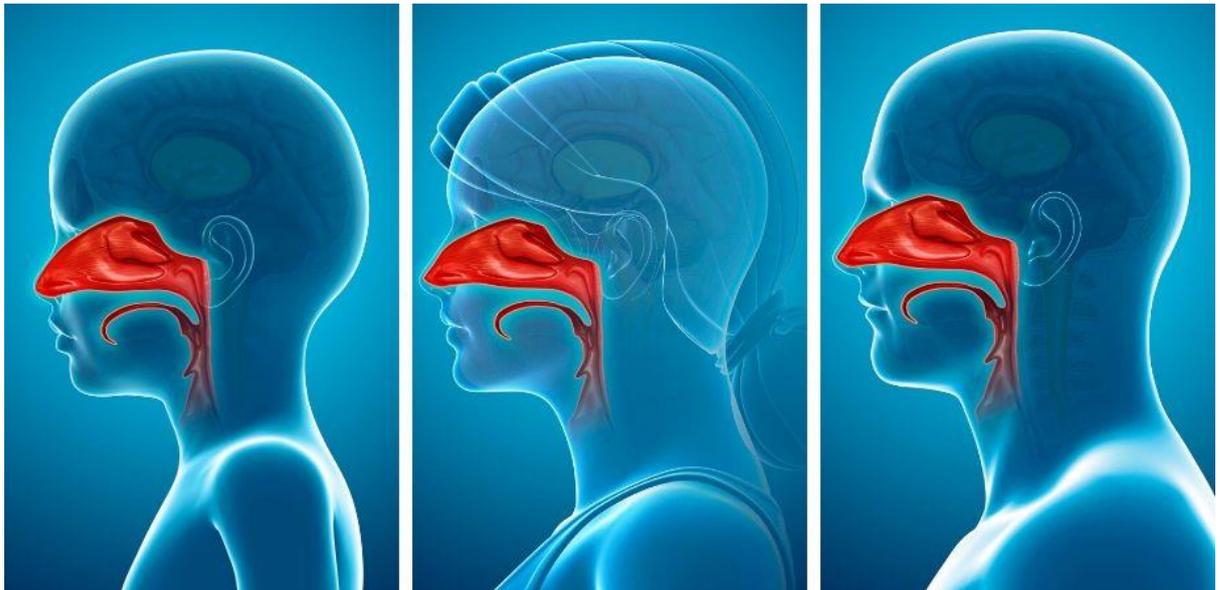


Breathing to Boost Natural Immunity



When ENT specialist Dr Maurice Cottle (founder of the American Rhinologic Society, 1954) identified 30 reasons to nose breathe he did not mention nitric oxide (NO).[1] That's because the role of NO in regulating biological functions in humans was yet to be discovered. In 1998, researchers on the complex roles of NO within the body were awarded a Nobel Prize for their work.[2] It has since been referred to as the third respiratory gas along with oxygen and carbon dioxide.

Scientists have previously highlighted the importance of nasal breathing in preventing the spread of infections, indicating that where facemasks fail, the nose may provide a natural filter for dangerous pathogens. It is relatively obvious that the nose filters, warms and humidifies air on its way into the body, whereas mouth breathing does not, but there is more to the nose than you might realise.

Functional Breathing to Boost Immunity

An ideal breathing pattern:

- Nasal breathing at rest, when sleeping and up to moderate levels of physical exertion.
- Minute volume of 4-5 litres of air at rest (about 8-12 breaths/minute).

- Regular rhythmic breathing (very few sighs, yawns, coughs, catch-up breaths).
- Diaphragm breathing (80% at rest).

The above parameters help boost immunity and fight infection in the following ways:

- Nasal breathing warms, filters and humidifies inhaled air before it reaches the lower respiratory tract.
- An optimal minute volume (MV) combined with nasal breathing helps reduce the load of inhaled pathogens.
- Lower MV and nasal breathing help maintain the delicate balance of gases, O₂, CO₂ and NO, in airways and blood.
- Lower MV means increased levels of both NO and CO₂ which help soothe the nasal and lung mucosa and mediate cellular defence.
- Both NO and CO₂ are vasodilators and bronchodilators helping maintain airway and vascular tone and ensuring oxygenated blood is delivered throughout the body.
- An optimal level of CO₂ in arterial blood is essential for the delivery of oxygen from haemoglobin to cells in the body. This is known as the Bohr Effect, first described by Christian Bohr in 1904.

By contrast, breathing through the mouth upsets the delicate balance of gases in airways and blood, lowering NO, CO₂ and O₂. Mouth breathing also engages the secondary respiratory muscles and the sympathetic nervous system (fight or flight mode). When the SNS is dominant, the immune system is down-regulated.

Below are two breathing exercises to help clear nasal passages and boost your natural immunity.

Humming Exercise

Here is a simple humming exercise you can do if you feel you are coming down with a respiratory infection, sinusitis, or are unwell. You can do it any time as a preventative measure to help boost immunity. We associate humming with cheerfulness and you'll notice that it's difficult to hum and feel down at the same time.

[Immune protective effects of nitric oxide and humming »](#)

Nose-Clearing Exercise

Some people breathe through the mouth simply through lack of awareness. For others there could be a physical impediment such as nasal congestion. Many habitual mouth breathers do so simply because they get an unpleasant sensation that they just can't get enough air through the nose. This is particularly true in children who habitually mouth breathe. Mouth breathing and over-breathing are characteristic responses in times of stress. As breathing educators we work with people to help them pull out of this cycle and establish a more functional breathing pattern.

Often the first step in this process is to relieve nasal congestion. There are many interventions that can improve nasal breathing including reducing dairy and consumption of refined carbohydrates. For quick relief we suggest you try this nose unblocking exercise:

[Clear a blocked nose »](#)

Breathing for Everyday Activities

As mentioned earlier in this article, less is more when it comes to breathing – in the same way that good nutrition is not about eating more. A good start is the ability to breathe through your nose at rest and up to moderate levels of physical exertion, like climbing stairs, or if you are fit, jogging. You should also breathe through your nose when sleeping and symptoms like bad breath, strong thirst, or dry mouth on waking are indications that you are probably breathing through your mouth when sleeping. Snoring, sleep apnoea, insomnia, restless sleep or blocked nose on waking are also signs that you are likely to be over-breathing through your mouth in your sleep.

The breathing pattern in your sleep is a mirror of your daytime breathing. The implications of this are that you probably have a dysfunctional breathing pattern which is not only impacting on your sleep quality, but potentially impairing your health and immunity.

What You Can Do

At the time of writing, new findings are suggesting that the COVID-19 virus may spread as an airborne aerosol, like SARS.[3,4] It is therefore imperative to breathe in and out through your nose as gently as possible, not only for your protection, but also for those in your vicinity. If you are exercising, reduce the pace and intensity as

necessary, to enable you to maintain comfortable nasal breathing. This will minimise the chance of inhaling and spreading germs and has the added benefit of generating the germicidal power of nitric oxide for your own protection.

Masks are effective in helping to reduce hand-to-face contamination, but may also help in reducing exposure to airborne particles. The widespread use of masks in China and Japan is implicated in helping slow the spread of the virus. Keeping to your isolation bubble and maintaining a respectful minimum 2-metre distance from others are essential measures, as is advice to wash your hands regularly using soap and water.

Boosting Immunity – The Bigger Picture

The focus of this article is breathing and for optimal results should be accompanied by other immune-boosting measures, including productive sleep, good nutrition, adequate hydration, physical exercise, reducing stress and maintaining social contacts (virtually, if lockdown is in place).

In addition to these, studies have shown that supplementation with therapeutic levels of vitamin C, vitamin D and zinc may assist in the prevention and treatment of respiratory infections.

Vitamin D, the sunshine vitamin, may confer protection against respiratory infections and COVID-19 infection rates might be expected to be higher in northern countries emerging from winter.[5]

A randomized, double-blind, placebo-controlled trial compared vitamin D3 supplements (1200 IU/d) with a placebo in school children. The study concluded that vitamin D3 supplementation during the winter may reduce the incidence of influenza A.[6]

A 2016 meta-analysis to assess the overall effect of vitamin D supplementation on the risk of acute respiratory tract infection reviewed results from 25 randomised controlled trials (total 1,321 participants, aged 0 to 95 years). It showed that vitamin D may help prevent and treat respiratory infections.[7]

A case study published in *Canadian Family Physician* reported reductions in flu or influenza-like illness in a rest home population given supplemental vitamin D. Patients who did have influenza were treated with a one-time 50,000 IU dose of vitamin D3 or 10,000 IU three times daily for two to three days.[8]

There are a number of studies reporting success using high-dose vitamin C in combination with other treatments for sepsis.[9,10]

Research is being undertaken in the use of high-dose vitamin C to treat COVID-ARDS in hospitals in China, Italy and New York.[11] If successful, this potentially offers a relatively inexpensive and readily available treatment to help reduce the morbidity and mortality rates from acute respiratory illnesses.

Studies have demonstrated preventative zinc supplementation may assist in reducing mortality from respiratory infections, especially in cases of zinc deficiency.[11,12,13,14,15]

About this Post

The New Zealand Government and front-line workers in our hospitals are doing an exemplary job in containing the spread of this virus.

Please note neither this post/blog nor any linked articles claim that nasal breathing or humming prevent or cure COVID-19. However, now more than ever it makes sense both for physical and psychological reasons to take any steps that may improve our health. Like the advice to wash our hands frequently, the advice to nasal breathe also gives us a sense that there is something we can do, a sense of control and anything that makes us feel less stressed is also good for our immune system.

Booking online consultations

To book for an upcoming seminar, online consultation or for more information on ways you can boost your natural immunity, you can contact our clinic and speak with a practitioner.

Tel: 09-360 6291

[Book online here »](#)

Written by Glenn White, BSC, MBIBH, BBEA, Breathing Educator and Nicky McLeod, BA, MBIBH, Breathing Educator, March 2020

About the authors

Glenn White is a Buteyko Institute certified practitioner trainer and director of the Buteyko Breathing Clinic in Auckland, New Zealand.

Glenn overcame a lifetime of asthma, allergies and recurrent respiratory infections after completing a Buteyko breathing course in the UK in 2000. He has been asthma, allergy and drug free since that time. Glenn has not had a respiratory infection requiring antibiotics since 2000. This is especially significant as the antibiotics had been a lifeline for almost 20 years in treating the constant bronchial infections that severely impacted his asthma. Overcoming a lifetime illness led Glenn to train as a Buteyko Institute practitioner in the UK, returning to open the Buteyko Breathing Clinic in New Zealand in 2001.

[Read more here »](#)

Nicky McLeod is a Breathing Educator (certified by the Buteyko Institute of Breathing and Health) and director of The Breathing Clinic in Nelson, New Zealand.

Nicky trained with Glenn White, NZ's only practitioner trainer, and undertook further training with Tess Graham in Australia. By achieving a more functional breathing pattern while doing a breathing retraining course in 2016, Nicky was able to stop triggering life-threatening grand mal and partial complex seizures that she had had for 13 years following the birth of her first child. She has been medication and seizure free since then and spends a considerable amount of time working to raise awareness of breathing retraining as a health modality, both in the public domain and among health professionals.

[Read more here »](#)

We acknowledge and thank our colleagues including Rosalba Courtenay, Patrick McKeown, Jill McGowan, Tess Graham for their invaluable and ongoing contributions about the importance in boosting natural immunity to prevent and overcome respiratory infections, including COVID-19.

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