

**Title:** Long COVID Shared Medical Appointments: Lifestyle and Mind-Body Medicine with Peer Support.

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**Abbreviations:**

SMA: Shared Medical Appointments

## **THE INNOVATION:**

Long COVID is a new rising health concern with no clear treatment guidelines.<sup>1,2</sup> Patients have multiple distressing symptoms which are difficult to address in time-restricted clinic visits.<sup>1,3,4</sup> Early evidence indicates a role of cytokines and chronic inflammatory processes in developing long COVID.<sup>5</sup> Healthy lifestyle behaviors and modifying stress responses reduce chronic systemic inflammation.<sup>6,7</sup> We created a novel shared medical appointment (SMA) program to provide healthy lifestyle education, mindfulness training, and group peer support for patients with long COVID symptoms.

## **WHO & WHERE:**

Medical providers (physician or nurse practitioners) and a psychotherapist from the Cleveland Clinic Center for Integrative and Lifestyle Medicine virtually co-lead the SMA sessions. Each SMA cohort meets for two hours weekly for six weeks with a maximum of ten participants.

## **HOW:**

### Patient enrollment process:

Primary care physicians or specialists refer patients to our center for long COVID symptom management. Patients attend an initial 60-minute appointment during which one of our providers reviews detailed medical, lifestyle, and psychosocial history, and makes individual integrative treatment recommendations. Based on symptom severity and interest, patients are referred to the long COVID SMA and the coordinator contacts and enrolls patients. Since May 2021, eight SMA cohorts (n=91 patients) have been conducted, and more than 80% of participants attended at least four of the six sessions.

### Long-COVID SMA content:

We share information on the role of lifestyle factors in causing systemic inflammation. Every session includes mindfulness practice and nutrition advice. We assign daily homework consisting of lifestyle

modification goals and mindfulness practices. Each appointment includes time for peer support during which participants share their progress, setbacks, experiences, and successes.

Week 1 and 2: We share information about the effect of diet on physical health. Patients are encouraged to remove pro-inflammatory foods (sugar, processed food) and introduce anti-inflammatory foods such as the Mediterranean diet.<sup>8,9</sup> Week 3: We review how emotional stress contributes to chronic disease and share mindfulness practices to reduce the stress responses. Week 4: We teach the importance of sleep for regeneration and recovery with practical tools to maintain good sleep hygiene.<sup>10</sup> Week 5: We review the benefits of exercise on mental and physical health. Patients are encouraged to add some form of movement into their daily living, being mindful of their physical limitations post-COVID. Patients are led through a chair yoga practice. Week 6: The final session includes a review of all materials and progress made by the participants.

### **LEARNING:**

The initial 90-minute SMAs with a maximum of six patients were extended to 120 minutes with ten patients per session due to a waitlist of more than 30 patients within the first two months. We stopped Friday evening sessions due to high no-show rates as patients frequently reported being too exhausted at this time.

Providers realized psychosocial stressors interfered with several patients' ability to attend appointments and commit to lifestyle modifications (e.g., primary caregiver, partner needed surgery, multiple healthcare appointments). Patients were given options to participate in another provider's weekly SMA if they could not attend their regular SMA.

Patients felt educated, connected, and supported ("I am not alone, I am not crazy." "This class gives me tools to help myself").

Providers can educate multiple patients longitudinally, and patients benefit from the knowledge and peer support.

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### Appendix Document 1:

Sleep hygiene Instructions:

Good sleep habits, also called good sleep hygiene, are practices to help you get enough quality sleep.

Do:

- **Have a sleep schedule:** Go to sleep and wake up around the same time every day, even on weekends and vacations.
- **Clear your mind before bed:** Make a to-do list early in the evening, so you won't stay awake in bed and worry about the next day.
- **Create a good sleep environment:** Make sure your bed and pillows are comfortable. Turn down the lights and avoid loud sounds. Keep the room at a comfortable temperature.
- **Exercise every day:** Stay active but try to avoid exercising during the few hours right before bed.
- **Relax:** Before bed, take a warm bath, read, or do another relaxing activity.
- **See your healthcare provider:** If you've been having trouble sleeping or feel extra drowsy during the day, talk to your provider. There are many treatments available for sleep disorders.

Don't:

- **Consume caffeine, nicotine, and alcohol late in the day:** These substances can interfere with your ability to fall and stay asleep.
- **Lie in bed awake:** It's better to do a soothing activity, like reading, until you feel tired.
- **Nap during the day:** A short nap (less than 30 minutes) is OK if you're very sleepy. But try to avoid naps after 3 p.m.
- **Think negative thoughts:** Try to avoid a negative mindset when going to bed, such as, "If I don't get enough sleep now, I won't get through my day tomorrow!"

- **Use electronics right before bed:** Electronics, such as your phone or tablet, can interfere with your body's production of melatonin. This hormone gets released before bedtime to help you easily fall asleep.