About *CDKN2A* Gene Mutations

About Genes

Genes are in every cell in our bodies. Genes are made of DNA, which gives instructions to cells about how to grow and work together. We have two copies of each gene in each cell—one from our mother and one from our father. When genes work properly, they help stop cancer from developing.

The *CDKN2A* gene sends signals to cells that tell them to stop growing. When there is a change called a mutation in *CDKN2A*, the signal to stop growing will not be sent. Cells keep growing and dividing. This is how cancer forms.

If you have a mutation in the *CDKN2A* gene, your risk of getting melanoma and pancreatic cancers is higher than average.

CDKN2A Mutations and Cancer Risk

Melanoma

Melanoma is a serious type of skin cancer. About 2 in 100 people without the mutation get melanoma. Among people with a *CDKN2A* mutation, 30 to 70 people in 100 get melanoma during their lifetime.

It is hard to predict how many people with a *CDKN2A* mutation will get melanoma, because many other factors contribute to the risk:

- Other genetic factors
- Skin color
- Where a person lives
- History of sunburns

Pancreatic Cancer

Pancreatic cancer is rare. About 2 in 100 men and women without the mutation get this type of cancer in their lifetime. Among people with a *CDKN2A* mutation, 17 in 100 people get pancreatic cancer.

Recommendations

EVERYONE WITH THIS MUTATION

Follow these sun safety tips when you are outdoors to help reduce your risk of melanoma:

- Use SPF 30+ broad-spectrum sunscreen, and reapply it often.
- Avoid getting suntans or sunburns.
- Wear a wide-brimmed hat and sunglasses.
- Cover up with long pants and long-sleeve shirts.
- Stay in the shade when possible.

Starting at age 10:

- Monthly skin exams by a parent until the child is old enough to do self-exams. Tell your dermatologist about any new dark spots you find.
- Dermatologist skin exams every 6–12 months, including full-body photographs to compare with future exams.

Starting at age 50:

If there is a family history of pancreatic cancer, we recommend imaging tests every year. Tests should alternate between endoscopic ultrasound and MRI.

CHILDREN AND SIBLINGS

Children and siblings of people with a *CDKN2A* mutation have a 1 in 2 chance of also having the mutation. We recommend genetic testing and counseling for them at age 10 because of the risk for childhood melanoma.

FAMILY MEMBERS WHO TEST NEGATIVE

Family members without the *CDKN2A* mutation probably do not have a higher risk of getting cancer. The family history of cancer and other risk factors may raise their risk somewhat. Family members who do not have the mutation should follow screening and sun safety recommendations for the general public.

Do you have questions about your risk for cancer?
Our doctors and genetic counselors can help find the cancer screening plan you need.
Call Huntsman Cancer Institute's Family Cancer Assessment Clinic to learn more: 801-587-9555.

For more patient education information: Call 1-888-424-2100 toll free • Email cancerinfo@hci.utah.edu • Visit huntsmancancer.org
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