

REGULATION (EU) No 609/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL  
of 12 June 2013

on food intended for infants and young children, food for special medical purposes, and total diet replacement for weight control and repealing Council Directive 92/52/EEC, Commission Directives 96/8/EC, 1999/21/EC, 2006/125/EC and 2006/141/EC, Directive 2009/39/EC of the European Parliament and of the Council and Commission Regulations (EC) No 41/2009 and (EC) No 953/2009

(Text with EEA relevance)

From July 2016

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foods for infants

foods for special  
medical purposes

total replacements  
diet for the  
reduction of body  
weight

The field of **products intended for particular nutritional uses**, where **there are foods for infants and dietary products, is currently governed by Directive 2009/39/EC**, which codified Directive 89/398 / EEC. It shall be adopted in Italy under the current Legislative Decree 27 January 1992 n. 111.

Since July 20, 2016, Directive 2009/39/EC will be repealed for regulatory simplification by Regulation (EU requirements) 609/2013, commonly referred to by the acronym **FSG (Food for Specific Group) integrated for the Infant Formula from the Reg EU 127/2016.**

The three above-mentioned categories of products, such as exclusive or partial food sources, are intended for specific groups of the population with special nutritional needs, such as infants and young children, subjects rendered nutritionally vulnerable to certain disorders, diseases or medical conditions, persons with excess weight and for reducing body weight should fully satisfy requirements for essential nutrients with a reduced energy intake, or much reduced.



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Foods for infants are products specifically intended for infants (individuals under the age of 12 months) and young children (subjects 1 to 3 years).

Are among these foods:

1. infant formula and follow-on formulas, covered by Directive 2006/141/EC, implemented by decree 9 April 2009 no. 82
2. cereal-based foods and foods for infants and young children (baby food), covered by Directive 2006/125/EC, which codified Directive 96/5/EC (implemented with the latter existing DPR 128/1999)

Included there are also so-called "growth milks", intended for children 1 to 3 years as supply milk component.

Decree 9 April 2009, n. 82 contains a number of provisions that are aimed, in particular, to ensure proper marketing of infant formula, in order to ensure maximum protection to breastfeeding.

This practice represents an unequalled way of providing ideal nutrition for healthy growth and optimal development of the infant, with medium- and long-term benefits for the health of the baby and the mother.

Under Article 13 of the Ministerial Decree 9 April 2009, n. 82 "conferences on nutrition in early childhood", before they occur, should be reported to the Ministry of Health which will assess in particular whether the objectives of the promotion of breastfeeding and proper nutrition of infants and young children.



The foods for special medical purposes are regulated (AFMS) by Directive 99/21 / EC, implemented by Presidential Decree of 20 March 2002 n. 57.

The New Regulation (EU) 609/2013 proposes the definition: "a specially developed food or formulated and intended for the dietary management of patients, including infants, to be used under medical supervision; It is intended for use as full or partial of patients with limited capacity, disturbed or altered to take, digest, absorb, metabolize or eliminate ordinary food or certain nutrients contained therein or metabolites, or with other specific nutritional needs of clinical conditions and whose dietary management can not be performed with the modification of the normal diet. "

As for the composition, the AFMS are cataloged by Directive 99/21/EC in the following three categories:

1. complete products from a nutritional point of view with a standard nutrient formulation
2. complete products from a nutritional point of view with a nutrient formulation adapted to a specific disease, disorder or medical condition
3. incomplete product from the nutritional point of view with a standard formulation or adapted to a specific disease, disorder or medical condition, which does not represent the only daily food source

The AFMS must comply with guidelines on foods for special medical purposes, as of December 2015 and shall be notified for placing on the market.

Are among the AFMS dependents deliverable products of the National Health Service for patients with congenital metabolic diseases or cystic fibrosis.

## Specific requirements on food information

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1. Unless otherwise provided in this Regulation, food for special medical purposes shall comply with Regulation (EU) No 1169/2011.
2. In addition to the mandatory particulars listed in Article 9(1) of Regulation (EU) No 1169/2011, the following shall be additional mandatory particulars for food for special medical purposes:
  - (a) a statement that the product must be used under medical supervision;
  - (b) a statement whether the product is suitable for use as the sole source of nourishment;
  - (c) a statement that the product is intended for a specific age group, as appropriate;
  - (d) where appropriate, a statement that the product poses a health hazard when consumed by persons who do not have the disease, disorder or medical condition for which the product is intended;
  - (e) the statement 'For the dietary management of ...' where the blank shall be filled in with the disease, disorder or medical condition for which the product is intended;
  - (f) where appropriate, a statement concerning adequate precautions and contra-indications;
  - (g) a description of the properties and/or characteristics that make the product useful in relation to the disease, disorder or medical condition for the dietary management of which the product is intended, in particular, as the case may be, relating to the special processing and formulation, the nutrients which have been increased, reduced, eliminated or otherwise modified and the rationale of the use of the product;
  - (h) where appropriate, a warning that the product is not for parenteral use;
  - (i) instructions for appropriate preparation, use and storage of the product after the opening of the container, as appropriate.

The particulars referred to in points (a) to (d) shall be preceded by the words 'important notice' or their equivalent.

### Specific requirements on the nutrition declaration

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1. In addition to the information referred to in Article 30(1) of Regulation (EU) No 1169/2011, the mandatory nutrition declaration for food for special medical purposes shall include the following:
  - (a) the amount of each mineral substance and of each vitamin listed in Annex I to this Regulation and present in the product;
  - (b) the amount of components of protein, carbohydrate, fat and/or of other nutrients and their components, the declaration of which would be necessary for the appropriate intended use of the product;
  - (c) information on the osmolality or the osmolarity of the product where appropriate;
  - (d) information on the source and the nature of the protein and/or protein hydrolysates contained in the product.
2. By way of derogation from Article 30(3) of Regulation (EU) No 1169/2011, the information included in the mandatory nutrition declaration for food for special medical purposes shall not be repeated on the labelling.
3. The nutrition declaration shall be mandatory for all food for special medical purposes, irrespective of the size of the largest surface of the packaging or container.
4. Articles 31 to 35 of Regulation (EU) No 1169/2011 shall apply to all the nutrients included in the nutrition declaration for food for special medical purposes.
5. By way of derogation from Article 31(3) of Regulation (EU) No 1169/2011, the energy value and the amounts of nutrients of food for special medical purposes shall be those of the food as sold and, where appropriate, those of the food ready for use after preparation in accordance with the manufacturer's instructions.
6. By way of derogation from Article 32(3) and (4) of Regulation (EU) No 1169/2011, the energy value and the amount of nutrients of food for special medical purposes shall not be expressed as a percentage of the reference intakes set out in Annex XIII to that Regulation.

#### Nutrition and health claims

Nutrition and health claims shall not be made on food for special medical purposes.

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## For Marketing

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### Notification

When food for special medical purposes is placed on the market, the food business operator shall notify the competent authority of each Member State where the product concerned is being marketed of the information appearing on the label, by sending to it a model of the label used for the product, and of any other information the competent authority may reasonably request to establish compliance with this Regulation, unless a Member State exempts the food business operator from that obligation under a national system that guarantees an efficient official monitoring of the product concerned.





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The products presented in accordance with current legislation **as total replacements of the diet for weight reduction which provide an energy intake of between 800 and 1200 kcal, the so-called Low Calorie Diet (LCD)**, are governed by Directive 96/8/EC , implemented by Ministerial Decree of 1 June 1998, no. 519. This law **also regulates the meal replacement, whose caloric intake should be between 200 and 400 kcal.**

**The Food for specific groups Regulation (FSG) will include in its scope the requirements for products such as LCD**, now covered by Directive 96/8/EC, but also provisions to regulate the products presented as a total substitute the diet with an intake energy less than 800 kcal, that is, the Very Low Calorie Diet (VLCD), for which currently there is no specific legislation at EU level.

The VLCD nationwide fall upon among AFMS and will continue to maintain this position until the harmonization of the matter.

And 'being part of the EU Commission preparing the delegated act which will define the composition of LCD and VLCD criteria, based on the opinion issued by EFSA - EFSA Journal 2015; 13 (1): 3957.

As regards meal replacements, such products will not fall in the context of FSG Regulation. It has in fact agreed to consider them as common foods, which will apply Regulation (EC) 1925/2006 on the addition of vitamins and minerals. Regarding the claims of Regulation (EU) 432/2012, the existing compositional requirements of Directive 96/8/EC will be adopted as a condition for their use.



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Indicazioni	MIN	MAX
Energia intera razione alimentare giornaliera	800 kcal (3360 kJ)	1200 kcal (5040 kJ)
Energia per pasto	200 kcal (840 kJ)	400 kcal (1680 kJ)
Proteine (sull'energia totale del prodotto)	25%*	50% (non oltre 125 g)
Grassi§ (sull'energia totale del prodotto)	-	30%
Fibre alimentari	10 g	30 g
Vitamine e minerali	Per i sostitutivi dell'intera razione giornaliera i valori devono coprire il 100%, mentre per i prodotti sostitutivi di pasto devono fornire almeno il 30% per pasto. Il quantitativo di K fornito da questi prodotti non deve tuttavia essere inferiore a 500 mg per pasto	

\* Se l'indice chimico è inferiore a 100% della proteina di riferimento, i livelli minimi di proteina devono essere aumentati in conseguenza e, in ogni caso, l'indice chimico della proteina deve essere almeno uguale all'80% di quello della proteina di riferimento. L'"indice chimico" indica il rapporto più basso tra la quantità di ciascun aminoacido essenziale della proteina in prova e la quantità di ciascun aminoacido corrispondente della proteina di riferimento.

§Per i sostitutivi dell'intera razione giornaliera l'acido linoleico (sotto forma di gliceridi) non deve essere inferiore a 4,5 g mentre per i prodotti sostitutivi di pasto, l'acido linoleico (sotto forma di gliceridi) non deve essere inferiore a 1 g.



# Nutritional needs through life

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U10

## Key stages in life

The key stages in life include:

- pregnancy;
- infancy;
- childhood;
- adolescence;
- adulthood.

Energy and nutrient requirements change through life and depend on many factors, such as:

- age;
- sex;
- body size;
- level of activity.



# Food for Specific Group

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## Composition

Infant formulae shall be manufactured from protein sources defined in point 2 of Annex I, while for follow-up formula the reference is the AnnexII, and other food ingredients, as the case may be, whose suitability for particular nutritional use by infants from birth has been established by generally accepted scientific data

### Article 8

1. Only the substances listed in Annex III may be used in the manufacture of infant formulae and follow-on formulae in order to satisfy the requirements on:

- (a) mineral substances;
- (b) vitamins;
- (c) amino acids and other nitrogen compounds;
- (d) other substances having a particular nutritional purpose.

### Article 9

1. To facilitate the efficient official monitoring of infant formulae, when a food business operator places an infant formula on the market he shall notify the competent authority of the Member States where the product is being marketed by forwarding to it a model of the label used for the product.



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Il latte materno primo ed insostituibile alimento per il neonato.....

## Caratteristica

## Vantaggi

Composizione

Nutrienti in quantità e proporzioni adeguate

Protezione da infezioni batteriche

Apporto di Ig, lattoferrina, lisozima e cellule del sistema immunitario

Azione preventiva

↓incidenza di allergie alimentari in età adulta

Benessere psicologico

Rapporto madre-figlio

Praticità

Pronto, fresco, a temperatura ambiente

Aspetto economico

Costo contenuto



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Composizione media dei diversi tipi di latte umano e vaccino (valori su 100g)

Tipo di latte	Colostro	Latte di transizione	Latte maturo	Latte vaccino
<b>Proteine (g)</b>	2.7	1.6	1.1	3.2
<b>Lipidi (g)</b>	2.0	2.8	3.2	3.7
<b>Zuccheri (g)</b>	5.0	6.5	7.0	4.8
<b>Sodio (meq)</b>	2.1	0.6	0.1	2.2

Le formulazioni per lattanti sani hanno come base il latte vaccino opportunamente modificate per avvicinarsi il più possibile al latte materno



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## LIPIDI

### Quantitativamente

latte vaccino  
sovrapponibile con il  
latte umano maturo

### Qualitativamente

- ↓ ac.grassi insaturi , ↑ ac.grassi saturi
- Ac. Palmitico in posizioni ≠ dalla 2 = ↓ biodisponibilità di Ca<sup>++</sup>
- Presenza di ac.butirrico → rigurgito

Distribuzione delle varie classi lipidiche nel latte materno e vaccino

Tipo di latte	Colostro	Latte di transizione	Latte maturo	Latte vaccino
Lipidi totali (%)	2.0	2.8	3.2	3.7
Fosfolipidi	1.1	0.8	0.8	0.2-1.0
Colesterolo	1.3	0.7	0.5	0.42-0.46
Trigliceridi	97.6	98.5	98.9	95-98
Digliceridi				0.28-0.59
Monoglicerid				0.16-0.38
Ac.grassi liberi				0.1-0.4
Esteri del coesterolo				Tracce-0.02



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## PROTEINE

### Quantitativamente

3 del latte umano

### Qualitativamente

- ↑ contenuto di caseine
- povero in sieroproteine → no azione
- immunizzante
- b-lattoglobulina allergizzante

Distribuzione delle proteine in varie specie di mammifero

Tipo di latte	Contenuto proteico (%)	caseine	sieroproteine
Donna	1.1	35	65
Vacca	3.2	80	20
Pecora	4.9	84	16
Capra	4.3	84	16
Asina	2.0	33	67



## CARBOIDRATI

Tipo di latte	Lattosio (%)	Oligosaccaridi (%)
Donna	6.0	1.1
Vacca	4.8	0.1

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Il lattosio: fornisce il 40% delle calorie totali

facilita l'assorbimento di  $Ca^{++}$  e  $Mg^{++}$

regola il pH nell'intestino

idrolizzato in glucosio e galattosio che partecipa alla maturazione del SNC

Oligosaccaridi: digeriti nell'intestino usati a scopo energetico

contribuiscono all'osmolarità del latte

favoriscono la crescita della flora acidofila che contrasta la patogena

contenimento dei processi fermentativi a livello intestinale



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## VITAMINE E MINERALI

Il latte materno è ricco di Vit E e C (al limite del fabbisogno), ma al contrario è povero in Vit K, ac. folico e biotina.

Il contenuto del latte umano è il 30% del latte vaccino ↓ carico renale

Il Ca del latte umano soddisfa il fabbisogno nutrizionale ed è > biodisponibile, così come il Fe anche se presente in basse quantità.

Sono comunque influenzati molto dalla dieta.

Tabella 12  
Contenuto medio di vitamine in 100 mL di latte umano e vaccino

Vitamina	Latte umano	Latte vaccino
<b>Vitamine liposolubili</b>		
▶ Vitamina A	0.045 mg	0.030 mg
Carotenoidi	0.027 mg	0.039 mg
Vitamina D	0.031 µg	0.020 µg
▶ Vitamina E	0.67 mg	0.070 mg
Vitamina K	0.38 µg	0.90 µg
<b>Vitamine idrosolubili</b>		
Vitamina B <sub>1</sub>	0.020 mg	0.048 mg
Vitamina B <sub>2</sub>	0.052 mg	0.159 µg
Vitamina B <sub>6</sub>	0.018 mg	0.056 mg
Vitamina B <sub>12</sub>	0.049 µg	0.40 µg
Vitamina C	4.80 mg	0.90 mg
Acido folico	9.00 µg	5.58 µg
Acido pantotenico	0.23 mg	0.335 mg
Biotina	0.67 µg	2.90 µg
Niacina	0.17 mg	0.092 mg

Tabella 13  
Contenuto medio di minerali in 100 mL di latte umano e vaccino

Minerale	Latte umano	Latte vaccino
<b>Macroelementi (mg)</b>		
Calcio	32	130
Cloro	45	105
Fosforo	16	95
Magnesio	4	12
Potassio	60	140
Sodio	18	51
Zolfo	15	35
<b>Microelementi (µg)</b>		
Alluminio	30-100	50-100
Cobalto	—	0.05-0.1
Ferro	50-100	20-50
Fluoro	—	10-20
Iodio	5-10	1.5-5
Manganese	2-6	3-5
Rame	10-50	2-15
Silicio	50-150	150-700
Zinco	300-500	200-500

Dati elaborati da: Vitamins in milk. In: RG Jensen (ed). Handbook of milk composition Academic Press, S. Diego, 1995.





Le modifiche sul latte vaccino devono tener conto:  
dei fabbisogni nutrizionali  
delle caratteristiche digestive e metaboliche del lattante

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Apporto energetico: 60-75 Kcal/100ml

Proteine: ↓ contenuto proteico  
rapporto sieroproteine /caseine > 1

Lipidi: ↑ ac. grassi poliinsaturi  
rapporto ac grassi  
saturi/monoinsaturi/polinsaturi 45/40/15  
rapporto ac linoleico/linolenico 5-15

Carboidrati: ↑ lattosio  
↑ oligosaccaridi

Vitamine e minerali: ↓ contenuto di Sali  
equilibrare il contenuto di Ca, Fe, P  
integrare il contenuto minimo di Vit

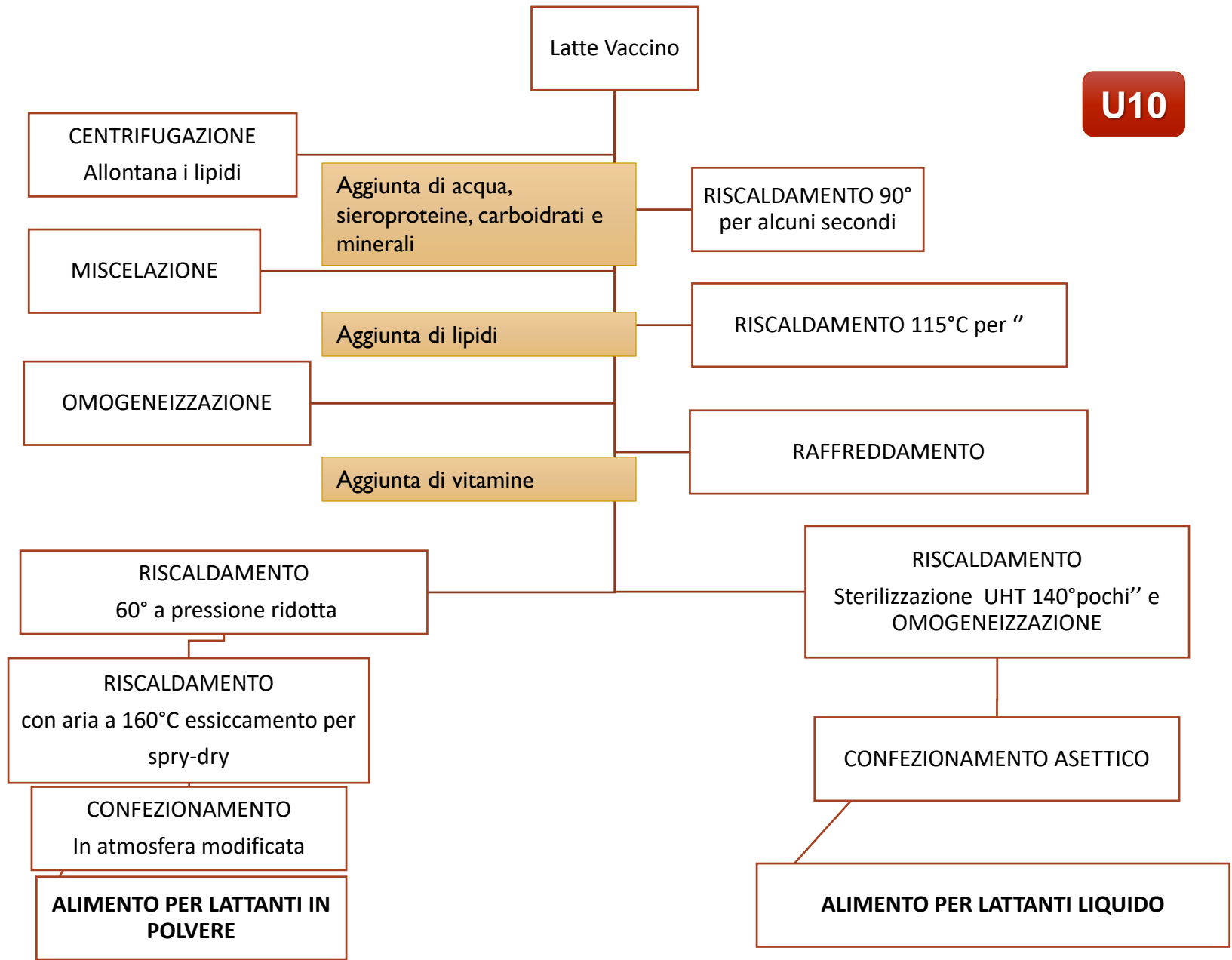
Nucleotidi: 20%di azoto non proteico  
attivi nello sviluppo  
della mucosa intestinale e del sistema immunitario



aggiunta di sieroproteine  
latte vaccino (a-lattoalbumina)

aggiunta di lipidi vegetali preferenza  
oli di oliva e mais, vietati sesamo e  
cotone (allergizzanti)

aggiunta di maltodestrine derivate  
da idrolisi dell'amido



TRATTAMENTI FISICI PER LA PRODUZIONE DI ALIMENTI PER LATTANTI

## LATTI PER LATTANTI (starting)



1

Alimento completo e bilanciato indicato nell'alimentazione, dalla nascita fino al 6° mese compiuto.

Latte scremato; sieroproteine demineralizzate in polvere; oli vegetali (contenenti lecitina di soia); lattosio; sciroppo di galatto-oligosaccaridi (GOS); minerali; olio di pesce; colina bitartrato; L-tirosina; vitamine; taurina; inositolo; L-triptofano; stabilizzante: L(+) acido lattico; nucleotidi.

60-75 Kcal/100ml

## LATTI DI PROSEGUIMENTO

VEDI TUTTI >

MELLIN 2 POLVERE	MELLIN 2 LIQUIDO	MELLIN HA 2*	AIUTA LA DIGESTIONE DEL LATTOSIO*
Latte indicato dopo il 6° fino al 12° mese	Latte indicato dopo il 6° fino al 12° mese	Latte indicato dopo il 6° fino al 12° mese *Con sieroproteine parzialmente idrolizzate.	Latte indicato dopo il 6° fino al 12° mese *Grazie lattasi attiva

Alimento completo  
Indicato a bambini con allergia al latte vaccino

2

60-75 Kcal/100ml

Rispetto alle formule 1 cambia la quantità di glucidi, proteine e ferro che aumenta

## LATTI DI CRESCITA

VEDI TUTTI >

LATTE CRESCITA 3 POLVERE	LATTE CRESCITA 3 LIQUIDO	LATTE CRESCITA CON BISCOTTO	LATTE CRESCITA 4 POLVERE
Alimento in polvere per bambini indicato dal 12° al 24° mese	Alimento liquido per bambini indicato dal 12° al 24° mese	Alimento in polvere per bambini indicato dai 12 mesi	Alimento in polvere per bambini indicato dal 24° al 36° mese

3

65 Kcal/100ml

Porzione da 200 mL



con FERRO per il normale sviluppo cognitivo

con CALCIO e VITAMINA D per la normale crescita e lo sviluppo di ossa e denti

fornisce un APPORTO BILANCIATO DI PROTEINE



IN CASO DI REFLUSSO	IN CASO DI ALLERGIA	IN CASO DI DIARREA	PREMATURI
Alimenti a fini medici speciali in caso di patologia da reflusso gastro-esofageo	Alimenti dietetici fini medici speciali in caso di allergia alle proteine del latte vaccino	Alimento dietetico in polvere a fini medici speciali per lattanti e bambini indicato nei casi di diarrea acuta	Alimento dietetico in polvere a fini medici speciali per neonati pretermine e/o di basso peso alla dimissione

Latti ispessiti con amido di riso, di mais o con farina di semi di carrube (componenti attivi galattomannani)

Idrolisati di proteine di latte vaccino (HA Hypoantigenic): le proteine sono di dimensioni ridotte scissione delle sequenze epitopiche L'idrolisi avviene mediante enzimi Sono idrolizzati di sieroproteine Parzialmente e fortemente idrolizzate

Latti con ridotto tenore di lattosio a composizione ipotonica

75-80 Kcal/100ml  
Energia 135 Kcal/Kg/die  
equilibrare liquidi  
+ sieroproteine AAess e cisteina  
+ AA e DHA 0.35/0.4%  
+MCT  
+vitamine (K)  
+ Ca/ P rapporto 2, Na

## For labelling

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The labelling of infant formulae shall, in addition, bear the following mandatory particulars, preceded by the words 'Important Notice' or their equivalent:

- (a) a statement concerning the superiority of breast feeding;
- (b) a statement recommending that the product be used only on the advice of independent persons having qualifications in medicine, nutrition or pharmacy, or other professionals responsible for maternal and child care.

5. The labelling of infant formulae shall not include pictures of infants, nor shall it include other pictures or text which may idealise the use of the product. It may, however, have graphic representations for easy identification of the product and for illustrating methods of preparation.

The use of the terms 'humanised', 'maternalised', 'adapted', or similar terms shall be prohibited

6. The labelling of infant formulae may bear nutrition and health claims only in the cases listed in Annex IV and in accordance with the conditions set out therein.

## For labelling

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### NUTRITION AND HEALTH CLAIMS FOR INFANT FORMULAE AND CONDITIONS WARRANTING A CORRESPONDING CLAIM

#### 1. NUTRITION CLAIMS

Nutrition claim related to	Conditions warranting the nutrition claim
1.1 Lactose only	Lactose is the only carbohydrate present.
1.2 Lactose free	Lactose content is not greater than 2,5 mg/100 kJ (10 mg/100 kcal).
1.3 Added LCP or an equivalent nutrition claim related to the addition of docosahexaenoic acid	The docosahexaenoic acid content is not less than 0,2 % of the total fatty acid content.
1.4 Nutrition claims on the addition of the following optional ingredients:	} Voluntarily added at a level that would be appropriate for the intended particular use by infants and in accordance with the conditions set out in Annex I.
1.4.1 taurine	
1.4.2 fructo-oligosaccharides and galacto-oligosaccharides	
1.4.3 nucleotides	

# Nutritional needs through life



## Weaning



### Olio extravergine di oliva

Aggiungi alla sua pappa un cucchiaino di olio extravergine di oliva vitaminizzato crudo.

### Omogeneizzati di frutta

Per i suoi primi assaggi, dopo la pappa o a merenda, scegli mela, pera e prugna.

### Liofilizzati e Omogeneizzati di carne

Inizia con i liofilizzati per poi passare agli omogeneizzati nelle varietà più delicate: agnello, coniglio o tacchino.

### Cereali per l'infanzia

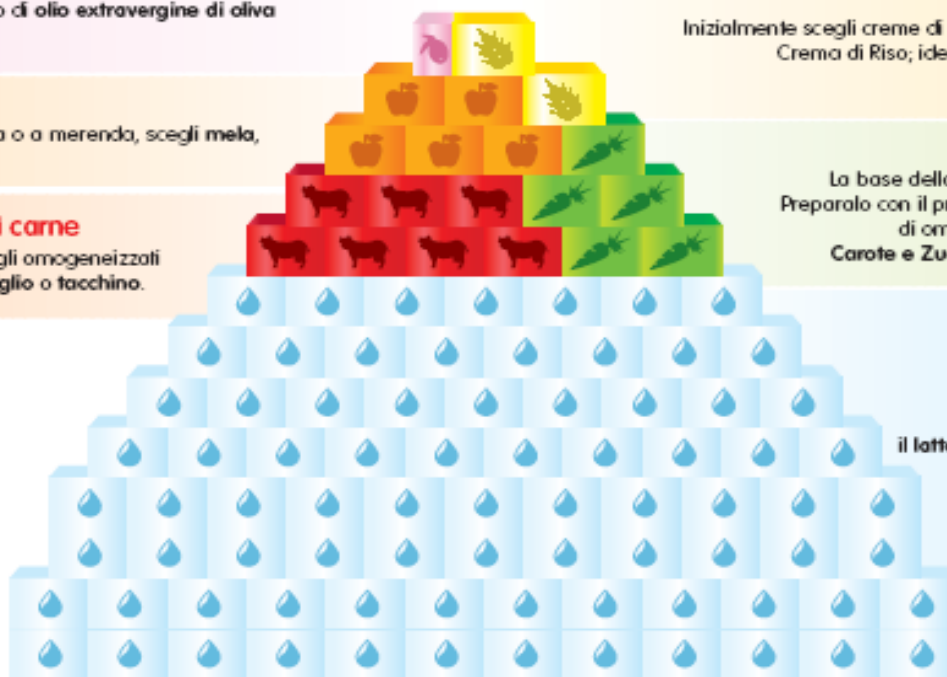
Inizialmente scegli creme di cereali privi di glutine iniziando con la Crema di Riso; ideale anche perché altamente digeribile.

### Omogeneizzati di verdure

La base della sua prima pappa è il brodo vegetale. Preparalo con il pratico brodo già pronto o con le varietà di omogeneizzati più semplici come Patate, Carote e Zucchine o Carote, Mais dolce e Patate.

### Latte materno e pappe latte

Con 3-4 pasti di latte al giorno, il latte materno è il suo principale alimento. In mancanza di questo, scegli il latte di proseguimento.



### Come leggere la piramide

- La piramide rappresenta visivamente la quantità - in percentuale - di ogni alimento che un bambino dovrebbe mangiare in questa fascia d'età, nell'arco di una settimana.
- La sua alimentazione è basata soprattutto sul latte. Giorno dopo giorno proponi nel suo menu i primi assaggi di frutta, verdura, cereali e carne.





# Nutritional needs through life

## Childhood

Children should be encouraged to eat a variety of foods from each of the four main food groups:

fruit and vegetables;

bread, rice, potatoes, pasta and other starchy foods;

milk and dairy foods;

meat, fish, eggs, beans and other non-dairy sources of protein.

- Childhood is an important time for growth and development.
- Children need a good supply of protein, and other nutrients including calcium, iron and vitamins A and D.
- Children begin to take responsibility for their own food choices around this time. It is therefore important to encourage them to eat a healthy, varied diet which is rich in fruit, vegetables and starchy foods.

1 PORZIONE DI FRUTTA E VERDURA EQUIVALE A:

### UNA MANO PIENA

(per frutta/verdura in unica grossa pezzatura come mela, pera, arancia, pesca, kiwi, banana, pomodoro, peperone)



### DUE MANI PIENE

(per frutta/verdura piccola o che si taglia in piccoli pezzi come fragole, mirtilli, ananas, uva, ciliegie, insalata, cime di broccolo, pomodorini, ciliegia, carote grattugiate, cavolfiore, ravanelli, cetrioli tagliati, zucchine tagliate)

Per le verdure cotte si può utilizzare il metodo della mano e del pugno



- Children should be encouraged to remain a healthy weight with respect to their height.
- A healthy family lifestyle can help to maintain a healthy weight, such as being active together or sharing meals.
  - Dental hygiene is very important. Children should pay attention to dental hygiene and ways to prevent dental caries.  
Teeth should be brushed twice a day with a fluoride-containing toothpaste.
- Sugar-containing foods and drinks should be limited to meal times



# Nutritional needs through life



U10

## Adulthood

- Nutritional requirements do not change much between the ages of 19 to 50, except during pregnancy and lactation.
- A poor diet can lead to diseases such as obesity, cardiovascular diseases, cancer and diabetes.



## Healthy weight for adults

- Adults should aim for a healthy body weight for their height and try to keep it at that level.
- The Body Mass Index (BMI) is an indicator of whether a person is underweight, overweight or a healthy weight.
- To calculate BMI ( $\text{kg}/\text{m}^2$ ), divide weight (kg) by height (m) x height (m).

$$\text{BMI} = \frac{\text{weight (kg)}}{\text{height (m)} \times \text{height (m)}}$$

### Recommended BMI range

Underweight	less than 18.5
Normal	18.5 - less than 25
Overweight	25 - less than 30
Obese	30 - 40
Very obese	over 40

# Nutritional needs through life

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## Pregnancy

A varied diet, providing adequate amounts of energy and nutrients, is essential both before a woman becomes pregnant (conception) and during pregnancy.

The mother's diet can influence the health of the baby. Having a healthy body weight is important.

Being underweight can make it more difficult to become pregnant and make it more likely for the baby to have a low birth weight, leading to a greater risk of ill health.

### Did you know?

Being overweight increases the risk of complications, such as high blood pressure and diabetes during pregnancy.

During pregnancy, some extra nutrients are needed (mainly in the last three months) to:

- help the development of the uterus, placenta and other tissues;
- meet the needs of the growing foetus;
- lay down stores of nutrients and energy (as fat) for the growth of the foetus and in the mother for lactation.

**Folic acid (B9)** is the synthetic form of the B vitamin, folate. It is needed for rapid cell division and growth in the foetus that takes place during pregnancy

**DHA (omega-3)** important for child psychomotor development

**Fe** for blood emodilution

### Food to avoid during pregnancy

Unpasteurised milk/cheese, undercooked meat, eggs, fish.

Stop drinking alcohol

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# Nutritional needs through life

U10

**Tabella 4**

Principali alterazioni biochimiche (plasmatiche e urinarie) che si realizzano durante la gravidanza.



- ↓ stato marziale
- ↑ globuli bianchi
- ↓ ↓ albumina sierica
- ↓ vitamina C, folati e B12 sierica
- ↑ carotene sierico  
= vitamina A
- ↑ tocoferolo sierico
- ↑ N1-metilnicotinamide
- ↑ riboflavina urinaria
- ↑ escrezione di acido xanturico

**Tabella 5**

Principali alterazioni metaboliche che si realizzano nella donna durante la gravidanza.

- ↑ T3 e T4 plasmatici
- ↑ insulina plasmatica
- ↑ intolleranza glucidica
- ↑ assorbimento di calcio e ferro
- ↑ ritenzione dell'azoto (anabolismo)
- ↑ trigliceridi, colesterolo, fibrinogeno



**LARN 2012 - PROTEINE**

**APPORTI GIORNALIERI DI RIFERIMENTO PER LA POPOLAZIONE ITALIANA:  
FABBISOGNO MEDIO (AR) E ASSUNZIONE RACCOMANDATA PER LA POPOLAZIONE (PRI)**

**LARN 2012 - VITAMINE**

**LARN 2012 - MINERALI**

**APPORTI DI RIFERIMENTO GIORNALIERO PER LA POPOLAZIONE ITALIANA:  
ASSUNZIONE RACCOMANDATA PER LA POPOLAZIONE (PRI, IN GRASSETTO); ASSUNZIONE ADEGUATA (AI, IN CORSIVO)**

	Età (anni)	Ca (mg)	P (mg)	Mg (mg)	Na (g)	K (g)	Cl (g)	Fe (mg)	Zn (mg)	Cu (mg)	Se (µg)	I (µg)	Mn (mg)	Mo (µg)	Cr (µg)	F (mg)
<b>Femmine</b>	18-29	1000	700	240	1,5	3,9	2,3	18	8	0,9	55	150	2,3	45	25	3
	30-59	1000	700	240	1,5	3,9	2,3	18	8	0,9	55	150	2,3	45	25	3
	60-74	1200	700	240	1,1	3,9	1,7	10	8	0,9	55	150	2,3	45	20	3
	≥75	1200	700	240	1,1	3,9	1,7	10	8	0,9	55	150	2,3	45	20	3
<b>GRAVIDANZA</b>		1000	700	240	1,5	3,9	2,3	27	11	1,2	55	220	2,5	50	30	3
<b>ALLATTAMENTO Femmine</b>	18-29	1000	700	240	1,5	3,9	2,3	11	13	1,6	70	290	3,1	50	45	3
	30-59	<i>60</i>	<i>0,71</i>	<i>43</i>	<i>0,90</i>	<i>54</i>										
	60-74	<i>60</i>	<i>0,71</i>	<i>43</i>	<i>0,90</i>	<i>54</i>										
	≥75	<i>60</i>	<i>0,71</i>	<i>43</i>	<i>0,90</i>	<i>54</i>										
<b>GRAVIDANZA</b>	I trimestre									+0,5					+1	
	II trimestre									+7					+9	
	III trimestre									+23					+29	
<b>ALLATTAMENTO</b>	I semestre									+15					+19	
	II semestre									+10					+13	

**INDICAZIONI DIETETICHE**

**DIETA VARIATA IN QUALITÀ →**

**formazione e sviluppo nuovi tessuti  
costituzione di riserve energetiche per allattamento  
assicurare i giusti nutrienti essenziali per il bambino**

**ALCOL E FUMO SAREBBERO FORTEMENTE SCONSIGLIATI.....**

**Tabella 7**

**Nu** Porzioni raccomandate di alimenti e loro contributo in micronutrienti.



**Alimenti da assumere con moderazione durante la gravidanza**

- Bevande nervine contenenti caffeina o sostanze simili (esempio: caffè, tè, alcune bibite analcoliche a base di cola)
- Bevande alcoliche

**Alimenti da evitare durante la gravidanza**

- Superalcolici
- Carni crude o poco cotte

**Alimenti da evitare o assumere con moderazione durante l'allattamento**

- Cavolo, aglio, asparagi, peperoni, spezie, cibi fritti, formaggi fermentati (gongorzola, brie, ecc), crostacei, molluschi, selvaggina, dolci farciti con creme e liquori aromatizzati, cacao o cioccolato, fragole, uva, ciliege, pesche, albicocche

Gruppo di alimenti	Donna adulta	Donna in gravidanza	Donna che allatta	Fonti principali	Nutrienti principali
Pane e cereali	3-6	4-5	4-5	Pane, pasta, riso, legumi, cereali, patate etc.	Carboidrati complessi), vitamine (gruppo B) e fibre
Vegetali	2-3	2-4	2-4	Ampia varietà basata sulla disponibilità stagionale; include insalata ogni giorno	Vitamine, minerali, acqua e fibre
Frutta	2-3	2-3	2-3	Ampia varietà basata sulla disponibilità stagionale	Vitamine, minerali, acqua e fibre
Latticini	2-4	3-4	4-5	Latte, prodotti di latte fermentati, formaggio (preferiti prodotti a basso contenuto di grassi)	Proteine, lipidi e calcio
Alimenti proteici	1 1/2- 2 1/2	2 1/2	2 1/2	Carne, pollame, pesce, uova Legumi, nocciole e cereali	Proteine (di valore biologico variabile) Lipidi (di origine vegetale o animale)
Grassi aggiunti	3-5	4	4	Preferibilmente olio di oliva o di semi	Lipidi, vitamina E
Acqua	>2	4-6	6-8 bicchieri	Acqua di rubinetto o in bottiglia, tè alle erbe e bevande non alcoliche a basso contenuto di zucchero	Acqua

# Nutritional needs through life



## Breastfeeding / lactation

- The process of producing breast milk and delivering it to the baby is called lactation.
- The extra EAR for energy during lactation is 1400kJ per day in the first six months.
- There are also increased demand for nutrients, such as calcium, phosphorous, vitamins A and C.

## Breast milk

- On average, 100g of breast milk provide
  - 289kJ energy
  - 1.3g protein
  - 4.1g fat
  - 7.2g carbohydrate
  - 34mg calcium
- Breast milk provides special proteins, antibodies and white blood cells, which help to protect the baby against infection.
- It also provides growth factors and hormones, important for the healthy growth and development of the baby.

## Bottle feeding

- Infant formula (also known as 'baby milk') does not provide any of the factors that help prevent infections.
- It is important to note that once a mother has started to bottle feed her baby, it is difficult to change to breast feeding.

## Weaning

- After 4 to 6 months of age, milk no longer fulfils all the baby's needs for energy and nutrients.
- Solids must be semi-fluid and soft, since the baby has no teeth and cannot chew.
- Supplements of vitamins A, C and D in the form of drops are recommended for children aged from 6 months to 5 years. This is particularly important if they do not eat a varied diet. For some, these are available free via the Healthy Start scheme.
- Cows' milk is not suitable as a drink before 12 months of age because it is low in iron, but can be used in small amounts in cooking from 6 months.

# Nutritional needs through life

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## Older adults

- Requirements for energy gradually decrease after the age of 50 as activity level falls.
- Older adults is the term usually referring to people over the age of 65.

Older people may eat less for different reasons, for example:

- difficulty in chewing and swallowing;
- dental problems;
- changes in sense of smell and taste;
- difficulty in shopping, preparing and cooking food;
- living alone;
- financial problems;
- illness.

- After menopause (when menstruation stops), women lose bone strength at an increased rate. Having a great peak bone mass (PBM) in early adulthood helps adults to start from a higher point from which bones will be lost during the ageing process.
  - Older adults should have plenty of calcium intake from the diet, but also remain active and have adequate vitamin D from foods, or through the action of sunlight on the skin. Adults over 65 years who are housebound should take a daily supplement of vitamin D as skin synthesis of this vitamin requires sunshine.
-





## Variazioni nella composizione corporea con l' invecchiamento

In generale si osserva **riduzione delle masse muscolari scheletriche**, del **volume plasmatico**, dell' **acqua corporea** ed **aumento del tessuto adiposo**

In particolare:

- **progressiva riduzione della massa magra** metabolicamente attiva (=sarcopenia)
- **aumento della massa grassa** circa del 16% dai 25 ai 75 anni
- **ridistribuzione del grasso corporeo**, con prevalenza di **depositi viscerali** in entrambi i sessi (nella donna più repentina dopo la menopausa parallelamente al cambiamento nella concentrazione degli ormoni sessuali)
  - *l'accumulo di adipe a livello viscerale sembra essere correlato ad una **maggior** **incidenza di patologie cardiovascolari e metaboliche***
- **progressivo disuso dell'apparato muscolare** e **alterazione del metabolismo proteico muscolare** (catabolismo sostanzialmente invariato a fronte di ridotta sintesi proteica) cui la sedentarietà contribuisce significativamente
- **accumulo di proteine modificate** (glicosilate, ossidate) in numerosi organi
- **riduzione del volume di acqua e aumentato rischio di disidratazione** per:
  - 1) aumento perdite urinarie di liquidi (diminuita sensibilità all'ADH);
  - 2) riduzione introduzione spontanea di acqua;
  - 3) riduzione del senso della sete

# Nutritional needs through life



Figura 1. Piramide alimentare

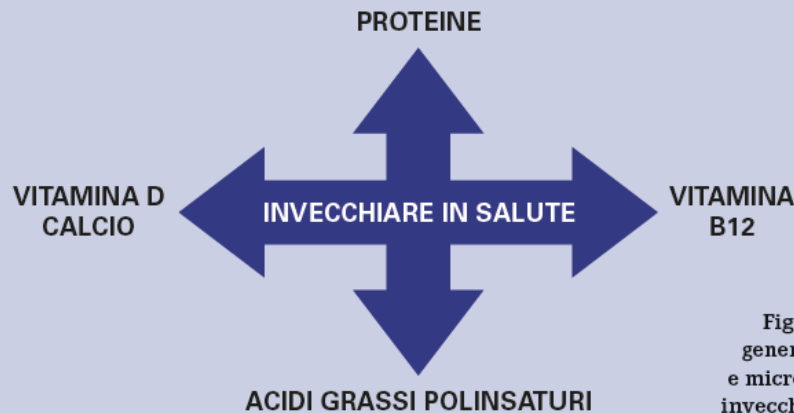
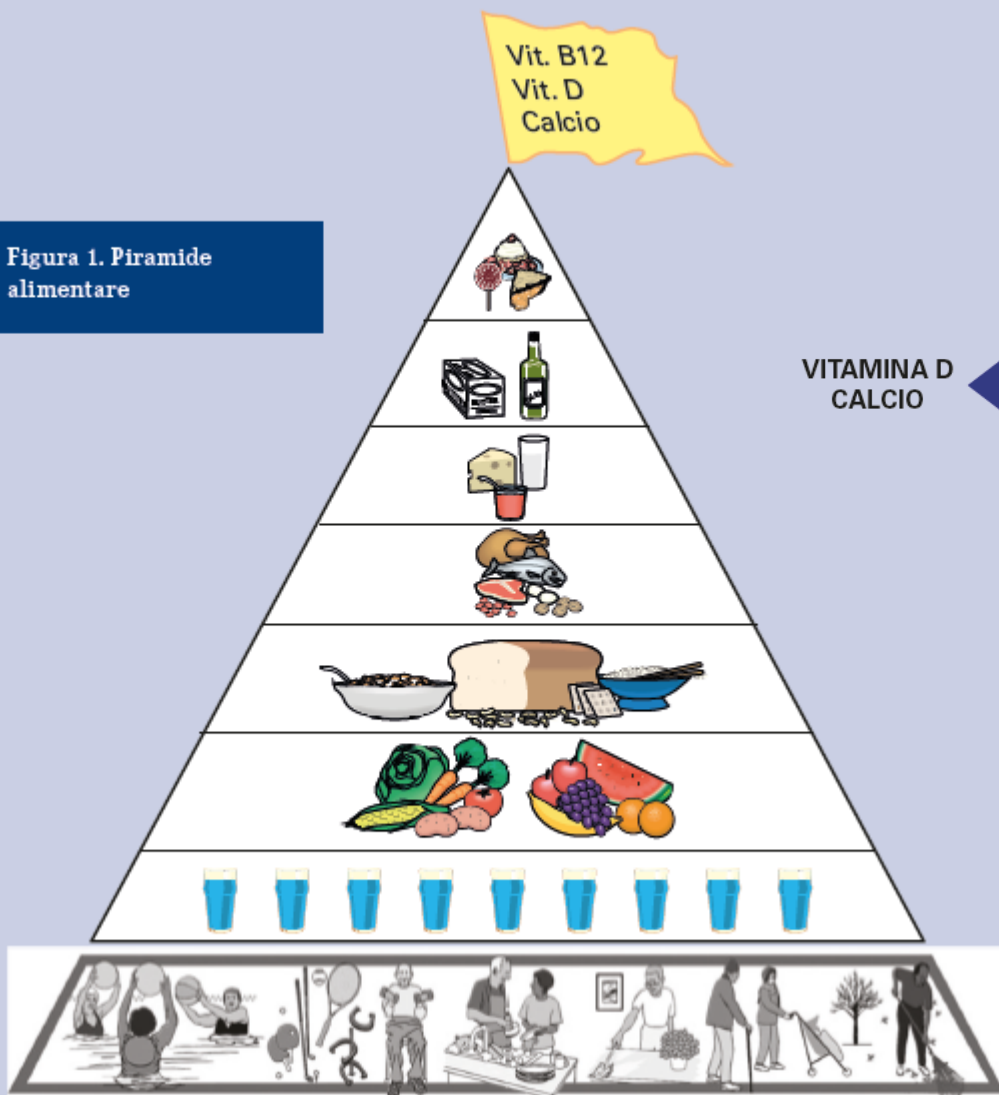


Figura 2. Schema generale dei macro e micronutrienti per invecchiare in salute

The greatest frequency of chronic diseases, of periods of repeated hospitalization, of residency health care, the greatest hiring of drugs with the consequent anorectic effects, the minor physical activity and composition changes body make seniors a band of population at high risk of malnutrition

# Nutritional needs through life



The causes of malnutrition by default in the elderly are multiple, and can be schematically summarized in **psychological, social, medical and hormonal causes**.

A Protein-calorie malnutrition is an important factor of risk of morbidity and mortality in any environment clinical care and frequently causes disorders immune, of increased drug toxicity and of greater frequency of falls and fractures. Moreover, in geriatric hospital medicine, the presence of malnutrition in a subject increases the average times of hospitalization: from the 18 days of the elderly normonutrito subject, 48 days of the elderly malnourished subject with, therefore, a significant increase in healthcare costs.

The interventions nutritional require a specific, customized path, which can be implemented through different levels which depend on clinical and nutritional conditions of the subject. If normal foods are not sufficient to ensure an adequate nutritional intake, a cause of poor appetite, poor cooperation on the part of the patient or due to increased related needs to the pathology, it is necessary to resort to supplementation nutritional (supplements or foods for medical purposes special, AFMS) with specific products for os, which they supply a wide range of dietetic possibilities. IS It is essential that the prescription be carried out by a nutritionist doctor who defines the type and quantity of adequate supplement or AFMS, based on the needs calories and in macro and micronutrients and on the basis of the patient's pathologies. Appreciable results yes they only get after a treatment period of at least a month

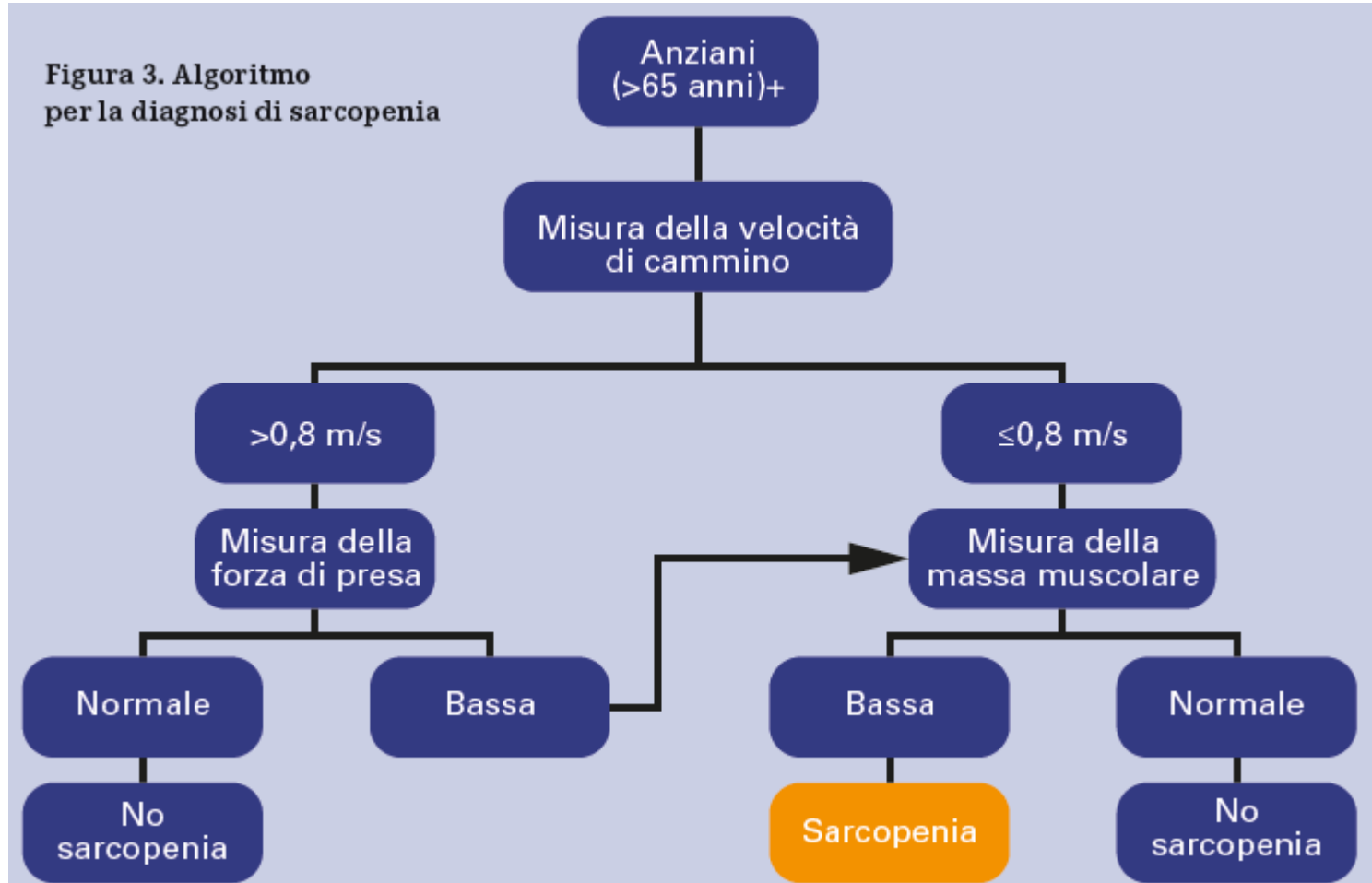
**Tabella 3. Formulazioni di integratori e AFMS**

Liquida	come bevanda da sorseggiare nell'arco della giornata
Budino	da utilizzare come spuntino e particolarmente adatta per pazienti affetti da disfagia
Polveri	che possono essere diluite in qualsiasi liquido (latte, acqua, brodo); queste polveri possono essere aromatizzate ottenendo sapori dolci (quindi in questo caso sono disponibili in vari gusti quali vaniglia, cacao, fragola...) oppure sapori salati (creme di verdure, frittate), oppure possono avere anche gusto neutro ed essere quindi aggiunte a pastina, semolino, passati di verdura o altre preparazioni

# Nutritional needs through life



Figura 3. Algoritmo per la diagnosi di sarcopenia



## Tabella 4. Concetti chiave espressi nel position paper del "PROT-AGE Study Group"

Nell'anziano è necessaria un'assunzione di proteine pari a 1,0-1,2 g/kg di peso corporeo/die

Se la sarcopenia è già conclamata, l'assunzione di proteine deve essere pari a 1,2-1,5 g/kg di peso corporeo/die

L'assunzione proteica deve corrispondere a 25 a 30 g di proteine per pasto

Il contenuto di leucina quotidiano deve essere pari almeno a 2,5-2,8 g