

RAK HOSPITAL  
COVID - 19  
REHABILITATION  
PROGRAM



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**THE RAK HOSPITAL  
COVID-19, REHABILITATION  
CONCEPT NOTE**

**CHAPTER 1**

**INTRODUCTION**

The first human cases of COVID-19, the disease caused by the novel coronavirus, subsequently named SARS-CoV-2 were first reported by officials in Wuhan City, China, in December 2019. Retrospective investigations by Chinese authorities have identified human cases with onset of symptoms in early December 2019. While some of the earliest known cases had a link to a wholesale food market in Wuhan, some did not. Many of the initial patients were either stall owners, market employees, or regular visitors to this market. Environmental samples taken from this market in December 2019 tested positive for SARS-CoV-2, further suggesting that the market in Wuhan City was the source of this outbreak or played a role in the initial amplification of the outbreak. The market was closed on 1 January 2020.

On February 11, 2020, the World Health Organization announced an official name for the disease that was causing the 2019 novel coronavirus outbreak. The new name for this disease was Coronavirus Disease 2019, abbreviated as COVID-19. In COVID-19, 'CO' stands for 'corona,' 'VI' for 'virus,' and 'D' for disease, hereafter referred to as COVID-19.

Coronaviruses, named for the crown-like spikes on their surfaces, are a large family of viruses that are common in people and many different species of animals, including camels, cattle, cats, and bats. There are many types of human coronaviruses, including some that commonly cause mild upper-respiratory tract illnesses. COVID-19 is a new disease, caused by a novel (or new) coronavirus that has not previously been seen in humans.

**Global COVID-19, Statistics**

Globally, over a hundred million individuals across 219 countries have contracted COVID 19 with over a million deaths. Please click here for the latest global statistics

[https://covid19.who.int/?adgroupsurvey={adgroupsurvey}&gclid=EAlaIQobChMlo-aes5ae7wIVTtPtCh2B6w5GEAAYASABEgK7hPD\\_BwE](https://covid19.who.int/?adgroupsurvey={adgroupsurvey}&gclid=EAlaIQobChMlo-aes5ae7wIVTtPtCh2B6w5GEAAYASABEgK7hPD_BwE)

**Hospitalization rate:**

The CDC (USA) has indicated that the overall cumulative COVID-19-associated hospitalization rate was 207 hospitalizations per 1000 population, or 20%.

## **UAE COVID statistics:**

For the latest status on COVID 19 in the UAE please click here

<https://www.mohap.gov.ae/en/AwarenessCenter/Pages/COVID19-Information-Center.aspx>

## **THE NEED FOR A COVID-19, REHABILITATION PROGRAM**

### **1. BENEFITS TO THE PATIENT**

For many COVID-19 survivors, (defined as anyone who has tested positive, & not only those who were hospitalised), the road to recovery is just beginning, once they leave the hospital or recover from COVID at home. They continue to face physical, cognitive, or mental health problems post the discharge such as neuropathy, respiratory disorders, joint ailments, acute body pain, psychological problems, & other long term effects of COVID-19 as mentioned below.

**Cardiovascular (Effects on the heart)** : The imaging tests taken months after recovery from COVID-19 have shown lasting damage to the heart muscle, even in people who experienced only mild COVID-19 symptoms. This may increase the risk of heart failure or other heart complications in the future.

According to a June 2020 review, 20–30% of people hospitalized with COVID-19 have signs that the illness has affected their heart muscle. The researchers speculate that in some people, COVID-19 may also cause myocarditis. which is essentially the inflammation of the heart muscle.

**Respiratory (Effects on the lungs)** : An August 2020 study found that people with severe COVID-19 are often discharged with signs of pulmonary fibrosis, a type of lung damage that can cause long-standing damage to the tiny air sacs (alveoli) in the lungs. The resulting scar tissue can lead to long-term breathing problems.

<https://www.bmj.com/content/370/bmj.m3001>

**Neuropathy (Effects on the brain/spine)**: Even in young people, COVID-19 can cause strokes, seizures and Guillain-Barré syndrome — a condition that causes temporary paralysis. COVID-19 may also increase the risk of developing Parkinson's disease and Alzheimer's disease.

An April 2020 study with 214 participants found that people with severe COVID-19 were more likely to experience neurological manifestations, such as dizziness, nerve pain, and impaired attention.

<https://jamanetwork.com/journals/jamaneurology/fullarticle/2764549>

### **Blood clots and blood vessel problems**

COVID-19 can make blood cells more likely to clump and form clots. While large clots can cause heart attacks and strokes, much of the heart damage caused by COVID-19 is believed to stem from very small clots that block tiny blood vessels (capillaries) in the heart muscle.

**Other organs affected**, by blood clots include the lungs, legs, liver and kidneys. COVID-19 can also weaken blood vessels, which contributes to potentially long-lasting problems with the liver and kidneys.

### **Psychological problems (Effects on the mind)**

People who have severe symptoms of COVID-19 often have to be treated in a hospital's intensive care unit (ICU), with mechanical assistance for breathing using ventilators or positive pressure ventilation devices . Simply surviving this experience can make a person more likely to later develop post-traumatic stress syndrome, depression and anxiety.

According to a study conducted by San Raffaele Hospital in Milan, COVID-19 survivors suffer higher rates of psychiatric disorders including, anxiety, insomnia, depression, and extreme fatigue.

## **2. COMMUNITY BENEFITS OF COVID REHABILITATION**

The World Health Organization (WHO) has defined rehabilitation as “a set of interventions designed to optimize functioning and reduce disability in individuals with health conditions, in interaction with their environment”. Therefore, starting a rehab program soon after recovery can help patients get back to their normal lives and activities as quickly as possible.

Rehabilitation not only improves the health outcomes of patients with severe cases of COVID-19, but also benefits community health services through:

- **Optimizing health and functioning outcomes**  
Rehabilitation may reduce complications and can help address many consequences of severe COVID-19, including physical, mental , and neurological impairments, and provide psychosocial support. Older patients, and those with pre-existing health conditions, may be more vulnerable to the effects of severe illness, and rehabilitation can be particularly beneficial in regaining their prior levels of independence.
- **Rehabilitation & multi-care phases**  
Patients who develop a severe case of COVID-19 will require multiple phases of care. Rehabilitation should be included in all phases of the care: as part of the acute phase delivered in the intensive and critical care units; during the sub-acute phase delivered in a hospital ward or step-down facility and during the long-term phase such as when patients return home and are still recovering.

- **Facilitating early discharge**  
Where there is high demand for hospital beds, patients may need to be discharged more rapidly than ordinarily. Rehabilitation is particularly important in preparing patients for discharge, coordinating complex discharges, and in ensuring continuity of care.
- **Reducing the risk of readmission**  
Rehabilitation helps to ensure patients do not deteriorate following discharge and require readmission, which is critical in the context of hospital bed shortages.
- **Rehabilitation for all COVID-19 patient groups**  
Evidence highlights that there may be risks to some individuals, and reduced health outcomes when rehabilitation is withdrawn or unavailable for some patient groups. Therefore, rehabilitation services for these patient groups should be considered essential service and continued to be provided throughout.
- **Rehabilitation should be integrated into the National COVID-19 planning**  
This should occur at the earliest opportunity and through engagement with rehabilitation experts and/ or professional associations and national rehabilitation institutions. A practical mechanism for this is the inclusion of a focal rehabilitation representative in national and centre-based health management and coordination structures.

The evidence for rehabilitation in the COVID-19 context is emerging, including guidance being developed by international and national professional associations of physiotherapy, occupational therapy, speech and language therapy and physiatrist for clinical management of COVID-19 patients.

## CHAPTER 2

### THE RAK HOSPITAL COVID-19 REHAB PROTOCOLS

The Rehabilitation required as a consequence of COVID-19, is usually multi phased as follows.

1. For severe cases of COVID where the patient is admitted into the ICU, & requires artificial ventilation, the patient gets COVID rehab support for breathing, after discharge from the ICU.
2. For hospitalized COVID inpatients, who were not admitted into the ICU, Rehab protocols are initiated prior to discharge, & continued later as OPD Rehabilitation.
3. Those COVID patients who did not require hospitalization, are directly inducted into the outpatient rehabilitation
4. In all the above cases, the rehab process continues at home, for a duration of 6 weeks for short term COVID cases & for upto to 6 months after COVID-19, for long duration COVID patients.

### RAK HOSPITAL POST COVID19- RECOVERY PROGRAM



Recover faster • Recover better • Recover at home



Doctor Consultation



Diet Counselling



Physiotherapy Session



Psychologist Consultation

**The RAK Hospital post COVID19- recovery & rehabilitation program is provided as a complementary, free of charge program to all COVID19- recovering patients**

CONTACT:

**Dr. H. Wilkhoo** - 7754038 055  
harkirat.w@arabianhealthcaregroup.ae

**Saday Kumar** - 8831701 055  
saday.k@arabianhealthcaregroup.ae

**RAK Hospital undertakes COVID Rehabilitation in the OPD & Home settings.** A brief note on the RAK Hospital COVID-19, Rehabilitation protocols follows.

## **CORPORATE AND COMMUNITY OUTREACH**

The COVID Rehab initiative by RAK Hospital, is a CSR outreach program offered complimentary for the benefit of the community & for corporate employees as follows

**Corporates:** Corporate Relationship Managers of RAK Hospital connect with HR of different corporates, with a request for them to nominate their employees to be part of the RAK Hospital CSR initiative. The objective of RAK Hospital is to improve the medical, physical and mental wellbeing of corporate employees.

**Community:** As a part of the Hospital System, everyone who undergoes any lab tests, including COVID test, gets their result through a message on his/her registered mobile number . As a part of this COVID Rehab Program, all COVID positive tested patients, will get a mail/message inviting them to join in the RAK Hospital complimentary COVID Rehab Program, after they complete their COVID treatment, & are discharged & test negative for COVID.

## **RAK HOSPITAL COVID-19, REHAB PROGRAM PROTOCOLS**

The RAK Hospital COVID Rehab Program comprises 4 main areas as follows:

- Consultation with the Physician
- Consultation with the Physiotherapist
- Counseling with the Nutritionist
- Counseling with the Psychologist

The various protocols that the patient goes through are given below:

### **1. Registration Protocols:**

On visiting the hospital for the COVID Rehab program, the patients are registered with the following information, most of which is taken from their Emirates ID and stored into the Hospital system

- Date
- Name of the patient
- Age
- Gender
- Date of Birth
- Nationality
- Hospital ID of the patient
- Corporate Name



## **2. Nurse Protocols:**

After registration, the patient visits the nurse where following details are checked and recorded in the hospital system

- BP (Systolic & Diastolic)
- Temperature
- Weight
- Heart Rate
- Respiration
- SpO2
- Allergies
- Functional Assessment

## **3. Medical Diagnostics & Test, Protocols:**

As part of the RAK Hospital Rehab protocol, each patient is required to undergo the following tests and is accordingly directed to the appropriate departments for these tests:

- PFT
- Chest X-Ray
- ECG (optional)
- Blood Tests
  - Hematocrit/CBC
  - Ferritine

## **4. Physician Protocols:**

On completion of the medical tests, the patients and results are forwarded to the physician who reviews and completes the following

- Subjective note comprising the chief complaints of the patient
- Allergies, if any
- Vital as recorded by the nurse including temperature, heart rate, respiratory rate, blood pressure, Ht/Wt, BMI, SpO2
- Pain Assessment
- Functional assessment for mobility, daily activity, weakness, paralysis, etc.
- Physical examination for heart, lungs, etc.
- Diagnosis as evaluated by the physician
- Plan of Care as charted by the physician including lifestyle change, and further consultation as required

## 5. Physiotherapy Protocols:

As mentioned earlier, the physiotherapist will review the relevant details of the clients, including hospitalization, if any, medical treatment, heart rate, respiratory rate, SpO<sub>2</sub>, Ht, Wt, BMI, medical history, etc. and conducts various physical tests including evaluation of,

- Muscular Strength
- Joint Mobility
- Body Flexibility
- Stamina including
  - Lung capacity
  - Recovery Heart Rate
- Muscle Fat Ratio
- Activity levels
- Balance & coordination
- Exercise contra indication
  - Medication
  - Stroke
  - Obesity, etc.

The activity and exercise prescription released by the physiotherapist will include frequency of exercise (days per week), intensity of exercise (repetition and sets), time (30 – 60 min. daily including Warm up, Cool down) and type of exercises (Walking, Yoga, Swimming, Calisthenics, Taichi,), etc.

## 6. Nutritional Protocols:

The Nutritionist will review the clients medical findings including, BP, BMI, BS, daily living, allergies, endocrine disorders, medication, etc.

With this information as a background and utilizing the 24 hour diet recall and gastrointestinal problems (constipation, diarrhea), etc., the dietician recommends a modified diet to include

- Weight management
- Appropriate calories
- Protein
- Supplements, etc.
- Food aversions / allergies
- Dietary preferences (vegetarian/non vegetarian)
- Medical ailments & medication for hypertension, diabetes, cardiac ailments etc.

The Diet plan is entered in the hospital system after counseling to the client.

## **7. Psychologist Protocols:**

All the COVID rehab specialists are able to view the clients medical records, for better understanding of the clients medical and health status including hospitalization, if any, etc. Specific to the mental wellbeing aspect the Psychologist reviews the following and counsels the client:

- Easy fatigability
- Sleep cycle disruptions
- Sleep difficulties
- Loss of appetite
- Elevated stress
- Mood fluctuations
- Anxiety
- Helplessness
- Decreased pleasure
- Obsessions
- Hyper -vigilance
- Difficulty in decision making
- Forgetfulness
- Decreased sustained attention
- Social withdrawal
- Hopelessness
- Death wishes, etc.

In case medication is required, the case is referred to the physician and all details are recorded in the Hospital system.

## **COVID-19 REHAB OBJECTIVES**

- The RAK Hospital COVID Rehab program is a complimentary service to bring relief to COVID positive patients.
- The patient is informed that they will have to visit for review every 30 days to 6 weeks, till such time as the Rehab is completed & the patient is functioning optimally.
- For research purposes, the system's data will be reviewed periodically in order to analyze the improvement and changes in the client as well as the population.

## CHAPTER 3

### OBJECTIVES OF MEDICAL REHAB IN COVID-19

#### OBJECTIVES OF PHYSICIAN'S REHAB & INTERVENTIONS

The COVID-19 pandemic will have major impacts on the individual's health, which will require increased demand of post COVID care. Individuals affected by COVID may suffer from various symptoms, of which many linger and continue to cause discomfort in daily activities. It is critical to maintain preventive and curative health support to vulnerable groups of the population such as children, the elderly and people suffering from pre-existing co-morbidities.

#### THE LONG TERM EFFECTS OF COVID-19

There are various symptoms which an individual may suffer during the COVID infection. Many of these symptoms may fade with time, but many linger over time and cause discomfort in the patients. The most common symptoms that linger over time include:

- **Cardio-myopathy:** Myocarditis, pericarditis, palpitations, arrhythmia. This may increase the risk of heart failure or other heart complications in the future.
- **Respiratory disorders:** The fibrosis of alveoli resulting in scar tissue which may lead to long-term breathing problems. Congestion, allergic cough and irritative cough.
- **Neuropathy:** Dizziness, vague/local nerve pains, brain fog or confusion loss of smell/taste, headache, seizures. There may also be an increased risk of developing stroke, Parkinson's disease and Alzheimer's disease.
- **Blood clots and blood vessel problems:** Fatigue, shortness of breath, heaviness of the chest with discomfort, headache, semi-paralysis, pseudo-paralysis. Long lasting effects to the organs affected by blood clots include the lungs, legs, liver, brain and kidneys.
- **Musculo-skeletal disorders:** Joint pains, chronic fatigue and tiredness, muscle soreness, muscle aches, muscle weakness, bursitis.
- **Gastrointestinal disorders:** Diarrhea, vomiting, dyspepsia, taste issues, loss of weight, anorexia can develop as a sequel of COVID-19.
- **Psychological disorders:** Anxiety, insomnia, mood swings, depression, fear can develop

Patients with long lasting symptoms are assessed for evaluating the status and degree of suffering. Every individual patient has their own threshold and may vary in sufferings. The post COVID assessment helps to plan and design the tailored rehabilitation program keeping in mind that patient's history.

#### **PATIENTS ARE ASSESSED & REVIEWED ON THE BELOW MENTIONED CRITERIA**

- **Medical ailment status:** Medical ailments may include existing or newly developed signs and symptoms. (chronic cardiac ailment, COPD, chronic liver disorder, metabolic disorder).
- **Lab evaluation:** Blood tests including CRP, ESR, Hematocrit, D- Dimer, LDH, INR, Ferritin, AST, ALT.
- **Radiological evaluation:** Chest X-Ray to reveal any opacities and cardio-respiratory changes.
- **Pulmonary function test:** To evaluate the vital capacity of the lungs.
- **Activities of Daily Living Performance:** To evaluate the impact of symptoms affecting daily activity.

#### **NOTE:**

1. The evaluation for establishing changed status needs primary data to be recorded as a benchmark.
2. Patient with COVID should be enrolled immediately & supported during the quarantine phase.
3. Patient post COVID should be enrolled after quarantine phase, to reduce the discomfort of continued symptoms.

## CHAPTER 4

### OBJECTIVES OF PHYSICAL REHABILITATION IN COVID-19

COVID-19, impacts the body physically in several ways. During the period of hospitalization the muscles atrophy due to bed rest and also due to the infection, as a consequence there is a reduction in muscular strength. Similarly, there is also a reduction in joint mobility and body flexibility due to the long period of bed rest and reduced physical activity. A major victim of the COVID-19 illness is the respiratory system which is perhaps the most badly hit by the virus. As a consequence, the patient suffers from breathlessness and breathing difficulty. In addition, the COVID virus is known to affect several other parts of the body including the heart, the circulatory system, the brain, etc.

The effect of all the above maladies can be suitably managed by physiotherapy rehabilitation which is initiated while the patient is in the hospital itself, in case the patient is admitted into the ICU or is on the ventilator. In other hospital cases where the COVID-19 infection does not require ICU treatment, the rehabilitation maybe initiated after discharge, as an OPD treatment.

The majority of COVID-19 cases are treated at home. The possibility is that this group may suffer less long term effects of COVID -19. However, it is prudent for this group too, to undergo COVID Rehabilitation, in order to achieve optimal body condition, in short course

During the initial physiotherapy intervention, the patient is evaluated by the physiotherapist for cardio respiratory stamina, muscular strength, joint mobility, balance etc. and suitable remedies are prescribed keeping in mind the following broad philosophies of exercise therapy, including, stamina, strength, & mobility.

**Stamina Exercises:** This refers to cardio-respiratory endurance and relate to the strengthening of the heart and lungs and improvement in blood circulation. The following aerobic exercises meet this objective.

- **Walking:** Walking has excellent cardiovascular benefits for the advanced age groups. This should be done briskly with swinging of the arms. Comfortable shoes must be worn. Walking may be done morning or evening for 30-60 minutes.
- **Jogging:** Suitable for younger age group below 40 yrs., with no cardiac & respiratory problems. 30 minutes is all that is required and may be done continuously, or jog and walk in between when fatigued. The pace of jogging is equal to that of a brisk walk. Run on soft or grassy surface. Wear comfortable clothes and breathe freely.
- **Swimming:** For swimmers, 20 minutes of continuous swimming is sufficient, Alternately swim the length of a pool 10-20 meters, rest at the end for 30 seconds,

swim back. 10 such lengths are good. Use any stroke you know. They are all of almost equal cardiovascular and muscular benefit.

- **Cycling:** For any age group. Minimum time 45-60 minutes of continuous controlled cycling. Cycling up slopes gives added benefit. Ordinary cycles are good enough and indoor stationary exer-cycles may also be used at low resistance for 45minutes.
- **Breathing:** In order to strengthen the lungs, 10 repetitions of deep breathing maybe done at the end of each exercise session.

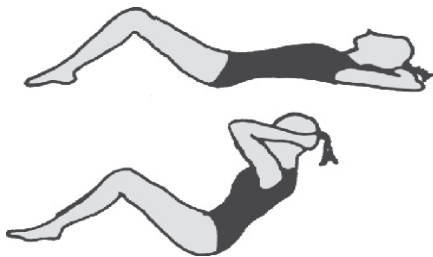
**Strength Exercises:** Relate to the muscular system and you could improve muscular strength with 10-20 repetitions of each of these movements



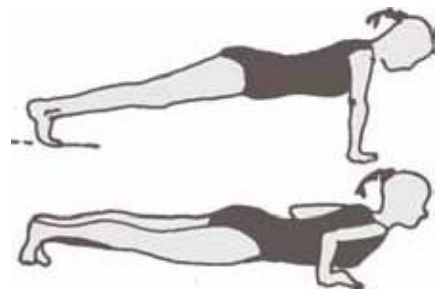
Modified Push up



Modified Sit up



Sit ups for Abdominal Muscles



Push up for Shoulder, Chest, and arms



Back lift for strengthening back



Squats for Thighs



Calf Raises

**Mobility Exercises** improve the various joints of the body whose mobility is reduced due to hospitalization, inflammation, etc. Enhance body flexibility with 10 repetitions of each of these joint movements.



Neck Rotation



Wrist Rotation



Shoulder Rotation



Elbow Bends





Waist Rotation



Front Thigh Stretch



Toe Touch



Hip Mobility



Calf Stretch



Ankle Rotation

## Posture

Maintain a good posture while sitting, sleeping, walking, and lifting to avoid back problems

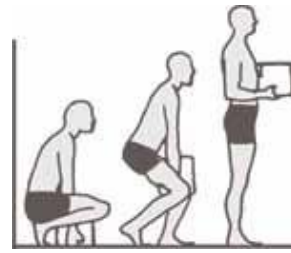
1. At all times keep your spine in a straight alignment.
2. When you need to bend, bend from the knees.



How to Stand



How to Bend



Use your knees to lift



While sleeping use a firm mattress & a low pillow



Sit upright with a straight spine

**Keeping FIT.** In exercise parlance, the word fit refers to **Frequency, Intensity & Time.** Your frequency of exercise is daily. The intensity would be moderate and the time required for an exercise program is 30 to 60 minutes per day.

## CHAPTER 5

### OBJECTIVES OF COVID-19, NUTRITIONAL REHABILITATION

While the patient is sick with COVID-19, the body uses all its energy to fight the virus. This fight, coupled with bedrest, causes the loss of valuable muscle. Below is a summary of nutritional steps that can be taken to rebuild strength and return to activities of daily living.

- **Eat on schedule:** Create an eating schedule and make regular meals and snacks part of a routine. Eating regularly will help provide the body with the nutrients and the calories needed to restore strength and immune function.
- **Protein:** Eating enough protein (fish, poultry, other meats, dairy, beans) at every meal is essential to help stimulate muscle growth and prevent a continued breakdown of muscle. Coupled with physical training, eating proteins will result in improved strength over time.
  - Eat 25 to 40 grams of protein at each meal and 10 to 20 grams at each snack.
  - Use ready-to-drink protein shakes, homemade shakes, protein powders or bars to help meet your protein needs if your diet is insufficient.
- **Calories:** It is important to eat enough calories in addition to well-balanced meals. This reduces stress on your body, allowing the food you eat to go toward rebuilding your strength. Round off your protein portions with vegetables, fruits, whole grains or other starches (such as brown rice, potatoes, whole grain bread, and beans – which have significant concentrations of both carbohydrates and proteins).

Monitor your weight. However, this is NOT the time to diet for weight loss! Try & remain within your weight range.

- **Vitamin C:** Vitamin C helps keep your immune system healthy. It is found in many fruits and vegetables.
- **Zinc:** Zinc is another mineral essential for a healthy immune system. If you don't get enough zinc, you are at a higher risk for infection. Zinc is found mostly in seafood and meat and to a lesser extent in yogurt & nuts.
- **Vitamin D:** Vitamin D has been found to be more than just a vitamin. It is actually a hormone in the body and is involved in many different systems, from bone health to muscle function and even immunity.
  - The vitamin D our bodies use can actually be made by our skin with the ultraviolet light from the sun. This is one reason why getting outside at least

three times a week for 30 minutes (with exposure on your hands, arms, legs and face) is helpful and recommended

- Vitamin D is also found in some foods (e.g. fatty fish such as salmon, fortified milk and eggs).
- Since many people work indoors or live in parts of the country with limited sun, and getting enough vitamin D from food is not always realistic, taking a daily supplement is often necessary.
- **Gut health, probiotics and prebiotics:** In addition to our skin, our gut is a first-line of defense against infection. As we get older, our bodies become less able to maintain a healthy environment in our gut.
  - Probiotics are good strains of microorganism/bacteria that can help us in a variety of ways.
  - Probiotics are found in fermented foods like yogurt (with active cultures, which even soy yogurt has). Even eating one yogurt a day with active cultures (it will say so on the label) or making a shake is very helpful.
  - Prebiotics are the food that probiotics live on. Prebiotics are found mostly in fruits, vegetables, beans and whole grains. Eating these foods helps to keep a healthy digestive tract as part of a healthy immune system.
- **Calcium:** This is an important nutrient for bone health. As you lose muscle, you lose bone density. Calcium-rich foods are essential to help keep the bone mass you have.

Your body can only absorb 500 mg of calcium at one time, so enjoy calcium-rich food at different meals and snacks throughout the day.

- **Omega-3 fatty acids:** Omega-3 fatty acids (omega-3s) may help with reducing excess inflammation. As you recover, your body may be experiencing a significant amount of inflammation as a result of fighting this infection. Consuming food-based sources of omega-3s could be helpful.
  - Omega-3s are found mostly in fatty fish like salmon, tuna, sardines, herrings, sea bass and mackerel. Chia seeds, ground flaxseeds and edamame provide a healthy type of omega-3s as well.
  - Aim for consuming fatty fish two times a week to reach your goals, and/or consider supplementing.
- **Hydration:** Staying well hydrated is always important, especially when you are sick. As we get older, our thirst sensation is not as acute, and we tend to drink less. So, like eating, it is a good idea to drink on somewhat of a schedule.

- We actually absorb fluid better when we drink throughout the day rather than having a lot of fluid at once.
- Good examples of fluids would be, water, juice, milk or tea.
- If you urinate every three to four hours and have a good amount of urine, you are probably doing a good job of staying hydrated.
- **Other health issues that may need further attention**
  - **Diabetes:** It is essential to plan your diet to help with your blood sugar control.
  - **Heart disease,** hypertension, pulmonary conditions and other health issues may also require individualized counseling.
- **Supplements that support muscle building and recovery**
  - Exercise has the greatest effect on rebuilding endurance and strength and also helps build immune function. Nutritional supplements, especially for those 65 years and older, have slight or limited effect at best and can only support the effects of exercise – not replace exercise – as a way to improve function and ability to participate in the activities of daily life.
  - Taking a multivitamin/mineral will not help with muscle building but may help bridge the gap between what you are taking in and what you need.
  - Continue to wash your hands regularly, get adequate sleep and maintain social distancing. Consult with your health care provider on a regular basis to assess your progress.

## CHAPTER 6

### OBJECTIVES OF COVID-19 REHAB & MENTAL WELLBEING

Many psychological problems in terms of mental health, including stress, anxiety, depression, frustration, uncertainty emerged progressively during the COVID-19 outbreak. Common psychological reactions related to the mass quarantine which was imposed in order to attenuate the COVID-19 spread, are generalized fear and community anxiety which are typically associated with disease outbreaks. This was further increased with the escalation of new cases together with anxiety-provoking information which was enhanced by the media. The psychological reactions to COVID-19 pandemic may vary from a panic behavior or collective hysteria to pervasive feelings of hopelessness and desperation which are associated with negative outcomes including suicidal behavior. Importantly, other health measures may be compromised by abnormally elevated anxiety.

Given this background, the objective of psychological support is to reduce the impact of the COVID-19 epidemic on the mental health in the general population, & not only on COVID positive patients.

#### PSYCHOLOGICAL REACTIONS TO COVID-19

##### Uncontrolled fears related to infection

This is commonly one of the most frequent psychological reactions to pandemics. Several existing studies demonstrated that those who have been exposed to the risk of infection may develop pervasive fears about their health, worries to infect others and fears of infecting family members. Other studies reported that pregnant women and individuals with young children are the most at risk to develop the fear of becoming infected.

##### Pervasive anxiety

Social isolation related to restrictions and lockdown measures are linked to feelings of uncertainty for the future, fear of new and unknown infective agents resulting in abnormally increased anxiety. In addition, anxiety is closely associated with fatigue and reduced performance while boredom and loneliness are directly related to anger, frustration and sufferings linked to quarantine restrictions.

##### Frustration and boredom

Distress, boredom, social isolation and frustration are directly related to confinement, abnormally reduced social/physical contact with others, and loss of usual habits. Frustration and pervasive loneliness seem to derive by the inhibition from daily activities, interruption of social necessities and not taking part in social networking activities. Unfortunately, in this context, hopelessness together with other individual characteristics, may significantly and independently predict suicidal behavior, and even the unbearable anger related to the imposition of quarantine.

## **Disabling loneliness**

The final effect of social isolation is pervasive loneliness and boredom, which have potential dramatic effects on both physical and mental individual well-being. Pervasive loneliness may be significantly associated with increased depression and suicidal behavior. In addition, social isolation and loneliness are also associated with alcohol and drug abuse. Overall, it is well known that long periods of social isolation or quarantine for specific illnesses may have detrimental effects on mental well-being.

## **MENTAL WELLBEING PROTECTIVE FACTORS**

### **Resilience**

Psychological resilience may be generally defined as the ability to support or retrieve psychological well-being during or after addressing stressful disabling conditions. Notably, a general message of hope and social protection given by healthcare regulatory authorities and scientists, not only about the risk of being infected but even about the existence of containment measurements that may be implemented in the hospitals and in the community as a whole, may enhance resilience and individual abilities to successfully react to social threats.

### **Social support**

Adequate social support for the general population with regard to specific at risk populations (e.g. infected patients, quarantined individuals and medical professionals) should be provided by offering targeted, tailored messages according to the most reliable scientific evidence. Relevantly, a variety of mental health supporting strategies are required in pandemic areas in order to facilitate lifestyle changes and re-adaptation activities required after the occurrence of the outbreaks.

### **Preventive strategies**

Specific preventive strategies at community level such as (i) implementing effective communication and (ii) providing adequate psychological services should be carried out in order to attenuate the psychological and psychosocial impact of COVID-19 outbreak. Health education needs to be enhanced using online platforms, the scientific community should provide appropriate information to attenuate the impact of anxiety, frustration, and all the negative emotions which represent important barriers to the correct management of social crisis and psychological consequences related to the pandemic.

## **TEAM, RESEARCH AND REFERENCE**

### **A. COVID Rehab Team**

Dr. Humam Sami Ali (Physician)  
Ms. Cornelia Gloor (Physiotherapy)  
Ms. Ruba Alhourani (Dietician)  
Ms. Huba Khadel (Dietician)  
Ms. Prateksha Shetty (Psychologist)  
Dr. Nithya Aiyanar (Quality)

### **B. Contributing Researchers**

Prof. A Kennedy, Chief Wellness Officer, AWLM  
Dr. HS Wilkhoo, Head Operations, AWLM  
Mr. Saday Kumar, Head Admin, AWLM  
Ms. Saloni Francis, Research Assistance  
Mr. Srikanth Tenali, IT Head

### **C. Reference & Source**

WHO - <https://covid19.who.int/table?tableChartType=heat>

MOHAP-<https://www.mohap.gov.ae/en/AwarenessCenter/Pages/COVID19-Information-Center.aspx>

CDC - <https://www.cdc.gov/coronavirus/2019-ncov/cdcresponse/about-COVID-19.html>

Hss.edu.guide- Covid-19 nutritional –rehabilitation

Good Health Book,AWLM, Exercise & Fitness

Mental Health &Covid 19.euro.who.int/en/health

RAK Hospital MIS