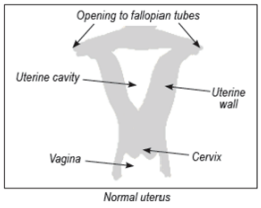
Reproductive Facts

Patient fact sheet developed by the American Society for Reproductive Medicine

Abnormalities of the Female Reproductive Tract (Müllerian Anomalies)

What are the Müllerian ducts?

Like other organs in the body, the uterus and fallopian tubes take shape while a fetus is still inside the uterus. These reproductive organs develop from two ducts known as the Müllerian ducts.



Normal uterus

During normal development, these ducts come together, fuse, and the intervening tissue wall disappears. When this happens, a single uterus with an open cavity and two fallopian tubes are formed. Sometimes, however, the uterus and fallopian tubes may not form as they should. These malformations are called Müllerian anomalies. Müllerian anomalies may make it difficult or impossible to become pregnant.

What types of müllerian anomalies are there?

There are an indefinite number of anomalies in development, but the most common types are:

- Müllerian agenesis, which is a failure to form the uterus and fallopian tubes
- Disorders of fusion, which occur when the müllerian ducts fail to come together correctly

Sometimes, kidney problems may be present in women with müllerian abnormalities, mainly because the kidneys develop next to the müllerian system.

What is Müllerian agenesis?

Müllerian agenesis (sometimes called Mayer-Rokitansky-Kuster Hauser [MRKH] syndrome) happens when the uterus, cervix (opening of the uterus), and upper vagina don't develop correctly or at all. Instead, there is a small vaginal opening or dimple.

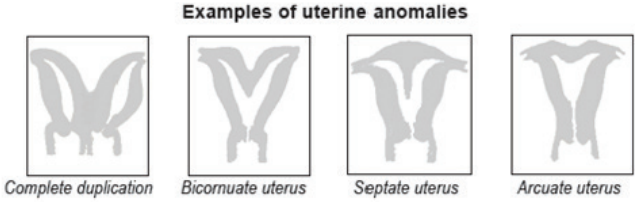
An individual with MRKH has normal ovaries and will have normal development of breasts, clitoris (part of the vulva), and vulva (external genitalia). The cause is often unknown, but it occurs early in development.

An individual with MRKH may not become aware until they are older. The main symptoms are the absence of periods and/or pain when attempting sexual intercourse. An individual with MRKH can sometimes have surgery or use dilators to enlarge the vagina. Also, since an individual with MRKH has ovaries that produce eggs, having biologically related children is possible, but will require use of vitro fertilization (IVF) and a gestational carrier or uterine transplant.

What types of Müllerian duct fusion disorders are there?

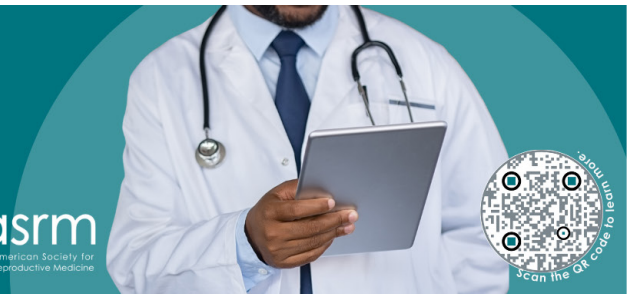
Some simple examples pictured below include:

- A complete duplication of the uterus. In this situation, there are two uteri, cervices, and vaginas.
- A bicornuate uterus, in which two uteri share a single cervix and vagina.
- A septate uterus. In this situation, there is typically a fibrous band of tissue going through the uterus.
- An arcuate uterus, which means there is a mild indentation of the inner top wall of the uterus.



Can Müllerian anomalies be corrected with surgery?

It is important to note there are many variations of mullerian anomalies, and not all require surgical correction. You should speak with your doctor about



what is right for your situation. For instance, some individuals may have painful periods relating to their anatomical difference, which may improve with surgery.

How do Müllerian anomalies impact an individual's ability to get pregnant?

It depends on the anomaly. While those with Mullerian agenesis will require a gestational carrier or uterine transplant to carry a pregnancy, many individuals with fusion disorders can become pregnant and carry a pregnancy without complications. Due to the shape of the uterus, however, some individuals with fusion disorders may be at higher risk for pregnancy complications, like miscarriages, preterm births, and breech positions of the baby. Difficulties with pregnancy depend on the specific fusion disorder present. The best way to diagnose a fusion disorder is with 3D ultrasound, magnetic resonance imaging (MRI), or a surgical procedure.

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