



Welcome to the Division of Continuing Medical Education's Post COVID-19 Condition Winter 2026 Webinar Series



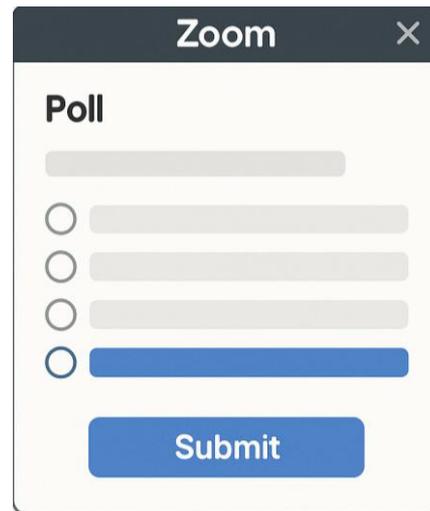
Treaty Acknowledgment

As we gather here today, we acknowledge we are on Treaty 2, 4, 5, 6, 8 and 10 Territories and the Homeland of the Métis. We respect that Indigenous people have rich cultural and traditional practices that have been known to improve health outcomes. We pay our respect to the First Nations and Métis ancestors of this place and reaffirm our relationship with one another.



Quick Poll

- Please select your role from the list, so we can see who is in the audience.
- Please rate your **knowledge level** about the Post COVID-19 Condition (PCC) topics **before** attending the webinar.



The image shows a screenshot of a Zoom poll interface. At the top, the word "Zoom" is displayed in white on a dark grey background, with a close button (X) to its right. Below this, the word "Poll" is written in bold black text. There are four horizontal bars representing poll options. The first bar is grey. The second, third, and fourth bars are also grey, each preceded by an unselected radio button. The fourth bar is highlighted in blue, and its radio button is also selected. At the bottom of the poll area, there is a blue button with the word "Submit" written in white.



Accreditation Credits

- **Royal College of Physicians and Surgeons of Canada (RCPSC):**
This event is an Accredited Group Learning Activity (Section 1) as defined by the Maintenance of Certification (MOC) program of the Royal College of Physicians and Surgeons of Canada and approved by the Division of Continuing Medical Education, College of Medicine, University of Saskatchewan. You may claim a maximum of 1.0 hours (credits are automatically calculated).
- **The College of Family Physicians of Canada (CFPC):**
This one-credit-per-hour Group Learning program meets the certification criteria of the College of Family Physicians of Canada and has been certified by the Continuing Medical Education Division, College of Medicine, University of Saskatchewan for up to 1.0 Mainpro+ credits.
- **Other Healthcare Professionals:**
Participation in this event may be included as part of the continuing education and competence programs established by individual professional associations.



Following this webinar...

Certificates:

Certificates will be emailed to those who attend the live session, within 10-14 business days post-webinar.



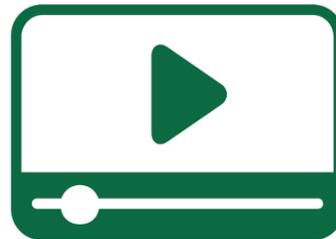
Evaluation:

A survey link will be shared in the chat at the end of this event. The link will also be included in the email distribution of the certificates.



Recordings:

This event will be recorded for future educational purposes and managed/distributed by CME.





Digital Learning Experience

Questions:

- Throughout the presentation and during the Q&A period, attendees can submit written questions through **Zoom's Q&A function** (anonymously, if desired) or **chat function** (addressed to "everyone")
- During the presentation, attendees will be muted.
- During the Q&A period following the presentation, attendees can use the **raise hand function** and **unmute** to ask a question.

Video:

- Video has been enabled and is optional for attendees.
- During the Q&A period, any speakers, including our main presenters, will be recorded.





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Potential sources of bias have been mitigated.

- CME office recruits, communicates and manages all financial supporters, not the Scientific Planning Committee.
- 'Event Supporters' are kept separate from the educational content and listed as 'non-accredited' and 'optional' to attendees.
- 'Event Supporters' are not provided the opportunity to have commercial influence towards the educational content being delivered.
- Continuing Professional Development (CPD) material is peer reviewed and elevated to the Director of Accreditation, CME for further review, if required, until in compliance with the national accreditation standards.
- Brands/medical equipment/etc. are equally presented with no bias and/or with a generic brand listed.
- Survey results are documented, reviewed and addressed when bias is identified.



Dr. Rejina Kamrul, MBBS, CCFP, FCFP

- *Associate Professor of Family Medicine*
- *Clerkship Director of Family Medicine*
- Department of Academic Family Medicine, College of Medicine, University of Saskatchewan
- *University of Saskatchewan*
- Member of the Canadian Guidelines for Post COVID-19 Condition in the Testing, Identification and Diagnosis group and the CAN-PCC Knowledge Mobilization group.





Dr. Andrea Vasquez Camargo, MD, CCFP, MSc

- Clinical Assistant Professor of Family Medicine and Caring with Evidence (EBM) Curriculum Provincial Lead Coordinator in the Department of Academic Family Medicine, College of Medicine, University of Saskatchewan.
- Member of Honours and Awards Research Committee (HARC) and the Section of Researchers (SOR), at the College of Family Physicians of Canada (CFPC).
- Member of the Canadian Guidelines for Post COVID-19 Condition in the Prevention of Post COVID-19 Condition and the Testing, Identification and Diagnosis groups and the CAN-PCC Knowledge Mobilization group.





Post COVID-19 Condition:
Intro to PCC and Differentiating Care for
Primary Care Providers

January 20, 2026



Presenter Disclosure

Presenters: Dr. Rejina Kamrul and Dr. Andrea Vasquez

Relationships with financial sponsors:

Grants/Research Support, Speakers Bureau/ Honoraria, Consulting Fees, Patents, Other:

This work has been supported for 2022-2023 by the Saskatchewan Health Authority, for 2024 - 2025 via Grant from the McMaster University and GRADE Center with financial support of the Public Health Agency of Canada and for 2026 via Grant from the Saskatchewan Health Research Foundation

Disclosure of Financial Support:

None of the presenters has received any financial support to deliver today's presentation.



Learning Objectives

By the end of this presentation, learners will be able to:

1. Identify the impact of Post COVID-19 Condition on individuals and families.
2. Describe appropriate steps for Post COVID-19 Condition evaluation, diagnosis, and management.
3. Integrate guidelines for Post COVID-19 Condition into healthcare practice.



Lived Experience





What is Post COVID-19 Condition (PCC)?

"Post COVID-19 condition (Long COVID) occurs in individuals with a history of probable or confirmed SARS- CoV-2 infection, usually 3 months from the onset of COVID-19 with symptoms that last for at least 2 months and ***cannot be explained by an alternative diagnosis***"



COVID-19 and Post COVID-19 Condition

- As of December 2023, about 1 out of every 5 Canadian adults reported long-term symptoms following a SARS-CoV-2 infection. [1]
- **58.2%** of adults in Canada who had longer-term symptoms (**2.1 million people**), continued to have them. [3]
- **66.4%** of adults who sought healthcare services reported not receiving any treatment, services or support for any of their longer-term symptoms. [3]
- A study published in the fall of 2023 estimated the total burden of PCC to the Canadian healthcare system at about 8 to 51 billion dollars CAD per year. [4]



Impact of Post-COVID Condition



Among adults with longer-term COVID-19 symptoms who had a paid job or were attending school,

- **74.1%** (95% CI: 69.3%, 78.3%) reported **missing one or more days from work or school** because of their symptoms up to the date of completing the survey.
- About 20% of individuals with PCC are absent from work for a prolonged period of time.
- The average **number of missed days** from work or school due to symptoms was **20** (95% CI: 15.8, 25.2).



Worker's Compensation Claims

Data from the NYSIF (New York State Insurance Fund) analyzed **more than 3,000 COVID-19 workers' compensation claims** initiated between January 2020 and March 2022, found that:

- **1/3** of all workers infected with COVID-19 suffered, or are suffering, from Long COVID.
- Approximately **18 %** of workers with Long COVID - or about **5%** of COVID-19 claimants - could not return to work for more than one year.
- **37%** Female workers with Long COVID to **26%** male workers with Long COVID.
- **40%** of workers with Long COVID returned to work within 60 days of infection while still receiving medical treatment.
- Adults over 60 with Long COVID experienced significant difficulty returning to regular work life, with their challenges intensifying with age.



Symptoms of Post COVID-19 Condition (PCC)

[Living with Post-COVID Symptoms |
Provincial Health Services Authority BC](#)

BE WHAT THE WORLD NEEDS





Approach to Care Depends on Presentation

Some people will require a specific plan of care and closer follow-up by a primary care provider if they have one or more of the following factors:

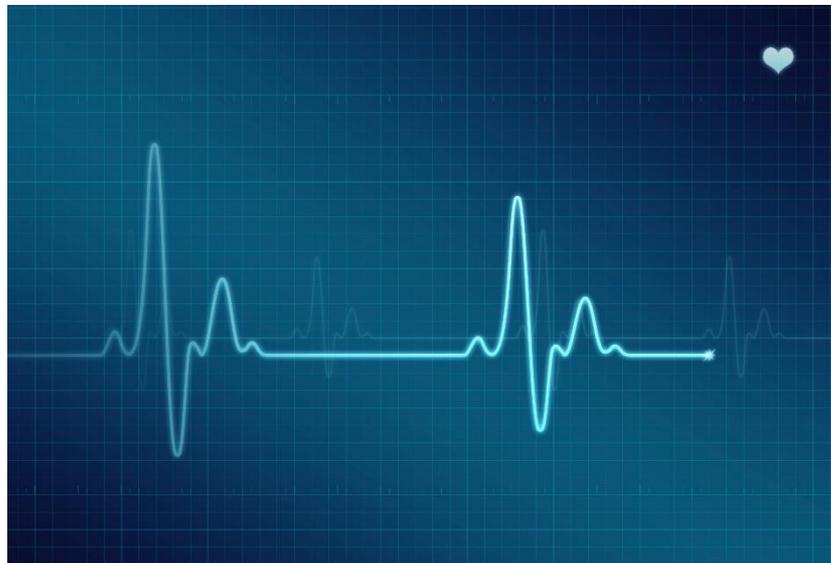
- **Health conditions** like diabetes, respiratory disease (Asthma, COPD), cardiac disease, cancer.
- **Social determinants of health** (i.e. house and food insecurity, lack of support, lack of healthcare access, ethnic minority)
- **Certain patient groups** (i.e. Indigenous peoples, refugees and immigrants, 2SLGBTQIA+, persons involved in the justice system, people with disabilities, elderly people, pregnant women, children)
- Acute COVID-19 infection that required **hospitalization**, especially **ICU admission**

People will benefit from care navigators or self-care programmes and resources.



Approach to Management Based on Symptoms

Ensure patient is *stable* and screen for *red flag signs* and features to refer to immediate assessment and intervention as required / ED referral.





Approach based on symptom presentation ...



CASE 1



Mrs. MS, 56 y/o female, presented with significant tiredness and exhaustion.

HPI – Symptoms started 6 months after an acute SARS -CoV 2 infection documented in 2021

- With any day-to-day activities, physical or mental.
- Was working in an office job and was unable to keep up with desk/computer tasks.
- Complaining of brain fog, inability to focus and concentrate. Having to miss days from work.
- No chest pain, no palpitations, no cough or SOB, no constitutional symptoms.

PMHx

- Menopause 5 years ago
- No Chronic medical conditions (DM, Cardiovascular, COPD/Asthma, Anemia, Malignancies)
- No history of traumatic brain injury
- No Depression or Anxiety

Fam Hx – No significant

Allergies – NKDA

Medications

- No prescribed medications
- Multivitamins – OTC

Social

- Non-smoker, no alcohol, no illicit drugs
- Married, 2 children, all well.



CASE 1



Physical Examination

BP 116/65 mmHg HR 76 bpm, regular

RR 18 rpm O2Sat 96% RA

BMI 24

Normal general appearance, not in distress

Cardiorespiratory, neurological exam normal

- What other information would you like to know?
- What is your differential diagnosis at this point?



CASE 1



Differential Diagnosis

- **Anemia**
- **Diabetes**
- **Thyroid Disease**
- **Menopause**
- **Depression**
- **Malignancy**
- **Chronic Fatigue Syndrome**
- **Less likely cardiac**

Would you consider
Post-COVID-19 Condition
as a differential diagnosis?



Good Practice Statement

Health care professionals should evaluate people for suspected post COVID-19 condition if they have symptoms that have negative impact on daily activities or quality of life and persist beyond 12 weeks after the diagnosis of COVID-19 (**ungraded good practice statement**). **Remarks:** Symptoms can persist, be intermittent, or progressive. People may have different trajectories of disease over time and may seek care at different timepoints. Evaluation should be done in an accessible, appropriate, and culturally responsive manner.

Canadian Guidelines for Post COVID-19 Condition (CAN-PCC) - Recommendation Map <https://can-pcc.recmap.org/grid>



CASE 1

What investigations would you consider?

Investigations – All within normal limits

- Bloodwork - CBC, TSH, HbA1c, Iron studies, Renal panel, Liver panel



Good Practice Statement

Health care professionals should perform a baseline assessment of end-organ function on all adults being evaluated for suspected post COVID-19 condition (**ungraded good practice statement**).

Remarks: The baseline assessment of end-organ function should include thorough enquiry about symptoms, associated comorbidities, risk factors, as well as vital signs measurements and orthostatic vital signs measurements. Baseline blood tests may include, for example, complete blood count (CBC) with differential, random blood glucose, kidney function evaluation (e.g., electrolytes, creatinine, blood urea nitrogen [BUN]), markers of liver injury/function (liver enzymes, bilirubin, international normalized ratio [INR], albumin), hemoglobin A1C, and thyroid-stimulating hormone (TSH). Please see further evidence-based recommendations for recommended tests based on the context of the individual and their presenting symptom (e.g., cardiac or respiratory symptoms). Healthcare providers should coordinate care to minimize burden of investigation on patients.



Recommendation



Testing, identification, and diagnosis of post COVID-19 Condition

Topic: **Testing, identification and diagnosis related to PCC**

The CAN-PCC Collaborative suggests using iron studies in adults with suspected post COVID-19 condition and fatigue and/or cardiac or respiratory symptoms (conditional recommendation, very low certainty in the evidence). **Remarks:** The benefits of this test are diagnosing or ruling out important conditions, such as iron deficiency and/or iron deficiency anemia, but not making a diagnosis of post COVID-19 condition. There was insufficient evidence to determine if ferritin alone versus with all iron studies should be ordered. Moreover, ferritin can be elevated in other clinical conditions, including post COVID-19 condition.



QUESTIONNAIRES

- PHQ-9 and GAD-7
- [DePaul Questionnaire –
Post-Exertional Malaise \(PEM\)](#)
- EQ-5D-5L questionnaire
- Post-COVID Functional Status Scale



Recommendation

Testing, identification, and diagnosis of post COVID-19 Condition

Topic: **Testing, identification and diagnosis related to PCC**

The CAN-PCC Collaborative suggests the use of questionnaires to screen for post-exertional malaise over not using them in adult patients with suspected post COVID-19 condition (conditional recommendation, very low certainty in the evidence). **Remarks:** The benefits of using a questionnaire, such as the DePaul Symptom Questionnaire-Post-Exertional Malaise (DSQ-PEM) short form, are increasing suspicion of post COVID-19 condition and important manifestations often associated with post COVID-19 condition (i.e., post-exertional malaise/post-exertional symptom exacerbation [PEM/PESE]) but not making a diagnosis of post COVID-19 condition.

Certainty of evidence

⊕○○○ Very low

Recommendation strength

✓ conditional



**DePaul Symptom Questionnaire – Short Form
 DSQ – SF**

For each symptom below, please circle **one number for frequency** and **one number for severity**:
 Please complete the chart from left to right.

<i>Frequency:</i>	<i>Severity:</i>
Throughout the past 6 months , how often have you had this symptom?	Throughout the past 6 months , how much has this symptom bothered you?
For each symptom listed below, circle a number from: 0 = none of the time 1 = a little of the time 2 = about half the time 3 = most of the time 4 = all of the time	For each symptom listed below, circle a number from: 0 = symptom not present 1 = mild 2 = moderate 3 = severe 4 = very severe

Symptom	Frequency:	Severity:
1. Fatigue/extreme tiredness	0 1 2 3 4	0 1 2 3 4
2. Next day soreness or fatigue after non-strenuous, everyday activities	0 1 2 3 4	0 1 2 3 4
3. Minimum exercise makes you physically tired	0 1 2 3 4	0 1 2 3 4
4. Feeling unrefreshed after you wake up in the morning	0 1 2 3 4	0 1 2 3 4
5. Pain or aching in your muscles	0 1 2 3 4	0 1 2 3 4
6. Bloating	0 1 2 3 4	0 1 2 3 4
7. Problems remembering things	0 1 2 3 4	0 1 2 3 4
8. Difficulty paying attention for a long period of time	0 1 2 3 4	0 1 2 3 4
9. Irritable bowel problems	0 1 2 3 4	0 1 2 3 4
10. Feeling unsteady on your feet, like you might fall	0 1 2 3 4	0 1 2 3 4
11. Cold limbs (e.g. arms, legs, hands)	0 1 2 3 4	0 1 2 3 4
12. Feeling hot or cold for no reason	0 1 2 3 4	0 1 2 3 4
13. Flu-like symptoms	0 1 2 3 4	0 1 2 3 4
14. Some smells, foods, medications, or chemicals make you feel sick	0 1 2 3 4	0 1 2 3 4

Appendix A. The DePaul Post-Exertional Malaise Questionnaire (DPEMQ)

Section 1: Demographic and Illness Information

- What is your age? _____
(must be over 18 years old)
- What is your gender?
 - Male
 - Female
 - Other
 - Prefer not to answer
- To which of the following race(s) do you belong?
 - Black, African-American
 - White
 - American Indian or Alaska Native
 - Asian or Pacific Islander
- Other race (*Please specify*) _____
- Are you of Latino or Hispanic origin?
 - Yes
 - No
- Do you currently live in the United States?
 - Yes
 - No
 6a. If you do not live in the United States, what country do you currently live in?

- What is your current marital status?
 - Married or living with partner
 - Separated
 - Widowed
 - Divorced
 - Never married
 - Prefer not to answer
- What is the highest degree or level of education you have completed?
 - Less than high school
 - Some high school
 - High school degree or GED
 - Partial college/university (at least one year) or specialized training
 - Standard college/university degree
 - Graduate professional degree including masters and doctorate

The EQ-5D-5L questionnaire

EuroQol Group (EQ)

- "5D" signifies its **5 Dimensions** of health (Mobility, Usual Activities, Self-Care, Pain/Discomfort, Anxiety/Depression)
- "5L" indicates it uses **5 Levels** (no, slight, moderate, severe, extreme problems)

Devlin N, Pickard S, Busschbach J. The Development of the EQ-5D-5L and its Value Sets. 2022 Mar 24. In: Devlin N, Roudijk B, Ludwig K, editors. Value Sets for EQ-5D-5L: A Compendium, Comparative Review & User Guide [Internet]. Cham (CH): Springer; 2022. Chapter 1. Available from: https://www.ncbi.nlm.nih.gov/books/NBK589306/doi/10.1007/978-3-030-89289-0_1

Under each heading, please tick the ONE box that best describes your health TODAY.

MOBILITY

I have no problems in walking about

I have slight problems in walking about

I have moderate problems in walking about

I have severe problems in walking about

I am unable to walk about

SELF-CARE

I have no problems washing or dressing myself

I have slight problems washing or dressing myself

I have moderate problems washing or dressing myself

I have severe problems washing or dressing myself

I am unable to wash or dress myself

USUAL ACTIVITIES (e.g. work, study, housework, family or leisure activities)

I have no problems doing my usual activities

I have slight problems doing my usual activities

I have moderate problems doing my usual activities

I have severe problems doing my usual activities

I am unable to do my usual activities

PAIN / DISCOMFORT

I have no pain or discomfort

I have slight pain or discomfort

I have moderate pain or discomfort

I have severe pain or discomfort

I have extreme pain or discomfort

ANXIETY / DEPRESSION

I am not anxious or depressed

I am slightly anxious or depressed

I am moderately anxious or depressed

I am severely anxious or depressed

I am extremely anxious or depressed

Levels of problems reported by respondents on each dimension are coded as follows:

Level 1 = 1

Level 2 = 2

Level 3 = 3

Level 4 = 4

Level 5 = 5

The responses to the EQ-5D-5L can be summarised as a five number string, representing the levels reported on each dimension in the order in which they appear in the questionnaire. This five number string is an EQ-5D profile.

The EQ-5D-5L describes 3,125 possible profiles.

No problems on any dimension = 11111

Unable to/extreme problems on all dimensions = 55555

Moderate problems on all dimensions = 33333

The profile indicated by the ticked boxes in the example on the left = 21325



The EQ-5D-5L questionnaire

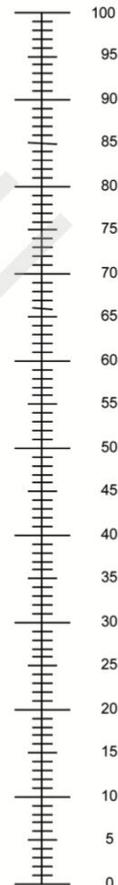
VISUAL ANALOGUE SCALE (VAS)

Devlin N, Pickard S, Busschbach J. The Development of the EQ-5D-5L and its Value Sets. 2022 Mar 24. In: Devlin N, Roudijk B, Ludwig K, editors. Value Sets for EQ-5D-5L: A Compendium, Comparative Review & User Guide [Internet]. Cham (CH): Springer; 2022. Chapter 1. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK589306/> doi: 10.1007/978-3-030-89289-0_1

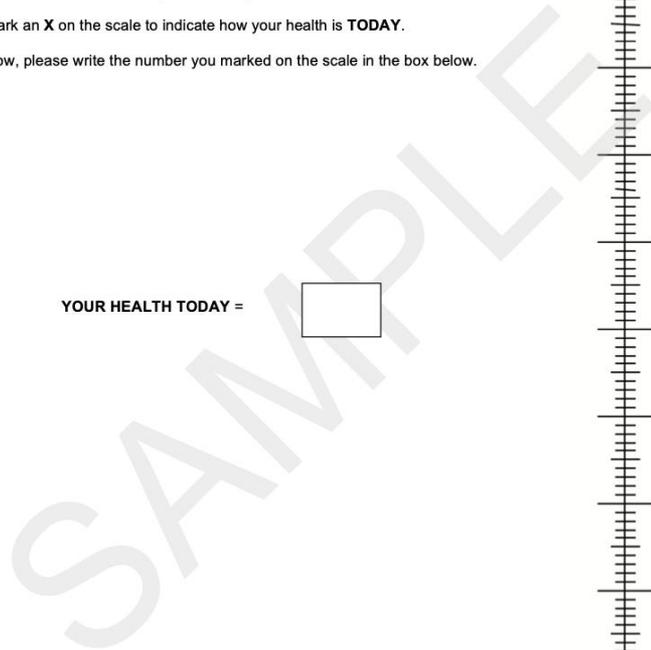
- We would like to know how good or bad your health is **TODAY**.
- This scale is numbered from **0** to **100**.
- **100** means the best health you can imagine.
0 means the worst health you can imagine.
- Mark an **X** on the scale to indicate how your health is **TODAY**.
- Now, please write the number you marked on the scale in the box below.

YOUR HEALTH TODAY =

The best health
 you can imagine



The worst health
 you can imagine



Post COVID-19 Functional Status Scale and Post COVID-19 Symptom Checklist

This two-part tool is designed to identify rehabilitation and recovery needs of patients who have been diagnosed with or suspected to have COVID-19. Any healthcare provider can administer this tool at any time during the patient's journey.

Part 1: Post COVID-19 Functional Status Scale (PCFS)

How much is the patient currently affected in their everyday life by COVID-19?

Check the box beside the most accurate description and see below for appropriate resources and services.

Consider pre-existing conditions and whether there are changes from baseline (pre-COVID-19 infection) function.

No limitations = PCFS Score 0		
No symptoms related to the COVID-19 infection.		
Negligible limitations = PCFS Score 1		
Can perform all usual duties/activities, although still has persistent symptoms e.g. cough, loss of taste/smell.		
Slight limitations = PCFS Score 2		
Occasionally needs to avoid or reduce usual duties/activities/work or needs to spread these over time due to symptoms. May require occasional assistance to complete activities due to persistent symptoms e.g. minor headache/fatigue, muscle aches.		
Moderate limitations = PCFS Score 3		
Unable to perform all usual duties/activities/work due to symptoms e.g. chest pain, moderate fatigue/brain fog, nerve pain.		
Severe limitations = PCFS Score 4		
Unable to take care of oneself, is dependent on nursing care and/or assistance from another person due to symptoms e.g. shortness of breath, severe fatigue/brain fog.		
Practitioner Name	Signature/Designation	Date (dd-Mon-yyyy)

Healthcare providers are encouraged to factor in which resources and services are available in each situation to support their patient's unique needs. The majority of patients can self-manage with appropriate resources and supports.

Resources for ALL patients (PCFS Score 0-4)

[Universal Self Care Resources](#) should be shared with ALL patients as early as possible.

[Getting Healthy After COVID-19: Resources for Patients](#)

[After COVID-19: Information and resources to help you recover](#)

Targeted Resources (PCFS Score 2-3)

Services designed for groups of people with a common need.

[Alberta Healthy Living Program's Video Series for Patients](#)

Personalized Resources (PCFS Score 3-4)

Individualized, multidisciplinary care designed to meet the unique needs of an individual.

[Long COVID Patient Services](#)

Additional Resources for Healthcare Providers

[Recovery & Rehabilitation after COVID-19: Resources for Health Professionals](#)

[Information for Community Physicians](#)

Adapted from: Klok FA, Boon GJAM, Barco S, et al. The Post-COVID-19 Functional Status scale: a tool to measure functional status over time after COVID-19. Eur Respir J 2020; 56: 2001494 [https://doi.org/10.1183/13993003.01494-2020] is licensed under CC BY NC 4.0.

Post COVID-19 Functional Status Scale and Post COVID-19 Symptom Checklist

Part 2: Post COVID-19 Symptom Checklist

This checklist is intended to highlight specific symptoms patients are **currently experiencing as a result of COVID-19**, so that appropriate resources and/or referrals can be provided.

Have patients indicate if their symptoms are absent, same, worse or stable/improving (for pre-existing or new since COVID-19).

Upon completion, providers should ask patients about **additional symptoms** that may have been missed along with other psychosocial concerns, financial changes since having COVID-19, difficulty working, etc.

Post COVID-19 Respiratory Symptoms	Absent	Pre-existing: same	Pre-existing: worse	New since COVID-19: stable/improving	New since COVID-19: worse
Shortness of breath/difficulty breathing at rest					
Shortness of breath/difficulty breathing with activity					
Cough					
Post COVID-19 Cardiovascular Symptoms	Absent	Pre-existing: same	Pre-existing: worse	New since COVID-19: stable/improving	New since COVID-19: worse
Chest pain at rest					
Chest pain with activity					
Palpitations					
Dizziness or fainting					
Post COVID-19 Gastrointestinal Symptoms	Absent	Pre-existing: same	Pre-existing: worse	New since COVID-19: stable/improving	New since COVID-19: worse
Nausea and/or vomiting					
Senses of taste/smell been affected					
Difficult eating/drinking/swallowing (e.g. choking, painful swallowing, coughing while eating/drinking)					
Eating less than usual for more than 1 week					
Lost/gained a significant amount of weight without trying <i>Include amount of weight gain/loss, for loss indicate a negative number: _____ (kg)</i>					
Difficulty with bowels (e.g. diarrhea, constipation)					
Difficulty with bladder (e.g. incontinence/leakage secondary to cough)					

Adapted from: Sivan M, Halpin S, Gee J. Assessing long term rehabilitation needs in COVID-19 survivors using a telephone screening tool (C19-YRS tool). ACNR. 2020; 19 (4): 14-7. doi: https://doi.org/10.47795/NELE5960 is used under CC BY 4.0.



Recommendation



Testing, identification, and diagnosis of post COVID-19 Condition

Topic: **Testing, identification and diagnosis related to PCC**

The CAN-PCC Collaborative suggests the use of tools (i.e., Post COVID-19 functional status scale, and EuroQol-5D [EQ-5D]) to evaluate adults with suspected post COVID-19 condition and dizziness and/or fatigue (conditional recommendation, very low certainty in the evidence). **Remarks:** The role of these tools is to increase suspicion of post COVID-19 condition and important complications often associated with post COVID-19 condition (e.g., myalgic encephalitis/chronic fatigue syndrome) while providing assessments of impact on quality of life and functional status, but not making a diagnosis of post COVID-19 condition.



CASE 1

Management Approach

Consider Post COVID-19 Condition and Post-Exertional Malaise (PEM)



Approach to Management Based on Symptoms

POST EXERTIONAL MALAISE (PEM)

Also known as post-exertional symptom exacerbation (PESE), is defined as an increase in symptoms (for example, fatigue, brain fog, breathlessness, headaches, body aches) after doing what doesn't seem like a lot of activity.

The activity can be:

- Physical (like taking a walk)
- Cognitive (like doing paperwork)
- Social/emotional (like attending a dinner party)

PEM/PESE can be triggered up to 48 hours after activity.
Symptoms can last from days to months





Approach to Management Based on Symptoms

CAN-PCC Recommendation for people presenting with Fatigue and Post Exertional Malaise

We suggest the use of questionnaires to screen for post-exertional malaise (PEM)/Post-exertional symptom exacerbation (PESE) in adults with suspected long COVID (also known as post COVID-19 condition).

Recommendation strength: conditional ✓

2024-12-02

Fatigue



Post-exertional malaise





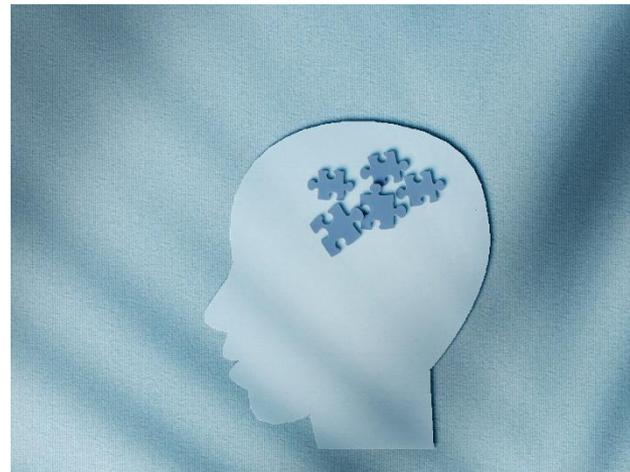
Approach to Management Based on Symptoms

Brain fog

- Brain fog describes issues with cognition or thinking processes.
- With PCC, there is usually no damage to the brain tissue. However, PCC can affect how the brain executes tasks on a chemical and cellular level.

People with brain fog might:

- Not be able to pay attention or concentrate as well.
- Feel more sensitive to light and sounds.
- Feel that one is slower to think and respond than usual.
- Find it difficult :
 - to read or watch television.
 - to remember recent events or details
 - to plan or stay organized.
 - to find the right words or carry on a conversation.



CAN-PCC Guidelines

Brain Fog and Cognitive issues | MyGuide Long COVID

<https://www.longcovidbc.ca/resource-catalogue>



CASE 1

Management Approach

Consider Post COVID-19 Condition and Post-Exertional Malaise (PEM)

- Review Self-care and Pacing strategy
- Review the quality of life and functional status (**EQ-5D-5L questionnaire**)
- Self-care Resources available



Recommendation



Health care services and system, social support for post COVID-19 condition

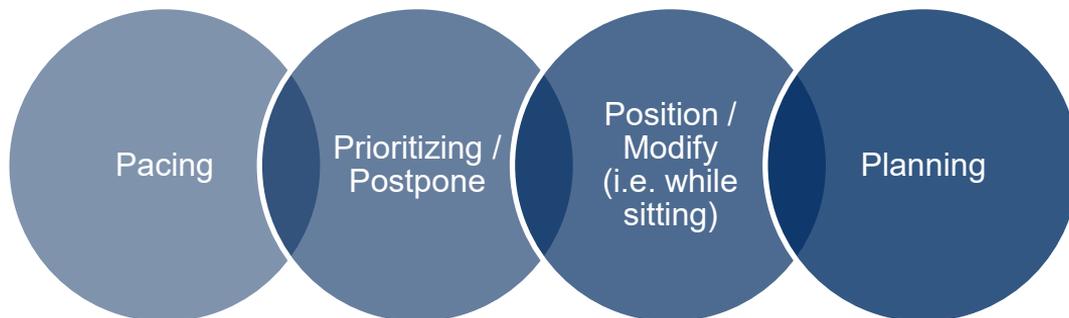
Topic: **Health care services and systems, social support**

The CAN-PCC Collaborative suggests programmes to improve self-care be provided to adults with suspected or confirmed post COVID-19 condition (conditional recommendation, very low certainty in the evidence). **Remarks:** Self-care interventions are programmes that provide information and education to improve a person's ability to manage symptoms and treatment of their condition, and improve physical, psychological, and/or social outcomes. Self-care interventions can be provided in a variety of formats and with different content which may evolve as general understanding of living with post COVID-19 conditions increases. Self-care programmes are provided in the context of receiving other care.



Approach to Management Based on Symptoms – PEM and FATIGUE

Post-exertional malaise and Fatigue management approach:
Education about the 4 Ps:



Treatment is prioritized based on the presence of medical conditions and the severity of symptoms.



Approach to Management Based on Symptoms

CAN-PCC Recommendations for people presenting with brain fog

We suggest not using central nervous system (CNS) stimulants in people with long COVID (also known as post COVID-19 condition) and brain fog, with or without post exertional malaise (PEM).

Recommendation strength: conditional 

2024-10-01

Brain fog



There is little evidence on how CNS stimulants affect long COVID. Available evidence of CNS stimulants in a different population, cancer patients, showed they may cause more harm than good. The recommendation will be re-evaluated if studies on CNS stimulants in those with long COVID become available.

There was no available evidence on whether CNS stimulants may cause post exertional malaise (PEM).

People should discuss starting CNS stimulants with a healthcare professional.

Approach to Management Based on Symptoms

CAN-PCC Recommendations for people presenting with Brain Fog

We suggest using cognitive rehabilitation* in people with long COVID (also known as post COVID-19 condition) and cognitive impairment (brain fog). *Cognitive rehabilitation is a set of treatments that: Re-train the brain by practicing previously learned thinking, memory and decision-making skills to improve them. and/or Teaches how to work around any challenges with thinking and processing. **Cognitive impairment is “problems with a person’s ability to think, learn, remember, use judgement, and make decisions” (NIH, 2024). It is commonly referred to as ‘brain fog’ amongst people with long COVID symptoms.**

Recommendation strength: conditional ✓

2024-11-01



Approach to Management Based on Symptoms

The recommendation will be re-evaluated if studies on cognitive rehabilitation in those with long COVID become available.

Cognitive rehabilitation may worsen symptoms of people with post exertional malaise (PEM). PEM involves a worsening of symptoms that occurs after minimal exertion.

Cognitive rehabilitation will likely not be the same for everyone. They will need to be made to meet your needs.

CAN-PCC Guidelines

Brain fog





Approach to Management Based on Symptoms

Brain fog

- Healthcare providers may use validated tools to perform a cognitive assessment based on the initial clinical presentation
- Healthcare providers will do an assessment and other necessary investigations to rule out neurological conditions and possible reversible causes of cognitive impairment.



Approach to Management Based on Symptom

Brain fog

Some ways to help overall recovery and brain fog are:

Pacing, Prioritizing, Position,
Planning

Managing stress levels

Staying within your “energy
envelope” (tolerance levels)

Getting lots of sleep and
rest

Cognitively demanding
tasks that can drain your
energy - remember to **take
breaks and pace yourself.**



CASE 1

Management Approach

Consider Post COVID-19 Condition and Post-Exertional Malaise (PEM)

- Review Self-care and Pacing strategy
- Review the quality of life and functional status (**EQ-5D-5L questionnaire**)
- Self-care Resources available
- Review work situation
 - Short-term disability options
 - Workplace accommodations
 - Long-term disability options
- Continue monitoring – follow-up care
- Multidisciplinary team
 - Occupational Therapy, Physiotherapy (PEM awareness), Social Worker, Counsellor, etc.



Recommendation



Health care services and system, social support for post COVID-19 condition

Topic: **Health care services and systems, social support**

The CAN-PCC Collaborative suggests that multidisciplinary workplace interventions be provided to people with suspected or confirmed post COVID-19 condition who have been unable to return to work (conditional recommendation, very low certainty in the evidence). **Remarks:** Multidisciplinary workplace interventions can include interventions aimed at changing the workplace, such as modified work tasks, and interventions aimed at the person, such as clinical, physical and psycho-educational interventions. Interventions should be tailored to the individual, including adaptations to avoid relapses.

Good Practice Statement

Recommendation

Health care services and system, social support for post COVID-19 condition

Topic: Health care services and systems, social support

The CAN-PCC Collaborative suggests either in-person or virtual appointments for adults with suspected or confirmed post COVID-19 condition to receive care (conditional recommendation, low certainty in the evidence). **Remarks:** Virtual appointments aim to enhance access to care for persons who otherwise may not be able or prefer not to come to the clinic in person. Virtual appointments include synchronous ('real time'/live) communication such as video, phone, text (chat) and email, that are tailored to the individual and ensure feasibility. Appropriateness of using virtual appointments should be agreed on between the provider and individual. A separate CAN-PCC recommendation addresses virtual rehabilitation vs in-person rehabilitation for persons with post COVID-19 condition and post-exertional malaise, fatigue, or cognitive symptoms.

Supportive care at home (home care) should be provided to adults with suspected or confirmed post COVID-19 condition who are unable or need an excessive amount of time to perform their activities of daily living (**ungraded good practice statement**). **Remarks:** Adults with suspected or confirmed post COVID-19 condition may be unable to perform activities of daily living or may be able to perform these activities but need to spread their activities over time due to symptoms. Supportive care would be used for basic activities of daily living and some instrumental activities of daily living. Activities of daily living include for example ambulating, feeding, dressing, personal hygiene, continence, and toileting. Instrumental activities of daily living require more complex thinking skills, including organizational skills, such as using the phone, shopping, preparing meals, managing medications, housecleaning and home maintenance, getting around on your own, managing money and paying bills, and managing communication with others. Medical care is not considered to be part of supportive care at home here.



CANADIAN GUIDELINES FOR
POST COVID-19 CONDITION



CASE 2

Mr. OP, 43 y/o male, IT worker, presented with SOB on exertion

HPI – Symptoms started immediately after an acute SARS-CoV 2 infection documented in Jan 2021

- Symptoms have persisted over 4 months
- Initially, extreme fatigue and SOB on exertion
- Dry cough
- Occasionally, chest tightness with exertion
- Had initial cardiac and PE work up which all was negative
- Cough improved gradually, but NO IMPROVEMENT of SOB on exertion.
- No wheezing, No palpitations, no dizziness, no constitutional symptoms, no syncopal episodes.
- No symptoms of GERD, allergic rhinitis.



PMHx

- COVID-19
- No history of Sleep apnea, HTN, Diabetes, cardiovascular disease, asthma or COPD.

FHX – no CV disease

Medications

- Salbutamol inhaler – as needed

Allergies - NKDA

Social

- Non smoker (cig/vaping), No alcohol, No illicit drugs
- Single
- Active exercise – unable due to symptoms.



CASE 2



Physical Examination

BP 121/72 mmHg HR 68 bpm, regular

RR 16 rpm O2Sat 98% RA

No obesity – BMI 23

No increased WOB

Cardiorespiratory

- Normal Heart sounds, no murmur.
- Resp -Equal air entry, no crackles, no wheezing
- No edema

- What other information would you like to know?
- What is your differential diagnosis at this point?



CASE 2



Differential Diagnosis

- **Anemia**
- **Cardiac disease**
 - Coronary artery disease
 - Valvular disease
 - Heart failure (?)
 - Arrhythmias (?)
- **Pulmonary disease**
 - Restrictive
 - Interstitial lung disease
 - Obstructive pulmonary disease
 - Asthma
 - COPD (non-smoker but possible environmental exposure)
- **Thyroid disease (unlikely)**

Would you consider
Post-COVID-19 Condition
as a differential diagnosis?



Approach to Management Based on Symptom

Shortness of breath

- Healthcare provider may perform a thorough clinical assessment to rule out acute heart or lung causes
- Health care provider may also perform tests based on clinical assessment (i.e. chest x-ray, ECG, spirometry, complete blood count, etc.)

Shortness of breath





CASE 2

What investigations would you consider?

Investigations – All within normal limits

- **Blood work**
 - CBC, TSH, HbA1c, iron studies

Good Practice Statement

Health care professionals should perform a baseline assessment of end-organ function on all adults being evaluated for suspected post COVID-19 condition (**ungraded good practice statement**).

Remarks: The baseline assessment of end-organ function should include thorough enquiry about symptoms, associated comorbidities, risk factors, as well as vital signs measurements and orthostatic vital signs measurements. Baseline blood tests may include, for example, complete blood count (CBC) with differential, random blood glucose, kidney function evaluation (e.g., electrolytes, creatinine, blood urea nitrogen [BUN]), markers of liver injury/function (liver enzymes, bilirubin, international normalized ratio [INR], albumin), hemoglobin A1C, and thyroid-stimulating hormone (TSH). Please see further evidence-based recommendations for recommended tests based on the context of the individual and their presenting symptom (e.g., cardiac or respiratory symptoms). Healthcare providers should coordinate care to minimize burden of investigation on patients.



CASE 2

- Initial Cardiac (ECG) and PE (D-dimer) workup was normal
- Chest x-ray
 - Normal, no intrathoracic abnormality

Given that his SOB on exertion persisted, further investigations were completed, including:

- ECG
 - Normal sinus rhythm
- Spirometry in community
 - No evidence of obstructive lung disease





CASE 2



- Echocardiogram
 - EF 62% , no valvular disease, normal diastolic and systolic ventricular function
- Pulmonary function test
 - Referred to Respirologist for persistent SOB after normal investigations)
 - No evidence of obstruction or restriction, Lung capacity and diffusion capacity normal



Recommendation



Testing, identification, and diagnosis of post COVID-19 Condition

Topic: **Testing, identification and diagnosis related to PCC**

The CAN-PCC Collaborative suggests using chest x-rays in adults with suspected post COVID-19 condition and cardiac or respiratory symptoms (conditional recommendation, very low certainty in the evidence). **Remarks:** This recommendation was supported by data from people who were hospitalized during their acute COVID-19 infection. Based on available evidence, the pre-test probability is likely to be higher in people who were hospitalized during their acute COVID-19 infection. Pre-test probability could not be determined in people who were not hospitalized due to lack of evidence but is assumed to be lower than in people who were hospitalized during their acute COVID-19 infection. The benefits of this test are diagnosing or ruling out important conditions, such as a pneumonia, fibrosis/lung scarring or heart failure but not making a diagnosis of post COVID-19 condition.



Recommendation



CANADIAN GUIDELINES FOR
POST COVID-19 CONDITION

Testing, identification, and diagnosis of post COVID-19 Condition

Topic: **Testing, identification and diagnosis related to PCC**

The CAN-PCC Collaborative suggests the use of an echocardiogram in adults with suspected post COVID-19 condition and cardiac or respiratory symptoms (conditional recommendation, very low certainty in the evidence). **Remarks:** The benefits of this test are diagnosing or ruling out important conditions, such as perimyocarditis, heart failure, valvular disease, and pulmonary hypertension, but not making a diagnosis of post COVID-19 condition. If suspicion for perimyocarditis/pericarditis remains high despite a normal echocardiogram, a consultation with a specialized healthcare professional may be advisable.



Recommendation



Testing, identification, and diagnosis of post COVID-19 Condition

Topic: Testing, identification and diagnosis related to PCC

The CAN-PCC Collaborative suggests the use of full pulmonary function tests (PFTs) versus not using full pulmonary function tests in adults with suspected post COVID-19 condition and cardiac or respiratory symptoms (conditional recommendation, very low certainty in the evidence). **Remarks:** The benefits of this test are to obtain evidence in support of a diagnosis or to rule-out important conditions, such as obstructive or restrictive pulmonary diseases, but not making a diagnosis of post COVID-19 condition.



Approach to Management Based on Symptoms – HEART OR LUNG

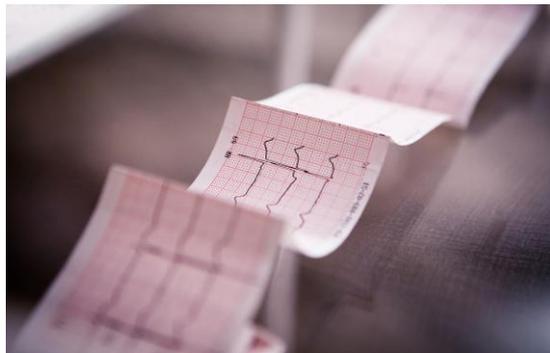
A proportion of adults with PCC have symptoms that could be associated with heart or lung symptoms such as palpitations, tachycardia, chest pain or discomfort, and shortness of breath.

CAN-PCC Recommendations for people presenting with Cardiac or Respiratory symptoms:

We suggest the use of electrocardiogram (EKG/ECG) in patients with suspected long COVID (also known as post COVID-19 condition) and heart or lung symptoms.

Recommendation strength: conditional ✓

2024-09-03



i Additional information

ECG test is not used to diagnose long COVID. It helps in the diagnosis of heart conditions. This may lead to a change in the medical care of the person.

ECG may help detect irregular heartbeats, heart attack, or inflammation of the heart.



Approach to Management Based on Symptoms – HEART OR LUNG COMPLAINT

A proportion of adults with PCC have symptoms that could be associated with heart or lung symptoms such as palpitations, tachycardia, chest pain or discomfort, and shortness of breath.

CAN-PCC Recommendations for people presenting with Cardiac or Respiratory symptoms:

We suggest the use of a Holter monitor in adults with suspected long COVID (also known as post COVID-19 condition) and heart or lung symptoms.

Recommendation strength: conditional ✓

2024-09-03



Approach to Management Based on Symptom – CARDIORESPIRATORY



A Holter monitor test is not used to diagnose long COVID. It helps in the diagnosis of heart conditions. This may lead to a change in the medical care of the person.

Holter monitor test could be used in adults with chest pain, difficulty breathing, feeling of a pounding heart, and fast or slow heartbeats.

Holter monitor use has no direct harms. There is a risk of over testing and wrong diagnosis with this test. However, people place a higher value on the potential benefits.



CASE 2

Management Approach

Consider Post COVID-19 Condition causing ongoing SOB

Review Self-care and Pacing strategy

- Review the quality of life and functional status (**EQ-5D-5L questionnaire**)
- **Post COVID -19 symptom checklist**
- Self-care Resources available
- Review work situation
 - Short-term disability options
 - Long-term disability options
 - Workplace accommodations
- Continue monitoring – follow-up care





CASE 2

Management Approach

Consider Post COVID-19 Condition causing ongoing SOB.

Review Self-care and Pacing strategy

- Multidisciplinary team
 - Attended the Post-COVID Rehabilitation Program – 8 weeks
 - 6-minute walking test performed





6 - minute walking test

Evaluate disease progression and treatment response in patients with moderate to severe cardiac or pulmonary diseases.

- Preoperative risk stratification, measures a patient's exercise tolerance and prognosis, depending on pulmonary diseases such as COPD
- Other conditions - idiopathic pulmonary fibrosis, cystic fibrosis, and sarcoidosis, cardiovascular (heart failure and peripheral artery disease)

The distance walked in 6 minutes on a flat, straight course, typically 30 meters long. The distance reflects submaximal (not peak) exercise capacity.

- Distance walked:
 - A healthy adult typically walks 400 to 700 m.
- Signs and symptoms:
 - Dyspnea, fatigue, chest pain, or leg discomfort, HR , BP,
 - Assess cardiovascular response and recovery after the test.





CASE 2

Management Approach



Consider Post COVID-19 Condition causing ongoing SOB.

Review Self-care and Pacing strategy

- Multidisciplinary team
- Attended the Post-COVID Rehabilitation Program – 8 weeks
 - 6-minute walking test performed
 - Done prior to commencing the program = 364 mt + SOB on exertion and upper airway restriction
 - Done at the end of the program = 478 mt
 - Continued to improve over time



Recommendation



Testing, identification, and diagnosis of post COVID-19 Condition

Topic: **Testing, identification and diagnosis related to PCC**

For adult patients with suspected post COVID-19 condition and cardiac or respiratory symptoms the CAN-PCC Collaborative suggests using a 6-minute walk test (6MWT) with oximetry versus not using a 6MWT with oximetry (conditional recommendation, very low certainty in the evidence). **Remarks:** If there are risk factors that place the patient at a higher likelihood of having exertional desaturation or precipitating post-exertional malaise/post-exertional symptom exacerbation (PEM/PESE), a patient-centered approach and discussion with a healthcare professional with expertise in interpreting ambulatory oximetry is required. The benefits of this test include diagnosing or ruling out important conditions, such as interstitial lung disease, but not diagnosing post COVID-19 condition.



CASE 2

Management Approach



Consider Post COVID-19 Condition causing ongoing SOB

Review Self-care and Pacing strategy

- Multidisciplinary team
 - Attended the Post COVID Rehabilitation Program
 - Occupational Therapy, Physiotherapy (PEM awareness), Social Worker, Counsellor, etc
 - Respiratory Support referral form for chronic disease and CDM- SK (Look for similar in your area)
 - Pulmonary rehabilitation 12-week program
 - Post-COVID rehabilitation assessment and exercise programming – Stapleford (Regina, SK)
 - Individualized assessment and exercise program
 - Patient referred to forever in motion live well programing (look for similar in your area)



For Health Providers, Students & Volunteers

Enter Y

Home > Intranet > Departments & Programs > Strategy and Innovation

- About SHA
- Careers
- Departments & Programs
 - Community Engagement & Communications
 - Finance
 - Human Resources
 - Integrated Health
 - Internal Audit
 - Provincial Cascading Huddles
 - Provincial Clinical and Support Services
 - Quality, Safety and Information
 - SHA Management System
 - Strategy and Innovation
 - Clinical Pathways
 - Acute Stroke Pathway - Provider Information
 - Bariatric Surgery Pathway
 - Cancer Treatment Pathway
 - Chronic Obstructive Pulmonary Disease (COPD) Pathway – Provider Information**
 - Chronic Pain Pathway - Provider Information

Chronic Obstructive Pulmon Pathway – Provider Informa

The Saskatchewan COPD Pathway aims to ensure that hi people living with COPD in Saskatchewan. The COPD Pat appropriate testing for people at risk for COPD as close to care and access to interdisciplinary health-care provider self-management of their COPD, reduce emergency room prevent disease progression.

Provincial Provider Pathway



Provincial COPD Clinical Provider Path
 (PDF 325.35 KB)
 Published December 5, 2025

Provincial Respiratory Referral Form

Respirologists, family doctors, and nurse practitioners c Provincial Respiratory Referral Form. Additionally, peopl support services, education, commercial tobacco cessati home visits.

Referral Form



Respiratory Support Referral (SHA 035)
 (PDF 179.91 KB)
 Published May 13, 2025



Respiratory Support Referral

Fax: 306-766-6049

Email: provincialcopdreferral@saskhealthauthority.ca

INITIAL APPLICABLE BOXES

Patient is aware of referral Data collection purposes only

*ILD =Interstitial Lung Disease

Reason for Referral: Suspected COPD COPD confirmed on Spirometry
Other Respiratory Conditions: Asthma ILD* Other: _____
 Referral from hospital - Expected Discharge Date: _____ Request virtual follow-up service within 48 hours
 Current oxygen usage: _____ Oxygen Provider: _____

Services/Tests: (select as many as needed)

Comments:

- Full Certified Respiratory Educator Support (includes items below in this section)
- Smoking Cessation Support
- Action Plan
- Education, including inhaler technique
- Pulmonary Rehab 12-week Program (attach spirometry tests)

Section above completed by (Printed Name and designation): _____

Signature: _____ Date: _____

PRACTITIONER SIGNATURE REQUIRED FOR THE SERVICES LISTED BELOW

Immunizations – if applicable follow the Anaphylaxis Identification and Initial Treatment (Clinical Procedure) (CS-CP-0015)

- Influenza Vaccine 0.5 mL IM COVID Vaccine Pneumo-C-20 Vaccine 0.5 mL IM – may be a cost to patient
- Vaccines as required with signature below

Home Oxygen Testing

- Initial Oxygen Assessment (ABG performed only if deemed necessary by tester)
- Oxygen Renewal Assessment (ABG performed only if deemed necessary by tester)
 - SAIL/NIHB renewal date (if known): _____
- Arterial Blood Gas (ABG) Room Air On O₂ _____ L/Min Reason for testing: _____

Does this patient have Cor-pulmonale or Polycythemia? Yes No

- Nocturnal Oximetry Test
 - On room air only

Coverage:

NIHB SAIL



GET STARTED WITH

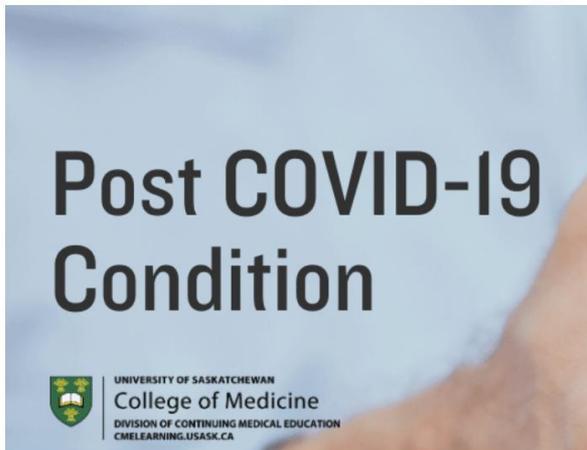
MyGuide: Long COVID

MyGuide: Long COVID is a customizable guide for individuals who experience post-COVID symptoms, or those wanting to learn about recovering from lingering symptoms after COVID-19 infection. It should not be used to self-diagnose or replace medical advice.



POST-COVID-19
 Interdisciplinary Clinical Care Network
 Provincial Health Services Authority

Patient resources



Info and Resources

Patients & Families



Click the link below to access information and resources for individuals experiencing PCC & their families.

[More Information](#)

Health Care Providers



Click the link below to access resources for healthcare providers supporting individuals experiencing PCC & their families.

[More Information](#)

Organizations



Click the link below to access resources for organizations supporting individuals experiencing PCC & their families.

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LONG COVID WEB

LONG COVID WEB

A Canadian network supporting research into the Post-COVID Condition (PCC)



CAN-PCC

CANADIAN GUIDELINES FOR
POST COVID-19 CONDITION



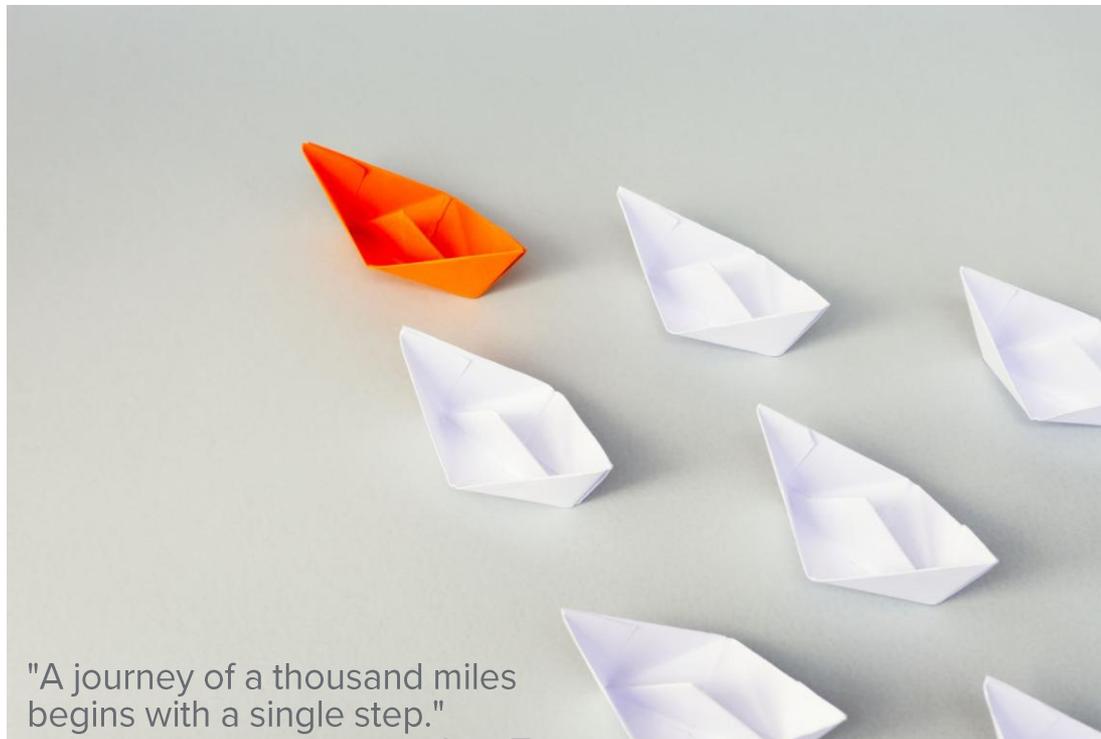
In conclusion....

- **Validate patient's concern**
- **Perform a comprehensive assessment**
- **Approach based on symptoms**





Thank You
Merci



"A journey of a thousand miles
begins with a single step."

Lao Tzu



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