

Agenesis of the Corpus Callosum (ACC)

Absent Corpus Callosum

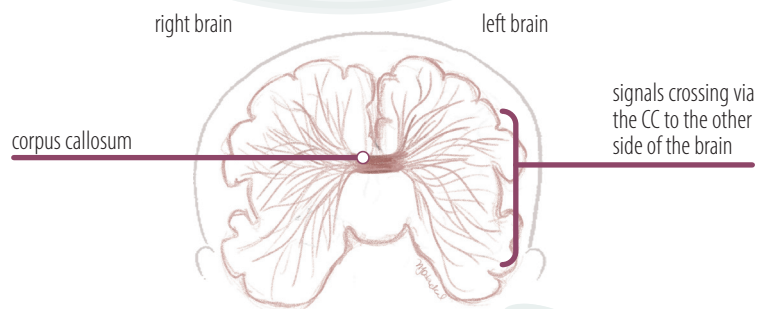
Dysgenesis of the Corpus Callosum

Key Notes: an ACC diagnosis...

- ... is not a life threatening condition
- ... does increase risk of not meeting several developmental milestones
- ... may not be an isolated finding
- ... will benefit from additional evaluation
- ... may require NICU admission and delay in discharge

What does my baby have?

The corpus callosum is a structure that connects neurons and coordinates communication between the two sides (hemispheres) of the brain. Agenesis of the Corpus Callosum (ACC) is when this structure is absent.

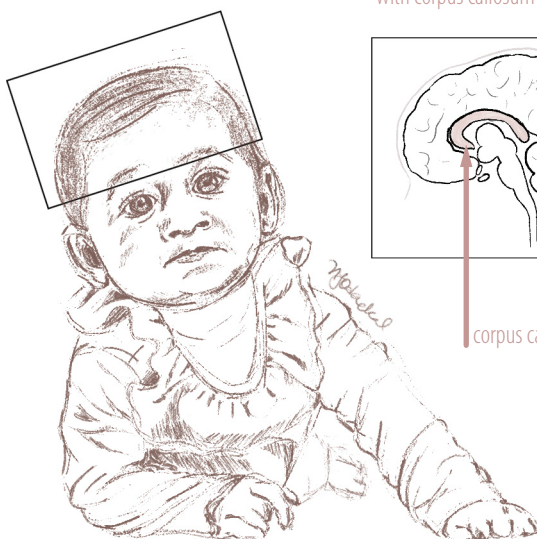


What does this mean for my baby and my family?

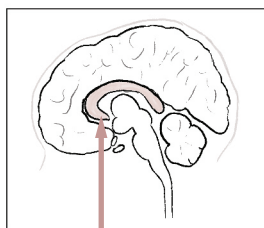
ACC is not a life threatening condition. There are other components of the brain maintaining physical connections between the two halves so ACC does not cause the brain to be atypically mobile.

The significance of the finding of ACC for your baby depends on whether or not there are additional findings, either in the brain (>50% of the time) or in other parts of the body (often involving the heart, reproductive, and urinary organs). ACC is an indicator to your medical team that we should be vigilant for other differences so we can be prepared to help your baby as much as possible. Additional imaging and blood studies help provide this information.

Babies that have ACC are at risk for intellectual and developmental delays, including delayed communication, motor and daily living skills. Isolated findings of ACC, when no other differences are found in the body, generally have better developmental outcomes than when additional differences are found. Overall it is very difficult to predict what the exact impact will be. There will be a team of medical specialists as your baby grows to help you and your family learn about your baby and the impact of ACC.

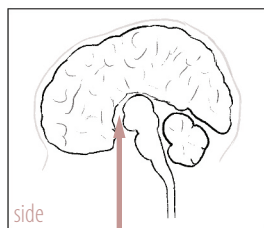


with corpus callosum

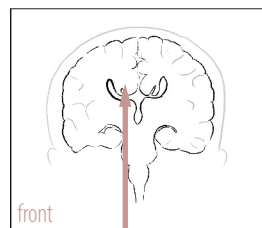


corpus callosum

without corpus callosum

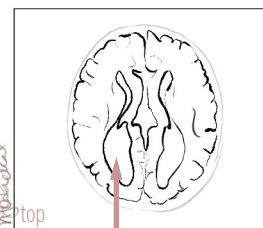


no corpus callosum



widening of space between ventricles

due to white matter tracts, 'probst bundles', being present here instead of crossing over across the CC



enlarged ventricles 'colpocephaly'

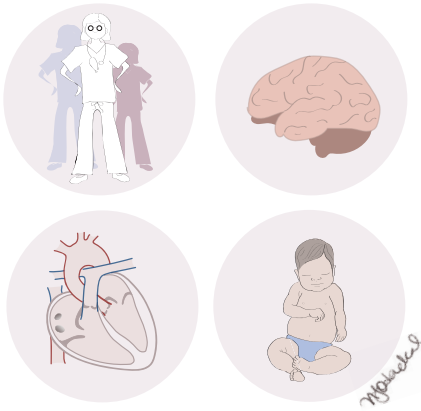
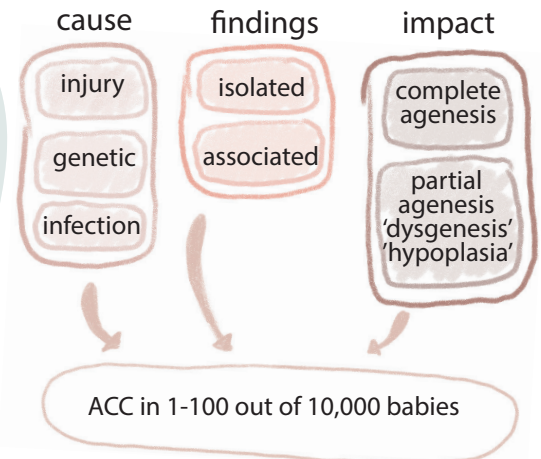
this is an associated finding, not a separate issue



Aggenesis of the Corpus Callosum (ACC)

Why did this happen?

ACC is actually the second most common brain malformation. Sometimes the tract only partially develops, and sometimes it doesn't develop at all and we don't always know why. The formation of the CC is complicated, and begins early on in pregnancy, and requires multiple cells in the brain to coordinate, move, and function. When this process is disrupted, an abnormality in the development of the CC can occur. This can possibly be due to an infection, a toxin, a metabolic condition, a genetic difference, or a condition impacting the mother.



How will this impact my delivery?

ACC is commonly associated with other differences in the brain and other organ systems. For this reason, your baby may benefit from additional testing before they are born including advanced ultrasound imaging of the heart and an MRI of the brain and body. Based on the concerns your medical team has based on studies so far, they may recommend that a specialized delivery team including neonatologists be present at your baby's delivery. This team can help monitor and support the transition of your baby from inside the birthing parent to the outside environment.

How will my baby be supported after birth?

After birth your baby may go to the well baby nursery. If there is concern that your baby would benefit from careful monitoring, immediate studies or involvement from specialized doctors, they may be transferred to the closest Neonatal Intensive Care Unit (NICU). Regardless, prior to discharge they should have some blood labs drawn to evaluate the function of their endocrine system, responsible for production of their hormones.



Haisley LD et al.
Pediatrics. 2025



Hahn JS et al.
NeoReviews. 2012

Rotmensch S et al.
AJOG. 2020



Tsai P et al.
Prenat Diag. 2023

What happens once we go home?

Because the corpus callosum is a structure in the middle of the brain, when its development is impacted we evaluate for other potential differences in the middle of the brain. In order to do this, once your baby is discharged from the hospital they will have a brain MRI to look carefully at the structures in the brain. The medical team will especially be looking at an impact on the nerves leading to the eyes (optic chiasm) and a gland that is responsible for many hormones (pituitary gland). Your baby will also follow up out patient with specialized medical doctors including the neurologist who may refer you to a hormone doctor (endocrinologist) and an eye doctor (ophthalmologist).

