# Physiotherapy Role in Cystic Fibrosis Program at SPH

## Site Applicability:

SPH

## Scope:

Services are provided to adults throughout the province of B.C. who have been diagnosed with cystic fibrosis (CF).

## Procedures:

**Outpatient services:**

- Clinics are held five times a week. Two of these sessions are provided via telehealth. Registered patients are seen 4 times per year for assessment by each team member and to update lab and other investigations.
- Outreach clinics are usually held four times per year in Kelowna/Kamloops/Prince George (rotating according to regional needs and facility access). The CF physician plus two allied health team members (rotating among: physiotherapist, dietician, social worker, pharmacist, clinic nurse coordinator) attend each clinic.
- Transition clinics are held twice a year for patients transferring from BC Children's Hospital to the adult clinic.
- Outpatient physiotherapy appointments are provided to those patients living locally who require physiotherapy services outside of clinic visits (assess $O_2$ requirements / exercise testing / development or progression of home exercise programs/ teaching of secretion clearance techniques / post-transplant rehab when VGH unable to accommodate a patient etc.). Virtual appointments are also available.

**In-patient services:**

- All CF patients admitted to hospital are screened by a physiotherapist regardless of the reason for admission.
- Treatment is provided as required (and according to SPH priority intervention criteria) 7 days per week to help mitigate the debilitating effects of repeated infections and hospitalizations and optimize discharge status.

**Infection Control (inpatients):**

There are several organisms associated with an accelerated deterioration in respiratory status in cystic fibrosis patients.

CF Canada introduced strict infection control policies for both outpatient and inpatient CF care in 2014. These are implemented at SPH and include the following:

- Patients growing B. Cepacia will be admitted to the 7C/D and are permitted exercise in the Main Physiotherapy Dept. on the 3rd floor Burrard Bldg.
- Patients growing M. abscessus or P. apista will also be admitted to the 7C/D, but are not permitted to use any gym facility at SPH. Portable exercise equipment is available in the CF gym for these patients to use in their rooms.
- All other CF patients will be admitted to 7A/B and exercise in the CF gym on 8B
- CF patients must be admitted to private rooms.
- Patients exercise individually with no overlap in gym times. The treating physiotherapist will ensure any equipment or parts of the room that have been used are cleaned immediately post treatment.
- Meticulous hand washing is paramount. Staff and patients will wash (disinfect) their hands on entering and leaving the gym.
- At CF Clinics patients are assigned to an examination room, staying there as staff rotate to meet with them.
- CF patients are required to wear a surgical mask at all times (other than in exam rooms, or patient rooms (or the gym) if inpatients) when inside the hospital, and it is recommended that they avoid contact with other CF patients as much as possible. If they choose to have contact, masks must be worn and a distance of 6 feet maintained between individuals.
- All staff providing treatment for CF patients are required to observe contact precautions similar to those for MRSA/VRE.

**Secretion Clearance Techniques:**

- Respiratory disease in CF is characterized by hypersecretion of abnormally viscous secretions along with impaired mucocilliary transport leading to mucous plugging, chronic infection, etc.
- Airway clearance is an integral component of therapy in CF. Enhanced airway clearance assists in reducing the bacterial load and airway inflammation.
- Current practice for secretion clearance includes use of positive expiratory pressure devices (PEP), active cycle of breathing techniques (ACBT), autogenic drainage (AD), airway oscillating device (Acapella/Flutter), exercise or combinations of more than 1 technique. Postural drainage and percussion are only performed if a patient is completely unable to perform any other technique effectively, and agrees to this form of treatment.
- At this facility non-invasive ventilation (NIV) is primarily used in late stage disease as a bridge to lung transplantation and not primarily for secretion clearance, although many patients report enhanced clearance with the use of NIV.
- There is no conclusive evidence to support superior efficacy of any one of the above techniques over another. (Cochrane Database; CF Trust; see references at end of document)
- Therefore choice of treatment modality is based on individual requirements as determined by the patient and physiotherapist in collaboration.

- Treatment regimens may need to be varied for an individual according to clinical status (e.g. acute shortness of breath, hemoptysis, pneumothorax, pregnancy etc.).

**Communication**

When there are no beds available for CF patients on the 7th floor, they may go to any available off-service private room. They will be followed by the CF PT regardless of their location (except for critical care areas). Usually the CF physiotherapist will be aware of patient admissions to other areas, but staff on other units are encouraged to confirm this by contacting the CF PT at local 68983.

## References:

1. Bradley J.M., & Moran, F. (2015). Physical exercise training for cystic fibrosis. Cochrane Database of Systematic Reviews,6, N.PAG
2. Bradley, J. M., Moran, F. M., & Elborn, J. S. (2006). Evidence for physical therapies (airway clearance and physical training) in cystic fibrosis: an overview of five Cochrane systematic reviews. Respiratory medicine, 100(2), 191–201. https://doi.org/10.1016/j.rmed.2005.11.028.
3. Cystic Fibrosis Trust. (2020). Standards of Care and Good Clinical Practice for the Physiotherapy Management of Cystic Fibrosis. Accessed June 8, 2023 at https://www.cysticfibrosis.org.uk/sites/default/files/2020-12/Standards of Care and Good Clinical Practice%2A0for the Physiotherapy Management of Cystic Fibrosis Fourth edition December 2020.pdf.
4. Fisher, D. F. (2022). Positive Expiratory Pressure Physiotherapy for Airway Clearance in People With Cystic Fibrosis: A Cochrane Review Summary With Commentary. Respiratory Care, 67(3), 370–372. https://doi.org/10.4187/respcare.09306
5. Elkins M, Jones A, & van der Schans CP. (2006). Positive expiratory pressure physiotherapy for airway clearance in people with cystic fibrosis. Cochrane Database of Systematic Reviews, N.PAG.
6. Main, E., Prasad, A., & Schans, C. (2005). Conventional chest physiotherapy compared to other airway clearance techniques for cystic fibrosis. The Cochrane database of systematic reviews, 2005(1), CD002011. https://doi.org/10.1002/14651858.CD002011.pub2
7. Moran, F., Bradley, J.M., & Piper, A.J. (2013). Non-invasive ventilation for cystic fibrosis. *Cochrane Database of Systematic Reviews*, 4, N.PAG. https://doi.org/10.1002/14651858.CD002769.pub3
8. Providence Health Care. The Adult Cystic Fibrosis Clinic – St. Paul's Hospital. Operational Review and Opportunities for Redesign. Report: Summary of Findings. MERA Consulting Inc. 2005.
9. Saiman, L., Siegel, J. D., LiPuma, J. J., Brown, R. F., Bryson, E. A., Chambers, M. J., Downer, V. S., Fliege, J., Hazle, L. A., Jain, M., Marshall, B. C., O'Malley, C., Pattee, S. R., Potter-Bynoe, G., Reid, S., Robinson, K. A., Sabadosa, K. A., Schmidt, H. J., Tullis, E., Webber, J., … Society for Healthcare Epidemiology of America (2014). Infection prevention and control guideline for cystic fibrosis: 2013 update. Infection control and hospital epidemiology, 35 Suppl 1, S1–S67. https://doi.org/10.1086/676882

10. Warnock L, Gates A. Airway clearance techniques compared to no airway clearance techniques for cystic fibrosis. Cochrane Database of Systematic Reviews 2023, Issue 4. Art. No.: CD001401. DOI: 10.1002/14651858.CD001401.pub4. Accessed 12 June 2023.

| APPROVALS | | |
|---|---|---|
| *Practice Lead* | | *June 13, 2023* |
| *Research, Education and Practice Coordinator* | | *June 13, 2023* |
| **DEVELOPERS/OWNER** | | |
| *(e.g. Developer Team Members)* | *Name* | *Date (month/day/year)* |

**REVISION HISTORY**

| Revision# | Description of Changes | Prepared by | Effective Date |
|---|---|---|---|
| *OO* | *Initial Release* | | *April 18 2017* |
| *01* | *Revised* | | *June 11, 2019* |
| *02* | *Revised* | | *June 13, 2023* |