Genetic Counseling Service
75 Claremont Rd Suite 305
Bernardsville, NJ 07924

Dear Family Member,

A member of your family has been identified as having a genetic mutation in the ***VHL* gene**. Mutations in this gene are known to be associated with an increased risk for certain cancers. This means that other family members are at risk to carry this same gene mutation and hence at an increased risk for certain cancers. This letter has been written to summarize information regarding *VHL* mutations.

Individuals with a mutation in the VHL gene have a diagnosis of Von Hippel-Lindau syndrome (VHL), VHL is a highly variable hereditary tumor syndrome. The condition is characterized by the development of cysts and tumors throughout the body. Although most tumors are benign, individuals with VHL have an increased risk of several types of cancer, including clear-cell renal cell carcinoma (40-70% risk), pancreatic neuroendocrine tumors (5-17%risk), pheochromocytomas (10-20% risk), and endolymphatic sac tumors in the inner ear (10-16% of patients). A hallmark feature of VHL is the development of central nervous system (CNS) hemangioblastomas. Retinal hemangioblastomas are another common presenting feature of VHL, which may be asymptomatic or result in vision loss. Multiple pancreatic cysts typically develop with age and are present in older affected individuals; however, these lesions rarely impair pancreatic function. Multiple renal cysts are common in VHL.

Understanding risk is an important tool in prevention and management of cancer. It is important to note that some individuals with *VHL* mutations will never develop cancer over their lifetime. When one inherits an *VHL* mutation, he/she is not inheriting cancer; rather they are inheriting a predisposition to cancer.

When an individual has one copy of the *VHL* gene mutation, they have an increased risk for cancer as outlined above. Because everyone has two copies of the gene for *VHL,* this means that a parent who carries an *VHL* mutation has a 50% chance of passing the mutation onto each of their children. It also means that if a person carries such a mutation, their siblings have a 50% chance to carry the same mutation. Extended family members may also be at risk for having the same mutation. If a person does not carry the mutation, they cannot pass it onto their children. It should be noted that very rarely an individual may have two VHL mutations, one inherited from their mother, and one inherited from their father. If a person has two VHL mutations, they have a condition known as familial erythrocytosis type 2. This disorder is characterized by overproduction of red blood cells, which may cause such symptoms as headache, dizziness, nosebleeds, shortness of breath, and blood clots. Most individuals diagnosed with an VHL have an affected parent, around 20% of cases are a due to a *de novo* mutation, meaning resulting from new mutations in the *VHL* gene and occur in people with no history of the disorder in their family.

We strongly recommend that you and all persons in your family who are at risk for carrying the *VHL* gene mutation consider scheduling an appointment for cancer genetic counseling to discuss the benefits and limitations of genetic testing. To pursue cancer genetic testing, it is helpful if you have a copy of your family member's genetic testing report indicating that they have an *VHL* mutation.

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GeneScreen is available to discuss this information in more detail with you and coordinate appropriate testing. Please visit the following website to submit your request for genetic counseling: https://hipaa.jotform.com/200926739003048. You can also contact Genescreen directly at 908-766-2800 to schedule a remote consultation with a genetic counselor.

Sincerely,

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Senior Oncology Genetic Counselor
Genescreen

Jill Chisholm, APN
President
Genescreen