INTRODUCTION: Anaerobic performance refers to high intensity, short duration exercise performance focusing on speed and power. These are short duration exercises with a high intensity, lasting from three seconds to a maximum of two minutes. The predominate systems within the body working during these performances are the adenosine triphosphate and phosphocreatine (ATP-PC) systems which utilizes stores in the muscle and anaerobic glycolysis which generates ATP and leads to the metabolic byproduct, lactic acid. Caffeine is a central nervous system (CNS) stimulant. This drug increases the metabolism of fatty acids, and in turn spares muscle glycogen to enhance performance. Glycogen is the stored carbohydrate located within muscle tissue, and to a lesser degree, the liver. Caffeine can also reduce the perception of fatigue within individuals. The neural stimulus and motor unit firing rates stimulated by caffeine can also enhance strength. For the purposes of this study, both sparing of muscle glycogen and reduced CNS fatigue may contribute to increased anaerobic performance.

METHODS: Nine men (M; age 26.78 ± 6.96 yrs) of the UTA Kinesiology department, volunteered to participate in this study. Each subject had their bodyweight recorded prior to exercise testing. A value of 5mg/kg of bodyweight was used when consuming caffeine to enhance performance.

RESULTS: The pushup repetitions calculated from the placebo group was 12.7 ± 0.87 and (13.2 ± 0.67) for the caffeine group, which did not show a significant difference (p = 0.007). The 40-yard dash time in seconds calculated from the placebo group was 12.7 ± 0.87 and (13.2 ± 0.67) for the caffeine group, which did not show a significant difference (p = 0.007). The maximal value for HR was (93 ± 3 bpm) for the placebo group and (100 ± 3.9 bpm) for the caffeine group, resulting in a statistically significant difference (p = 0.0000017). RPE for the placebo group was (12.7 ± 0.87) and (13.2 ± 0.67) for the caffeine group, which was significantly different (p = 0.007).

CONCLUSION: The results of this study support previous findings that caffeine consumption does have a positive effect on anaerobic exercise performance.