

Information for Parents or Guardians of Infants Between the Ages of One and Six-Months, Regarding Colonization and/or Infection with *Clostridium difficile*

There is a culture of *Clostridium difficile* in the stool of a one-month to six-month old baby. How significant is this?

Approximately a quarter to a third of all infants between one- and six-months of age are colonized by *Clostridium difficile* (C.diff). It is important to remember that, although colonization, (the growth of the organism in the GI tract), is common, disease caused by C.diff (mild to severe diarrhea) is not.

Does this mean there is nothing to worry about?

Pediatric C.diff-related hospitalizations are increasing, but most are reported in children older than one-year of age and most are related to previous antibiotic use. That does not mean that discovery of C.diff in an infant is meaningless. Perinatal infants, infants one-month of age or younger, are usually not at risk for development of *Clostridium difficile* infection (CDI) related symptoms.

The most susceptible children are between three and 18-years of age, but children one-month to two-years of age lie somewhere between the previous two age groups when considering risk of disease.

If my child has no symptoms of disease, and no diarrhea, should I have the child screened for C.diff?

No. Routine testing of children younger than one-year of age is not recommended. Why? Because asymptomatic colonization is fairly common in children younger than one-year of age.

If my infant has diarrhea, and if cultures have shown growth of C.diff, does this mean that C.diff is the definite cause of the diarrhea?

No. Several studies have shown that viruses, most notably noroviruses and rotaviruses (also calciviruses and others) can exist in the child's intestines concurrently. Often cultures of C.diff are incidental findings and play no role in pathogenesis; however, this is difficult to determine. Alternative etiologies should always be considered in patients younger than one-year of age.

In adults and children older than one-year of age, presence of C.diff toxins are used to confirm C.diff as a causative agent.

However, in children younger than one-year of age, detection of C.diff toxins do not confirm causality. Many researchers suggest that children in the younger than one-year age group lack receptors for these toxins.

Nevertheless, pediatricians usually follow an algorithm to determine whether C.diff should be treated with appropriate drugs.

Is the incidence of C diff infection increasing in the one-month to six-month of age group?

The answer to this question is complicated. Some researchers suggest that increases in pathogenic strains in both hospital and community acquired varieties have led to a corresponding increase in hospitalizations in very early age groups.

Nevertheless, co-infectious with various viruses; associations with certain risks (e.g. antibiotic use, use of medications that increase stomach pH [proton pump inhibitors]; repeated enemas; use of diapers; invasive procedures in hospital settings; underlying intestinal diseases; GI tract surgery; kidney problems; malignancies; and impaired immunity); and longer durations of exposure in healthcare facilities are thought to play a role in colonization. Formula-fed infants also tend to have higher rates of colonization than breast-fed infants. Many researchers have stated that no increase in disease from C.diff in the very young has occurred.

What is the real risk of severe disease from C.diff in an infant between one-month and six-months of age?

Although development of severe disease is not impossible, most incidents of severe disease related to C.diff have been in children older than one-year of age. One study concluded that most children in the one- to six-month age group experienced a fairly mild illness (lower morbidity and mortality than in older age groups).

How will the presence of C.diff in the intestinal tract affect my child in the future?

Any effects on health in later life, if there are any, have yet to be determined. It should be noted that higher prevalence of C.diff colonization in the very young, usually disappears by the time children reach three-years of age.

Did I cause my child to be colonized or infected with C.diff?

Environmental contamination, rather than direct transmission from the mother, is thought to be the primary source.