Nutrition/ONS Guidance for Hospitalized Non-ICU Adult Patients with COVID-19

April 2020

COVID-19 Patients Present with High Nutritional Risk[1-4]

- Patients requiring hospitalization and positive for COVID-19 have increased nutritional requirements due to a severe acute inflammatory status
- Many patients have comorbidities (diabetes, chronic kidney disease, etc.) which put them at even higher nutritional risk
- Patients often present with decreased food intake and difficulty eating which prevents them from meeting their nutritional requirements

Conduct Nutrition Screening[1,2,5]

- Conduct nutrition screening within 24 hours of hospital admission using a validated nutrition screening tool to identify (at-risk of) malnutrition in all patients

Estimate Nutritional Requirements[1,2,6-10]

- **PROTEIN:** Estimate protein needs based on increased requirements for adult patients with acute or chronic disease (1.2-1.5 g protein/kg BW/day), and severe illness or marked malnutrition (up to 2 g protein/kg BW/day)
- **ENERGY:** Determine energy requirements using indirect calorimetry, if available, or estimate using weight-based formulas: 25-30 kcal/kg actual body weight (ABW)/day for non-obese (BMI <30) and underweight patients, and 11-14 kcal/kg ABW/day for obese patients (BMI >30)
- **MICRONUTRIENTS:** Assure daily provision of recommended dietary allowances (RDA) for micronutrients including vitamins C, D, A, E & B-vitamins, and zinc, selenium & iron. Deficiency of these micronutrients has been associated with adverse clinical outcomes during viral infections

Initiate Nutrition Care[1,2,11,12]

- Provide a diet rich in nutrient-dense foods and initiate oral nutritional supplements (ONS)
- Provide 2-3 servings of ONS in accordance with patient needs and regular food intake
- ONS shall provide ≥400 kcals/day including ≥30 g protein/day, and micronutrients to help meet daily nutritional requirements
- Select ONS based on patient nutritional needs and presence of specific co-morbidities*

Monitor Patient Diet and ONS Intake[1,2,5]

- Encourage patient compliance and monitor nutritional intake
- If patient is unable to meet their nutritional requirements (to be assessed every 48-72 hours), initiate supplemental enteral feeding

Plan Nutritional Support with Transitions of Care[1]

- Nutritional support should continue after hospital discharge with ONS and individualized nutrition plans. This is especially important since pre-existing nutritional risk factors continue to apply and acute disease and hospitalization are likely to worsen the risk or condition of malnutrition
- Assure ONS usage for at least one month. Assess ONS efficacy after one month, and continue as needed

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Conduct Nutrition Screening of Patients Positive for COVID-19
within 24 hours of Hospital Admission

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At-risk of Malnutrition or High Nutritional Risk Identified

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Patient able to Tolerate Oral Feedings

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Estimate Nutritional Requirements

Protein	Energy	Micronutrients
1.2-1.5 g protein/kg BW/day for acute or chronic disease; and up to 2 g protein/kg BW/day for severe illness or marked malnutrition	25-30 kcal/kg ABW/day for non-obese (BMI <30) and underweight patients, and 11-14 kcal/kg ABW/day for obese patients (BMI>30)	Assure provision of RDA for vitamins C, D, A, E & B-vitamins, and zinc, selenium & iron

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Initiate Nutrition Care Plan

Nutrient-dense Foods

+

2-3 Servings of Oral Nutritional Supplements per day
ONS to provide ≥400 kcals/day including ≥30 g protein/day, and micronutrients to help meet daily nutritional requirements

ONS Product Selection based on Patient Nutritional Needs*

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Monitor Patient Diet and ONS Intake

Plan Nutritional Support with Transitions of Care
- Assure individualized nutrition plan and ONS for at least one month
- Assess ONS efficacy after one month, and continue as needed

*Nestlé Health Science Oral Nutritional Supplement Offerings by Diet Order

ONS Diet Order	ONS Product Selection (Vanilla Flavor)	Total Kcals (per serving)	Kcal per mL	Protein (% Total Energy)	Carbs (% Total Energy)	Fat (% Total Energy)	Vitamins & Minerals
High Protein	**BOOST® High Protein Drink** (retail and institutional)	240 Kcals (237 mL)	1.0	20 g (33% TE)	28 g (44% TE)	6 g (23% TE)	27
High Calorie	**BOOST PLUS® Drink** (retail and institutional)	360 Kcals (237 mL)	1.5	14 g (15% TE)	45 g (50% TE)	14 g (35% TE)	26
High Protein, High Calorie	**BOOST® Very High Calorie (VHC)** (institutional)	530 Kcals (237 mL)	2.24	22 g (17% TE)	52 g (39% TE)	26 g (44% TE)	26
Diabetes Friendly	**BOOST Glucose Control® Drink** (institutional)	250 Kcals (237 mL)	1.06	14 g (23% TE)	23 g (33% TE)	12 g (44% TE)	25
	BOOST Glucose Control® Drink (retail)	190 Kcals (237 mL)	0.8	16 g (33% TE)	16 g (34% TE)	7 g (33% TE)	25
Renal Friendly	**NOVASOURCE® Renal Drink** (institutional)	475 Kcals (237 mL)	2.0	21.6 g (18% TE)	43.5 g (37% TE)	23.8 g (45% TE)	25
	NOVASOURCE® Renal Drink (retail)	500 Kcals (250 mL)	2.0	23 g (18% TE)	46 g (37% TE)	25 g (45% TE)	25

For specific product information, visit www.NestleHealth Science.us

References: **1. Barazzoni R** et al. *Clin Nutr* 2020;March 24 (E pub ahead of print). **2. Jin** et al. *MMR* 2020;7:4. **3. Bhatraju PK** et al. *NEJM* 2020;March 30 (E Pub ahead of print). **4. Rabi FA** et al. *Pathogens* 2020; 9:231. **5. ASPEN** Adult Malnutrition Care Pathway 2015. **6. Bauer J** et al. *J Am Med Dir Assoc* 2013;14:542-59. **7. Deutz NEP** et al. *Clin Nutr* 2014; 33:929-36. **8. McClave SA** et al. *JPEN* 2016;40:159-211. **9. Zang L, Liu Y.** *J Med Virol* 2020;92:479-90. **10. Semba RD, Tang AM**. *Br J Nutr* 1999;81:181-89. **11. Volkert D** et al. *Clin Nutr* 2019;38:10-47. **12. Gomes F** et al. *Clin Nutr* 2018;37:336-53.

This document is not intended to be a substitute for clinical judgment.

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