

## **Comfortable Indoor Heat Health Study Formula 1938**

According to Ehlers and Steel [1], in 1938, a Committee on the Hygiene of Housing, appointed by APHA, created the Basic Principles of Healthful Housing, which provided guidance regarding the fundamental needs of humans as they relate to housing.

The Heating fundamental was " a thermal environment that will avoid undue heat loss,"

This formula led to the development of the human Homeostatic equation;

" Body core temperature is the result of the balance between those process that create body heat and those that dissipate heat. Winslow, Herrington and Gagge in 1938 used the following formula to approximate how the body's thermoregulatory system worked:

$$S = M \pm R \pm C_d \pm C_v - E$$

S= Stored Heat

M = Metabolic Heat Production

R = Amount Heat Gained or loss by radiation  $C_d$  = Conductive Heat lost or gained  $C_v$  = Convective Heat lost or gained E = Evaporative heat loss"

It was discovered through military "research" that "Hypothermia occurs when the body temperature drops below 96°F (46°C). It can occur in any person exposed to severe cold without enough protection."

It was estimated that at 50°F the human body has a hard time maintaining core temperatures. For individuals in their homes to perform normal daily indoor activities, 70°F was necessary to provide a reasonably comfortable requirement.

It is true that in the energy crisis it was lowered to 2 degrees, and has even been proposed to go as low as 60.  
Hope this helps.

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### **State of Minnesota Health Department minimum temperature for Nursing Homes**

Coral Garner verified that the Minnesota Nursing Home regulations for minimum temperature is 68 degrees. Both seniors and vulnerable adults are residents in Nursing homes. I hope this helps.

Gretchen Musicant

Commissioner

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