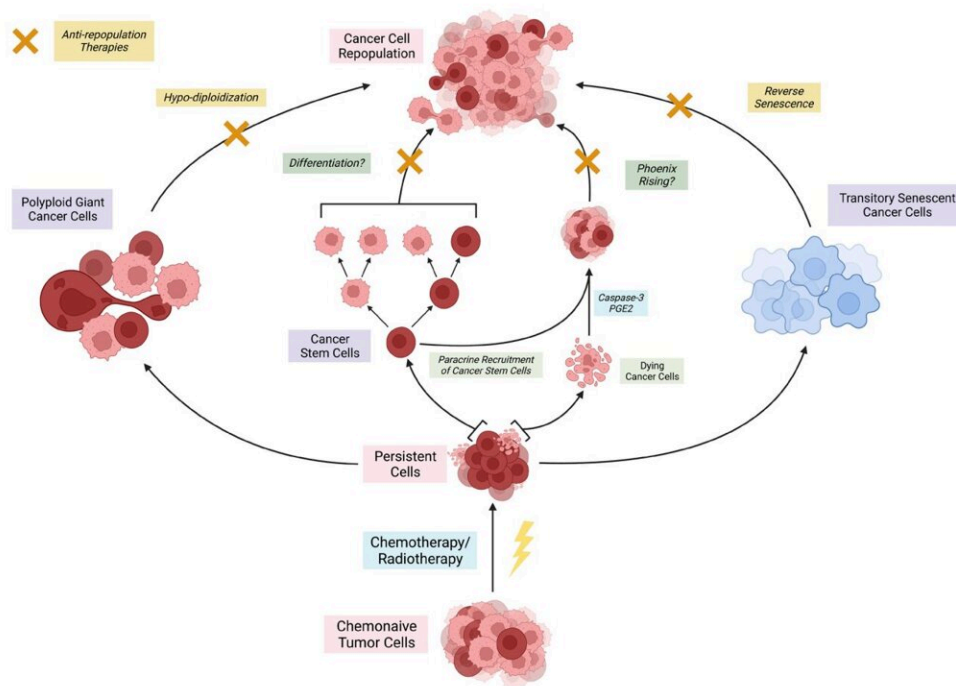


Cancer cell repopulation after therapy: Study explores the mechanism

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Presumed models of tumor cell repopulation after escaping chemoradiation. Credit: 2023 Prakash and Telleria

The past two decades have brought great progress in the treatment of cancer as patients with the disease live longer having access to better diagnosis and therapeutic approaches. However, the disease remains incurable. One of the reasons for the high resilience of this disease is

that cancer cells hide and escape from therapies thus leading to cancer recurrence. The process whereby cells escape therapy is referred to as cancer cell repopulation.

A new research perspective that examines this process was published in *Oncoscience* on June 1, 2023, titled, "Cancer cell repopulation after therapy: which is the mechanism?"

Cancer cell repopulation after therapy is a phenomenon that leads to therapeutic failure with the consequent relapse of the disease. The process is understudied and mechanisms need to be uncovered. In this new perspective, researchers Rewati Prakash and Carlos M. Telleria from McGill University and McGill University Health Center discuss the issue of cancer cell repopulation after chemo- and radio-therapies.

The researchers compiled evidence alleging that the repopulation of cancer cells can be originated from either [cancer stem cells](#) resistant to therapy, [cancer cells](#) that in response to therapy become polyploid and thereafter germinate into near-diploid rapid proliferating cells, and/or cells that respond to treatment undergoing senescence as a transient mechanism to survive, followed by the reinitiation of the cell cycle.

"Perhaps the better approach to eliminate cancer cell repopulation is a combination treatment involving first chemoradiation-induced transitory senescence, followed by senolytic therapies as recently discussed by Wang and colleagues," say the researchers.

More information: Rewati Prakash et al, Cancer cell repopulation after therapy: which is the mechanism?, *Oncoscience* (2023). [DOI: 10.18632/oncoscience.577](https://doi.org/10.18632/oncoscience.577)

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