



# THE JOURNEY TO RECOVERY - POST-COVID-19 CARE IN BC

Webinar date: **Jan 28, 2021**

Recording and Presentation Slides: <https://ubccpd.ca/journey-recovery-post-covid-19-care-bc>

**Disclaimer:** Information on COVID-19 is changing rapidly and much of the research is preliminary. Assessment and management protocols are suggestions only; they do not take the place of clinical judgement. Please check with your own health authorities and local medical health officers as policies and support for the suggested approaches to patient care may vary between regions.

This summary was prepared by Dr. Birinder Narang and not by the speakers.

## Learning Objectives

- Access existing resources for COVID-19 recovery care in BC;
- Apply best practices and existing evidence to guide care for chronic post-COVID-19 symptoms; and
- Assess the psychiatric, respiratory and rehabilitative needs of patients recovering from COVID-19

## Webinar Summary

### Post-COVID Recovery Clinic (PCRC)

- ‘One stop shop’ for patients post-COVID
- Integration of Medical, Psychological & Social Supports, and with research
- **Referral Criteria:**
  - **Category A**
    - Hospitalization for COVID-19
    - 2 or more ER presentations following diagnosis of COVID-19
    - New evidence of end organ impairment without identifiable cause
  - **Category B**

- NYHA dyspnea scale 3 or higher (new)
  - Inability to return to work or school post diagnosis of COVID-19 for 12 or more weeks
  - Functional Deterioration post diagnosis of COVID-19 (ADL/iADL)
- **Category C**
  - Unexplained + persistent symptoms >12 weeks post COVID-19 diagnosis
- **Multiple Symptoms may persist:**
  - Including fatigue, dyspnea, joint pain, chest pain, cough, anosmia etc.
  - Don't know prevalence yet.
  - Prevalence of symptoms may have huge range from 2.3% - 76% based on different reports at 12 weeks to 6 months

## Post COVID-19 Symptoms

- **COVID Symptom Study**
  - Risk factors for Long COVID
    - Include age, obesity, females, asthma
- **Anecdotal Evidence: The Illness Script**
  - Symptoms not homogenous, new ones can develop, can wax & wane
  - Stress may exacerbate symptoms (physical, cognitive, emotional)
  - Symptom flares can be temporarily disassociated ~24-72 hours post stress
- **Medical Complications**
  - Study of 58 hospitalized patients
  - 2-3 months post symptom onset
    - 64% persistent dyspnea
    - 55% persistent fatigue
    - 60% persistent abnormalities on Lung MRI
    - Reduced FEV 11%, FVC 13% + reduced 6 min walk test

## COVID-19 Pulmonary Complications

- **Local Data**
  - 78 patients seen within the first few months (all hospitalized)
    - All patients had pulmonary function test, and DLCO abnormal in 52% and some pulmonary function abnormality in 58%
  - CT Findings at 3 months
    - 55% had >10% of lung affected (persistent fibrosis)
  - Predictors of 3 months outcomes

- Ongoing dyspnea is hard to predict
  - Days on oxygen predict DLCO% & CT severity at 3 months
  - Dyspnea at 3 months correlates with DLCO% at 3 months
- Patient reported outcome measures - ~50% of patients have abnormalities across quality of life, frailty, dyspnea, mood, sleep
- Quality of life is poorly associated with pre-existing comorbidities
  - I.e., some patients who lacked comorbidities before COVID had significantly impaired quality of life 3 months after infection

## COVID-19 Psychiatry Considerations

- **Patient Presentations**
  - Cognitive Physical + Mental constellation of symptoms
    - Weak, fatigued, short of breath, decreased memory, depressed, anxious, insomnia
    - Post-ICU neuromuscular complications
    - Post-infection fatigue, exercise capacity limitations, cognitive difficulties, mental health needs
  - World Health Organization's International Classification of Functioning, Disability, and Health Framework (WHO ICF):
    - Interplay between Body Functions & Structure, Activity, Participation, and Contextual Factors (environmental, personal factors, including Public Health measures)
    - Multiple Body Functions and Structures potentially affected: Respiratory, Neuromusculoskeletal, Cardiovascular, Mental Functions, etc.
    - Examples of activity limitations: Learning and applying knowledge, communication, mobility, gait speed, balance, exercise capacity and this is in the context of public health measures
    - Examples of participation restrictions: Social interactions, Driving, Employment
    - Still trying to understand the disease in regards to structures and functions
    - Psychiatry can manage the functional implications regardless of the disease itself
- **Summary**
  - We are still learning about "Post-COVID19" impairments
  - Psychiatry can help diagnose impairments and coordinate multidisciplinary rehabilitation of physical and cognitive impairments
  - Management of various co-morbidities and co-impairments will need primary care and other specialists

# COVID-19 Psychiatry Considerations

- **COVID & Mental Health**
  - Mental Health Research Canada
    - Survey – data most recently collected December 10-18, 2020
    - Highest rates yet of people reporting
      - 23% anxiety, 15% depression
    - Driven by social isolation, working from home, negative impact of economy
    - highly vulnerable include young adults, parents, frontline healthcare workers
- **Psychiatric screening questionnaire**
  - Screen for 7 broad domains of psychopathology
    - Anxiety, Depression, Substance use, OCD Sx, Mania, Psychosis, PTSD
  - All questions begin with “During the last 2 weeks...”
  - Any positive screen would leave to Psychiatry referral
- **Local data**
  - Initial 30 patients seen:
    - Anxiety - 19 screened positive, 11 met full diagnostic criteria for Generalized Anxiety Disorder, additional 6 met criteria for adjustment disorder w/ anxiety features
    - Depression – 13 screened positive 4 met full diagnostic criteria for Major Depression, additional 5 met criteria for adjustment disorder
    - Post-Traumatic Stress Disorder- 11 screened positive, 4 diagnosed
  - Really high false positive screen for mania and OCD
  - Additional health concerns at time of initial assessments
    - 82% dyspnea
    - 91% fatigue
    - 63% memory/cognitive concerns
- **JAMA Psychiatry Study**
  - Cohort study March – May screened all admissions consecutively, close to 8,000 diagnosed with being COVID positive
  - Were able to correlate schizophrenia was an independent risk factor for mortality (second behind age)

## Question & Answers

### Diagnosis

**Q: What are the diagnostic criteria for Post COVID Syndrome?**

**A:** Difficult to diagnose clinically no standardized criteria

- Patient profiles – include ICU admission, hospitalized, non-hospitalized with persistent symptoms >12 weeks, non-hospitalized, asymptomatic by 12 weeks, diagnosis unconfirmed with persistent symptoms
- Management approach is similar to other “Post-viral syndromes”
- Refer to referral criteria for clinic to give approach to criteria
- Some confirmation of diagnosis through serology, swab or epi-confirmed case is the goal, but we know people may swab negative, or not have had access to testing early in pandemic

**Q: Where to find referral criteria/form?**

**A:** Google: Providence “Post COVID Recovery Clinic”, expanding into PHSA & multiple clinics/hospitals

### Pathophysiology

**Q: What is the pathophysiology of “Long-COVID”? Example of a provider who is 11 months post diagnosis and now is suffering from POTS, ME, CFS & Fibromyalgia**

**A:** Short answer: we don’t know. Lots of theories, including query auto-immunity, persistent viral particles in immune privileged sites. Hoping to get more insight into these disease processes.

**Q: Is any of DLCO percent reduction due to ventilation/perfusion mismatch?**

**A:** 2 main mechanisms reduced DLCO post COVID are:

- 1) fibrosis and thickening of alveoli from epithelium to endothelium that impairs gas transfers
- 2) Pulmonary emboli + pulmonary vascular disease, can be macroscopic and microscopic (w/ micro thrombi).

# Symptom Management

## **Q: Are there guidelines on post COVID symptom management & can we expect them?**

**A:** Until we know more, strength of those guidelines will always be expert driven. NIH has good information on their website, and fairly robust set of guidelines, management specific symptoms. Targeted to Family Doctors + Primary Care Physicians

## **Approach to management**

### **• Supportive Care data**

- Education & Pattern Recognition:
  - Trigger identification (Physical, cognitive, emotional)
  - Pacing guidance
  - Sleep hygiene
  - Mindfulness practice
- Supportive symptom management
  - Pain, dizziness, insomnia, etc. These can wax and wane together.
- In Myalgic Encephalomyelitis community
  - 'Energy Envelope' model
    - Patients have to operate in that energy envelope or their symptoms flare
    - Teaching patients what their own envelope is, goal to identify what their individual threshold is, then to try and expand it
    - Challenge – the stress is temporally disassociated with the flare (could be delayed by 24-72 hours), could present as a constellation of symptoms that may be mistaken as a viral syndrome
- Positive reinforcement is key, goal setting is important, try to identify what their passions are and incorporate them

## **Q: What's my prognosis, doc?**

**A:** No nutshell answer, reflect on their individual journey + symptoms + structural involvement. Additionally, from 'COVID Symptom Study' – exponential decrease over time of symptoms, 13% symptomatic at 4 weeks to 2.3% symptomatic at 12 weeks. With respect to their respiratory symptoms + DLCO – seeing 5-15% improvement in lung function from 3-6 months post illness.

## **Q: Recommendations for specific symptoms:**

### **1) Fatigue**

- a. Energy envelope, avoiding the post-exertional crash, some patient will create symptom diaries to help identify triggers. PHSA guidelines will include '3P' including Planning,

Pacing & Prioritizing. Ensure to investigate for diagnoses like as, cardiomyopathy, myocarditis, adrenal insufficiency, pulmonary vascular disease, sleep apnea etc.

- b. Some practitioners working in the Post COVID Recovery clinic are trying approaches like Low-Dose Naltrexone, Co-Enzyme Q, L-Carnitine (evidence re: mitochondrial dysfunction), not a lot of anecdotal success so far. Other proposed options by patients from things like Vitamin C, Zinc, Acupuncture and other alternative therapies.

## **2) Cough & Dyspnea**

- a. Cough - Not all post-COVID cough is simply post-viral – post-COVID cough may also be due to non-COVID factors: consider the common things such as ACE Inhibitor, Acid Reflux, Asthma, Post nasal drip. If alternative causes are ruled out, one can consider an inhaled corticosteroid and bronchodilator (e.g., Symbicort) for a post-viral cough, but there is no real evidence for this approach.
- b. Dyspnea – could be COVID related fibrosis, but check heart, lung and muscle function and target approach accordingly.
- c. Watch out for organizing pneumonia post COVID, which happens in up to a few percent of patients. This should be considered if consolidation lasts more than 1-2 months after acute infection, particularly if a patient improves and then worsens again. Suggest a respirology referral and consideration of corticosteroids if organizing pneumonia is suspected.

## **3) Neuro-cognitive functions (i.e., Brain Fog, Attention Deficit, Short Term Memory impairment)**

- a. Brain imaging so far has not yielded specific causes. A lot of management from concussion literature to inform management plans. Monitor for psychiatric causes. Using a symptom diary can be helpful. Occupational/Physical therapy support very important.
- b. Psychiatrically – screening for depression and anxiety disorders. Regarding ADHD, 2 diagnoses have been made, but likely had that prior to COVID. Treat as you would general psychiatric conditions pharmacologically.

## **4) Tachycardia + POTS (Postural-Orthostatic Tachycardia Syndrome)**

- a. Dysautonomia related to COVID, seeing it symptomatically and asymptotically that would fit criteria for tachycardia and POTS. Getting good results from NY from fluid and salt intake (assuming no hypertension). POTS does not respond well to medication historically.

## Miscellaneous

### **Q: How long does immunity last?**

**A:** Length of immunity is variable between patients, unable to give specific advice. Ongoing public health order adherence is important even if they have had COVID.

### **Q: Return to Exercise Considerations? High level athletes, should get they get ECG, Troponin and Echo if were hospitalized?**

**A:** Certainly something to keep in mind in general, depends on stratification of what type of illness course they had. There is some evidence for return to activity level, using principles of exercise prescriptions of duration, intensity and frequency. Depends on symptoms + progressing activities as tolerated. Individual goal setting is important.

A study out of NY – found some type of inflammatory changes on Cardiac MRI (even with milder courses of illness). UK has recommended physical examination, ECG, BNP and troponin especially in high level athletes. Individualize approach based on symptoms.

### **Q: Any cultural differences seen in Post Covid Syndrome?**

**A:** No, have not seen any yet.

## Resources (if applicable)

- **Post COVID 19 Recovery Clinic:** <https://www.providencehealthcare.org/covidrecoveryclinic>
- **UK Guidelines:** [www.nice.org.uk/guidance/ng188](http://www.nice.org.uk/guidance/ng188)
- **COVID Symptom Study:** <https://covid.joinzoe.com/>
- **VCH Post-COVID-19 Recovery Clinic locations:** [http://www.vch.ca/locations-services/result?res\\_id=1480](http://www.vch.ca/locations-services/result?res_id=1480)
- **PHSA website for the PCRC on the resources:** <http://www.phsa.ca/health-info/post-covid-19-care-recovery>

## Thanks to the speakers on the video:

- Panelist: **Dr. Chris Ryerson**, Respiriology
- Panelist: **Dr. Evan Kwong**, Physical Medicine and Rehabilitation
- Panelist: **Dr. Grant Millar**, Psychiatry
- Panelist: **Dr. Jesse Greiner**, Internal Medicine
- Panelist: **Dr. Peter Birks**, Internal Medicine, Nephrologist
- Panelist: **Dr. Zachary Schwartz**, Internal Medicine
- Moderator: **Dr. Simon Moore**, Family Physician, UBC CPD Medical Lead