Studies estimate that between 2 and 5% of all people with MS develop first symptoms before age 18. Diagnosis may be challenging, as symptoms are often attributed to other, more common childhood disorders (hindawi.com/journals/ad/2013/673947/abs); however, improved definitions for pediatric demyelinating diseases have led to increased recognition of MS in young patients (msj.sagepub.com/content/early/2013/04/08/1352458513484547.abstract).

The Network of Pediatric MS Centers is recruiting children and teens with MS within the first four years of disease onset for an NIH-funded study on genetic and environmental risk factors of MS (16 sites). Contact janace.hart@ucsf.edu or call 415-514-2476.

**Long-term outcomes and disease course**

Two studies (Gorman et al., 2009 ncbi.nlm.nih.gov/pubmed/19139299 and Carbonell et al., 2013 ncbi.nlm.nih.gov/pubmed/24065582) found a significantly higher relapse rate in pediatric compared to adult patients, and while there were study limitations, they suggest that pediatric onset may represent a more inflammatory disease course.

A recent study suggests that obesity may be associated with risk of pediatric MS in girls (ncbi.nlm.nih.gov/pubmed/23365063?dopt=Abstract) but not boys.

**Cognitive and psychiatric features**

Approximately 1/3 of children and adolescents with MS experience some cognitive difficulty (Amato, 2008 ncbi.nlm.nih.gov/m/pubmed/18474844/; Amato, 2010 neurology.org/content/75/13/1134; Till, 2011 ncbi.nlm.nih.gov/pubmed/21534686; Julian, 2013 jcn.sagepub.com/content/28/1/102.abstract). Studies identified the following affected areas: verbal memory, complex attention, verbal fluency, receptive language, visuo-motor integration, fine motor coordination and information processing speed.

Other studies have noted anxiety, attention deficit disorder and mood disorders, and found these children to be at increased risk for cognitive deficits (ncbi.nlm.nih.gov/pubmed/24072721). Children with MS can experience challenges in school and everyday activities (neurology.org/content/75/13/1134).

**Treatment**

Studies have shown that the self-injectable DMTs are safe and well tolerated in children (ncbi.nlm.nih.gov/pubmed/21439455). Research also suggests that natalizumab — typically reserved for children who do not respond to the injectable DMTs — is safe in this population (msj.sagepub.com/content/early/2013/02/07/1352458512471878). There are no current data available on safety or tolerability of the oral DMTs in the pediatric population.