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Nutrition and
Dietetics



Kompass Nutrition & Dietetics

Focus

Dietetic implications in the era of COVID-19

- Research and dietetic response to COVID-19 in Europe
- Can diet influence the COVID-19 mortality rate?
- The effects of COVID-19 home confinement on health

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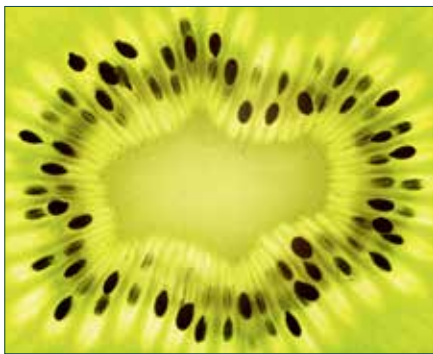
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Cover image

Close up of a slice of kiwi fruit

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A Bridge between International Science and Dietetic Practice

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Dear reader,
We are really happy that the first issue of Kompass Nutrition & Dietetics is now in front of you! The European Federation of the Associations of Dietitians (EFAD) has always hoped to start a dietetic journal to share dietetic knowledge and experience with dietitians throughout Europe. Every day, new knowledge and new experiences are identified in dietetics – in your own country and beyond. Applying knowledge to dietetic practice is key to our profession. Every day, new scientific information is published, requiring dietitians to translate this information into practice. Kompass Nutrition & Dietetics aims to bridge this gap between science and dietetic practice. It will enable dietitians to learn about new insights, new methods and new ways of working that exist in Europe. We hope that this information will inspire you to further improve our profession.

It took some time for EFAD to find out what kind of dietetic journal would best fit our members. To start to shape the new journal, we consulted national dietetic associations and the editors of their national journals, and we consulted EFAD's European Specialist Dietetic Networks. We then started working in a small Task and Finish Group and had our first meetings with Karger. Increasingly, we believed that a Kompass Nutrition & Dietetics would be the perfect journal for EFAD. Dr. Liana Pouliou, one of the members of the Task and Finish Group, volunteered to be the editor of the first issue.

Each issue of Kompass Nutrition & Dietetics will focus on a specific dietetic topic. The journal will start with two issues per year and contain different types of articles, including knowledge transfer articles, explaining how outcomes of scientific research could be used in dietetic practice. Experts from inside and outside EFAD will be asked to write

these knowledge transfer articles. It will also include reviews and case reports, which could be translated articles from journals of national dietetic associations. Please let us know if you have articles that you wish to share across Europe!

The publication of Kompass Nutrition & Dietetics is a new venture for EFAD, so please feel free to think with us and provide feedback (secretariat@efad.org).

We hope that you, as members of EFAD's member associations, will appreciate Kompass Nutrition & Dietetics. Enjoy reading!





Liana Poulia

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Nutrition in the Era of COVID-19

As the editor-in-chief of the first issue, I would like to welcome you to a new scientific trip with Kompass Nutrition & Dietetics, a journal that aims to be the voice of dietitians and nutritionists in Europe. This new healthcare journal, aimed mainly at dietitians and nutritionists but also all healthcare professionals who are interested in nutrition, is the formal publication of the European Federation of the Association of Dietitians, EFAD, representing over 33,000 members in 28 European countries.

Kompass Nutrition & Dietetics will be published bi-annually, and each issue will be dedicated to a thematic focus. This first issue could not have had any other focus than COVID-19 and its consequences for dietitians and nutritionists. Since December 2019, the world has been facing a new reality, a pandemic of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) causing coronavirus disease 2019 (COVID-19). This pandemic is substantially affect-

ing our lives, healthcare systems as well as the national and global economies. Social distancing, lockdown measures and limitations of the freedom of our everyday lives have a great impact on mental health, and the limited access to physical exercise alongside with emotional overeating due to stress and depression can lead to increased rates of obesity and lifestyle-related chronic diseases.

As obesity and poor nutritional status can negatively affect outcomes for patients with COVID-19 and as there is no specific therapy or vaccine available yet, optimal nutrition could be of paramount importance. In this issue, you will be able to easily access information regarding the effect of nutrition in the prevention and the course of the disease, the role of nutritional intervention in patient recovery, recommendations for the management of COVID-19, and the effects of the pandemic and the lockdown measures on the nutritional status of patients.

The carefully chosen thematic parts of this issue were contributed by specialists in obesity, diabetes, oncology, sports and gastroenterology to ensure the representation of all aspects in which nutrition and dietetics can help in the prevention of COVID-19 or ensure an effective nutrition management and rehabilitation of patients. Dietitians and nutritionists as the healthcare professionals with the highest level of expertise in nutrition and dietetics should be directly involved in decisions regarding public health and clinical nutrition management, especially in unprecedented times like this.

As you read our first issue, we hope that the knowledge transfers and evidence-based data will be an inspiration for more research and actions to further strengthen the role of nutritionists and dietitians in our scientific universe. I hope you enjoy the trip!

Dietary Recommendations During the COVID-19 Pandemic

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Keywords

Breastfeeding · COVID-19 · FOOD · Supplementation · Hygiene

Abstract

Optimal nutrition can improve well-being and might mitigate the risk and morbidity associated with coronavirus disease 2019 (COVID-19), caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). This review summarizes nutritional guidelines to support dietary counseling provided by dietitians and health-related professionals. The majority of documents encouraged the consumption of fruits, vegetables, and whole grain foods. Thirty-one percent of the guidelines highlighted the importance of minerals and vitamins such as zinc and vitamins C, A, and D to maintain a well-functioning immune system. Dietary supplementation has

not been linked to COVID-19 prevention. However, supplementation with vitamins C and D, as well as with zinc and selenium, was highlighted as potentially beneficial for individuals with, or at risk of, respiratory viral infections or for those in whom nutrient deficiency is detected. There was no convincing evidence that food or food packaging is associated with the transmission of COVID-19, but good hygiene practices for handling and preparing foods were recommended. No changes to breastfeeding recommendations have been made, even in women diagnosed with COVID-19.

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Introduction

In January 2020, the world faced an outbreak of coronavirus disease 2019 (COVID-19), caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Evidence of high human-to-human transmissibility of SARS-CoV-2 has made social isolation the best preventive measure to avoid the spread of COVID-19 [1]. This pandemic is substantially affecting lifestyles, healthcare systems, and national and global economies. Social isolation is often an unpleasant experience that may have negative effects on mental health [2]. It has been suggested that, until quarantine

ends, self-isolation is likely to cause psychological and emotional symptoms [3], changes in mood and altered sleep or eating patterns [4], worsening of chronic health conditions, weight gain, and increased use of alcohol, tobacco, or illegal drugs.

Optimal nutrition is one of the main determinants of health that can improve well-being and mitigate the harmful health consequences associated with social distancing by helping to prevent or control most chronic diseases (eg, diabetes, hypertension, and excess body weight/obesity); aid in the regulation of sleep and mood; and prevent fatigue [5, 6]. Nutritional modulation of the immune system is also important across the age spectrum. During early

childhood, breastfeeding can provide protection against infections and respiratory diseases, as breast milk contains antibodies, enzymes, and hormones that can offer health benefits [7]. In older adults, the group at most risk for COVID-19, changes in dietary habits lead to significant alterations in immunity and inflammation, termed immunosenescence and inflammaging [8]. Some nutrients, such as omega-3 polyunsaturated fatty acids and probiotics, have been linked to anti-inflammatory responses and enhanced resistance to upper respiratory tract infection [8].

In individuals infected with SARS-CoV-2, nutritional status is a crucial factor for optimal prognosis and can determine the clinical severity of COVID-19 [9]. Dietary supplementation with selected vitamins (eg, A, B, C, and D), minerals (eg, selenium, zinc, and iron), and omega-3 fatty acids was suggested by Zhang and Liu [10] as a treatment option for COVID-19 patients and as preventive therapy against lung infection. However, the use of micro-nutrient supplements to prevent infections remains questionable. Since to date there is no vaccine or evidence-based treatment for COVID-19, the optimization of nutrient intake through well-balanced meals and the use of good hygiene practices in food selection, preparation, and conservation is probably the most effective approach for managing the continuous risk of viral infection. To this end, dissemination of healthy eating guidelines for healthcare professionals and the general public is a crucial strategy. Despite intense efforts by international nutrition organizations and other health-related societies to produce guidelines and advice related to the COVID-19 pandemic, literature is still scarce. Meanwhile, the general public has been bombarded with a vast array of nutritional information from governmental authorities, the dietary supplement industry, nutrition enthusiasts, healthcare professionals, and others on how to prevent COVID-19. This information, however, may be conflicting or non-evidence based. Therefore, a systematic search of guidelines and official documents related to nutrition and COVID-19 was conducted. The search included information obtained from several countries affected by the pandemic as well as manuscripts identified in scientific databases. The goal was to address one main question: What nutritional advice is being offered for individuals in quarantine during the COVID-19 pandemic? The aim of this review was to summarize nutritional guidance related to the novel coronavirus (SARS-CoV-2) in order to support dietary counseling provided by dietitians and healthcare professionals during this pandemic.

Methods

This narrative review was carried out from December 2019 to April 2020, during the COVID-19 pandemic. Guidelines and official documents from governmental and nongovernmental health agencies or institutions worldwide, all providing recommendations on food and nutrition during the COVID-19 pandemic, were eligible for inclusion. Literature related to specific nutritional or pharmacological treatment of patients already infected was excluded. The descriptors «coronavirus», «COVID-19», «COVID»

AND «nutrition» OR «diet» were used to search for guidelines, position papers, and official documents in the PubMed, SciELO, Cochrane, and Google databases. The Boolean operators «AND» and «OR» were used to combine the terms used in the literature search. Publications in the following languages were searched: Italian, English, Spanish, and Portuguese. Two authors (J.F.M. and F.C.C.) conducted the search and screened all references independently in a 2-step process. All selected documents were retrieved, and duplicates were excluded. Titles and abstracts were then screened to identify studies that potentially met the eligibility criteria.

Results

Of the 48 documents retrieved, 13 were included in this narrative review. Of these, 8 dietary recommendations were issued from nutrition societies and associations and 6 from national governments (Australia, Brazil, Canada, Italy, Spain, United States). Five guidelines from health organizations (Food and Agriculture Organization of the United Nations, World Health Organization, United Nations Children's Fund, Center for Disease Control and Prevention, and European Food Information Council) were included. [...] Four major nutrition-related topics – overall dietary recommendations, dietary supplements, breastfeeding, and food hygiene – were identified.

Dietary Recommendations

Nearly 70% of the documents retrieved encouraged the consumption of fruits, vegetables, and whole grain foods. Two nutrition societies, from Italy and Spain [12, 22] recommended at least 5 servings of fruits and vegetables per day. Diets rich in fruits and vegetables contain high amounts of vitamins and minerals, including vitamins A, C, D, E, and B complex, as well as zinc and selenium, which are important modulators of the immune system [26]. In addition, fruit and vegetables are good sources of water, antioxidants, and fiber, all of which play a role in the control of hypertension diabetes, and weight gain, some of the most important risk factors for COVID-19 complications [27]. Micronutrients contribute to immune function through a variety of pathways in both innate and adaptive immune responses. Vitamins A, C, D, E, B6, and B12 and zinc are important for the maintenance of structural and functional integrity of physical barriers (eg, skin, gastrointestinal lining, respiratory tract, and others) as well as for the differentiation, proliferation, function, and migration of innate immune cells [28].

Meanwhile, vitamins C and E, along with zinc and selenium, protect against free radical damage during increased oxidative stress. Vitamins A, C, D, E, B6, and B12 and zinc and selenium support the adaptive immune response by influencing the differentiation, proliferation, and normal function of T and B cells. These nutrients also affect antibody production and function [28], contribute to cell-mediated immunity, and support the recognition and destruction of pathogens. Lastly, they have antimicrobial activity and regulate the inflammatory response [28].

Approximately one-third of the identified guidelines mentioned at least one of these nutrients as being important for optimizing the immune system, placing special emphasis on zinc and vitamins C, A, and D [11, 19, 22]. Adequate intakes of these micronutrients may be attained through a daily diet that includes meat, fish, lentils and beans, dairy foods, nuts, seeds, eggs, citrus fruits (eg, orange, lemon, grapefruit), kiwi, strawberries, and vegetables such as broccoli, cauliflower, pumpkin, spinach, sweet potato, and carrots. [...]

Almost, one-third of the organizations and societies recommended avoiding the intake of salt, fat, and sugar and encouraged reductions in sugary drinks, other sugar-rich products, meat portions, and other foods of animal origin to lower the intake of saturated fat [12–14]. In addition, they suggested that low-fat dairy foods and healthy fats (eg, olive oil and fish oil) be included in the diet [12, 23] and recommended sauces, spices, and herbs as salt substitutes [17].

[...] Drinking water or maintaining adequate hydration was suggested in 3 documents [12, 20, 24], but no guidance on water requirements (eg, cups or milliliters per day) was provided. The evidence in favor of a direct association between hydration status and health has been previously confirmed. Water is essential for cellular homeostasis, kidney function, body temperature control, mood regulation, cognitive function, gastrointestinal and heart function, and headache prevention [37]. [...] Therefore, advice on the importance of drinking water, tea, and milk and consuming other water-containing foods should be delivered by dietitians and healthcare professionals during the COVID-19 pandemic. Since the daily water requirement is influenced by age, sex, level of physical activity, diet, body composition, pregnancy, environmental conditions, and the presence of disease, the recommended intake of water varies widely and can reach 3.7 L/d for older adults (including all water contained in food, beverages, and drinking water) [39]. According to the Dietary Reference Intakes for Water, Potassium, Sodium, Chloride, and Sulfate [39], adults with moderate levels of physical activity who consume approximately 2200 kcal/d can meet water recommendations by drinking 12 cups of water and beverages daily, while children require 4 to 5 cups per day, adolescents (9 to 18 years) 7 to 11 cups per day, and older adults 9 to 13 cups per day.

While some organizations recommend choosing unprocessed foods [12, 13, 22–24], healthy dried, frozen, or canned foods (eg, fish, fruits, soups) are suggested as alternatives when fresh produce is not available [17, 23]. There is a current trend for guidelines to support homemade and fresh meals instead of processed foods. [...]

Although there is some lack of clarity and guidance regarding obesity as a risk factor for COVID-19 [47], substantial preliminary data demonstrate that higher body mass index is a considerable risk factor for hospitalization and development of severe pneumonia [48–51]. In fact, a systematic review and meta-analyses showed that 50% of the adult patients infected with the Middle East coronavirus presented with hypertension and diabetes, while obesity was present in 16% of the cases [52]. Moreover, a recent

study found a significant inverse correlation between body mass index and age: young individuals admitted to hospitals were more likely to have obesity. The study suggested that obesity could shift the incidence of severe COVID-19 disease to younger ages in countries where the prevalence of obesity is high [48]. [...] Thus, healthy weight loss could be a good strategy to reduce the risk of COVID-19 complications. Although none of the institutions mentioned weight loss in their guidelines, 3 of them highlighted the importance of avoiding weight gain. Specific guidelines for obese individuals are nonetheless needed to promote gradual weight loss without compromising the body's lean mass. Considering the difficulty to achieve significant weight loss through physical activity during the pandemic, protein intake of around 30% of energy requirements may be considered for adults under energy-restricted diets. This level of protein intake can prevent or attenuate the loss of lean muscle mass while also promoting greater satiety during weight loss [54]. In their discussion of nutritional recommendations during COVID-19 quarantine, Muscoguri et al. [4] highlighted the role of tryptophan, an amino acid and a precursor of serotonin, in the regulation of satiety and caloric intake, suggesting protein-rich foods such as milk, yogurt, seeds, and nuts as good sources. It is worth noting that web-based weight-loss approaches are becoming popular and are effective for patients with obesity [55]. Such tools may be useful during the COVID-19 pandemic.

Probiotics were recommended by only one institution [11], which did not provide a specific amount or examples of food sources. Probiotics are defined as live microorganisms that, when administered in adequate amounts, confer a health benefit on the host.» [56]. They can act through diverse mechanisms, including modulation of immune function, production of antimicrobial compounds and organic acids, improvement of gut barrier integrity, formation of enzymes, and interaction with resident microbiota [57]. Studies of probiotic species belonging to the *Lactobacillus* and *Bifidobacterium* genera have shown promising results regarding improved immune function [58]. Fermented dairy products might be a good option to improve the gut microbiota, although further studies are needed to better elucidate the modulatory mechanisms of the microorganisms in these foods. Only one agency provided guidance on alcohol consumption. The Food and Agriculture Organization of the United Nations [20] recommended that alcohol intake be limited, but no specific amounts were provided

Excessive alcohol consumption is associated with reduced host immunity to viral infections and increased susceptibility to tuberculosis and bacterial and viral pneumonia in humans and animals [59]. On the other hand, some benefits of moderate alcohol consumption have been reported, including reduced risk of cardiovascular disease, alleviation of acute stress, improved mood, and increased relaxation [60]. Current guidelines for moderate intake recommend no more than 1 drink per day for women and no more than 2 drinks per day for men [5]. It should be noted that individuals who do not drink alcohol should not start drinking.

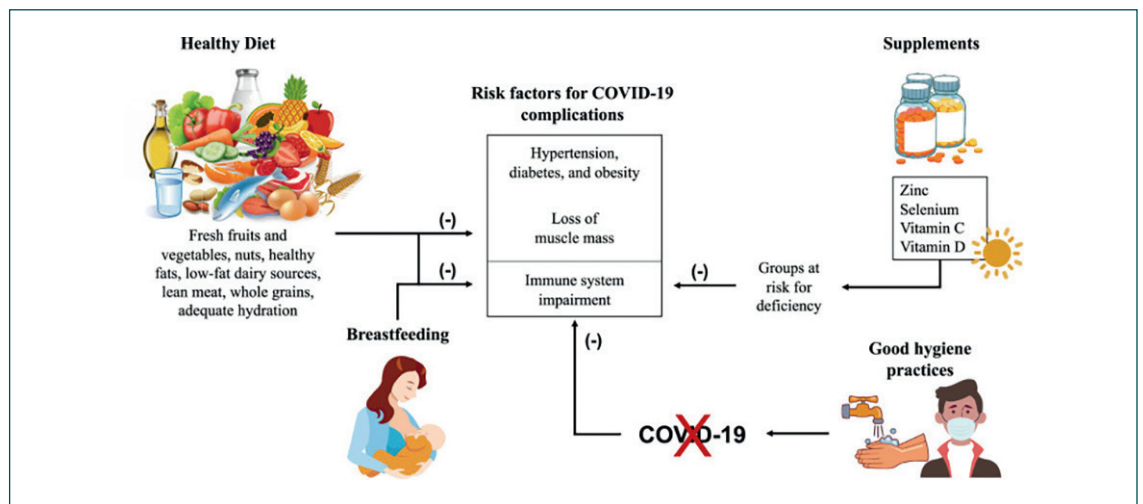


Fig. 1. Rationale for dietary recommendations during the coronavirus disease 2019 (COVID-19) pandemic. Key nutrients that support the immune system can be obtained through dietary components that include fresh foods (e.g., fruits and vegetables), fish, lean meat, dairy, water and other non-sugary beverages, and healthy fats. A healthy diet can also decrease the risk of, or help control, hypertension, diabetes, obesity, and muscle atrophy, which are all considered risk factors for COVID-19 complications. There are no known supplements that can prevent COVID-19; however, in populations at risk of deficiency, supplements can mitigate the public health risks associated with COVID-19. Breastfeeding benefits an infant's immune system, protecting against viruses and bacterial infections. The use of personal protection, such as masks, along with good hygiene practices, such as frequent handwashing with soap and water or alcohol-based sanitizers, can prevent COVID-19 transmission and immune system impairment. Symbol: (-): inhibitory effect.

Finally, generic terms and phrases such as «healthy diet», «variety of foods in each group», «variety of fresh and unprocessed foods», and «varied diet» were observed in the majority of the documents. These messages might not be clear enough to encourage people to make healthy food choices. Specific recommendations, including examples of food and instructions for food preparation, would improve the public health message.

Dietary Supplementation

All documents reported that there are currently no known supplements to prevent COVID-19. Only 2 documents mentioned that it might be possible to use supplements to meet dietary recommendations [11, 19]. Some vitamins and minerals improve immunity; however, the idea that more is better is a misconception. Megadoses of vitamins and minerals can induce toxic and adverse effects [61, 62] or interact with medications, leading to enhanced or reduced pharmacological effects [63]. On the other hand, it is important to note that Dietary Reference Intakes have been established for healthy individuals and are based on a diet providing 2000 kcal/d [64]. Thus, healthcare professionals should individualize dietary plans by considering factors that can increase nutrient requirements, such as specific diseases/conditions, medications, dietary patterns (eg, vegetarianism), and exercise intensity. For this purpose, the range from the Recommended Dietary Allowance to the Tolerable Upper Intake Level can be used to optimize the dietary plan [65]. [...]

Breastfeeding

Breastfeeding provides a multitude of benefits for both mother and child. Breast milk contains important antibodies that benefit the child's immune system, protecting against viral and bacterial infections [7]. According to the World Health Organization, breastfeeding must be exclusive until 6 months of age (no water, other fluids, or solids) and continued until 2 years of age or beyond [79]. Only 6 of the 13 documents included in this review addressed this topic [15, 18, 19, 21, 23, 25]. All recommended that breastfeeding be maintained during the COVID-19 pandemic, even in women diagnosed with the disease. However, good hygiene practices are recommended, including mask wearing, handwashing before and after touching the infant, and disinfecting frequently used surfaces.

Food Hygiene

Approximately 54% of the documents selected for this review included guidance on food hygiene [14, 16, 18–20, 23]. There is currently no convincing evidence that food or food packaging is associated with the transmission of COVID-19 [18, 20, 23]. The risk of fecal-oral transmission, while low, can persist even after viral clearance from the respiratory tract. This highlights the need for routine stool testing and transmission-based precautions for hospitalized patients [81] and probably for those recovering at home. All documents emphasized the importance of adequate personal hygiene when handling food, highlighting the need for frequent handwashing with soap and water or alcohol-based hand sanitizers. In food and beverage stores, the greatest risk of contamina-

tion is through contact with other people and «high touch» surfaces such as food scales, shopping-cart handles, and elevator buttons [19]. Unlike some viruses that can live on food or other surfaces for several days, SARS-CoV-2 can survive on metal or plastic surfaces for 3 days and on cardboard surfaces for 1 day [82]. Infectious disease authorities in several countries are recommending the use of soap or alcohol-based hand sanitizer for handwashing, reinforcing the importance of strict hygiene measures to prevent the spread of contamination [80, 83]. According to the European Food Safety Authority [19], there is no need to disinfect food packaging itself, as long as some precautions are taken: (1) wash hands for 20 seconds with soap and water before and after grocery shopping, unpacking foods, and after receiving delivered food; (2) maintain a safe distance (1 to 2 meters) from other people when shopping; (3) do not go shopping when sick; instead, when possible, order groceries online or have family members or friends help with shopping; (4) avoid touching foods unless you plan to buy them; (5) limit trips to the supermarket by planning meals; (6) cover your mouth and nose with a tissue or your sleeve when coughing or sneezing, and wash hands afterward; and (7) after touching surfaces, avoid touching your face, nose, and mouth until after hands have been washed. [...]

Figure 1 describes the rationale behind the dietary guidance and the personal hygiene practices recommended during the COVID-19 pandemic, along with the potential mechanisms linking diet and the prevention of COVID-19 complications.

Conclusion

This review summarizes recent scientific literature and existing recommendations from national and international nutrition agencies on an optimal diet, vitamin and mineral supplementation, and good hygiene practices for food preparation during the COVID-19 pandemic. The findings can be used to help dietitians and healthcare professionals better address dietary recommenda-

tions during the COVID-19 pandemic. Guidance related to the safe handling of food, from production to consumption, is critical to reduce the risk of viral dissemination. The general recommendation is to consume a diet based predominantly on fresh foods such as fruits, vegetables, whole grains, low-fat dairy sources, and healthy fats (olive oil and fish oil) and to limit intakes of sugary drinks and processed foods high in calories and salt. Dietary supplements (i.e., vitamins C and D, zinc, and selenium) should be administered to individuals with, or at risk of, respiratory viral infections or in whom deficiency is detected. Breast milk is the safest and healthiest food for infants, and breastfeeding should be encouraged, even in women diagnosed with COVID-19.

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Author Contributions

C.d.F.C.-R., F.C.C., F.L.F.Z.S., and J.F.M. designed the review. F.C.C. and J.F.M. performed the literature search. C.d.F.C.-R., F.C.C., F.L.F.Z.S., and J.F.M. drafted the manuscript. C.M.M.P. and A.L. critically reviewed the manuscript. All authors approved the final version of the manuscript.

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Declaration of Interest

The authors have no relevant interests to declare.

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The references are available at <https://academic.oup.com/nutritionreviews/advance-article/doi/10.1093/nutrit/nuaa067/5870414>.

EFAD Statement on the Review Article – Research and Dietetic Response to COVID-19 in Europe: What Has Been Done and What Could Be Improved?

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Introduction

In December 2019, the World Health Organization was alerted to a group of patients with pneumonia in Wuhan, and a month later the Chinese authorities confirmed that they had identified a new coronavirus, SARS-COVID-19. The pandemic began for most European countries in March-April, and since then our lives have dramatically changed. The public health response has been heavily dependent on the social, political, economic, and technological situation [1, 2]; alongside the health system; emergency preparedness; and capacity [3].

The research response has been massive and unprecedented. From the calls for freely available, open access COVID-19 research [4] to the rapid launch of many studies aimed at understanding and treating the virus [5]. Undoubtedly, this research has resulted in important learnings on how to contain the pandemic, how the virus works and potential treatment routes [6]. However, this massive research response has generated a huge volume of peer reviewed and non-peer reviewed studies and commentaries, which potentially makes evidence-based practice and decision making more challenging, rather than easier.

Research response to COVID-19: massive, poor quality and uncoordinated

The volume of COVID-19 research generated in such a short period of time is unprecedented. Nowakowska [7] estimated that 2,062 articles were already published by March 31, 2020. The majority (55%) were published without peer review. They estimated that 36% of publications were commentaries, 34% were reviews (majority not systematic) and only 21% were original research [7]. Gianola [8] conducted another search two month later identify-

ing 3,635 journal articles and 3,805 preprints. Surprisingly, only 9% of preprints were eventually published as scientific articles. They also found <1% (both journals and preprints) were RCTs, and <5% were systematic reviews [8]. Finally, Zyoud [5] found that by June 2020, 19,044 publications existed (in Scopus, which includes PubMed) and 48% were original articles. This points to a five-fold increase in publications in a single month and shines a clear light on the challenges presented by this exponential expansion. Prior to the pandemic, 85% of research could be considered as research waste due to a variety of issues such as poor research questions, poor study designs, inefficiency in the preparation, reporting and duplication of efforts [9]. The uncoordinated COVID-19 research has undoubtedly amplified these problems [10]. In fact, of the more than 2,000 clinical studies planned as COVID-19 treatments, only 2 were classified as adequate designs [11]. While no similar analysis exists for the field of nutrition, it is expected that the quality would be the same or potentially worse. Despite this necessary criticism, it is worth noting that the COVID-19 pandemic has also revealed the potential for modern global science to respond quickly, on multiple levels and across systems or fields of research [5]. Undoubtedly, as far as research is concerned, the need for prioritization and coordination systems has been highlighted to avoid duplication of efforts and waste in research [12].

European Federation of the Associations of Dietitians (EFAD) and dietetic response across Europe: room for improvement

The pandemic has shaken society to its core, but it has also highlighted the commitment of all health workers – including dietitians – to health systems and their communities. Dietitians are ex-

perts in clinical nutrition who are highly qualified and legally regulated. They are the only professionals specifically trained to support the nutrition and hydration needs of acutely and chronically ill people and to monitor the nutritional status of populations at risk, including older adults and people with food insecurity [13].

Critically ill patients with COVID-19 admitted to intensive care units require nutrition, hydration and potentially medication delivered through feeding tubes, either enterally or parenterally [14]. Dietitians are experts in assessing individual patient nutritional demands considering their specific needs and circumstances. When people are well enough to leave hospital after having COVID-19, nutrition and hydration remain important. Dietitians have a role to play in rehabilitation, reducing risk of complications and shortening recovery, and they are key players in supporting delivery in practice. Outside of COVID-19 infection, the public health dietitian has a vital role due to potential increased prevalence of food insecurity due to the wider impacts of COVID-19 on financial and social wellbeing [15]. It is also likely that eating behaviours may have worsened due to social isolation periods such as lockdowns [16] and these periods have made caring for people with pre-existence and nutrition-related diseases even more complex and difficult [17].

Professional bodies and institutions have responded in a time of unprecedented scientific uncertainty to try to support their members in providing evidence-based practice guidance. EFAD has taken a responsive approach to developing a variety of resources to support practice. The EFAD briefing document «The Role of Dietitians in Fighting COVID-19» outlined the central role that dietitians can and do play in the response to COVID-19. This role extends from the frontline in critical care to population-level advice. The paper also outlines the ability of the dietitian to provide support in acute community care, primary care, food service and education settings as well [13]. Dietitians have responded to the changes that COVID-19 has forced upon them and there is a need to capture the innovative ways with which dietitians have adapted their work practices and care delivery. EFAD would be well placed to coordinate this research across members and in turn, disseminate the findings widely so the implementation of best-practice can be modelled and adapted across Europe.

Through EFAD's responsive approach, it has positioned itself to be an information and support point for all European dietitians. EFAD (and member associations) have contributed COVID-19 resources to the EuDAP database in addition to actively disseminating resources through ESDNs, regular newsletter items and press releases. They also provided dietitians with access to eight free webinars for the continued training on COVID-19 related issues, such as the management of critical patients in ICU and re-

habilitation, or how to deal with the pairing of cancer and COVID-19. Likewise, the EFAD website COVID-19 section is a trusted source of information for all European members. The website library is a collection of a wide variety of materials that have been gathered and sorted into cognate areas. In many cases, there are translated versions available tailored to the needs of each different European country and their dietitians. The resources include countries such as the United Kingdom, Ireland, Spain, Hungary, Turkey, Germany, Portugal, Greece, Israel, France, Netherlands, Turkey and Italy and they can all be accessed via the website (<http://www.efad.org/en-us/covid-19/>).

Despite the large efforts made by all European dietitians and the rapid response by EFAD and European Dietitian Associations, there remains a need for improvement. According to preliminary analysis by the EFAD Research and Evidence-based Practice Committee into the quality of resources made available to dietitians, the vast majority (83%) of documents generated and shared had content intended to be «ready for use in practice» yet 98% were developed without following a systematic and transparent approach. It is also noteworthy that a considerable degree of duplication of efforts was detected. Consequently, the large amount of energy expended to produce guidelines, guides and resources has resulted a sizeable volume of work, however the quality of that evidence remains uncertain. This should give the dietetic profession food for thought. Should we be striving to develop better frameworks to support our responsiveness to situations like pandemics in the future? A strategic preparedness and response plan within EFAD could allow for greater coordination of future pandemic responses. It could also support higher standards for scientific evidence production being implemented so that systematic and transparent approaches prevail. This will ultimately lead to reduced research waste and improved translation of research into practice, which truly is the mission of dietitians everywhere.

Summary

- COVID-19 research has been exponential but of varying quality.
- EFAD has engaged a wide range of supports for dietitians to promote best-practice.
- Dietetic research into COVID-19 needs to be focused on improving the quality of the evidence base.

Disclosure Statement

The authors have no conflicts of interest to declare.

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The references are available at www.karger.com/Article/Fulltext/513442.



Nutritional Therapy in COVID-19 Management

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Abstract from Fernández-Quintela A, Milton-Laskibar I, Trepiana J, et al.: Key aspects in nutritional management of COVID-19 patients. *J Clin Med.* 2020;9(8):2589.

Keywords

COVID-19 · SARS-CoV-2 · Bioactive compounds · Malnutrition · Nutrition · Nutritional support

Abstract

This review deals with the relationship among nutrition, the immune system, and coronavirus disease 2019 (COVID-19). The influence of nutrients and bioactive molecules present in foodstuffs on immune system activity, the influence of COVID-19 on the nutritional status of the patients, and the dietary recommendations for hospitalized patients are addressed. Deficient nutritional status is probably due to anorexia, nausea, vomiting, diarrhea, hypoalbuminemia, hypermetabolism, and excessive nitrogen loss. There is limited knowledge regarding the nutritional support during hospital stay of COVID-19 patients. However, nutritional therapy appears as first-line treatment and should be implemented

into standard practice. Optimal intake of all nutrients, mainly those playing crucial roles in immune system, should be assured through a diverse and well-balanced diet. Nevertheless, in order to reduce the risk and consequences of infections, the intakes for some micronutrients may exceed the recommended dietary allowances since infections and other stressors can reduce micronutrient status. In the case of critically ill patients, recently published guidelines are available for their nutritional management. Further, several natural bioactive compounds interact with the angiotensin-converting enzyme 2 (ACE2) receptor, the gateway for severe acute respiratory syndrome (SARS) and severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Natural bioactive compounds can also reduce the inflammatory response induced by SARS-CoV-2. These compounds are potential beneficial tools in the nutritional management of COVID-19 patients.

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Knowledge Transfer

Background

Since the first cases of coronavirus disease 2019, the society has been challenged to live in a new reality. Considered a high threat to human health, this illness caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) causes infection in the respiratory system. At cell level, SARS-CoV-2 binds to angiotensin-converting enzyme 2 (ACE2) receptors causing an inflammatory response. As a consequence, infected individuals may remain asymptomatic or present a variety of moderate to more severe symptoms. Among those symptoms are some that directly or indirectly affect dietary intake and nutrient or energy requirements such as fever, fatigue, dry cough, anosmia/dysgeusia, pneumonia with dyspnoea, and also muscle and joint pain, headache, diarrhoea, nausea or vomiting. This study provides research on nutrients and dietary compounds that affect the immune system and interact with the ACE2 receptors, as well as the ones that are important for the treatment of COVID-19 patients [1, 2].

Study Results

In summary, high biological value proteins, fatty acids (omega 3), vitamins A and C, dietary fibre, selenium and copper present anti-inflammatory effects; polar lipids have an anti-thrombotic effect; vitamins A, C and D protect against respiratory infections; vitamin E, iron and zinc improve the immune function; and vitamins C, A and E, and omega 3 fatty acids present antioxidant effects (Fig. 1). Consumption of carbohydrates with a higher glycaemic index should be avoided since this contributes to inflammation. Supplementation is required when the recommended dietary intake is compromised but remains controversial for patients without deficiency. Chronic diseases, malnutrition, or COVID-19 itself can compromise meeting nutritional needs. Obesity and excessive adiposity, but especially low muscle mass are risk factors for COVID-19 patients. Professionals should analyse cases individually and search for signs of deficiency or environmental factors that may influence the nutritional needs. Natural bioactive compounds found in plants and sea food, namely reveste-rol, eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), capsaicin, and curcumin, among others, have been associated with anti-inflammatory effects. Nevertheless, the administration of those components requires more research. At last, considering the important connection between gut microbiota and immunity, probiotics and prebiotics revealed a protective effect and are promising compounds for a dietary therapy of COVID-19 patients [1, 3].

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Nutritional Status and Therapy

Given the fact that COVID-19 particularly affects the older age groups who are already at risk for malnutrition, it is recommended

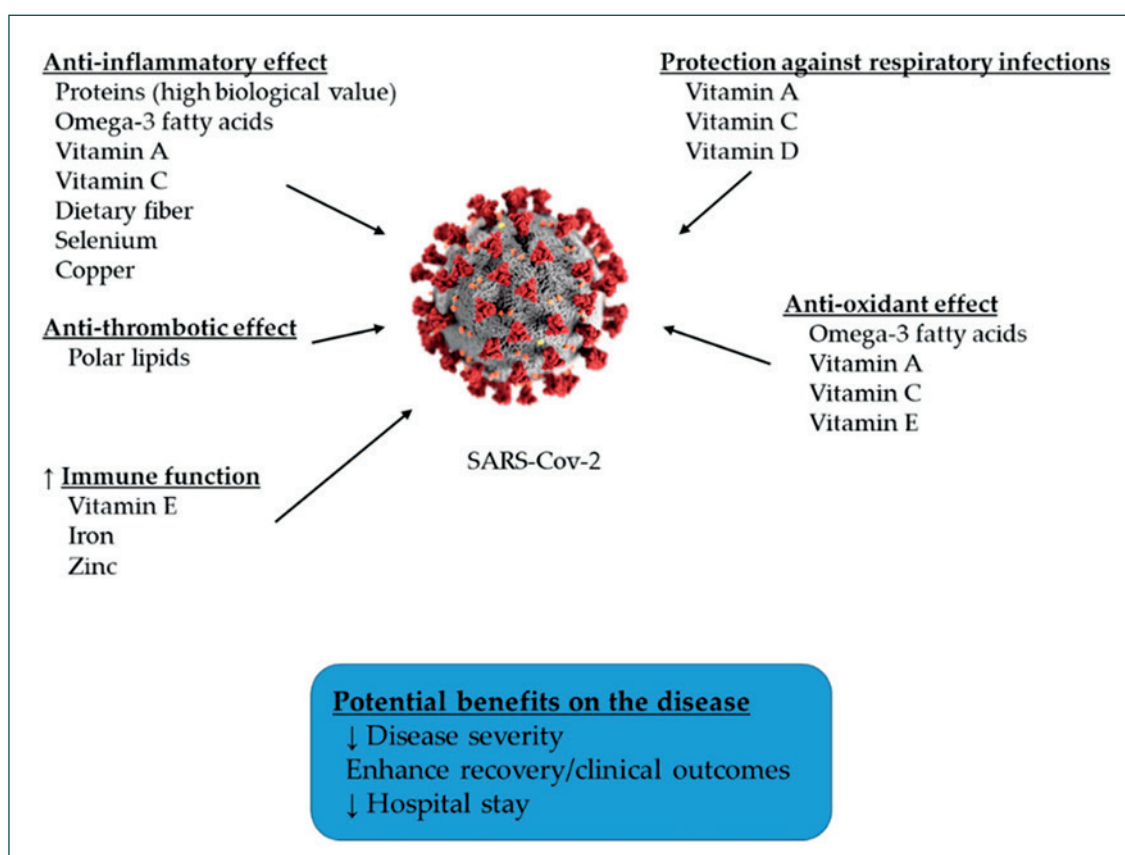


Fig. 1. Effects of several nutrients on aspects of COVID-19 infection [1].

to proceed with the screening and assessment of nutritional status using standardized tools. Environmental and personal conditions (palatability of food, swallowing difficulties, low mobility of the gastrointestinal tract, dysgeusia, etc.) can also compromise nutritional status [4, 5]. Enteral and parenteral nutrition should be considered whenever oral feeding is not possible. Non-critically ill patients should follow a healthy diet and supplements of some nutrients as vitamins D and E and folates can be used [1, 3]. Formulas rich in protein and low in glucose are used for enteral or parenteral feeding. For critically ill patients, experts recommend a hypocaloric diet in the first week. However, long-term patients should not consume hyper- or hypocaloric diets. In these cases, supplementation in micronutrients is required [1].

Conclusion

Studying dietary components and specific bioactive compounds for the management of COVID-19 is extremely important and should focus on the changes in nutrient requirements and the impact on the immune systems of patients from different age groups. Nutritional therapy is an essential component for the successful treatment and recovery of COVID-19 patients.

Disclosure Statement

I hereby declare that there are no conflicts of interest with regard to this commentary.

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Challenges in Clinical Nutrition during the COVID-19 Pandemic

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Abstract from Thibault R, Coëffier M, Joly F, et al.: How the Covid-19 epidemic is challenging our practice in clinical nutrition – feedback from the field. Eur J Clin Nutr 2020;DOI:10.1038/s41430-020-00757-6

Abstract

The viral epidemic caused by the new Coronavirus SARS-CoV-2 is responsible for the new Coronavirus disease-2019 (Covid-19). Fifteen percent of the Covid-19 patients will require hospital stay, and 10% of them will need urgent respiratory and hemodynamic support in the intensive care unit (ICU). Covid-19 is an infectious disease characterized by inflammatory syndrome, itself leading to reduced food intake and increased muscle catabolism. Therefore Covid-19 patients are at high risk of being malnourished, making the prevention of malnutrition and the nutritional management key aspects of care. Urgent, brutal and massive arrivals of patients needing urgent respiratory care and artificial ventilation lead to the necessity to reorganize hospital care, wards and staff. In that context, nutritional screening and care may not be considered a

priority. Moreover, at the start of the epidemic, due to mask and other protecting material shortage, the risk of healthcare givers contamination have led to not using enteral nutrition, although indicated, because nasogastric tube insertion is an aerosol-generating procedure. Clinical nutrition practice based on the international guidelines should therefore adapt and the use of degraded procedures could unfortunately be the only way. Based on the experience from the first weeks of the epidemic in France, we emphasize ten challenges for clinical nutrition practice. The objective is to bring objective answers to the most frequently met issues to help the clinical nutrition caregivers to promote nutritional care in the hospitalized Covid-19 patient. We propose a flow chart for optimizing the nutrition management of the Covid-19 patients in the non-ICU wards. © 2020 The Author(s)

Knowledge Transfer

Background

Recent data show that COVID-19 patients are at high risk for malnutrition. The infection impairs immune function and causes a hypercatabolic state that induces circulating inflammatory cytokines leading to rapid muscle waste and decreased food intake.

Preventing malnutrition and giving the appropriate nutritional support is essential to those patients, as endorsed by the international guidelines of the European Society of Clinical Nutrition and Metabolism (ESPEN) [1] and the American Society for Parenteral and Enteral Nutrition (ASPEN) [2]. Still, it is important to know whether these guidelines are feasible in clinical practice during the COVID-19 pandemic.

Review Results

In the review of Thibault and colleagues in the European Journal of Clinical Nutrition [3], the researchers highlighted the risk of malnutrition and the key role of nutrition therapy in COVID-19 patients. What was interesting were the challenges they observed in their clinical nutrition practice when implementing international guidelines (e.g. ESPEN, ASPEN) during the first weeks of the pandemic in France. Concerning these challenges, they suggested a nutrition protocol in order to promote nutritional care in hospitalized non-ICU COVID-19 patients (Fig. 1).

Challenges for the Clinical Nutrition Practice during the COVID-19 Pandemic

1 New clinical nutrition protocols are needed: As dietitians are often not allowed to visit COVID-19 (or even non-COVID-19) hospital wards, clinical nutrition teams need to write and implement new nutrition protocols in order to keep nutritional screening and evaluation a priority.

2 The nutrition protocols need to be simple and practical: Some healthcare professionals are often not aware of clinical nutrition guidelines. Thus, dietitians need to create simple and practical nutrition protocols based on feasible decision algorithms.

3 Simple indicators should be used to assess and diagnose malnutrition: If applicable, it is important to measure a patient's actual weight and height upon admission and calculate their recent weight loss and body mass index (BMI). This is to identify the ESPEN phenotypic and etiologic criteria for the diagnosis of malnutrition.

4 Energy and protein needs should be assessed in a simple manner: If available, indirect calorimetry should be used safely and appropriately. Alternatively, weight-based formulae or predictive equations should be used. Special consideration should be given in obese patients (BMI \geq 30) by using the adjusted body weight.

5 Healthcare professionals should be aware of refeeding syndrome: Every COVID-19 unit should have specific protocols for the prevention of refeeding syndrome.

6 Adjustments in hospital food delivery should be made in order to avoid insufficient food intake: Higher energy and

protein foods should be delivered to patients upon admission along with two oral nutritional supplements every day. Nasogastric tubes (NGT) should be considered as a first line nutrition support in COVID-19 patients when oral food intake has fallen below 70% of target after 48 h.

7 Misconceptions around the use of enteral nutrition (EN) should be fought: Based on the available evidence, the insertion of a NGT does not induce or worsen hypoxemia and apnoea. Once in place, it does not block natural ventilation or the oxygen mask position. Accordingly, the continuous feeding does not affect EN tolerance.

8 Factors that make EN unfeasible need to be known: In patients with high oxygen requirements, EN may be insufficient and thus parenteral nutrition (PN) should be considered. Strict antiviral protection rules must be followed in order to insert an NTG, and CT

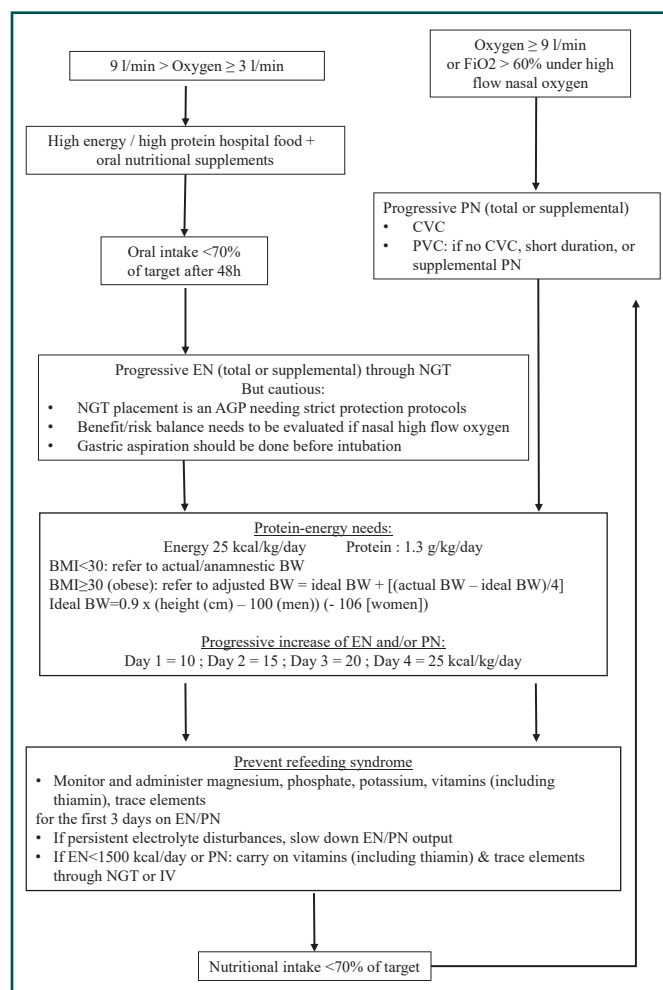


Fig. 1. Nutrition protocol for hospitalized COVID-19 patients in non-ICU wards (with permission from Thibault, et al. [3]). BMI = body mass index, BW = body weight, CVC = central venous catheter, EN = enteral nutrition, ICU = intensive care unit, IV = intravenous, NGT = nasogastric tube, PN = parenteral nutrition, PVC = peripheral venous catheter.

should be used to check the tube's location, in case a chest X-ray is not feasible. EN should be administered via a pump with flow regulator. In case of a shortage, portable pumps should be available. Before an emergency intubation, a stomach aspiration via NGT might be necessary.

9 PN may be considered in case EN is not feasible.

10 Post-ICU patients should receive appropriate nutritional support at the rehabilitation phase: A thorough nutritional evaluation and support is needed for post-ICU COVID-19 patients during the recovery phase.

Personal Experience

In Greece, the implementation of the international nutrition guidelines has been challenged in the daily clinical practice during the COVID-19 pandemic. Often, dietitians are not allowed to enter the COVID-19 wards. However, after the establishment of the nutrition support teams (that include doctors, nurses and pharmacists), which have been established in Greece since 2012, dietitians have the opportunity to collaborate with the other team members, in order to design individualized nutritional care plans for each patient. In specific cases, they have the opportunity to enter COVID-19 wards and use more sophisticated methods and measurements for

the evaluation and management of the patients, e.g. indirect calorimetry, anthropometric measurements (circumferences, skin folds, etc).

Disclosure Statement

I hereby declare that there are no conflicts of interest with regard to this commentary.

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Can Diet Influence the COVID-19 Mortality Rate?

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Abstract from Bousquet J, Anto JM, Iaccarino G, et al: Is diet partly responsible for differences in COVID-19 death rates between and within countries? Clin Transl Allergy. 2020;10:16.

Keywords

Angiotensin-converting enzyme · Antioxidant · Coronavirus · Diet · Food

Abstract

Reported COVID-19 deaths in Germany are relatively low as compared to many European countries. Among the several explanations proposed, an early and large testing of the population was put forward. Most current debates on COVID-19 focus on the differences among countries, but little attention has been given to regional differences and diet. The low-death rate European coun-

tries (e.g. Austria, Baltic States, Czech Republic, Finland, Norway, Poland, Slovakia) have used different quarantine and/or confinement times and methods and none have performed as many early tests as Germany. Among other factors that may be significant are the dietary habits. It seems that some foods largely used in these countries may reduce angiotensin-converting enzyme activity or are anti-oxidants. Among the many possible areas of research, it might be important to understand diet and angiotensin-converting enzyme-2 (ACE2) levels in populations with different COVID-19 death rates since dietary interventions may be of great benefit.

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Knowledge Transfer

Background

This commentary paper [1] considers why some European countries have much lower death rates from COVID-19 than other countries. The countries with notable low death rates include Austria, the Baltic States, Czech Republic, Finland, Norway, Poland, Slovakia and Germany. Of course, there could be a number of plausible reasons including the early and wide-scale testing adopted by Germany or some of the different approaches to quarantine adopted by the other countries in this list. Large differences in death rates exist within a country as well and, for example, whilst Bavaria started the earliest testing it remains the most affected region within Germany. However, the fact that these countries, and regions within, may have different dietary habits to countries and regions with higher death rates has been largely overlooked. It is increasingly being recognised that COVID symptoms are more prevalent and worse in people with sub-clinical inflammatory conditions such as obesity and type 2 diabetes [2], and there is some indication that vitamin D insufficiency may also be associated with an increased risk [3]. However, it could be that these countries with lower death rates from the virus may have specific dietary habits which may be protective. The authors of the commentary paper suggest that this may indeed be the case. This review will outline some of their theories in the context of our wider knowledge and the supporting evidence base.

Obesity as a Starting Point

The fact that obesity is a recognised risk factor for mortality does suggest that nutritional status may be an important factor in COVID-19 risk severity. Both obesity and type 2 diabetes have insulin resistance and impaired lipid metabolism as common features which lead to increased oxidative stress and inflammation [4]. Many foods have some level of anti-oxidant activity, particularly fruit and vegetables. Some dietary components have both anti-oxidative and anti-inflammatory properties and an example is resveratrol, a natural polyphenol found in red wine, rhubarb, fruits such as blueberries, cranberries, red grapes, and also in peanuts. From in vitro work it has been shown that resveratrol can significantly prevent Middle East Respiratory Syndrome coronavirus (MERS-CoV) and also prolong cellular survival after infection [5].

Dietary fatty acids, and particularly the omega-6 to omega-3 ratio, may influence the immune response in different situations with omega-3 polyunsaturated fatty acids (PUFAs) generally exhibiting a protective effect. For example, the airway epithelium is the first line of defence in the respiratory system and docosahexaenoic acid (DHA) supplementation has been shown to decrease pro-inflammatory cytokine production from the airway epithelium in the presence of an underlying inflammatory condition [6]. Supplements of omega-3 PUFAs may also help to reduce barrier permeability, mucus production and oxidative stress whilst improving healing in inflammatory conditions [7]. Oily fish and some vegetable oils are the best dietary sources of omega-3 PUFAs.

Angiotensin-Converting Enzyme 2 (ACE2)

An imbalance in ACE2 activation pathways may lead to an inflammatory response in people with diabetes [8]. ACE2 has a number of physiological roles including the receptor for SARS-CoV and SARS-CoV-2 and thus represents the main entry point for the coronavirus into cells [9]. Some genetic differences in ACE have been reported as being associated with susceptibility to vascular disease in the Asian population [10].

Of interest is that dietary patterns can influence ACE levels with circulating levels in the blood being very sensitive to food intake. ACE inhibitors can be found in food proteins of various origins. Peptides possessing ACE inhibitory activity have been found in milk, eggs, fish, meat, and plants with milk and dairy proteins having significant inhibitory activity [11]. Fermentation, using different live microorganism cultures, increases ACE inhibitory properties in a number of foods [12]. In contrast, a high saturated fat diet may increase ACE levels in some individuals [13].

So Could Diet Be Partly Responsible for Differences in COVID-19 Death Rates between and within Countries?

Certainly people in the southern region of Germany, where the mortality rates are higher, traditionally have a higher fat diet compared to people in the northern states. Fermented food products with potent anti-ACE activity are consumed in a number of European countries with reduced COVID severity. Fermented milk is frequently consumed in Bulgaria and fermented cabbage in Romania. People in Turkey consume both fermented milk and cabbage products. All three countries have relatively low mortality rates from COVID [1].

The easy availability to a wide range of processed foods of poor nutritional quality in a number of the countries and regions with a higher level of mortality may be a contributory factor for a number of reasons. Not only does this level of availability increase the risk of obesity but also highly processed, fibre-depleted foods have a negative effect on the gut microbiome. In contrast, probiotics can have a beneficial effect on maintaining a healthy intestinal or lung microbiota. A number of studies have used probiotic supplementation to prevent or treat respiratory tract infections, and the potential role of both probiotics and prebiotics for the prevention and treatment of COVID-19 is being investigated [14]. Of course, fermented food products are often sources of a range of these potentially beneficial live microorganisms.

In conclusion, dietitians are well placed to consider whether dietary differences both between and within countries may contribute to the severity of the COVID-19 virus, and from a public health perspective, key nutritional messages may be of importance going forward both in the treatment and the management of the disease.

Disclosure Statement

I hereby declare that there are no conflicts of interest with regard to this commentary.

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Effects of COVID-19 Home Confinement on Eating Behaviour and Physical Activity: Results of the ECLB-COVID19 International Online Survey

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Abstract from Ammar A, Brach M, Trabelsi K, et al.: Effects of COVID-19 home confinement on eating behaviour and physical activity: results of the ECLB-COVID19 international online survey. *Nutrients*. 2020;12(6):1583.

Keywords

COVID-19 · Nutrition · Pandemic · Physical activity · Public health

Abstract

Background: Public health recommendations and governmental measures during the COVID-19 pandemic have resulted in numerous restrictions on daily living including social distancing, isolation and home confinement. While these measures are imperative to abate the spreading of COVID-19, the impact of these restrictions on health behaviours and lifestyles at home is undefined. Therefore, an international online survey was launched in April 2020, in seven languages, to elucidate the behavioural and lifestyle consequences of COVID-19 restrictions. This report presents the results from the first thousand responders on physical activity (PA) and nutrition behaviours.

Subjects and methods: Following a structured review of the literature, the «Effects of home Confinement on multiple Lifestyle Behaviours during the COVID-19 outbreak (ECLB-COVID19)» Electronic survey was designed by a steering group of multidisciplinary scientists and academics. The survey was uploaded and shared on the Google online survey platform. Thirty-five research organisations from Europe, North Africa, Western Asia and the

Americas promoted the survey in English, German, French, Arabic, Spanish, Portuguese and Slovenian languages. Questions were presented in a differential format, with questions related to responses «before» and «during» confinement conditions.

Results: 1047 replies (54% women) from Asia (36%), Africa (40%), Europe (21%) and other (3%) were included in the analysis. The COVID-19 home confinement had a negative effect on all PA intensity levels (vigorous, moderate, walking and overall). Additionally, daily sitting time increased from 5 to 8 h per day. Food consumption and meal patterns (the type of food, eating out of control, snacks between meals, number of main meals) were more unhealthy during confinement, with only alcohol binge drinking decreasing significantly.

Summary: While isolation is a necessary measure to protect public health, results indicate that it alters physical activity and eating behaviours in a health compromising direction. A more detailed analysis of survey data will allow for a segregation of these responses in different age groups, countries and other subgroups, which will help develop interventions to mitigate the negative lifestyle behaviours that have manifested during the COVID-19 confinement.

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Knowledge Transfer

Introduction

During the COVID-19 pandemic, there were a lot of restrictions in order to promote public health such as social distancing, isolation and home confinement. The purpose of the survey was to examine the effects of home confinement on physical activity (PA) and eating behaviour.

Methods

It was an online survey. The questionnaire was translated in different languages and included 64 questions on health, mental wellbeing, mood, life satisfaction and multidimension lifestyle behaviours (PA, diet, sleep, etc.). The questions had 2 parts: «before» and «during» home confinement. There were 1047 participants aged 18 years or older.

Results

The results show that PA was significantly decreased during home confinement compared to before. PA was decreased by 24% (days per week) and 33.5% (minutes per day), respectively. The metabolic equivalent (MET) values for all PA decreased by 38%. Additionally, the number of hours per day of sitting increased by 28.6%. As for the intensity of the PA,

- the days per week with vigorous PA decreased by 22.7%, the minutes per day by 33.1%, and the MET values for a vigorous intensity PA by 36.9%.

- the days per week for moderate PA decreased by 35%, the minutes per day for walking by 34%, and the MET values for walking by 42.7%.

There were also changes to eating behaviour. During the home confinement, there was a significant increase in consuming unhealthy food, eating out of control, snacking between meals (including late-night snacks) and in the number of main meals. On the other hand, there was a decrease in alcohol binge drinking (Fig. 1).

Positive Energy Balance

The survey proves that during home confinement, the energy expenditure via PA decreased. On the other hand, the energy consumption rose by increased snacking, a higher number of meals and by choosing less healthy foods. This causes a disturbance in the energy balance as a positive energy balance is created. The higher the food consumption the higher the positive energy balance will be, something which might be triggered by anxiety and boredom evoked by quarantine. This results in excess accumulation of fat and ultimately, overweight and obese people. It is proven that obesity increases mortality in COVID-19 patients, and it is associated with many other diseases such as cardiovascular disease, diabetes, cancer, etc.

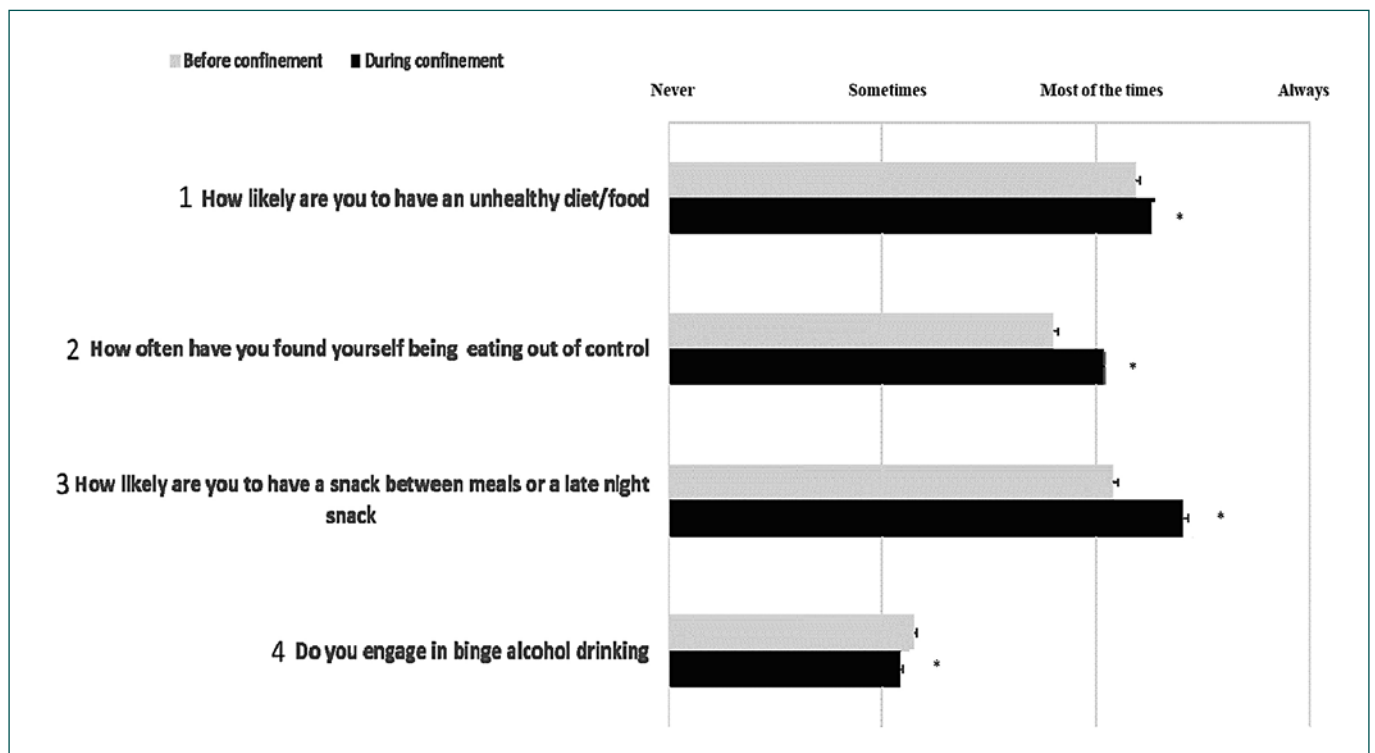


Fig. 1. Participants' scores in response to the related diet behaviour questions. * = Significant differences between "before" and "during" COVID-19 home confinement period [1].

Lack of PA –Consequences

The World Health Organisation (WHO) recommends for adults from 18 to 64 years old:

- At least 150 minutes of moderate-intensity PA throughout the week, or at least 75 minutes of vigorous-intensity PA throughout the week, or an equivalent combination of moderate- and vigorous-intensity activity.
- For additional health benefits, adults should increase their moderate-intensity PA to 300 minutes per week, or equivalent.
- Muscle-strengthening activities should be done involving major muscle groups on 2 or more days a week.

The survey revealed the following levels of PA during home confinement:

- vigorous PA: 26 minutes per day and 1.52 days per week (mean),
- moderate PA: 21.4 minutes per day and 1.36 days per week (mean).

There clearly is a lack of PA during home confinement. According to the WHO, insufficient PA is one of the leading risk factors for death worldwide as well as a key risk factor for noncommunicable diseases (NCDs) such as cardiovascular diseases, cancer and diabetes. Beyond that, PA has significant health benefits and contributes to prevent NCDs.

Conclusion

Social Services and Public Health Organizations should encourage people to increase PA and obtain better food-related behaviour. As the use of technology devices, gaming platforms and social media increased during home confinement, a clever way to promote the healthy way of living could be the use of apps, games that require movement, videos on social media and, of course, role models.

Disclosure Statement

I hereby declare that there are no conflicts of interest with regard to this commentary.

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What the COVID-19 Pandemic Showed Us: Limited Time Resources as an Important Factor of Diabetes Management

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Abstract from Grabia M, Markiewicz-Żukowska R, Puścion-Jakubik A, et al.: The nutritional and health effects of the COVID-19 pandemic on patients with diabetes mellitus. *Nutrients*. 2020;12(10):E3013.

Keywords

Diabetes mellitus · COVID-19 · Food choices · Eating behaviours · Lifestyle habits · Survey · Hygiene · Sleep · Stress · Nutrition

Abstract

COVID-19 related restrictions aimed at curbing the spread of the coronavirus result in changes in daily routines and physical activity which can have a negative effect on eating and health habits. The aim of the study was to assess the impact of the COVID-19 pandemic on patients with diabetes and their nutrition and health behaviours. A survey conducted in July 2020 included 124 individuals with type 1 ($n = 90$) and 2 ($n = 34$) diabetes mellitus from Poland. To assess nutritional and health behaviours, an on-

line questionnaire covering basic information, anthropometric data, and details regarding physical activity, eating, and hygiene habits was used. Almost 40% of all respondents with type 1 and 2 diabetes mellitus (DM) stated that their disease self-management had significantly improved. Over 60% of all participants declared that they had started eating more nutritious and regular meals during the COVID-19 pandemic. Enhanced hygiene, in particular, during the period, a statistically significant increase in hand sanitiser use was reported by respondents (18% vs. 82%, $p < 0.001$). The study demonstrated that the pandemic had a significant impact on the behaviour of patients with DM. Improved disease self-management and making healthy, informed food and hygiene choices were observed.

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Knowledge Transfer

Background

The COVID-19 pandemic has led to an unprecedented home confinement of a large percentage of people around the world. Diabetes is considered a global epidemic on the rise, strongly associated with lifestyle choices, and with significant disabling consequences and an increased risk of death if not well-controlled. There is a complex interplay between COVID-19 and diabetes, with some of its parameters better reported than others. The effects of the measures taken to combat the COVID-19 spread on diabetes management have not been adequately addressed.

Study Results

The study by Grabia et al., published in *Nutrients* in late summer 2020 [1], deals with the effect of the COVID-19 pandemic home confinement on the lifestyle of patients with diabetes in Poland. The researchers studied the differences in dietary, exercise and hygiene

habits of 124 patients with diabetes before and during the COVID-19 confinement by the use of an online questionnaire. Separate analyses were performed for type 1 and type 2 diabetes patients, but the results were the same for both groups. It was found that in general, dietary habits improved in most patients during the pandemic confinement, e.g. increased consumption of water as well as healthy and fresh foods, and decreased consumption of ready-made snacks. Sleeping patterns and hygiene habits also improved during the pandemic with the majority of participants increasing their sleep duration and the use of hand sanitizers. Exercise levels were reduced, a finding mainly explained by the confinement rules that allowed only non-organized forms of outdoor exercise such as walking and running. On the other hand, sitting time as assessed by television watching and sitting in front of a computer greatly increased with 60% of study participants spending more than 5 hours per day looking at screens during the pandemic (Fig. 1).

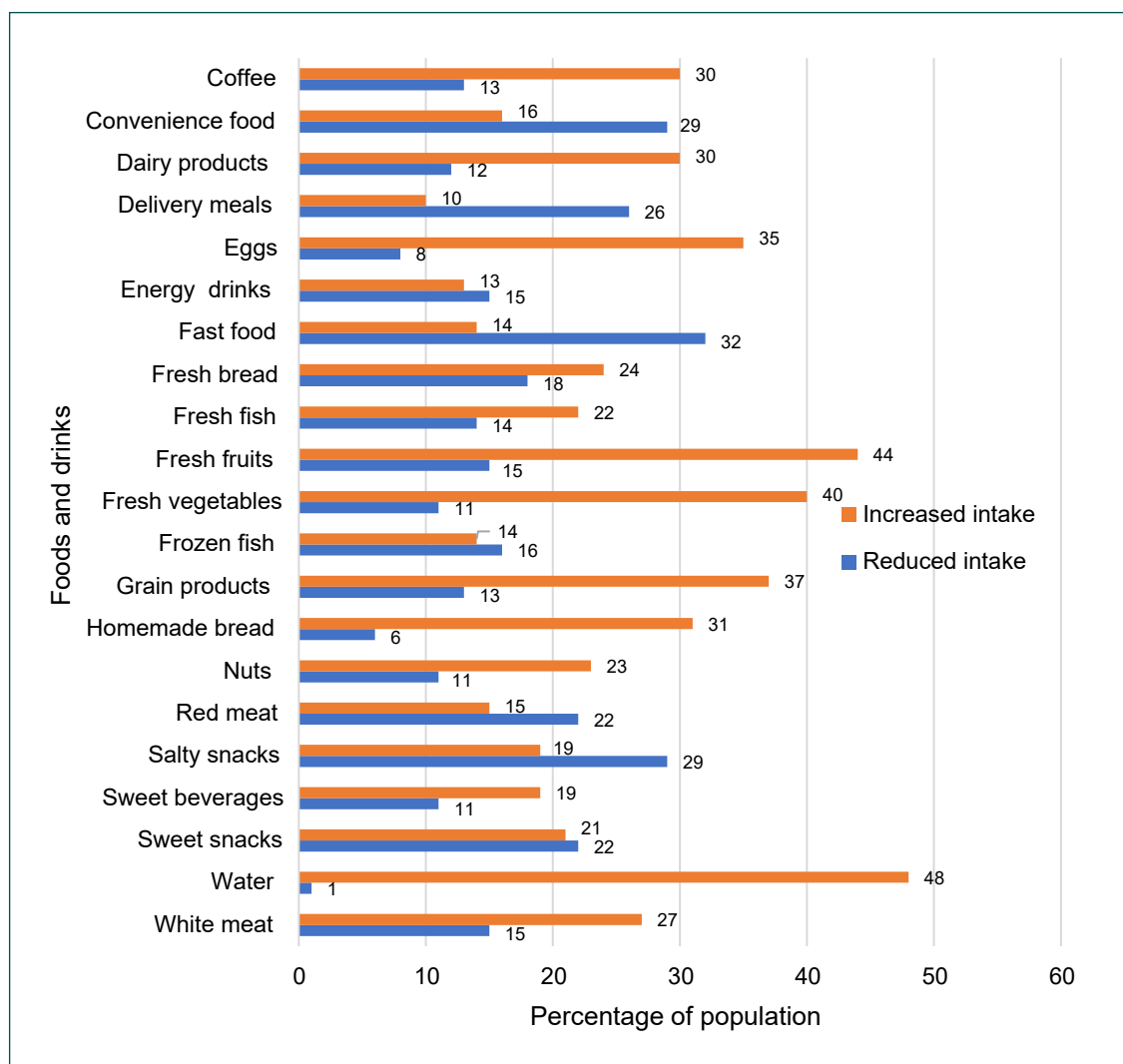


Fig. 1. The impact of the COVID-19 pandemic on food and drink intake according to respondents' responses [1].

Even though administering an online questionnaire was one of the few ways the study could be conducted during the pandemic, it came with several limitations, some of which, like the rather limited number of patients, were reported by the authors. Another important limitation was the young age of the patients included in the analysis (with the age 75th quartile being 28 years for type 1 diabetes and 44 years for type 2 diabetes patients). This is a common limitation of online surveys due to the technological illiteracy and non-participation in online groups of most older people. However, this limits the generalization of the study results in regards to the largest group of diabetes patients, the middle-aged and older patients with type 2 diabetes. Additionally, it would have been useful if the authors could have provided data on the effects the differences in lifestyle had on some markers of disease management like HbA1c, especially because contradictory changes, like improvement in dietary habits and sleep time but decrease in exercise and increase in sitting time, occurred.

Conclusion for Clinical Practice

Despite these limitations, the study provides food for thought for a very important point in clinical practice, not only during the COVID-19 pandemic: Limited time resources are important factors in diabetes management in multiple ways and affect areas like sleep duration, food preparation and dietary choices. Time limitations also affect exercise time, posing an additional burden for diabetes management. The confinement rules during the first wave of

the COVID-19 pandemic lessened these limitations in comparison to the pre-COVID-19 life with lots of activities available outside of home. Health professionals dealing with patients with diabetes should always keep in mind that even if we accurately follow medical and dietetic diabetes management algorithms, we might not be providing the patients with the best care if, due to time limitations, they are not able to follow the advice, i.e., prepare meals, drink water and get adequate sleep. An individually tailored approach considering all aspects of the patient's life including time limitations could serve our patients better and allow both them and us to better manage diabetes.

Disclosure Statement

I hereby confirm that there are no conflicts of interest with regard to this commentary.

References

- 1 Grabia M, Markiewicz-Żukowska R, Puścion-Jakubik A, et al.: The nutritional and health effects of the COVID-19 pandemic on patients with diabetes mellitus. *Nutrients*. 2020;12(10):E3013.

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Positive Influence of Probiotics on the Gut-Skin Axis

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Abstract from Szántó M, Dózsa A, Antal D, et al.: Targeting the gut-skin axis – probiotics as new tools for skin disorder management? *Experimental Dermatology*. 2019;28:1210–1218.

Keywords

Atopic dermatitis · Inflammatory skin diseases · Pathogenesis · Psoriasis

Abstract

The existence of a gut-skin axis is supported by increasing evidence, but its translational potential is not widely recognized. Studies linked inflammatory skin diseases to an imbalanced gut microbiome; hence, the modulation of the gut microbiota to improve skin condition seems to be a feasible approach. Today, there is a growing interest in natural products as alternatives to synthetic drugs. In this respect, oral probiotics could be a simple, safe and cheap modality in the therapeutic management of skin inflammation. Unfortunately, very few studies have looked into how probiotic supplementation influences inflammatory skin disorders.

The results, though promising, are difficult to implement in clinical practice due to the heterogeneity of the applied supplemental regimen in the different studies. In this Viewpoint, we aim to encourage the conduction of more research in that direction to explore unambiguously the therapeutic potential of oral probiotics in dermatology. We focus on the most common inflammatory skin diseases (atopic dermatitis, psoriasis, rosacea, acne vulgaris) with an associated gut dysbiosis, but we also discuss some less common, but very serious skin pathologies (eg erythema nodosum, pyoderma gangrenosum, hidradenitis suppurativa) that are possibly linked to a disturbed gut flora composition. We dissect the possible mechanisms along the gut-skin axis and highlight novel points where probiotics could interfere in this communication in the diseased state.

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Knowledge Transfer

Background

Links between the condition of the skin/skin diseases and gastrointestinal diseases have long since been established in empirical medicine. Apart from an apparent influence on the skin by various internal diseases, abnormal colonisation of the gut without clinically apparent symptoms is suspected in cases of urticaria and rosacea, for example, but also in other chronic inflammatory skin diseases. In recent years, research on the microbiome, that is, the entirety of the benign microbes colonising an organ, has significantly increased in this respect and it has been able to demonstrate important links between a colonisation of the skin and gut for their own integrity in each case but also for other organs in the human body.

Probiotics in Cases of Inflammatory Skin Diseases

The degree to which the probiotics used to date in alternative medicine can be used is described by Szántó et al. in their article cited in «Viewpoint» as an example for atopic dermatitis (AD), psoriasis and acne vulgaris. Probiotics are living microorganisms which, taken orally, lead to an improvement in health. Prebiotics, by contrast, are food components which are fermented by or promote the growth of gut microbes. Bacterial strains of probiotics, such as certain lactobacilli, are able to increase anti-inflammatory cytokines such as IL-10, and this in turn induces peripheral regulatory T-cells as well as the release of various hypothalamic hormones. The current pathogenetic understanding thus views the immune system of the gut as what is referred to as «gut-associated lymphoid tissue» (GALT) as well as the microbiome and the entirety of the bioactive metabolites produced by it, referred to as the metabolome, as important components of a gut-skin axis.

Atopic Dermatitis and Psoriasis

In the case of AD, the topical application of probiotic bacterial strains can already lead to an improvement. The influence of a vaginal delivery versus a Caesarean section with regard to the microbial colonisation of the child is especially significant for AD. The pre- and postnatal probiotic supplementation of children could possibly also reduce the risk of developing AD. Various bacterial metabolites such as free phenols and paracresol can disrupt the epidermal barrier and thus promote the development of the skin disease. Indeed, increased intestinal permeability has been described in the case of AD as compared to healthy persons. The mutual influence of vitamin D and probiotics is also interesting, given

the concomitant identification of decreased vitamin D levels in correlation to the severity of AD and also of psoriasis. In the latter case, the significance of short-chain fatty acids which arise from intestinal bacteria through fermentation was able to be demonstrated in the regulation of Th-17 cells such that there may be a connection here as well between the gut and the skin.

Acne Vulgaris and Others

Apart from an abnormal colonisation of the skin in the case of acne vulgaris as a topic which has been investigated for a long time, diets and – recently proven – the gut microbiome are also important. In patients, the intestinal microorganisms can induce the insulin-like growth factor IGF-1 and produce lipopolysaccharides, which are both pathogenetically involved. A study was in fact able to demonstrate the reduction in IGF-1 and an improvement in the clinical condition when the probiotic *Lactobacillus rhamnosus* SP1 was taken for 12 weeks.

The extent to which other skin diseases, such as hidradenitis suppurativa, erythema nodosum and pyoderma gangraenosum, which are frequently associated with chronic inflammatory bowel diseases, are mediated via a disrupted gut microbiome and in which probiotics play an important role remains to be investigated.

Conclusion for Clinical Practice

Overall, the disruption in homeostasis in gut flora is significant not only for the gut itself but evidently also for other organs, such as the skin. Whether topical probiotics or a combination of oral and topical probiotics are effective must be demonstrated in controlled clinical studies with clearly defined inclusion and exclusion criteria as well as clinical endpoints.

Disclosure Statement

I hereby declare that there are no conflicts of interest with regard to this commentary.

Republication

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Customised Care: Post Intensive Care Syndrome

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Keywords

COVID-19 · Intensive Care · Malnutrition · PICS · Collaboration

Abstract

Physiotherapy, Dietetics and Occupational Therapy have been collaborating over recent years to develop an optimal healthcare programme for patients with Post Intensive Care Syndrome (PICS). This case is an example of PICS symptomatology and focuses on the collaboration between Physiotherapy and Dietetics.

What is PICS? Owing to healthcare improvements, more and more patients are surviving stays in an ICU, and recovery during and after that stay has been receiving more attention [1, 2]. Approximately 30% of the patients admitted to an Intensive Care Unit (ICU) have persistent symptoms including muscle weakness, reduced walking ability, fatigue, concentration deficits, memory problems, malnutrition, sleep and mood disorders sometimes even years after discharge [3–8]. Since 2012, this combination of physical, cognitive and psychiatric manifestations and reduced quality of life after staying in an ICU has been recognised as Post Intensive Care Syndrome (PICS) [9]. The impact of PICS is often not limited to the patient as it may also impact the mental status of the patient's immediate family. This is known as PICS-Family (PICS-F) [10–12].

Treatment of PICS: Approximately 80% of PICS patients have first-line physiotherapy. Physiotherapists and GPs are often the only first-line healthcare professionals involved in the recovery process of these patients [13, 14]. Both patients and healthcare professionals report a number of difficulties, e.g. limited transmural continuity in healthcare, coordination of multidisciplinary activities, supportive treatment guidelines and specific knowledge of pathology, treatment and prognosis. Patients report that they are not adequately supported when resuming their professional activities and that medical and allied healthcare treatments do not fully meet their needs at that time [15–18].

The REACH project: In order to improve the situation, the REACH project (REhabilitation After Critical illness and Hospital discharge) was started in Amsterdam. Within REACH, a Community of Practice – consisting of professionals (physiotherapists, occupational therapists, dieticians), those who live or have lived with the condition and researchers – has developed a transmural rehab programme. A special attribute of this programme is the integration of the concept of “positive health”. The case in this article describes the treatment of a PICS patient treated within the REACH network.

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Medical History and Hospital Admission

An 85-year-old male patient was admitted to hospital with a primary diagnosis of small bowel ileus. The full history included asthma, lung surgery, kidney disease managed with haemodialy-

sis, Coronary Artery Bypass Graft and digestive tract haemorrhage. Before the admission, the patient was able to climb stairs, walk short distances unaided and he did not have mental problems or cognitive dysfunction. He lived independently with his partner.

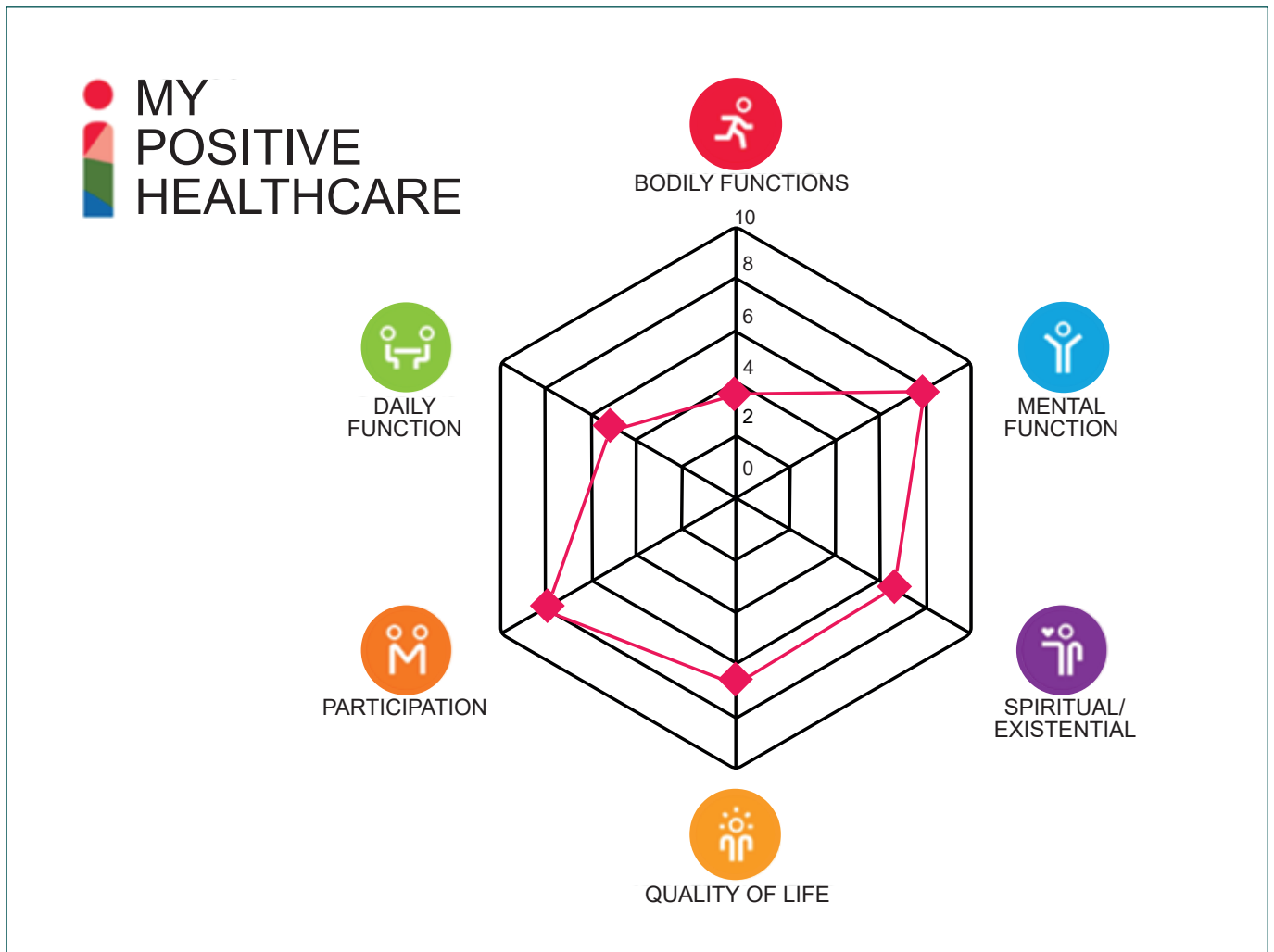


Fig. 1. Completed 'spiderweb' tool to start the discussion [19].

During the hospital stay, he developed sepsis due to small bowel perforation for which he underwent emergency laparotomy. During a postoperative stay in the ICU, the situation was further complicated by cardiogenic shock, pneumonia and terminal kidney failure. He was mechanically ventilated for two days.

On Post-op day 2, the patient started physiotherapy (breathing exercises, bedside exercise therapy, cycling in bed, transfer training) alongside his haemodialysis and medicinal therapy. He was transferred to the ward on Post-op day 10. Transfer training was ramped up on the ward and he was given walk training using a wheeled walker. Dietetics was also involved here; the dietician started a wholesome diet suitable for the patient's limited appetite ensuring adequate protein intake (1.2 to 1.5 grams per kg per day).

Physiotherapy, walking aids and homecare (twice daily) was requested at discharge. The dialysis dietician was already involved in the case. The patient was discharged on Post-op day 18. After discharge, physiotherapy was handed over to a first-line REACH network physiotherapist. The handover procedure within this

network consists of a discharge letter – geared to patients with PICS – and a telephone call.

Research

Within the REACH network, patients are visited by the physiotherapist at home as soon as possible which happened six days after discharge in this case. The first step in the process involves identifying the healthcare need the patient has, as well as their health perception from a positive healthcare viewpoint (the spiderweb, see Fig. 1) [19]. The patient felt that his quality of life could be improved, specifically his physical function and that he would like to improve his maximum walking distance.

Physiotherapy

Physical examination revealed that the patient's overall muscle strength was 4 (Medical Research Council, MRC) and that his grip strength was inadequate (22 kg, P10). His inspiratory muscle strength was -61 cm H₂O (reference value > -49 cm H₂O).²⁰ He did not have restricted joint mobility, but did feel stiffness and

pain when moving (5 on 10-point scale). Fatigue (measured using the Modified Fatigue Impact scale, MRI) gave a high (maximum) score of 20 points on 'physical fatigue' and 'reduced activity'. The 'reduced motivation' was moderately increased (14 points) and he scored 'normal' (5 points) on mental fatigue [21, 22].

Assistance was needed from one person to transfer from sitting to standing. The maximum walking distance was approximately 100 metres using a wheeled walker taking four breaks.

The patient scored a remarkably high score of 8 on a 10-point 'health perception' scale for participation. His wife, children and friends were very supportive. His home was adequate for using his wheeled walker safely both inside and outside. The REACH network physiotherapist screened for malnutrition using the SNAQ⁶⁵⁺ [23]. The 'red' score confirmed that the patient had an indication for dietetic care. The screening questions for cognitive function, occupational therapy and Global Psychotrauma Screen [24] did not suggest that occupational therapy was needed.

Dietetics

The patient was found to have lost a significant amount of weight, which had already started before the surgery. The patient's body composition (ratio of fat mass to muscle mass) was abnormal. This was attributed to weight loss due to illness and inactivity (Fat Free Mass Index <P5, Fat Mass Index = P25) [25, 26]. He had little appetite (5 on a 10-point scale), had nausea due to fatigue and consumed only approximately 75% of his daily energy and protein requirements. Based on the patient's weight loss, intake, functional tests and body composition, the dietician diagnosed malnutrition and sarcopenia [27, 28].

Diagnosis

This patient met the previously described PICS symptomatology. Patients treated in an ICU have a wide range of baseline situations before admission, primary diagnoses, comorbidities and other factors that may influence burden and coping capacity [29]. Known factors present that influence the outcome of the patient's recovery programme were: old age, extensive medical history, unknown baseline situation and good support from the patient's wife and family [12, 30–33]. The significant medical history and unknown preoperative coping capacity made it difficult to estimate the patient's postoperative function and the feasibility of achieving the ultimately desired function. The home visit clarified some of the factors facilitating the patient's recovery, such as the involvement of the wife and family and the home situation which provided an effective and safe environment for exercise therapy. The use of positive health in this case promoted a shift in focus from the extensiveness and complexity of medical data to the patient himself. The patient's resilience was very important: in this case to improve his mobility (especially independent mobility) [34, 35].

Screening Tools
At the hospital, patients with PICS are treated by multidisciplinary teams. These teams bring together different types of expertise [36, 37]. However, malnutrition and sarcopenia are more commonly the rule than the exception in patients with PICS [23]. REACH project physiotherapists use the SNAQ ⁶⁵⁺ to consider whether a dietician is needed to treat a particular patient.
Simple screening tools to assess cognitive and psychosocial function for use in patients with PICS are not yet available for physiotherapists. The REACH network uses various self-developed screening questions that help to understand the patient's cognitive function and their ability to perform their ADL (to assess the appropriateness of occupational therapy). In this case, the conclusion was that the patient did not have an indication.
The Global Psychotrauma Screen (GPS) was used to get an impression of common psychological conditions after a stay in an ICU. This is a simple tool for rough screening of trauma-related psychological problems [24]. The score on this tool did not trigger further psychological testing.

Treatment Goals

The patient's goals were to walk independently without walking-aids for a period of 10 minutes, and more generally: to improve his maximum walking distance, nutritional status, to stimulate resilience and ability to self-manage, and finally to involve the patient's wife in the treatment (PICS-F).

Multidisciplinary Treatment

The physiotherapist visited twice weekly on days the patient did not have dialysis. Exercises included rolling over in bed, getting out of bed, sitting down and walking with the wheeled-walker. This resulted in significant progress within a few weeks. The wheeled-walker exercises were expanded from indoors to outdoors. Agreements were made to expand the walking training guided by fatigue while taking the patient's dialysis into consideration. The wheeled-walker allowed the patient to walk greater distances feeling safer.

The dietician spoke to the patient during his haemodialysis. She worked with the patient and his wife to make some changes to meal timings and diet. Despite his poor appetite and nausea, he managed to consume sufficient calories and proteins, while still taking into consideration the restrictions associated with haemodialysis. The importance of additional protein around periods of physical exercise and protein-rich snacks before going to sleep was highlighted.

The physiotherapist and dietician both reported to the GP. Health-care evaluation revealed that both were involved, but that there was no coordination. The literature suggests that coordinated intervention of nutrition and exercise training can deliver added value in vulnerable patient groups [38–42].

Results

The patient and physiotherapist were so satisfied with the patient's home-based treatment leading to improved physical function that further treatment in the physiotherapy practice was not needed. After ten weeks, the patient's overall fitness and his ability to use his wheeled-walker had improved to the extent that he was easily able to walk outside without breaks for twenty minutes. The patient was satisfied and able to maintain or even improve his fitness independently. Walking independently without a wheeled-walker was no longer considered feasible or desirable. The patient was happy to be able to resume his normal activities with his wife. He was able to resume driving together with his wife. The physiotherapy was stopped.

His nutritional status improved slightly as evidenced by his weight gain and increased muscle mass. His intake was adequate, and his appetite and nausea improved. The dietician continued to be involved in the treatment because of the haemodialysis.

Further assessments were made as part of the REACH project at three and six months after discharge. This confirmed that the patient was able to maintain and even further improve his ability to walk. No PICS-related cognitive dysfunction or mental problems were observed.

Recovery from PICS can take months or even years. New PICS-related symptoms may also manifest or arise; monitoring should therefore be continued. The major variations in patient characteristics and recovery make it difficult to predict the prognosis and suggest that caution is appropriate.

Learning Points

The group of PICS patients is very heterogeneous. In this case, the patient's age, extensive medical history and medical records were

the reason to suspect the condition. However, the patient eventually made an almost full recovery without complications.

The first contact at home clearly delivered added value in terms of assessing the patient's function and special attention was given to bed mobility and transfers. The home situation and involvement of the patient's wife and acquaintances were also helpful. The patient felt that the assessments of his physical function (strength, fitness) were frustrating and negative, but the concept of positive health helped him rediscover what he was able to do, which led to him finding his resilience and ability to self-manage. An important point to consider is coordination between the dietician, GP and physiotherapist (or the need for this). This did not take place in this case. However, we do not know whether coordinating nutrition and exercise therapy would have delivered added value in this case. Based on the patient's level of functioning and motivation, there were no doubts about his ability to continue to be active. Further follow-up was not performed. The REACH programme offered structure and supported the treatment.

This case has also been published in *Fysiopraxis*. More information about REACH and the dietician's healthcare pathway for PICS patients developed within the REACH project is available in this article on www.ntvd.media.

References

References to this article are available at www.karger.com/doi/10.1159/000513300.

The Range of European Nutritional Practice – Inspiring and on the Point

The Czech Association of Dietitians

New Czech National Standards of Hospital Food and Nutrition Care

After nearly three decades the Czech Ministry of Health issued new National Standards of Hospital Food and Nutrition Care. Notably, this is the first time that the National Standards contains chapters dedicated to nutrition care.

While nutrition care standards have been developed by many Czech hospitals, a nutrition care standard on a national level did not exist and the national standard of hos-

pital food was last revised in 1991. Therefore in 2019, the Minister of Health initiated work on a new national standard under the professional supervision of SKVIMP (Czech-SPEN) and the Czech Association of Dietitians (CAD), and mediated the cooperation with over 20 hospitals.

The new standard is a principle-based document which aims to help hospitals organize nutrition care in line with the ESPEN guidelines and brings a simplified overview of hospital diets and their indications. Most importantly, it includes guidance on a basic diet which respects nutrition guidelines for a healthy population.

During the development phase it became clear that while new chapters on nutrition care are widely accepted, implementation of the new hospital food standard will be a challenge. A survey among hospitals found that 68% of the respondents still manage

food service based on the system developed in 1955 which followed a Soviet pattern of numbered diets for groups of patients. The 1955 system was well supported by detailed publication containing diet principles, energy and nutrient intake recommendations along with hundreds of recipes. However, it is not based on current scientific evidence and promotes limiting nutrients for certain groups of patients, possibly resulting in malnutrition.

In order to promote acceptance of this new evidence-based document and enable its successful implementation, the Czech hospital food service needs a new vision for becoming a valued provider of patient-centred nutrition care.



Samples of Czech traditional hospital meals.



www.cant.cz

Hellenic Dietetic Association (HDA)

Greece Is Officially the 19th Member of the Optimal Nutrition Care for All (ONCA) Campaign

This European initiative led by the European Nutrition Health Alliance (ENHA) will facilitate processes regarding the screening of disease-related malnutrition risk and will promote the implementation of appropriate nutritional care protocols for patients at national level.

After coordinated efforts of the Hellenic Dietetic Association (HDA) and the Hellenic Society for Medical / Clinical Nutrition & Metabolism (GrESPEN), Greece will actively participate in the design and implementation of the appropriate clinical practices for the evaluation and treatment of patients' nutritional status.

The main contributors to this effort were Dr. Christina Katsagoni, (President of the Clinical Nutrition Specialists group of HDA) and Dr. Dimitris Karagiannis (LLL program manager in Greece) assisted by

Dr. Theodora-Irini (Dorina) Sialvera (President of HDA) the Assist. Professor of Medical Nutrition Michael Chourdakis (President of GrESPEN) and the board members of the two scientific societies.



www.hda.gr

Portuguese Association of Nutrition Improve the Future Through Food Sustainability

Food has a considerable environmental impact, taking into account its production, transformation, transport and consumption practices, where it is possible to highlight the existing food waste in extremely high numbers, as it is known. In this way, the importance of reflecting on food sustainability is increasingly emphasized, not forgetting to join the environmental, social and economic axis, in order to contribute to the existence

of eating habits with a lower environmental impact and that contribute to the food and nutritional security of the population, as well as for their state of health, both now and in the future. Our food must protect and respect biodiversity and the ecosystem, in addition to allowing the optimization of natural and human resources.

In this field, nutritionists can be professionals of excellence for the transmission of these messages, reinforcing and clarifying that a sustainable diet is healthy, but that a healthy diet may not be sustainable, making all the difference the choices we make in our daily lives (choose national, fresh, respect seasonality, minimize waste, recycle, etc.).

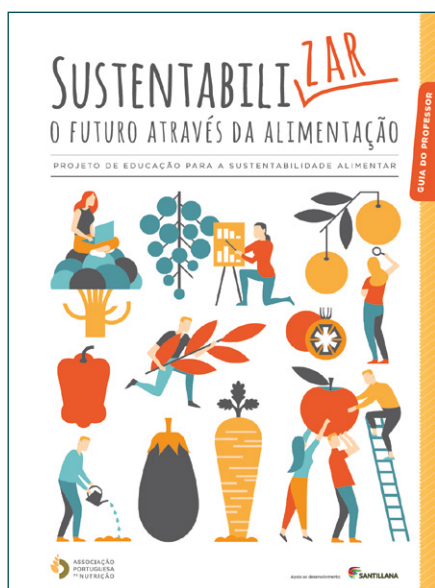
The Portuguese Association of Nutrition has been working on these themes in a food sustainability program since 2017, and is currently carrying out a project in secondary schools that aims to inform, raise awareness and put young people to reflect on their choices and whether they are sustainable. Providing young people, adults of tomorrow, with better knowledge, far from extremism and imbued with balance and consideration, will be one of the solutions to

ensure that we meet present and future needs, without causing irreversible damage to the ecosystem and without compromising the future of the next generations. The project has been gaining good support from schools, with around 2500 students involved since the beginning of 2020. Improve the future through food sustainability is something that emerges and must be worked in a multidisciplinary way by the various agents in the food, health, education, environment, economy, among others. It is the order of the day and we should all feel involved, as only everyone's effort will make a difference.

Helena Real, Nutritionist

More information about the sustainability program of Portuguese Association of Nutrition at:

<https://sustentabilidadealimentar.apn.org.pt/>



Ecotrophelia Trophy 2020 The Future of Food Innovation

OrangeBeeeee it the big winner of of Ecotrophelia 2020. Two young women from the University of Aveiro, Portugal, have created a fermented preparation of aquafaba and yacon with a layer of orange peel jam, sprinkled with bee pollen. This product is a vegetarian alternative to yoghurt. Further rewarded attendees were a team of University of the Aegean, Greece, with O-live, an ecological breadstick and two students of Iceland University. With Frosti they originate a lactose-free organic Icelandic dairy product and skyr flakes.

Established in France in 2000 and expanded to a European scale in 2008, ECOTROPHELIA Europe is organized by the European Technology Platform "Food for Life", ANIA (Na-

tional Association of Food Industries) and CCI Vacluse. On the principle of a food innovation "Champions League" each European country organizes its own national competition to select the most innovative food project that will then be presented at ECOTROPHELIA Europe. Each country selection is coordinated by its national food federation. The teams are composed of 2 to 10 students from either public or private higher education European establishments, scientific or commercial. The prize money this year was 9500 Euro.

Dominique Ladevèze, initiator of ECOTROPHELIA, highlights: "2020 is a complex year for everyone and our competition was no exception." Due to pandemic reasons, 13

teams presented their innovations in a video forum. "With a peak of more than 600 people connected", Ladevèze emphasizes. The jury was very much impressed by this hunger for innovation, which could have been slowed down by the pandemic. Well, not at all! "We are also noticing the inexorable rise of 'healthy', 'free', vegetarian and vegan trends, which lead us to lighter and healthier products – provided that taste and pleasure are met".



<https://eu.ecotrophelia.org>

Hungarian Dietetic Association Promoting the Dietetic Profession in Hungary

The first Dietitian's Week in Hungary was held between 2nd and 6th of June 2020, with which the Hungarian Dietetic Association showed the diversity of their profession and emphasized, how they can help develop proper nutrition and diets for the treatment of certain diseases. The aim of their Facebook campaign was to make the general public aware that it is worth contacting dietitians with questions related to nutrition because they are experts in this field. In Hungary, college education dates back to forty-five years, and a dietitian degree can be obtained after four years of study. The degree entitles you to three areas: prevention, nutrition management, and clinical dietetics. The professional organization of dietitians, the Hungarian Dietetic Association (MDOSZ), has been representing and bringing together the profession for almost thirty years. According to a survey from 2018, the majority of the Hungarian adult population (61%) know what dietitians do and would turn to them primarily about their nutrition-related

questions. The vast majority (89%) consider the opinions and advice of dietitians to be the most authentic and understandable. However, for the word nutrition advice, Google will return 653,000 hits in a matter of seconds. The mass of information is difficult to adjust to, so they often turn to those without a dietetic education for advice, which is often very harmful.

Meanwhile, it has also been shown that closer integration of nutrition counseling into primary care could have a number of economic and public health benefits. Proper nutrition, based on scientific evidence, reduces the risk and development of diet-related diseases, including obesity, diabetes, and cardiovascular disease, and could therefore reduce health care costs. International research shows that every Euro spent on nutrition advice saves 14–63 Euro to the society, not to mention an individual's health, quality of life, and well-being.

The Dietitians' Week initiative would like to raise the profile of dietetic practice as a pub-



lic health importance. From the 2nd of June 2020, for five days, the Hungarian Dietetic Association's Facebook page promoted the dietetic profession with informative posts and infographics.

The campaign (press release and SM activities) reached almost 1 million people and gained 27,000+ Euro earned media.

Zsuzsanna Zsúzs



Cochrane Review

Does a Tax on Fat in Food Help Against Overweight?

A tax on high-fat foods could probably have a positive effect on people's diet. However there are still too few reliable studies. This is the conclusion of a study published in the Cochrane Database of Systematic Reviews by an international research team from the University of Bremen, the Danube University Krems, the AOK Baden-Württemberg and other international research institutions.

Denmark was the only country in the world to introduce a fat tax in the years 2011–2012. It was set at 16 Danish Kroner (a good two euros) per kilogram of saturated fatty acids

for all foods in which this type of fat accounted for more than 2.3% of the total weight. However, the first author of the current Cochrane Review, Dr. Stefan K. Lhachimi (University of Bremen) emphasizes that the short-lived Danish fat tax is a lost opportunity: "It is tragic that Denmark has failed to evaluate this legal measure in a meaningful way with regard to its health effects."

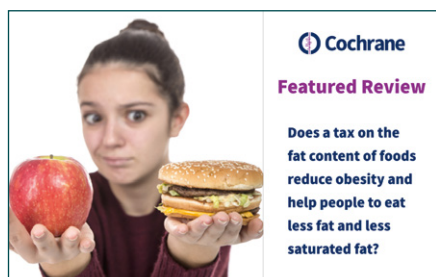
According to the two found studies the sales of cream decreased with the fat tax in Denmark by nearly 6% mincemeat had been in demand by 4% less. "A study reported a reduction in per capita fat consumption of 42 grams per week," said Dr. Stefan K. Lhachimi. However, this observation was based on purchases in supermarkets. "Unfortunately, we do not know what people actually ate: less, just as much or possibly even more fat, just from other sources."

A tax on saturated fatty acids like in Denmark could be a good approach to make so-called

junk food more expensive and thus less attractive. "Everyone has a rough gut feeling about what junk food is," says Lhachimi, "but it is difficult to find a clear definition here under food law." A tax on unsaturated fatty acids would automatically affect many products from the junk food group. He criticizes the Danish fat tax as lost opportunity. As an active researcher it is sad to see that the accountable authorities did not implement a thorough prospective evaluation of this game-changing policy initiative.

Literature

Lhachimi SK, Pega F, Heise TL et al.: Taxation of the fat content of foods for reducing their consumption and preventing obesity or other adverse health outcomes. Cochrane Database of Systematic Reviews 2020, Issue 9. Art. No.: CD012415. DOI: 10.1002/14651858.CD012415.pub2.



www.cochrane.org

Infection with SARS-CoV-2 via Pork Meat Unlikely According to Current State of Knowledge

State media in China have claimed that a worker has become infected with the novel coronavirus (SARS-CoV-2) from a knuckle of pork imported from Germany. The infection is reported to have taken place in a cold store. Traces of SARS-CoV-2 were detected on packaging as well as on a door knob.

According to the current state of knowledge, there are no cases that have shown evidence of humans being infected with the novel coronavirus via the consumption of contaminated food. Nor has any reliable evidence being presented to date concerning transmission of the virus via contact with contaminated objects or contaminated surfaces – such as packaging – which would have led to subsequent infections in humans.

According to the current state of knowledge, farm animals used for the production of meat cannot become infected with SARS-CoV-2 and are therefore unable to transmit the virus to humans via this pathway. Contamination of meat and meat products or its packaging with coronavirus could occur during the slaughtering, butchering, processing and packaging processes, however.

Generally, coronaviruses can potentially be transferred from an infected person to meat products if hygiene rules are not followed, – for example, by sneezing or coughing onto these products, or through contaminated hands. The same applies to surface contaminations (on packaging, for example). However, the hygiene rules and safety precautions that are commonly observed during the slaughtering, processing and packaging of meat minimise the risk of contamination with pathogens, which also applies for SARS-CoV-2.

Coronaviruses cannot multiply in or on food; they require a living animal or human host to do this. Transmission of the virus to another person via a contact infection appears possible only if this person touches a contaminated item of food or packaging and then transfers the virus to the mucous membranes of their nose or eyes with the hands. According to the current state of knowledge, the oral/alimentary route of transmission through the consumption of meat is not relevant for the current SARS-CoV-2 pandemic.

It is unclear whether the detected traces of virus are derived from an infectious virus or

whether the virus had already been inactivated by storage or transportation. Nor do the reports state whether the traces of the virus were already present on the imported product or had been transferred to the packaging and door knob by the infected worker.

To protect yourself from viral infection, always observe the general rules for everyday hygiene: ensure that you wash your hands regularly and avoid touching your face with your hands – especially while preparing food. Furthermore, meat and poultry in general should be heated sufficiently and evenly before consumption, until the meat juice trickling out is clear and the meat is a whitish (poultry), greyish-pink (pork) or greyish-brown (beef) colour.

More information on hygiene when handling food can be found here:

<https://www.bfr.bund.de/cm/364/protection-against-foodborne-infections.pdf>



www.bfr.bund.de/en

News in Kompass Nutrition & Dietetics

Dear Reader,

Please contribute news from national dietetic associations. For an easy handling please note:

For Kaleidoscope we use press releases. Please submit

- o an English text (not more than 2,000 characters) with a catchy **headline**
- o full **name of the institute/organization** who spread the news, its **logo** and a **web address**

Additionally, a photo, graphic or other eyecatcher could be included, as long as you hold the copyright and we can use the element for free.

For the Calendar of events please submit

- o name,
- o date,
- o location,
- o website of the event

Please send your contribution to Christine (c.schiller@karger.com) at Karger Publishers.

JANUARY 2021

Virtuell Classroom by the British Association of Dietetics: Introduction to Mental Health, Eating disorders and Learning Disabilities.

11. January 2021

<https://www.bda.uk.com/ems-event-calendar/introduction-to-mental-health-eating-disorders-and-learning-disabilities210111.html>

Virtuell Classroom by the British Association of Dietetics: Consolidating Dietetic Practice in Diabetes.

12. January 2021

Consolidating Dietetic Practice in Diabetes (bda.uk.com)

Virtuell Classroom by the British Association of Dietetics: Introducing the Principles and Practice of Behaviour Change.

21. January 2021

Introducing the Principles and Practice of Behaviour Change (bda.uk.com)

Virtuell Classroom by the British Association of Dietetics: Diagnosis and Management of Cow's Milks Allergy in Infants and Children

26. January 2021

Diagnosis and Management of Cow's Milks Allergy in Infants and Children (bda.uk.com)

FEBRUARY 2021

Virtuell Classroom by the British Association of Dietetics: Management of Chronic Kidney Disease Stages 3-5

11. February 2021

Management of Chronic Kidney Disease Stages 3-5 (bda.uk.com)

APRIL 2021

Online German Association of Dietitians (VDD) National Congress

22.-24. April 2021

VDD Kongress 2021

SEPTEMBER 2021

International Congress of Dietetics 2021 01.-03. September 2021

Cape Town South Africa

www.icd2021.com

OCTOBER 2021

13th EFAD Congress of Dietetics

22.-23. October 2021

Budapest, Hungary

efadconference.com

MAY 2022

Nutridays – Kongress der Ernährung und Diätetik

25.-26. May 2022

Bern, CH

NutriDays - SVDE ASDD