

reduces the risk of pneumococcal infection in children with SCD younger than 5 years old and is associated with minimal adverse reactions. Supporting the same conclusion that there is strong evidence that daily oral penicillin prophylaxis greatly reduces the risk of pneumococcal infection in children with SCA younger than 3 years old was reported in a systematic review ([Gwaram and Gwaram, 2014](#)).

- Researchers combined the clinical experiences of three sickle cell programs in the eastern United States in an attempt to determine the age and disease-specific risk of *Streptococcus pneumoniae* bacteremia and meningitis in children with SCD at a time when penicillin prophylaxis was routine. Forty-seven pneumococcal infections (44 bacteremia; 3 meningitis) among 40 patients with SCD were observed. Most children in whom infections developed were taking prophylactic penicillin and received Pneumovax at 24 months old. The observed severe pneumococcal infection rate in HgbSS children younger than 5 years old was less than that reported before penicillin prophylaxis in this specific population ([Hord, Byrd, Stowe, et al, 2002](#)).
- Administration of oral prophylactic penicillin was compared with the 14-valent pneumococcal vaccine in preventing pneumococcal infection in 242 children between the ages of 6 months and 3 years with HgbSS. In the first 5 years of the trial, there were 11 pneumococcal infections in the pneumococcal vaccine group and higher infection rates in those given the vaccine before 1 year of age. No pneumococcal isolates were found in the group receiving penicillin, although four pneumococcal isolates were found in this group within 1 year of stopping the penicillin prophylaxis at 3 years old. This study supported the use of penicillin prophylaxis to prevent pneumococcal infection in children younger than 3 years old ([John, Ramlal, Jackson, et al, 1984](#)).
- In a multicenter, randomized, double-blind, placebo-controlled clinical trial, 105 children received penicillin twice daily; a control group of 110 children received a placebo twice daily. The trial was terminated 8 months early when an 84% reduction in the incidence of pneumococcal infections was observed in the group treated with penicillin compared with the placebo group. There