

# Researchers say androgen deprivation therapy may lead to cognitive impairment

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Cognitive impairment can occur in cancer patients who are treated with a variety of therapies, including radiation therapy, hormone therapy, and chemotherapy. After chemotherapy treatment it is commonly called "chemo brain." Signs of cognitive impairment include forgetfulness, inability to concentrate, problems recalling information, trouble multi-tasking and becoming slower at processing information. The number of people who experience cognitive problems following cancer therapy is broad, with an estimate range of 15 to 70 percent.

There have been several studies analyzing this side effect in [breast cancer patients](#), but few have investigated cognitive impairment following androgen deprivation therapy (ADT) for men being treated prostate cancer. A new Moffitt Cancer Center study indicated that men who are on androgen deprivation therapy have greater odds of experiencing impaired cognitive function.

Androgen deprivation therapy is commonly used to treat prostate cancer, often on an open-ended basis for therapy of advanced prostate cancer. It is estimated that 44 percent of men with prostate cancer undergo ADT at some point. The goal of this type of therapy is to block the male hormones, including testosterone, from stimulating the growth of the [prostate cancer cells](#). However, the side effect of ADT on cognitive function in men with prostate cancer has not been measured as much.

In this study, researchers used formal tests to compare the cognitive ability of 58 prostate cancer patients receiving androgen deprivation

therapy to 84 prostate cancer patients who did not receive ADT, and to 88 men without cancer. The research showed that the men treated with ADT were 70 percent more likely to experience cognitive impairment at six months, and more than twice as likely to experience cognitive impairment at the one year time point.

The researchers also reported for the first time a possible genetic link among those individuals who experience cognitive impairment during androgen deprivation therapy. They found that patients who have a particular version of a gene called GNB3 were 14 times more likely to suffer from [cognitive problems](#) following androgen deprivation therapy.

"Studies like ours show the importance of identifying genetic predictors of cognitive impairment. This information can be used to further personalize cancer care based on patients' unique characteristics, and to find patients who may be prone to be intolerant of this standard type of treatment" said Mayer Fishman, M.D., Ph.D., senior member of Moffitt's Genitourinary Oncology Program.

The results of this study may have implications for physicians trying to decide on the best therapeutic options for their patients. "The risk of [cognitive impairment](#) should be considered when deciding whether or not to receive [androgen deprivation therapy](#) for [prostate cancer](#)," said Brian Gonzalez, Ph.D., a postdoctoral fellow in the Health Outcomes and Behavior Program at Moffitt.

The study was published in the May 11 issue of the *Journal of Clinical Oncology*.

**More information:** *Journal of Clinical Oncology*,  
[jco.ascopubs.org/content/early ... 014.60.1963.abstract](http://jco.ascopubs.org/content/early ... 014.60.1963.abstract)

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