

testosterone of 120 ng/dL (2 - 45 ng/dL) and a normal SHBG of 39 nmol/L (14–73 nmol/L) which was now consistent with her clinical picture of postmenopausal hyperandrogenism. Bilateral laparoscopic salpingo-oophorectomy was recommended to exclude an androgen-secreting ovarian tumor or hyperthecosis. Testing was then repeated while taking biotin which again manifested a normal free testosterone of 2.8 pg/mL (<4.2 pg/mL) with an elevated total testosterone of 121.4 ng/dL (7.0–40 ng/dL) and a normal SHBG of 45 nmol/L (14–73 nmol/L). **Discussion:** Biotin may interfere with the total testosterone levels, but little is known of its effects on free testosterone. We report the first case of biotin interference on the free testosterone assay, resulting in falsely low values demonstrated in two different occasions, that improved following withdrawal of this widely used vitamin supplement. Laboratories use a direct analog enzyme immunoassay to calculate the free testosterone however its calibration and specificity has been debatable, and it is still unclear how biotin can affect it. It is critical that laboratorians and clinicians are aware of this biotin interference so that misdiagnosis and inappropriate treatment can be prevented. **References:** 1. Macarena Alpañés, José M. González-Casbas, Juan Sánchez, Héctor Pián, Héctor F. Escobar-Morreale, Management of Postmenopausal Virilization, The Journal of Clinical Endocrinology & Metabolism, Volume 97, Issue 8, 1 August 2012, Pages 2584–2588.

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Newly Observed Interference of Oral Biotin with the Free Testosterone Assay? In a Woman with Postmenopausal Virilization.

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Introduction: Approximately 15-20% of US adults take supraphysiologic doses of biotin-containing supplements for common hair and skin problems. When consumed in high doses, competitive and non-competitive immunoassays which use the streptavidin-biotin binding complex can skew results to be either falsely high or falsely low.

Case Presentation: A 74 y/o Caucasian female who initially presented to her primary care physician concerned for alopecia with frontal balding, acne and moderate hirsutism. Her total testosterone was elevated with 146 ng/dL (7.0–40 ng/dL) with a perplexing normal free testosterone of 4.2 pg/mL (<4.2 pg/mL) in the context of a normal SHBG of 48 nmol/L (14–73 nmol/L). Androstenedione was elevated with 161 ng/dL (17–99 ng/dL) with a normal CMP, prolactin, DHEA-s and 17-hydroxyprogesterone. Transvaginal US was normal. The size of the ovaries was consistent with menopause. Abdominal and pelvic MRI showed normal adrenal glands and ovaries. She was taking between 1 to 3mg of biotin per day. Biotin was discontinued. Repeat testing revealed an elevated free testosterone of 12.7 pg/mL (0.2 - 3.7 pg/mL) along with an elevated total