

## Obesity in long-term survivors of childhood cancer

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Survival rates for children with cancer have improved dramatically over past decades. For every ten children diagnosed with cancer, almost eight now survive for five years or more, compared with fewer than three in ten in the late 1960s. With the increasing number of cured children, identifying the occurrence of long-term adverse late effects has become of utmost importance. Survivors of pediatric cancer are at increased risk of second neoplasms, chronic medical conditions (including neurologic, endocrine, pulmonary, cardiovascular, musculoskeletal, and gastrointestinal conditions), as well as psychosocial impairment. The new paradigm for defining successful cancer treatment is the balance between oncologic efficacies and toxicity/late effects.

Obesity is a well-recognized late effect, and there is currently considerable concern about the metabolic/endocrine effects leading to important implications for long-term survivors, as accelerated weight gain is associated with increased morbidity and mortality, particularly due to cardiovascular disease. Studies concerning obesity in childhood cancer survivors have focused mostly on acute lymphoblastic leukemia and brain tumors. These two types of cancer are considered at particular risk since cranial irradiation, chemotherapy, primary tumor location and brain surgery can damage the hypothalamic-pituitary axis. Recent research has identified the role of genetic factors. Growth hormone deficiency, leptin regulation, fat mass obesity (FTO) gene and the insulin resistant ENPP1 variants disorders have all been pointed out. Additional studies are needed to better understand mechanisms implicated in the pathogenesis of obesity and metabolic syndrome in childhood cancer survivors. Early detection of patients at risk and implementation of preventive interventions is mandatory.

### Biography

Jelena Roganovic completed her MD and Ph.D. from Rijeka University School of Medicine. She is board-certified in pediatric hematology/oncology and pediatrics. She completed her residency in pediatrics in Croatia, and a fellowship in pediatric hematology/oncology in Padua, Italy. Dr Roganovic is the Chief of the Division of Pediatric Hematology and Oncology at Children's Hospital of Rijeka, and Full Professor of Clinical Pediatrics at the University of Rijeka. She has published more than 150 papers and proceedings in the field of pediatric hematology and oncology, and serves as an editorial review board member of repute.

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