APC gene: What You Need to Know

What does it mean to carry an APC gene mutation?
Mutations in the APC gene cause the following cancer predisposition conditions:
- Familial Adenomatous Polyposis (FAP) syndrome
- Attenuated familial adenomatous polyposis (AFAP) syndrome
- Gardner syndrome
- Turcot syndrome

What is my risk for cancer if I have an APC gene mutation?
If you have an APC gene mutation, you have a greater risk of developing gastrointestinal polyps (non-cancerous growths), as well as certain types of cancer.

What can you tell me about Familial Adenomatous Polyposis (FAP) Syndrome?
- All individuals with FAP have many polyps and an increased risk of colon cancer.
- A person with FAP typically has hundreds to thousands of polyps in the large intestine that usually develop in childhood.
- There is a nearly 100% chance of developing colon cancer by age 50 without treatment. The average age of diagnosis is around 40 years old. It is important to note that these risks are based on individuals who did not have regular screening and/or other treatments such as preventative surgery. There is data that suggests that people with an APC mutation can significantly decrease their risk of developing cancer by careful medical and surgical follow-up.
- Other features of FAP that can develop include: polyps of the stomach, polyps of the small intestine, bony growths (typically on the jaw or skull), dental problems, unusual pigment in the eye, and soft tissue tumors.
- Some other cancers that may occur in FAP include cancer of the thyroid, liver, pancreas, adrenal glands and central nervous system.
- In addition to classic FAP, there are three different kinds of FAP: Attenuated familial adenomatous polyposis, Gardner Syndrome and Turcot syndrome.

What is the difference between Familial Adenomatous Polyposis (FAP) syndrome, Attenuated familial adenomatous polyposis (AFAP) syndrome, Gardner syndrome and Turcot syndrome?

Attenuated Familial Adenomatous Polyposis (AFAP) Syndrome: Individuals have fewer polyps and a later age of getting colon cancer. The average age is about 50-55 years old. Although the other features of FAP may be present, the eye problems and soft tissue tumors are rare.

Gardner syndrome: In addition to the features associated with FAP, individuals are also at risk for non-cancerous bony growths and soft tissue tumors.

Turcot syndrome: Individuals have features of FAP, plus central nervous system cancers. Mutations in genes other than APC can also cause Turcot syndrome.

What is the chance that I will pass an APC gene mutation to my children?
Both men and women with an APC gene mutation have a 50% chance of passing it on to each of their children. Children with APC gene mutations are at risk for developing intestinal polyps but rarely develop cancer. However, APC gene mutations can rarely (in less than 2% of cases) cause childhood tumors of the liver.