

Scientific Studies

Heat Increases Toxicity

“Thermal heat responses may exacerbate chemical toxicity.”

Core body temperature responses to high ambient temperatures and/or toxicant exposure can have a profound impact on the ability of an organism to survive the exposure according to Lisa R. Leon at the US Army Research Institute of Environmental Medicine.

“Thermal heat responses may exacerbate chemical toxicity,” says Leon. When the pores open to allow perspiration, the permeability of the skin is increased, which allows the skin to absorb environmental toxicants more readily.

There are many environmental toxicants in the air from pollution, smoke, fragrances, pesticides, and other toxicants. These toxicants enter the body more easily in high heat.

Leon says, “The efficacy by which toxicants enter the body is directly influenced by thermoregulatory effector responses that are evoked in response to high ambient temperatures.”

During perspiration, there is an increase in blood flow to the skin, allowing for more rapid absorption of toxicants into the blood.

Hypothermia is an in-

born thermoregulatory survival strategy rodents use to diminish the effect of severe environmental insults. Hypothermia is protective against increased absorption of environmental contaminants which is minimized at reduced core temperatures.

Sauna therapy is often used to increase detoxification via the skin using the same principal. When the pores open and blood flow increases to the skin, toxicants may be eliminated from within the body.

However, if the environment is polluted, this may also increase absorption of toxicants from the environment. It is essential to ensure the lowest possible contaminates when taking a sauna bath.

Individuals with multiple chemical sensitivity and other environmental illnesses may find cooler temperatures lessen absorption of chemicals in the environment. Those without any of these illnesses may also benefit from cooler temperatures to limit exposures which may lead to environmental illness.

Reference

Leon LR. Thermoregulatory responses to environmental toxicants: The interaction of thermal stress and toxicant exposure. *Toxicol Appl Pharmacol.* 2008 Jan 31

