3MT Script

Sleep is something that we all do and is vital to help restore us physically as well as mentally. If I were to ask you “what are some ways you might improve how well you sleep at night?”, you would probably answer with things like: make sure the room is dark and quiet, maybe make sure the room isn’t too hot or cold, and try not to drink coffee or tea in the late afternoon. These answers are all absolutely correct and have been studied extensively. The problem is there is another, seemingly invisible factor that could prevent you from getting a good night’s sleep. That factor is your indoor air quality.

We often don’t think about air quality until we can actually see the how bad it is - out of sight, out of mind. However, just because we can’t see or even smell how bad the air

quality is, doesn’t mean that it isn’t causing us problems. The air quality inside is incredibly important because we tend to spend about 90% of our time indoors and without proper ventilation, pollutants and dust can accumulate to unhealthy levels rather quickly.

We know generally how common indoor air pollutants like dust and carbon dioxide affect us while we are awake, but I am curious to see how these pollutants interact with us while we are sleeping. To answer this question, we first had to develop a device that could measure a variety of indoor air pollutants in addition to things like temperature and light. We included temperature and light because we know they affect sleep so we wanted to make sure to exclude nights from our analysis when the temperature and light were outside typical comfort zones. After

developing and testing our device, we then recruited students and families to put these devices in their bedrooms for a few months so we could monitor their indoor environments. At the same time, we provided them fitness trackers to monitor their sleep in addition to asking them to fill out surveys in the mornings regarding how well they think they slept. How a device measures your sleep can be just as important as how you perceive your sleep so we wanted to include both types of measurement.

What we have discovered so far is that there are a few unexplored pollutants that are affecting sleep more than we originally thought. I will say that these pollutants don't affect your sleep to the same extent that light and temperature do, but they do seem to alter the amount of time you spend awake each night and they do seem to

change the time you spend in different sleep stages. While these changes might be small, compound them over a week, a month, or even a lifetime, and the effects become more serious.

My hope is that when someone asks you in the future, “hey, any tips on how I might be able to sleep better?” that your response will include things like opening the window or running the AC a bit more to help provide better ventilation. We can’t always see how bad the air quality is, but it is an important factor if you want to make sure you are getting the best possible sleep.

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