Breathing through your nose when you exercise may make your runs easier

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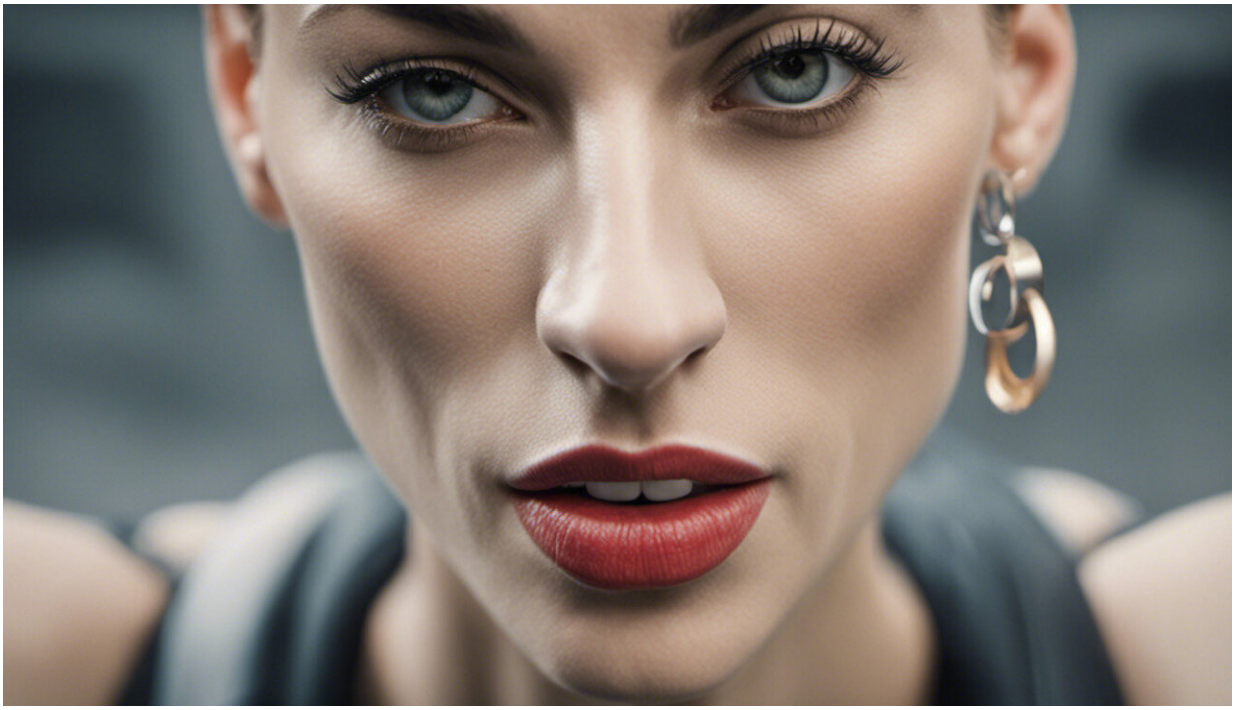

Credit: AI-generated image (disclaimer)

Breathing is subconscious. We don't have to think about it—it just happens. But when we exercise, many of us become more aware of it than we normally are—sometimes thinking about every breath we take.

During low and moderate-intensity exercises (such as walking and

cycling), the majority of us breathe in through our nose and out through our mouths. But the more intense the exercise becomes, the more we tend to breathe entirely through our mouths.

Most of us would assume that breathing through the mouth is the best technique to use during intense exercise, as it allows more oxygen to reach our muscles. But evidence shows the contrary—and that breathing through your nose may actually be a better technique to use during intense exercise (such as running).

A series of studies have shown that when exercising at different intensities, less oxygen is used when breathing through the nose compared to breathing through your mouth. While this might not sound like a benefit, this basically means that the body can still perform the same amount of exercise while using less oxygen to perform it.

This could be a real advantage especially for endurance athletes as economy of movement is fundamental to success. Think of oxygen like fuel for car. The fewer miles per gallon of fuel a car uses the better its "fuel economy" is. The same applies to oxygen. The less oxygen used per footfall, the less energy a person uses (and therefore the more economical they are). This means you may be able to run further without becoming exhausted as quickly.

Further to this, breathing through your nose is associated with reduced volumes of air. This makes sense, as the nostrils are much smaller than your mouth is, so you can't draw in as much oxygen at one time. But this study also found that people breathed less frequently through their nose when exercising, which seems less logical.

The key here is understanding that air moves from high pressures to lower pressures to help it go from the air and into the lungs. So although the volume of air is lower in the nasal cavity compared to the mouth, the

pressure is higher—meaning the air moves more quickly into the respiratory system. The result is that oxygen can then be delivered more quickly to the working muscles.

More oxygen is also released per breath, which explains why there's no difference in heart rate when breathing orally or nasally during the same exercise. So despite lower volumes of oxygen coming in, this indicates the heart doesn't need to work harder to deliver it to the muscles. This means the heart is under no additional stress when breathing through your nose during exercise.

Researchers also suggest that breathing through your nose increases production of nitric oxide, which not only makes it easier for oxygen to reach the lungs and muscles, it may also prevent airborne pathogens (such as viruses) from causing harm. Nitric oxide does this by lowering blood pressure and helping blood flow more easily, allowing that much-needed oxygen to reach the working muscles.

In all, it looks like breathing through your nose may actually be of benefit when running. It makes you your movements more economical, reduces the amount of airborne particles your breathe, reduces exercising blood pressure and helps oxygen reach the working muscles more effectively.

Evidence is less clear for other types of exercises (such as weight lifting) which require short, sharp bursts of effort. These types of exercise rely on drawing energy from other sources than oxygen—such as stored sugar (glucose) in our muscles. But these metabolic processes, which become depleted during the exercise, still need oxygen to recover. Taking deep breaths through your nose while recovering between sets may help this process to happen more optimally.

But while this all sounds incredibly positive and encouraging, there are

some negatives to be aware of.

Breathing only through your nose during exercise is very much a learnt process. It shouldn't be introduced instantly. If you introduce it without training first, it could lead to "air hunger"—a process whereby a small amount of carbon dioxide is retained at the end of each breath. This can cause discomfort and hyperventilation.

As with anything, practice makes perfect. When learning to breathe through your nose, make sure you don't force air in. Try and relax into the process. Ensure you're tongue is at the top of your mouth, as this relaxes the jaw and face muscles making it easier to draw a deep breath through your nose. You also may want to alternate between breathing through your nose and your mouth at first until you get more used to breathing solely through your nose. The more you do this, the more the process will become subconscious.

Breathing through your nose while exercising can be very effective. Just be sure to practice and give your body time to adjust to avoid harm.

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