



## P-30

### **THERMAL SENSATIONS DURING MILD-HYPERTHERMIA IS MODIFIED WITH POSTURAL CHANGE AND AGING**

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**Background:** Aging is associated with deteriorated autonomic heat dissipative responses and blunted thermal sensations during hyperthermia. We recently found that postural change from supine (SUP) to sitting (SIT) increased whole body thermal sensation while decreased autonomic heat dissipative responses during hyperthermia in young subjects.

**Aim:** To assess whether these responses with postural change during hyperthermia were maintained in older subjects.

**Methods:** Seventeen young ( $21 \pm 1.6$  yrs, mean $\pm$ SD) and twelve older ( $71 \pm 3.0$  yrs) healthy men underwent measurements of whole body thermal sensation (VAS) in SUP and SIT randomly under normothermia (NT; esophageal temperature ( $T_{es}$ ),  $36.6 \pm 0.0^\circ\text{C}$  and  $36.4 \pm 0.2^\circ\text{C}$ , respectively, mean $\pm$ SE) and mild-hyperthermia with lower legs immersion in  $42^\circ\text{C}$  water (HT;  $T_{es}$ ,  $37.3 \pm 0.0^\circ\text{C}$  and  $37.4 \pm 0.2^\circ\text{C}$ , respectively).  $T_{es}$  and mean skin temperature ( $T_{sk}$ ) were measured continuously.

**Results:**  $T_{es}$  and  $T_{sk}$  increased during HT than NT in both groups. There were no significant differences in  $T_{es}$  and  $T_{sk}$  between young and older men during both conditions. Whole body thermal sensation was lower in older than young men under all conditions ( $P < 0.05$ ). Whole body thermal sensation was increased with postural change from supine to sitting in young men ( $P < 0.05$ ) but remained unchanged in older men. Response of whole body thermal sensation with postural change from supine to sitting during HT was significantly lower in older than young men ( $P < 0.05$ ).

**Conclusion:** Whole body thermal sensation under normothermia and hyperthermia was blunted and its response with postural change during hyperthermia was disappeared with aging.

**Keywords:** Thermal sensation, Thermoregulation, Aging