



«Rilevare il consumo alimentare per le politiche a tutela della salute»

*Ministero della Salute
Via Giorgio Ribotta 5, 00144 Roma*

Roma, 24 maggio 2016

**La dieta nella popolazione: alimenti e nutrienti,
adeguatezza e impatto ambientale; le raccomandazioni e le
linee guida per una sana alimentazione**

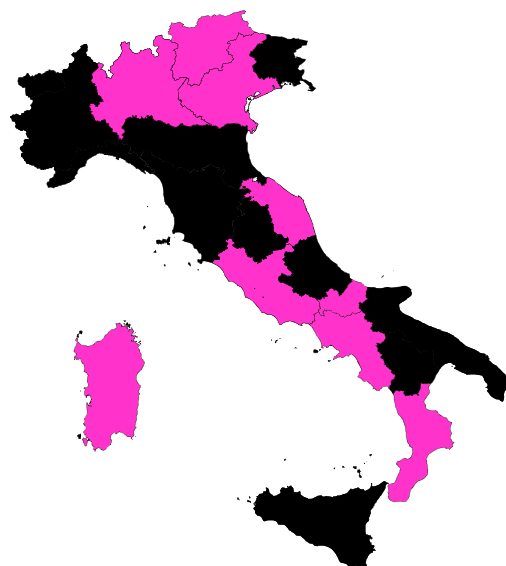
Aida Turrini e Laura Rossi

**Gruppo di Ricerca “ Studi sui Consumi alimentari in ottica
nutrizionale”**



CREA - Alimenti e Nutrizione

• **INN 1980-84**



• **INN-CA 1994-96** • **INRAN-SCAI 2005-2006**



Indagine nazionale sui consumi alimentari delle famiglie 1980-84
alcuni principali risultati

A. Saba, A. Turrini, G. Mistura, E. Ciaffa
Istituto nazionale della nutrizione - Roma

M. Vichi
Università Lauss - Roma

La Rivista **Original Communication**
Food consumption patterns in Italy: the INN-CA Study 1994–1996

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Public Health Nutrition: 12(12), 2504–2532

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The Italian National Food Consumption Survey INRAN-SCAI 2005–06: main results in terms of food consumption

Catherine Leclercq*, Davide Arcella, Raffaella Piccinelli, Stefania Sette, Cinzia Le Donne and Aida Turrini on behalf of the INRAN-SCAI 2005–06 Study Group†
INRAN, National Research Institute for Food and Nutrition, Via Ardeatina 546, I-00178 Rome, Italy

Nutrition, Metabolism & Cardiovascular Diseases (2011) 21, 922–932



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available at www.sciencedirect.com



journal homepage: www.elsevier.com/locate/nmcd

The third Italian National Food Consumption Survey INRAN-SCAI 2005–06 – Part 1: Nutrient intakes in Italy

S. Sette*, C. Le Donne, R. Piccinelli, D. Arcella, A. Turrini
2005–06 Study

NUTRIENT INTAKES

Received 18 September 2009; received in revised form 8 February 2010; accepted 8 March 2010

KEYWORDS

Macronutrient;
Micronutrient;
Intake;
Italy;
Dietary records

Abstract *Background and aims:* Italian National Food Consumption Survey (INRAN-SCAI) 2005–06, is the third national food consumption survey performed in Italy. The aim of this paper is to identify the main dietary sources of nutrients in the diet of the population in Italy. *Methods:* Data collected through individual food records within the INRAN-SCAI 2005–06 survey were required. The final sample included 3323 subjects aged 0.1–97.7 years. *Results:* The percentage contributed by each food category to the intake of energy, dietary fibre and of 26 nutrients was calculated. Above 3 years of age, the main contributors to macro- and micro-nutrient intakes were similar among the various age-sex groupings with few exceptions. *Conclusion:* These data might be used to develop specific strategies for Italy in order to increase the intake of dietary fibre and to decrease that of total fats and of sugars in the population.

Methods and results: A national cross-sectional food consumption survey was performed in Italy. Consecutive 3-day food records between October 2005 and December 2006 were collected from 3323 subjects (1517 males and 1806 females) aged 0.1–97.7 years living in private households. Individual food records were converted into energy and nutrient intakes using the updated national food composition databases. For each subject, the intake of 26 nutrients was calculated, including six minerals (i.e., iron, calcium, potassium and zinc) and 10 vitamins (i.e., thiamine, riboflavin, niacin, vitamin B₆, vitamin B₁₂, vitamin C, vitamin E, vitamin K, vitamin A as retinol equivalents (REs), vitamin D). On average, 36% of calories appeared to derive from fat (11% from saturated fat, 15% from monounsaturated fat and 10% from polyunsaturated fat), 45% from available carbohydrates (15% from soluble carbohydrates and 30% from insoluble carbohydrates). *Conclusions:* The results of the INRAN-SCAI 2005–06 survey in Italy provide an important piece of information for nutrition surveillance of the population and to identify priorities for further research.



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healthcare

RESEARCH ARTICLE

The third National Food Consumption Survey, INRAN-SCAI 2005–06: major dietary sources of nutrients in Italy

Stefania Sette, Cinzia Le Donne, Raffaella Piccinelli, Lorenza Mistura, Marika Ferrari, Catherine Leclercq, and On behalf of the INRAN-SCAI 2005–06 study group*

INRAN, National Research Institute on Food and Nutrition, Via Ardeatina 546, 00178 Rome, Italy

Abstract

Introduction: To promote healthy food consumption patterns, information is required on the contribution of food groups to total nutrient intake. The objective of this paper is to identify the main dietary sources of nutrients in the diet of the population in Italy. *Methods:* Data collected through individual food records within the INRAN-SCAI 2005–06 survey were required. The final sample included 3323 subjects aged 0.1–97.7 years. *Results:* The percentage contributed by each food category to the intake of energy, dietary fibre and of 26 nutrients was calculated. Above 3 years of age, the main contributors to macro- and micro-nutrient intakes were similar among the various age-sex groupings with few exceptions. *Conclusion:* These data might be used to develop specific strategies for Italy in order to increase the intake of dietary fibre and to decrease that of total fats and of sugars in the population.

Keywords

Food source, general population, macro-nutrient, micro-nutrient, national survey

History

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Introduction

The assessment of nutrient intake in the population provides key information for the development of dietary guidelines and for the identification of population groups at risk of nutrient deficiency.

DIETARY SOURCES

diabetes (European Food Safety Authority, 2010a; Food and Agriculture Organization, 2010; World Cancer Research Fund International – American Institute for Cancer Research, 2007). Moreover, the identification of the main nutrient sources is of great importance for decision-makers and planners in the field of public health, for the food industry, and for professionals engaged in health promotion and education, in clinical practice and for research in the field of nutrition.

In developed countries, despite the abundant food supply, there are several nutrients whose intake is inadequate. Among nutrients of greatest public health concern according to WHO (World Health Organization, 2002), iron and iodine are those for which deficiency is more frequent in developed countries. Moreover, there is the need to better document the

diabetes (European Food Safety Authority, 2010a; Food and Agriculture Organization, 2010; World Cancer Research Fund International – American Institute for Cancer Research, 2007).

d-based dietary guidelines should be derived from national patterns of food and nutrient intake in target populations and from the recommendations of the World Health Organization and Agriculture Organization/World Health Organization, 2003b; European Food Safety Authority, 2007, 2010b). In particular, consideration of the relative contribution of different food groups to total nutrient intake permits the development of recommendations in terms of food consumption patterns that are aligned with cultural food choices of the different population groups.

In Italy, national food consumption surveys had been carried out in 1980–84 (Saba et al., 1990) and 1994–96 (Turrini et al., 2001). The most recent survey was performed in 2005–06 (Leclercq et al., 2009). Each of these food consumption databases had allowed to estimate nutrient intake (D'Amicis, 2000; Saba et al., 1990; Sette et al., 2011). The present paper is aimed at identifying the main dietary sources of energy, macro- and micronutrients in Italy, based on the last food consumption survey (INRAN-SCAI 2005–06).

• INN 1980-84



• INN-CA 1994-96



• INRAN-SCAI 2005-2006



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The Italian National Food Consumption Survey INRAN-SCAI
2005–06: main results in terms of food consumption

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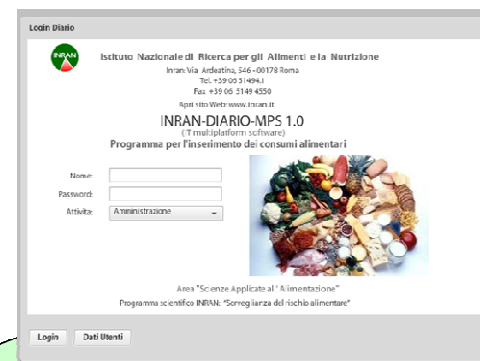
	Orario e Luogo (①)	ALIMENTI Scrivi un solo alimento per riquadro e, in caso di ricetta, elenca i vari ingredienti (②)	MARCA alimento	QUANTITÀ (in cifre) (③)	Unità di Misura (④)	CONDIMENTI	MARCA condimenti	QUANTITÀ (in cifre) (③)	Unità di Misura (④)
						aggiunti da te (parmigiano, olio, ketchup, zucchero, dolcificante, etc...)			
CENA	1 21.00 RISTORANTE	PASTA AL FORNO CON RAGU', MOZZARELLA FUNGHI, PARMIGIANO		1	PM				
	2 ~	FRITTURA MISTA DI PESCE (SOLO GAMBERI E CALAMARI)		1	PP	LIMONE		1	SP
	3 ~	PATATINE FRITTE		1	PP	KETCHUP	KRAFT	1	BU
	4 ~	GRISSINI	SAIWA	4	UN				
	5 ~	PEPSI BOOM		3	BG				
	6 ~	VINO ROSSO DA TAVOLA	BRACHETTO	1/2	BP				
	7 ~	PANE (ROSETTA)		1/4	UN				
	8 ~	TORTA DELLA NONNA CON CREMA E PINOLI		1/2	FM				

① specifica il luogo dove hai consumato ogni singolo alimento (es: casa, bar, a casa di amici, scuola, pizzeria, ristorante, pizzeria al taglio, ecc...)

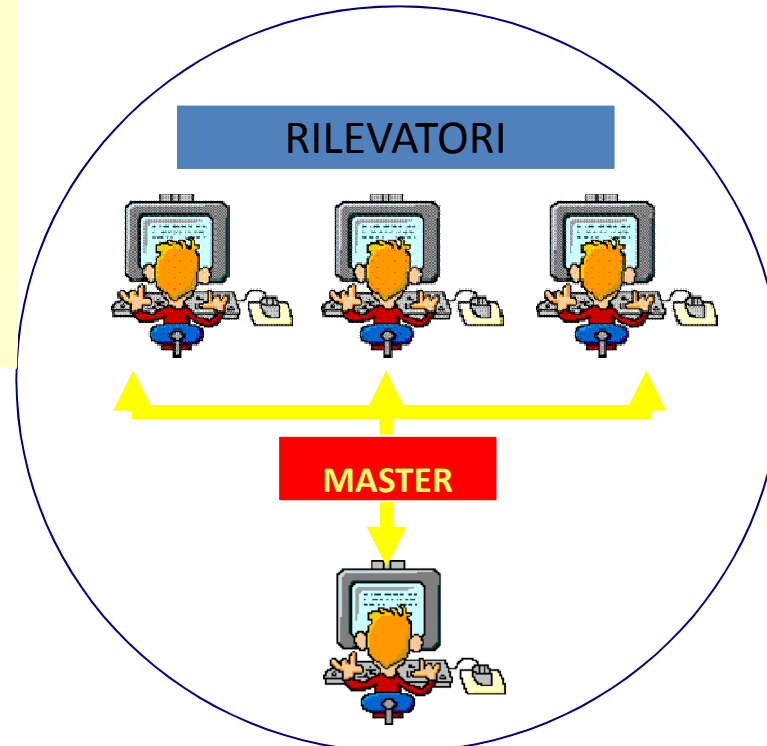
② Ricordati di scrivere anche le bevande, il pane e la frutta.

③ Scrivi la quantità di unità consumate (es: numero di cucchiaini di zucchero, numero di bicchieri di bevande, numero di uova, numero di porzioni, ecc.) o la quantità in grammi **solo** se ne conosci il peso esatto.

④ Scrivi l'Unità di misura usando i **codici della tabella** riportata nell'ultima pagina del diario (es. UN se la quantità è in numero di pezzi consumati, PM se è una porzione media, ecc...)



INRAN-Diario-MPS 1.0



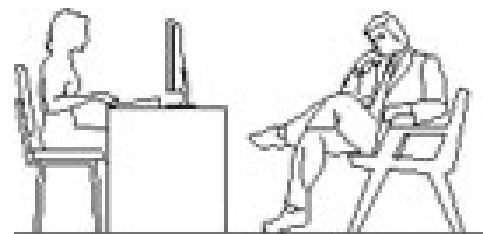
	Orario e Luogo (①)	ALIMENTI Scrivi un solo alimento per riquadro e, in caso di ricetta, elenca i vari ingredienti (②)	MARCA alimento	QUANTITÀ (in cifre) (③)	Unità di Misura (④)	CONDIMENTI		QUANTITÀ (in cifre) (③)	Unità di Misura (④)
						aggiunti da te (parmigiano, olio, ketchup, zucchero, dolcificante, etc...)	MARCA condimenti		
CENA	1 21.00 RISTORANTE	PASTA AL FORNO CON RAGU', MOZZARELLA FUNGHI, PARMIGIANO		1	PM				
	2 ~	FRITTURA MISTA DI PESCE (SOLO GAMBERI E CALAMARI)		1	PP	LIMOME		1	SP
	3 ~	PATATINE FRITTE		1	PP	KETCHUP	KRAFT	1	BU
	4 ~	GRISSINI	SAIWA	4	UN				
	5 ~	PEPSI BOOM		3	BG				
	6 ~	VINO ROSSO DA TAVOLA	BRACHETTO	1/2	BP				
	7 ~	PANE (ROSETTA)		1/4	UN				
	8 ~	TORTA DELLA NONNA CON CREMA E PINOLI		1/2	FM				

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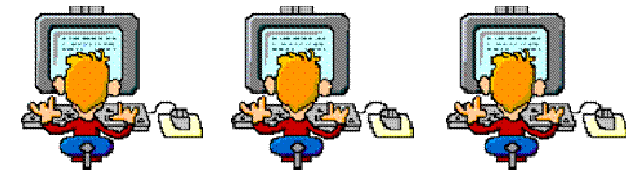
*www.foodcons.eu



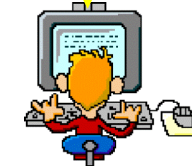
INRAN-Diario-MPS 1.0

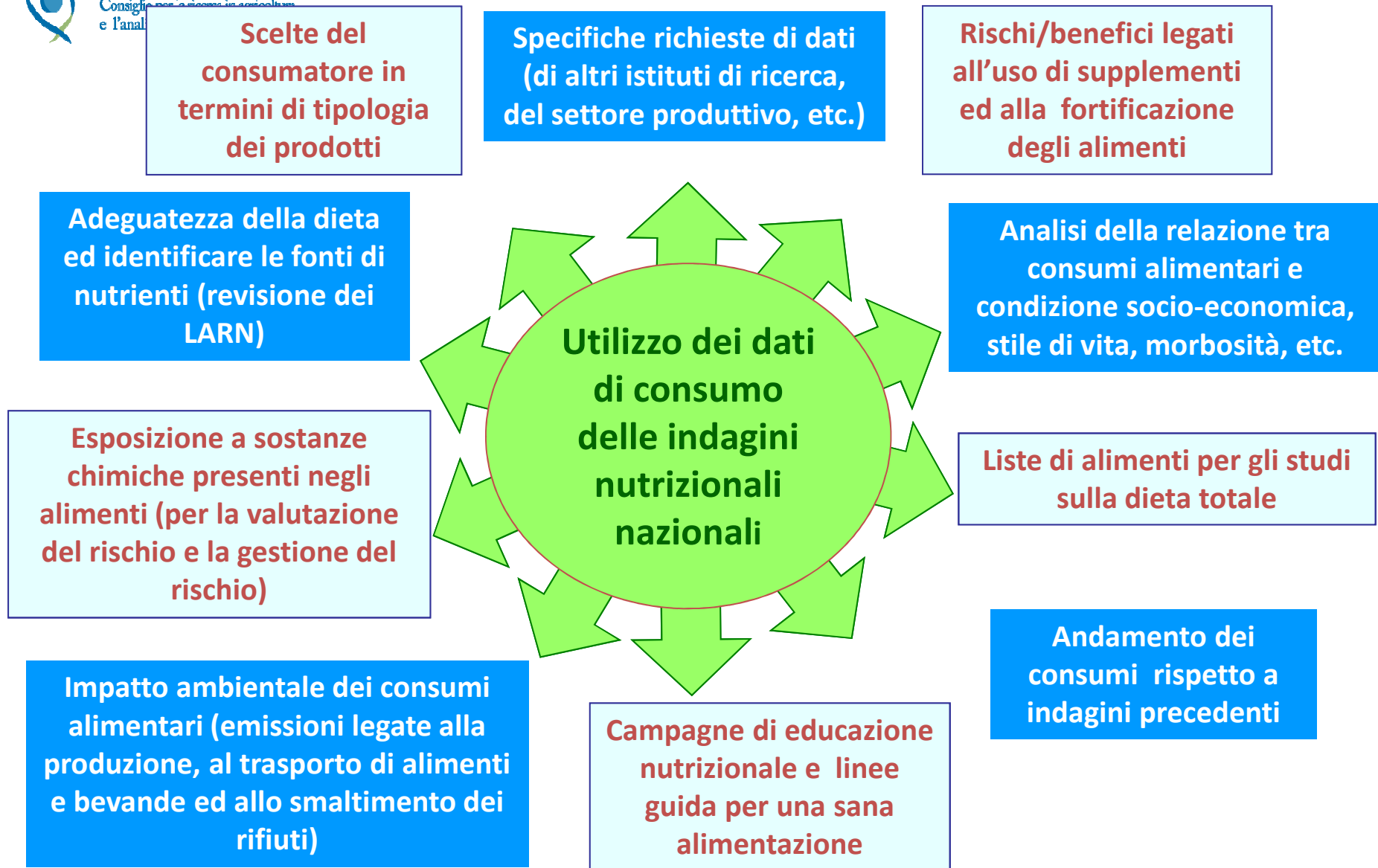
FOODCONS software*

RILEVATORI



MASTER





Come è stata usata la base di dati 2005-06?

EU FP7 project (2008-2012):
FACET
Flavourings, Additives, Contact materials Exposure Task

EU FP7 project ACROPOLIS (2010-2013) *Aggregate and Cumulative Risk of Pesticides: an on-line integrated Strategy*

ESPOSIZIONE

EU FP7 project (2012-2015): **TDSEXPOSURE**
Total Diet Study Exposure

Joint Programming Initiative – Healthy Diet for Healthy Life

DEDIPAC
FOODBALL

Utilizzo dei dati di consumo dell'indagine nutrizionale nazionale 2005-06

INTEGRAZIONE e ARMONIZZAZIONE

PALINGENIO


Indagini armonizzate permanenti sul comportamento alimentare e lo stile di vita

ERANET SUSFOOD Call Research Project: **SUSDIET**
Towards Sustainable Diets in Europe

SOSTENIBILITA'


HORIZON 2020 research Project: **SUSFANS** *Metrics, Models and Foresight for European Sustainable Food and Nutrition Security"*

Dove è stata inserita la base di dati?



World Health Organization

GEMS/Food data sets
FAO/WHO Meeting on Pesticide Residue (JMPR)
Global Burden of Disease (GBD)




efsa
European Food Safety Authority

Concise database of food consumption




efsa
European Food Safety Authority


Comprehensive European food consumption database




MCRA 8.1
MCRA stands for Monte Carlo Risk Assessment



efsa
European Food Safety Authority




WAGENINGEN UR
For quality of life



fera

Software MCRA e CREME
per la stima dell'esposizione con approccio probabilistico



Creme
GLOBAL



CONSUMI
ALIMENTARI



SALUTE E
PREVENZIONE



EDUCAZIONE
ALIMENTARE



AMBIENTE E
SOSTENIBILITA'



Revisione in corso





I DOCUMENTI DI CONSENSO ITALIANI

LARN: fissano agli apporti raccomandati di energia e nutrienti in funzione della stima dei relativi bisogni a livelli di sicurezza, tenendo conto di specifiche condizioni di età, sesso, ecc.

Linee Guida per una sana alimentazione degli italiani

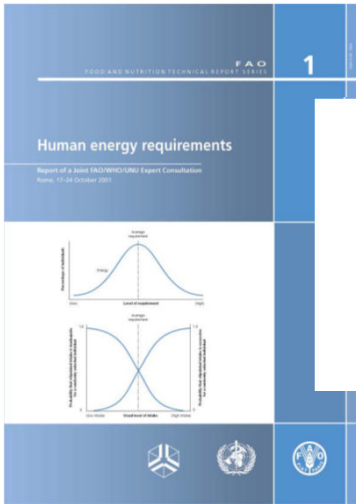


Revisione 2016

LINEE GUIDA: si propongono la tutela della salute in situazioni in cui fattori socio-economici abbiano determinato sovrabbondanza di risorse e conseguenti eccessi e/o squilibri alimentari.

I due strumenti sono correlati: le Linee Guida che traducono in indicazioni pratiche come soddisfare i fabbisogni nutrizionali fissati dai LARN.

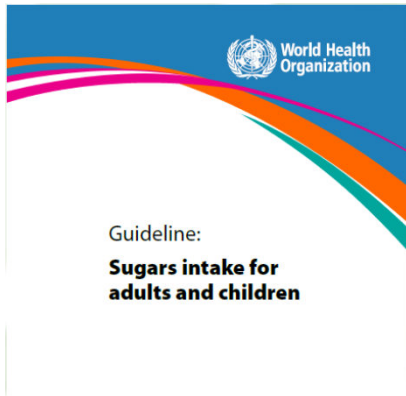
I DOCUMENTI DI RIFERIMENTO



Scientific Opinion on establishing Food-Based Dietary Guidelines¹

EFSA Panel on Dietetic Products, Nutrition, and Allergies (NDA)^{2,3}

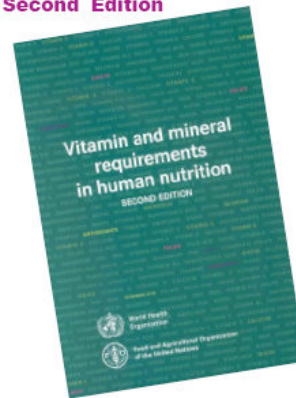
EFSA Journal 2010; 8(3):1460



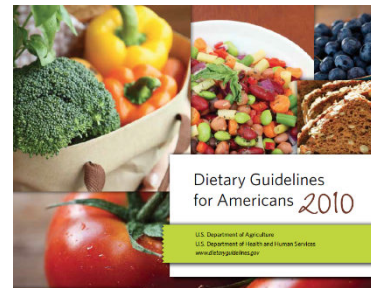
Practice Paper of the American Dietetic Association:
Using the Dietary Reference Intakes
from the association



Vitamin and Mineral Requirements in Human Nutrition
Second Edition



World Cancer Research Fund International



2nd International Conference of Nutrition



EFSA Journal 2010; 8(3):1458

SCIENTIFIC OPINION

Scientific Opinion on principles for deriving and applying Dietary Reference Values¹

EFSA Panel on Dietetic Products, Nutrition, and Allergies (NDA)^{2,3}

European Food Safety Authority (EFSA), Parma, Italy



24.05.2016

Fonti alimentari

CONTENUTO NEGLI ALIMENTI

Dalle tabelle di composizione degli alimenti dell'INRAN (Carnovale e Marletta, 2000) emerge che gli alimenti naturalmente più ricchi di Fe sono le frattaglie (2,8-18,0 mg/100 g), i legumi secchi (4,5-9,0 mg/100 g), le carni (0,4-3,9 mg/100 g), con i valori maggiori nelle carni rosse, i prodotti ittici (0,2-6,0 mg/100 g), la frutta secca e oleosa (1,9-7,3 mg/100 g), i cereali (0,4-12,9 mg/100 g), specialmente quelli integrali, le verdure a foglia (1,0-7,8 mg/100 g) e le uova di gallina (4,9 mg/100 g nel tuorlo).

Il Fe non-eme rappresenta la totalità del Fe presente negli alimenti di origine vegetale e nel latte e nei suoi derivati, e circa il 60% del totale negli altri alimenti di origine animale (Lombardi-Boccia et al., 2004). Il Fe eme rappresenta quindi circa il 40% del Fe totale presente nella carne e nel pesce (Lombardi-Boccia et al., 2004).

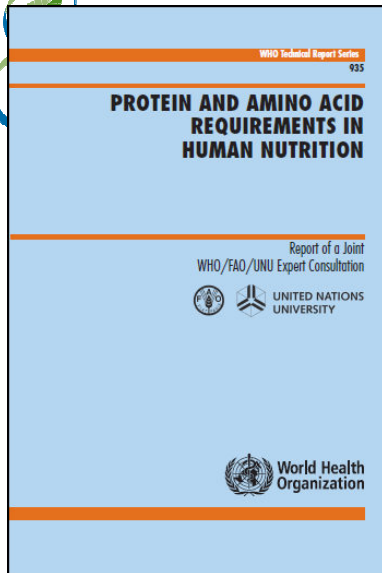


FONTI NELLA DIETA

Dai dati dell'indagine INRAN-SCAI 2005-06 (Leclercq et al., 2009) il gruppo alimentare "Cereali e derivati" risulta la prima fonte e fornisce il 31% del Fe assunto, con il 18% che proviene da pane e pasta. I gruppi "Carne e derivati" e "Verdura e ortaggi" forniscono rispettivamente il 17% e il 14% del totale. I cereali fortificati per la prima colazione sono gli alimenti fortificati più consumati dagli adolescenti e dagli adulti, garantendo rispettivamente il 3% e lo 0,8% dell'assunzione del minerale. Nei bambini (0-2,9 anni) il latte in formula, insieme a pasta e farine per la prima infanzia, risultano gli alimenti fortificati in Fe maggiormente consumati (circa il 18% dell'assunzione di Fe totale) (dati non pubblicati, elaborazione di Stefania Sette su dati INRAN-SCAI 2005-06).

I dati confermano le precedenti stime rilevate dallo studio sulla dieta totale (Lombardi-Boccia et al., 2003), che individuavano quale principale fonte di Fe il gruppo "Cereali e derivati" (30% del totale) seguito dai gruppi "Carne e derivati" e "Verdura e ortaggi", che fornivano rispettivamente il 20% e il 25% del totale.

L'esempio dei fabbisogni di proteine



Values for the digestibility of protein in humans (4)

Protein source	True digestibility (%)	Protein source	True digestibility (%)
American mixed diet	96	Oatmeal	86
Beans	78	Oats, cereal	72
Brazilian mixed diet	78	Peanut butter	95
Chinese mixed diet	96	Peanuts	94
Corn, cereal	70	Peas, mature	88
Corn, whole	87	Rice, cereal	75
Cottonseed	90	Rice, polished	88
Egg	97	Soy flour	86
Farina	99	Soy protein isolate	95
Filipino mixed diet	88	Sunflower seed flour	90
Indian rice + beans diet	78	Triticale	90
Indian rice diet	77	Wheat flour, white	96
Indian rice diet + milk	87	Wheat gluten	99
Maize	85	Wheat, cereal	77
Maize + beans	78	Wheat, refined	96
Maize + beans + milk	84	Wheat, whole	86
Meat, fish	94		
Milk, cheese	95		
Millet	79		

Fonte: Protein and amino acid requirement in humans, WHO 2007



EFSA Journal 2012;10(2):2557

SCIENTIFIC OPINION

Scientific Opinion on Dietary Reference Values for protein¹

EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA)^{2,3}

European Food Safety Authority (EFSA), Parma, Italy

ABSTRACT

This opinion of the EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA) deals with the setting of Dietary Reference Values (DRVs) for protein. The Panel concludes that a Population Reference Intake (PRI) can be derived from nitrogen balance studies. Several health outcomes possibly associated with protein intake were also considered but data were found to be insufficient to establish DRVs. For healthy adults of both sexes, the average requirement (AR) is 0.66 g protein/kg body weight per day based on nitrogen balance data. Considering the 97.5th percentile of the distribution of the requirement and assuming an efficiency of utilisation of dietary protein for maintenance of 47%, the PRI for adults of all ages was estimated to be 0.83 g protein/kg body weight per day and is applicable both to high quality protein and to protein in mixed diets. For children from six months onwards, age-dependent requirements for growth estimated from average daily rates of protein deposition and adjusted by a protein efficiency for growth of 58% were added to the requirement for maintenance of 0.66 g/kg body weight per day. The PRI was estimated based on the average requirement plus 1.96 SD using a combined SD for growth and maintenance. For pregnancy, an intake of 1.9 and 28 g/d in the first, second and third trimesters, respectively, is proposed in addition to the PRI for non-pregnant women. For lactation, a protein intake of 19 g/d during the first six months, and of 13 g/d after six months, is proposed in addition to the PRI for non-lactating women. Data are insufficient to establish a Tolerable Upper Intake Level (UL) for protein. Intakes up to twice the PRI are regularly consumed from mixed diets by some physically active and healthy adults in Europe and are considered safe.

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KEY WORDS

Protein, amino acids, nitrogen balance, factorial method, efficiency of utilisation, digestibility, health outcomes.

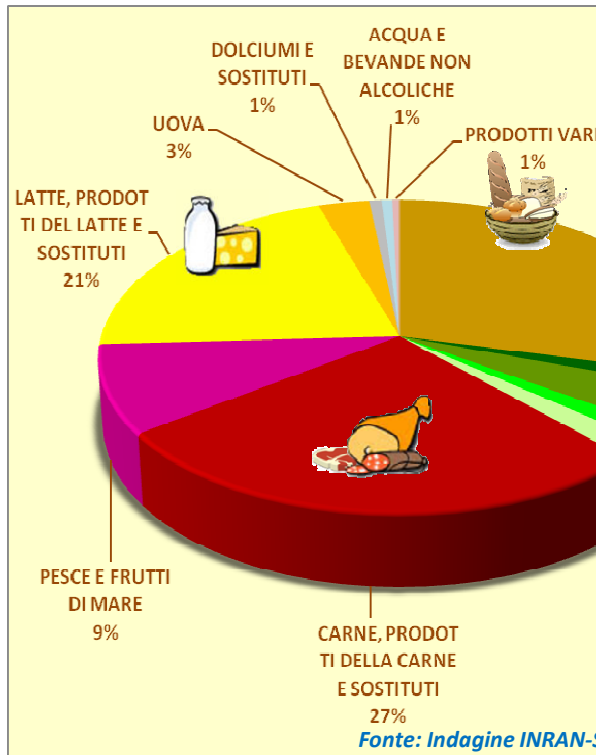
Per definire il fabbisogno di proteine è indispensabile conoscere la qualità proteica della dieta italiana per poter applicare un fattore di correzione basato sui dati di quanto è realmente e mediamente consumato.

Concretamente come cambiano i numeri



Consiglio per la ricerca in agricoltura
e l'analisi dell'economia agraria


Le fonti di proteine della dieta



Fasce di età	Fabbisogno proteine senza correzione (g/kg x die)	Fabbisogno proteine con correzione (g/kg x die)
6-12 mesi	1,22	1,32
1-3 anni	0,97	1,00
4-6 anni	0,87	0,94
7-10 anni	0,91	0,99
11-14 anni (M)	0,90	0,97
11-14 anni (F)	0,88	0,95
15-17 (M)	0,87	0,93
15-17 (F)	0,84	0,90
18-60 anni (M+F)	0,83	0,90
>60 anni (M+F)	0,83	1,1



Le Linee Guida – analisi di contesto

- 
- Analisi di contesto su nutrizione, salute e fattori di rischio correlati.
 - Profilo epidemiologico delle malattie ad ascendente nutrizionale
 - Cambiamenti della mortalità e della morbidità
 - Valutazione dello stato di nutrizione.
 - **Pattern di consumo alimentare**
 - **Disponibilità**
 - **Accesso**
 - **Consumi**
 - **Composizione**
 - **Abitudini Alimentari**
 - **Ripartizione dei pasti**
 - **Modalità di acquisto, conservazione, ecc.**
 - Identificazione aspetti emergenti per la salute pubblica.

2016 Italian Dietary Guidelines – F&V formulation of recommendations

Problem of health and nutrition	Critical nutrient	Critical foods	Practices/habits /beliefs related to the problem	How to solve the problem
<p>Low consumption of fruit and vegetables</p>	<p>Fiber</p> <p>High energy density of the diet</p>	<p>Low intake of vegetable, whole grain cereals, and fruit</p> <p>High intake of animal products, especially meat and derivate</p> <p>High intake of refined products, sweetned beverages, cake and sugar</p>	<p>Taste and preferences</p> <p>Often considered expensive food items for cost and for time for preparing</p>	<p>Use fruit and vegetable in any occasion, as snack, include in the recipes, etc.</p> <p>Limits fat add to the preparation with vegetables</p> <p>Always have fruit and vegetable in the fridge, also in form ready-to-eat and minimally treated (increase availability)</p> <p>Add fruit to cakes</p>

Un sentito grazie da parte del

*Gruppo di Ricerca “Consumi
alimentari in ottica nutrizionale”*

Giovina Catasta, Javier Comendador, Laura
D'Addezio, Marika Ferrari, Cinzia Le Donne,
Lorenza Mistura, Raffaella Piccinelli, Stefania
Sette, Aida Turrini