

The Transcendental Meditation Technique as a Tool to Strengthen the Immune System

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Abstract.

This article summarizes evidence that the Transcendental Meditation technique (TM) is a useful tool for strengthening immunity to viruses. It describes research showing that TM produces a physiological state of restful alertness that is the opposite of stress. It cites research indicating that meditators have higher levels of circulating white blood cells that fight viruses, and reports a study showing that TM is effective in helping patients with HIV infections. It describes studies of health care utilization statistics, which show that TM meditators have markedly reduced hospitalization in all categories of disease, with 73% lower rates for the category of Nose, Throat, and Lungs diseases. This category includes diseases caused by viruses and bacteria, such as common colds, sinus infections, sore throat, bronchitis and pneumonia. Studies show that hospitalization rates and outpatient doctor visits are particularly reduced for elder patients compared to age-matched controls. Longitudinal studies show that the reduction in health care utilization relative to non-meditating controls only begins after they learn TM (that is, they were not healthier to begin with). The TM group decreased by an average of 14% per year relative to controls, reaching a 70% reduction after 5 years.

Although there are not yet any randomized controlled trials (RCT's) on the effects of TM in viral disease, there have been RCTs on heart disease and mortality, providing compelling evidence that TM practice is the causal agent of health benefits in these domains. Future well-controlled studies on TM's effects on viral diseases are warranted.

The research reviewed in this document does not prove that if you meditate you will be immune to the COVID-19 virus.

Please be vigilant to follow the CDC recommendations for preventing, getting and spreading the virus to others.

<https://www.cdc.gov/coronavirus/2019-ncov/about/index.html>

<https://www.cdc.gov/coronavirus/2019-ncov/downloads/sick-with-2019-nCoV-fact-sheet.pdf>

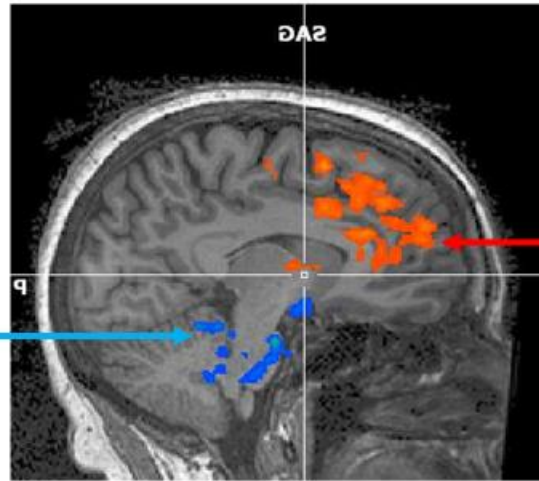
With the imminent possibility of a pandemic from the coronavirus, I was asked to write a summary of the evidence that the Transcendental Meditation technique (TM) strengthens the immune system. The way TM works to prevent viral as well as bacterial infections is by providing a unique style of restful alertness that facilitates the body's self-repair mechanisms. Let's look under the hood and see what happens in the brain during TM.

Restful Alertness: A Unique State of Healing.

Functional Magnetic Resonance Imaging (fMRI) shows changes in blood flow in the brain, which index changes in activity. fMRI during TM shows decreased blood flow to the control centers for vital functions located in the brain stem (shown in blue), which corresponds to the slower breathing, decreased heart rate, etc. observed during TM. Blood flow also decreases in the cerebellum, which is generally understood to govern muscle tone, balance and coordination of motor activity. Reduced activity in the cerebellum during TM corresponds to increased relaxation of the body. At the same time that the body is gaining deep relaxation, inner awareness and alertness increase, as indicated by increased blood flow in the executive frontal brain areas (shown in red) ¹. Thus, both the central nervous system (seen in the fMRI) and peripheral nervous system (changes in breath rate, etc.) paint a consistent picture of restful alertness during TM. Restful alertness is different from ordinary waking, sleep, dreaming and other types of meditation. ² It provides the body with a kind of super rest that it doesn't otherwise get, and this has great health benefits. It is regular experience of restful alertness that allows the body's self-healing mechanisms to work more effectively.

fMRI BRAIN IMAGING STUDY DURING TM A Portrait of Restful Alertness

Restfulness:
decreased activity in the brain stem and cerebellum indicates decreased respiration, heart rate, and movement.



Alertness:
increased activity in frontal executive cortex indicates inner awareness.

Reference. Mahone, Michelle C., Travis, Fred , Gevirtz, Richard, & Hubbard, David (2018). fMRI during Transcendental Meditation practice. *Brain and Cognition*, Epub 2018 Mar 2.

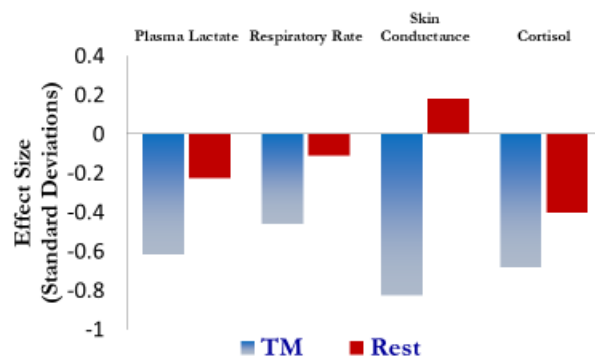
It has been known since 1970 that TM produces a restfully alert state. Restfulness is indicated by a wide array of measures such as decreases in breathing rate, heart rate, and skin conductance. Alertness is indicated by increases in brain waves (alpha1 (8-9 Hz) EEG) that indicate the person is relaxed with inner awareness, but is not focusing on anything in particular.³⁻⁵

Greater Relaxation than Ordinary Rest. A meta-analysis is a systematic synthesis of all the research in a field. A meta-analysis of 32 studies that compared TM with ordinary rest sitting eyes closed like TM found that TM produced significantly greater reductions in decreased plasma lactate (a metabolic byproduct), which indicates rejuvenation of the body; as well as

- decreased breathing rate, which indicates a more relaxed physiology;
- decreased skin conductance, which reflects less sweaty palms, an indicator that stress is decreasing;
- decreased cortisol, which is the major stress hormone, and indicates a holistic reduction in the stress response.

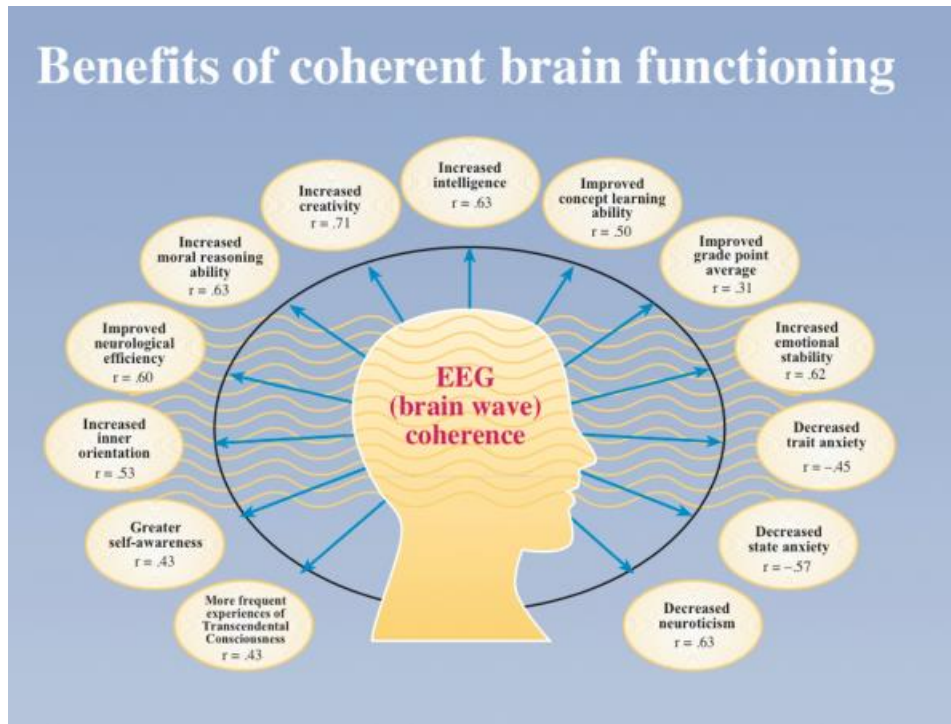
All the these changes are in the opposite direction of those produced by stress. During TM practice, stress decreases. With regular practice the body spontaneously maintains a more relaxed stress-free lifestyle outside of meditation as well. Virtually all diseases are negatively impacted by stress. One way to think about TM’s effects on preventing viral infections is that it decreases loss of vitality from spinning one’s wheels during stressful situations. The meditator becomes calmer with more adaptive resources available for coping with life’s stressors.

**DEEP PHYSIOLOGICAL RELAXATION:
TM Compared to Rest
Meta-Analysis of 32 Studies**



Reference. Dillbeck, M. C., & Orme-Johnson, D. W. (1987). Physiological differences between Transcendental Meditation and rest. *American Psychologist*, 42, 879–881.

Coherent Brain Functioning. TM also fights diseases by making the person more alert, intelligent, and creative so that they become better choosers, more likely to use known preventive measures against disease, such as wearing masks in situations where risk is high. Numerous studies have shown that the alpha1 EEG during TM is *coherent*, meaning that the brain waves are synchronous with each other, indicating more integrated functioning⁶⁻¹⁰. Increased alpha1 EEG coherence, as produced by TM, is correlated with increased intelligence, creativity, memory, motor behavior, as well as reductions in anxiety and increased emotional stability¹¹⁻¹⁴. The TM meditator is less likely to panic.

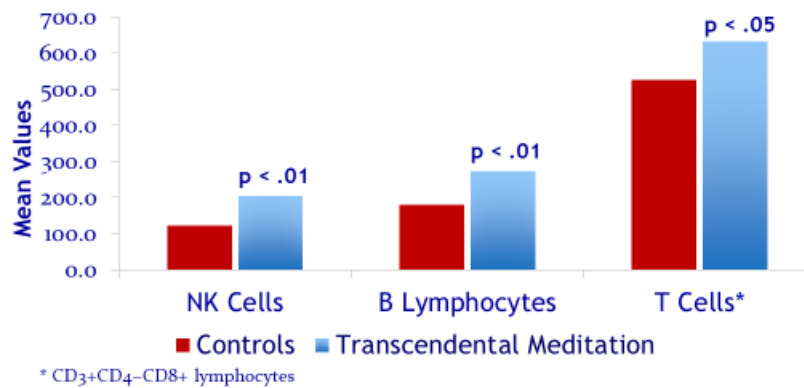


Stronger Immune System. TM meditators have been found to have higher levels of circulating lymphocytes that protect the body from viruses. This study found that compared to non-meditating healthy control subjects, that healthy TM practitioners have more:

- **T cells** (CD3+CD4-CD8+ lymphocytes) that destroy virally infected cells and tumor cells;
- **B lymphocytes**, which identify and neutralize foreign objects, such as bacteria and viruses;
- **Natural killer cells**, which provide rapid response to virally infected cells and tumor formation ¹⁵.

These results suggest that TM practice may increase the body's defenses against viral infections.

Stronger Immune System through the *Transcendental Meditation* Technique

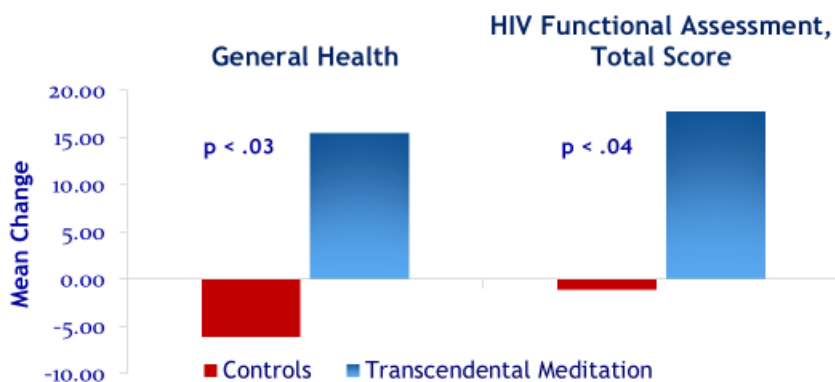


TM increases white blood cells that defend the body from infection and cancer.

Reference. Infante, Jose R, Fernando Peran, Juan I Rayo, Justo Serrano, Maria L Dominguez, Lucia Garcia, Carmen Duran, and Ana Roldan. "Levels of Immune Cells in Transcendental Meditation Practitioners." *International Journal of Yoga* 7, no. 2 (2014): 147-51

Improvement in HIV Patients. As an example of how TM may complement standard treatments for viral disease, this study was on patients with human immunodeficiency virus (HIV)-infected who were stable on antiretroviral treatment. The research question was: would the addition of TM to standard treatment help the patients. To control the amount of attention given the patients, the TM group was compared to the addition of a healthy-eating control group. The addition of TM to the antiretroviral treatment significantly improved the patients' general health as well as HIV functional assessment scores, which indicates such things as more energy, less nausea, less pain, feeling less ill, less coughing, less side effects from treatment, and more able to meet the needs of one's family^{16,17}.

Increased Vitality in HIV Patients through the *Transcendental Meditation* Technique



The TM technique improves general health as well as quality of life and health issues specific to HIV.

Reference. Chhatre, Sumedha, David S. Metzger, Ian Frank, Jean Boyer, Edward Thompson, Sanford Nidich, Luis J. Montaner, and Ravishankar Jayadevappa. "Effects of Behavioral Stress Reduction Transcendental Meditation Intervention in Persons with HIV." *AIDS Care* 25, no. 10 (2013): 1291-97.

Reduced Hospitalization for Viral Diseases, Study 1. A five-year study was conducted on the health insurance statistics of 2,000 people practicing the Transcendental Meditation technique (TM). The TM group's rates of medical utilization are shown by blue bars in the chart below. Compared to the normative data for all 600,000 people insured by the company, called "Other Groups" (red bar), the TM group had lower hospitalization rates in all categories of disease.

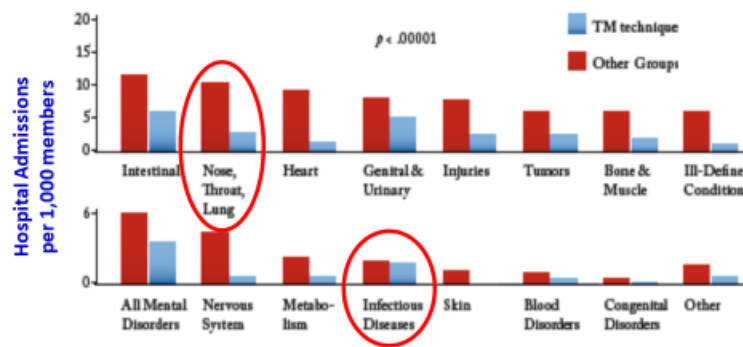
How could one simple technique like TM improve all kinds of diseases? It is because the restfully alert physiological state produced by TM facilitates the innumerable self-repair mechanisms of the body. Whatever problem that is in the body and mind when a person sits to meditate, in the deeply relaxing and coherent state of TM the body's self-repair mechanisms for that situation go to work and help the body to fix it.

The average reduction in hospitalization across all disease categories was 50% less for the TM group than norm. The reductions for viral infections were even larger, 73% for category labeled "Nose, Throat, and Lungs". This category

includes many diseases caused by viruses and bacteria, such as common colds, sinusitis (infection of the sinuses), pharyngitis (sore throat), pneumonia (inflammation of one or both lungs), bronchitis (inflammation of the bronchial tubes). Note that coronaviruses, which are a family of viruses, are one of the causes of colds. The COVID-19 coronavirus that has infected China is a more serious virus of the same family.

For the category of Infectious Diseases (circled in red, lower charts), the TM group had a 30.4% lower hospitalization rate. This category includes viral infections such as polio, chickenpox, herpes, measles, hepatitis. These results, together with the study showing that TM increases lymphocytes, suggest that TM practice may help prevent viral infectious diseases.

Study 1: Health Insurance Statistics Fewer Hospital Admissions in All Disease Categories through the *Transcendental Meditation* technique



Study 1 measured 2000 TM practitioners over a five-year period. It found reduced hospital admissions in all disease categories, by an average of over 50% across disease categories.

Reference: Orme-Johnson DW. Medical care utilization and the Transcendental Meditation program. *Psychosomatic Medicine* 1987;49:493-507.

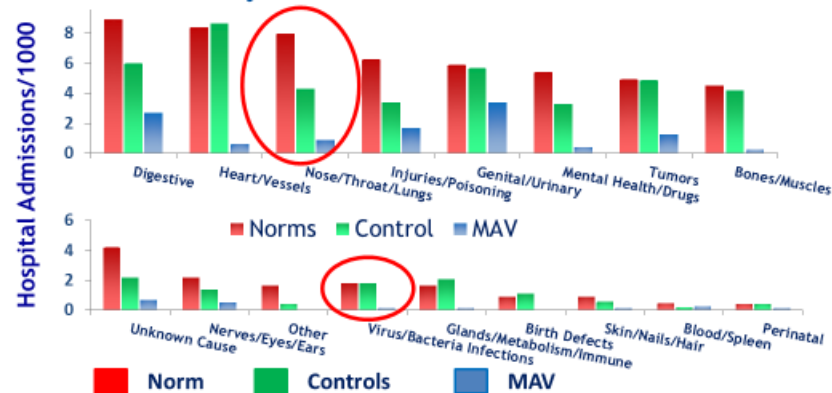
*Data courtesy of Blue Cross Blue Shield of Iowa.

Reduced Hospitalization for Viral Diseases, Study 2. Was study 1 just a lucky result? Could it be replicated with another group of TM meditators? To answer this question and extend it to Ayur Veda, a second study was conducted on the health

insurance data on 693 TM practitioners (the MAV group) who also practiced other Maharishi AyurVeda practices, including the TM- Sidhi program, daily Yoga asanas, and breathing exercises. The MAV group was compared with a Control group of similar profession, age distribution, climate and geographic location as well as to the normative data. For the category “Nose, Throat, and Lungs”, the MAV group had 89% lower hospitalization rates than the norm and 80% lower than controls, compared to a 73% reduction in Study 1 on TM alone. The additional MAV modalities apparently reduced hospitalization for these diseases of the Nose, Throat, and Lungs by a another 16%.

The category “Infectious Diseases” showed even more spectacular results. MAV had 93% less hospitalization for infectious diseases than both the Norm and Controls. This compares with a 30.4% reduction found for TM alone in Study 1. In this case, MAV modalities may have reduced hospitalization by another 62.6%. These encouraging results need to be confirmed by further research.

Study 2: Hospital Admissions: Transcendental Meditation and Other Maharishi AyurVeda Practices



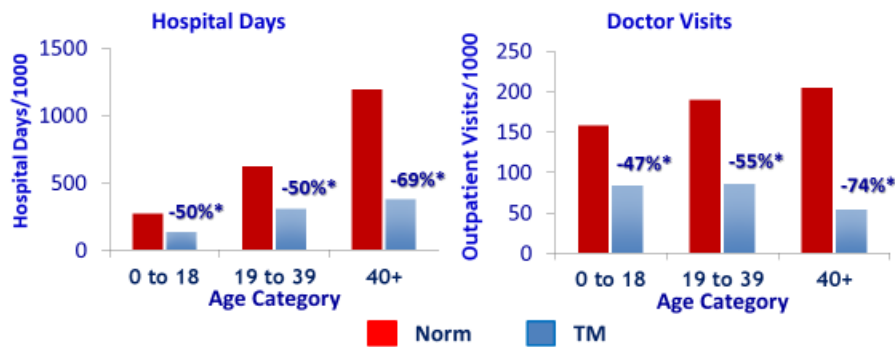
Study 2 on another group (N=693) replicated the results of Study 1. It also found fewer hospital admissions across all disease categories.

Reference: Orme-Johnson, D.W. and R.E. Herron, An innovative approach to reducing medical care utilization and expenditures. *The American Journal of Managed Care*, 1997. 3(1): p. 135-144.

Effects on Older People. The majority of people who die from the coronavirus are elderly. Would TM help this population? This study did not look only at the elderly, but it did show that TM reduced hospitalization and doctor visits in all age categories. The biggest reductions were seen in the oldest category, those over 40. The chart below shows that for the 0 to 18 years and the 19 to 39 years age categories that the reductions for TM were about 50% compared to the norm. But for people over 40, the reductions were even larger, 69% for hospitalization and 74% for doctor (outpatient) visits. This finding gives hope that regular TM practice would be a great tool for older people to have to help fight viral infections.

*Data courtesy of Blue Cross Blue Shield of Iowa.

Study 1: Health Insurance Statistics (cont.)
Reduced Medical Utilization in All Age Categories
 through the *Transcendental Meditation* technique



The TM group had fewer days in the hospital and fewer doctor visits in all age categories. The largest decreases were for older people.

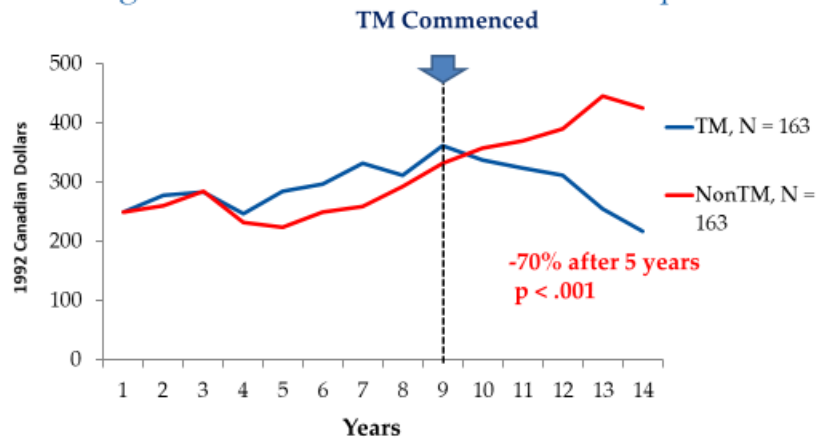
Reference: Orme-Johnson DW. Medical care utilization and the Transcendental Meditation program. *Psychosomatic Medicine* 1987;49:493-507.

Longitudinal Study on Medical Expenditures. The health insurance studies described above were conducted on people who self-selected to learn TM. The legitimate question arises, were people who go to learn TM healthier to begin with? Maybe people who learn TM are into organic wholesome food, and exercise daily, not smoke and generally have a healthful lifestyle. What role does TM play in reducing medical utilization and costs? A 14-year study of medical costs conducted in Quebec on official medical statistics compared

1418 TM meditators with 1418 people matched for age, sex, and region. In the eight years prior to learning TM, the TM groups costs were comparable to controls. It was only after they learned TM that their medical costs began to drop year each year for the next six years.

Since the effects on the elderly are particularly important for the coronavirus, the chart below shows people over 65, N = 163 for both TM and Non-TM-controls. It can be seen that people who learned to TM (blue line) had, if anything, slightly higher medical costs than controls before learning, and that their costs were rising at about the same rate as controls during the 8-year baseline period. However, once they learned TM, in the 5-year period of practicing TM the meditators' medical costs began to drop, by about 15% per year, showing them to be 70% lower than controls after five years. Note that this magnitude reduction in medical costs is comparable with what is shown in the previous chart on rates of hospitalization and doctor visits, about 70% lower levels of hospitalization and doctor visits for the older age group. It can be mentioned here that randomized controlled studies have shown that TM also reduces cardiovascular disease¹⁸⁻²³ and reduces mortality²⁴⁻²⁶. These studies prove that TM has health benefits. However, randomized controlled trials are still needed on the effects of TM on viral diseases.

Decreased Medical Expenditures in the Elderly through the *Transcendental Meditation* technique



Medical expenditures for people over 65 decreased after learning TM, reaching a 70% reduction relative to non-TM controls after only five years.

Reference: Herron R, Cavanaugh K. Can the Transcendental Meditation program reduce the medical expenditures of older people? A longitudinal cost reduction study in Canada. *Journal of Social Behavior and Personality*. 2005;17:415-442

Conclusion. Evidence from several types of studies indicates that TM is a good tool for helping prevent and recover from viral diseases.

- It produces a healing state of restful alertness.
- TM meditators have higher levels of circulating white blood cells that fight viruses.
- It is effective in helping patients with HIV infections.
- Hospitalization rates are lower in all categories of disease. They are 73% lower for Nose, Throat, and Lungs diseases, which includes diseases caused by viruses in the same family as the coronavirus.
- It particularly reduces hospitalization rates for elder patients.
- The health benefits of TM begin as soon as it is learned, providing evidence that TM is the cause.

This being said, this information does not state or imply that if you meditate you will be immune to the COVID-19 virus. Please be vigilant to follow the CDC recommendations for preventing, getting and spreading it to others.

<https://www.cdc.gov/coronavirus/2019-ncov/about/index.html>

<https://www.cdc.gov/coronavirus/2019-ncov/downloads/sick-with-2019-nCoV-fact-sheet.pdf>

An additional recommendation I would like to make that I haven't seen from the CDC or elsewhere is to *stay rested!* Go to bed early, take frequent breaks from work (and play). Don't push yourself. Be kind to your body and let it recover from exertion. And, of course, the main point from me, learn the Transcendental Meditation technique and practice it regularly, 20 minutes twice a day, AM before breakfast and PM before dinner. Best wishes for a healthy you and a healthy, peaceful world.

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