

Dietary Reference Intakes for Japanese -2010-

*The summary report from the Scientific Committee of
“Dietary Reference intakes for Japanese”*

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Dietary Reference Intakes for Japanese -2010- is the government report that is available on the web: <http://www.mhlw.go.jp/bunya/kenkou/sessyu-kijun.html> [Report in Japanese]

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1. Historical overview

In Japan, the Recommended Dietary Allowance (RDA) was first established in 1970, after which revisions have been made every five years by the Ministry of Health and Welfare (MHW). The concept of Dietary Reference Intakes (DRIs) was first introduced in the 6th revision of the RDA (2000-2004). In order to more comprehensively follow the approach of the 6th revision of the RDA, the 7th revision was established as the “Dietary Reference Intakes for Japanese (DRIs-J) 2005” by the Ministry of Health, Labour and Welfare (MHLW), based on the Health Promotion Law.

The DRIs-J 2005 have been prepared not only to prevent energy or nutrient deficiencies that may be caused by insufficient intake of energy or nutrients, but also for the primary prevention of lifestyle-related diseases caused by excess and/or imbalanced consumption of energy and nutrients. It is expected that those who use the DRIs-J should not become too focused on the values themselves, but should rather have an accurate understanding of the concept of the DRIs-J and apply them correctly. In that sense, the current DRIs-J are not to be used as a fact sheet, but should be used for various nutrition-related practices.

The current version is the DRIs-J 2010.

1) Differences from previous RDAs.

- DRIs-J consist of six reference values (one for energy and five for nutrients) to prevent deficiencies, adverse effects by excess intake, and lifestyle-related diseases. The recommended dietary intake level is shown by a “Range” and is not a one-point value.
- DRIs-J were established on a scientific basis. The project to establish DRIs-J 2010 started in April 2008. A total of more than sixty scientists and assistants with varied expertise in Japan were asked to participate in this project by the Japanese Ministry of Health, Labour, and Welfare. Using a comprehensive systematic review, over 15,000 publications were collected and reviewed.

Table 1. Historical Overview of the Development of Dietary Recommendations in Japan

Versions	Periods of use	Recommendations made
RDAs 1 st version	Apr.1970-Mar.1975	Aug. 1969
RDAs 1 st revision	Apr.1975-Mar.1980	Mar. 1975
RDAs 2 nd revision	Apr.1981-Mar.1985	Aug. 1979
RDAs 3 rd revision	Apr.1985-Mar.1990	Aug. 1984
RDAs 4 th revision	Apr.1990-Mar.1995	Sep. 1989
RDAs 5 th revision	Apr.1995-Mar.2000	Mar. 1994
RDAs 6 th revision	Apr.2000-Mar.2005	Jun. 1999
DRIs-J 2005	Apr.2005-Mar.2010	Oct. 2004
DRIs-J 2010 revision	Apr.2010-Mar.2015	May. 2009

2. Concept of DRIs-J

When making use of DRIs-J, the following basic theories are important.

1) Purpose

The DRIs-J are designed to present reference values for healthy individuals and groups for intake of energy and 34 nutrients:

- To maintain and promote health
- To prevent lifestyle-related diseases due to insufficient, excess, and/or imbalanced consumption of energy and nutrients

2) Target population

Healthy individuals and groups

Including those who have certain mild ailments (e.g. hypertension, diabetes, or hyperlipidemia), without dietary education, diet restrictions, or prescribed diets. If the target populations have dietary education, diet restrictions, or prescribed diets, the disease-specific clinical practice guidelines are given priority and used, and DRIs-J should be used as an auxiliary tool.

3) Sources of Intake

“Habitual daily intake” or long-term daily intake of energy and nutrients from dietary sources and dietary supplements.

IT IS NOT recommended that values be compared with the nutrient contents of one day’s intake or those of one dish or meal.

4) The DRIs-J categories

Inclusion criteria of DRI-J for energy and nutrients:

- Energy is essential for health and life
- Nutrients were selected based on the following criteria:
 - a) Essential for life and the maintenance and/or improvement of health
 - b) Values are scientifically reliable or have achieved global consensus

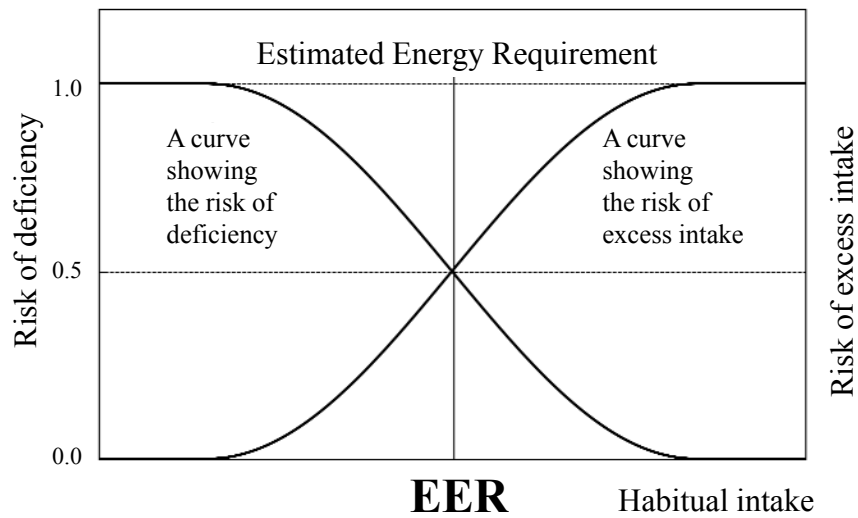


Figure 1. Estimated Energy Requirement (EER)

Energy

Figure 1 illustrates the concept of Estimated Energy Requirement (EER).

EER is defined as the average dietary energy intake that is assumed to maintain energy balance and good health in a healthy adult of a defined age, sex, weight, height, and physical activity level (PAL). There is one reference value because energy intake below the EER would be expected to result in weight-loss, leanness, and protein-energy malnutrition, while energy intake above the EER would increase the probability of weight gain.

The doubly-labeled water (DLW) method is used to determine energy expenditure by healthy individuals who maintain normal daily activities. Due to financial and technical constraints, the EER for an adult is calculated from his/her Basal Metabolic Rate (BMR) (= reference basal metabolic rate \times reference body weight) and PAL.

$$\text{EER for adults (kcal/day)} = \text{BMR} \times \text{PAL}$$

For infants and children in the growth stage, the EER includes the caloric intake needed to maintain the current body weight and that necessary for growth. For pregnant women and lactating mothers, additional energy values are needed for fetal growth and lactation in order to meet the EER. Table 3 indicates the EER values by sex, age group, and PAL.

Table 2. Conceptual differences in reference values

	EAR, RDA, AI	UL	DG
Purpose	Avoidance of deficiencies by insufficient intake	Avoidance of adverse effects by excess intake	Prevention of lifestyle-related diseases
Research methods	Experimental and epidemiological studies	Case reports	Epidemiological studies
Timescale to develop health problems	Several months		Several years
Number of reports	Extremely rare - many	Extremely rare - few	Many

Nutrients

Reference values for 34 nutrients were developed for the DRIs-J 2010. Nutrient values that could not be established due to insufficient evidence were not included. Since the DRIs were based on the results of reliable studies, the findings were integrated in accordance with the chart introduced in Table 2. The DRIs include the EAR, Estimated Average Requirement (EAR), RDA, Adequate Intake (AI), Tolerable Upper Intake Level (UL), and Tentative Dietary Goal for Preventing Lifestyle-related Diseases (DG).

Figure 2 illustrates the definitions of each of the DRIs for nutrient intake.

Specific definitions were given to DRIs as follows:

a) Deficiency:

- **Estimated Average Requirement (EAR)** – an average requirement (50%) for the nutrient for each age and sex group
- **Recommended Dietary Allowance (RDA)** – an intake that covers the needs of 97.5% of the population, for each age and sex group. The RDA was calculated by $EAR + 2SD_{EAR}$. However, the variance is usually unknown, so the coefficient of variation is adopted instead
- **Adequate Intake (AI)** – a less well-defined value, generally the median of the population without evidence of deficiency

b) Adverse effects:

- **Tolerable Upper Intake Level (UL)** – the highest level of intake that can be tolerated without the possibility of causing adverse effects

c) Primary prevention of lifestyle-related diseases:

- **Tentative Dietary Goal for Preventing Lifestyle-related Diseases (DG)** – the value for primary prevention of lifestyle-related diseases

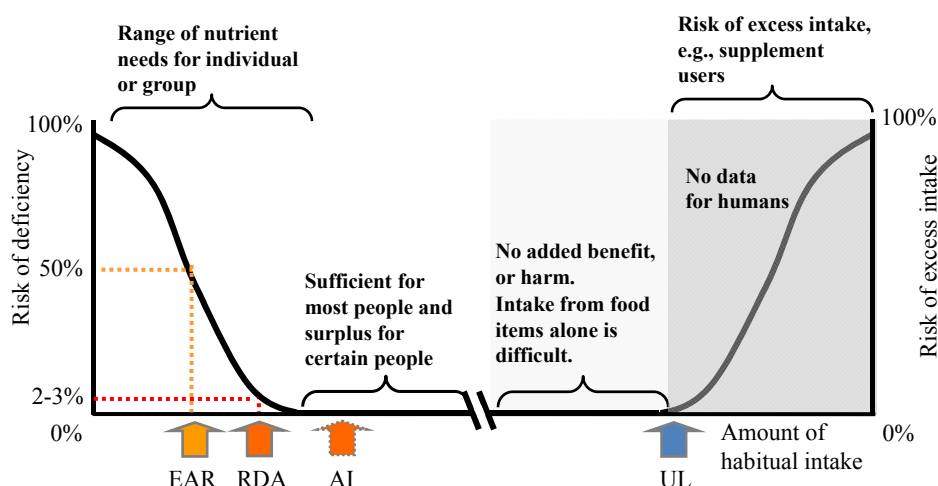


Figure 2. Intake range for nutrients

EAR, estimated average requirement; RDA, recommended dietary allowance; AI, adequate intake; UL, tolerable upper intake level

A DG has been set for several macronutrients and minerals that have been shown in epidemiologic studies and is defined as the intake level (or range) that Japanese should currently consume to primarily prevent lifestyle-related diseases. Thus, DG is unique to Japan, while others are similar to those used in other countries.

In the DRIs, particular emphasis was placed on primary prevention of cardiovascular diseases (e.g., hypertension, hyperlipidemia, stroke, and myocardial infarction) and cancer (such as stomach cancer). Specifically, it was directed towards the intake of protein, fat (fatty acids), cholesterol, carbohydrates, dietary fiber, calcium, sodium (salt), and potassium.

Table 3 shows the list of established DRIs for each nutrient for persons at least 1 year of age. The appendix also demonstrates the reference values for each nutrient by sex and age.

Since the meaning of deficiency is different from nutrient to nutrient, the calculation methods of EAR differ for each nutrient. Furthermore, it should be noted that several nutrients, i.e., vitamin C and calcium, have implications beyond the above definitions. For example, EAR and RDA for vitamin C in adults were set at 85 mg/d and 100 mg/d, respectively. The disease caused by vitamin C deficiency is scurvy; however, it is sufficient to take 6-12 mg/d of vitamin C to prevent it. Reference values of vitamin C also include the prevention of cardiovascular diseases: that is, the current values include the implications of the DG rather than EAR and RDA.

Using nutrient-specific calculation methods for the development of EAR

>Balance studies: protein, sodium, magnesium, chromium, and molybdenum

>Factorial method: calcium, iron, zinc, and iodine

>Biomarkers of nutritional status: vitamin A, vitamin B₁, vitamin B₂, niacin, vitamin B₆, vitamin B₁₂, folic acid, vitamin C, copper, and selenium

Table 3. Nutrients for which DRIs have been established (persons ≥ 1 year old)

Nutrients		EAR	RDA	AI	UL	DG	
Protein		○	○	-	-	-	
Fat	Total fat						
	Saturated fatty acids	-	-	-	-	○	
	Cholesterol						
	n-6 fatty acids	-	-	○	-	○	
	n-3 fatty acids						
Carbohydrates							
	Carbohydrates	-	-	-	-	○	
	Dietary fibers						
Vitamins	Fat-soluble	Vitamin A	○	○	-	○	-
		Vitamin D and E	-	-	○	○	-
		Vitamin K	-	-	○	-	-
	Water-soluble	Vitamin B₁, B₂, B₁₂, and C	○	○	-	-	-
		Niacin	○	○	-	○	-
		Vitamin B₆	○	○	-	○	-
		Folic acid	○	○	-	○*	-
		Pantothenic acid	-	-	○	-	-
		Biotin					
Minerals	Macro	Sodium	○	-	-	-	○
		Potassium	-	-	○	-	○
		Calcium	○	○	-	○	-
		Magnesium	○	○	-	○*	-
		Phosphorus	-	-	○	○	-
	Micro	Iron, Zinc, Copper, Iodine, Selenium, Molybdenum	○	○	-	○	-
		Manganese	-	-	○	○	-
		Chromium	○	○	-	-	-

* Defined as intake from sources other than daily food items.

EAR, estimated average requirement; RDA, recommended dietary allowance; AI, adequate intake; UL, tolerable upper intake level, and DG, tentative dietary goal for preventing non-communicable diseases

3. Application and implementation of DRIs-J

This section includes several tips for promoting effective use of DRIs-J 2010.

The applications of DRIs-J were broadly classified into “improvement of diet” and “management of food services”. Common and important elements of these applications take turns in the Assessment > Plan > Implementation cycle.

1) Improvement of diet

The steps in “improvement of diet” include assessment of dietary intake, planning, and implementation for dietary improvement. The theories of application differ for individuals and groups.

a) Individuals

- For assessment of insufficient or excess intake of energy, changes in body weight and body mass index (BMI) are used. For planning and implementation, the focus should be maintenance of a normal range of BMI (normally 18.5-25.0 kg/m²). Ideally, measurements and reviews of body weight and BMI should be done twice or more within several-month intervals.
- For assessment of adequate or inadequate intake of nutrients, EAR and RDA are used. If these values are unavailable, AI is used instead. However, AI cannot be used as an evaluation of risk of insufficiency by its definition. Assessment using AI requires careful attention when intake is below AI. For planning and implementation, RDA is used for nutrients. UL is used for preventing excess intake.

b) Groups

- For assessment of insufficient or excess energy intake, the BMI distribution is used. For planning and implementation, the focus should be on increasing the percentage of individuals within a normal range of BMI (normally 18.5-25.0 kg/m², but this is dependent on the characteristics of the group).
- For assessment of adequate or inadequate intake of nutrients, EAR values are used. If these values are unavailable, AI is used carefully instead. Using a cut-point method or a probability method, the percentage of people who report values below the EAR should be calculated. Since several measurement errors usually occur in the assessment of groups, careful monitoring of the construction of the dietary survey is needed. For planning and implementation, EAR or AI is used. UL is used for preventing excess intake.

To prevent lifestyle-related diseases, DG should be used for assessment, planning, and implementation.

There are various ways of assessment, such as: a) anthropometric measurements, especially body weight and BMI; b) data of clinical examinations and biochemical analyses; and c) ascertainment of dietary intake. Unfortunately, because a perfect method to evaluate habitual dietary intake has not been established, it is important to know that there are measurement errors in dietary assessment, such as under- or over-reporting and day-to-day variation.

2) Management of food services

Table 4 demonstrates the basic concept for the working procedures for applying DRIs-J in food services. The important points are to undertake information gathering of the characteristics of the group (assessment), decide an appropriate plan based on the assessment, create menus (plan), and serve quality-controlled meals (do), and feedback within regular intervals.

Table 4. Basic concept of working procedure for applying DRIs-J in food service

Orders	Basic concept of working procedure
1. Selection of subject group to serve meals and identify characteristics of the group	-- Selecting subject group to serve meals. -- Gathering information and distribution about group characteristics (sex, age groups, height, weight, and PAL).
2. Assessment of dietary intake	-- Assessing dietary intake (every meal and snack). Obtain the proportion of dietary intake from food services in whole meal. -- When it is difficult to obtain the above data, , only the meals that are provided by food services, assessing the meals, assessing a few members of the group, or using the data from other groups with similar characteristics could be used.
3. Dietary plan (nutrient base)	-- Make a dietary plan based on the results of the above assessment.
4. Dietary plan (food base)	-- Make a specific menu plan.
5. Serving meals	-- Serve meals under appropriate quality control.
6. Check dietary intakes	-- Obtain dietary intake of the subject (or subject groups).
7. Revise dietary plan	-- Verify and feedback #3 based on the results of #6 and recheck of #1.

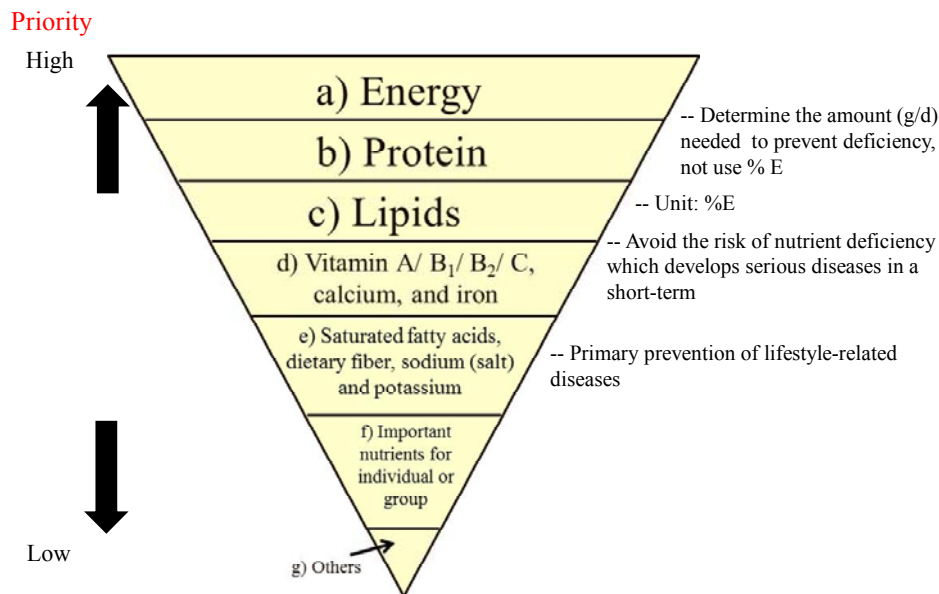


Figure 3. Priority according to nutrient characteristics

3) Priority according to nutrient characteristics

The reliability and priority in application differ from nutrient to nutrient. Keeping an adequate balance of energy intake and expenditure is fundamental to nutrition management. Adequate nutrient intake values are divided into two groups depending on the purpose: maintenance of good health and promotion of health, and primary prevention of lifestyle-related diseases. Because the latter purpose should be the goal after assurance of maintenance and promotion of health, values for EAR, RDA, AI, and UL have priority over DG.

Figure 3 illustrates the priority of energy and nutrients for applying DRIs-J. The order of priority is basically as follows: a) energy, b) protein, c) fat, d) vitamin A/ B₁/ B₂/ C, calcium, and iron, e) saturated fatty acids, dietary fiber, sodium (salt) and potassium, f) important nutrients for the individual or group, and g) others.

[APPENDIX]

Reference physique (reference height and weights) and reference values for Dietary Reference Intakes for Japanese 2010

*Abbreviations: EER, estimated energy requirements; PAL: physical activity level, EAR, estimated average requirement; RDA, recommended dietary allowance; AI, adequate intake; UL, tolerable upper intake level

Table appendix-1. Reference physique (reference height and weights)

Sex	Males		Females ¹	
Age	Reference height (cm)	Reference weights (kg)	Reference height (cm)	Reference weights (kg)
0-5 months	61.5	6.4	60	5.9
6-11	71.5	8.8	69.9	8.2
6-8	69.7	8.5	68.1	7.8
9-11	73.2	9.1	71.6	8.5
1-2 years	85	11.7	84	11
3-5	103.4	16.2	103.2	16.2
6-7	120	22	118.6	22
8-9	130	27.5	130.2	27.2
10-11	142.9	35.5	141.4	34.5
12-14	159.6	48	155	46
15-17	170	58.4	157	50.6
18-29	171.4	63	158	50.6
30-49	170.5	68.5	158	53
50-69	165.7	65	153	53.6
≥70	161	59.7	147.5	49

¹ Excluded pregnant women.

Table appendix-2. Estimated Energy Requirements (EERs) (kcal/day)¹

Sex	Males			Females		
PAL	I	II	III	I	II	III
0-5 months	-	550	-	-	500	-
6-8	-	650	-	-	600	-
9-11	-	700	-	-	650	-
1-2 years	-	1,000	-	-	900	-
3-5	-	1,300	-	-	1,250	-
6-7	1,350	1,550	1,700	1,250	1,450	1,650
8-9	1,600	1,800	2,050	1,500	1,700	1,900
10-11	1,950	2,250	2,500	1,750	2,000	2,250
12-14	2,200	2,500	2,750	2,000	2,250	2,550
15-17	2,450	2,750	3,100	2,000	2,250	2,500
18-29	2,250	2,650	3,000	1,700	1,950	2,250
30-49	2,300	2,650	3,050	1,750	2,000	2,300
50-69	2,100	2,450	2,800	1,650	1,950	2,200
≥70²	1,850	2,200	2,500	1,450	1,700	2,000
Pregnant women:						
Early-stage (amount to be added)				+50	+50	+50
Mid-stage (amount to be added)				+250	+250	+250
Late-stage (amount to be added)				+450	+450	+450
Lactating women (amount to be added)				+350	+350	+350

¹ For adults, the following formula was used for computation: Estimated Energy Requirement=Basal Metabolic Rate (kcal/day) × PAL.

For those between 18 and 69 years, the PALs were designated as I=1.50, II=1.75 or III=2.00. For those 70 years or older, the following were used instead: I=1.45, II=1.70, III=1.95.

² Subjects data mainly obtained from healthy independent elderly aged 70-75 years old

Table appendix-3. Protein (g/day)

Sex	Males				Females			
Age	EAR	RDA	AI	UL	EAR	RDA	AI	UL
0-5 months	-	-	10	-	-	-	10	-
6-8	-	-	15	-	-	-	15	-
9-11	-	-	25	-	-	-	25	-
1-2 years	15	20	-	-	15	20	-	-
3-5	20	25	-	-	20	25	-	-
6-7	25	30	-	-	25	30	-	-
8-9	30	40	-	-	30	40	-	-
10-11	40	45	-	-	35	45	-	-
12-14	45	60	-	-	45	55	-	-
15-17	50	60	-	-	45	55	-	-
18-29	50	60	-	-	40	50	-	-
30-49	50	60	-	-	40	50	-	-
50-69	50	60	-	-	40	50	-	-
≥70²	50	60	-	-	40	50	-	-
Pregnant women:								
 Early-stage (amount to be added)					+0	+0	-	-
 Mid-stage (amount to be added)					+5	+5	-	-
 Late-stage (amount to be added)					+20	+25	-	-
Lactating women (amount to be added)					+15	+20	-	-

Table appendix-4.1. Lipids --total fat, and saturated fatty acids--

Sex	Total fat (% energy)				Saturated fatty acids (% energy)	
	Male		Females		Males	Females
Age	AI	DG (range)	AI	DG (range)	DG (range)	DG (range)
0-5 months	50	-	50	-	-	-
6-11	40	-	40	-	-	-
1-2 years	-	20 _≤ , <30	-	20 _≤ , <30	-	-
3-5	-	20 _≤ , <30	-	20 _≤ , <30	-	-
6-7	-	20 _≤ , <30	-	20 _≤ , <30	-	-
8-9	-	20 _≤ , <30	-	20 _≤ , <30	-	-
10-11	-	20 _≤ , <30	-	20 _≤ , <30	-	-
12-14	-	20 _≤ , <30	-	20 _≤ , <30	-	-
15-17	-	20 _≤ , <30	-	20 _≤ , <30	-	-
18-29	-	20 _≤ , <30	-	20 _≤ , <30	4.5 _≤ , <7.0	4.5 _≤ , <7.0
30-49	-	20 _≤ , <25	-	20 _≤ , <25	4.5 _≤ , <7.0	4.5 _≤ , <7.0
50-69	-	20 _≤ , <25	-	20 _≤ , <25	4.5 _≤ , <7.0	4.5 _≤ , <7.0
≥70	-	20 _≤ , <25	-	20 _≤ , <25	4.5 _≤ , <7.0	4.5 _≤ , <7.0
Pregnant women: (amount to be added)	/		-	-	/	
Lactating women (amount to be added)			-	-		

Table appendix-4.2. Lipids (contd.) --total fat, and saturated fatty acids--

Sex	n-6 fatty acids (g/day)				n-3 fatty acids (g/day)				Cholesterol (mg/day)	
	Males		Females		Males		Females		Males	Females
Age	AI	DG	AI	DG	AI	DG ²	AI	DG ²	DG	DG
0-5 months	4	-	4	-	0.9	-	0.9	-	-	-
6-11	5	-	5	-	0.9	-	0.9	-	-	-
1-2 years	5	-	5	-	0.9	-	0.9	-	-	-
3-5	7	-	6	-	1.2	-	1.2	-	-	-
6-7	8	-	7	-	1.6	-	1.3	-	-	-
8-9	9	-	8	-	1.7	-	1.5	-	-	-
10-11	10	-	9	-	1.8	-	1.7	-	-	-
12-14	11	-	10	-	2.1	-	2.1	-	-	-
15-17	13	-	11	-	2.5	-	2.1	-	-	-
18-29	11	<10	9	<10	-	≥2.1	-	>1.8	<750	<600
30-49	10	<10	9	<10	-	≥2.2	-	>1.8	<750	<600
50-69	10	<10	8	<10	-	≥2.4	-	>2.1	<750	<600
≥70	8	<10	7	<10	-	≥2.2	-	>1.8	<750	<600
Pregnant women	/		1 ¹	-	/		1.9	-	/	
Lactating women			0 ¹	-			1.7	-		

¹ Amount to be added² In DG, it is desirable to intake more than 1 g/day of EPA and DHA.

Table appendix-5. Carbohydrates (% energy)¹

Sex	Males					Females				
Age	EAR	RDA	AI	DG (range)	UL	EAR	RDA	AI	DG (range)	UL
0-5 months	-	-	-	-	-	-	-	-	-	-
6-11	-	-	-	-	-	-	-	-	-	-
1-2 years	-	-	-	50≤, <70	-	-	-	-	50≤, <70	-
3-5	-	-	-	50≤, <70	-	-	-	-	50≤, <70	-
6-7	-	-	-	50≤, <70	-	-	-	-	50≤, <70	-
8-9	-	-	-	50≤, <70	-	-	-	-	50≤, <70	-
10-11	-	-	-	50≤, <70	-	-	-	-	50≤, <70	-
12-14	-	-	-	50≤, <70	-	-	-	-	50≤, <70	-
15-17	-	-	-	50≤, <70	-	-	-	-	50≤, <70	-
18-29	-	-	-	50≤, <70	-	-	-	-	50≤, <70	-
30-49	-	-	-	50≤, <70	-	-	-	-	50≤, <70	-
50-69	-	-	-	50≤, <70	-	-	-	-	50≤, <70	-
≥70	-	-	-	50≤, <70	-	-	-	-	50≤, <70	-
Pregnant women (amount to be added)						-	-	-	-	-
Lactating women (amount to be added)						-	-	-	-	-

¹Including energy derived from alcohol.

Table appendix-6. Dietary fibers (g/day)

Sex	Males					Females				
Age	EAR	RDA	AI	DG	UL	EAR	RDA	AI	DG	UL
0-5 months	-	-	-	-	-	-	-	-	-	-
6-11	-	-	-	-	-	-	-	-	-	-
1-2 years	-	-	-	-	-	-	-	-	-	-
3-5	-	-	-	-	-	-	-	-	-	-
6-7	-	-	-	-	-	-	-	-	-	-
8-9	-	-	-	-	-	-	-	-	-	-
10-11	-	-	-	-	-	-	-	-	-	-
12-14	-	-	-	-	-	-	-	-	-	-
15-17	-	-	-	-	-	-	-	-	-	-
18-29	-	-		>19	-	-	-		>17	-
30-49	-	-		>19	-	-	-		>17	-
50-69	-	-		>19	-	-	-		>17	-
≥70	-	-		>19	-	-	-		>17	-
Pregnant women (amount to be added)						-	-	-	-	-
Lactating women (amount to be added)						-	-	-	-	-

Table appendix-7. Vitamin A ($\mu\text{g RE/day}$)¹

Sex	Males				Females			
	EAR ²	RDA ²	AI ³	UL ³	EAR ²	RDA ²	AI ³	UL ³
Age								
0-5 months	-	-	300	600	-	-	300	600
6-11	-	-	400	600	-	-	400	600
1-2 years	300	400	-	600	250	350	-	600
3-5	300	450	-	700	300	450	-	700
6-7	300	450	-	900	300	400	-	900
8-9	350	500	-	1,200	350	500	-	1,200
10-11	450	600	-	1,500	400	550	-	1,500
12-14	550	750	-	2,000	500	700	-	2,000
15-17	650	900	-	2,500	450	650	-	2,500
18-29	600	850	-	2,700	450	650	-	2,700
30-49	600	850	-	2,700	500	700	-	2,700
50-69	600	850	-	2,700	500	700	-	2,700
≥ 70	550	800	-	2,700	450	650	-	2,700
Pregnant women: (amount to be added)	/							
Early-stage					+0	+0	-	-
Mid-stage					+0	+0	-	-
Late-stage					+60	+80	-	-
Lactating women (amount to be added)					+300	+450	-	-

RE=retinol equivalents

¹ Retinol equivalent (mg RE) = retinol (mg) + beta-carotene (mg) *1/12 + alpha-carotene(mg) *1/24 + beta-cryptoxanthin(mg) *1/24 + other provitamin A carotenoids(mg)*1/24

² Including provitamin A carotenoids.

³ Excluding provitamin A carotenoids

Table appendix-8. Vitamin D ($\mu\text{g}/\text{day}$)

Sex	Males				Females			
Age	EAR	RDA	AI	UL	EAR	RDA	AI	UL
0-5 months	-	-	2.5 (5.0) ¹	25	-	-	2.5 (5.0) ¹	25
6-11	-	-	5.0 (5.0) ¹	25	-	-	5.0 (5.0) ¹	25
1-2 years	-	-	2.5	25	-	-	2.5	25
3-5	-	-	2.5	30	-	-	2.5	30
6-7	-	-	2.5	30	-	-	2.5	30
8-9	-	-	3	35	-	-	3	35
10-11	-	-	3.5	35	-	-	3.5	35
12-14	-	-	3.5	45	-	-	3.5	45
15-17	-	-	4.5	50	-	-	4.5	50
18-29	-	-	5.5	50	-	-	5.5	50
30-49	-	-	5.5	50	-	-	5.5	50
50-69	-	-	5.5	50	-	-	5.5	50
≥ 70	-	-	5.5	50	-	-	5.5	50
Pregnant women (amount to be added)					-	-	+1.5	-
Lactating women (amount to be added)					-	-	+2.5	-

¹Adequate intakes for an infant who is exposed to appropriate sunlight. The value in parentheses is adequate intakes for those with less sunlight exposure.

Table appendix-9. Vitamin E (mg/day)¹

Sex	Males				Females			
Age	EAR	RDA	AI	UL	EAR	RDA	AI	UL
0-5 months	-	-	3.0	-	-	-	3.0	-
6-11	-	-	3.5	-	-	-	3.5	-
1-2 years	-	-	3.5	150	-	-	3.5	150
3-5	-	-	4.5	200	-	-	4.5	200
6-7	-	-	5.0	300	-	-	5.0	300
8-9	-	-	6.0	350	-	-	5.5	350
10-11	-	-	6.5	450	-	-	6.0	450
12-14	-	-	7.0	600	-	-	7.0	600
15-17	-	-	8.0	750	-	-	7.0	650
18-29	-	-	7.0	800	-	-	6.5	650
30-49	-	-	7.0	900	-	-	6.5	700
50-69	-	-	7.0	850	-	-	6.5	700
≥70	-	-	7.0	750	-	-	6.5	650
Pregnant women (amount to be added)					-	-	+0.0	-
Lactating women (amount to be added)					-	-	+3.0	-

¹ Computation was made on α -tocopherol. Not included vitamins E other than $\alpha\alpha$ -tocopherol.

Table appendix-10. Vitamin K ($\mu\text{g}/\text{day}$)

Sex	Males				Females			
Age	EAR	RDA	AI	UL	EAR	RDA	AI	UL
0-5 months	-	-	4	-	-	-	4	-
6-11	-	-	7	-	-	-	7	-
1-2 years	-	-	25	-	-	-	25	-
3-5	-	-	30	-	-	-	30	-
6-7	-	-	40	-	-	-	40	-
8-9	-	-	45	-	-	-	45	-
10-11	-	-	55	-	-	-	55	-
12-14	-	-	70	-	-	-	65	-
15-17	-	-	80	-	-	-	60	-
18-29	-	-	75	-	-	-	60	-
30-49	-	-	75	-	-	-	65	-
50-69	-	-	75	-	-	-	65	-
≥ 70	-	-	75	-	-	-	65	-
Pregnant women (amount to be added)					-	-	+0	-
Lactating women (amount to be added)					-	-	+0	-

Table appendix-11. Vitamin B₁ (mg/day)¹

Sex	Males				Females			
Age	EAR	RDA	AI	UL	EAR	RDA	AI	UL
0-5 months	-	-	0.1	-	-	-	0.1	-
6-11	-	-	0.3	-	-	-	0.3	-
1-2 years	0.5	0.5	-	-	0.4	0.5	-	-
3-5	0.6	0.7	-	-	0.6	0.7	-	-
6-7	0.7	0.8	-	-	0.7	0.8	-	-
8-9	0.8	1.0	-	-	0.8	1.0	-	-
10-11	1.0	1.2	-	-	0.9	1.1	-	-
12-14	1.1	1.4	-	-	1.0	1.2	-	-
15-17	1.2	1.5	-	-	1.0	1.2	-	-
18-29	1.2	1.4	-	-	0.9	1.1	-	-
30-49	1.2	1.4	-	-	0.9	1.1	-	-
50-69	1.1	1.3	-	-	0.9	1.1	-	-
≥70	1.0	1.2	-	-	0.8	0.9	-	-
Pregnant women: (amount to be added)								
Early-stage					+0.0	+0.0	-	-
Mid-stage					+0.1	+0.1	-	-
Late-stage					+0.2	+0.2	-	-
Lactating women (amount to be added)					+0.2	+0.2	-	-

¹ Computed using the EER for PAL II.

Table appendix-12. Vitamin B₂ (mg/day)¹

Sex	Males				Females			
Age	EAR	RDA	AI	UL	EAR	RDA	AI	UL
0-5 months	-	-	0.3	-	-	-	0.3	-
6-11	-	-	0.4	-	-	-	0.4	-
1-2 years	0.5	0.6	-	-	0.5	0.5	-	-
3-5	0.7	0.8	-	-	0.6	0.8	-	-
6-7	0.8	0.9	-	-	0.7	0.9	-	-
8-9	0.9	1.1	-	-	0.9	1.0	-	-
10-11	1.1	1.4	-	-	1.0	1.2	-	-
12-14	1.3	1.5	-	-	1.1	1.4	-	-
15-17	1.4	1.7	-	-	1.1	1.4	-	-
18-29	1.3	1.6	-	-	1.0	1.2	-	-
30-49	1.3	1.6	-	-	1.0	1.2	-	-
50-69	1.2	1.5	-	-	1.0	1.2	-	-
≥70	1.1	1.3	-	-	0.9	1.0	-	-
Pregnant women: (amount to be added)							-	-
Early-stage					+0.0	+0.0	-	-
Mid-stage					+0.1	+0.2		
Late-stage					+0.2	+0.3		
Lactating women (amount to be added)					+0.3	+0.4	-	-

¹ Computed using the EER for PAL II.

Table appendix-13. Niacin (mg NE/day)¹

Sex	Males				Females			
	EAR	RDA	AI	UL ²	EAR	RDA	AI	UL ²
Age								
0-5 months³	-	-	23	-	-	-	23	-
6-11	-	-	3	-	-	-	3	-
1-2 years	5	6	-	60 (15)	4	5	-	60 (15)
3-5	6	7	-	80 (20)	6	7	-	80 (20)
6-7	7	9	-	100 (30)	7	8	-	100 (30)
8-9	9	10	-	150 (35)	8	10	-	150 (35)
10-11	11	13	-	200 (45)	10	12	-	150 (45)
12-14	12	14	-	250 (60)	11	13	-	250 (60)
15-17	13	16	-	300 (70)	11	13	-	250 (65)
18-29	13	15	-	300 (80)	9	11	-	250 (65)
30-49	13	15	-	350 (85)	10	12	-	250 (65)
50-69	12	14	-	350 (80)	9	11	-	250 (65)
≥70	11	13	-	300 (75)	8	10	-	250 (60)
Pregnant women (amount to be added)	/				+0	+0	-	-
Lactating women (amount to be added)					+3	v3	-	-

¹ NE= niacin equivalent = niacin+1/60 tryptophan. Computed using the Estimated Energy Requirement for PAL II.

² Quantity as nicotinamide (mg). The values in parentheses show nicotinic acid (mg). Computed by reference weight (kg).

³ Unit: mg/day

Table appendix-14. Vitamin B₆ (mg/day)¹

Sex	Males				Females			
Age	EAR	RDA	AI	UL ²	EAR	RDA	AI	UL ²
0-5 months	-	-	0.2	-	-	-	0.2	-
6-11	-	-	0.3	-	-	-	0.3	-
1-2 years	0.4	0.5	-	10.0	0.4	0.5	-	10.0
3-5	0.5	0.6	-	15.0	0.5	0.6	-	15.0
6-7	0.7	0.8	-	20.0	0.6	0.7	-	20.0
8-9	0.8	0.9	-	25.0	0.8	0.9	-	25.0
10-11	0.9	1.0	-	30.0	0.9	1.0	-	30.0
12-14	1.0	1.3	-	40.0	1.0	1.3	-	40.0
15-17	1.1	1.4	-	50.0	1.0	1.3	-	45.0
18-29	1.1	1.4	-	55.0	1.0	1.1	-	45.0
30-49	1.1	1.4	-	60.0	1.0	1.1	-	45.0
50-69	1.1	1.4	-	55.0	1.0	1.1	-	45.0
≥70	1.1	1.4	-	50.0	1.0	1.1	-	40.0
Pregnant women (amount to be added)					+0.7	+0.8	-	-
Lactating women (amount to be added)					+0.3	+0.3	-	-

¹ Computed using the EER for PAL II.² Quantity as pyridoxine, not indicating values in dietary vitamin B₆.

Table appendix-15. Vitamin B₁₂ (µg/day)

Sex	Males				Females			
Age	EAR	RDA	AI	UL	EAR	RDA	AI	UL
0-5 months	-	-	0.4	-	-	-	0.4	-
6-11	-	-	0.6	-	-	-	0.6	-
1-2 years	0.8	0.9	-	-	0.8	0.9	-	-
3-5	0.9	1.1	-	-	0.9	1.1	-	-
6-7	1.1	1.4	-	-	1.1	1.4	-	-
8-9	1.3	1.6	-	-	1.3	1.6	-	-
10-11	1.6	1.9	-	-	1.6	1.9	-	-
12-14	2.0	2.4	-	-	2.0	2.4	-	-
15-17	2.0	2.4	-	-	2.0	2.4	-	-
18-29	2.0	2.4	-	-	2.0	2.4	-	-
30-49	2.0	2.4	-	-	2.0	2.4	-	-
50-69	2.0	2.4	-	-	2.0	2.4	-	-
≥70	2.0	2.4	-	-	2.0	2.4	-	-
Pregnant women (amount to be added)					+0.3	+0.4	-	-
Lactating women (amount to be added)					+0.7	+0.8	-	-

Table appendix-16. Folic acid ($\mu\text{g}/\text{day}$)¹

Sex	Males				Females			
Age	EAR	RDA	AI	UL ²	EAR	RDA	AI	UL ²
0-5 months	-	-	40	-	-	-	40	-
6-11	-	-	65	-	-	-	65	-
1-2 years	80	100	-	300	80	100	-	300
3-5	90	110	-	400	90	110	-	400
6-7	110	140	-	600	110	140	-	600
8-9	130	160	-	700	130	160	-	700
10-11	160	190	-	900	160	190	-	900
12-14	200	240	-	1,200	200	240	-	1,200
15-17	200	240	-	1,300	200	240	-	1,300
18-29	200	240	-	1,300	200	240	-	1,300
30-49	200	240	-	1,400	200	240	-	1,400
50-69	200	240	-	1,400	200	240	-	1,400
≥ 70	200	240	-	1,300	200	240	-	1,300
Pregnant women (amount to be added)					+200	+240	-	-
Lactating women (amount to be added)					+80	+100	-	-

¹ Intake of 400 mg/day is desired for women who are planning to get pregnant or may be pregnant to reduce the risk of neural tube closure.² Quantity as pteroyl-monoglutamic acid (intake from sources other than ordinary food).

Table appendix-17. Pantothenic acid (mg/day)

Sex	Males				Females			
Age	EAR	RDA	AI	UL	EAR	RDA	AI	UL
0-5 months	-	-	4	-	-	-	4	-
6-11	-	-	5	-	-	-	5	-
1-2 years	-	-	3	-	-	-	3	-
3-5	-	-	4	-	-	-	4	-
6-7	-	-	5	-	-	-	5	-
8-9	-	-	6	-	-	-	5	-
10-11	-	-	7	-	-	-	6	-
12-14	-	-	7	-	-	-	6	-
15-17	-	-	7	-	-	-	5	-
18-29	-	-	5	-	-	-	5	-
30-49	-	-	5	-	-	-	5	-
50-69	-	-	6	-	-	-	5	-
≥70	-	-	6	-	-	-	5	-
Pregnant women (amount to be added)					-	-	+1	-
Lactating women (amount to be added)					-	-	+1	-

Table appendix-18. Botin ($\mu\text{g}/\text{day}$)

Sex	Males				Females			
Age	EAR	RDA	AI	UL	EAR	RDA	AI	UL
0-5 months	-	-	4	-	-	-	4	-
6-11	-	-	10	-	-	-	10	-
1-2 years	-	-	20	-	-	-	20	-
3-5	-	-	25	-	-	-	25	-
6-7	-	-	30	-	-	-	30	-
8-9	-	-	35	-	-	-	35	-
10-11	-	-	40	-	-	-	40	-
12-14	-	-	50	-	-	-	50	-
15-17	-	-	50	-	-	-	50	-
18-29	-	-	50	-	-	-	50	-
30-49	-	-	50	-	-	-	50	-
50-69	-	-	50	-	-	-	50	-
≥ 70	-	-	50	-	-	-	50	-
Pregnant women (amount to be added)	/				-	-	+2	—
Lactating women (amount to be added)					-	-	+5	—

Table appendix-19. vitamin C (mg/day)

Sex	Males			Females		
Age	EAR	RDA	AI	EAR	RDA	AI
0-5 months	-	-	40	-	-	40
6-11	-	-	40	-	-	40
1-2 years	35	40	-	35	40	-
3-5	40	45	-	40	45	-
6-7	45	55	-	45	55	-
8-9	55	65	-	55	65	-
10-11	65	80	-	65	80	-
12-14	85	100	-	85	100	-
15-17	85	100	-	85	100	-
18-29	85	100	-	85	100	-
30-49	85	100	-	85	100	-
50-69	85	100	-	85	100	-
≥70	85	100	-	85	100	-
Pregnant women (amount to be added)	/			+10	+10	-
Lactating women (amount to be added)				+40	+50	-

Table appendix-20. Sodium (mg/day, the value in parentheses is equivalent to table salt [g/day])

Sex	Males			Females		
Age	EAR	AI	DG	EAR	AI	DG
0-5 months	-	100 (0.3)	-	-	100 (0.3)	-
6-11	-	600 (1.5)	-	-	600 (1.5)	-
1-2 years	-	-	(<4.0)	-	-	(<4.0)
3-5	-	-	(<5.0)	-	-	(<5.0)
6-7	-	-	(<6.0)	-	-	(<6.0)
8-9	-	-	(<7.0)	-	-	(<7.0)
10-11	-	-	(<8.0)	-	-	(<7.5)
12-14	-	-	(<9.0)	-	-	(<7.5)
15-17	-	-	(<9.0)	-	-	(<7.5)
18-29	600 (1.5)	-	(<9.0)	600 (1.5)	-	(<7.5)
30-49	600 (1.5)	-	(<9.0)	600 (1.5)	-	(<7.5)
50-69	600 (1.5)	-	(<9.0)	600 (1.5)	-	(<7.5)
≥70	600 (1.5)	-	(<9.0)	600 (1.5)	-	(<7.5)
Pregnant women (amount to be added)	/			-	-	-
Lactating women (amount to be added)				-	-	-

Table appendix-21. Potassium: (mg/day)

Sex	Males		Females	
Age	AI ¹	UL ²	AI ¹	UL ²
0-5 months	400	-	400	-
6-11	700	-	700	-
1-2 years	900	-	800	-
3-5	1,000	-	1,000	-
6-7	1,300	-	1,000	-
8-9	1,500	-	1,400	-
10-11	1,900	-	1,700	-
12-14	2,300	-	2,100	-
15-17	2,700	-	2,000	-
18-29	2,500	2,800	2,000	2,700
30-49	2,500	2,900	2,000	2,800
50-69	2,500	3,000	2,000	3,000
≥70	2,500	3,000	2,000	2,900
Pregnant women (amount to be added)	/		+0	-
Lactating women (amount to be added)			+400	-

¹ The value that is considered appropriate to maintain *in vivo* potassium balance was used as the adequate intake .

² The value is established from a standpoint of prevention of hypertension.

Table appendix-22. Calcium (mg/day)

Sex	Males				Females			
Age	EAR	RDA	AI	UL	EAR	RDA	AI	UL
0-5 months	-	-	200	-	-	-	200	-
6-11	-	-	250	-	-	-	250	-
1-2 years	350	400	-	-	350	400	-	-
3-5	500	600	-	-	450	550	-	-
6-7	500	600	-	-	450	550	-	-
8-9	550	650	-	-	600	750	-	-
10-11	600	700	-	-	600	700	-	-
12-14	800	1,000	-	-	650	800	-	-
15-17	650	800	-	-	550	650	-	-
18-29	650	800	-	2,300	550	650	-	2,300
30-49	550	650	-	2,300	550	650	-	2,300
50-69	600	700	-	2,300	550	650	-	2,300
≥70	600	700	-	2,300	550	650	-	2,300
Pregnant women (amount to be added)	/				+0	+0	-	-
Lactating women (amount to be added)					+0	+0	-	-

Table appendix-23. Magnesium (mg/day)

Sex	Males				Females			
Age	EAR	RDA	AI	UL ¹	EAR	RDA	AI	UL ¹
0-5 months	-	-	20	-	-	-	20	-
6-11	-	-	60	-	-	-	60	-
1-2 years	60	70	-	-	60	70	-	-
3-5	80	100	-	-	80	100	-	-
6-7	110	130	-	-	110	130	-	-
8-9	140	170	-	-	140	160	-	-
10-11	180	210	-	-	170	210	-	-
12-14	240	290	-	-	230	280	-	-
15-17	290	350	-	-	250	300	-	-
18-29	280	340	-	-	230	270	-	-
30-49	310	370	-	-	240	290	-	-
50-69	290	350	-	-	240	290	-	-
≥70	270	320	-	-	220	260	-	-
Pregnant women (amount to be added)					30	40	-	-
Lactating women (amount to be added)					0	0	-	-

¹ When the nutrient is obtained from ordinary food, no upper threshold is set. When the nutrient is obtained from a source other than ordinary food, the upper threshold is set at 350 mg/day for adults and 5 mg/kg weight/day for children.

Table appendix-24. Phosphorus (mg/day)

Sex	Males				Females			
Age	EAR	RDA	AI	UL	EAR	RDA	AI	UL
0-5 months	-	-	120	-	-	-	120	-
6-11	-	-	260	-	-	-	260	-
1-2 years	-	-	600	-	-	-	600	-
3-5	-	-	800	-	-	-	700	-
6-7	-	-	900	-	-	-	900	-
8-9	-	-	1,100	-	-	-	1,000	-
10-11	-	-	1,200	-	-	-	1,100	-
12-14	-	-	1,200	-	-	-	1,100	-
15-17	-	-	1,200	-	-	-	1,000	-
18-29	-	-	1,000	3,000	-	-	900	3,000
30-49	-	-	1,000	3,000	-	-	900	3,000
50-69	-	-	1,000	3,000	-	-	900	3,000
≥70	-	-	1,000	3,000	-	-	900	3,000
Pregnant women (amount to be added)					-	-	+0	-
Lactating women (amount to be added)					-	-	+0	-

Table appendix-24. Iron (mg/day)¹

Sex	Males				Females					
Age	EAR	RDA	AI	UL	Not menstruating		Menstruating		AI	UL
					EAR	RDA	EAR	RDA		
0-5 months	-	-	0.5	-	-	-	-	-	0.5	-
6-11	3.5	5.0	-	-	3.5	4.5	-	-	-	-
1-2 years	3.0	4.0	-	25	3.0	4.5	-	-	-	20
3-5	4.0	5.5	-	25	4.0	5.5	-	-	-	25
6-7	4.5	6.5	-	30	4.5	6.5	-	-	-	30
8-9	6.0	8.5	-	35	5.5	8.0	-	-	-	35
10-11	7.0	10.0	-	35	6.5	9.5	9.5	13.5	-	35
12-14	8.0	11.0	-	50	7.0	10.0	10.0	14.0	-	45
15-17	8.0	9.5	-	45	5.5	7.0	8.5	10.5	-	40
18-29	6.0	7.0	-	50	5.0	6.0	8.5	10.5	-	40
30-49	6.5	7.5	-	55	5.5	6.5	9.0	11.0	-	40
50-69	6.0	7.5	-	50	5.5	6.5	9.0	11.0	-	45
≥70	6.0	7.0	-	50	5.0	6.0	-	-	-	40
Pregnant women: (amount to be added)										
Early-stage					+2.0	+2.5	-	-	-	-
Mid- and late-stage					+12.5	+15.0	-	-	-	-
Lactating women (amount to be added)					+2.0	+2.5	-	-	-	-

¹ The values were set excluding those with menorrhagia (blood loss exceeding 80 mL/period).

Table appendix-25. Zinc (mg/day)

Sex	Males				Females			
Age	EAR	RDA	AI	UL	EAR	RDA	AI	UL
0-5 months	-	-	2	-	-	-	2	-
6-11	-	-	3	-	-	-	3	-
1-2 years	4	5	-	-	4	5	-	-
3-5	5	6	-	-	5	6	-	-
6-7	6	7	-	-	6	7	-	-
8-9	7	8	-	-	7	8	-	-
10-11	8	10	-	-	8	10	-	-
12-14	9	11	-	-	8	9	-	-
15-17	11	13	-	-	7	9	-	-
18-29	10	12	-	40	7	9	-	35
30-49	10	12	-	45	8	9	-	35
50-69	10	12	-	45	8	9	-	35
≥70	9	11	-	40	7	9	-	30
Pregnant women (amount to be added)					+1	+2	-	-
Lactating women (amount to be added)					+3	+3	-	-

Table appendix-26. Copper (mg/day)

Sex	Males				Females			
Age	EAR	RDA	AI	UL	EAR	RDA	AI	UL
0-5 months	-	-	0.3	-	-	-	0.3	-
6-11	-	-	0.3	-	-	-	0.3	-
1-2 years	0.2	0.3	-	-	0.2	0.3	-	-
3-5	0.3	0.3	-	-	0.3	0.3	-	-
6-7	0.3	0.4	-	-	0.3	0.4	-	-
8-9	0.4	0.5	-	-	0.4	0.5	-	-
10-11	0.5	0.6	-	-	0.5	0.6	-	-
12-14	0.6	0.8	-	-	0.6	0.8	-	-
15-17	0.7	0.9	-	-	0.6	0.7	-	-
18-29	0.7	0.9	-	10	0.6	0.7	-	10
30-49	0.7	0.9	-	10	0.6	0.7	-	10
50-69	0.7	0.9	-	10	0.6	0.7	-	10
≥70	0.6	0.8	-	10	0.5	0.7	-	10
Pregnant women (amount to be added)					+0.1	+0.1	-	-
Lactating women (amount to be added)					+0.5	+0.6	-	-

Table appendix-27. Manganese (mg/day)

Sex	Males				Females			
Age	EAR	RDA	AI	UL	EAR	RDA	AI	UL
0-5 months	-	-	0.01	-	-	-	0.01	-
6-11	-	-	0.5	-	-	-	0.5	-
1-2 years	-	-	1.5	-	-	-	1.5	-
3-5	-	-	1.5	-	-	-	1.5	-
6-7	-	-	2.0	-	-	-	2.0	-
8-9	-	-	2.5	-	-	-	2.5	-
10-11	-	-	3.0	-	-	-	3.0	-
12-14	-	-	4.0	-	-	-	3.5	-
15-17	-	-	4.5	-	-	-	3.5	-
18-29	-	-	4.0	11	-	-	3.5	11
30-49	-	-	4.0	11	-	-	3.5	11
50-69	-	-	4.0	11	-	-	3.5	11
≥70	-	-	4.0	11	-	-	3.5	11
Pregnant women (amount to be added)					-	-	+0	-
Lactating women (amount to be added)					-	-	+0	-

Table appendix-28. iodine ($\mu\text{g}/\text{day}$)

Sex	Males				Females			
Age	EAR	RDA	AI	UL	EAR	RDA	AI	UL
0-5 months	-	-	100	250	-	-	100	250
6-11	-	-	130	250	-	-	130	250
1-2 years	35	50	-	250	35	50	-	250
3-5	45	60	-	350	45	60	-	350
6-7	55	75	-	500	55	75	-	500
8-9	65	90	-	500	65	90	-	500
10-11	75	110	-	500	75	110	-	500
12-14	95	130	-	1,300	95	130	-	1,300
15-17	100	140	-	2,100	100	140	-	2,100
18-29	95	130	-	2,200	95	130	-	2,200
30-49	95	130	-	2,200	95	130	-	2,200
50-69	95	130	-	2,200	95	130	-	2,200
≥ 70	95	130	-	2,200	95	130	-	2,200
Pregnant women (amount to be added)					+75	+110	-	-
Lactating women (amount to be added)					+100	+140	-	-

Table appendix-28. Selenium ($\mu\text{g}/\text{day}$)

Sex	Males				Females			
Age	EAR	RDA	AI	UL	EAR	RDA	AI	UL
0-5 months	-	-	15	-	-	-	15	-
6-11	-	-	15	-	-	-	15	-
1-2 years	10	10	-	50	10	10	-	50
3-5	10	15	-	70	10	15	-	70
6-7	15	15	-	100	15	15	-	100
8-9	15	20	-	120	15	20	-	120
10-11	20	25	-	160	20	20	-	150
12-14	25	30	-	210	20	25	-	200
15-17	25	35	-	260	20	25	-	220
18-29	25	30	-	280	20	25	-	220
30-49	25	30	-	300	20	25	-	230
50-69	25	30	-	280	20	25	-	230
≥ 70	25	30	-	260	20	25	-	210
Pregnant women (amount to be added)					+5	+5	-	-
Lactating women (amount to be added)					+15	+20	-	-

Table appendix-29. Chromium ($\mu\text{g}/\text{day}$)¹

Sex	Males				Females			
Age	EAR	RDA	AI	UL	EAR	RDA	AI	UL
0-5 months	-	-	0.8	-	-	-	0.8	-
6-11	-	-	1.0	-	-	-	1.0	-
1-2 years	-	-	-	-	-	-	-	-
3-5	-	-	-	-	-	-	-	-
6-7	-	-	-	-	-	-	-	-
8-9	-	-	-	-	-	-	-	-
10-11	-	-	-	-	-	-	-	-
12-14	-	-	-	-	-	-	-	-
15-17	-	-	-	-	-	-	-	-
18-29	35	40	-	-	25	30	-	-
30-49	35	40	-	-	25	30	-	-
50-69	30	40	-	-	25	30	-	-
≥ 70	30	35	-	-	20	25	-	-
Pregnant women (amount to be added)					-	-	-	-
Lactating women (amount to be added)					-	-	-	-

¹ Computed using the EER for PAL II.

Table appendix-30. Molybdenum (μg /day)

Sex	Males				Females			
Age	EAR	RDA	AI	UL	EAR	RDA	AI	UL
0-5 months	-	-	2	-	-	-	2	-
6-11	-	-	3	-	-	-	3	-
1-2 years	-	-	-	-	-	-	—	-
3-5	-	-	-	-	-	-	-	-
6-7	-	-	-	-	-	-	-	-
8-9	-	-	-	-	-	-	-	-
10-11	-	-	-	-	-	-	-	-
12-14	-	-	-	-	-	-	-	-
15-17	-	-	-	-	-	-	-	-
18-29	20	25	-	550	20	20	-	450
30-49	25	30	-	600	20	25	-	500
50-69	20	25	-	600	20	25	-	500
≥ 70	20	25	-	550	20	20	-	450
Pregnant women (amount to be added)	/				-	-	-	-
Lactating women (amount to be added)					+3	+3	-	-

