



# Thumb Duplication

## What is thumb duplication?

Thumb duplication is a congenital condition (meaning that your baby was born with it). It means that your child has 2 thumbs on 1 hand. The thumbs may be separate or appear fused together. It is also called pre-axial polydactyly or bifid thumb. Usually only 1 hand is affected.

The term "thumb duplication" is not quite accurate as "split thumb". Rather than having 2 normal thumbs, your child probably has thumbs that are smaller and less developed than normal. The muscles, tendons, ligaments, blood vessels and nerves are often divided between each of the thumbs. It is not painful.

## What causes thumb duplication?

The exact cause is unknown. The hand initially forms early in the first trimester of pregnancy as a limb bud that looks like a paddle or mitten. As development continues, the limb bud is divided into fingers, and a split thumb occurs when this process of division continues a little longer than normal. Most of the time this excess division happens without any known genetic association. In some cases, there may be a hereditary predisposition, especially if there is a thumb with 3 bones instead of 2.

## How common is thumb duplication?

About 1 out of every 10,000 babies has the condition. More boys are born with it than girls. Caucasians, Asians and Native-Americans are more likely to be affected than African-Americans.

## How is thumb duplication diagnosed?

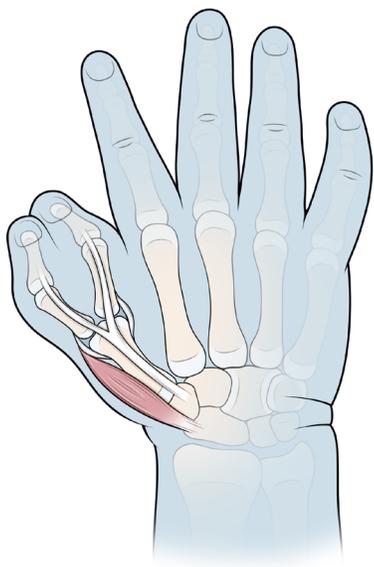
A split thumb can sometimes be seen by ultrasound prenatally, and is visible at birth. Your baby will have X-rays at some point to see the structure of your baby's thumbs and to decide on treatment.

## How is thumb duplication treated?

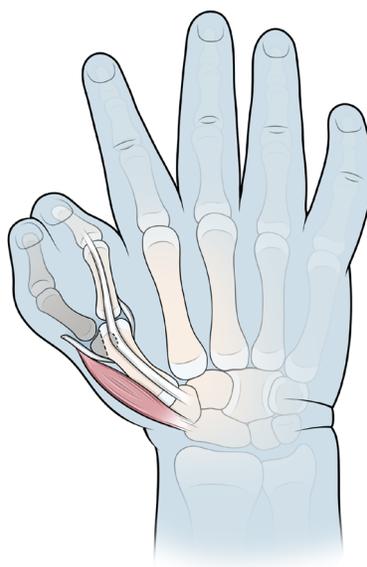
Thumb duplication is treated with surgery to create a single, functioning thumb. This will probably happen when your child is about 1-2 years old. Surgery can be complex. Just removing the extra thumb is not usually enough. Each of the split thumbs has elements that need to be combined to recreate 1 fully working thumb.

The procedure usually involves removing most of one thumb and remodeling the remaining thumb, with special attention to its soft tissues, tendons, joints, ligaments and fingernails. Even after treatment, the reconstructed thumb may be smaller and work a little differently than a normal thumb.

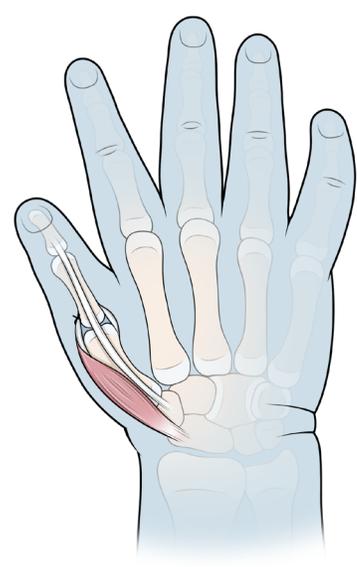
After surgery, a cast is usually placed for 4 weeks. Your child's doctor may recommend occupational or physical therapy to help with scarring and improve movement once the cast comes off. Your child's team will work with you to teach you any necessary home exercises. Your child may need to wear a cast or splint. A small percentage of children need more operations later in life.



Anatomical structures are divided between two thumbs.



Duplicate structures are removed. Thumb joint is remodeled.



A single, functioning thumb joint is created.

