

## CLINICAL SUMMARY

# Malnutrition Increases Days of Hospitalization and Risk for Readmission in Patients with COPD

Chronic obstructive pulmonary disease is a serious condition that leads to the deterioration in quality of life. Researchers identified malnutrition as a leading cause of readmissions, emphasizing early detection and oral nutritional supplementation to improve patient outcomes.

Malnutrition is common among hospitalized COPD patients and is linked to longer and more frequent hospitalizations.

People with chronic obstructive pulmonary disease (COPD) often experience weight loss and muscle weakness, conditions that lead to progression of the disease and deterioration in quality of life. Furthermore, malnutrition in COPD patients is associated with increased morbidity such as respiratory infections (pneumonia) and mortality.

A research team designed a study with two objectives:

- Determine the prevalence of malnutrition among patients with moderate to severe COPD who were hospitalized with exacerbation of their disease.
- Evaluate the clinical and prognostic influence of malnutrition on the exacerbation. Exacerbations included tachypnea (rapid breathing), cyanosis, fever, and alterations of consciousness.

The team assessed the nutritional status of 78 patients with moderate to severe COPD using body mass index (BMI), bioelectric impedance analysis (BIA), percent weight loss, and plasma albumin levels and recorded their days of hospitalization and readmissions during the following 3 months.

The team identified malnutrition through various parameters including BMI <20 or fat-free mass (FFM) index  $\leq 16$ . The study results showed that according to BMI and FFM, 38% of patients were malnourished.

Number of days of hospitalization were reduced when correlated with a higher value of FFM, muscle mass (MM), BMI, and albumin levels. The higher the value of FFM and MM also correlated with several measures of better lung function, less readmissions and shorter length of stay; which means the higher the correlation value, the better these three outcomes will be.

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As shown in the chart below, nutritional status is associated with readmissions. During the 3-month follow-up, 28 patients were readmitted and 50 patients were not readmitted. For those patients who were readmitted, they had lower FFM and muscle mass.

Malnutrition is common among hospitalized COPD patients and is linked to longer and more frequent hospitalizations. The researchers emphasize the importance of detecting risk of malnutrition in this patient population in the earliest phases of the disease so that adequate nutritional measures can be initiated, leading to fewer days in the hospital and fewer readmissions.

### Fat-Free Mass and Muscle Mass in Hospital Readmissions

	Readmitted n=28	vs	Not admitted n=50
Fat-free mass (kg)	45.0 ± 6.3		49.35 ± 8.2*
Muscle mass (kg)	25.9 ± 6.9		30.4 ± 6.9*

\* $P < 0.05$

**Malnutrition in COPD patients is associated with increased morbidity such as respiratory infections (pneumonia) and mortality.**

### NUTRITION CONCLUSION

Finding patients at nutritional risk early upon admission, followed by oral nutritional supplement intervention throughout their stay, may be beneficial in maintaining lean body mass and reducing the risk of readmissions.

Girón R. et al, *Ann Nutr Metab* 2009; 54: 52-58.