

# NUTRICIA SATELLITE SYMPOSIUM

**Targeted nutritional therapy:**  
new data to enhance rehabilitation and implications  
for COVID-19 recovery

Symposium booklet



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## Introduction by Nutricia

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Dear Satellite Symposium Attendees,

**I am delighted to welcome you to this virtual satellite symposium hosted by Nutricia. Our aim is to empower healthcare professionals to optimize nutritional management along the patient journey, which is even more relevant in the current COVID-19 setting.**

The ESPEN conference is the key event in the annual calendar for healthcare professionals with an interest in clinical nutrition and metabolism. For the first time this year – due to the COVID-19 pandemic – ESPEN will be a fully virtual congress. Continuing the tradition of many years, Nutricia will host a topical, live scientific symposium with internationally renowned speakers as part of the ESPEN program. The theme of this year’s symposium relates to recovery after severe illness. There has been increasing recognition over the past years that patients who have required intensive care frequently have a long and challenging recovery. Although good nutritional management is an integral part of optimal care it is often over-looked. This has been brought sharply into focus in 2020 by the COVID-19 pandemic.

This year’s Nutricia symposium provides a platform for experts in the field to share their deep insights, experience and research in nutritional management after severe illness which is highly relevant for optimizing nutritional care of patients who have suffered severe COVID-19 infection. In addition, new data and research in patients with COVID-19 will be highlighted. The symposium is co-chaired by Professor Paul Wischmeyer (Durham, USA) and Professor Pere Clave (Barcelona, Spain).

- **Professor Wischmeyer** will open the symposium with his presentation entitled **“ICU recovery begins the day of ICU admission”: meeting nutritional targets from ICU to rehabilitation with insights from LEEP-COVID data**. This presentation will include characterization of patients with COVID-19 and nutritional challenges along the patient journey, referencing new data and addressing the key steps and interventions to be taken to ensure that patients are in the best nutritional state at each phase of the patient journey.
- **Professor Clave** will then focus on a topic that is frequently overlooked with his presentation **Dysphagia: addressing an often-neglected issue**. He will introduce the issue of dysphagia after ICU and provide guidance on management, with lessons learned from patients with COVID-19 infection. He will share new data on dysphagia in hospitalized patients with COVID-19 and emphasise the importance of paying attention to this issue, which is a major contributory cause of malnutrition.


- **Dr Peter Collins** (Gold Coast, Australia) will then address **Implementing optimal nutritional care after discharge: how to make this happen?** Discharge from hospital is a key moment when nutritional care may be disrupted – ensuring the continuum of care is crucial for ensuring the best patient outcomes. This presentation will address current challenges and gaps and how they can be addressed, including attention on the role of malnutrition care pathways, multi-disciplinary teams and the role of oral nutritional supplements.
- Finally, **Dr Emanuele Cereda** (Pavia, Italy) will tackle the role and benefits of specialized oral nutritional supplements in his presentation entitled **The role of muscle-targeted nutritional therapy: new data**. This presentation will provide insights into why muscle is of critical relevance during the patient journey and showcase new data that illustrate the benefits of high protein whey-based oral nutritional supplements enriched with leucine and vitamin D in older patients undergoing rehabilitation.

There will be a live opportunity for audience questions to the speaker panel at the end of the symposium. Please join us to shape the discussion and gather new insights and learnings to help you drive better care and outcomes for patients after severe illness, both with and without COVID-19 infection.

In addition to the Satellite Symposium, the ESPEN conference offers Nutricia the opportunity to showcase its investment in new clinical research and implementation initiatives. We are immensely grateful that this year we have been able to set up an extensive program across the globe to support activities to better understand and improve nutritional care in patients following discharge after COVID-19 infection. More information on this - the NutriCOVER program – can be found in this digital booklet. We are also delighted that 5 Nutricia-supported research initiatives will be presented at ESPEN as oral communications or posters. These are described in more detail in this booklet. We believe that these initiatives will help drive clinical practice improvements and better patient outcomes.

We are looking forward to many virtual interactions with ESPEN delegates during the conference. Please visit us at the Nutricia booth and do not hesitate to contact us via the live chat function if you have any questions or suggestions.

Yours sincerely,



Ceri Green, PhD

Nutricia Global Medical Affairs Director Disease-Related Malnutrition  
Specialized Nutrition



## **Professor Paul E. Wischmeyer**

MD, FASPEN, FCCM, EDIC

Professor of Anesthesiology and Surgery with Tenure at Duke University School of Medicine  
Director of Perioperative Research Institute at the Duke Clinical Research Institute  
Durham, NC, USA

Paul E. Wischmeyer, MD, FASPEN, FCCM, EDIC is a critical care, perioperative and nutrition physician. Prof. Wischmeyer serves as a Professor with Tenure of Anesthesiology and Surgery at Duke University School of Medicine in Durham, NC, USA. He also serves as the Director of Perioperative Research at the Duke Clinical Research Institute, and is the Director of the Nutrition Team and TPN Services at Duke University Hospital. Prof. Wischmeyer's clinical and research focus includes ICU and surgical nutrition therapy, perioperative optimization, post-illness lean body mass and functional recovery, and role of probiotics / microbiome in illness.

For his research and clinical work, Prof. Wischmeyer has received numerous awards from national and international societies, including the Jeffrey Silverstein Award and Memorial Lecture for Humanism in Medicine from the American Delirium Society, the John M. Kinney Award for the most significant contribution to the field of general nutrition, the Stanley Dudrick Research Scholar Award by the American Society for Parenteral and Enteral Nutrition, and the Lifetime Achievement Award of the International Parenteral Nutrition Education and Methodology Advancement for significant contributions to the field of nutrition.

Prof. Wischmeyer has over 150 publications in nutrition, critical care, and perioperative care (with an H-index of 49 and 25 papers with > 100 citations), including publications in the New England Journal of Medicine. He has been an invited speaker at numerous national and international medical meetings, delivering over 700 invited presentations over his career.



## **Professor Pere Clavé**

MD, PhD

Director of Research (R&D+) and Academic Development  
Consorci Sanitari del Maresme  
Barcelona, Spain

Pere Clavé, MD, PhD is the Director of Academic Studies and R&D at the Hospital de Mataró, in Catalonia, Spain, and was recently appointed as full Professor for the Department of Surgery at the Universitat Autònoma de Barcelona (UAB). In 2016, he launched the Postgraduate Diploma (now Master) on Swallowing Disorders with the UAB. He is the Principal Investigator (PI) of the Digestive Physiology Research Group Ciberehd-CSdM-UAB at the Hospital de Mataró. The group combines 19 basic and clinical researchers organized around a General Hospital and the Department of Physiology at the UAB.

Prof. Clavé is the Founding President of the European Society for Swallowing Disorders (ESSD) and has served two terms as the President of the ESSD (2010-2015 and 2015-2020). He held the position of International Councilor at the Dysphagia Research Society (2012-14) and currently serves on the World Organization for Specialized Studies on Diseases of the Esophagus, OESO, (2015-), as well as holding positions as the Honorary President of the Annual Meeting of the Asociación Argentina de Disfagia (2015-), Member of Advisory Board of Chinese Association of Rehabilitation Medicine (CARM, 2017- ), and the College of Reviewers del Canada Research Chairs (2017-). He is also a member of the Japanese Society of Dysphagia Rehabilitation (JSDR) International Affair Committee, as well as a Member of the Board of Furega (Research Foundation on Gastroenterology). Prof. Clavé organized the 2nd, 5th and 7th ESSD annual meetings in Barcelona and the First World Dysphagia Summit jointly organized by the ESSD, JSDR and DRS to debate and seek consensus on global issues on oropharyngeal dysphagia and its complications.

In 2017, Prof. Clavé was awarded for professional excellence in research by the Official College of Physicians of Barcelona. Prof. Clavé has authored 178 Publications, 3 books, 2 patents, 29 book chapters, and was the Director of 24 theses in Gastrointestinal Physiology, Oropharyngeal Dysphagia and its complications. Prof. Clavé is also the Associate Editor of the journals Dysphagia, Nutrients, and Neurogastroenterology and Motility.



## **Dr Peter Collins**

PhD, APD, RD

Senior Lecturer in Nutrition and Dietetics School of Allied Health Sciences

Griffith University

Gold Coast, Australia

Peter Collins, PhD, APD, RD is a Senior Lecturer in Nutrition & Dietetics in the School of Allied Health Sciences at Griffith University, Gold Coast, Australia. Dr Collins is a member of the Patient-Centred Health Services group at Menzies Health Institute Queensland, Australia. He is a Registered Dietitian (RD) with the UK Health Care & Professions Council and is an Accredited Practising Dietitian (APD) with Dietitians Australia (DA). Peter is passionate about the importance of good nutritional care and its impact on patients' lives and healthcare systems. His research focuses on the detection and management of disease-related malnutrition across the healthcare continuum, with a specific focus on the nutritional management of respiratory disease. He is an ESPEN Early Career Faculty member and will be leading the development of an upcoming ESPEN guideline on nutrition support in COPD.



## **Dr Emanuele Cereda**

MD, PhD

Researcher and Physician (Nutrition & Dietetics)

Fondazione IRCCS Policlinico San Matteo

Pavia, Italy

Emanuele Cereda, MD, PhD is a clinician and research scientist. Dr Cereda graduated as an MD in 2002 and was awarded the specialization degree in Clinical Nutrition in 2006 and PhD in “Clinical and Experimental Nutrition” in 2009. Since 2010, he has worked as a physician and research scientist at the Clinical Nutrition and Dietetics Unit of the Fondazione IRCCS Policlinico “San Matteo” in Pavia, Italy. As lead investigator in many clinical trials, his research activities are substantiated by a large number of publications in highly ranked peer-reviewed international journals and by several chapters in national and international books, mainly dealing with disease-related malnutrition and complications in hospitals and institutions, wound healing, clinical nutrition in oncology, geriatrics and neurodegenerative diseases.

Dr Cereda contributed to the latest edition of the “ESPEN Guideline Clinical Nutrition in Neurology” and has been the chair of the Nutrition Small Working Group for the “Prevention and Treatment of Pressure Ulcers/Injuries: Clinical Practice Guideline” (3rd Edition, 2019) edited by EPUAP/NPUAP/PPPIA. He is Associate Editor of Clinical Nutrition and serves as an active reviewer for several international peer reviewed journals dedicated to clinical nutrition or focusing on nutritional topics.



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## Key resources

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### **Nutritional management in ICU/post-ICU**

Wischmeyer P. Tailoring nutrition therapy to illness and recovery. *Crit Care*. 2017;21:316.

Zanten van ARH, et al. Nutrition therapy and critical illness: practical guidance for the ICU, post-ICU, and long-term convalescence phases. *Crit Care*. 2019;23:368.

### **Management of oropharyngeal dysphagia**

Brodsky MB, et al. Recovery from dysphagia symptoms after oral endotracheal intubation in acute respiratory distress syndrome survivors. A 5-year longitudinal study. *Ann Am Thorac Soc*. 2017;14: 376–383.

Bolivar Prados M, et al. Effect of a gum based thickener on the safety of swallowing in patients with post-stroke oropharyngeal dysphagia. *Neurogastroenterol. Motil*. 2019;00:e13695.

### **Nutritional management in COPD**

Collins PF, et al. Nutritional support in chronic obstructive pulmonary disease (COPD): an evidence update. *J Thorac Dis*. 2019;11(Suppl. 17): S2230-S2237.

Nguyen TH, et al. Effectiveness of tailored dietary counseling in treating malnourished with chronic obstructive pulmonary disease: a randomized controlled trial. *J Acad Nutr Diet*. 2020;120: 778-791.

### **Muscle-targeted nutritional management**

Prado C, et al. Implications of low muscle mass across the continuum of care: a narrative review. *Ann Med*. 2018; 50:675-693.

Rondanelli M, et al. Improving rehabilitation in sarcopenia (IRIS) by muscle-targeted nutritional support: A randomized, double-blind, placebo-controlled study. Clin Nutr. 2019;38(suppl 1):S3  
[Full publication] Rondanelli M, Cereda E, et al. J Cachexia Sarcopenia Muscle 2020; In press

Dimori S, et al. Clinical nutrition and physical rehabilitation in a long-term care setting: preliminary observations in sarcopenic older patients. Aging Clin Exp Res. 2018;30:951-958.

Molnar A, et al. Special nutrition intervention is required for muscle protective efficacy of physical exercise in elderly people at highest risk of sarcopenia. Physiol Int. 2016;103:368-376.

Bauer JM, et al. Effects of a vitamin D and leucine-enriched whey protein nutritional supplement on measures of sarcopenia in older adults, the PROVIDE Study: A randomized, double-blind, placebo-controlled Trial. J Am Med Dir Assoc. 2015;16:740-7.

## **Nutritional management in COVID-19**

Barazzoni R, et al. ESPEN expert statements and practical guidance for nutritional management of individuals with SARS-CoV-2 infection. Clin Nutr. 2020; 39:1631-38.

Chapple LS, et al. Nutrition management for critically and acutely unwell hospitalised patients with coronavirus disease 2019 (COVID-19) in Australia and New Zealand. Aust Crit Care 2020, 33: 399-406.

Clave P, et al. Basic procedures to assess and treat oropharyngeal dysphagia in patients with COVID-19 infection. Expert opinion practical guidance from Hospital de Mataro, Catalonia, Spain. 2020 April 6th.  
<https://www.furega.com/covid-19/covid-eng.pdf>

Caccialanza R, et al. Early nutritional supplementation in non-critically ill patients hospitalized for the 2019 novel coronavirus disease (COVID-19): Rationale and feasibility of a shared pragmatic protocol. Nutrition. 2020;74:110835.

Brugliera L, et al. Nutritional management of COVID-19 patients in a rehabilitation unit. Eur J Clin Nutr. 2020;74:860-3.

# NUTRICIA SUPPORTS RESEARCH ON COVID-19 RECOVERY AFTER HOSPITAL DISCHARGE

## Nutritional management is an integral part of recovery from major illness

Patients in Intensive Care Units (ICU) can lose as much as 1 kilogram of muscle mass per day<sup>1</sup>. Lengthy stays in intensive care of patients with COVID-19 infection can result in severe loss of muscle mass and strength, critically impacting the speed of recovery. Recent research shows that patients with COVID-19 experience low physical functioning and impaired performance of activities of daily life after hospital discharge<sup>2</sup>. Medical nutrition has been shown to positively contribute to improved clinical outcomes<sup>3,4</sup> better quality of life<sup>3,4</sup> and earlier hospital discharge<sup>4</sup> in malnourished patients or those showing signs of malnutrition, as a result of a variety of diseases and conditions .

For malnourished patients recovering from major illness, ongoing nutritional management post-ICU and post-hospital discharge is critical to support the recovery process<sup>5,6</sup>.

## The NutriCOVER program supports independent research to improve recovery after hospital discharge for patients with COVID-19

The logo for the NutriCOVER Program, featuring the word "NUTRICOVER" in a large, bold, blue font, with "PROGRAM" in a smaller, blue font directly below it.

Existing nutritional guidance is based on established knowledge on management of malnutrition; however, real-world evidence remains needed to support the development of COVID-19 specific guidance on nutritional care after hospital discharge to address the needs during recovery.

The NutriCOVER program was launched in May 2020 by Nutricia. with close to €1m allocated to investigator-led studies and initiatives aiming to advance knowledge and clinical practice to improve recovery of patients after severe COVID-19.

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1 - Puthuchery, et al. JAMA. 2013; 310:1591-1600

2 - Belli, et al. Eur Respir J. 2020; in press

3 - Elia, et al. Clin Nutr. 2016;35:125-37

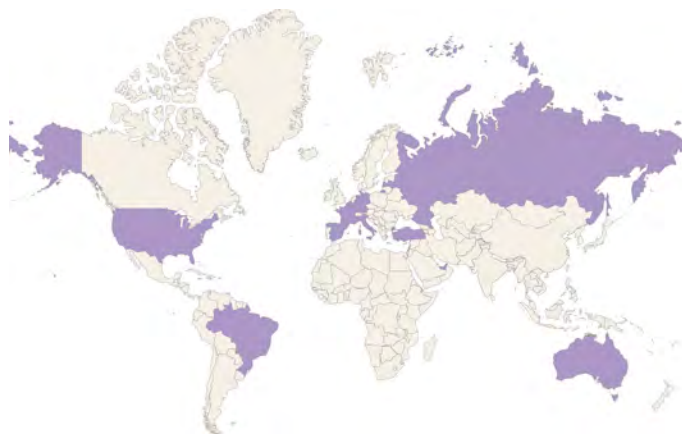
4 - Stratton RJ, et al. CABI Publishing, 2003

5 - Zanten van, et al. Crit Care. 2019;23:368

6 - Barazzoni, et al. Clin Nutr. 2020;39:1631-8

## LEARN MORE ABOUT THE NUTRICOVER PROGRAM

NUTRICOVER  
PROGRAM



### New data from Catalonia, Spain highlight significant nutritional challenges in hospitalized patients with COVID-19<sup>1</sup>

A prospective observational study conducted at the Consorci Sanitari del Maresme in Catalonia, Spain reveals significant nutritional challenges for patients with COVID-19 infection at hospital admission, with half of patients suffering from dysphagia and more than 70% at risk of malnutrition and requiring oral nutritional supplements<sup>1</sup>.

[Read](#) the abstract presented at the ESPEN congress 2020 to find out more, including data on the pathophysiology of oropharyngeal dysphagia in this cohort, and the need for appropriate intervention.



**“It is essential to prepare for a new wave of the pandemic, in improving protocols to provide clinical response in the management of patients with dysphagia.**

**We need to move from the current rather reactive attitude that seeks to treat malnutrition”, dehydration or respiratory infection when they have already occurred, to a more proactive attitude that aims to treat those patients at risk of oropharyngeal dysphagia and malnutrition early to avoid these complications.”**

**Prof. Pere Clave, Barcelona, Spain**

1 - Clave, et al. Poster ESPEN congress. 2020; LB-065

# A nutrition therapy cost-effectiveness model informs potential cost-savings for healthcare, in Brazil

Maria Isabel Correia<sup>1</sup>, Melina Castro<sup>2</sup>, Diogo de Oliveira Toledo<sup>3</sup> ESPEN20-LB-307

## Rationale

Malnutrition is highly prevalent in hospitalized patients, but seldom recognized and treated. Malnutrition poses several adverse events, such as increased infection rates, length of hospital stay and mortality, as well as costs. Early nutrition interventions have been shown to decrease the associated malnutrition burdens, leading to important savings. Thus, the aim of this study is to evaluate the cost-effectiveness of nutrition therapy, including oral supplements to at-risk or malnourished adult inpatients admitted to the Brazilian Public System (SUS) hospitals.

## Methods

A cost-effectiveness model encompassing a one-year period regarding total costs, length of hospital stay, readmissions, and mortality related to malnutrition was developed, having the provision of early nutrition therapy as the intervention variable. The number of avoided hospitalization days, prevented hospital readmissions and deaths defined the effectiveness of the model. All the costs were estimated based on the SUS database.

## Results

Early nutrition therapy provided to all at risk or malnourished patients would represent a cost-effectiveness of US\$92.24, US\$544.59, US\$1,848.12 and US\$3,698.92, per day of hospitalization avoided, for additional patients having access to hospitalization, for preventing readmission and death, respectively. The highest impact on savings was represented by the mean reduction on the length of hospital stay.

## Conclusion

Early oral nutrition intervention to at risk of malnutrition or malnourished patients resulted in overall reduced hospital costs. These findings provide a rationale to tackle the implementation of educational programs focusing on the care of inpatients with malnutrition or its risk.

## References

Buitrago G, Vargas J, Sulo S, Partridge JS, Guevara-Nieto M, Gomez G, et al. Targeting malnutrition: Nutrition programs yield cost savings for hospitalized patients. *Clin Nutr*. 2019. on line; Correia MITD, Perman MI, Pradelli L, Omaralsaleh A, Waitzberg DL. Economic burden of hospital malnutrition and the cost-benefit of supplemental parenteral nutrition in critically ill patients in Latin America. *J Med Econom*. 2018.

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# Enteral formula protein composition affects gastric residual volume in a critically ill patient model in healthy adults

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## Rationale

Enteral nutrition (EN) with intact protein formula is preferred in critically ill patients when oral intake is insufficient. EN is often rich in casein protein with coagulating properties, which may impede gastric emptying rate. The effect of protein composition of enteral formula on gastric content volume (GCV) was assessed during and after continuous feeding of healthy subjects in whom critically ill conditions were mimicked pharmacologically.

## Methods

A non-coagulating enteral formula containing 4 proteins (P4) was compared to a coagulating casein-dominant formulation (Cas) in a randomized crossover study. Esomeprazole and codeine were administered to mimic stress ulcer prophylaxis and induce gastroduodenal motor dysfunction, both hallmarks of critically ill patients. GCV was measured 9 times over a period of 6 hours by magnetic resonance imaging prior, during and after continuous feeding (100 mL/h for 4h). Results presented as mean (SD).

## Results

20 subjects completed the study (ITT population: 14 women, 25.8 (4.6) years old, BMI: 22.5 (1.5) kg/m<sup>2</sup>). Continuous feeding with P4 resulted in numerically lower GCVs compared to Cas (AUC<sub>0-360</sub> GCV = 44631 (15546) vs 52822 (19686) mL\*min, p = 0.06). This difference was significant during feeding at T = 180 min (175.4 (64.8) vs 205.2 (75.4) mL, p = 0.038), after cessation of feeding at T = 300 min (81.3 (71.1) vs 116.3 (84.3) mL, p = 0.004) and at T = 330 min (39.9 (53.9) vs 73.6 (81.1) mL, p = 0.03). With P4 it took less time to reach half of the GCV after stop feeding at T = 240 min compared to Cas (52.8 (27.6) vs 65.4 (29.9) min, p = 0.02).

## Conclusion

These data suggest that continuous enteral feeding with the non-coagulating P4 blend results in less gastric residual volume compared to a casein-dominant coagulating formula. The use of a P4 protein blend might therefore result in clinical benefits for critically ill patients.

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# Oropharyngeal dysphagia and malnutrition in patients with COVID-19 at the Consorci Sanitari del Maresme, Catalonia, Spain: Prevalence and needs of compensatory treatment

Omar Ortega,<sup>1,2</sup> Viridiana Arreola,<sup>1</sup> Weslania Nascimento,<sup>1</sup> Alberto Martín,<sup>1,2</sup> Alicia Costa,<sup>1</sup> Mireia Arús,<sup>3</sup> Maria Roca,<sup>3</sup> Paula Viñas,<sup>1,3</sup> Silvia Carrón,<sup>2</sup> Pere Clavé.<sup>1,2</sup> ESPEN20-LB-06

## Rationale

COVID-19 may manifest with a wide range of symptoms and its degree of severity may be from mild to severe. Our aim was to assess the prevalence and pathophysiology of oropharyngeal dysphagia (OD), malnutrition (MN), nutritional risk, and the needs of compensatory treatments in patients admitted due to COVID-19 at the Consorci Sanitari del Maresme (CSdM), Catalonia, Spain.

## Methods

Prospective observational study with clinical assessment of OD (clinical symptoms, clinical observation and Volume-Viscosity Swallowing Test) and nutritional screening with NRS2002 and GLIM criteria in consecutive COVID-19 patients admitted at the Hospital de Mataró (CSdM) during 2020 Covid-19 pandemics. Patient's clinical characteristics and their needs of compensatory treatments for OD and MN were assessed at baseline and will be followed up at 3 and 6 months. Here we present the baseline data.

## Results

We included 268 hospitalized patients, 52.2% men, with a mean age of 70.2±17.0 yr, severity of disease was moderate-severe in 34%. At hospital admission prevalence of OD was 52.4% (49.4% had impaired efficacy and 44.9% impaired safety of swallow). Pathophysiology of OD includes ICU and post-extubating factors (16%), neurological factors (32%), respiratory insufficiency (42%) and interstitial pneumonia (74%). Up to 43.7% of patients needed thickeners to be safely hydrated (38.7% with 250mPa-s and 5.2% with 800mPa-s of Xanthan Gum thickeners) and 54.5% had mastication impairments needing texture-modified diets (27.7% easy mastication and 28.8% puree). 74.2% of patients presented a NRS2002>3 and were at risk of MN, 46% had MN and 73.8% of patients received ONS.

## Conclusion

Prevalence of OD, nutritional risk and MN in patients with COVID-19 at admission in a General Hospital is very high. Pathophysiology is multifactorial and not limited to ICU factors. Early treatment includes fluid thickening, texture modified foods and nutritional support.

## References

10 Basic procedures to assess and treat oropharyngeal dysphagia in patients with COVID-19 (SARS-CoV-2) infection. <https://www.furega.com/covid-19/covid-eng.pdf>

1 Gastrointestinal Physiology Laboratory, HOSPITAL DE MATARÓ, Mataró

2 Centro de Investigación Biomédica en Red de enfermedades hepáticas y digestivas (CIBERehd), Instituto de Salud Carlos III, Barcelona,

3 Dietetics Department, HOSPITAL DE MATARÓ, Mataró, Spain

# Protein intake in geriatric patients with hip-fracture: Feasibility study evaluating current ESPEN guidelines for geriatrics

Amelie Kruse Sigersted Frederiksen <sup>1</sup>, Anne Wilkens Knudsen <sup>1</sup>, Annie Marie Beck <sup>1,2</sup>, Tina Munk <sup>1</sup> ESPEN20-ABS-P393

## Rationale

Geriatric patients with hip-fracture are often malnourished or at risk of developing malnutrition. These patients often have poor oral food intake and difficulties reaching their recommended protein intake from food alone. Recently published ESPEN guidelines in geriatrics recommend oral nutritional supplement (ONS) providing at least 30g protein/day. The aim of the study was to assess the feasibility of the ESPEN recommendations.

## Methods

Inclusion: Patients  $\geq 65$  years with a hip-fracture. Exclusion: Impaired renal function, GI problems or dysphagia. Patients received standard care and were offered 2 servings ONS daily (Nutridrink Compact Protein, 18g protein/125 ml serving), from first postoperative day until hospital discharge. Average protein- and energy intake during hospitalization was recorded. Patients who achieved 30g protein from ONS were compared with those that did not.

## Results

Thirteen patients were excluded. Forty patients (70% W) median age 86.5 years (IQR 78.8-90.0) were included. Five patients met the recommended 30g protein/day from ONS. They had a higher median protein intake from ONS than the other 35 patients (36.0g (36.0-36.0) vs. 18.0g (10.5-23.8)  $p=0.0006$ ). Total protein intake was not significantly higher (1.01g/kg BW/day (0.74-1.14) vs. 0.66g/kg BW/day (0.57-0.93)  $p = 0.152$ ). No difference was found in protein intake from food alone between groups (18.0g (15.3-29.4) vs. 23.4g (14.5-28.9)  $p = 1$ ). In addition, no difference between groups in age, sex or BMI was found.

## Conclusion

Protein intake from food was very low in this population of geriatric patients with hip-fracture. The recommended protein intake of 30g from ONS was met in only 5/40 patients during hospital stay. ONS did not affect the protein intake from food. Further efforts are needed to improve awareness of and adherence to ONS to meet the guidelines.

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<sup>1</sup> Dietetic and Nutritional Research Unit, EFFECT, HERLEV-GENTOFTE UNIVERSITY HOSPITAL, Herlev

<sup>2</sup> Faculty of Health, Institute of Nursing and Nutrition, University College Copenhagen, Copenhagen, Denmark



# Self-reported taste and smell alterations in patients with cancer receiving systemic anti-cancer treatment

Jacco de Haan<sup>1</sup> Remco J. Renken<sup>1</sup>, Yvette Moshage<sup>1</sup>, Daniëlle Kluijthoof<sup>1</sup>, Camille Corbier<sup>2</sup>, Hélène Blanchard<sup>3</sup>, Louise Daly<sup>3</sup>, Anna K.L. Reyners<sup>1</sup>. ESPEN20-ABS-P311.

## Rationale

Taste and smell alterations (TSAs) are a common side effect in patients with cancer undergoing systemic anticancer therapy (affecting up to 70% of patients)<sup>1</sup> and can negatively impact on food intake and quality of life. This study aimed to characterize TSAs in patients with cancer, and investigate the impact of TSAs on overall liking of oral nutritional supplements (ONS) prototype flavours with warming and cooling sensations.

## Methods

Patients with cancer undergoing systemic therapy were recruited. Patients completed a questionnaire on TSAs and evaluated overall liking of 5 prototype flavours of Nutridrink® Compact Protein on a 10-point scale via a sip test.

## Results

Fifty patients with various types of cancer and treatments were included. Thirty patients (60%) reported taste alterations (TAs) and 13 (26%) experienced smell alterations (SAs). In patients with TAs, the severity was reported as moderate-severe by 40% (n=12) of patients with an impact on daily life rated as moderate-severe by 33% (n=10) of patients. Compared to before treatment, 32% (n=16) of patients experienced dysgeusia and 26% (n=13) reported hypogeusia. In patients who experienced a bad taste (n=21), chemical (57%, n=12) and metallic (48%, n=10) tastes were common. Larger variation in liking scores of ONS flavours were observed in patients with TAs (±SAs) (4.9-7.1) vs. patients without TSAs (5.9-6.5). In patients with TAs(±SAs), 3 flavours were rated with a liking score >6 by 67% (hot tropical ginger), 73% (neutral) and 93% (cool red fruits) of patients.

## Conclusion

TSAs are common in patients with cancer undergoing systemic anti-cancer therapy and adversely impact on patients daily life. Liking of ONS flavours may vary with TSAs, however, in patients with TSAs sensory adapted flavours appear to be appreciated. In daily clinical practice, TSAs in patients with cancer should be evaluated and considered when selecting ONS flavours.

## References

1. Spotten et al. 2017 Annals of Oncology 28:969-984

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This certificate is presented to



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For attending the Nutricia Satellite Symposium @ 2020 ESPEN Virtual Congress  
**Targeted nutritional therapy: new data to enhance rehabilitation and implications for  
COVID-19 recovery**

**Ceri Green, PhD**

Nutricia Global Medical Affairs Director Disease-Related Malnutrition  
Specialized Nutrition