A recent study at Hamilton Health Sciences proves that sperm freezing and banking is an effective way to preserve fertility in adolescents and young adult (AYA) males with cancer.

Researchers at the Centre for Reproductive Care, McMaster Children's Hospital and the Juravinski Cancer Centre, all members of the Hamilton Health Sciences family of health care facilities, joined forces to investigate the benefits of proactively preserving sperm prior to starting cancer treatment in order to allow male cancer patients the opportunity to father biological children in the future.

In AYA male cancer patients, surgery, radiation and chemotherapy may cause transient or permanent infertility by affecting either ejaculatory or erectile function or by impairing the generation of sperm. (“The effects of cancer and cancer treatments on male reproductive function by Drs Magelssen, Brydoy and Fossa).

According to a new study to be published in the September 1, 2007 issue of CANCER, a peer-reviewed journal of the American Cancer Society, and available on-line today, lead author Michael Neal, Laboratory Director at the Centre for Reproductive Care, and his co-investigators, found that even though sperm freezing is shown to be highly effective, it is an underutilized option of fertility preservation for young male cancer patients.

The study, "Effectiveness of Sperm Banking in Adolescents and Young Adults with Cancer A Regional Experience," showed that only 18 percent of the patients in the study opted to bank their sperm before cancer treatment. Those who used their frozen sperm sample after overcoming their cancer had a fertility success rate of 36 percent using intrauterine insemination (IUI injecting the sperm into the uterus) and 50 percent using in vitro fertilization (IVF fertilizing the egg in a lab and then transferring the embryo to the uterus) and intracytoplasmic sperm injection (ICSI injecting the sperm directly into the egg).

A vital component in the efficacy of the study was the collaborative approach taken by the different groups involved, including the Pediatric Oncology team and the Centre for Reproductive Care.

"The teams involved in the study are highly specialized and unique individually," said Dr. Neal. "From
saving lives to creating new life, the collaboration between these two disciplines provides an exciting opportunity for improved quality of life among adolescent and young adult cancer survivors in the Hamilton region.

" Childhood cancer treatment has improved dramatically in the last decade resulting in a greater number of survivors," said Dr. Neal. "At the same time, improvements in the field of assisted conception are providing a great chance for male cancer survivors to father children of their own after potentially fertility-damaging treatment."

Another important component of the study addressed the quality of life of young people affected by cancer. "When adolescents and young adults are diagnosed with cancer, every aspect of their lives is influenced, including their physical, emotional, economic, spiritual, interpersonal, psychosocial, and sexual well-being," said Dr. Ronald Barr, Chief of Service, Pediatric Hematology/Oncology, McMaster Children's Hospital and professor of pediatrics at McMaster University.

The study demonstrated that in clinical practice, the factors of sexual well-being and the effects of the treatment on reproduction might not be addressed adequately by caregivers.

The necessity for education of both health care providers and patients about this option is an essential outcome of this study. Kim Nagel, Research Nurse, Pediatric Oncology, McMaster Children's Hospital, reflects that there is a relatively small window of opportunity before young male cancer patients begin treatment, so it is essential that health care providers are prepared and diligent about providing all options available in regard to improving future fertility.

"The results of this study have demonstrated the benefits of this unique collaboration between specialties in the hospital," said Kim Nagel. "Consequently, more research is already in progress or in the planning stages. Given the results of this study, our goal is to improve awareness of sperm banking and future fertility treatments that may impact our patients quality of life."

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