

# Increasing cardiorespiratory reserves in the post covid era

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**ABSTRACT**

Since Covid times there has been a rising trend of respiratory and cardiac failure due to inability of the body's immune system to upkeep the body's oxygen requirements. In these times it is of utmost importance to increase the reserves to defy the environmental conditions due to degradation of forest reserves, changes in the ecosystem, increase in different virus attacks, and the contagious nature of the disease. It is an individual and societal, systematic effort to increase the reserves of the body to that at mitochondrial levels, nuclear transcriptional level, and protein productions are such that the body is able to combat the onslaught of the changing times.

**Keywords:** Cardiac; Respiratory; reserves; Mitochondrial; Genetics; Transcription; Regulation; Proteins

## BACKGROUND

### Eating and then sitting leads to abdominal bulge:

Protruding belly is accompanied by big butts and heavy thighs. All these are deposit of unused fats, neutral fats or triglycerides as they are called. This leads to respiratory distress in high pressure environment, toxin build up, oxidative stress, hypertension, Is there a connection between maladjustment to stress, loneliness, boredom, work pressure, inadequate feelings, lack of direction and a way of eating and sleeping to get over the insecurities of life [1].

Or is there a larger relatedness to endocrine functions and link with cortisol, thyroid stimulating hormone and thyroid hormones and functions. Insulin sensitivity among world's population has decreased. It's amazing to know that of the entire hospital laboratory tests ordered, about 80% or more have improper control and regulation of blood sugar levels. It may be environmental effects, post COVID era challenges or there may be unexplained reason for this [2].

### The other challenge is breathing trouble

- Biological membrane fluid state is one such reason.
- Another reason is cell adhesion molecules.

There's a connection between respiratory distress, fatigue, tiredness, lack of energy, tea, biscuits, respiratory reserves. Tea biscuits have dual action on respiratory distress. Sometimes, in short bouts, it's increases the reserve. But long term, it depleted the respiratory capacity [3].

## METHOD

### Cross sectional observational study:

Period of study was during post COVID times, Lab reports over 10 months were analyzed in a clinical biochemistry laboratory. There is an increase in number of blood sugar levels, fasting >100 mg/dl, post prandial sugar levels, >140mg/dl in majority of people. This shows there is an increase in glucose intolerance among people [4].

## RESULTS

Stringent blood sugar control reduces associated risk for atherosclerosis, cardiovascular disease, cancer, obesity. Association of high TSH with diabetes cases in 30 percent diabetics Sepsis markers like CRP, procalcitonin, ferritin, LDH, IL6 predict on-going inflammation states. Increase in respiratory reserves can be achieved by increasing dark green leafy vegetables, carrots, and a variety of proteins

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intake in diet. Increase physical exercise, increased yoga, aerobics, meditation, walking, running, breathing exercises, relaxation techniques have been effective in increasing respiratory reserves [5].

Change in Attitude leads to change in behavior. Epigenetics is the science of changing the DNA outputs of protein products without changing the code by changing environment factors etc. Respiratory reserves can be increased by drinking plenty of water. Coffee, dark leafy greens, fatty fish, peppers, tomatoes, olive oil, oysters, blueberries, and pumpkin increase lung function, vitamin C, vitamin D, magnesium, omega-3s, zinc, and selenium promote lung health. Proper nutrition in terms of vitamins and minerals, like biotin and others play key role in maintaining respiratory reserves. When we say that it's possible to restore respiratory reserves, lungs do have the power of regeneration of epithelial cells, gas exchange, and respiratory capacity [6].

**Examples:** Brisk walking, running, swimming, cycling, playing tennis and jumping rope. Heart-pumping aerobic exercise is the kind that doctors have in mind when they recommend at least 150 minutes per week of moderate activity.

The normal value for coronary flow reserve is greater than 2 to 2.5. This means that under stress (exertion), you have double the amount of blood flow to your heart that you have while at rest. Obesity and hypertension decrease cardiac reserves [7]. Regular walking increases cardiac reserves. Some food like oranges, banana, resin, fish, milk, meat increase cardiac reserves. (Food containing potassium, and those without added fat), Breathe, Posture (sitting straight and standing tall), Speech, Hydrate- water (or tea), drink 2 liters of water every day, Record yourself and listen, Practice, Hemoglobin saturation of oxygen is mostly dependent on bicarbonate levels (not partial pressure of oxygen, not

partial pressure of CO<sub>2</sub>, not carbamino hemoglobin but on base reserves of bicarbonate level of blood) [8].

## DISCUSSION

It is advisable to have the fasting blood sugar levels around 70mg/ dl and post prandial sugar levels of 80-90 mg/dl. It is advisable to eat small meals, frequent as it may be as per requirement. Strict blood sugar monitoring over long term is a sure way of better health. HbA1c is 9% or more while on the day of test, patient intentionally fasts longer and eats little to get fasting, post prandial sugar levels in normal range, is not the goal. Change in attitude leads to change in behavior [9].

The inability to handle stress, exercise intolerance, fatigue, restlessness and tea and toast diet, with cookies or other fast ready to eat foods on a regular basis is another behaviour that needs to change. Meals, whole some diet, fruits, or beverages, hot drinks should be, It is also advisable to keep the cholesterol triglycerides (VLDL<40 mg /dl), LDL TG levels low, optimum would be around 70 mg/ dl, the lower, the better. To keep trans fats out of diet, to increase the use of (mono:poly 1:1) unsaturated cis fatty acids that will increase fluidity of biological membranes, and allow ion channel to work, reduce oxidative stress, increase oxygenation into mitochondria, increase pO<sub>2</sub> levels, decrease CO<sub>2</sub> levels, decrease acidosis, increase bicarbonate reserves. The other way is by moving, walking, reduced tummy size, exercises, yoga, meditation, physical exercise, and standing [10].

## ACKNOWLEDGEMENT

None

## CONFLICT OF INTEREST

None

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