



**Contact:** Jennifer Ryan  
CINJ  
732/235-9891  
[ryanje@umdnj.edu](mailto:ryanje@umdnj.edu)

Susan Preston  
UMDNJ  
973/972-7265  
[prestosj@umdnj.edu](mailto:prestosj@umdnj.edu)

**Researchers Identify Gene Variation That May Increase  
The Development of Cancers at an Earlier Age**  
*Study Published in November 24, 2004 Issue of Cell*

**New Brunswick, N.J., November 30, 2004** – A tiny variation in a gene involved in regulating tumor suppression could increase the development of cancer at an earlier age for some individuals, according to researchers at The Cancer Institute of New Jersey.

The study, conducted by Arnold Levine, Ph.D. and colleagues, appears in the November 24, 2004 issue of the journal *Cell*.

“The tumor suppressor p53 gene is mutated in minimally half of all cancers and variations in the p53 gene may affect an individual’s development of cancer at an earlier age,” said Dr. Levine, a resident member of The Cancer Institute of New Jersey and professor of pediatrics and biochemistry at the University of Medicine and Dentistry of New Jersey-Robert Wood Johnson Medical School and Professor in the School of Natural Science at the Institute for Advanced Study in Princeton, NJ. “The ability to predict the development of early onset cancers could mean the identification of a group that should be screened at an earlier age for cancers.”

This slight variation, which involves only one “letter” within the gene, is called a single nucleotide polymorphism, or SNP. If certain SNPs correspond to the likelihood of having a specific disease, the single-letter variations may play an instrumental role in the future of genomic medicine.

While looking for SNPs in genes that work with the p53 tumor suppressor, Dr. Levine and his colleagues discovered a relevant SNP in MDM2. MDM2 encodes a p53 regulator that keeps the tumor suppressor from doing its job.

Based on this finding, the researchers concluded that in individuals with the MDM2 SNP variation, tumor formation is accelerated and that tumors may occur even earlier in life in some hereditary types of cancer.

A copy of the article, entitled “A Single Nucleotide Polymorphism in the MDM2 Promoter Attenuates the p53 Tumor Suppressor Pathway and Accelerates Tumor Formation in Humans” is available upon request.

The Cancer Institute of New Jersey is the state's first and only National Cancer Institute-designated Comprehensive Cancer Center, and is dedicated to improving the prevention, detection, treatment and care of patients with cancer. CINJ's physician-scientists engage in translational research, transforming their laboratory discoveries into clinical practice-quite literally bringing research to life. CINJ's Partner and Affiliate Network is comprised of twenty partner and affiliate institutions throughout the state and provides a mechanism to rapidly disseminate important, valid discoveries into the community. The Cancer Institute of New Jersey is a center of excellence of UMDNJ-Robert Wood Johnson Medical School.

The University of Medicine and Dentistry of New Jersey comprises the state's only three medical schools, its only dental school, a graduate school of biomedical sciences, school of health related professions, school of nursing and a school of public health on campuses in Newark, Piscataway/New Brunswick, Scotch Plains, Camden and Stratford. UMDNJ also operates UMDNJ-University Hospital in Newark and University Behavioral HealthCare. It is affiliated with more than 200 health care and educational institutions throughout the state.

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