

Sperm banking is underutilized by adolescent and young adult cancer patients

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Lead author James Klosky, Ph.D., Co-Director of the Fertility Preservation Clinic, in a mock consultation. Credit: Seth Dixon / St. Jude Children's Research Hospital

A comprehensive study of adolescent and young adult cancer patients

found just 43.8 percent of those at risk for infertility banked sperm prior to cancer therapy, suggesting that patients might benefit from efforts to increase awareness and understanding of the option. The study was led by St. Jude Children's Research Hospital and appears today in the *Journal of Clinical Oncology*.

"Research has found that the majority of males who survive childhood cancer desire biological children," said lead author James Klosky, Ph.D., an associate member of the St. Jude Department of Psychology.

"Fertility preservation is also associated with a variety of benefits for survivors, including increased optimism about the future. While [sperm banking](#) is not for everyone, it is an effective method for preserving male fertility. Yet this study shows that sperm [banking](#) remains underutilized by at-risk [patients](#) with cancer."

Survey results identified factors that influenced the likelihood of patients making sperm collection attempts as well as successfully banking sperm.

The most powerful predictors of attempted sperm banking were meeting with a fertility specialist and parental recommendations. Patients who met with specialists were about 30 times more likely to attempt to bank sperm. Those whose parents recommended sperm banking were more than 12 times as likely to try banking.

Of the 146 male cancer patients surveyed, 78, or 53.4 percent, attempted sperm banking prior to treatment initiation. Sixty-two, or 82 percent, of those who attempted sperm banking were successful. But overall, fewer than 44 percent of the at-risk patients successfully banked sperm.

Overall long-term survival rates for childhood [cancer patients](#) have improved dramatically in recent decades and now exceed 80 percent. But the disease and surgery, radiation and chemotherapy used to treat cancer leave half of young male survivors at increased risk for infertility and

later psychological and emotional distress.

The study included patients treated at St. Jude or seven other cancer centers in the U.S. and Canada. Along with patients, 144 parents or guardians were surveyed as well as 52 oncologists and other [health care providers](#). The study is the largest yet aimed at understanding factors that influence sperm banking outcomes in high-risk patients.

Physical maturity rather than age was also a factor in the decision to bank sperm. The study involved patients who were 13 through 21 years old. Physically mature patients were more than five times more likely to attempt sperm banking than patients who were less mature. "More physically mature patients should be encouraged to make a collection attempt because in this study, 82 percent of such patients were successful," Klosky said.

Patients were more likely to attempt and successfully bank sperm if they recognized the benefits, had confidence about their ability to collect a sample and had a history of masturbation. Patients whose parents or health care providers recommended sperm banking were also more than four times more likely to succeed at sperm banking.

"These results highlight factors that providers can target to empower adolescents to actively participate in their own health care. These decisions, which are typically made at the time of diagnosis, have high potential to affect their lives as survivors," Klosky said. Those factors include discussing the risk of treatment-related infertility as early as possible with patients and families and providing patients access to fertility specialists trained in working with adolescents to discuss preservation options.

"Interventions should be tested that aim to increase sperm banking as well as overall patient satisfaction regardless of their choice or banking

outcome," Klosky said. He said there was no evidence in this study that a failed sperm banking attempt increased patients' psychological distress.

Of the 64 patients who did not attempt sperm banking, 29 patients and families reported discussing the option but deciding against it. Twenty-six patients indicated they did not believe sperm banking was necessary, and three patients were unsure what it was.

Future research should also consider other factors that might influence sperm banking, including onsite sample collection and financial support for sperm banking.

In 2014, the St. Jude Fertility Clinic opened on campus to provide patients and long-term survivors access to fertility preservation, counseling and information. St. Jude covers the cost of harvesting eggs and [sperm](#) as well as storage until patients are 35 years of age.

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