Task Force on Dancer Health

DANCE/USA

The Dancer's Planning Guide to Optimizing Immunity

During COVID-19 and Beyond

Disclaimer: The information on optimizing immunity contained in this paper is intended to help guide and inform the dancer. It is not meant to take the place of the advice of a medical professional.

We are in a worldwide crisis due to a virus that causes the disease, COVID-19. Although some people get seriously ill from this virus, most do not. The risk of developing severe illness increases with underlying conditions in all people. These conditions include obesity, chronic kidney disease, sickle cell disease and type 2 diabetes. For details and the complete list, visit the CDC website (link below). These conditions are less common in dancers. Vitamin D deficiency and excessive stress do impact many dancers, though, and also increase the risk of severe illness.

Don't fear! We are not hopeless. Studies of other viruses inform us that making changes to our lifestyle may improve the chances of recovering quickly. Many of these strategies are readily available and low cost. They may be helpful in other infections as well. None of this should be considered a substitute for actual medical advice or treatment. If you are ill or suspect you have coronavirus, please call a physician.

Lifestyle

Exercise

Exercise strengthens the immune system. High intensity exercise temporarily suppresses immunity, so avoid vigorous exercise if you are ill. Dancers are experts at listening to their body, but are used to pushing through discomfort. If you start feeling sick, rest and drink lots of fluids. Only resume activity when your body is ready.

Sleep

Healthy sleep is necessary to fight off infection. Address sleep hygiene if needed. Poor sleep also increases inflammation. A proper sleep/wake cycle (sleeping at night and being awake during the day) is important. This may be hard for dancers during performance weeks when "normal" sleep schedules often become interrupted. If you are having trouble sleeping, taking a melatonin supplement may help (see below).

Stress

These are stressful times for dancers. Stressors include money problems, job insecurity, and loss of identity.

Stress increases inflammation and blood sugar. Stress decreases immunity. Unhealthy coping strategies include abusing alcohol or drugs, and self-harm. Social isolation and excessive or inadequate food or sleep are unhealthy. Healthy strategies are listening to music, reading, and journaling. Spending time outdoors is helpful.

See also the DanceUSA papers on sleep, stress and anxiety.

Distress engages the "fight, flight or freeze" response. This causes chemical changes in the body that weaken immunity. Breathing and mindfulness strategies can calm the nervous system by activating the opposite - the "rest, digest and restore" response. Breathing that is slow (ideally 6 breaths per minute) calms the nervous system. This changes the body's chemistry in ways that improve immunity. These strategies can be challenging at first, but get easier with practice.

Smoking and Pollution
Avoid smoking, vaping, and air pollution. Having your lungs in the best possible condition will be helpful if you get sick. This will help decrease inflammation as well.

Supplements and Foods

No food or supplement has been proven to prevent or treat coronavirus, however, research on products that come from food sources is promising. The recommendations below are based on research on numerous viruses (not specifically COVID-19).

Foods
Stay hydrated with fluids that do not contain sugar, artificial sweeteners or caffeine. Broth can be especially helpful as well as hot drinks and herbal teas. Green tea has beneficial properties (see below). Chamomile, eucalyptus, peppermint, ginger or hot water with cinnamon, lemon, and honey are also good choices.

Chronic Inflammation
People with diabetes are at a higher risk of poor outcomes with COVID-19. Those with suboptimal blood sugar control are probably also at risk. Avoiding foods that raise your blood sugar significantly (white flour/rice/pasta, potatoes, fruit juice) can help decrease inflammation and improve immunity. Opt for whole grain and complex carbohydrates instead.

Consume whole plant-based foods, healthy fats, and foods rich in phytonutrients (colorful fruits and vegetables) to reduce inflammation.

- Fiber, polyphenols (micronutrients from plants), prebiotics and probiotics
    - help create a healthy gut which increases resistance to infection
- Garlic
    - contains compounds that help the body fight off infections
- Cruciferous vegetables
    - decrease inflammation and improve immune function
    - best raw or lightly cooked
    - Include arugula, bok choy, broccoli, brussel sprouts, cabbage, cauliflower, kale, and spinach
- Green tea
    - high in Epigallocatechin Gallate (EGCG) which reduces inflammation and viral growth
    - EGCG can be taken as a supplement 225 mg daily or as green tea 4 cups daily
- Fish and fish oil supplements
    - anti-inflammatory and may be protective against abnormal blood clotting that can occur with COVID-19
    - rich in omega 3 fatty acids

- Beta Glucan
    - Anti-inflammatory and improves immune function
    - Slows digestion and release of sugar into the bloodstream
    - Oatmeal, barley, shiitake and reishi mushrooms, seaweed and algae
    - If taken as a supplement, the recommended dose is 250 to 500 mg daily

Avoid

- Processed foods, chemical additives, sugar and trans fats as they are pro-inflammatory
- Sugar weakens the immune system
- Alcohol damages immune cells and increases inflammation. This increases the risk of infection and more severe illness.

Supplements

The below supplements may be helpful to prevent infection and/or treat mild illness. These recommendations may not apply to your circumstances. This is especially true if you have medical problems. Some supplements (eg; vitamin A) have additional risks for pregnant or breastfeeding women. Supplements may also cause harmful interactions with other supplements or medications. They are also not a substitute for an unhealthy diet. A diet rich in nutrients is essential. It is best to consult with your own physician prior to making any changes to your healthcare.

Vitamin D

- Actually a hormone (not a vitamin) that our bodies make from skin exposed to the sun.
- Many people cannot achieve ideal blood levels without taking a supplement.
- Checking vitamin D levels with blood level testing is helpful. The dose of vitamin D is then adjusted to attain an optimum blood level by your physician.
- Recommendations vary greatly depending on the quantity of sun exposure, genetics, and skin color.
- There is a much higher incidence of vitamin D deficiency in people with darker skin. Lighter skin tones require less sunlight to make vitamin D.
- Deficiency is common especially amongst people who spend a lot of time indoors (eg dancers)
- Important for proper immune function, regulating inflammation, mood, sleep and pain
- Reduces viral growth
- Common dosages are 3000-5000 IU per day (in absence of blood level testing)
- Vitamin D3 is better absorbed than D2
- Absorption is improved by taking with fat

Melatonin

- A hormone that regulates the sleep-wake cycle
- Anti-inflammatory
- Can help with problems falling asleep
- Reduces airway inflammation
- Dose 3-10 mg in the evening
- “Start low and go slow”
    - Start at a low dose and increase gradually as needed to improve sleep quality and decrease inflammation
    - Avoid rapid increases as they may cause more vivid dreaming

Vitamin A

- Found in many foods (spinach, dairy products and liver)

- Your body converts beta-carotene into vitamin A
- Foods rich in beta-carotene are green leafy vegetables, carrots, and cantaloupe
- Important for controlling chronic inflammation
- Important for immune function
- Supports the lining of the respiratory tract
- Females that are pregnant should consult with their OB/GYN
- Dose 10,000 IU per day
- Higher doses may be used for a short period of time for treatment (25,000 IU per day)

Palmitoylethanolamide (PEA)

- A chemical made by the body from fat
- Found naturally in the body and in some foods (eg: egg yolks and peanuts)
- Anti-inflammatory and anti-viral activity
- Dose 300 mg twice daily to prevent infection
- Dose 600 mg three times daily to treat infection

Vitamin C

- Natural antihistamine and anti-inflammatory
- Helps prevent and treat infections
- 1 gram per day for prevention
- If tolerated, up to 3 grams per day may be used to treat mild illness (diarrhea occurs with higher doses)

Zinc

- An essential mineral
- Best food sources are oysters, red meat and poultry.
- The body cannot use these food sources as well (beans, nuts, some seafood, whole grains, fortified breakfast cereals, and dairy products)
- Strong antiviral activity
- Deficiency is common and lab values minimally helpful
- Dose 30-60 mg daily WITH FOOD

Quercetin

- A plant pigment (flavonoid) found in fruits and vegetables
- Food sources include red wine, onions, green tea, apples, and berries
- Anti-viral, antioxidant, anti-inflammatory, stabilizes mast cells, reduces symptoms
- Dose 500 mg twice daily

Curcumin

- The main active ingredient in turmeric
- Powerful anti-inflammatory and antioxidant
- Reduces viral replication and reduces symptoms
- Dose 500-1000 mg twice daily

N-Acetylcysteine (NAC)

- Comes from the amino acid, L-cysteine
- Amino acids are the building blocks of proteins
- Promotes glutathione production, the master antioxidant of the body
- Reduces symptoms and possibly the severity of illness
- Helps clearance of mucus from the lungs
- Dose 600-900 mg twice daily

Resveratrol

- Naturally occurring polyphenol, a plant based nutrient we get through food
- Anti-inflammatory and anti-viral activity
- Dose 100-150 mg daily

Elderberry

- The dark purple berry from the European elder tree
- High in vitamin C, fiber, and antioxidants
- May help prevent viral infection
- Dose 500 mg daily

Conclusion

Professional dancers are elite athletes who manage stress at home, in the studio, and on stage. COVID-19 has added to this stress on many levels. Research shows that using positive coping techniques and developing strategies to improve psychological resilience can enhance immunity. Simple lifestyle, diet, and supplement changes may improve immune function and decrease chronic inflammation in the dancer. Working towards these goals will provide benefits at all times, not just during the COVID-19 pandemic.

For more information:

Resources:

https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-with-medical-conditions.html

IADMS videos:
https://www.iadms.org/page/coronavirus

Bendy Bodies Podcast:
https://www.hypermobilitymd.com/podcast

Meditation Apps: Calm, Headspace (currently free during COVID-19)

References:

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https://www.ifm.org/news-insights/boosting-immunity-functional-medicine-tips-prevention-immunity-boosting-covid-19-coronavirus-outbreak/

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This information is provided by Dance/USA Task Force on Dancer Health.

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