

# Are children more prone to heat and cold stress than adults? ▶



**Y**es, children are more sensitive to heat and cold stress than adults. Heat tolerance is directly affected by body size. Children are smaller and weigh less, but because they have a larger relative surface area than adults, their ability to tolerate either heat or cold stress is affected.

During exercise, most of the energy released from the body appears as heat. The more we exercise, the more heat we build. And the more heat we build, the more we have to get rid of it. The evaporation of sweat is the most effective way to get rid of body heat.

Pound for pound, children build up more heat than adults. For example, if an adult and a child are walking, the child is accumulating more heat. To make things even harder, children do not sweat as much as adults.

Paradoxically, in cold conditions, children lose heat faster than adults and are more vulnerable to over-cooling. Children are more susceptible to cold stress because of their relatively large surface-to-mass ratio. Children also lose heat rapidly in cool water. The smaller the child, the faster the heat loss.

Children also take longer to acclimatize to changes in hot and cold weather. An adult body will acclimatize to a heat wave in about a week to 10 days; a child's body will take about 10 to 14 days. Adults should be aware that while they may be coping well with heat or cold, the child may not yet be acclimatized or may not have the same tolerance.

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