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Interrelationship Between Levels of Bisphenol- A and -S, Peak Anaerobic Power and Body Composition

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Bisphenol-A and -S (BPA and BPS) are environmental estrogen often found in manufacturing products, including food/beverage packing, from where it can leach into the food content. Levels of BPA and BPS in human specimens are positively linked with obesity and type 2 diabetes. Our previous study found that BPA levels, not BPS, were negatively associated with aerobic capacity. **PURPOSE:** This study aims to investigate if levels of BPA and BPS are associated with peak anaerobic power, muscle damage, and percentage of muscle and fat. **METHODS:** Healthy young adults ($n=34$, age 20.35 ± 1.35 , BMI $24.84 \pm .72$ Kg/m²) performed a vertical jumping test, and the peak anaerobic power was quantified. Levels of urinary BPA, BPS, and lactate dehydrogenase (LDH, a marker of muscle damage) were assessed by ELISA assay. Percentage of muscle and fat and fat distribution were calculated. Relationships between variables were examined using Kendall's Tau-b correlation analysis. **RESULTS:** Overall, BPA and BPS levels were not significantly associated with peak anaerobic power and other variables of interest. Levels of LDH were positively associated with the overall percentage of fat, truncal fat, and upper and lower limb fat ($\tau = .39, .35, .42, .37$, respectively $p < .05$) and negatively associated with the percentage of muscle ($\tau = -.4$ $p < .05$). **CONCLUSION:** The results of the present study do not support the initial hypothesis since results indicate that levels of BPA or BPS might not affect peak anaerobic power, body composition, and skeletal muscle damage in healthy, active young adults. **SIGNIFICANCE/NOVELTY:** To our best knowledge, this study was the first to examine the association of environmental estrogen with peak anaerobic power. Despite no effect found in the investigated group, these chemicals are still considered a potential threat to human health.

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