

Hereditary Diffuse Gastric Cancer

Hereditary diffuse gastric cancer is a relatively rare hereditary cancer predisposition syndrome. This condition is characterized by gastric cancer, breast cancer, and signet ring cell colon cancer. The estimated gastric cancer risk in men is 67% and 83% in woman by the age of 80, with an average age of diagnosis of 38 years. Women have as high as a 40% lifetime risk of developing lobular breast cancer over their lifetime. Signet ring cell colon cancer has been reported in patients with hereditary diffuse gastric cancer, but it is unknown how often this occurs.

Hereditary diffuse gastric cancer is due to mutations in the *CDH1* (E-cadherin) gene. Approximately 30-40% of patients will have a detectable mutation through gene sequencing and another 4% will have a deletion or large rearrangement within the gene. *CDH1* gene mutations can be inherited from, and passed on to, men as well as women. We all have two copies of the *CDH1* gene. One gene copy is inherited from the father and the other gene copy is inherited from the mother. Therefore, if a parent has a gene mutation in *CDH1*, each of his/her children has a 50% (1 in 2) chance of inheriting the gene mutation. Each child also has a 50% chance of inheriting the working copy of the gene, in which case his/her cancer risk would be no higher than that of the general population.