

What is SCID?

Severe combined immunodeficiency (SCID) is a genetically-determined condition that results in lack of cellular and humoral immunity. It is estimated that there is one new case per 50,000 to 100,000 live births. Infants with SCID are highly susceptible to infections and may not be diagnosed until these infections prompt the pediatrician to examine their immune system, usually after 4 months of age.

Thus, most SCID infants may have already received one to two doses of the live rotavirus vaccine before the diagnosis is made.

How is SCID diagnosed?

Without newborn screening, the diagnosis of SCID is usually based on history of infections, tests on blood lymphocytes and gene sequence analysis. In only about 20% of cases is a family history of SCID available.

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www.primaryimmune.org/you_can_help/idf_scid_initiative.htm



SCID, Angels for Life Foundation

www.scidangelsforlife.com



For additional information and references please contact IDF

40 West Chesapeake Avenue, Suite 308

Towson, MD 21204

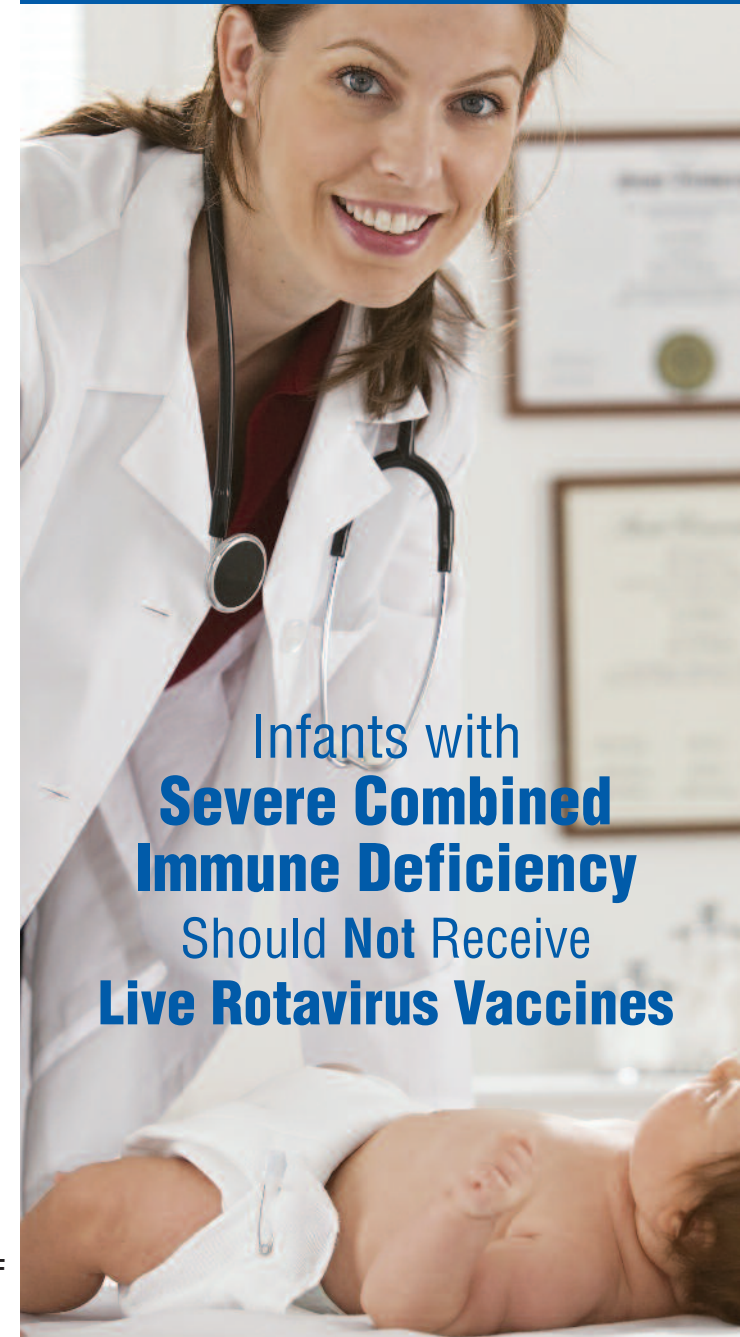
800-296-4433

410-321-6647

410-321-9165 (Fax)

www.primaryimmune.org • idf@primaryimmune.org

Informative Brochure for Providers



**Infants with
Severe Combined
Immune Deficiency
Should Not Receive
Live Rotavirus Vaccines**



Why and When are Rotavirus Vaccines given?

Rotavirus is a pathogen that usually infects children 6 to 24 months of age. It can cause gastroenteritis with severe diarrhea and dehydration that may lead to hospitalization and even fatality. Immunization with rotavirus vaccine has been proven to reduce disease severity and mortality from rotavirus gastroenteritis.

The Advisory Committee on Immunization Practices (ACIP) from the Centers for Disease Control and Prevention (CDC) recommends the administration of rotavirus vaccines (2-dose Rotarix® or 3-dose RotatTeq®), starting with the first dose at age 2 months. Rotavirus vaccines are to be given to all infants **EXCEPT** those with the following conditions:

- 1) Previous severe allergic reaction to the vaccine or its components.
- 2) Infants with history of intussusception
- 3) Infants with ongoing gastroenteritis
- 4) **Severe Combined Immunodeficiency (SCID)**

Why are Rotavirus Vaccines contraindicated in Severe Combined Immunodeficiency (SCID)?

Rotavirus vaccines are live attenuated rotavirus strains. Infants who are immunocompromised because of SCID may experience severe gastroenteritis caused by rotavirus vaccines. MMR, varicella, and FluMist vaccines are other common live viral vaccines that should not be given to children with severe defects in T cell function.

What should a provider do before administering the Rotavirus Vaccine?

- 1) Review contraindications (e.g. allergies, acute diarrhea) and history of infections.
- 2) Review family history for suspected immunodeficiency.
- 3) When available, check the number and percentage of lymphocytes in a CBC, because most SCID patients present with significant lymphopenia (ALC <2,500 cells/mm³).
- 4) If the CBC indicates lymphopenia, consider withholding the vaccine pending an immunologic investigation.

Providers should follow up all infants receiving rotavirus vaccines for persistent diarrhea and should consult a clinical immunologist if necessary. Even if SCID newborn screening is adopted, some infants with non-lymphocytopenic immunodeficiencies may experience prolonged vaccine-strain rotaviral diarrhea.

Reports of five cases of prolonged and severe gastroenteritis caused by rotavirus vaccines in undiagnosed SCID infants were published between September 2009 and January 2010. Four additional cases have been reported to the Vaccine Adverse Event Reporting System (VAERS).

Rotavirus vaccine infection was confirmed in all patients by molecular methods. Based on these reports, the CDC included SCID in the list of contraindications for the administration of the rotavirus vaccines in June 2010.



Recently, SCID newborn screening has been demonstrated to be feasible using dried blood spot Guthrie cards. The U.S. Department of Health and Human Services endorsed the addition of SCID to the uniform newborn screening panel in May 2010. Many states are currently evaluating whether to offer this test, which would keep an otherwise beneficial public health measure, rotavirus immunization, from causing harm to infants with SCID.