

Warm Nights: India's Hidden Summer Health Threat Explained

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Warm Nights Latest News

- Warmer nights may pose a greater health risk than daytime heatwaves during Indian summers, especially for people living in low- and middle-income housing.
- While daytime heat receives most attention, nighttime temperatures in India are rising even faster, increasing the danger of prolonged heat exposure.
- Normally, cooler nights allow the human body to recover from daytime heat, but persistently high night temperatures prevent this recovery, leading to continuous physiological stress.
- The risk is particularly severe in poorly ventilated homes without air-conditioning, where people remain trapped in hot indoor conditions for hours.
- A recent Climate Trends study in Chennai found many households experiencing indoor nighttime temperatures above 32°C, sometimes even crossing 35°C, comparable to peak daytime heat.
- Though research in India is limited, global studies suggest that warmer nights could significantly increase heat-related deaths, making indoor heat exposure an emerging public health concern.

Rising Night-Time Temperatures: An Emerging Heat Risk

- India's average temperature increased by about 0.7°C between 1901 and 2018, according to the 2020 climate assessment for the Indian region.
- While both daytime and nighttime temperatures have risen, their rates differ.
- By the end of the century:
 - Warmest day temperatures may rise by 4.7°C
 - Coldest night temperatures may rise by 5.5°C
- This indicates that nighttime temperatures are likely to rise faster than daytime temperatures, a trend already visible in recent IMD data.

Urban Heat Island Effect

- The rise in nighttime temperatures is particularly severe in cities due to the **urban heat island effect**.
- **Causes** - Urban materials such as: Concrete; Roads; Bricks; Metal structures, absorb heat during the day and release it at night.
- This effect is intensified by: Lack of vegetation and green spaces; Loss of water bodies; Dense clusters of high-rise buildings; Growing use of air-conditioners that release hot air outdoors.
- As a result, nighttime temperatures in dense urban areas can be **4-6°C higher** than in city outskirts.

Impact on Urban Residents

- The problem is especially acute in urban India, where many people live in: Small houses; Poorly designed structures; Homes with inadequate ventilation.
- This leaves residents with little nighttime relief from heat.
- Persistently warm nights can lead to: Sleep discomfort; Restlessness; Physical exhaustion; Reduced energy levels; Lower productivity the following day.
- Experts warn that the full scale of health impacts is still being studied, but the risks are likely to be significant.

Heat Beyond Heatwaves: The Hidden Danger of Warm Nights

- Evidence suggests that high night-time temperatures may significantly **increase mortality**.
- Public health experts highlighted that when daytime temperatures exceeded 45°C but night temperatures stayed below 28°C, daily deaths remained close to the normal average of 100.
- However, when nighttime temperatures rose to 28-30°C, daily deaths increased to around 165, and when they crossed 30°C, mortality surged to nearly 265 deaths per day.
- This indicates a strong correlation between warmer nights and increased health risks.

Limitations of Current Heat Action Plans

- India has **heat action plans** in at least 23 states and over 200 cities, but these largely focus on managing heatwave events, which occur only when specific temperature thresholds are met and may happen only a

few times a month.

- However, extreme summer heat and rising night-time temperatures are a persistent reality, suggesting that existing responses may be too narrowly focused on episodic heatwaves rather than continuous heat exposure.

Need for Long-Term Structural Measures

- Experts stress the need to strengthen the long-term components of heat action plans, including:
 - Improved urban infrastructure
 - Better low-cost, heat-resilient housing
 - Expansion of green spaces
 - Better urban planning to reduce heat stress

Immediate Relief Measures

- For vulnerable households, especially those in cramped living conditions, simple low-cost solutions can offer quick relief.
- The Climate Trends Chennai study suggests measures such as:
 - Reflective roof coatings
 - Whitewashed roofs and walls
 - Improved natural ventilation
- These passive cooling interventions can help reduce indoor heat exposure and lessen health risks from increasingly warmer nights.

Source: IE

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