COFFIN-SIRIS SYNDROME

CSS Fast Facts and FAQs

What is Coffin-Siris Syndrome?

Coffin-Siris Syndrome (CSS; fifth digit syndrome) was first reported in 1970 by Drs. Coffin and Siris to describe individuals with a shortened or underdeveloped fifth digit or fifth digit nail, along with developmental and learning differences, and a variety of organ-system issues. For many years, the diagnosis was made solely on clinical features; in 2013, the first genes associated with CSS were discovered. As more individuals with CSS are being diagnosed, the clinical picture has broadened; we are finding that not all individuals have the classic fifth digit finding, and that the extent of learning, developmental, and growth differences vary among children. Other terms that have been proposed for the syndrome include 'BAFopathies' and 'SWI-SNF related disorders.'

What causes CSS?

Genes that cause CSS have been linked to the BAF molecular pathway, which is responsible in part for the 'packaging' of genetic information in our cells. Specific genes that have been shown to cause CSS include *ARID1B, ARID1A, ARID2, SMARCA4, SMARCE1, SMARCB1,* and *SOX11*. Recently, changes in the *DPF2* have also been reported in a 'Coffin-Siris-like' syndrome. It is likely that further genes may be linked to CSS as researchers discover more about our genes.

How common is CSS?

The true prevalence of CSS, as with many genetic conditions, is unknown. Although there are approximately 300 individuals reported in the literature, there are likely many more. As genetic testing technology continues to expand, we will certainly be able to diagnose more children with the condition.

What is ARID1B-related disorder? Is it the same as CSS?

ARID1B-related disorder has been described as slightly different from CSS, as some individuals with changes in the *ARID1B* gene are only affected with learning or developmental differences, without significant medical issues. Clinicians are still divided as to what is properly termed 'CSS' vs. 'ARID1B related disorder', but this does not change the underlying cause or how we care for children with either.

Can CSS be passed down?

Theoretically, yes. There have been only a few reports of individuals with CSS passing down CSS to their children. Oftentimes if a child is found to have a change in one of the genes that cause CSS, his or her parents may be tested. It is possible that a parent may have a change, or a variant, in one of the CSS genes, but if the parent is healthy, that variant is likely not causing CSS in that parent. Children who have CSS have a 50% chance of passing down their altered CSS gene to any future children.

If I have one child with CSS, can additional children have CSS?

With any genetic syndrome, there is a low, but not zero, chance that additional children may be affected (due to a phenomenon known as gonadal mosaicism). However, if a healthy parent does not have the same gene change as their CSS child, the likelihood of having another child with CSS is <1%.

Did anything I do cause my child to have CSS?

No. We have no control over the genetic material that we either pass down to our children or that is created when they are conceived. CSS is not caused by anything that a mother or father did or didn't do while or before they became pregnant. There are no specific ultrasound findings for CSS prenatally.

Is there treatment for CSS?

Because CSS is caused by a genetic change that is present in all the cells of the body, there is no medicine or treatment that will 'undo' that change. However, children with CSS should be monitored for various health concerns and should be evaluated by several specialists depending on their unique medical needs. All children with CSS have some degree of learning or developmental differences, and benefit from personalized education plans as well as speech, occupational, ABA, or physical therapies. Two recent articles have outlined recommendations for children with CSS and ARID1B-related disorder; these can be found at coffinsiris.org or emailing the foundation.