

**Module 8.2**

**Hospital Diet and Oral Nutritional Supplements (Sip Feeds)**

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**Learning Objectives**

- To learn about the importance of hospital food;
- To know the requirements of hospitalized patients and ways to cover them by oral diet;
- To learn about the standards that food service should follow;
- To identify ways to monitor nutritional intake;
- To learn about available ways to enhance nutritional intake (food fortification, protected meal times, provision of assistance);
- To know the indications for and types of oral nutritional supplements.

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**Key Messages**

- Oral feeding, with either normal food or special and/or fortified diets, is always the first choice to prevent or treat undernutrition in patients;
- Measures to enhance palatability, good quality and appearance of hospital food should be taken;
- Oral nutritional intake should be carefully monitored, encouraged and supplemented either by energy dense food choices or with food fortification, especially in malnourished patients;
- Oral nutritional supplements (ONS) should be used for patients who fail to cover their nutritional needs by hospital food or food fortification.

## 1. The Importance of Hospital Food

Maintaining good nutritional status during hospitalization is vital, as undernutrition in patients is associated with increased risk of hospital infections, delayed wound healing, and longer hospital stay, increased cost of treatment and higher morbidity and mortality risk (1, 2). Disease related malnutrition (DRM) is a significant problem, affecting 20-60% of hospitalised patients (3, 4). During hospitalization this problem is often exacerbated, as hospital procedures may necessitate fasting or skipping meals. The problem of iatrogenic malnutrition was first described by Butterworth in 1974, who was the first to recognise the negative effect of medical procedures on nutritional status (5).

Food intake is a major contributor to quality of life and well-being, not only in health but also in disease. The importance of food was recognised as early as 400 BC by Hippocrates, who stated "**Food is your medicine – hence let your medicine be your food**". During hospitalization, all patients have the right to safe, nutritious food. Hospital food and oral nutritional intake is actually the most common way to cover the needs of the majority of patients and therefore it represents the first-line nutritional measure to tackle hospital malnutrition for patients in whom it is possible and safe to cover their dietary needs by ordinary food. Therefore, hospital food provision should be flexible enough to cover several requirements. In order to provide patients with all necessary macro- and micronutrients, it should have a high quality in terms of raw materials, hygiene and preparation. It must be attractive in both taste and appearance and follow the preferences of the patients whenever possible (6).

Finally, it is important to keep in mind that 80-100% of hospitalized patients rely solely on the food provided by the hospital for the coverage of their needs (7). Patients often cannot express their opinion about the effectiveness of a treatment but they can easily identify poor food. Therefore, maximizing hospital food consumption by ensuring good nutritional quality of the meals provided is a complex and difficult task for dietitians, nutritionists and the catering team (8).

Recognizing the importance of nutrition during the hospital stay, the European Council published the Resolution on Food and Nutritional Care in Hospitals in 2003, in which the 10 key characteristics of good nutritional care in hospital are described as follows (9):

1. All patients are screened on admission to identify the patients who are malnourished or at risk of becoming malnourished. All patients are re-screened weekly.
2. All patients have a care plan which identifies their nutritional care needs and how they are to be met.
3. The hospital includes specific guidance on food services and nutritional care in its Clinical Governance arrangements.
4. Patients are involved in the planning and monitoring arrangements for food service provision.
5. The ward implements Protected Mealtimes to provide an environment conducive to patients enjoying and being able to eat their food.
6. All staff have the appropriate skills and competencies needed to ensure that patient's nutritional needs are met. All staff receive regular training on nutritional care and management.
7. Hospital facilities are designed to be flexible and patient centred with the aim of providing and delivering an excellent experience of food service and nutritional care 24 hours a day, every day.
8. The hospital has a policy for food service and nutritional care which is patient centred and performance managed in line with home country governance frameworks.
9. Food service and nutritional care is delivered to the patient safely.
10. The hospital supports a multi-disciplinary approach to nutritional care and values the contribution of all staff groups working in partnership with patients and users.

## 2. Characteristics of Hospital Food

It is important to have in mind that hospitals, by their nature are environments with a varied and diverse population groups. Therefore, food service that provides hospital food should be covering needs and provide suitable food for all age groups - for babies to older adults - and specific for clinical conditions. In order to plan and provide a hospital menu, information regarding age, gender, cultural, ethnic, social and religious diversity, food preferences and special needs should be taken into consideration.

Among hospitalised patients we should be able to distinguish two major groups with significantly different needs. The first group is the "nutritionally well" hospital patients, admitted for a short period of time, mostly for a simple medical procedure or a minor illness, previously healthy and fit, and whose illness will not/does not greatly affect their nutritional status. For these patients a dietary plan based on general healthy eating principles is the most appropriate (10). The other group is the nutritional vulnerable, patients at high risk of malnutrition because of:

- an acute or chronic illness affecting their appetite and their nutritional intake
- cognitive decline or limited ability to communicate with the medical staff
- increased or altered nutritional requirements due to the underlying medical condition (e.g. surgery, burns, trauma, diabetes, chronic kidney disease)
- disturbed swallowing or chewing ability, poor dentition or dysphagic patients

For many of these patients it may not be appropriate for a healthy eating style diet to be provided at this time and they will require menus targeted to their special needs, in terms of the provision of energy- and/or protein-dense food choices, electrolyte controlled diets and texture modified food (10). In **Table 1** the nutrients/day for nutritionally well and nutritionally vulnerable patients are presented.

As for the menu planning standards there are several national guidelines. Among the more detailed ones are the ones presented for the NHS in the UK in which specific recommendations are given regarding menu planning in hospitals (11). More specifically hospital menus should provide:

- A minimum of 300 kcal per main meal and 500 kcal for an energy dense meal and at least 18 g protein with each meal
- A minimum of two courses at the midday and evening meals
- A vegetarian choice on each eating occasion
- A choice of portion sizes for all meals
- A variety of snacks, providing a minimum of 150 kcal, at least twice a day. Fruits should always be a choice
- Standard recipes should be used
- An "out of hours" meal must be available for all patients who missed their meal. The "out of hours" meal should provide at least 300 kcal and 18 g of protein.

**Table 1**  
**Provision of nutrients for the hospitalised adults (adopted from (10))**

| Nutrient (/day)                              | Nutritionally well | Nutritionally vulnerable | Provided            |
|--|--------------------|--------------------------|---------------------|
| <b>Energy (kcal)</b>                         | 1800-2550          | 2250-2626                | Daily               |
| <b>Protein (g)</b>                           | 56                 | 60-75                    | Daily               |
| <b>Total fat (% total energy intake)</b>     | ≤35                | Not specified            | Average over a week |
| <b>Saturated fat (% total energy intake)</b> | ≤11                | Not specified            | Average over a week |
| <b>Carbohydrates (% total energy intake)</b> | ≥50                | Not specified            | Average over a week |
| <b>Sodium (mg)</b>                           | <2400              | <2400                    | Daily               |
| <b>Calcium (mg)</b>                          | ≥700               | ≥700                     | Average over a week |
| <b>Potassium (mg)</b>                        | 3500               | 3500                     | Average over a week |
| <b>Magnesium (mg)</b>                        | 300                | Average over a week      | Average over a week |
| <b>Iron</b>                                  | ≥14.8              | ≥14.8                    | Average over a week |
| <b>Vitamin B12 (µg)</b>                      | ≥1.5               | ≥1.5                     | Average over a week |
| <b>Folate and folic acid</b>                 | ≥200               | ≥200                     | Average over a week |
| <b>Vitamin C (mg)</b>                        | ≥40                | ≥40                      | Average over a week |
| <b>Fluid (ml)</b>                            | ≥1500              | ≥1500                    | Daily               |

Apart from identifying the target population of the hospital menu, it is also important to take into account the resources available. The budget of the hospital regarding food catering is very important determinant of food item selection, and the kitchen equipment allows or restricts the production of certain recipes. Above all the development of a hospital menu should take into consideration the available storage facilities and aspects of food security, by limiting food items that could easily be spoiled.

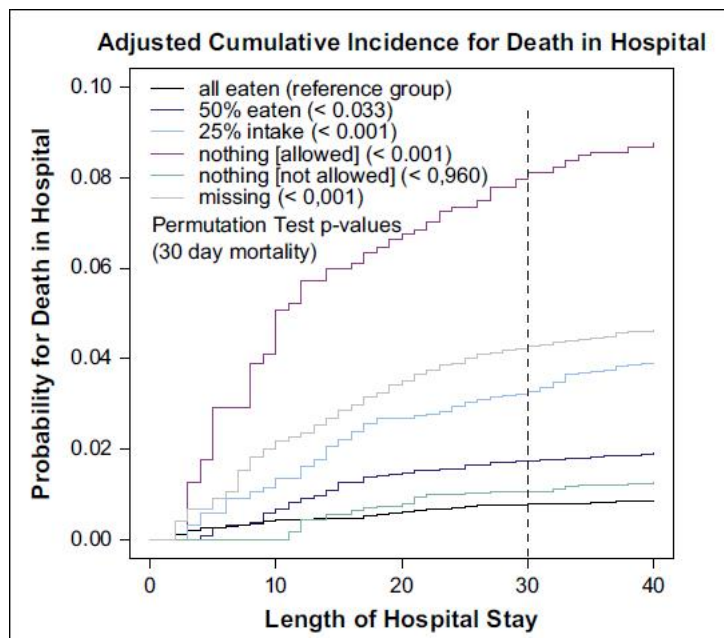
## 2.1 Common Types of Hospital Diets

In the majority of hospitals the diets provided follow the same rationale. More specifically there are common types of diet covering the needs of typical patient groups. The most common types of diets are:

1. The **standard diet**, covering the needs of the majority of the "nutritionally well" patients
2. Diets with **altered nutrient content** (low residue, clear liquid diets, full liquid diets, soft diet)
3. Diets with **modified texture** (blenderised, pureed diets)
4. **Protein- and/or energy-enriched** diets
5. **Energy restricted** diets (for obesity)
6. Diets for **specific medical conditions** (Diabetic, Renal, etc) with altered content in macro- (low fat, low in simple carbohydrates, low/high protein) and/or micronutrients (low potassium, low phosphate, low sodium)
7. Diets with **increased meal frequency** (e.g. for patients with gastrectomies)
8. **Elimination diets** (lactose-free, gluten-free, diets free from specific allergens etc)
9. Diets for **metabolic disorders** (e.g. diet for phenylketonuria)

### 3. Monitoring and Improving Food Intake during Hospitalization

Ensuring hospital food consumption has been proven to be a significant measure in determining outcome in hospitalised patients. According to NutritionDay results, patients who are allowed to eat and choose to skip their meal have a higher mortality during their stay in the hospital (**Fig. 1**) (7).



**Fig.1** Decreased meal consumption and risk of death (7)

There are several studies pointing out the fact that during hospital stay nutritional status often deteriorates (12, 13). Taking into account that food intake in hospital is frequently suboptimal (14), there are specific measures that can be taken in order to monitor and when needed enhance and protect food intake during hospital stay.

In 2008 the "Protected mealtimes initiative" (PMI) was introduced in UK by the Hospital Caterers Association (HCA) as a part of the Better Hospital Food programme, supported both by NHS and Royal College of Nursing (RCN). Protected mealtimes are periods when all ward based activities (where appropriate) stop to enable nurses, ward based teams, catering staff and volunteers to serve food and give assistance and support to patients. The purpose of PMI was to allow patients to eat their meals without unnecessary interruption, and to enable nursing staff to provide assistance to those patients unable to eat independently (15-17). The key aspects of PMI are (17):

- Patients should be able to eat their food in a relaxed environment, at their own pace and rest afterwards.
- Nursing staff will make food a priority during mealtimes, providing assistance and encouraging patients to eat, being aware of how much food is eaten and identifying patients nutritionally at risk.
- Ward based teams will organise their own mealtimes to maximise the number of staff available to deliver and assist patients/clients with food.
- Where appropriate, ward based teams will provide patients/clients with assistance to use the toilet prior to the service of food.
- Prior to the service of food all patients/clients will be given the opportunity to wash their hands.
- Patients/clients will be made comfortable prior to the service of meals, with food served within a comfortable reach, patients/clients supported by an appropriate eating position.
- Patients requiring assistance with food will be identified to the ward/unit team prior to the service of meals.

- Interruptions (e.g. ward rounds, drug rounds, GP visits, cleaning, documentation and therapy) will only occur (during mealtimes) when clinically appropriate.
- Staff directly involved with patients/clients at meal times will avoid answering the telephones. Clinical areas may consider diverting telephones at meal times.
- Consideration will be given to where patients/clients sit to eat their meals, supporting the social aspects of mealtimes whilst respecting the preferences of the individual.
- Each table will be clean and suitably prepared prior to the service of food and beverages, with appropriate tablecloths, place mats, cutlery, crockery and condiments.
- Bed tables and eating areas will be cleared (prior to the service of food) of items not conducive to mealtimes (e.g. urine bottles and used dressings).

Although PMI was launched several years ago, its efficacy has not been established. According to a study by Hickson *et al* in a teaching hospital only minor improvements in mealtime experience were made after the implementation of PM and so it is not unexpected that macronutrient intake did not improve (18). On the other hand in a more recent study by Palmer *et al*, specific aspects of PMI, i.e requiring and documenting the need for mealtime assistance, introduction of mealtime volunteers, time to eat and appropriate positioning during mealtimes were associated with improved intake (19).

The need for assisted eating, i.e. providing help to the patient who is unable to eat alone, ranges from verbal and non-verbal prompts, to physical guiding, to transferring food from the plate to an individual's mouth. It has been found that up to 70% of elderly hospital patients require some feeding assistance (20). In order to be able easily to identify patients in need of assistance, apart from documenting it in the patients' files, the use of a red tray for patients in need of feeding assistance has been advocated across UK and Australian hospitals (21). Although some studies have shown that nutritional intake can be improved, the evidence for the effectiveness of feeding assistance in improving patient outcomes is somewhat mixed (20, 22).

In order to improve nutritional intake further it has also been proposed to provide food of the patients' choice at the moment of consumption, rather than in advance, ensuring flexibility not only in the type of food served but also in portion sizes. In long-term facilities improved social interaction of residents at meal times, improvements in the dining environment and the sensory properties of the food, and enhancement of nutrient density of the foods provided, are all proposed, an issue that will be presented in more detail in the following part of the module (23-25).

Monitoring nutritional intake is very important for the early detection of patients who are not covering their nutritional needs by hospital food. Therefore, supervision of the tray collection and the evaluation of the food left on it is a very important parameter to evaluate nutritional intake of patients during hospitalization. It has been also proposed that day-to-day food consumption is monitored with an on-bed recording system and an easy registration system, similar to the one used for the evaluation of the proportion of food consumed in the NutritionDay project. Electronic apps have also been proposed for the same purpose (**Fig. 2**).

Please indicate for one meal<sup>29</sup>

|                       |                       |                       |                       |  |   |
|-----------------------|-----------------------|-----------------------|-----------------------|--|---|
| all                   | 1/2                   | 1/4                   | nothing               | <b>I did not eat everything because<sup>32</sup> (please check):</b>     |   |
|                       |                       |                       |                       | <input type="checkbox"/> I was not hungry                                | <input type="checkbox"/> I was tired              |
| <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="checkbox"/> I had nausea/vomiting                           | <input type="checkbox"/> I normally eat less      |
|                       |                       |                       |                       | <input type="checkbox"/> I was not allowed to eat                        | <input type="checkbox"/> I did not like the smell |
|                       |                       |                       |                       | <input type="checkbox"/> I cannot eat without help                       | <input type="checkbox"/> I did not like the taste |
|                       |                       |                       |                       | <input type="checkbox"/> I had an examination/surgery and missed my meal |   |
|                       |                       |                       |                       | <input type="checkbox"/> I ordered a smaller portion                     |   |

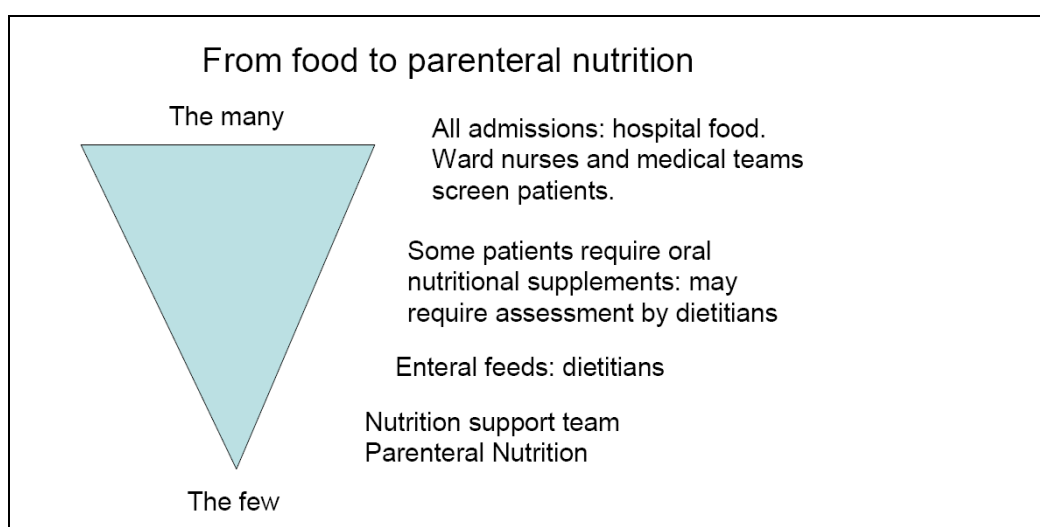
This meal was<sup>30</sup>       Lunch       Dinner

**Fig. 2a** NutritionDay monitoring of nutritional intake  
([http://www.nutritionday.org/cms/upload/pdf/1\\_for\\_hospitals/1.3.participate/EnglishUS/ND\\_sheet3b\\_english\\_US.pdf](http://www.nutritionday.org/cms/upload/pdf/1_for_hospitals/1.3.participate/EnglishUS/ND_sheet3b_english_US.pdf))



**Fig. 2b** Example of an application that can help in monitoring food consumption during hospitalization (<https://vimeo.com/35915591>) (26)

If a patient is at risk of malnutrition and is receiving nutritional therapy of any kind, nutritional intake should be monitored closely in order to be able to intervene with more intensive means of nutritional support. As shown in **Fig. 3**, the provision of hospital food can be enhanced with food fortification, which is the first step in providing nutritional support in patients who are able to eat but unable to cover sufficiently their nutritional needs.



**Fig. 3** Steps in nutritional support: From food to parenteral nutrition (27)

## 4. Food Fortification and Oral Nutritional Supplements (ONS)

### 4.1 Food Fortification

Food fortification is the least intrusive means of nutritional support. It can improve the nutritional intake of patients who are unable to meet their nutritional needs by ordinary hospital food, as it increases the energy and protein density of the meals, with the addition of energy dense and/or nutrient dense food items. Food enrichment is more suitable for patients who have small appetites (e.g. older adults, cancer patients). It is the most economical way of providing nutritional support and at the same time prevents taste fatigue, allowing better compliance and continuation of eating patterns (28-30).

Food enrichment includes the addition of (31):

- Protein, in the form of protein powders, liquid protein supplements, skimmed milk powder, or egg whites
- Fat in the form of oils and fats, including cream, butter, and margarine
- Carbohydrates in the form of maltodextrin, sugar, dextrose or honey

By adding these components to the food, there is naturally a sensoric limitation to the amount of additional energy or protein that can be achieved. Several studies have however shown that enriching food leads to improved nutritional intake in elderly patients who do not manage large amounts of food (32, 33). In a recent meta-analysis food-based fortification yielded positive results in the total amount of ingested calories and protein (34). Although advocated in clinical guidelines (29), few trials have evaluated this approach and there is a need for further studies aiming to evaluate whether the increase in energy intake by food enrichment in the hospital setting yields permanent value (31, 35).

### 4.2 Oral Nutritional Supplements (ONS) – sip feeds

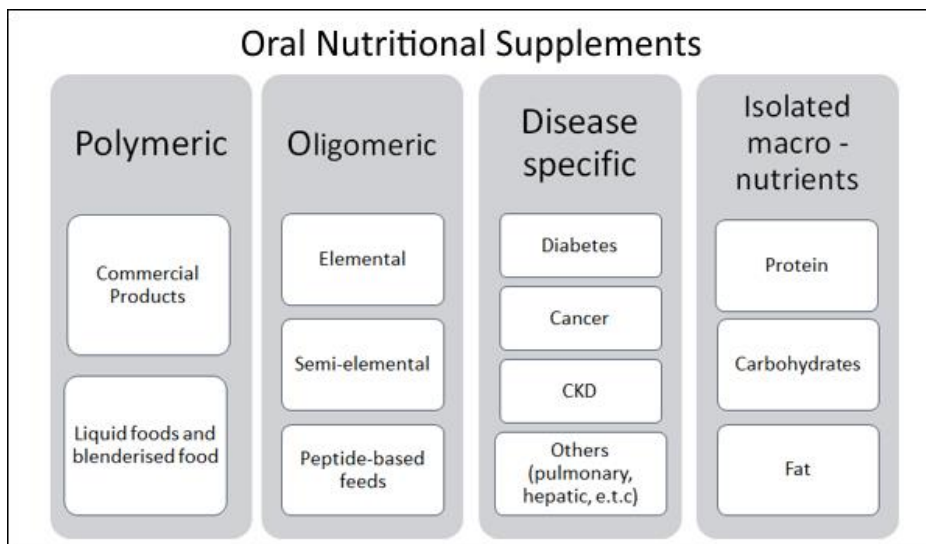
Oral Nutritional Supplements (ONS) are available as ready-made, pre-packed drinks, cream-like preparations, pills or powder-like supplements, all with significant nutrient content, prescribed in patients who fail to meet their nutritional requirements through food intake, and aim to improve the patients' nutritional status. Oral nutritional supplements can be categorised as follows (**Fig. 4**):

- **Polymeric ONS**, which contain macro and micronutrients; these now routinely contain dietary fibres but fibre-free versions are available. Usually they are prescribed as a supplement to the daily food intake, but those categorised as "complete" can in some cases, be provided as a sole source of nutrition. The macronutrient content of these feeds varies and there are supplements for general use and for specific clinical conditions. They are presented in liquid, cream-like (mainly for dysphagic patients) or powder form. They are either standard (1 kcal/ml), energy dense (1.5-2.4 kcal/ml) and/or protein dense (providing 10-20g of protein/serving), with or without fibre and lactose.
- **ONS with modified macronutrient content** i.e. hydrolysed or partially hydrolysed, elemental or semi-elemental feeds. They contain nitrogen in the form of dipeptides (semi-elemental) or amino acids (elemental), are low in fat (fat is mainly in the form of MCTs) or fat-free, and low residue. These supplements are designed for patients with disturbed GI function, who need partially hydrolysed nutrients for better digestion and absorption and for those who cannot tolerate polymeric feeds. Their osmolarity is usually higher than the polymeric ones depending on the degree of hydrolysis (elemental feeds have higher osmolarity than semi-elemental).
- **Supplements of one or more macronutrients** (i.e. carbohydrate, fat or protein). These are usually used for food enrichment and they cannot be used as a sole source of nutrition as they are neither complete nor balanced.



- **Multivitamin supplements.** They are used in order to cover micronutrient needs. They cannot be used as an exclusive source of nutrition.

Oral nutrition support should be considered for any patients who are malnourished or in danger of insufficient nutrient intake from food, presupposing that they can swallow safely and they have a gastrointestinal tract of adequate functionality.



**Fig. 4** Categorization of ONS

#### 4.2.1 Disease Specific Supplements

The market for disease-specific supplements is growing fast, providing new ONS for different clinical conditions. More details are given in the LLL modules devoted to individual diseases but the most common are (36):

**Renal feeds:** They usually contain limited amounts of sodium, potassium and phosphorus. Their protein content varies, as there are low protein feeds for early stages of chronic renal disease (CKD) and higher protein feeds for end-stage renal patients (i.e patients undergoing haemodialysis or peritoneal dialysis). The feeds for end-stage renal patients are usually energy dense, facilitating the fluid restriction that is needed.

**Pulmonary feeds:** They usually contain a higher percentage of their total energy in the form of fat to reduce the carbon dioxide production relative to oxygen consumption.

**Hepatic formulas:** These are commonly low in aromatic amino acids (AAA) and methionine and high in branched chain amino acids (BCAA). They usually have high calorie to nitrogen ratio, are hypercaloric, and low in sodium. They are usually low in copper, iron and manganese and are supplemented with fat soluble vitamins, folic acid and B-complex vitamins.

**Diabetic feeds:** These usually have lower overall carbohydrate content and different types of carbohydrate from the standard formulas. They may contain oligosaccharides, fructose and corn-starch and in combination with their higher fibre content they aim for better glycaemic control as a result of delayed gastric emptying and reduced intestinal transit. These feeds are also higher in Monounsaturated Fatty Acids (MUFA), in order to provide a better lipaemic control.

**Oncology feeds:** These are usually energy and protein dense, containing omega-3 fatty acids in the form of EPA/DHA, and antioxidants.

**Preoperative "feeds":** These are for supplementary use only and contain only carbohydrates; they are used shortly before an operation for carbohydrate loading to diminish insulin resistance.

**Immune enhancing products (immunonutrition):** The nutrients that have been tested (but generally in combination) regarding their role in the regulation of the immune system are the amino acids glutamine and arginine,  $\omega$ -3 fatty acids, dietary nucleotides, and antioxidants. Immune feeds contain variable amounts of these nutrients and they are more expensive than general feeds. Evidence supports their use in some critically ill patients, in septic conditions, and in some peri-operative patients.

## **5. When to Administer Oral Supplements – Effectiveness and Outcomes**

The first steps to enhance food intake in hospitals are either or both of dietary modification or food fortification. In the case that these measures prove to be ineffective the provision of Oral Nutritional Supplements (ONS) is indicated. ONS are food supplements, providing in most cases macro- and micronutrients. They are typically used in addition to the normal diet, when diet alone is insufficient to meet daily nutritional requirements. ONS require no or minimal preparation and they are usually consumed between meals in order to provide supplementation of nutritional intake without limiting food intake (37).

ONS should always be the first choice of nutritional support for patients who fail to cover their dietary needs by food and food fortification, providing that they can swallow safely and there is no obstruction in the oesophagus or lower in the gastrointestinal tract. ONS should be used as part of the management of disease-related malnutrition and for the other listed indications, i.e. pre-operative preparation of the malnourished patient, inflammatory bowel diseases, short bowel syndrome, intractable malabsorption, post-gastrectomy, dysphagia, bowel fistulae, growth failure and hypoproteinaemia. For disease-related malnutrition, routine screening should be used to identify at-risk individuals across health care settings (38).

### **Effectiveness of ONS**

Systematic reviews and meta-analyses have highlighted that ONS produce a range of clinical benefits including reduced overall morbidity with fewer complications, such as wound and chest infections, pressure and leg ulcers (29, 35, 37, 39). Moreover, a reduced mortality was observed with ONS versus routine care in patients with a range of acute and chronic conditions, especially underweight/malnourished patients and older patients (29, 35, 37, 39). On the contrary, in cancer patients ONS have no significant effect on mortality (40).

ONS have also been reported to produce significant improvements in functional parameters, including muscle strength, quality of life, immune function and activities of daily life, especially in older adults, chronically ill patients (e.g. CKD, liver disease) and underweight patients, with typical weight gain of >2kg (37, 40).

In all meta-analyses and systematic reviews ONS have been shown to improve nutritional status significantly and to increase nutritional intake. Nutritional status is usually reported as an increase in body weight or BMI, with lean body mass not taken into consideration. In studies in which lean body mass was assessed, upper arm anthropometry was used as a method, as it is an easy, cheap and quick method of assessment (38). In the review of Milne and his colleagues a significant increase in the Mid Arm Muscle Circumference (MAMC) was reported in older adults receiving nutritional support with ONS (35). As for nutritional intake, ONS have consistently been shown to improve total energy intake in acutely and chronically ill patients, in hospital and in the community. Moreover, significant improvements in micronutrient intakes have been reported as ONS contain a wide range of macro- and micronutrients and at the same

time they do not appear to suppress voluntary nutritional intake significantly (37, 38, 41).

There has been an increasing interest in the effects of ONS on health care use and costs. In the acute setting, reductions in the length of hospital stay and complications and a reduction in associated costs have been well documented with ONS (38). Another important parameter, not only for the total health care cost, but also for the quality of life of the patients, is hospital readmissions. ONS use significantly reduces hospital readmissions, especially in older adults (42) and in patients with benign gastrointestinal disease (43).

### ***ONS and compliance***

ONS, as any other type of treatment, should be used appropriately, efficiently and monitored. Prescription of ONS, apart from the indications mentioned above, should be tailored to the patients' needs and preferences, as these are strongly implicated in the compliance which is vital for the effectiveness of the treatment. In order to achieve compliance, a variety of flavours and textures can be used, served at different temperatures, according to the patients' taste, at the times they prefer. Moreover, energy dense supplements seem to be more easily accepted and effective as we minimize the necessary volume to achieve the desired results (44). We should also keep in mind that patients who usually need ONS are also facing changes in taste and smell sensation, which also influence their compliance (38, 45).

Compliance can also be improved by encouragement and explanation of the reasons and the aims of nutritional support. Overall, a greater understanding is still needed to maximize compliance with supplementation, especially over long periods of time, so that benefits can be achieved and sustained.

In order to avoid side effects that could limit compliance, such as diarrhoea, nausea, or vomiting, patients should be advised to drink the ONS slowly and not to consume them with or close to their meals in order to avoid early satiety, but rather to supplement their energy and protein intake sufficiently.

### ***Monitoring***

Like any other treatment, the use of ONS, as well as the other forms of nutritional support, including dietary counselling, should be monitored. Reviewing the indications, setting goals and assessing the patient at frequent intervals are required in order to facilitate early interventions when these are needed. Moreover, the achievement of the goals or the failure to achieve them, signifies the signal to terminate the use of ONS or the need to find a more intensive way to provide nutritional support.

## **6. Summary**

Oral feeding with either normal food or special and/or fortified diets is always the first choice to prevent or treat undernutrition in patients. Therefore, the provision of high calibre standard hospital food, which will cover the needs of the patients regarding their clinical condition, their age, their cultural and religion background should be a priority. In order to enhance palatability, good quality and appearance of hospital food, specific measures should be taken. Moreover, food intake in hospitals should be protected and patients assisted if needed. Specific policies have been developed, such as protected meal times, in order to assure respect of mealtimes in hospitalised patients and to ensure sufficient dietary intake. Oral nutritional intake should be carefully monitored, encouraged and supplemented either by energy dense food choices or with food fortification, especially in malnourished patients. In the case that these interventions fail to provide significant positive results, Oral Nutritional Supplements (ONS) should be used for patients who fail to cover their nutritional needs by hospital food or food fortification.

The choice of supplement depends on the nutritional profile and its acceptability to the patient. Good compliance is essential to the success of nutritional therapy.

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