

## **Final Project Course Chronicity Nutritional Assessment in Primary Care. Nutritional Risk and Malnutrition**

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### **Introduction**

Eating habits determine the health status of the population. In Spain, according to the WHO, 8 out of 10 deaths are related to diet and alcohol consumption.

The statistical office of the European Union says that, if in Spain in 2007 15.7% of the population was over 65, by 2050 Spain will be one of the oldest European countries, being over 65 years old 34.1% of its inhabitants.

These demographic changes represent an important challenge for the health system, not only because of the increase in spending, but also because it changes the nature of the care and care demanded.

There is a high prevalence of malnutrition risk in Primary Care. In Spain it is estimated that 11% of patients seen in the family doctor's office are at nutritional risk.

### **In the community:**

- 4.3% malnourished.
- 25.4% at risk of malnutrition.
- Home patients:
  - 20.2% malnourished.
  - 51.9% at risk of malnutrition.
- Geriatric residences:
  - 7.9% undernourished.
  - 61.8% at risk of malnutrition.

### **Hypothesis**

A healthy nutritional status contributes, without any doubt, to improve the functional and mental state of the patient and, therefore, contributes to improve the quality of life of the patient.

The assessment of nutritional status is an assessment aimed at detecting malnourished patients or those who are at nutritional risk, in order to carry out an adequate nutritional plan and avoid complications.

Elderly patients who due to physiological, pathological, cultural and socio-economic circumstances are exposed to malnutrition are the type of patient with the most frequent nutritional problems in primary care consultations.

It is in these patients that the ESPEN guidelines (The European Society for Clinical Nutrition and Metabolism, with a grade of recommendation A for oral supplementation, can increase or improve their nutritional status, their functional capacity and their survival by increasing the calorie intake, proteins and micronutrients.

In Primary Care, the assessment of nutritional status is not included in the electronic medical record and also the few minutes available to the family doctor in the consultation hamper the performance, in a routine, of this assessment; but there are quick and easy methods and tools that allow knowing the nutritional status [1-15].

### Material and Methods

The Primary Care Team (EAP) of a Health Center located in Valencia capital, belonging to one of the Health Departments of the Regional Ministry of Health and with an assigned population of 27,000 inhabitants. One of the family doctors presented the protocol of the Clinical Nutrition program from Primary Care to the Medical Direction, being related to the Endocrinology Service and the Nutrition Unit of the reference hospital, being the first Health Center where it has been placed in march this pilot program.

Currently a family doctor and a nurse from the Health Center work in this program, circumscribing for the moment only the patients belonging to it.

In addition to the relationship between Primary Care and Specialized Care, the medical professional has regular contact with the Medical Inspection regarding the quantitative and qualitative analysis of the prescription of dietotherapeutic products, the indications of the prescription and the quality of the visas based on the criteria defined in the home enteral nutrition guide of the National Health System.

### Definition

Food is the set of activities that take place from when you buy the food until it enters the mouth. It is a voluntary act, conscious and modifiable.

Conceptually we speak of nutrition as the set of processes through which the living being uses, transforms and incorporates into its structures substances that it receives through food with the objective of obtaining energy, constructing-repairing the organism and regulating metabolic processes. It is an involuntary and non-modifiable act.

The WHO defines malnutrition as the imbalance between the contribution and needs of nutrients and calories that ensure growth, maintenance and specific functions. It is classified classically in:

- Caloric malnutrition: marked decrease in weight and adipose tissue.
- Predominantly protein malnutrition: severe decrease in protein intake and/or increased requirements (acute illness).
- Mixed malnutrition.
- Deficiency states.

The term malnutrition means alteration of nutrition, both by default (malnutrition) and by excess (hypernutrition). It is, therefore, the result of an imbalance between the bodily needs and the intake of nutrients that can lead to a deficiency syndrome, dependence, toxicity or obesity.

Soeters., *et al.* (Clinical Nutrition 2008) define malnutrition as a state in which a combination of varying degrees of malnutrition or over-nutrition related to inflammatory processes condition changes in body composition and functional alterations.

The relationship nutrition-health, malnutrition-disease and improve the care of malnourished patients or at risk of malnutrition invites reflection on the importance of the Family Doctor in that an adequate nutritional assessment in Primary Care would improve the survival of their patients, reducing complications, hospital stays and socio-economic costs.

The Nutritional Supplements (SN) are complete preparations or not, in terms of their composition, are administered orally and allow dosing in a certain way (in small quantities). They supplement or improve an insufficient oral diet, have a medical purpose and are considered a dietetic food for special medical purposes.

### Justification

- Order of June 2, 1998 on nutrition within the configuration of health services.
- Royal Decree 63/1995 on dietetic and enteral nutrition treatments.
- Portfolio of Public Health Services of the Valencian Community (Conselleria de Sanitat).

The inclusion in Public Health of food practices and nutrition in the target population groups supposes the institutional support to the promotion of a healthy diet from Primary Care as one more activity of the daily consultation.

### Objectives

#### General

- Assess nutritional requirements.
- Determine the nutritional status of the population.
- Identify the patients that can benefit from a nutritional intervention.
- Predict the possibility of presenting risks added to the disease, attributable to nutritional disorders.

#### Specific

- Organize the nutritional risk assistance activity from primary care consultations.
- To improve the coordination between the different levels and resources involved in the care of these patients (Endocrinology, Oncology, Surgery, Internal Medicine and Domiciliary).
- Reduce the costs of hospital malnutrition by avoiding unnecessary referrals.
- Initiate and/or improve the training of the professionals of the Department in this assistance activity.

### Diana Population

#### Geriatric population

- Elderly people at risk of malnutrition. Grade recommendation B.
- Malnourished elderly. Grade recommendation A.
- Fragile elderly. Grade recommendation A.
- Elderly with pressure ulcers (UPP). Grade recommendation A.
- Elderly after surgical procedures (hip fracture, ...). Degree of recommendation A.

#### Risk groups

- Drug addicts.
- Alcoholics.
- Migrants (poor).
- Older age.
- Marginal exclusion.

#### Malnourished patients with:

- Kidney disease (dialysis).
- Diabetes.

- Oncological pathology.
- Neurological pathology.

### Nutritional Intervention

Aging is a process of very heterogeneous causes, influenced by biological, psychological and social changes.

While the passage of time is the same for the entire human body, not all organs suffer their effects in the same way. These universal effects, progressive and, in many cases, irreversible, usually affect one way or another the nutrition and the physiology of nutrition.

The nutritional intervention using enteral formulas with a defined mixture of macro and micronutrients, used as the sole nutritional source or as a complement to the normal intake of the patient, prevents the risk of malnutrition or corrects the already established one, reducing complications and associated morbidity and mortality.

To whom do we administer a nutritional supplement?

They are indicated in:

Patients with insufficient intake (2/3 of the nutritional requirements):

- Difficulty in swallowing and swallowing.
- Decrease in intake in polymedicates.
- Oncological pathology.
- Functional deterioration.
- Neurological diseases.

Patients with increased protein and/or energy requirements:

- Pressure ulcers (UPP)
- Hip fractures.
- Chronic pathologies that occur with cachexia (COPD, IC, ..)
- Situations of metabolic stress (QT, post-surgery, infections, ...)

### What supplements do we have to give?

Royal Decree 1091/2000, in article 2, of the Ministry of Health classifies complete foods in:

- **Standard supplements:** With normal formulation in nutrients.
- **Specific supplements:** With adapted and specific formulation for certain diseases, disorders or conditions such as diabetes, cancer, kidney disease, liver, etc ...

### Types

**Protein supplements:** They provide high amounts of proteins of high nutritional value, as well as energy, vitamins and minerals. They should be used in all those patients with insufficient protein intake, with difficulties to eat and with increased protein requirements.

**Energy supplements:** Contains a high caloric intake in a small volume. They are rich in carbohydrates, lipids, but also contain proteins, vitamins and minerals. They should be used in patients with insufficient energy intake, with difficulties in eating and with increased energy requirements and/or water restriction.

Whenever possible, the patient should participate in the choice of taste and smell, taking into account that neutral flavors allow them to be added as ingredients of traditional food.

In the presence of problems in the control of swallowing, supplements in cream texture will be administered and thickeners will be used for liquids.

In terms of temperature, the most accepted are those with a sweet taste if they are cold and in case of warm / warm preference, heat in a bain-marie or in a microwave, avoiding boiling.

Regarding the administration schedule, its objective is to ensure that oral food intake does not decrease, avoiding the displacement of the usual intake with a breakfast, mid-morning, lunch, snack, dinner and snack time. 22h30'.

They must be kept in a refrigerator and once opened no more than 24 hours. Keep them always closed.

The record of the intake of the supplement is essential to assess the nutritional intervention and modify it if necessary. You have to perform an evaluation at 3 months, if there is improvement withdraw the supplement and reevaluate at 6 months, if it remains the same or worse go to a complete enteral diet (oral or tube) and reevaluate at 2 months.

The control of spontaneous intake should not be neglected in order to be able to supplement, since the efficacy and the guideline of supplementation depend on it.

### **Organization**

The program will begin with the model of "Clinical Nutrition Unit" formed by:

- Médico.
- ATS/DUE.
- Dietitian.
- Pharmacist.

For initial implementation, the "formator of trainers" will attend the consultation to their patients and their teammates by scheduled appointment. This plan means the internal referral of patients, guarantee the equity of care and the learning of all professionals. The trainer receives the patients referred by the colleagues of the EAP mentioned in a weekly schedule of scheduled visits.

### **Development phases**

- Start the activity in a Health Center of the Department, following the initial schedule approved by the Directorate.
- Promote and facilitate the training of all professionals, decentralizing the attention, in its day, by basic health area.

### **Activities of professionals**

#### **Activities of the medical staff**

Clinical and dietetic H: 24-hour survey or diet record over a period of time:

- Number of daily meals.
- Quantity, quality and variety of foods.
- Fluid intake.
- Way of eating.
- Purchase and preparation of food.
- Presence of digestive symptoms: vomiting, diarrhea, satiety.

#### **Clinical exploration**

- Signs of malnutrition

#### **Biochemical parameters**

- Albumin.
- Cholesterol.

- Lymphocytes.
- Transferrin
- Prealbumin.

Installation of treatments.

Control of patients at the request of nursing and consultation at discharge.

#### **Activities of the nursing staff**

##### **Anthropometry**

- Weight.
- Size (standing, knee height, knee length maleolo and distance elbow-style).
- IMC
- Measure of skin folds and arm circumference (MUAC).

Nutritional screening (Nutritional assessment scales).

They are validated tools for diagnosis, they allow to detect the risk and appropriate for the population studied.

##### **Clinical methods**

- NRS (nutritional risk screening): ESPEN
- MUST (universal malnutrition screening tool): ESPEN
- MNA (Mini-Nutritional Assessment).

##### **Automated method**

##### **CONUT**

The MNA and the MUST are the most used in Primary Care. The first one has greater specificity and sensitivity in the population over 65 years old, and the second one is validated for the population in general.

##### **Activities of the dietitian**

- Nutritional assessment, food care and nutritional education of patients.
- Planning, coordination and computerization of diets.
- Nutritional formulation of enteral and parenteral nutrition.
- Development and monitoring of dietary intervention protocols for specific patient groups.

##### **Pharmacist activities**

- Selection of artificial nutrition preparations.
- Assessment of the requirements, design and preparation of the diets.
- Counseling of the prescription and monitoring of patients with nutritional support given their knowledge in pharmacotherapy, pharmacokinetics, metabolism and interactions of nutrients and drugs.

##### **Activities of the multidisciplinary team**

##### **Continuing Education**

- Sessions of the Unit and with Specialized Attention.
- Internal rotation of professionals.
- Preparation of a satisfaction survey.

Teaching and research activity.

Internal circuit of the Health Center. Patient management

### **Uptake to the program**

- Active recruitment of all subsidiary patients to benefit from this clinical and care activity.

### **Collection mechanism**

- Through medical consultation on demand and/or scheduled.
- Through the nursing consultation, in consultation and/or home, referring to your doctor.

### **First visit (each center doctor). Valuation-derivation**

**Objective:** To collect complete information about the patient and his pathology for his referral to the nutrition consultation.

### **Scheduled nutrition consultation**

**Objective:** Development of the program by the multidisciplinary team of the clinic nutrition clinic.

Follow-up visits.

Consultation scheduled for medical discharge.

### **Indicators of Nutritional Risk**

- Involuntary weight loss of 5% in one month, 7.5% in three months or 10% in six months.
- Low weight for height (< 20% of ideal weight).
- BMI < 22.
- Serum albumin < 3.5 mg/dl.
- Serum cholesterol < 160 mg/dl.
- Change in functional status, from independent to dependent.
- Adequate food intake.

### **Patient Type for Valuation**

- Normal nutrition (weight loss < 5%):
  - Dietary recommendations.
  - Recommended eating habits.
- Mild-Moderate Malnutrition (weight loss between 5-10%):
  - Weekly weight control.
  - Oral nutritional support.
  - Review.
- Severe Malnutrition (weight loss of more than 10%):
  - Derive to specialty.

### **Coordination**

A fluid relationship with Specialized Care is key and important, resulting in its fundamental participation in cases of diagnostic doubt, therapeutic indication, ongoing training and patient follow-up when the ability to act in Primary Care is exceeded.

### **Resources**

- **Humans**
  - Doctor (Family and Specialty).

- ATS/DUE.
- Dietitian.
- Pharmacy.
- Materials**
  - Query.
  - First electronic clinic (“Abucasis”).
  - Anthropometry: height and weight.
  - Laboratory “on line”: biochemical parameters.
- Stationery**
  - Nutritional assessment scales (MNA, MUST,...).
  - Satisfaction surveys.

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