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New method to preserve boy cancer patient fertility being developed

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Ben-Gurion University of the Negev (BGU) and Soroka University Medical Center researchers in Beer-Sheva, Israel are developing a cell culture system that for the first time can change testicular stem cells into sperm-like cells that may enable future fertility for boys with prepubertal cancer.

Aggressive chemotherapy in childhood often results in male testicular damage and consequently jeopardizes future fertility. According to the findings published in *Stem Cells and Development*, the researchers found that the presence of spermatogonial cells (SPGCs) in the testes of prepubertal cancer patient boys (PCPBs) can be used to develop future strategies for male fertility preservation.

In the study, seven testicular biopsies were obtained from chemotherapy-treated PCPBs. The researchers were able to cultivate and isolate testicular cells into different stages of development (pre-meiotic, meiotic and post-meiotic cells). Furthermore, they identified sperm-like cells that had developed from testicular cells of a PCPB.

"Our results demonstrate, for the first time, the presence of biologically active SPGCs in testicular biopsies of chemotherapy-treated PCPBs, and their capacity to develop in vitro to different stages of spermatogenesis, including the generation of sperm-like cells," according to lead researcher Prof. Mahmoud Huleihel, co-director of the Center of Advanced Research and Education in Reproduction (CARER), and a member of BGU's Shraga Segal Department of Microbiology,

Immunology and Genetics. "This study may open the way for new therapeutic strategies for fertility preservation of PCPBs and for azoospermic patients."

More information: Maram Abofoul-Azab et al, Development of postmeiotic cells in vitro from spermatogonial cells of prepubertal cancer patients, *Stem Cells and Development* (2018). DOI: 10.1089/scd.2017.0301

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