

## **Hedonics and Aversion Threshold of Bitter Taste Following Acute Cyclophosphamide Injection**

The perception of taste is crucial for identifying substances that provide nutrition and those that are toxic and thus should be avoided. One way in which an organism's taste system can be compromised is by the use of chemotherapy drugs such as cyclophosphamide (CYP). Previous studies in mice have shown an acute injection of CYP has a direct effect on taste epithelium and taste specific behaviors. These studies found CYP disrupted the cell replacement cycle of type II taste sensory cells, producing deficits in umami and sweet taste detection when assessed by time intense behavioral methods. In this exploratory study, the effects of CYP on type II bitter taste sensory cells and bitter taste hedonics/aversion threshold were assessed using a simpler, brief access behavioral method. It was hypothesized that a single dose of CYP would cause disturbances in bitter taste function by directly affecting taste buds and taste cells. Specifically, a single CYP injection would result in a period of heightened aversion threshold to bitter taste stimuli due to a decreased sensitivity associated with a decrease in the population of bitter taste sensory cells. Brief access testing appeared to be a faster, more efficient method of assessment, however, the pilot data indicated that this method failed to be sensitive enough to detect the effects of CYP. Consequently, the methods used to detect shifts in sensitivity during the previous studies of sweet and umami taste detection will be utilized to assess the effects of CYP on type II bitter taste sensory cells.