

Post COVID-19 Recovery

Nutrition, Eating, Feeding & Swallowing

Provincial COVID Rehabilitation Provider Education Sessions

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Land Acknowledgement

We acknowledge that we are gathered virtually today on the Territories of Treaty 6, Treaty 7, and Treaty 8 and Métis Regions 1, through 6.

These territories are home to many Indigenous Peoples, including the Blackfoot, Cree, Dene, Saulteaux, Ojibwe, Stoney Nakota Sioux, and Tsuut'ina peoples, the Métis Nations of Alberta and the 8 Métis Settlements.

We respect the Treaties that were made on these territories, we acknowledge the harms and mistakes of the past, and we dedicate ourselves to moving forward in partnership with Indigenous communities in a spirit of reconciliation and collaboration.

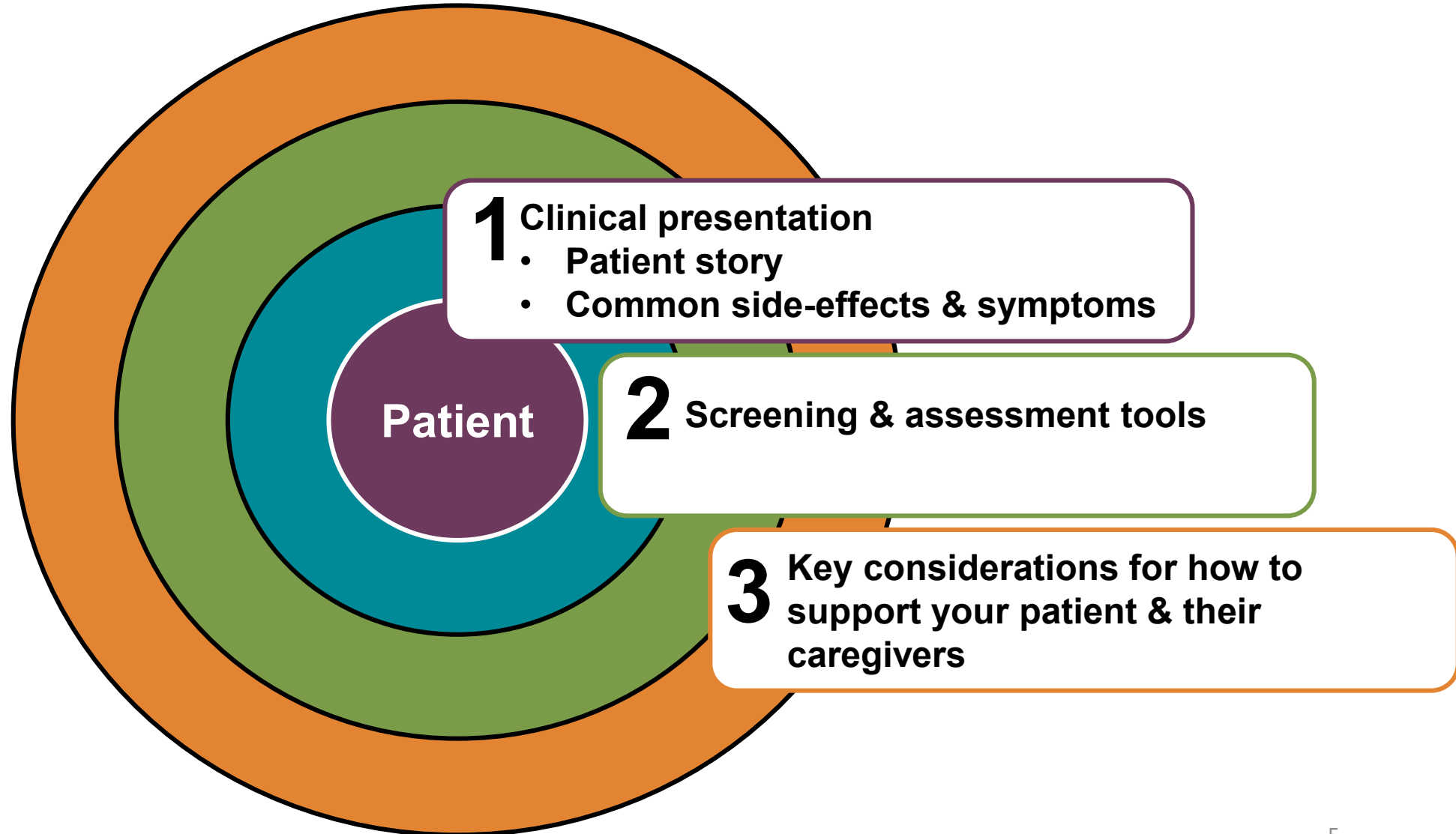


Acknowledgements

- **Paul Hemsing**, Patient
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- **Julie Evans**, Practice Director, Provincial Speech-Language Pathology
- **Marlis Atkins**, Nutrition Services Director, Provincial Initiatives & Integrated Services
- **Vanessa Dooley**, Professional Practice Lead, Respiratory Therapy



Outline



Resource Access



Getting Healthy After
COVID-19

[AHS.ca/HealthyAfterCovid](https://ahs.ca/HealthyAfterCovid)

On AHS Insite:

Guide to Clinical Feeding
& Swallowing Assessment
in Adults

Practice.Consultation@ahs.ca



Patient Story: Paul

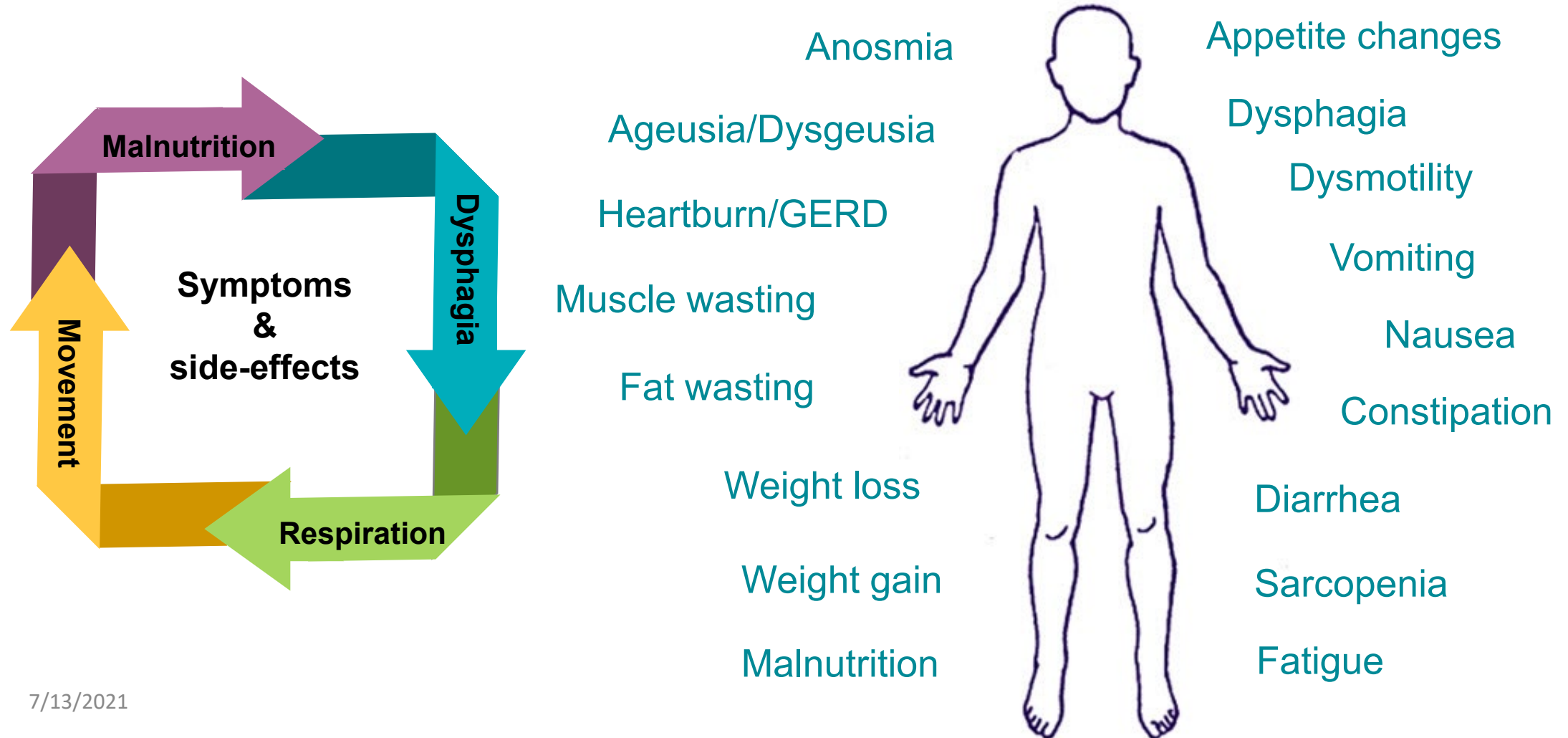
- 50-year-old male
- Past medical history: HTN
- Presentation: Some chest discomfort, feeling short of breath, very mild sporadic cough.
 - AstraZeneca vaccine (Apr-2020)
 - Experienced worsening headaches accompanied by generalized pain and fevers
- COVID-19 +ive (18-May-2021)
- ICU stay: 42 days
 - Intubation and mechanical ventilation (18-May-2021)
 - Tracheostomy (16-Jun-2021)
 - Intake: NPO + NG tube feeds



Patient Story: Paul

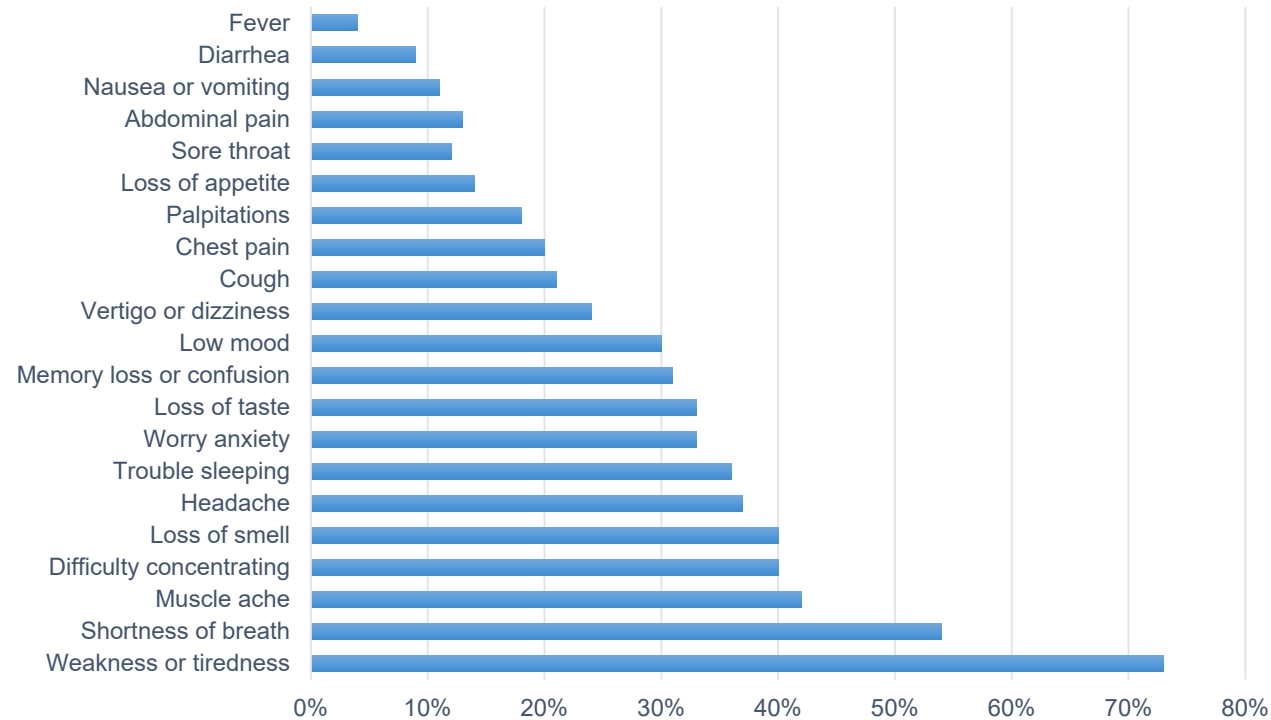
- Received intensive rehabilitation with subsequent decannulation (26-Jun-2021)
 - VFSS completed (28-Jun-2021)
 - Oral nutrition (28-Jun-2021)
- Significant improvement with ADLs and mobility
- Complications: Bilateral frozen shoulders, sacral ulcer requiring debridement
- Discharge to home (5-Jul-2021)
 - Walker
 - Shower chair

Clinical Presentation of Post-COVID-19



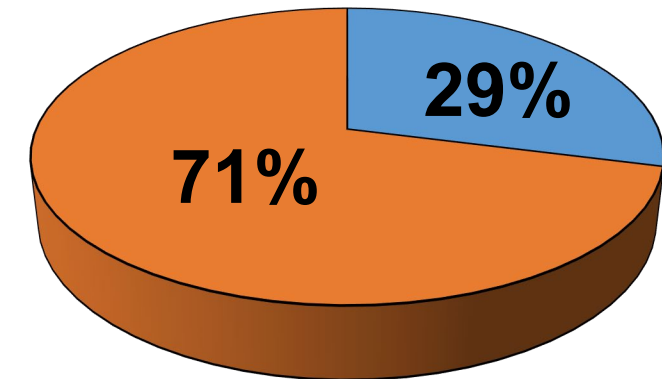
Post-COVID-19 Symptom Occurrence

COVID-19 Symptoms Persisting > 12 weeks



(Office for National Statistics (ons.gov.uk), 2021)

Dietetic Involvement Post-Discharge



■ RD post-discharge
■ No RD post-discharge

(The COVED Study, 2021)

Nutrition and EFS Screening Tools

CANADIAN NUTRITION SCREENING TOOL (CNST)

Name:	Age:	Weight:	Room:

Identify patients who are at risk for malnutrition

Ask the patient the following questions*	Admission		Rescreening	
	Yes	No	Yes	No
Have you lost weight in the past 6 months WITHOUT TRYING to lose this weight? <small>If the patient reports a weight loss but gained it back, consider it as NO weight loss.</small>				
Have you been eating less than usual FOR MORE THAN A WEEK?				
Two "YES" answers indicate nutrition risk†				

* If the patient is unable to answer the questions, a knowledgeable informant can be used to obtain the information. If the patient is uncertain regarding weight loss, ask if clothing is now fitting more loosely.

Patients at nutrition risk need an assessment to confirm malnutrition


Nutrition screening using a valid tool can generate a significant volume of requests for nutrition evaluation. Subjective Global Assessment (SGA) is a simple and efficient first-line assessment of nutritional status that can be used following a positive screening and to help prioritize cases.


If a patient is malnourished (SGA B or C), an in-depth nutrition assessment, along with treatment, is required by a registered dietitian.

The Canadian Nutrition Screening Tool was rigorously validated and tested for reliability in Canadian hospitals. Non-expert raters completed the tool and it was compared to the SGA conducted by a dietitian or trained nutrition researcher.

† If a patient is not at risk, rescreen within a week. Only consider weight change in the past week.

Validation and reliability testing of the Canadian Nutrition Screening Tool was funded by an unrestricted educational grant of Abbott Nutrition Canada.


 Canadian Nutrition Society
Société canadienne de nutrition


 Canadian Malnutrition Task Force
Le Groupe de travail canadien sur la malnutrition


EAT-10: A Swallowing Screening Tool

Last name: _____ First name: _____ Age: _____ Date: _____

OBJECTIVE:
EAT-10 helps to measure swallowing difficulties. It may be important for you to talk with your physician about treatment options for symptoms.

INSTRUCTIONS:
Answer each question by writing the number of points in the boxes. To what extent do you experience the following problems?

SYMPTOM	SCORE	Score
My swallowing problem has caused me to lose weight.	0 0 = no problem	Score <input style="width: 40px;" type="text"/>
	1 1	
	2 2	
	3 3	
	4 4 = severe problem	
My swallowing problem interferes with my ability to go out for meals.	0 0 = no problem	Score <input style="width: 40px;" type="text"/>
	1 1	
	2 2	
	3 3	
	4 4 = severe problem	
Swallowing liquids takes extra effort.	0 0 = no problem	Score <input style="width: 40px;" type="text"/>
	1 1	
	2 2	
	3 3	
	4 4 = severe problem	
Swallowing solids takes extra effort.	0 0 = no problem	Score <input style="width: 40px;" type="text"/>
	1 1	
	2 2	
	3 3	
	4 4 = severe problem	
Swallowing pills takes extra effort.	0 0 = no problem	Score <input style="width: 40px;" type="text"/>
	1 1	
	2 2	
	3 3	
	4 4 = severe problem	



CLIENT LABEL HERE:
 If label is not used, the following information is required:
 Name: _____
 Birthdate: (yyyy-mm-dd) _____
 Gender: F M
 PHN: _____
 ULI: _____

**Royal Brisbane & Women's Hospital (RBWH)
DYSPHAGIA SCREENING TOOL**

Screening Procedure for Patients with Dysphagia and / or Aspiration Risk
ONLY TO BE USED BY TRAINED CLINICAL STAFF

PHASE 1

YES	NO	Does the patient have any of the following or previous History of the following? (check yes or no)
		Dysphagia or aspiration risk on previous admission(s)
		COPD +/- upper GI disorder
		Stroke (CVA)
		Neurological involvement
		Head injury
		Head and neck cancer +/- surgery / chemotherapy / radiation
		Orthopaedic conditions - Neck Of Femur, cervical spinal surgery
		Acutely unwell, frail aged with co-morbidities
		Suspected aspiration pneumonia / recurrent chest infections
		Severe disability (e.g. physical disability)

If all boxes are checked NO, patient to have usual modified diet, or regular diet and thin liquids. Complete SWALLOWING MANAGEMENT PLAN below. DAILY SWALLOW SCREEN TO BE INITIATED.
If YES to any of the above boxes, proceed to Phase 2.

PHASE 2

YES	NO	Interview with the patient / family / caregiver (check yes or no)
		Do you have difficulty eating food / drinking fluid?
		Do you cough or have choking episodes while eating / drinking?
		Do you need to modify the food you eat? E.g. softer or smaller pieces
		If YES, provide details of diet and fluid consistency
		Do you get chest infections? Is it recent? YES <input type="checkbox"/> NO <input type="checkbox"/> Has it been investigated before? YES <input type="checkbox"/> NO <input type="checkbox"/>

INDICATORS OF DYSPHAGIA / ASPIRATION RISK (check yes or no)

	Altered LOC / reduced responsiveness
	Respiratory rate >30bpm
	Slurred speech (dysarthria)
	Weak / absent volitional cough
	Not managing oral secretions (drooling, wet voice)
	Weak voice (dysphonia)
	Suspected aspiration pneumonia / recurrent chest infections
	Documented or history of dysphagia / aspiration risk
	Reports difficulty swallowing
	Reported coughing / choking episodes while eating / drinking

WATER TEST: Administer only if NO has been checked for ALL indicators of dysphagia. Give patient 65ml (1/3 cup) water.

	Coughing during or between swallows, or up to one minute after swallowing
	Wet / gurgly or hoarse voice after swallowing
	Increased respiratory rate after swallowing

If NO to ALL of the above INDICATORS AND the WATER TEST, patient to have usual modified diet or regular diet and thin liquids. Complete swallowing management plan, DAILY SWALLOWING SCREEN TO BE INITIATED.
If YES to any of the above INDICATORS OR the WATER TEST, refer for feeding / swallowing assessment.
Patient is to remain NPO pending feeding / swallowing assessment and consultation with medical team.
Check YES in Swallowing Management Plan and complete same.

SWALLOWING MANAGEMENT PLAN

YES	NO	
		Patient identified as dysphagic or aspiration risk
		If NO: <input type="checkbox"/> recommend regular diet and thin fluids; or <input type="checkbox"/> Recommend usual modified diet / fluids (see orders)
		If YES: <input type="checkbox"/> Recommend NPO. Refer to Stroke Order Set regarding guidelines for IV / NG use & oral care.
		<input type="checkbox"/> Physician notified
		<input type="checkbox"/> Referral generated for feeding / swallowing assessment.

Individual Completing Screen:

Signature _____

Printed Name _____

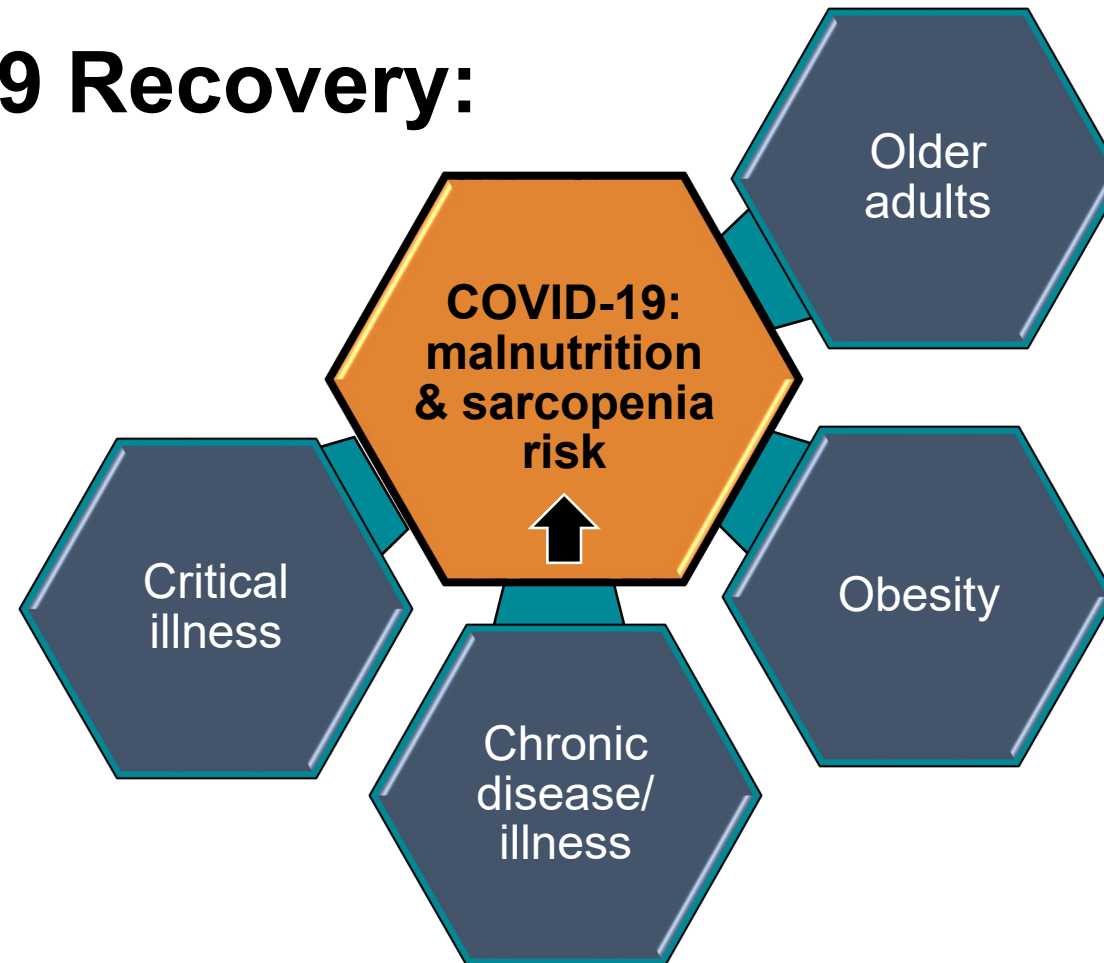
Date (yyyy-mm-dd) / Time (mm:ss) _____

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Post-COVID-19 Recovery: Nutrition



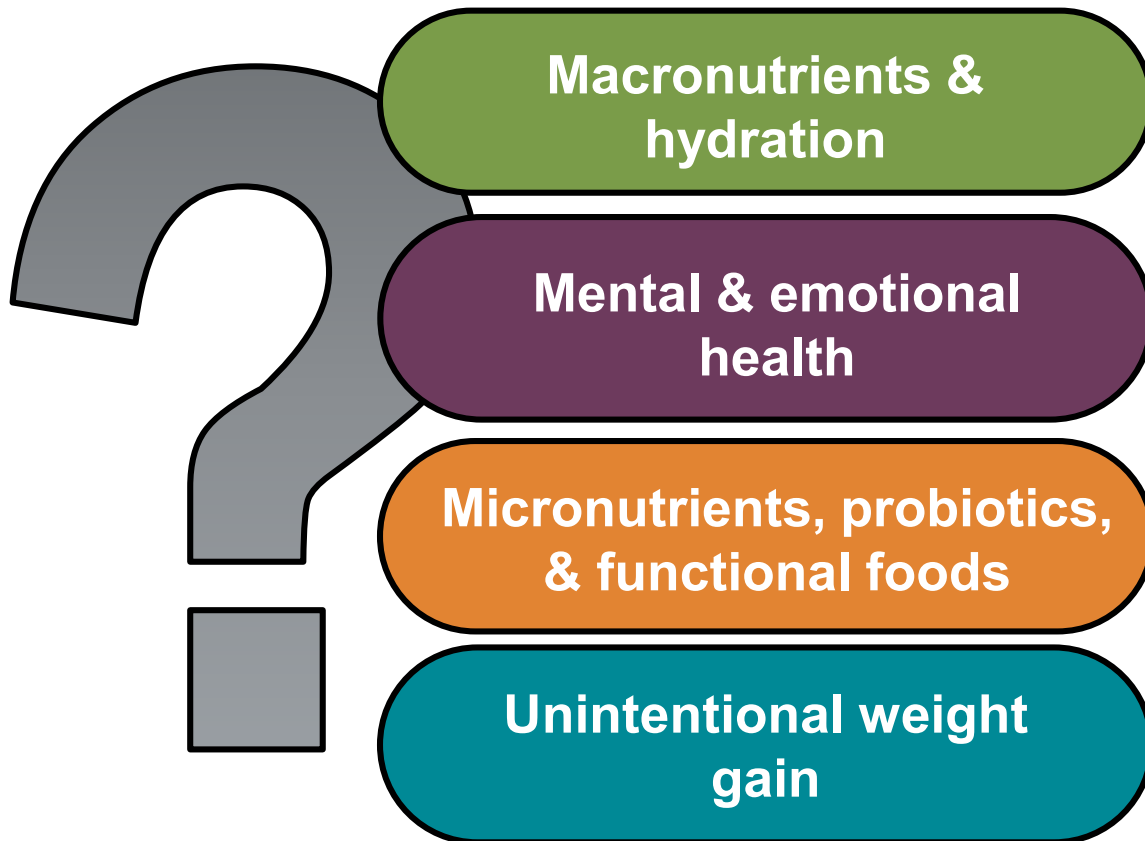
Canadian Malnutrition Task Force (2020)



Nutrition Guideline:
Frailty, Nutrition Risk, and
Malnutrition in Seniors

Prevention, timely recognition and treatment of malnutrition should be standard care for patients with COVID-19
European Society for Clinical Nutrition and Metabolism (ESPEN)

Post-COVID-19 Recovery: Nutrition



- Optimize calories, protein
- Encourage hydration
- Side-effects = challenges

- Eating disorders & disordered eating
- Low interest in eating
- Worsening nutrition intake

- Correct lab values
- Foods vs. supplements

- Change in eating patterns, stress, mental burden, reduced physical activity



Nutrition Guideline:
Post-COVID-19 Nutrition
for Recovery (Adults)

Post-COVID-19 Recovery: Nutrition

Practical strategies for Post-COVID-19 fatigue:

- Eat 6 smaller meals
- Use adaptive tools
- Try finger foods
- Modify textures
- Keep oral nutrition supplements or shelf-stable snacks in common areas at home
- Reheat ready-made foods
- Use meal or food delivery programs



Nutrition Guideline:
Post-COVID-19 Nutrition
for Recovery (Adults)

[AHS.ca/Nutrition](https://ahs.ca/Nutrition)



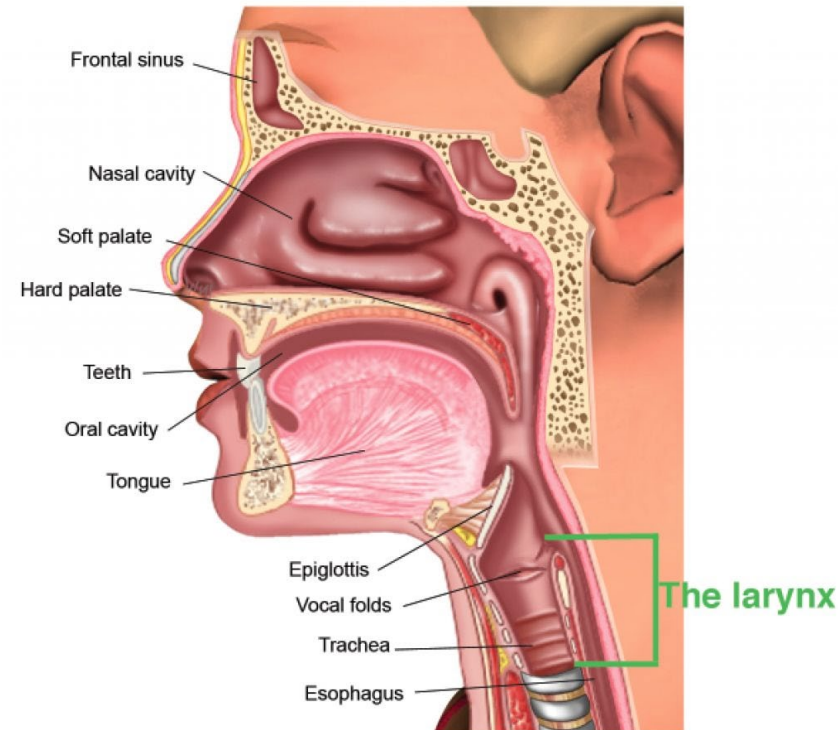
Validate their experience

Clinical Presentation – Red Flags

- Unintentional weight loss
- Dehydration
- Dyspnea
- Oxygen desaturation
- Pneumonia
- Fatigue
- With food or fluid consumption:
 - Cough
 - Voice changes

On AHS Insite:

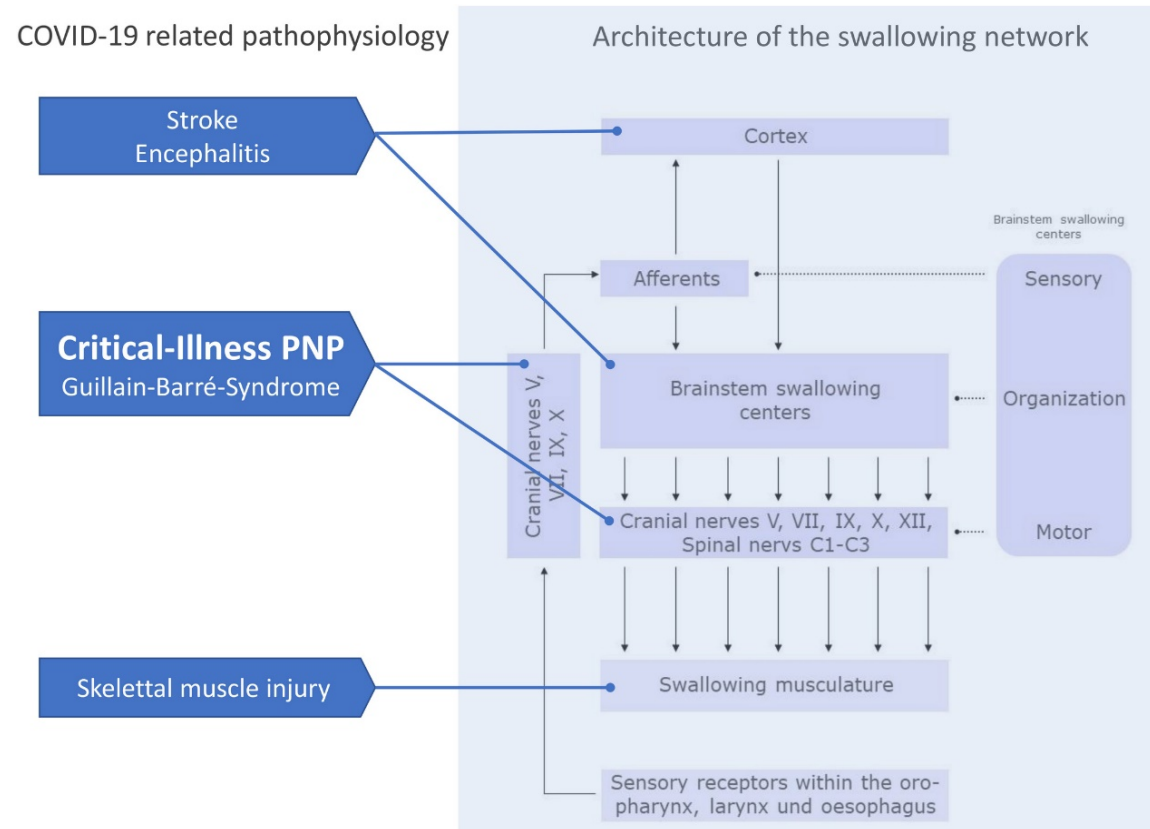
Guide to Clinical Feeding
& Swallowing Assessment
in Adults



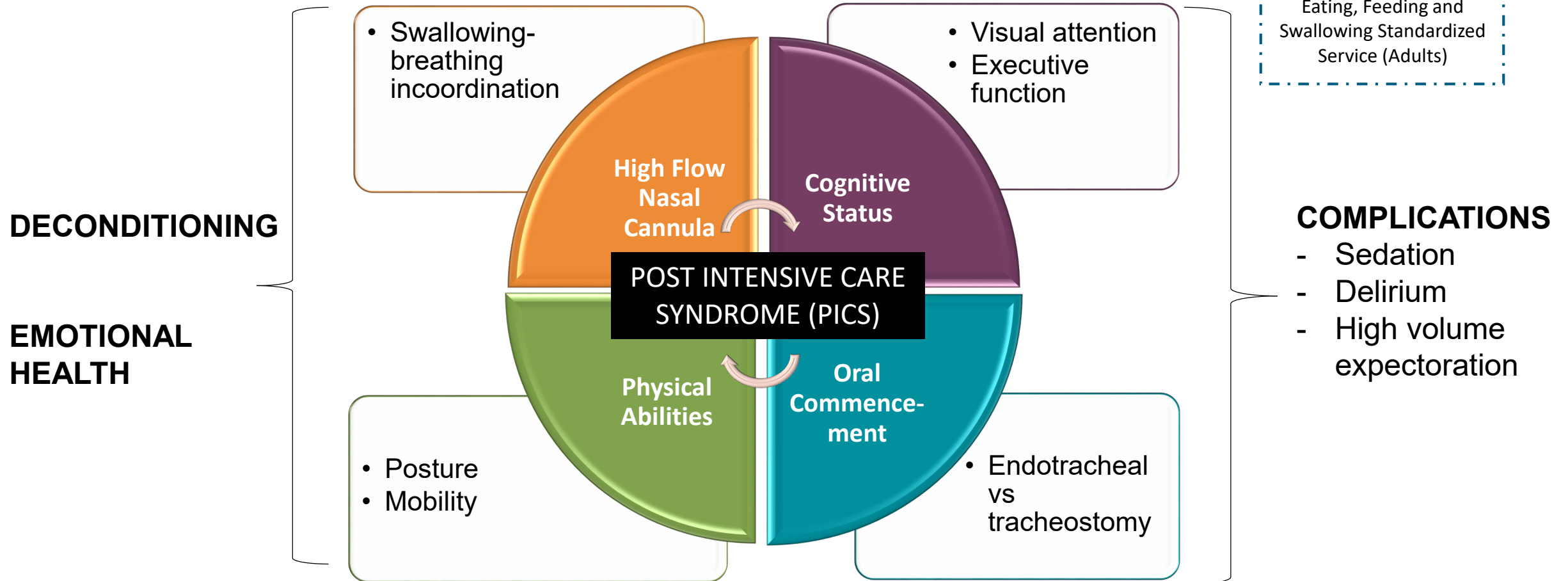
Post-COVID-19 Recovery: Dysphagia

On AHS Insite:

Eating, Feeding and
Swallowing Standardized
Service (Adults)



Post-COVID-19 Recovery: Dysphagia



Post-COVID-19 Recovery: Dysphagia

On AHS Insite:

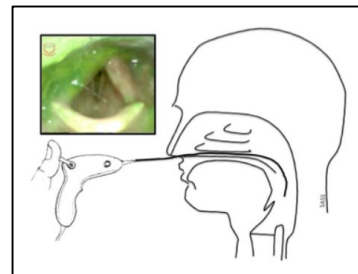
Eating, Feeding and
Swallowing Standardized
Service (Adults)

Instrumental Assessments: VFSS

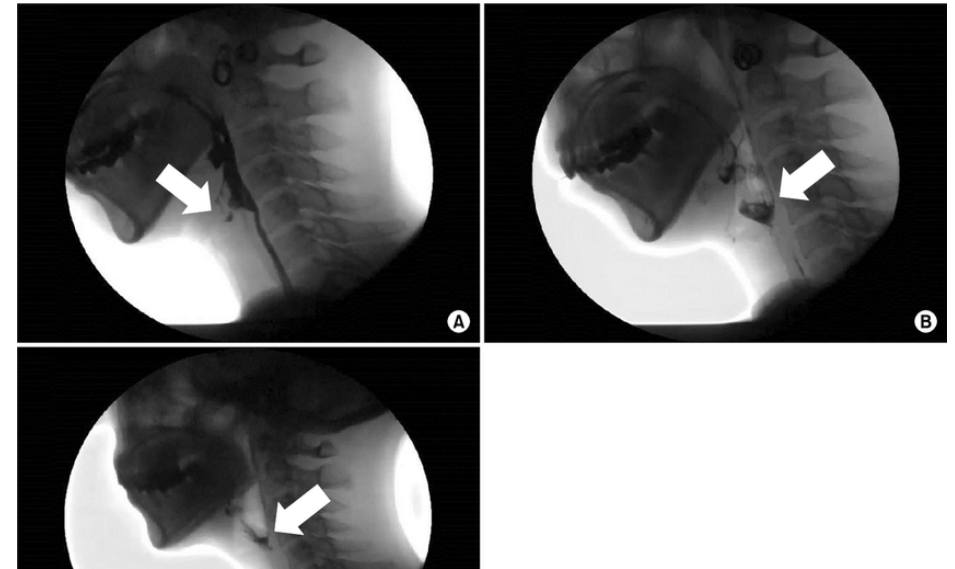
- Clients recovering from severe COVID-19 and long stay in the ICU
 - Higher incidence of swallowing disorder and silent aspiration

FEES: fewer studies

- AGMP (Aerosol Generating Medical Procedure)



SA Swallowing Services, PLLC. (2021).
FEES 2021: Instrumental Dysphagia
Assessment

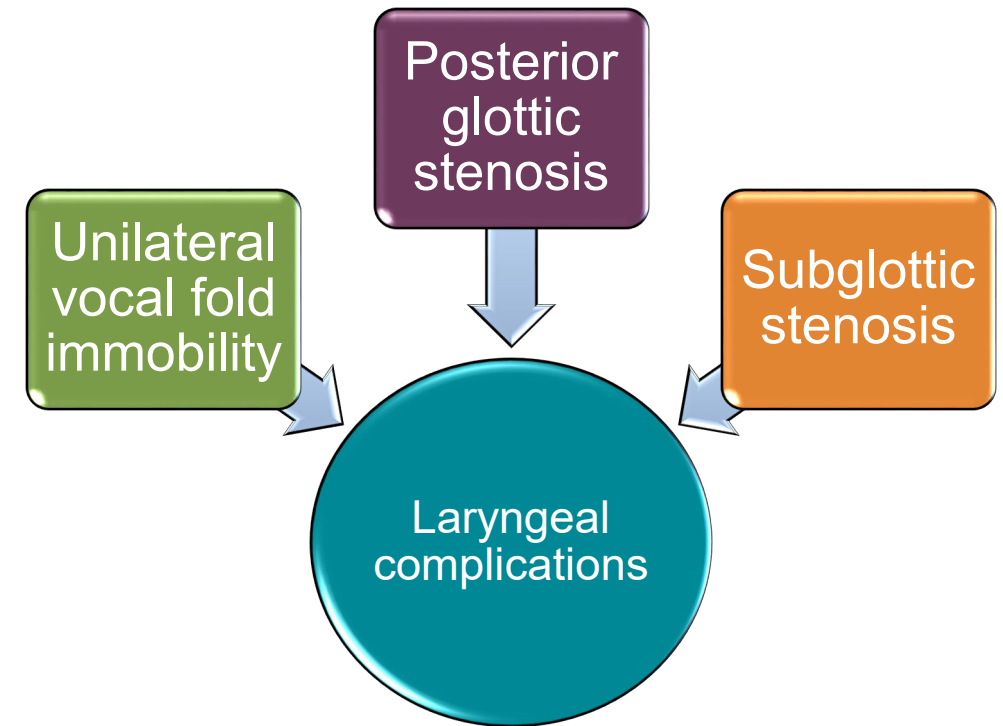


(Lee, Lee, Yoo, & Shin, 2017)

Post-COVID-19 Recovery: SLP

Dysphonia

- Prevalence of Dysphonia: 70% of patients admitted with COVID-19 (Archer et.al, 2021)
- Patients with dysphonia and intubated >5 days have increased risk for laryngeal injury and voice impairment (Archer et.al, 2021)
- Risk factors: Prolonged intubation and prone-positioning



Post-COVID-19 Recovery: OT

Posture and Positioning

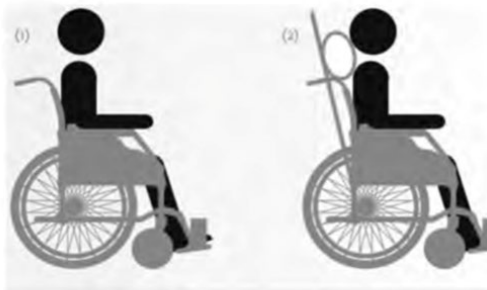


Figure 1. Recommended safe positioning in a standard or modified wheelchair as well as in an armchair. Client in an upright position as close to 90° as possible, feet on leg rests. Pillows or bolsters can be used to help obtain an upright position (Szpiech, 2014).



Figure 2. Recommended safe positioning in bed with head of bed anywhere between 75° and 90°. Use pillows and bolsters to prevent sliding in bed while maintaining an upright position (Szpiech, 2014).

Images from: Self feeding with the Adult Population: Back to Basics AOTA August 2020



Images retrieved from
[https://www2.hse.ie/conditions/covid19/symptoms/shortnessofbreathless/](https://www2.hse.ie/conditions/covid19/symptoms/shortnessofbreath/)

Post-COVID-19 Recovery: OT Cognition

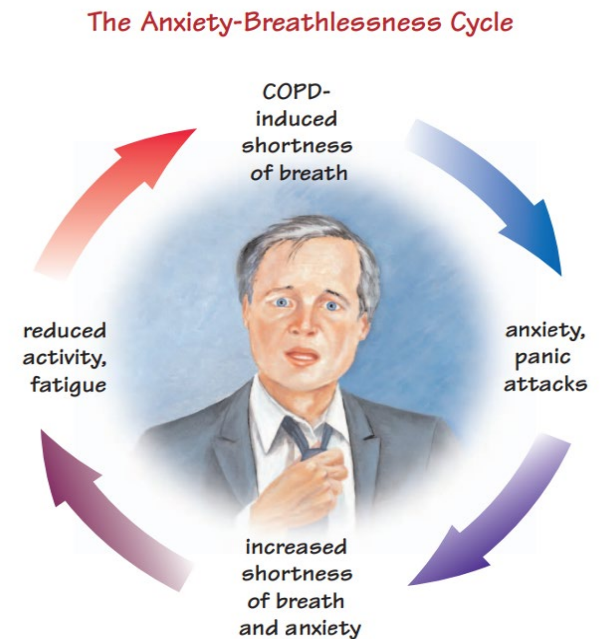


<https://otworldandme.wordpress.com/2020/07/01/cognitive-approach-in-occupational-therapy/>

- 'Brain fog' can last for months after the initial infection.
- Clinically significant cognitive impairment can range
- From 59% to 65% of hospitalized individuals with COVID (Miskowiak, 2021)

Psychosocial and cultural impact

- Anxiety – Breathlessness cycle



https://www.livingwellwithcopd.com/DATA/DOCUMENT/63_en~v~managing-your-stress-anxiety.pdf

Post-COVID-19 Recovery: OT

Energy conservation

- Patient logging and monitoring
 - Modified Borg
 - Pulse oximeters
 - Practicalities and cautions (Greenlaugh et al 2021)

Modified Borg Dyspnea Scale

0	Nothing at all	
0.5	Very, Very Slight (Just Noticable)	
1	Very Slight	
2	Slight	
3	Moderate	
4	Somewhat Severe	
5	Severe	
6		
7	Very Severe	
8		
9	Very, Very Severe (Almost Maximal)	
10	Maximal	

Post-COVID-19 Recovery: OT

Adaptive Equipment



Post-COVID-19 Recovery: OT

- Screening, assessment, and diagnostic assessments are widely available.
- Two examples of PROMS to evaluate the patient's perception of health and quality of life are presented.
- Consideration of how impairment impacts activity, participation, and wellbeing.
- Incorporates caregiver, family perspectives. Reflects change across points of care.
 - Australia Therapy Outcome Measures / AusTOMS
- Consideration of outcomes important to patients.
 - Swallowing Quality of Life questionnaire / SWAL-QOL
 - 10 domains
 - Scored 0-100 (extremely impaired to no impairment)

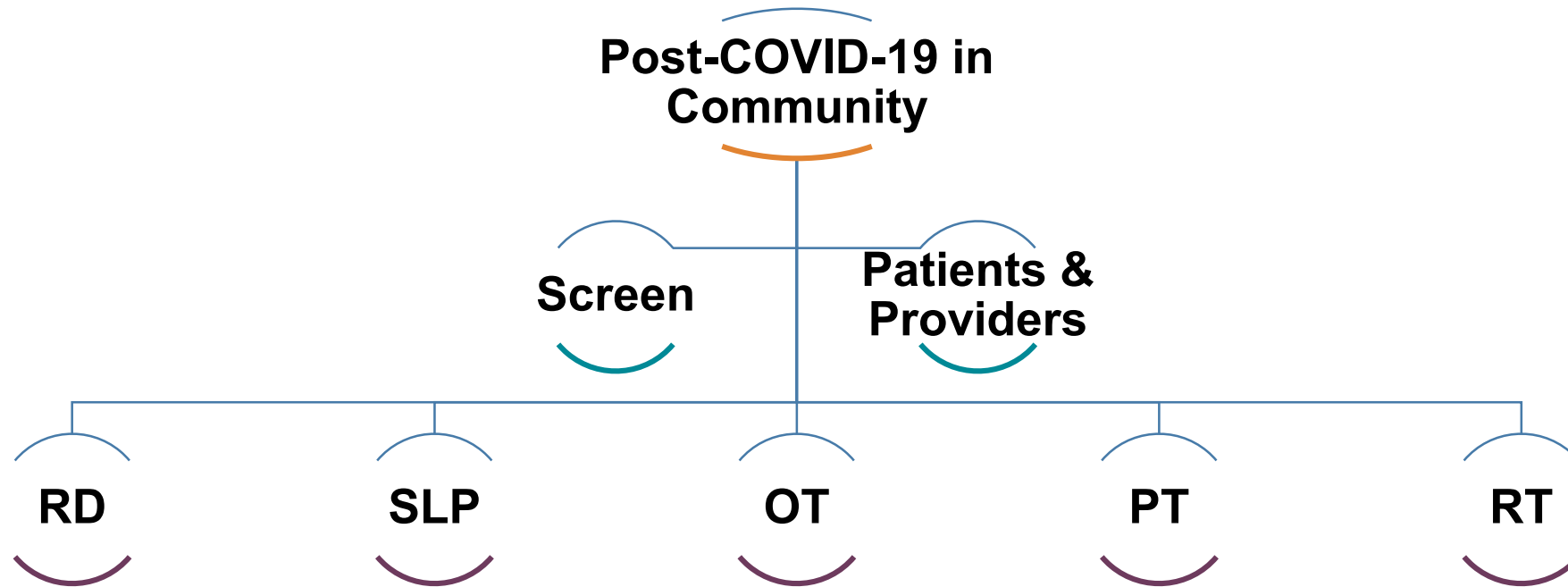
On AHS Insite:

Guide to Clinical Feeding
& Swallowing Assessment
in Adults

Nutrition, Eating, Feeding & Swallowing: Key Messages



Recovery & Rehabilitation
After COVID-19: Health
Professionals



Patient Education Workshops

Helping You Feel Better after COVID-19

AHLP Calgary Zone

- Open to all Albertans

For more details or to register:



- Visit ahs.ca/ahlp → Calgary Zone → Online Registration
- Call 403-943-2584 (long distance charges may apply)

Helping You Feel Better after COVID-19

Free courses for adults with ongoing COVID-19 symptoms

If you are one of the many Alberta adults living with COVID symptoms months after your diagnosis, our free classes can help you. You can take one or all of our five online Zoom sessions. Topics include breathing, eating, sleeping, stress, activity and more. You can take any of our online Zoom classes in any combination and in any order. Our healthcare experts will offer tips and advice to help improve your recovery and your quality of life. You can learn in the comfort of your home and no referral is needed.

Class names	Topics covered
Eating after COVID-19	<ul style="list-style-type: none"> • Eating, drinking and swallowing • Loss of taste and smell
Managing Breathing and Sleep	<ul style="list-style-type: none"> • Shortness of breath and persistent cough • Getting restful sleep
Managing Daily Life	<ul style="list-style-type: none"> • Getting back to your daily activities • Conserving your energy • Coping with cognitive changes • Returning to work, school and leisure
Managing Pain and Getting Active	<ul style="list-style-type: none"> • Coping with muscle and joint pain • Physical activity and long COVID
Managing Stress	<ul style="list-style-type: none"> • Strategies for self-care • Mental wellness

Registration details

Classes are available to anyone in Alberta 18 years old and over.

You will need an internet connection.

You will need to be physically present in Alberta when you take the class.

For more details or to register:

- Visit ahs.ca/ahlp → Calgary Zone → Online Registration
- Call 403-943-2584 (long distance charges may apply)

Community Referrals

Registered Dietitian

- [AHS.ca/Nutrition](https://www.albertahealthservices.ca/nutrition)
- [AHS.ca/NutritionResources](https://www.albertahealthservices.ca/nutritionresources)
- [Albertareferraldirectory.ca](https://albertareferraldirectory.ca)

If patients have ?'s or for self-referrals

- Health Link 811 (ask to talk to a dietitian)
- [AHS.ca/NutritionWorkshops](https://www.albertahealthservices.ca/nutritionworkshops)
- Alberta Healthy Living Program

Speech-Language Pathologist

- [Albertareferraldirectory.ca](https://albertareferraldirectory.ca)

If patients have ?'s or for self-referrals

- Family Physician
- Health Link 811

Occupational Therapist

- [Albertareferraldirectory.ca](https://albertareferraldirectory.ca)

If patients have ?'s or for self-referrals

- For Albertans, Rehabilitation Advice Line 1-833-379-0563

Questions?

Practice.Consultation@ahs.ca

SLP

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Nutrition Education Resources

For More Information

- Allied Health Practice and Education Hub
 - COVID-19 Resources:
 - Nutrition for Recovery and Rehabilitation
 - Rehabilitation (OT, PT, SLP, RecT, TA, Aud)
 - Practice.consultation@ahs.ca
- Post COVID Provider Resource Webpage (AHS external)
[COVID-19 Recovery & Rehabilitation After COVID-19: Resources for Health Professionals](#)
- College of Professional Association EFS Guidelines and Standards of Practice
 - Alberta College of Speech-Language Pathologist and Audiologists: [Guidelines and protocols](#)
 - Alberta College of Occupational Therapists: [Position statement](#)
 - Canadian Association of Occupational Therapists: [Position statement](#)
 - College of Dietitians of Alberta: [Dysphagia competencies](#)

Rehabilitation Advice Line

Rehabilitation advice can help you recover from injury, orthopedic surgery, COVID-19 or manage a neurological condition.

A healthcare professional on the line can provide you with:

- Activities and exercises to help with physical concerns
- Strategies to manage day-to-day activities affected by these concerns
- Rehabilitation services open for in-person or virtual visits
- Community organizations available for support

1-833-379-0563

9 a.m. to 5 p.m. Mon-Fri

Mental Health Help Line

24 hour, 7 day a week confidential service that provides support, information, and referrals to Albertans experiencing mental health concerns.

The line is staffed by a multidisciplinary team comprised of nurses, psychiatric nurses, social workers, occupational therapists, and psychologists.

- Confidential, anonymous service
- Information about mental health programs and services

1-877-303-2642

Additional Webinars

Recordings are available: [COVID-19 Recovery & Rehabilitation After COVID-19: Resources for Health Professionals | AHS](#) (Staff can also access here - [Practice Wise Archives | Insite](#))

- **June 10** – Physical Sequelae and Screening
- **June 15** – Maximizing Energy and Returning to Daily Activities and Meaningful Occupations
- **June 22** – Resuming Activity & Exercise
- **June 29** – Psychological, Spiritual and Social Considerations Important in Post-COVID Care
- **July 6** – Neurocognitive Sequelae, Functional Cognition and Cognitive Communication
- **July 13** – Nutrition, Eating, Feeding and Swallowing

Upcoming:

- **July 20** – Re-engagement in the Community

Resources

- MyHealth AB: After COVID-19
- AHS.ca/HealthyAfterCovid
- AHS.ca/Nutrition
- AHS.ca/NutritionResources
- AHS.ca/NutritionWorkshops
- Allied Health Sharepoint: [Feeding and Swallowing Learning Resources Basic to Advanced](#)
- Health Professions Strategy & Practice (<https://insite.albertahealthservices.ca/hps/p/Page7857.aspx>)
- SLP Learning Resources for Foundational Competency in Dysphagia (<https://insite.albertahealthservices.ca/Main/assets/tms/ahc/tms-ahc-feedswallow-resource.pdf>)
- Eating, Feeding and Swallowing Services for Adults (<https://insite.albertahealthservices.ca/main/assets/tms/hpsp/tms-hpsp-ss-eating-feeding-swallowing-adults.pdf>)

References

- Archer, S. K., Iezzi, C. M., & Gilpin, L. (2021). Swallowing and voice outcomes in patients hospitalized with COVID-19: An observational cohort study. *Archives of Physical Medicine and Rehabilitation*, doi:S0003-9993(21)00089-7 [pii]
- Brodsky, M.B., Gilbert, R.J. (2020) The Long-Term Effects of COVID-19 on Dysphagia Evaluation and Treatment. *Archives of Physical Medicine and Rehabilitation*, 101(9), 1662 -1664.
- Canadian Malnutrition Task Force (2020). Posters. Canadian Nutrition Society. Accessed 02-July-2021 from <https://nutritioncareincanada.ca/canadian-malnutrition-awareness-week/promotional-materials>
- Dawson, C., Capewell, R., Ellis, S., Matthews, S., Adamson, S., Wood, M., . . . Sharma, N. (2020). Dysphagia presentation and management following coronavirus disease 2019: An acute care tertiary centre experience. *The Journal of Laryngology & Otology*, 134(11), 981-986. doi:10.1017/S0022215120002443
- Dziewas, R., Warnecke, T., Zürcher, P., & Schefold, J. C. (2020). Dysphagia in COVID-19 - multilevel damage to the swallowing network?. *European Journal of Neurology*, 27(9), e46–e47. <https://doi.org/10.1111/ene.14367>
- Elite Healthcare (2016). Inpatient dysphagia: A case study [image]. Elite Learning. Accessed online 21-Jun-2021 from <https://www.elitecme.com/resource-center/rehabilitation-therapy/inpatient-dysphagia-a-case-study>
- Flores, M. J., Eng, K., Gerrity, E., & Sinha, N. (2019). Initiation of oral intake in patients using high-flow nasal cannula: A retrospective analysis. *Perspectives of the ASHA Special Interest Groups*, 4(3), 522-531.
- Frajkova, Z., Tedla, M., Tedlova, E. et al. Postintubation Dysphagia During COVID-19 Outbreak-Contemporary Review. *Dysphagia* 35, 549–557 (2020). <https://doi.org/10.1007/s00455-020-10139-6>
- Greenlaugh, T., knight, M., Inada-Kim, M., Fulop, N., Leach, J., Vindrola-Padros, C. (2021). Remote management of COVID 19 using home pulse oximetry and virtual ward support. *BMJ* 2021;372n677 doi <https://doi.org/10.1136/bmj.n677>
- Office for National Statistics (04-Jul-2021) Prevalence of ongoing symptoms following coronavirus (COVID-19) infection in the UK. Accessed online 05-Jul-2021 from <https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/conditionsanddiseases/datasets/alldatarelatingtoprevalenceofongoingsymptomsfollowingcoronaviruscovid19infectionintheuk?s=09>
- Lee, Frajkova, Z., Tedla, M., Tedlova, E. et al. Postintubation Dysphagia During COVID-19 Outbreak-Contemporary Review. *Dysphagia* 35, 549–557 (2020). <https://doi.org/10.1007/s00455-020-10139-6>
- Martin-Harris, B., Brodsky, M. B., Michel, Y., Ford, C. L., Walters, B., & Heffner, J. (2005). Breathing and swallowing dynamics across the adult lifespan. *Archives of Otolaryngology—Head & Neck Surgery*, 131(9), 762–770. <https://doi.org/10.1001/archotol.131.9.762>
- Miskowiak, K., Johnsen, S., Sattler, SM., Nielsen, S., Kunalan, K., Rungby, J., T., Lapperre, Porsberg, CM., Cognitive impairments four months after COVID-19 hospital discharge: Pattern, severity, and association with illness variables, *European Neuropsychopharmacology*, Volume 46, 2021, Pages 39-48, ISSN 0924-977X, <https://doi.org/10.1016/j.euroneuro.2021.03.019>.
- Muhle, P., Claus, I., Labeit, B. et al. Effects of cognitive and motor dual-tasks on oropharyngeal swallowing assessed with FEES in healthy individuals. *Sci Rep* 10, 20403 (2020). <https://doi.org/10.1038/s41598-020-77421-1>
- S., Lee, E., Yoon, C., Shin, H., & Lee, C. (2017). Collet-Sicard Syndrome With Hypoglossal Nerve Schwannoma: A Case Report. *Annals of Rehabilitation Medicine*. 41. 1100-1104. 10.5535/arm.2017.41.6.1100.
- SA Swallowing Services, PLLC. (2021). FEES 2021: Instrumental Dysphagia Assessment. [image]. SASS. Accessed online 22-Jun-2021 from <https://www.sasspllc.com/product/fees-2021-instrumental-dysphagia-assessment/>
- Threats, T.T. (2007). Use of the ICF in Dysphagia Management. *Seminars in Speech and Language*, 28(4), 323 – 333. doi:10.1055/s-2007-986529.
- Wierdsma, N. et. al. (2021) Poor nutritional status, risk of sarcopenia and nutrition related complaints are prevalent in COVID-19 patients during and after hospital admission. *Clinical Nutrition ESPEN*. 43: 369-376. <https://doi.org/10.1016/j.clnesp.2021.03.021>