Letter to the Editors

Enzyme elevations with muscle injury: know what to look for!

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We read with interest the article by Pettersson *et al.* on 'Muscular exercise can cause highly pathological liver function tests in healthy men [1]'. The authors discuss the length of time that 'pathological' liver enzymes may be elevated after resistance-exercise or weightlifting [1]. We reported almost 10 years ago on the severe elevations that may be seen in competitive bodybuilders both on and off anabolic steroids [2]. We found a significant correlation in elevations of creatine phosphokinase (CK) and transaminases [2]. Our subject groups consisted of competitive bodybuilders either on or off anabolic steroids and we found significant elevations of transaminases and CK. Most significantly we found the most simplistic laboratory value that should be included when examining resistance-exercise athletes is to include gamma glutamyl transpeptidase (GGT). We found none of our exercise subjects had elevations of GGT while patients with any form of hepatitis, who were analyzed retrospectively, all had GGT elevations [2]. Thus, we commend Pettersson *et al.* on their fine report and recommend physicians who are examining patients who are competitive athletes to include GGT on any laboratory values to ensure differentiation between transaminase elevations secondary to muscle damage vs. liver damage.

REFERENCES

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- 2 Dickerman RD, Pertusi RM, Zachariah NY, Dufour DR, McConathy WJ. Anabolic steroid-induced hepatotoxicity: is it overstated? *Clin J Sport Med* 1999; 9: 34–9.

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