

# CANCER PREVENTION RESEARCH

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Ramzi G. Salloum, Kimberly A. Shoenbill, and Adam O. Goldstein  
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## RESEARCH BRIEFS

- 201** **Germline and Somatic Fumarate Hydratase Testing in Atypical Uterine Leiomyomata**  
Lindsay M. Kipnis, Katelyn M. Breen, Diane R. Koeller, Alison Schwartz Levine, Zelei Yang, Hyeji Jun, Nabihah Tayob, Samantha M. Stokes, Connor P. Hayes, Arezou A. Ghazani, Sarah J. Hill, and Huma Q. Rana  
Women diagnosed with *fumarate hydratase (FH)*-deficient uterine leiomyomata are at increased risk of renal cancer. This work suggests a more standardized pathology-genetic counseling referral pathway for these patients, and that research on underlying causes of *FH*-deficient uterine leiomyomata in the absence of germline *FH* pathogenic/likely pathogenic variants is needed.
- 209** **Triple Primary Cancers: An Analysis of Genetic and Environmental Factors**  
Nicholas A. Borja, Rachel Silva-Smith, Carmen Calfa, Daniel A. Sussman, and Mustafa Tekin  
In patients with three or more primary cancers, genetic predisposition explained a significant proportion of cases; however, treatment history, lifestyle habits, and other exposures appeared to play a less significant role. This highlights the value of early genetic screening and the need to develop more sensitive markers of cancer susceptibility.  
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## RESEARCH ARTICLES

- 217** **Examining the Association between Abstinence from Smoking and Healthcare Costs among Patients with Cancer**  
George Kypriotakis, Seokhun Kim, Maher Karam-Hage, Jason D. Robinson, Jennifer A. Minnix, Janice A. Blalock, Yong Cui, Diane Beneventi, Bumyang Kim, I.-Wen Pan, Ya-Chen Tina Shih, and Paul M. Cinciripini  
This study emphasizes the dual impact of smoking cessation programs in patients with cancer: quitting smoking and reducing healthcare costs. It highlights the importance of integrating cessation programs into cancer prevention strategies, ensuring both individual health benefits and broader, system-wide economic efficiencies.  
**See related Spotlight, p. 197**
- 227** **Combination of an Autoantibody Panel and Alpha-Fetoprotein for Early Detection of Hepatitis B Virus-Associated Hepatocellular Carcinoma**  
Yajing Shen, Jiajun Chen, Jinyu Wu, Tiandong Li, Chuncheng Yi, Keyan Wang, Peng Wang, Changqing Sun, and Hua Ye  
We developed a robust diagnostic panel for identifying patients with HBV-HCC from patients with CHB. This autoantibody panel provided superior diagnostic performance for HBV-HCC at an early stage and/or with negative AFP results. Our findings suggest that AFP and the autoantibody panel may be independent but complementary biomarkers for HBV-HCC detection.

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## ABOUT THE COVER

Women with germline pathogenic variants in the *fumarate hydratase (FH)* gene are at an increased risk of developing aggressive renal cell carcinomas, but many of these women are unaware of their cancer predisposition until an atypical uterine leiomyoma is diagnosed. The prevalence of germline pathogenic/likely pathogenic variants (PVs) in *FH* among atypical uterine leiomyomata cases is unknown. In this study starting on page 201, Kipnis and colleagues conducted a retrospective analysis on a large dataset of atypical uterine leiomyomata cases with germline *FH* testing results to help better define *FH* PV prevalence and to understand current patterns of genetic counseling and germline genetic testing after a pathology-based atypical uterine leiomyoma diagnosis. The cover image is adapted from the hematoxylin and eosin images shown in Figure 1, which demonstrate three different atypical uterine leiomyomas, one of which is *FH*-proficient, and two of which are or may be *FH*-deficient. The results of this study suggest that while all three patients would benefit from genetic counseling, there is a need for improvement in the pathology-genetic counseling referral pathway. Additionally, these results provide a more precise estimate of the frequency of germline *FH* PVs.

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