

COVID-19

The Role of Acute Care Physical Therapy



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Delivery Of Physical Therapy

- Need to modify service delivery
- Increased consultation with other healthcare providers
- Minimize exposure of staff to COVID 19 positive patients
- Maximize information gathering prior to seeing patient
- Ensure safety of staff with appropriate PPE



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Staff Communication

- Time sensitive dissemination of critical information
- Daily staff AM huddles :
 - Updates of new policies/procedures
 - Covid patient volumes/ locations
 - Ventilator use
 - Location/Intent of temporary units
- End of shift update to entire staff via e-mail



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Deployment Of Staff

- Provide standard physical therapy services
- Assessment and treatment of medical and surgical pts
- Provide assistance and support to ED/ Nursing units
- Deployment of rehab staff to areas which are at critical staffing levels due to increased volume, increased acuity or increased sick time use by regular staff
- Participation in positioning and proning teams
- Assist ICU teams in proning of ventilated patients
- Provide assistance and support to Respiratory
- Chest PT, nebulizer treatments, management of Hi-flow devices

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Prone Positioning

- Increases homogeneous aeration of lungs
- Helps recruit posterior lung during ventilation
- Ensure proper positioning to avoid stress on sensitive structures and pressure points

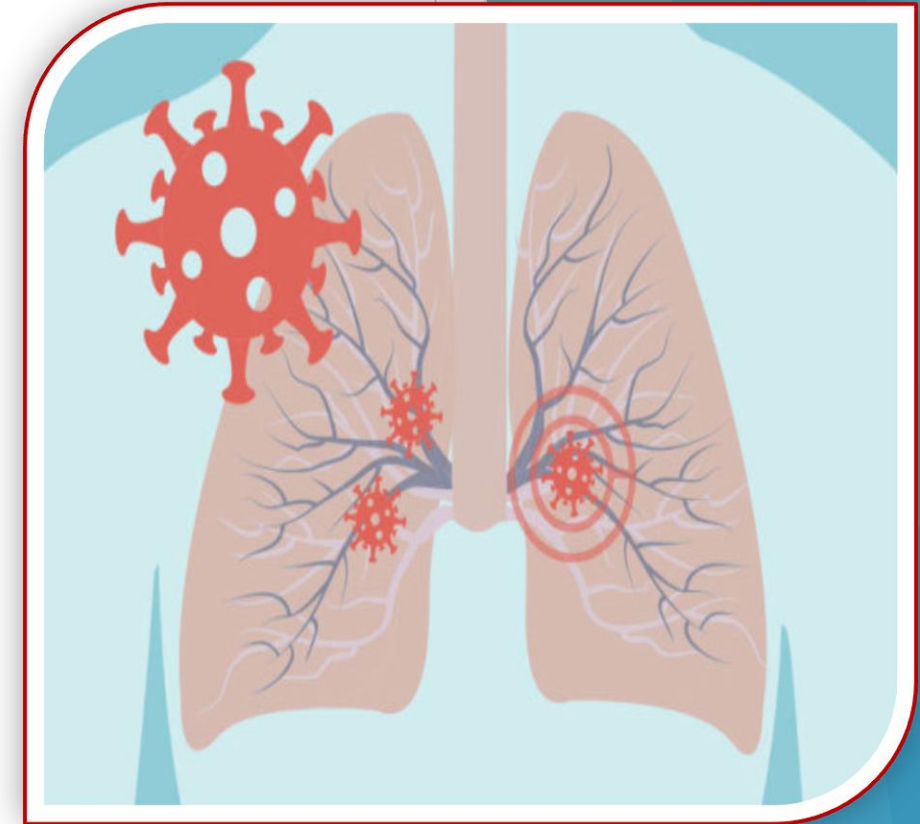


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Systemic Effects of Covid 19 virus

➤ *Respiratory*

- Down regulation of the ACE 2 receptor
- Cytokine storm
- Excessive immune response
- Viral impact on surfactant and alveoli epithelium
- Lower respiratory tract hypoxemia
- Adult respiratory Distress Syndrome (ARDS)



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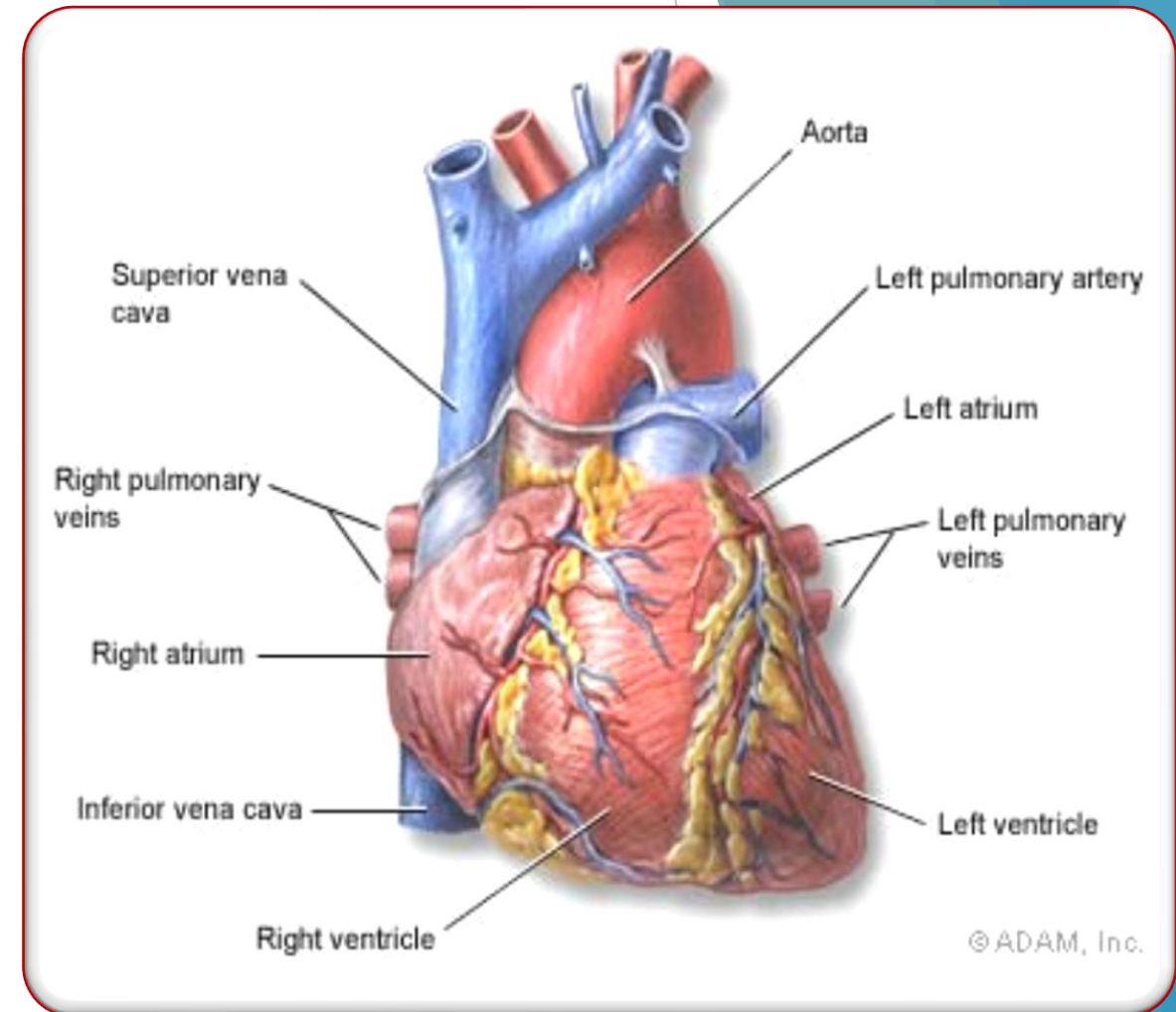
➤ *Cardiac*

Systemic inflammation may result in :

- Myocarditis
- Myopericarditis
- Cardiac myopathies
- Arrhythmia's

➤ *Vascular*

- May result in Hypertension or Stroke
- Coagulopathies
- Deep Vein Thromboses (DVT)
- Pulmonary Emboli (PE)



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➤ *Nervous System*

- CVA
- Central Nervous system
- Peripheral Nervous system

➤ *Musculoskeletal*

- Disuse atrophy
- Critical illness polyneuropathies



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Mental Status

- ▶ **ICU Psychosis**

Increase anxiety, disorientation, paranoia

- ▶ **Delirium**

Due to infections, UTI , medications, drug toxicity, liver disease, metabolic imbalances

- ▶ **Sundowning**

Common occurrence in geriatric dementia population

Increased confusion in evenings and nights

Memory loss



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Physical Therapy Goals/Interventions:

1) Clearance of secretions/enhance respiratory capability

- ▶ Chest Physical therapy - percussion and vibration
- ▶ Deep breathing / diaphragmatic breathing
- ▶ Forced exhalation (huffing)
- ▶ Coughing
- ▶ Incentive spirometry
- ▶ Prone lying



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2) Increase Functional Strength:

- ▶ Active range of motion
- ▶ Proprioceptive Neuromuscular Facilitation (PNF)
- ▶ Manually resisted exercise
- ▶ Progressive resistive exercise
- ▶ Weights
- ▶ Theraband
- ▶ Closed chain exercise



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3) Improve Mobility Skills:

- ▶ Bed mobility
- ▶ Rolling , bridging , assumption of sitting
- ▶ Transfer training
- ▶ To bedside chair, commode, wheelchair
- ▶ Ambulation

With/without hands on support

With/without assistive device

Curb and elevation training

Endurance activities



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Home Exercise Programs:

- ▶ *Breathing/Respiratory exercise*
- ▶ *ROM exercise*
- ▶ *BUE/BLE strengthening programs*
- ▶ *Walking Programs*



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Recovery from COVID 19

- Many patients will require a supplementary oxygen supply for either the short or long term to ensure adequate O2 saturation levels
- Respiratory function may be compromised and respiratory secretions be present depending on the amount of lung tissue damage.
- Upper and lower extremity strength deficits may persist for several weeks or months
- Mobility limitations may effect these patients for several weeks or months. Assistive devices may be needed as well as adaptations to improve accessibility in the home prevent falls and increase safety. i.e. stair lifts, additional bannisters, improvement of access



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Strength Deficits

- Due to de-conditioning and immobility
- Muscular weakness due peripheral nerve injury
- Application of training principles to remediate
 - Specificity
 - Progression
 - Overload
- Return to prior level will be a marathon, not a sprint

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ADL/IADL Limitations

- ▶ Severely affected patients may require assistance for basic ADL skills, dressing, grooming, and bathing.
- ▶ May require adaptive equipment to reduce energy expenditure and increase safety in the home
- ▶ Most will require modification or assistance with IADL tasks such as laundry, cooking, and cleaning since these are high energy consumption activities.



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Implications of the new normal: “staying home”

- ▶ Working from home may result in postural dysfunctions and overuse injuries from make - shift work stations.
- ▶ Decreased social interaction
- ▶ Lack of external stimuli
- ▶ Generalized decrease in strength and flexibility
- ▶ Decrease in aerobic capacity



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Future of Physical Therapy

- ▶ Increased amount of virtual / telehealth visits. Presently many payors including CMS have allowed temporary use of this modality. Will this receive permanent approval status ?
- ▶ Will this result in an increase or decrease in Home Health visits? Will patients / families be reluctant to allow healthcare workers into their homes or will patients prefer home visits to OP facilities to avoid additional exposure?
- ▶ Will reimbursement structures be modified to account for these changes?
- ▶ Will Physical Therapists' roles change from "hands on clinicians" to become solely "health educators".



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