Here’s how to optimize your workspace for sound and overall comfort

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There is such a thing as an office that’s too quiet, according to a recent study involving University researchers.

The study found that 50 decibels – comparable to the sound of birdsong or moderate rain – is the optimal noise level for maximizing physiological well-being, according to director of the Institute on Place, Wellbeing and Performance.

The finding that noise below 50 decibels could be stressful came as a surprise to researchers.

“Everybody knows that loud noise is irritating or stressful, and it can damage your ears,” said Sternberg, who is also director of research for the Andrew Weller Center for Integrative Medicine,

and a member of the BIOS Institute. “But what’s novel is that we discovered that when it’s very quiet in office settings, the stress response is also higher than at this sweet spot of 50 decibels.”

Noise is just one of many factors that can affect workplace well-being. Here, University experts offer tips to address not only a noisy office, but also ways to improve the workspace for comfort and productivity to maximize employees’ overall wellness.

How loud is your office?

Noise is one of the primary complaints many office workers have about their workplace, but addressing it is often not a priority during the building process, said Sternberg and Altaf Engineer, an assistant professor of architecture who holds a faculty affiliation with the Institute of Place, Wellbeing and Performance.

For those inclined to measure the noise in their office, Engineer recommends downloading one of the many free sound meter smartphone apps, such as Decibel X. With the app open, users can measure their nearby ambient sound in decibels and see short descriptors of real-world sounds that correspond to each level. This can inform whether more or less noise is necessary to reach the 50-decibel mark.

Optimizing a workspace for sound levels begins with the space’s design and materials, including the floor, ceiling and wall finishes, Engineer said. Having expert consultants who can use specialized software to simulate an office’s acoustics with different construction materials and layouts, and then guide the design and building phases, will always offer the best results, he added.

“One cosmetically finished building isn’t just worth nothing with significant intervention and cost. So, you want to have an impact in the design phase,” said Engineer, who, along with Sternberg, wrote a paper in 2021 to guide the building industry in designing spaces that help improve people’s emotional well-being and physical health.

Make your own noise

Barring a complete office transformation, Engineer and Sternberg said white noise machines can be an effective way to mask distracting background noise – or provide some ambient noise in an office that’s too quiet, which can also be distracting.

“The brain is a difference detector: If it’s too quiet, you can hear a pin drop and it disturbs your focus,” Sternberg said.

Many noise machines offer sounds that mimic those heard in nature, such as ocean waves, as well as ambient noise, such as fans. Sternberg recommends using machines that provide a primary use unrelated to sound but that also naturally come with white noises of their own – such as a humidifier or air purifier.

“Nature sounds will mask noise, and they will also put you in a state of calm because you associate these nature sounds with calming,” Sternberg said.

This advice also applies to people working from home, Sternberg said. She added that home workspaces set up in, for example, a bedroom, could also benefit from separation with portable folding screens that divide an area for visual privacy but can also tamp down unwanted sounds.

The science of inches

Ergonomics, or how well an environment fits a person, is another critical factor to reducing stress at the office, said Charity Madrid-Torres, a health and safety officer for Risk Management Services who oversees ergonomics for University employees.

Humans were not made to sit and stare at computer screens all day, Madrid-Torres said. The effects of doing so can compound over the years and cause soft-tissue injuries, musculoskeletal disorders and other problems.

But making minor changes to the way a person sits at their desk, the position of their keyboard or mouse, the types of equipment they use, and a variety of other factors can help mitigate injuries and discomfort.

“I call it the science of inches because everybody is different,” Madrid-Torres said, adding that even small adjustments can have a profound effect after years of sitting at a desk every day over the course of an employee’s career.

Here are some tips Madrid-Torres offers based on what she commonly sees:

Keep elbows and knees bent at 90 degrees. This helps your body avoid awkward positions that put unneeded stress on joints and muscles. This often requires lowering your chair so that your thighs are parallel to the floor instead of angled downward. Feet should also be kept flat on the floor, rather than tucked beneath you or crossed at the ankles.

Move your mouse and keyboard closer to your body. Keeping elbows bent at 90 degrees means you shouldn’t be reaching very far for your most-used equipment. Lowering your desk can allow your hands to naturally rest above the keyboard instead of resting your wrists on the edge of a desk, which causes stress to the soft tissue in the wrists and arms.

Consider a mechanical keyboard and trackball mouse. Keyboards that use mechanical actuators in the keys – rather than the more common electronic ones – require less pressure from the fingers. And trackball mice, which control the cursor with just a finger rather than the whole arm, can help avoid stress on your shoulders and arms.

Keep an eye on your monitor. Generally, you should be able to extend your arm and just barely or not quite touch your computer screen. And your eyes looking straight ahead should fall somewhere in the top-third of the screen.

Dim the lights.Harsh overhead fluorescent lighting can be hard on the eyes, so see if you can make them dimmer with the controls or even by asking Facilities Management to remove a bulb. Task lighting from desk lamps is often easier on the eyes.

Take breaks every hour. For every 60 minutes of work – sitting or standing – take a five-minute break, stepping away for a quick walk or stretch, a drink of water or a healthy snack. If a deadline has you glued to your screen, try the 20-20-20 rule: For every 20 minutes you spend staring at the screen, look at something that’s 20 feet away from your desk for at least 20 seconds. This helps reduce eye strain and relaxes muscles that have been tightly held in one place for long periods.

The best way to ensure a workspace is optimally ergonomic, Madrid-Torres said, is to go through an assessment with her team. Requests can be made by emailing Madrid-Torres. During the 15-minute assessment, Madrid-Torres or one of her colleagues meets with an employee at their workplace and recommends specific adjustments to posture, desk layout, lighting and more. They will also recommend ergonomic equipment for offices to consider buying.

“Ergonomics is one of the best ways for people to start really looking at themselves and asking, ‘How do I care for myself?’” Madrid-Torres said. “We’re not telling people to make drastic changes. We’re just saying that these are things that actually have an impact on your health and safety in the work environment.”

More information is available in Risk Management’s ergonomic self-assessment guide, and the office also offers recommendations for specific ergonomic equipment.

The University’s Disability Resource Center can provide guidance for offices that need to make workplace accommodations in accordance with the Americans with Disabilities Act. For more information, email disability@arizona.edu.

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