

## Are dietary, life style and socio-economic factors associated with the risk of mutations in colorectal cancer?

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**Background & Aim:** There are known factors having an etiological role in colorectal cancer, however few studies have addressed how and to what extent these factors affect the genetics and the disease processes. The precise relationship between these risk factors and specific genetic mutations that could alter signaling pathways involved in colorectal cancer is unknown. This study aimed to investigate any relationships between lifestyle, dietary habits and socio-economic factors and the risks of *KRAS* and *BRAF* mutations in colorectal cancer patients.

**Methods:** Patients with definitive diagnosis of colorectal cancer were included. The presence and type of the point mutations for *KRAS* exon 2 and *BRAF* exon 15 were determined by Sanger sequencing method. Logistic regression was employed to investigate the association of specific mutations involved in colorectal cancer and life style factors, patterns of food consumption and socioeconomic status.

**Results:** In this study, the rate of the *KRAS* mutation was 26% and the most prevalent mutation type was in codon 12. High socio-economic status was significantly associated with higher likelihood of *KRAS* gene mutation ( $P < 0.05$ ) (OR: 3.01; 95% CI: 0.69-13.02). Findings suggest consuming carbohydrates and alcohol increased odds of *KRAS* mutation. Patients with less working times and more common sedentary life style were more likely to have mutant *KRAS* gene.

**Conclusions:** Improving control and prevention of the risk factors, which affect the incidence of specific mutations can help in enhancing the prognosis of colorectal cancer in affected patients and in designing family-based prevention programs.

### Biography

Roya Dolatkah is an Assistant Professor (Academic Researcher) of Hematology and Oncology Research Center, Tabriz University of Medical Sciences, Tabriz, Iran. She is specialized in Molecular Epidemiology of Cancer, supervised by Dr. Saeed Dastgiri. She has worked at Doctor Faris Farassati's Molecular lab, Department of Internal Medicine-Molecular Medicine Laboratory, Divisions of Gastroenterology & Hematology/Oncology, Kansas City, USA. She has an extreme background in designing and developing research projects in this area. She has also selected as Fostering Leadership in Cancer Research, International Agency for Research on Cancer (IARC) in Lyon, France. She has 43 publications in scientific journals and has been selected as National Distinguished Researcher Student in Iran, from Student Research National Committee of Research & Technology, Vice-Chancellor of Iran during her PhD course. She was also a Member of Gifted & Talented Students team of Tabriz University of Medical Sciences. She was also a Principal Investigator of population based cancer registry in her area, involving in the main research projects in cancer prevention, early detection and cancer control in the country.

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