

## The role of partial androgen deficiency in aging men in the development of benign prostatic hyperplasia and prostate cancer

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Once people reach 35-40 years, they have a decrease in their pool of pluripotent stem cells, and show a violation of tissue renewal, a decrease in the number of cell-producers of testosterone (Leidig cells) and a reduction in testosterone circulating in the blood. Partial androgen deficiency in aging men violates division and differentiation of androgen-dependent cells and increases the risk for development of benign prostatic hyperplasia and prostate cancer. The recovery of testosterone production and regeneration helps make a decrease in proliferative activity, and the rehabilitation of regulation of androgen-dependent cells of the prostate and other tissues and organs, as well as reduce insulin resistance among older men. Although people can keep their social function in their old age, the period of optimal func-

tionality for human, as set by evolution, ends at the age of 35-40 years. Once people reach 35-40 years of age, they have a decrease in their pool of pluripotent stem cells, show a violation of tissue renewal, a decrease in the number of cell-producers of testosterone (Leidig cells), and a reduction in testosterone circulating in the blood. This reduction is named partial androgen deficiency of aging men (PADAM).

**Keywords:** testosterone, partial androgen deficiency in aging men, 5 $\alpha$ -dihydrotestosterone, 17 $\beta$ -oestradiol, prostate cancer, androgen blockade, benign prostatic hyperplasia, basic fibroblast growth factor, epidermal growth factor, transforming factor of growth- $\beta$ , insulin-similar growth factor-1, insulin, PSA, AR, ER, Ki67, Bcl-2, p53.