

This study explores how the menstrual cycle or oral contraceptives (OC) influence the body's response to standing. We recruited 21 healthy women, twelve OC users and nine non-users. They were tested when hormone levels were low (menstruation or placebo pill) and high (post-ovulation or during the 3<sup>rd</sup> week of active pills). During the first 30 seconds of standing, heart rate and blood pressure were not different between groups, yet during the low hormone phase, brain blood flow dropped more in OC users due to standing. This drop of brain blood flow was smaller during their active pill dose. This demonstrates that acute (active exposure, active pill week) and chronic (no exposure, placebo week) OC use has opposite effects on brain blood flow. Further, 8 women met the criteria for initial orthostatic hypotension, which is a sudden blood pressure drop during standing. These criteria were met during only a single phase of their cycle. This highlights that doctors should test multiple times throughout the cycle so that a diagnosis is not missed.