



C¹⁷ strives to improve health outcomes and quality of life for children and adolescents in Canada with cancer and blood disorders, and to eliminate disparities in care and outcomes wherever they occur.

Ewing sarcoma is the second most common bone tumour of childhood. It is an aggressive cancer and new treatment options are desperately needed, especially for patients with disease that has spread to other parts of the body.

Drs. Shlien and Malkin are applying cutting-edge techniques to paint a genetic picture of Ewing sarcoma. Their goal is to find and catalogue genetic changes that are present in set of Ewing sarcoma tumors from at least 60 patients. Each Ewing sarcoma tumour sample will be tested for changes in its genetic information and for changes in the way the genetic instructions contained in the DNA are understood (or misunderstood) by the Ewing sarcoma cancer cells. They will look for common and overlapping genetic changes, which might be implicated in Ewing sarcoma. Finding unique genetic “markers” might lead to potential targets for drugs or new ideas for drug development.

Drs. Shlien and Malkin from the Hospital for Sick Children are addressing the question of what genetic differences are implicated in the development, progression and spread of Ewing Sarcoma?

Research Update: Dr. Shlien and his research team have now recruited 63 patients to take part in their research, and genetic testing is complete for 37 Ewing sarcoma samples. They are looking for changes in DNA (called mutations) and so far over 3,000 mutations have been found. They are now combining this massive amount of genetic information with the patients’ clinical information, and studying this data using complex and custom computer analysis programs. They are looking for connections between genetic changes, spread of the cancer and patient survival. Also, they are hoping to figure out what genetic changes happen first, because early changes are more likely to be responsible for the change from normal to Ewing sarcoma. Drs. Shlien and Malkin are excited to report that they have made progress towards advancing untangling the complexity of Ewing sarcoma.

The support of the Ewings Cancer Foundation of Canada (ECFC) is important for moving this project forward. Dr. Shlien was able to recruit promising and well-trained graduate students who are dedicated full-time to Ewing sarcoma research. One of the graduate students was awarded a scholarship from the *Natural Sciences and Engineering Research Council of Canada* on the merit of their academic record and this research project. Using ECFC funds, Drs. Shlien and Malkin will be able to find more connections between the genetics of Ewing sarcoma and patient survival, which is vital for advancing prevention, early detection, and the discovery of new treatments that may lead to better survival for Ewing sarcoma patients.



Dr. Adam Shlien, PhD is a young scientist recently recruited back to SickKids from the Sanger Institute in Cambridge, England. He has trained with foremost world experts in genetic analysis and has successfully applied these techniques to other types of cancer.

Dr. David Malkin, MD is a pediatric oncologist, senior scientist and the director of the Cancer Genetics Program at SickKids. He is also the Medical Director of the Pediatric Oncology Group of Ontario (POGO), Chair of the POGO Research Unit Steering Committee, and Chair of Childhood Cancer Control at University of Toronto.



ECFC and the C¹⁷ Research Network are very excited to have researchers of this high caliber dedicating their talents to advancing the treatment of Ewing Sarcoma.

The Ewings Cancer Foundation of Canada was inspired by a young teen named Reid who lost his battle with Ewing sarcoma. ECFC is committed to funding medical research to find new and better treatments and ultimately, the cure for Ewing sarcoma.



C¹⁷ Council
3-590B Edmonton Clinic Health Academy
11405-87 Avenue
Edmonton, Alberta T6G 1C9

Kathy Brodeur-Robb, Executive Director
Kathy.Brodeur-Robb@albertahealthservices.ca
Phone 780.248.5590

Find us on the Web: www.c17.ca