Several studies have shown that anogenital distance (AGD) provides a non-invasive metric to assess adult testicular function as assessed by sperm and testosterone production [1–3]. Rodent studies suggest that in utero exposures, acting through androgen-mediated pathways, regulate AGD, and recent human studies support this concept [4].

The present study suggests that the same fetal exposures may also affect the risk of prostate cancer. Men who had the shortest AGD, presumably representing the weakest androgen signalling, had the highest risk of prostate cancer. Although somewhat counterintuitive to the data about the relationship between prostate cancer and testosterone signalling, the association is supported by research showing that hypogonadal men are at an increased risk for prostate cancer [5].

Subsequent to the first measurements being conducted in men, AGD has been measured using many techniques and by many investigators. The measurement (from the anus to the anterior base of the phallus) noted in the present study, which was found to be associated with prostate cancer risk, was shown not to be related to adult testicular function in another study [3]. By contrast, AGD₆₅ (from the anus to the base of the scrotum) has been shown independently to predict adult testicular function [1–3] but was not found to be associated with prostate cancer in the present study. Such inconsistencies highlight the need for further research in this area.

It is also important to note that the wide variation in adult AGD and the considerable overlap between cases and controls makes the AGD measurement unlikely to assist in the diagnosis of prostate cancer or even guide the decision for prostate biopsy. Nevertheless, the present study does represent a useful addition to ongoing research on human AGD.

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REFERENCES

Abbreviation: AGD, anogenital distance.