Peutz-Jeghers syndrome

Peutz-Jeghers syndrome is characterized by the development of noncancerous growths called hamartomatous polyps in the gastrointestinal tract (particularly the stomach and intestines) and a greatly increased risk of developing certain types of cancer.

Children with Peutz-Jeghers syndrome often develop small, dark-colored spots on the lips, around and inside the mouth, near the eyes and nostrils, and around the anus. These spots may also occur on the hands and feet. They appear during childhood and often fade as the person gets older. In addition, most people with Peutz-Jeghers syndrome develop multiple polyps in the stomach and intestines during childhood or adolescence. Polyps can cause health problems such as recurrent bowel obstructions, chronic bleeding, and abdominal pain.

People with Peutz-Jeghers syndrome have a high risk of developing cancer during their lifetimes. Cancers of the gastrointestinal tract, pancreas, cervix, ovary, and breast are among the most commonly reported tumors.

Frequency

The prevalence of this condition is uncertain; estimates range from 1 in 25,000 to 300,000 individuals.

Causes

Mutations in the \textit{STK11} gene (also known as \textit{LKB1}) cause most cases of Peutz-Jeghers syndrome. The \textit{STK11} gene is a tumor suppressor gene, which means that it normally prevents cells from growing and dividing too rapidly or in an uncontrolled way. A mutation in this gene alters the structure or function of the STK11 protein, disrupting its ability to restrain cell division. The resulting uncontrolled cell growth leads to the formation of noncancerous polyps and cancerous tumors in people with Peutz-Jeghers syndrome.

A small percentage of people with Peutz-Jeghers syndrome do not have mutations in the \textit{STK11} gene. In these cases, the cause of the disorder is unknown.

Inheritance Pattern

Peutz-Jeghers syndrome is inherited in an autosomal dominant pattern, which means one copy of the altered gene in each cell is sufficient to increase the risk of developing noncancerous polyps and cancerous tumors. In about half of all cases, an affected person inherits a mutation in the \textit{STK11} gene from one affected parent. The remaining cases occur in people with no history of Peutz-Jeghers syndrome in their family. These cases appear to result from new (de novo) mutations in the \textit{STK11} gene.
Other Names for This Condition

- intestinal polyposis-cutaneous pigmentation syndrome
- lentiginosis, perioral
- periorificial lentiginosis syndrome
- Peutz-Jeghers polyposis
- PJS
- polyposis, hamartomatous intestinal
- polyposis, intestinal, II
- polyps-and-spots syndrome

Diagnosis & Management

Genetic Testing Information

- What is genetic testing?
  /primer/testing/genetictesting
- Genetic Testing Registry: Peutz-Jeghers syndrome

Research Studies from ClinicalTrials.gov

- ClinicalTrials.gov
  https://clinicaltrials.gov/ct2/results?cond=%22peutz-jeghers+syndrome%22

Other Diagnosis and Management Resources

- GeneReview: Peutz-Jeghers Syndrome
  https://www.ncbi.nlm.nih.gov/books/NBK1266
- MedlinePlus Encyclopedia: Peutz-Jeghers Syndrome
  https://medlineplus.gov/ency/article/000244.htm

Additional Information & Resources

Health Information from MedlinePlus

- Encyclopedia: Peutz-Jeghers Syndrome
  https://medlineplus.gov/ency/article/000244.htm
- Health Topic: Cancer
  https://medlineplus.gov/cancer.html
- Health Topic: Colonic Polyps
  https://medlineplus.gov/colonicpolyps.html
Genetic and Rare Diseases Information Center

- Peutz-Jeghers syndrome

Additional NIH Resources

- National Cancer Institute: Genetics of Breast and Ovarian Cancer (PDQ)

Educational Resources

  https://www.ncbi.nlm.nih.gov/books/NBK1826/
- MalaCards: peutz-jeghers syndrome
  https://www.malacards.org/card/peutz_jeghers_syndrome
- Merck Manual Consumer Version: Polyps of the Colon and Rectum
- Orphanet: Peutz-Jeghers syndrome
  https://www.orpha.net/consor/cgi-bin/OC_Exp.php?Lng=EN&Expert=2869
- Stanford Cancer Center
  https://stanfordhealthcare.org/medical-conditions/cancer/peutz-jeghers-syndrome.html

Patient Support and Advocacy Resources

- American Cancer Society
  https://www.cancer.org/
- National Organization for Rare Disorders
  https://rarediseases.org/rare-diseases/peutz-jeghers-syndrome/

Clinical Information from GeneReviews

- Peutz-Jeghers Syndrome
  https://www.ncbi.nlm.nih.gov/books/NBK1266

Scientific Articles on PubMed

- PubMed
  https://www.ncbi.nlm.nih.gov/pubmed?term=%28Peutz-Jeghers+Syndrome%5BMAJR%5D%29+AND+%28Peutz-Jeghers+syndrome%5BTIAB%5D%29+AND+english%5Bla%5D+AND+human%5Bmh%5D+AND+%22last+720+days%22%5Bdp%5D
Catalog of Genes and Diseases from OMIM

- PEUTZ-JEGHERS SYNDROME
  http://omim.org/entry/175200

Sources for This Summary

  Citation on PubMed: https://www.ncbi.nlm.nih.gov/pubmed/20581245

  Citation on PubMed: https://www.ncbi.nlm.nih.gov/pubmed/14976486

  Citation on PubMed: https://www.ncbi.nlm.nih.gov/pubmed/16707622

  Citation on PubMed: https://www.ncbi.nlm.nih.gov/pubmed/15200509

  Citation on PubMed: https://www.ncbi.nlm.nih.gov/pubmed/21503746

  Citation on PubMed: https://www.ncbi.nlm.nih.gov/pubmed/20301443

  Citation on PubMed: https://www.ncbi.nlm.nih.gov/pubmed/10710046

  Citation on PubMed: https://www.ncbi.nlm.nih.gov/pubmed/15900295

  Citation on PubMed: https://www.ncbi.nlm.nih.gov/pubmed/20051941

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