

AGROMEDICINE PROGRAM UPDATE

The Newsletter of the Clemson University / MUSC Agromedicine Program

MUSC DEPARTMENT OF FAMILY MEDICINE – DIVISION OF PUBLIC HEALTH AND PUBLIC SERVICE
19 HAGOOD AVENUE – SUITE 305 HOT, P.O. BOX 250805, CHARLESTON, SC 29425

Samuel T. Caldwell, Editor
caldwest@musc.edu
843-792-2281 Fax 843-792-4702

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Program Notes

➤ Recent Lectures

- May 24 - Dr. Simpson presented *Tick-Borne Diseases* and *Botanical Dermatitis* at a safety meeting of South Carolina Electric and Gas linemen held in Charleston.
- June 8 - *Tick-Borne Diseases* was presented by Dr. Simpson at the Intensive Review of Family Medicine held at Kiawah Island.

➤ Research

"Structural Infestations by Imported Fire Ants: A Survey with Health Implications" was published in the June issue of the *Journal of*

the South Carolina Medical Association. This study was supported with funds from the Clemson Fire Ant Program.

➤ General Assembly

Dr. William M. Simpson, Jr. served as Doctor of the Day for the South Carolina General Assembly on May 23. He served at the invitation of Senator Passailaigue.

Respect the Heat!

It is mid June and already the state has seen temperatures approaching 100°. Along with high humidity, this places outdoor workers and others at risk

for weather-related heat illness. The table at the bottom of this page shows how temperature and humidity interact.

The Agromedicine Program has examined emergency room (ER) visits and hospitalizations for weather-related heat illness in South Carolina.¹ There were 5,393 ER visits and 576 hospitalizations from 1995 through 1999 for heat exhaustion, heat stroke, and other weather-related heat illnesses. There was an average of 1,194 cases per year.

An interesting pattern was observed when the ER and hospitalization data was

APPARENT TEMPERATURE

This table shows how relative humidity & temperature interact. For example, on a day when the air temperature is 90° and the humidity is 70%, your body feels an apparent temperature of 106°.

Temperature (F)	Percent Relative Humidity			
	60%	70%	80%	90%
100°	132*	144*	-	-
95°	114*	124*	136*	-
90°	100	106	113*	122*
85°	90	93	97	102

*Apparent temperatures of 113° or higher signal danger of heat stress.

converted to rates by county per 1,000 population. The pattern suggested "... an important rural component, specifically overexposure in agricultural settings, affecting younger workers (average 37.8 years in ER data) as well as higher-risk older workers (average age 57.9 years in inpatient data)." The leading counties for rates per 1,000 population for weather-related heat illness were Darlington - 2.7, Fairfield - 2.6, Allendale - 2.1, Barnwell - 1.9, Dillon - 1.8, Marlboro - 1.8, and Florence - 1.7. The rate per 1,000 population statewide was only 1.2 illnesses.

Weather-related heat illness is easier to prevent than to treat, but it takes foresight. Listed below are practical steps for prevention.

RESPECT THE HEAT

Plan a work schedule that starts early in the cooler part of the day. Allow yourself frequent short breaks for cooling and thirst quenching. Avoid clothing that interferes with perspiration and body cooling.

DRINK ONE THIRD MORE THAN YOUR THIRST DICTATES

Strong tea, coffee or carbonated drinks may provide too much caffeine and cause frequent urination. Natural juices, milk, soups, diluted thirst-quenchers (mixed half with water) and frequent small sips of water will do the job. One sign of

dehydration is dark urine in small amounts. An adequate intake of fluids keeps the urine light colored (diluted).

NUTRITION

A well-balanced diet supplies essential protein, calories, vitamins, and minerals for muscle wear and tear. Small, frequent meals with plenty of fresh fruits, vegetables, dairy products and poultry will result in safe potassium levels for heart and muscle activity. Salt tablets are no substitute for a balanced diet; they may damage the delicate stomach lining and cause cramps. A handful of raisins has more energy and minerals than a salt tablet or a quart of thirst quencher. Alcoholic drinks tend to interfere with circulation and effective body cooling.

PROTECTIVE CLOTHING

A light-colored loose long-sleeved shirt and trousers reduce solar burn. A wide brim, open-weave hat will help to keep the entire head cool.

LOOK FOR EARLY SIGNS AND SYMPTOMS

Muscle cramps, headache, dizziness, confusion, slowed speech or reflexes, unusual irritability, lack of concentration, hot dry skin or lips, and dark urine are all early warning signs. Nausea, vomiting, fainting may follow.

STOP, REST, & COOL

If any of the early signs develop, don't take chances! Stop, rest, and cool yourself off. Learn to respect the heat and live with it. It actually takes two weeks for the body to become conditioned to periods of high temperature and humidity. No one is immune to heat illness. Denial of early symptoms can result in a medical emergency.

¹*Schuman SH et al. Weather-related heat illness in South Carolina, 1995-1999. J SC Med Assoc 2000; 96:507-513.*

DDT and Breast Cancer

DDT, an insecticide, and PCB, an industrial chemical, have similarities to the hormone estrogen. Since estrogen has been associated with increased risk of breast cancer, these two chemicals have also become suspect.

A study² published in the May 16 issue of the *Journal of the National Cancer Institute* reported that there is no link between DDT or PCB and breast cancer in women. This study combined the results of five other studies funded since 1993 by the National Cancer Institute and the National Institute of Environmental Health Sciences.

²*Laden F et al. 1,1-Dichloro-2,2-bis(p-chlorophenyl) ethylene and Polychlorinated Biphenyls and Breast Cancer: Combined Analysis of Five U.S. Studies. J Natl Cancer Inst 2001; 93: 768-775.*