

Gender difference in vital cell count of HIV patients

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Male HIV patients in rural South Africa reach the low immunity levels required to become eligible for antiretroviral treatment in less than half the time it takes for immunity levels to drop to similar levels in women, according to new research from the University of Southampton.

Researchers also found a link between potential proxy measures of nutritional status and disease progression, with those reporting food shortages and use of nutritional supplements reaching lower levels of immunity faster.

CD4 [cell count](#) is a measure of the immune system which indicates the stage of [disease progression](#) in an individual with HIV, with a lower count indicating a more advanced stage of the disease. The study is the first to suggest a difference in time to a CD4 cell count of less than 350 between men and women with HIV.

At the time the study was undertaken, guidelines in the country stated that anyone with a CD4 cell count of less than 350 would be eligible for [antiretroviral treatment](#) (ART). While it took women on average around three years to go from a cell count of over 500 to a count of less than 350, it took men just 12 months.

Now, South Africa has changed its guidelines so that ART is available with a CD4 cell count of 500 or less, in line with recommendations from the World Health Organisation. It took an average of just over eight months for men to reach this cell count from the start of follow-up,

compared to over 17 months in women.

"The finding that time to ART eligibility was significantly shorter for men highlights the need to develop gender oriented strategies throughout HIV care in the African context" says Dr Nuala McGrath at the University of Southampton and lead author of the study. "Firstly men are more likely to present for care with slightly lower CD4 cell counts than women and we need to find ways to get men into care earlier. Once in care, many individuals will become eligible for treatment within one or two pre-ART care visits, especially if visits are less frequent than the recommended six monthly intervals.."

The relevance of the findings to the UK is unclear given differences in the HIV-infected population, the subtype of virus and the health system. UK guidelines still have a threshold of 350 cells, although some people are treated above this threshold for various reasons.

Published in the journal HIV Medicine, researchers monitored the cell count of 206 adults from a rural community in South Africa who had been diagnosed with HIV and retained in routine care. Participants were asked to complete a survey assessing a range of social demographic and behavioural factors. Of those who took part, 79 (or 38 per cent) became eligible for treatment within the course of the study.

The findings suggest that having a lower CD4 cell count at the start of the study, being male, residing in a household with [food shortages](#) in the last year and use of nutritional supplements were all independently associated with an increased chance of meeting the criteria for starting ART.

Dr McGrath comments: "The use of [nutritional supplements](#) and reporting a lack of food in the household could reflect a link between food insecurity, malnutrition and time to CD4 below 350 but

determining a cause and effect relationship is difficult due to the complex interplay between HIV and nutrition and the use of supplements as 'immune boosters' in the study context.

"As the study took place within routine care, the people involved could potentially have had more rapid decline in their CD4 count than others in the same community that were not yet diagnosed or not in care, so further research is needed."

Provided by University of Southampton

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