

**H**OT air. Damp sheets. A restless turn. A distant horn. A barking dog. A ceiling fan that does nothing but push the same heat around the room. Time stretches. Sleep fractures. The night refuses to soften.

Morning comes anyway and with it, the slow accumulation of everything the night could not fix.

Across cities, the day begins already strained. The roads fill early. Horns layer over one another — first as signals, then as impatience. A driver wipes sweat from his neck, misses a signal, and brakes too late. Another leans out, shouts. It escalates quickly. No one quite knows why.

Heat, now, is no longer just a discomfort people endure. It is quietly reshaping how they sleep, how they think, how they react. A growing body of research points to a clear pattern: rising temperatures are disrupting sleep, weakening cognitive performance, and lowering emotional thresholds — with consequences that spill into everyday life, and increasingly, onto the roads.

It begins at night, in rooms that never quite cool. Studies show warmer nights are consistently linked to shorter, poorer sleep. Even a slight rise in temperature, around 27°C, can reduce sleep by 15–17 minutes, increasing the likelihood of getting fewer than six hours. As the body struggles to cool itself, sleep becomes lighter, more fragmented and easily disrupted, with the deficit building night after night.

What changes is not just how long people sleep, but how deeply. Research by Alain Buguet, Manny W Radomski, Jacques Reis and Peter S Spencer shows that heatwaves reduce deep and REM sleep — the stages essential for recovery — turning sleep from restoration into another form of stress.

Through the day, it surfaces in small but telling ways. Attention blurs at the edges. Memory falters. Decisions take longer, feel heavier. Emotional balance

weakens. Even brief exposure to extreme heat can reduce cognitive performance, while longer stretches deepen the strain — sometimes tipping into a bad mood and depression.

Work does not escape it. In heat-exposed environments, productivity can drop by 30% to 60%. Outdoor and labour-intensive sectors feel it first, but indoor work is not spared. Performance rises to a point, then steadily declines as temperatures climb.

On the roads, the change is harder to ignore. Drivers honk more. Wait less. React quicker than they mean to. In cities where heat lingers in concrete and asphalt, even ordinary commutes begin to feel charged. Fatigue, delayed reactions, and irritability converge — and moments that should pass quietly escalate instead.

At the physiological level, the explanation is direct.

AIIMS resident Dr SM Turab explained, “Heat disrupts sleep by making it harder to fall asleep and causing frequent awakenings, as the body cannot maintain the ideal bedroom temperature of 18–22°C.

It also triggers the release of stress hormones like adrenaline and cortisol, increasing irritability, restlessness and the likelihood of conflicts, including road rage. Heat drains energy, leading to dehydration, cognitive impairment, and reduced motivation.”

But the effects are not just physical — they are behavioural, layered, cumulative.

Zoya Ahmed, a psychologist, said, “Extreme heat disrupts sleep and behaviour, leading to fatigue, irritability and reduced impulse control. In high-pressure settings like traffic, this lowers tolerance, making people more likely to react impulsively and increasing road rage and conflicts.”

Neurologists explained that when sleep is disrupted, activity in the prefrontal cortex — which governs impulse control and decision-making — decreases, while the amygdala becomes more reactive. This imbalance increases irritability and impul-

# A WARMER WORLD, A TIRED MIND

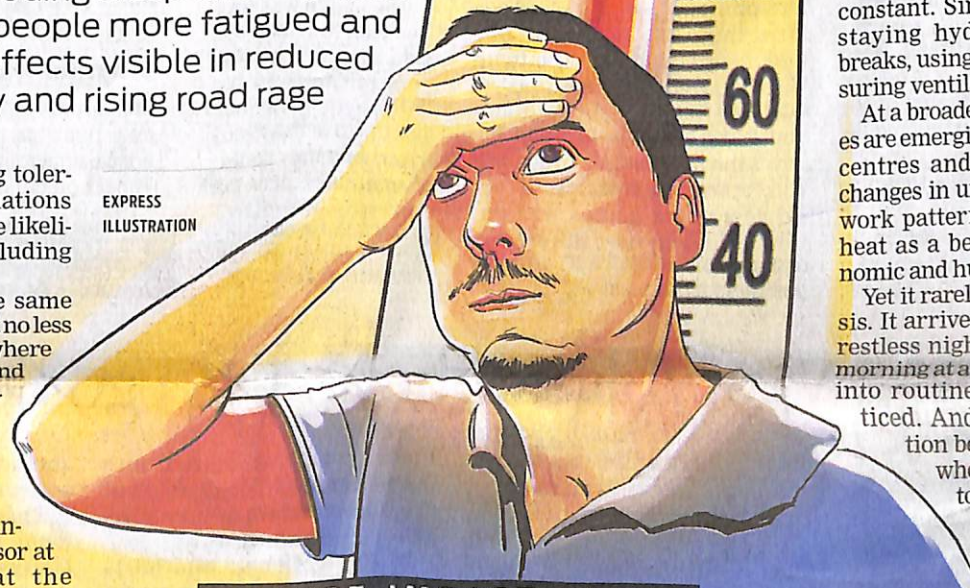
Heat is quietly eroding sleep and cognitive control, leaving people more fatigued and irritable, with effects visible in reduced productivity and rising road rage

sive behaviour, lowering tolerance in high-stress situations like traffic and raising the likelihood of aggression, including road rage.

Beyond the cities, the same heat settles differently, but no less heavily. In rural India, where livelihoods depend on land and weather, the strain extends beyond discomfort. It seeps into uncertainty, into loss, into mental health.

Dr Nanda Kishore Kanuri, an associate professor at UoH, told *TNIE* that the

EXPRESS ILLUSTRATION



CAUSE, IMPACT, CARE

## Sleep disruption

- Warm nights prevent the body from cooling down, which is essential for initiating and maintaining restful sleep
- This leads to lighter, fragmented sleep with frequent awakenings, reducing overall sleep quality
- On particularly hot nights (around 27°C), people tend to sleep 15–17 minutes less on average, increasing the risk of sleep deprivation over time

## Impact on the Brain

- Heat stress reduces activity in the prefrontal cortex, the region responsible for decision-making, focus and impulse control
- At the same time, it increases activity in the amygdala, which

processes emotions and stress responses

- This imbalance results in reduced judgement, slower reaction times and a higher tendency toward irritability and impulsive behaviour

## Behavioural Changes

- Prolonged exposure to heat is linked to increased irritability, frustration and aggression in daily interactions
- In high-pressure environments such as traffic, people are more likely to react impulsively, leading to road rage and conflicts
- Even otherwise calm individuals may experience lower tolerance levels and heightened emotional responses during heatwaves

## Productivity Drop

- Heat exposure causes fatigue, dehydration and cognitive overload, all of which affect performance
- Key functions such as attention, memory and reaction time begin to decline as temperatures rise
- Studies show that productivity can drop by 30% to 60% in some work environments, especially where cooling is inadequate

## Most Vulnerable

- Elderly individuals, who often have weaker thirst detection mechanisms, are at higher risk of dehydration
- Young children, who may not recognise or communicate their needs effectively, are also more vulnerable

project examines how rising temperatures affect farmers' health, particularly mental health and depression. Using participatory research and weather-linked data, it aims to co-develop and test a heat-informed mental health intervention. The five-year study focuses on vulnerable farming communities in Telangana, Andhra Pradesh and Karnataka.

Experts say the impact is uneven, with older adults, children, outdoor workers and those without cooling most affected. In heat-retaining cities and rain-dependent villages, the strain remains constant. Simple steps like staying hydrated, taking breaks, using cooling and ensuring ventilation can help.

At a broader level, responses are emerging, from cooling centres and heat alerts to changes in urban design and work patterns, recognising heat as a behavioural, economic and human challenge.

Yet it rarely feels like a crisis. It arrives quietly — one restless night, one irritable morning at a time — slipping into routine almost unnoticed. And when exhaustion becomes familiar, when strain begins to feel normal, at what point does it stop feeling like change?

- Outdoor workers and low-income groups without access to cooling systems face prolonged exposure, increasing both physical and mental strain

## What Can Help

- Staying well hydrated is essential to prevent fatigue and cognitive decline
- Taking frequent breaks from heat exposure helps the body recover and maintain stability
- Maintaining cool indoor environments (ideally 18–22°C) supports better sleep and productivity
- Reducing direct sunlight while ensuring proper ventilation can significantly improve comfort and health