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## Mental Fatigue and Vitality

- Temperatures above the recommended threshold (78.8 degrees Fahrenheit) are correlated with an increase in mental fatigue (Yoshida 2015, Tanabe 2007)
- Worker vitality, the desire to participate in activities after work hours, decreases when subject is in thermal discomfort. As mental fatigue increases, worker vitality decreases (Akimoto 2010).

## **Personal Control and Anxiety**

- Personal control over the thermal environment of a space has been correlated to positive psychological responses (Wagner 2006, Van Hoof 2010).
- When a patient in a hospital has the ability to control their personal environment before a procedure, the patient's anxiety significantly decreased (t=3.85, P=.0002) (Wagner 2006).
- Patients in preoperative care have been found to associate warm air with positive feelings of comfort and a significant decrease in anxiety (t=1.87, P=.06) (Wagner 2006, Fossum 2001).



## **KEY REFERENCES**

**Review Articles** -

- Fossum, Susan, Judy Hays, and Mary Margaret Henson. "A comparison study on the effects of prewarming patients in the outpatient surgery setting." Journal of PeriAnesthesia Nursing 16, no. 3 (2001): 187-194
- Van Hoof, Joost, Mitja Mazej, and Jan LM Hensen. "Thermal comfort: research and practice." Frontiers in Bioscience 15, no. 2 (2010): 765-788.

## Primary Research -

 Akimoto, Takashi, Shin-ichi Tanabe, Takashi Yanai, and Masato Sasaki. "Thermal comfort and productivity-Evaluation of workplace environment in a task conditioned office." Building and environment 45, no. 1 (2010): 45-50.

Tanabe, Shin-ichi, Naoe Nishihara, and Masaoki Haneda. "Indoor temperature, productivity, and fatigue in office tasks." HVAC&R Research 13, no. 4 (2007): 623-633.

Wagner, Doreen, Michelle Byrne, and Katharine Kolcaba. "Effects of comfort warming on preoperative patients." AORN journal 84, no. 3 (2006): 427-448.

Yoshida, Atsumasa, Takezo Hisabayashi, Kenta Kashihara, Shinichi Kinoshita, and Shoko Hashida. "Evaluation of effect of tree canopy on thermal environment, thermal sensation, and mental state." Urban Climate 14 (2015): 240-250