

Carbon Dioxide Challenge and Hot Flashes

Sarah E. Dorsey¹, Janet S. Carpenter¹,

¹Department of Adult Health, School of Nursing

Little is known about the pathophysiology of menopausal hot flashes, although there appear to be many similarities between hot flashes and panic attacks. While hot flashes occur at random and are difficult to study, there is a method of testing panic attacks. A Carbon Dioxide (CO₂) Challenge is a validated method that has been used to induce panic attacks in a laboratory setting. The aim of this study is to test whether a CO₂ Challenge using inhalations of 20% and 35% CO₂ can provoke a hot flash in menopausal women. We hypothesize that women who have many hot flashes each day (4+) will have a hot flash when exposed to the increased concentration of CO₂ using this challenge. Six healthy women attended a study session lasting ninety minutes. In this placebo controlled, cross-over study, women inhale room air, 20% CO₂ for 40 seconds, rest for 15 minutes, and 35% CO₂ using a double-breath vital capacity inhalation. Anxiety was measured on a numeric rating scale (NRS) and a State Trait Anxiety Inventory (STAI). Most participants have reported a hot flash within minutes of the CO₂ Challenge. There have been no significant changes in anxiety during the study. Findings provide evidence of the proposed link between hot flashes and panic.

Mentor: Janet S. Carpenter, Department of Adult Health, School of Nursing