

DNA differences may influence risk of Hodgkin disease

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A new analysis has found that certain variations in genes that repair DNA can affect a person's risk of developing Hodgkin disease. Published in the April 1, 2009 issue of *CANCER*, a peer-reviewed journal of the American Cancer Society, the study indicates that differences in these genes should be further investigated to better understand individuals' susceptibility to this type of cancer.

Proteins that repair damage to DNA are important for maintaining cells' health, particularly for preventing the accumulation of [genetic damage](#) that could increase the chances of becoming cancerous. Researchers have found that, in the general population, there are variations in the genes that encode these DNA repair proteins. Research has also shown a link between reduced DNA repair and susceptibility to a variety of cancers, including breast, colon, and lung [cancer](#).

To determine the potential role of genetic variants—or polymorphisms—in DNA [repair genes](#) in the development of [Hodgkin disease](#), Dr. Randa El-Zein and colleagues at The University of Texas M.D. Anderson Cancer Center in Houston evaluated the relationship between polymorphisms in five DNA repair genes (XPC, XPD, XPG, XRCC1, and XRCC3) in a population of 200 Hodgkin disease patients and 220 healthy individuals.

These five genes are involved in different pathways that repair DNA by performing different modifications to damaged DNA. Changes in these genes can change the make-up and structure of the proteins that carry

out these repair processes and therefore could influence how well DNA repair is performed.

The researchers found that variations in DNA repair genes may modify the risk of HD especially when interactions between the pathways are considered. Depending on the variant or combination thereof, people could be, up to four times more likely to develop the disease.

The authors concluded that "these data suggest that [genetic polymorphisms](#) in DNA repair genes may modify the risk of Hodgkin disease especially when interactions between the pathways are considered." They added that genetic variants in the different DNA repair pathways should be further evaluated to better understand their role in Hodgkin disease susceptibility in individuals.

More information: "Genetic polymorphisms in DNA repair genes as modulators of Hodgkin disease risk." Randa El-Zein, Claudia M. Monroy, Carol J. Etzel, Andrea C. Cortes, Yun Xing, Amanda L. Collier, and Sara S. Strom. CANCER; Published Online: March 9, 2009 (DOI: 10.1002/cncr.24205); Print Issue Date: April 15, 2009.

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