receptor only. However, the actual role of androgen receptor in breast cancer remains unclear. Considering the relatively consistent finding of hyperandrogenism in breast cancer, the impact of androgen on breast cancer warrants further investigation.

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Risk for Breast Cancer

To the Editor: Cauley and colleagues (1) reported that breast cancer risk was elevated not only in white postmenopausal women with high estrogen levels but also in those with high androgen levels. The association of breast cancer risk with androgen has been seen in many epidemiologic studies (2–4), but the mechanism by which androgens contribute to the cause of breast cancer is poorly understood. The relation between androgen and breast cancer is believed to be confounded by the strong correlation between androgen and estrogen because androgen is a precursor of estrogen in its metabolic pathway. Cauley and coworkers found that free testosterone was linked to breast cancer risk after adjustment for estrogens, suggesting that the association of androgen with breast cancer is independent of estrogen.

In a recent study by our group (5), we also found evidence supporting the notion that androgen may play a role in breast cancer. In breast cancer tissue, we analyzed DNA sequence from exon 1 of the androgen receptor gene that contained the variable length of CAG repeat known to inversely affect transcription according to its length. Our study showed that compared with longer CAG repeats, shorter CAG repeats were associated with aggressive disease and poor survival. This finding suggests that enhanced transcriptional activity of the androgen receptor gene might promote breast cancer progression.

Androgen receptor is expressed more frequently in breast cancer tissue than the estrogen or progesterone receptor is. This indicates that a subset of breast tumors may express androgen