The effect of intermittent fasting and varying physical activity intensities on fat-oxidation rates and commonly used fatness-measurements: A novel method in combating the obesity epidemic.

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With the rising financial burden of health care costs linked to battling an obesity epidemic, along with the associated co-morbidities, it is crucial for researchers to elucidate sustainable approaches to combat this global issue on an individual and population basis. The WHO estimates that, within the next few years, non-communicable diseases will become the principal global causes of morbidity and mortality. Over-fatness and obesity is a problem, as it increases the risk of morbidity from several pathologies, including hypertension, type 2 diabetes, coronary heart disease, stroke, non-alcoholic fatty liver disease, osteoarthritis, sleep apnea, and several cancers. Currently, the International Obesity Task-force estimates that at over 1.3 billion adults are overweight or obese, and rising. Currently employed techniques for weight loss consist of; extreme caloric deprivation alone or in combination with exercise, extreme exercise or medically invasive procedures, all of which have proven to not provide sustainable resolutions due to high failure rates. Researchers believe that focusing on improving the bodies fat-oxidation rates could be a more effective approach. In order to formulate a successful solution, researchers must examine the chronic effects of varying physical activity (PA) intensities and on fat-oxidation rates alone and in conjunction with intermittent fasting. The benefits of regular PA participation impact positively on many health outcomes and are not only limited to improvements in fat oxidation rates. The participants will then be randomized into 1 of 3 groups with 3 sub-groups. The 2 groups refer to the dietary intervention component: Intermittent Fasting (12 or 16 hour), and a post-prandial control group which does not fast. All groups consist of the same 3 sub-groups: a high intensity interval training (HIIT) intervention, a low-moderate continuous intensity intervention, and a no exercise control group. All interventions will consist of exercising on a treadmill, at a specific heart rate percentage based on their individual results on the FATmax determination. The participants will be randomized into an invention intensity based on targeted heart rate percentages from the VO2max and FATmax tests: Low intensity training up to 60% of HRmax, HIIT minimum of 70% of HRmax. The frequency will be 3 times/week for a total of 12 weeks.