent many kinds of sicknesses among infants. Almost no cases of *Cronobacter* sickness have been reported among infants who were being exclusively breastfed (meaning, the baby was fed only breast milk and no formula or other foods).

- **If your baby gets formula, choose infant formula sold in liquid form, especially when your baby is a newborn or very young.** Liquid formulations of infant formula are made to be sterile and should not contain *Cronobacter* germs.

- **If your baby gets powdered infant formula, follow these steps.**
  If your baby gets powdered infant formula, there are things you can do to protect your baby from sickness from many germs – not just *Cronobacter*. Good hygiene, mixing the formula with water hot enough to kill germs, and safely storing formula can prevent growth of *Cronobacter* and other germs. These are keys to keeping your baby safe and healthy.
    - **Clean up before preparation**
      - *Wash your hands* with soap and water
      - Clean bottles in a dishwasher with hot water and a heated drying cycle, or scrub bottles in hot, soapy water and then sterilize them
      - Clean work surfaces, such as countertops and sinks
    - **Prepare safely**
      - Keep powdered formula lids and scoops clean (be careful about what they touch)
      - Close containers of infant formula or bottled water as soon as possible
      - Use hot water (158 degrees F/70 degrees C and above) to make formula
      - Carefully shake, rather than stir, formula in the bottle
      - Cool formula to ensure it is not too hot before feeding your baby by running the prepared, capped bottle under cool water or placing it into an ice bath, taking care to keep the cooling water from getting into the bottle or on the nipple
• Before feeding the baby, test the temperature by shaking a few drops on your wrist

  o **Use up quickly or store safely**
    • Use formula within 2 hours of preparation. If the baby does not finish the entire bottle of formula, throw away the unused formula.
    • If you do not plan to use the prepared formula right away, refrigerate it immediately and use it within 24 hours. Refrigeration slows the growth of germs and increases safety.
    • When in doubt, throw it out. If you can't remember how long you have kept formula in the refrigerator, it is safer to throw it out than to feed it to your baby.

  • **Practice proper hygiene**
    • Wash your hands carefully with soap and water, especially after using the toilet or changing diapers. Always wash your hands:
      • before preparing and feeding bottles or foods to your infant
      • before touching your infant's mouth, and
      • before touching pacifiers or other things that go into your infant's mouth.
    • If soap and water aren't available, use an alcohol-based hand sanitizer. These alcohol-based products can quickly reduce the number of germs on hands in some situations, but they are not a substitute for washing with soap and water.
    • It is also important to keep all objects that enter infants' mouths (such as pacifiers and teethers) clean.