1. What is Peutz-Jeghers Syndrome?

Peutz-Jeghers syndrome (PJS) is a rare genetic condition characterized by dark colored spots (mucocutaneous pigmentation) inside the mouth, especially on the lips, around the mouth, on the skin and mucosa as a visible difference; polyps developing in the digestive system; and an increased risk of cancer in various organs. The prevalence of the disease is estimated to be between 1:25,000 and 1:280,000

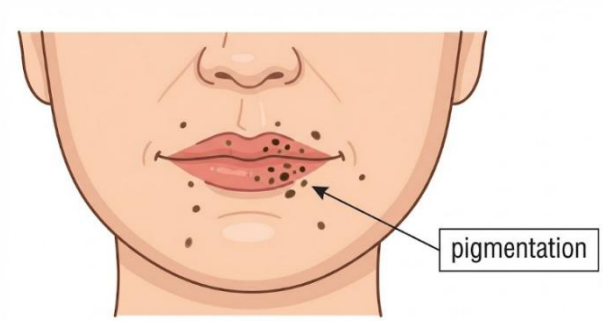
2. What are the Symptoms of PJS?

Skin Findings (Pigmentation)

• • In childhood (usually before the age of 5), dark blue/brown spots (macules) form on the lips, around the mouth, nose, eyes, and fingers.

• These spots may fade in adolescence and adulthood, but spots inside the mouth (buccal mucosa) are usually permanent.

• The spots usually appear before intestinal problems and are a critical clue for early diagnosis.



Stomach and Intestinal Polyps

• PJS-specific polyps (hamartomas) are most commonly seen in the small intestine. They can also be found in the stomach and large intestine.

• Important Risk: Polyps can grow and lead to bleeding, anemia, and a dangerous obstruction called intussusception (telescoping of the intestine).

• Intussusception risk rises to 44% at age 10 and up to 50% at age 20.

Risks

• Lifetime cancer risk is increased in individuals with PJS (overall risk by age 70 is reported as 83%).

• Risk Organs: Colon (large intestine), stomach, pancreas, breast, and ovaries.

• Ovarian (SCTAT) and cervical tumors in women; and testicular tumors (Sertoli cell) that can cause gynecomastia (breast enlargement) in men can be seen.

3. How is PJS Diagnosed?

PJS is diagnosed if any of the following situations are present:

1. Presence of two or more PJS-type polyps.

2. Observation of characteristic spots (pigmentation) and a family history of PJS

3. Presence of PJS-type polyps and a family history of PJS.

4. Presence of PJS-type polyps together with characteristic spots.

Definitive Diagnosis: Detection of the mutation in the STK11 gene via molecular genetic testing confirms the diagnosis.

4. Genetic Transmission: Is My Family At Risk?

Is My Family At Risk? The responsible gene in the vast majority of PJS cases is the STK11 gene. However, in some individuals clinically diagnosed with PJS, a mutation may not be found in this gene; this indicates that different genes or genetic changes that cannot be detected by current technology may play a role.

- PJS is an Autosomal Dominant disease. The presence of a single defective copy of the gene (STK11) is sufficient for the disease to occur. It can be seen in both men and women, regardless of gender. A mother or father with PJS has a 50% chance of passing this gene to each of their children.
- Sometimes it can appear for the first time in a child when no one in the family has it (de novo mutation). Although most people diagnosed with PJS have an affected parent, a significant portion (approximately 17-45%) are the first individuals in their family without a history of the disease.
- All siblings and children of a diagnosed individual must be screened.
- However, even if it seems like there is no disease in the family, parents may have very mild symptoms or parents may be "mosaic" (carrying the genetic change in only some of their cells). In this case, the risk for siblings may be higher than the population average.

5. Genetic Counseling and Family Planning

- If the genetic mutation in the family is known, prenatal tests or preimplantation (during IVF) genetic diagnosis methods can be applied.

- Genetic counseling is the optimal time to evaluate risks and options before pregnancy.

6 Cancer Risk and Monitoring (Why is it Important?)

In individuals with PJS, the lifetime risk of developing cancer in certain organs is higher than in the general population. Early diagnosis saves lives.

Organ	**Tracking Method**	**Relevant Unit (Child/Adult)**	**When should we start?**
intestines	Colonoscopy & Upper Endoscopy	Pediatric Gastroenterology / Gastroenterology	Ages 8 (A break until 18 is allowed if there are no issues)
Small intestine	Capsule Endoscopy or MR Enterography	Pediatric Gastroenterology / Gastroenterology	8 Years Old (every 1-3 years)
Breast	Clinical Examination & MRI/Mammography	Pediatric Surgery / General Surgery	25-30 Years Old (Every 6-12 Months)
Pancreas	Endoscopic Ultrasound or MRI	Pediatric Gastroenterology / Gastroenterology	Ages 30-35 (Once a year)
Female Reproduction	Gynecological Examination & Pap Smear	Gynecology and Obstetrics	18-20 Years Old (Once a year)
Male Reproduction	Testicular Examination (Monitoring hormonal changes)	Pediatric Surgery / Urology	10 Years Old (Once a year)

Treatment Approaches:

• **Polypectomy:** Removal of polyps larger than 1 cm is the standard method to prevent the risk of emergency surgery and cancer development.

• **Surgery:** Surgical intervention is performed in cases of obstruction or suspicion of cancer.

• Identification of at-risk family members (siblings, children) via genetic testing is of vital importance for taking early preventive measures.

This booklet is a general information resource prepared to increase the recognition of and raise awareness about Peutz-Jeghers Syndrome. However, it should not be forgotten that the information here does not substitute for professional medical advice, diagnosis, or treatment. PJS monitoring must be personalized according to your individual health status, family history, and genetic profile. The screening methods and intervals included in the booklet reflect general standards; your doctor may move these times forward or change them according to your clinical needs. Please be sure to consult your specialist physician for all decisions and follow-up processes regarding your health.

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KAYNAKÇA

McGarrity, T. J., Amos, C. I., ve Baker, M. J. (2021, 2 Eylül). *Peutz-Jeghers syndrome*. M. P. Adam, S. Bick, G. M. Mirzaa, vd. (Ed.), *GeneReviews* içinde. University of Washington, Seattle. https://www.ncbi.nlm.nih.gov/books/NBK1266/