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<p>[Background] The huddling in mice has been considered as social behavior as well as thermoregulatory behavior. When they are housed in group and in normal and/or cold conditions, they huddle. However, it remains unclear how huddling affects circadian body temperature rhythm and thermoregulatory responses to cold. Therefore, we assessed the circadian body temperature rhythm and behavioral responses to cold, comparing mice housed in a group with those in individual housing. [Methods] Eight ICR female mice were used and kept under a 12/12h light/dark cycle, free feeding and drinking. Nano tags were implanted in the abdominal cavity. All mice were allowed to eat and drink freely. Four mice were housed individually and four mice in a group for 7-14 days at 28°C, 25°C, 22°C, and 18°C. Deep body temperature and activity were recorded on a nanotag. In addition, huddling behavior was assessed by video monitor. We used a computer-controlled behavioral device with two different floor temperatures (20°C or 33°C). The floor temperature was randomly changed every 5 minutes for 120, and a mouse could move freely on the floor, which was monitored with a video system. [Results] In Experiment 1, mice housed in a group showed higher body temperatures in the light phase than those housed individually at 25°C, 22°C, and 18°C. In Experiment 2, we found that mice housed in a group tend to show less cold-escape behavior. [Discussion] Huddling help maintain body temperature in cold; however, such effect may be specific in the light phase. Group housing may affect behavioral response to cold.</p>	

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