

EPICOH 2013 ABSTRACT

California Heat Illness Prevention Study (CHIPS) in immigrant Latino farm workers.

Authors: Diane Mitchell, James Jones, Gail Wadsworth and Marc Schenker

Objectives:

To define the roles of work intensity and ambient heat as contributors to the risk of heat illness in field workers employed in diverse crops.

Methods:

Field workers were assessed across a single work shift. Changes in weight, blood osmolality and heart rate were monitored, as was the internal body temperature by an ingested sensor. Personal ambient temperature, relative humidity as well as stationary measurements of weather conditions were recorded. Workers were questioned about their experiences of field work in the heat, both current and historical.

Results:

One hundred workers were assessed between late June and August 2012, on seven different farms in the California Central Valley. Thirteen were female, and the mean age was 36.8 (SD=11.9) years. Ninety four percent were born in Mexico, the remainder in the USA, and over 95% identified as Latino. Educational level was low; 47% had attended ≤ 6 years of school. Twenty-two percent lost over 1.5% of their original body weight (ACGIH suggested criteria of increased risk of dehydration), 80.2% exhibited increased serum osmolality, with 21% experiencing at least a 3% increase. Males lost a significant amount of weight -0.56 Kg (95% CI -0.40 to -0.73 Kg) and those whose blood osmolality increased, also recorded a mean significant weight loss -0.59 Kg (95% CI -0.34 to -0.85 Kg). Associations will be assessed between heart rate, task, crop, ambient conditions and core body temperature.

Conclusion:

Risk of occupational heat illness may be evaluated using physiological assessments in this high risk immigrant group.