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Chronic Obstructive Pulmonary Disease

COPD: Executive Summary of Recommendations (2019)

Executive Summary of Recommendations

Below are the major recommendations and ratings for the Academy of Nutrition and Dietetics Chronic Obstructive Pulmonary Disease (COPD) Evidence-Based Nutrition Practice Guideline 2019. View the Guideline Overview from the Introduction section. More detail (including the evidence analysis supporting these recommendations) is available on this website to Academy members and EAL subscribers under the **Full Recommendations and Supporting Evidence** section.

To see a description of the Academy Recommendation Rating Scheme (Strong, Fair, Weak, Consensus, Insufficient Evidence), [click here](#).

The COPD 2019 Recommendations are listed below. [Note: If you mouse-over underlined acronyms and terms, a definition will pop up.]

- [Nutrition Assessment](#)

COPD: Assessment of Energy Intake

The registered dietitian nutritionist (RDN) should assess the energy intake of adults with COPD. Evidence suggests there was improvement in dyspnea scores with higher energy intakes. In addition, less robust evidence supported a beneficial relationship with functional status, healthcare utilization or duration of illness.

Fair

Imperative

COPD: Assessment of Body Weight Status

The RDN should assess body mass index (BMI) or other measures of body weight in adults with COPD. Strong evidence suggests an association between body weight status and mortality in adults with COPD. The lowest BMI groups had higher mortality rates when compared to higher BMI groups. Furthermore, a BMI classification of approximately 25.0kg/m² to 29.99kg/m² appeared to lower the risk of mortality when compared to both higher and lower BMI classifications. In unadjusted results, there was fair evidence of a positive association between BMI and FEV₁ percentage predicted. An increasing BMI was also shown to reduce declines in FEV₁ percentage predicted over time in a longitudinal study.

Strong

Imperative

COPD: Estimating Resting Metabolic Rate (RMR)

To calculate RMR in adults with COPD, the RDN may use either the World Health Organization [WHO (including height)] equation or the Harris-Benedict equation (HBE). If body composition is known (fat-free mass, body fat), the RDN may use the Westerterp equation. Limited evidence showed that the Westerterp equation has a prediction accuracy rate of 68%, followed by the WHO (including height; 63%) and Harris-Benedict (61%) equations.

Weak

Conditional

COPD: Estimating Total Energy Expenditure (TEE)

To calculate TEE in non-obese adults with COPD, the RDN may use 30kcal per kg body weight (BW) to estimate energy needs. Limited evidence suggests that 30kcal per kg body weight, in non-obese adults with COPD, produced an estimate that was not different from measured values on average, but whose variability was wide, indicating that estimation errors might be common and large.

Weak

Imperative

COPD: Assessment of Serum 25(OH)D Status

The RDN should assess serum 25(OH)D levels in adults with COPD as part of a routine nutrition assessment. Evidence from 60% of studies reviewed, found positive associations between serum 25(OH)D and lung function measures.

Fair

Imperative

COPD: Assessment of Exacerbations

If an adult with COPD is having two or more exacerbations per year, the RDN should assess 25(OH)D levels. Limited evidence of vitamin D supplementation in adults with COPD supports improved exacerbation outcomes in those with baseline serum 25(OH)D levels ≤10ng per ml.

Fair

Conditional

- [Nutrition Intervention](#)

COPD: Medical Nutrition Therapy (MNT)

The registered dietitian nutritionist (RDN) should provide MNT to adults with COPD to improve patient outcomes. Evidence indicates that MNT intervention provided by an RDN (or international equivalent) as part of a multidisciplinary program was effective in improving body weight status, quality of life, exercise capacity and body composition outcomes in adults with COPD.

Strong

Imperative

COPD: Energy Prescription

For adults with COPD, the RDN should individualize the calorie prescription based on a nutrition assessment of energy intake, body weight and estimated energy needs to achieve and maintain an optimal weight status. Strong evidence indicates that the lowest body mass index (BMI) groups had higher mortality rates when compared to higher BMI groups. A BMI classification of approximately 25.0kg/m² to 29.99kg/m² appeared to lower risk of mortality when compared to both higher and lower BMI classifications. Furthermore, fair evidence suggests that higher energy intakes improved dyspnea scores and also showed a beneficial but less robust relationship with functional status, healthcare utilization or duration of illness. In unadjusted results, fair evidence suggests a positive association between BMI and FEV₁ percentage predicted. In addition, an increasing BMI was also shown to reduce the longitudinal decline in FEV₁ percentage predicted over time.

Fair

Imperative

COPD: Macronutrient Composition (Percentage Distribution)

The RDN should individualize the macronutrient composition of the diet based on nutrition assessment. Limited evidence examining the impact of macronutrient distribution did not confirm an ideal percentage distribution of carbohydrates, protein and fat, or if macronutrient distribution should be different for adults with COPD.

Fair

Imperative

COPD: Vitamin D Supplementation for Serum 25(OH)D Levels 10ng/ml or Lower

If an adult with COPD has serum 25(OH)D levels ≤10ng per ml, the RDN should advise vitamin D supplementation to optimize serum 25(OH)D status. Limited evidence of vitamin D supplementation in adults with COPD supports improved exacerbation outcomes in those with baseline serum 25(OH)D levels 10ng per ml or lower.

Fair

Conditional

COPD: Vitamin D Supplementation for Serum 25(OH)D Levels 11-29ng/ml

If an adult with COPD has serum 25(OH)D levels 11ng to 29ng per ml, the RDN should consider vitamin D supplementation to optimize serum 25(OH)D status. While vitamin D is important for health, evidence indicates that vitamin D supplementation may or may not improve lung function or reduce exacerbations in adults with COPD who have baseline serum levels within this range. Evidence related to the effect of vitamin D supplementation on lung function and exacerbation outcomes yielded mixed findings and depended upon on dosing, dosing frequency and delivery routes, length of intervention and baseline serum 25(OH)D levels.

Fair
Conditional

- [Nutrition Monitoring and Evaluation](#)

COPD: Monitor and Evaluate Energy Intake and Body Weight for Energy Needs

For adults with COPD, the RDN should routinely monitor and evaluate body weight (BW) status and energy intake and adjust the estimated calorie prescription to achieve or maintain an optimal weight. Evidence suggests an association between BW status and both mortality and lung function in adults with COPD. Strong evidence indicates that the lowest BMI groups had higher mortality rates when compared to higher BMI groups. Furthermore, a BMI classification of approximately 25.0kg/m² to 29.99kg/m² appeared to lower risk of mortality when compared to both higher and lower BMI classifications. In unadjusted results, fair evidence indicates that BMI was positively associated with FEV₁ percentage predicted. Fair evidence was also found showing improvement in dyspnea scores with higher energy intakes.

Fair
Imperative

COPD: Monitor and Evaluate Serum 25(OH)D Levels

The RDN should periodically check serum 25(OH)D levels in adults with COPD as part of a routine nutrition monitoring and evaluation. Evidence from 60% of studies reviewed found positive associations between serum 25(OH)D and lung function measures.

Fair
Imperative

COPD: Monitor and Evaluate Effect of Vitamin D Supplementation

In adults with COPD who are receiving vitamin D supplementation, the RDN should monitor and evaluate the effect of the supplementation regimen on serum 25(OH)D levels.

If baseline serum 25(OH)D levels were ≤10ng per ml, the RDN should also evaluate the frequency of exacerbations to measure the effectiveness of supplementation. Limited evidence of vitamin D supplementation in adults with COPD supports improved exacerbation outcomes in those with baseline serum 25(OH)D levels 10ng per ml or lower. While vitamin D is important for general health, vitamin D supplementation in those with baseline serum 25(OH)D levels 11ng to 29ng per ml may or may not improve lung function or reduce exacerbations in adults with COPD.

Fair
Conditional