

Version 4/22/2021

For questions or comments about this document, email [contactUHS@umich.edu](mailto:contactUHS@umich.edu)

*Patients may experience diverse symptoms post COVID. Primary Care clinicians may use this table as a quick reference when determining the best initial evaluation and treatment plan depending on their patients' symptoms.*

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| **System** | **Symptom** | **Initial Work-up** | **Treatment by Primary Care** | **Referrals for Further Evaluation** | **Reasons to Refer** |
| Cardiology | Cardiac symptoms (palpitations, new arrhythmia, chest pain, edema, etc) | CBC  High sensitivity troponin  BNP  DDimer  CRP  Sed rate  EKG  Consider:  CXR  Echo | Treat underlying cause as appropriate | Cardiology | All patients with cardiac complications (myocarditis, pericarditis, MI, dysrhythmia, etc) should be evaluated by cardiology. |
| Dysautonomia | COMP\*  CBC  TSH  Orthostatic blood pressures  Tilt table test | Hydration  Increase salt intake  Compression stockings  Meditation and breathwork  POTS: consider adding midodrine or fludrocortisone  Hyperadrenergic POTS: beta-blocker  **Patient Education:**  [POTS AVS](http://www.med.umich.edu/1libr/FamilyMedicine/PostCOVIDclinic/PostCOVIDPOTS.pdf) | Post-COVID Conditions Clinic  Cardiology | Symptoms refractory to treatment |

\***Comp** complete metabolic panel (liver function and renal panel)

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| Ear, Nose and Throat | Anosmia | Evaluate for underlying etiology (allergies, postnasal drip, etc) | Nasal steroid sprays if appropriate  **Patient Education:**  [Anosmia and Smell Training AVS](http://www.med.umich.edu/1libr/FamilyMedicine/PostCOVIDclinic/Post-COVIDAnosmia.pdf) | ENT | If >6 months |
| Endocrine | Poor glycemic control | Routine labs | Lifestyle modifications  Medication management  **Patient Education:**  Diabetes education | MEND |  |
| Gastroenterology | Transaminitis/liver complications post COVID | LFT  Hepatitis panel  Iron panel  ANA  SMA  Ferritin  US Abd w/doppler flow  · | Avoid alcohol, Tylenol, and other liver toxic substances and medications | Hepatology/GI | * **Labs:**   + i. If ALT and/or AST >5 x ULN   + ii. If baseline pre-COVD value known to be > 5 x ULN: Increase of ALT and/or AST to > 2 x baseline   + iii. If baseline pre-COVD value known to be 2-5 x ULN: Increase of ALT and/or AST to > 3 x baseline   + iv. Evidence of hyperbilirubinemia (T. Bil > 2.5) or coagulopathy (INR >1.5) * **Clinical Features:**   + i. If Features of decompensated liver disease (e.g., ascites, hepatic encephalopathy) |
| Hematology | Thromboembo-lism and other thrombotic complications | Evaluate for underlying etiology | **Patient Education:**  Anticoagulation Education | Hematology |  |
| Infectious Disease | Severe secondary pulmonary infections | Imaging or labs identifying concern |  | Infectious Disease |  |
| Nephrology | Post-COVID kidney dysfunction (AKI, hematuria, proteinuria) | Routine labs | Treat underlying condition | Nephrology |  |

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| Neurology | Chronic headaches | MRI brain if escalating pattern or other red flag symptoms | Lifestyle modifications (exercise, sleep, diet)  Gabapentin  Pregabalin  Tricyclics  Duloxetine  **Patient Education:**  [Chronic HA AVS](http://www.med.umich.edu/1libr/FamilyMedicine/PostCOVIDclinic/PostCOVIDChronicHeadache.pdf) | Post-COVID Conditions Clinic  Neurology | Symptoms refractory to initial treatment |
| Neurologic symptoms (weakness, paresthesias, impaired mobility, etc) | CBC  Comp\*  TSH  Vit B12  Vit D  Hgb A1c if paresthesias  MRI brain if:   * Moderate-Severe COVID * >50 years of age * Medical comorbidities/risk factors * Impact on job or iADLs * Focal neurological deficits or symptoms | Gabapentin  Pregabalin  Tricyclics  Duloxetine  **Patient Education:**  [Paresthesias AVS](http://www.med.umich.edu/1libr/FamilyMedicine/PostCOVIDclinic/PostCOVIDParesthesia.pdf) | Post-COVID Conditions Clinic  Neurology  PT/OT |  |

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| Other | Chronic fatigue | COMP  CBC  TSH  [Screen for OSA](http://www.stopbang.ca/osa/screening.php) (STOP-BANG)  \*consider adding  ANA, CRP/ESR  myalgia, arthralgia | Pacing of exercise: low-impact and short duration.  Don't push to recondition.   * [Pacing activity](https://jamanetwork.com/journals/jamacardiology/fullarticle/2772399) * [Planning out your day](https://jamanetwork.com/journals/jamacardiology/fullarticle/2772399) * [Break larger tasks into smaller ones](https://jamanetwork.com/journals/jamacardiology/fullarticle/2772399)   [Resource for clinicians](https://jamanetwork.com/journals/jamacardiology/fullarticle/2772399)  Consider stimulants in severe cases  **Patient Education:**  [Chronic fatigue AVS](http://www.med.umich.edu/1libr/FamilyMedicine/PostCOVIDclinic/PostCOVIDChronicFatigue.pdf)  [Return to exercise Post-COVID AVS](http://www.med.umich.edu/1libr/FamilyMedicine/PostCOVIDclinic/Post-COVID%20ReturnToExercise.pdf) | Post-COVID Conditions Clinic  Sleep study if indicated  Sleep Medicine | Symptoms refractory to initial treatment  Suspicion for sleep disorder |
| Chronic pain | ANA with reflex ENA  CRP  Sed rate  Rheumatoid factor  Anti-ccp | Lifestyle modifications (exercise, sleep, diet)  Gabapentin  Pregabalin  Tricyclics  Duloxetine  **Patient Education:**  [Chronic Pain AVS](http://www.med.umich.edu/1libr/FamilyMedicine/PostCOVIDclinic/PostCOVIDChronicPain.pdf)  [Chronic Pain Patient](https://www.youtube.com/watch?v=B0EhNajqkdU&feature=emb_title)  [Education Class](https://www.youtube.com/watch?v=B0EhNajqkdU&feature=emb_title) | Post-COVID Conditions Clinic | Symptoms refractory to initial treatment |
| Return to activity |  | [Resource for clinicians](https://jamanetwork.com/journals/jamacardiology/fullarticle/2772399)  **Patient Education:**  [Return to exercise Post-COVID AVS](https://docs.google.com/document/d/1M-swsQ9IMGjUT9GKoslEwTqb4KXXrp1Y24wojKR7q4s/edit) | Post-COVID Conditions  Clinic  Cardiology | Competitive athlete  Severe COVID-19 infection or requiring hospitalization  Abnormal return to play cardiac testing (echo, EKG, hs-trop)  Cardiac injury diagnosed subsequent to COVID-19 infection |

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| Psychiatry | Depression  Anxiety  PTSD | PHQ-9  GAD-7  TSH  CBC | Counseling  Consider medication  SNRI if concurrent HA or paresthesias  **Patient Education:**  [Mental Health Support AVS](http://www.med.umich.edu/1libr/FamilyMedicine/PostCOVIDclinic/Post-COVIDMentalHealthSupport.pdf) | Post-COVID Conditions Clinic  Psychiatry | Symptoms refractory to initial treatment  Need for additional support |
| Decreased concentration  Brain fog  Memory Loss | CBC  Comp\*  TSH  Vit B12  Vit D  Severe cognitive decline:  Folate, thiamine, HIV, RPR and Neuropsychological testing  MRI brain if:   * Moderate-Severe COVID * >50 years of age * Medical comorbidities/risk factors * Impact on job or iADLs * Focal neurological deficits or symptoms | If symptoms significant:  atomoxetine  dextroamphetamine/amphetamine  methylphenidate  modafinil  Cognitive therapy  **Patient Education:**  [Brain Fog AVS](http://www.med.umich.edu/1libr/FamilyMedicine/PostCOVIDclinic/Post-COVIDBrainFog.pdf) | Post COVID Conditions Clinic |  |

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| Pulmonary | Chronic dyspnea | CBC  BNP  Resting pulse ox  1 minute Sit to Stand test  **Slow gradual recovery with persistent sx >8-12 wk:**  CXR  Adult com[plete PFT](http://www.stopbang.ca/osa/screening.php)  **[Progressive dyspnea and/or dry/velcro crackles on exam:](http://www.stopbang.ca/osa/screening.php)**  [CXR](http://www.stopbang.ca/osa/screening.php)  [Adult complete PFT](http://www.stopbang.ca/osa/screening.php)  [Referral to Pulmonary](http://www.stopbang.ca/osa/screening.php)  [Sc](http://www.stopbang.ca/osa/screening.php)reen for OSA (STOP-BANG)  CT chest if concerning exam or PFT findings | **Breathing Exercises:**  [Belly Breathing](https://www.youtube.com/watch?v=wai-GIYGMeo)  [Pursed Lip Breathing](https://www.youtube.com/watch?v=7kpJ0QlRss4)  [Boxed Breathing](https://www.youtube.com/watch?v=tEmt1Znux58) 1:2 ratio, inhale:exhale  Incentive spiromet[er](https://docs.google.com/document/d/1RLlnbT-Q-uuzfzG5RDZIrGr4KeN0gwzl9wOFd7vYHtY/edit#heading=h.3foxfye8li7n)  Consider pulse ox for patient reassurance  **Patient Education:**  [Breathlessness AVS](http://www.med.umich.edu/1libr/FamilyMedicine/PostCOVIDclinic/PostCOVIDBreathlessness.pdf) | Post-COVID Conditions Clinic  Pulmonary  Sleep study if indicated | Progressive dyspnea and/or dry/velcro crackles on exam  Symptoms >12 weeks  Sit to Stand Test ≥4% desaturation  Concerning findings on CXR or Spirometry/DLCO  STOP-BANG ≥3 |
| Chronic cough | Evaluate for common causes including GERD, postnasal drip, ACEI, etc  Consider chest imaging if not resolving in 6-8 weeks after infection or if evidence of secondary bacterial infection | Treat underlying cause if applicable  Consider cough suppressants (dextromethorphan, benzonatate) |  | Symptoms refractory to treatment  Concerning symptoms or findings on imaging |

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| Sleep Medicine | Insomnia | TSH  CBC  Iron studies  [Screen for OSA](http://www.stopbang.ca/osa/screening.php) (STOP-BANG) | CBT-I  Sleep hygiene  Sleep aids:   * melatonin * mirtazapine * gabapentin * amitriptyline (if paresthesias or headaches are also present).   **Patient Education:**  [Insomnia AVS](http://www.med.umich.edu/1libr/FamilyMedicine/PostCOVIDclinic/PostCOVIDInsomnia.pdf) | Sleep Medicine | Symptoms refractory to initial treatment |

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