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#INCA3

Press kit

12 July 2017

Third study on the food consumption and eating habits of the French population

Changes in consumption habits and patterns,
new issues in the areas of food safety and nutrition

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Press release

INCA 3: Changes in consumption habits and patterns, new issues in the areas of food safety and nutrition

Today ANSES is publishing the results of INCA 3, its third study on the food consumption and eating habits of the French population. More than 5800 people (3157 adults between the ages of 18 and 79 years and 2698 children between the ages of 0 and 17 years) participated in this large-scale national survey that mobilised almost 200 interviewers in 2014 and 2015. The participants were asked 150 questions about their lifestyle and eating habits and 13,600 days of consumption were recorded, generating data for 320,000 foods consumed. It took a total of six years to update the snapshot of the food consumption habits of the French population.

On average, French people consume 2.9 kg of food per day, i.e. around 2200 kcal, 50% of which come from beverages. Women generally prefer yoghurts and soft white cheese (*fromage blanc*), fruit purees, poultry and soups. As for men, they tend to enjoy cheese, meat, delicatessen meat, potatoes and cream desserts. The French population is consuming even more processed products, significantly more food supplements than in 2007, too much salt, and most importantly, not enough fibre.

There are also some practices that potentially pose additional risk: growing consumption of raw foods of animal origin, temperatures in refrigerators that are not always appropriate, and use-by dates that are more frequently exceeded.

Lastly, levels of physical activity and sedentariness in France can be described as unsuitable: physical activity is insufficient for a large part of the population, and time spent in front of screens every day (outside of working hours) continues to rise, with an average increase over the last seven years of 20 minutes for children, and 1 hour and 20 minutes for adults.

These new data provided by the INCA 3 study are essential for the work undertaken by the Agency in the area of food. Carried out within the framework of a harmonised procedure at European level, this work will enable recommendations to be made in line with the current practices of the French population.

The INCA studies are essential tools for assessing the risks related to food. They improve knowledge of habits in the French population (choice of foods, preparation, consumption of food supplements, levels of physical activity and sedentariness). Later combined with ANSES's databases on the composition of foods, they determine intakes of beneficial substances found in foods (vitamins, essential fatty acids, etc.).

The French diet

On average, children up to the age of 10 years consume 1.6 kg of food and beverages per day. This quantity increases to 2.2 kg for adolescents between the ages of 11 and 17 years, and 2.9 kg for adults aged 18 to 79 years. Beverages account for more than half of this daily intake, and water accounts for half of the beverages consumed.

According to the INCA 3 study, men eat more than women. The latter prefer yoghurts, soft white cheese (*fromage blanc*), fruit purees, poultry, soups and hot beverages, while the former favour cereal products, cheese, meat and delicatessen meat, and cream desserts.

The diet of the French population contains a high percentage of processed foods and still slightly too much salt (9 g/day for men and 7 g/day for women on average, compared to the French National Health and Nutrition Programme's objectives of 8 g/day and 6.5 g/day respectively). Fibre intakes (20 g/day on average for adults) still appear too low in relation to ANSES's recommendations



(30 g/day). The French population is also consuming more and more food supplements, as well as many foods derived from their own production (including water, *via* private wells) or that of a friend or relation.

There are disparities in behaviour according to age, gender, level of education, and region. For example, adults between the ages of 65 and 79 years consume more home-made foods, men consume more raw foods of animal origin, individuals with at least four years of higher education consume more fruits and half as many cold non-alcoholic beverages, and residents of large urban areas consume more fish, confectionery, chocolate and fruit juice than those of rural areas (who consume more delicatessen meat, vegetables and cheese), etc.

New behaviours potentially posing a greater risk to health

The results of the INCA 3 study show the emergence of **new issues in terms of the microbiological safety of food**. Indeed, a number of practices potentially posing a risk are more frequent in the INCA 3 study: increase in the consumption of raw foods of animal origin (mainly fish and beef), longer storage times before consumption of perishable foodstuffs, use-by dates that are more frequently exceeded, and inappropriate temperatures sometimes found in refrigerators.

Moreover, the **body weight status and level of physical activity of the French population remain inadequate**. In 2014-2015, 13% of children and adolescents (up to the age of 17) and 34% of adults aged 18 to 79 years were overweight, and respectively 4% and 17% were obese. In addition, the percentage of individuals with sedentary behaviour is alarming, since half of adolescents aged 11 to 14 years, two thirds of adolescents aged 15 to 17 years and more than 80% of adults aged 18 to 79 years are concerned. Over a seven-year period, the average daily time spent in front of a screen, outside of work/study hours, increased by 20 minutes for children, and by 1 hour and 20 minutes for adults.

The efforts implemented in the framework of national policy must therefore be strengthened. These efforts should focus on improving food from a nutritional point of view, promoting physical activity, and reducing sedentariness.

What action should be taken following INCA 3?

The INCA 3 study is an essential database for ANSES's expert appraisal activities. The data collected will thus be exploited, over the next few years, to respond to any future requests that ANSES is required to take on regarding the assessment of food-related nutritional, physico-chemical or microbiological risks in metropolitan France.

Among other things, ANSES is planning to undertake in-depth analyses of the data from the INCA 3 study in connection with risk assessments, in particular the assessment of risks related to inadequate nutrient intakes of macronutrients (fat, carbohydrates, protein), fatty acids, vitamins and minerals in adults, and the assessment of risks related to sedentariness and insufficient physical activity.

Thus, the data collected in the context of the INCA 3 study are already enabling ANSES to issue public health recommendations that are more in line with the habits of the French population, while keeping one step ahead of emerging risks.



What is a national study of individual food consumption (INCA)?

Food plays an essential role in our health. The links between diet and the prevention or development of certain diseases, such as cardiovascular diseases and cancer, have been scientifically established. To better prevent certain diseases, improve the nutritional quality of foods and guarantee their safety and the health of consumers, it is essential to have strong knowledge of the diet and consumption habits (modes of consumption and quantities consumed by food group, consumption places and rhythms, etc.) of the population residing in France (children and adults). To that end, ANSES conducts a national study of individual food consumption (INCA) at regular intervals. The INCA studies thus provide, at a given moment in time, a snapshot of the food consumption and eating habits of the population of metropolitan France.

ANSES launched its third INCA study (INCA 3) in February 2014. The data collected mainly in 2014-2015 relate to various themes connected to the assessment of food-related risks (in the areas of nutrition or health):

- the foods, beverages and food supplements consumed;
- physical activity and sedentariness;
- anthropometric characteristics (weight, height);
- socio-demographic characteristics and standard of living;
- eating habits: consumption places and occasions, consumption of produce grown by the household or by friends or relations (vegetable garden, etc.), consumption of foods collected in the wild (hunting, fishing, foraging), food production methods (processed products, organic farming, etc.), etc.;
- practices potentially posing a health risk: food preparation and storage, refrigerator temperature, consumption of raw foods of animal origin;
- household treatment of drinking water;
- food knowledge and behaviour.

Combined with ANSES's surveillance plans and databases on the nutrient composition or the chemical or biological contamination of foods, these studies can be used to estimate intake levels for beneficial substances found in foods as well as dietary exposure to chemicals or biological agents likely to be found in foods.

This study was carried out in collaboration with the French Public Health Agency, which conducted its Health Study on the Environment, Biomonitoring, Physical Activity and Nutrition (Esteban) over the same period. It was also carried out in the framework of the EU Menu project of the European Food Safety Authority (EFSA), which is seeking to harmonise food consumption studies between the Member States of the European Union. Thus, the food consumption data collected for this third INCA study are more exhaustive and more detailed and the results are more comparable with those obtained in other Member States involved in EU Menu. In addition, the data will be used by EFSA for its risk assessment work at European level.

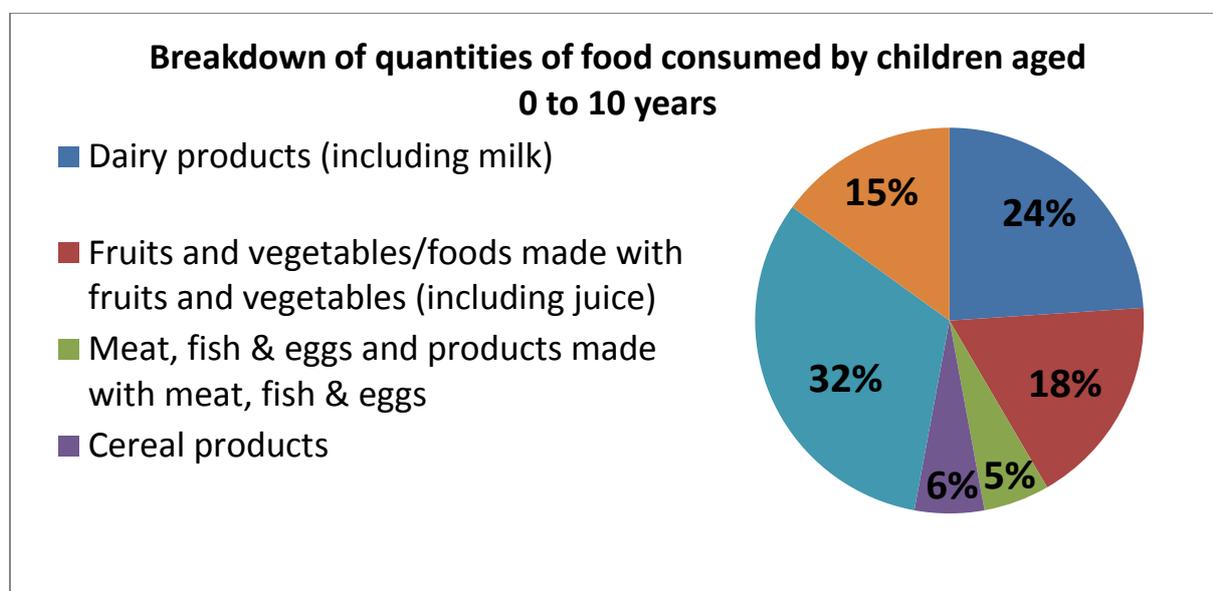


What do French people eat every day?

The INCA 3 study was conducted between February 2014 and September 2015, in metropolitan France, among 5855 individuals, broken down into two samples: 2698 children from birth to age 17, and 3157 adults between the ages of 18 and 79. Of these individuals, 4144 (1993 children and 2121 adults) described their food consumption in detail for two or three days (corresponding to 12,200 days of consumption and almost 290,000 foods consumed).

What quantities of food are consumed?

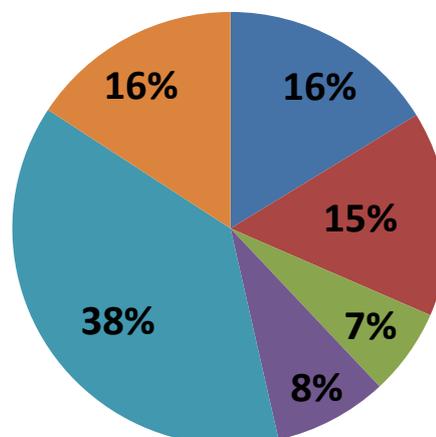
On average, children aged 0 to 10 years consume 1.6 kg of food and beverages per day. This quantity increases to 2.2 kg for adolescents between the ages of 11 and 17 years, and 2.9 kg for adults aged 18 to 79 years. Beverages account for more than half of this daily intake. (NB: the graphs below illustrate the weight distribution of intakes by food group. Beverages such as milk and juices fall in the "dairy products" or "fruits and vegetables" group and not in the "water and other beverages" category).





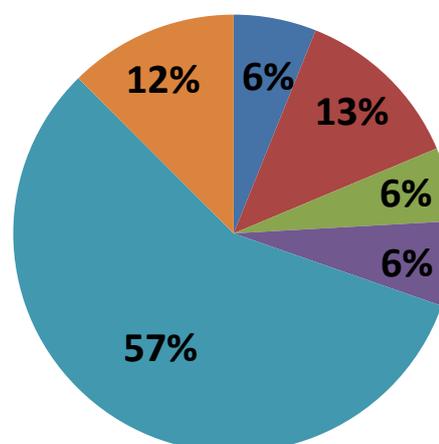
Breakdown of quantities of food consumed by children aged 11 to 17 years

- Dairy products (including milk)
- Fruits and vegetables/foods made with fruits and vegetables (including juice)
- Meat, fish & eggs and products made with meat, fish & eggs
- Cereal products
- Water and other beverages



Breakdown of quantities of food consumed by adults aged 18 to 44 years

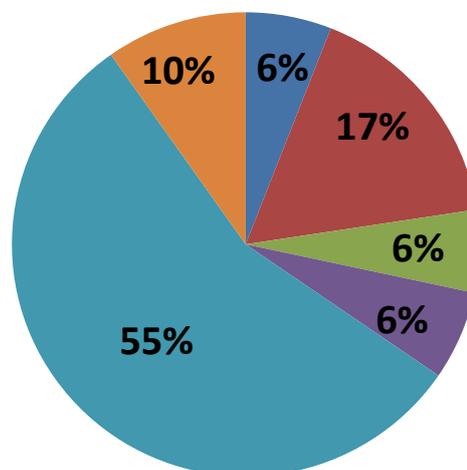
- Dairy products (including milk)
- Fruits and vegetables/foods made with fruits and vegetables (including juice)
- Meat, fish & eggs and products made with meat, fish & eggs
- Cereal products
- Water and other beverages





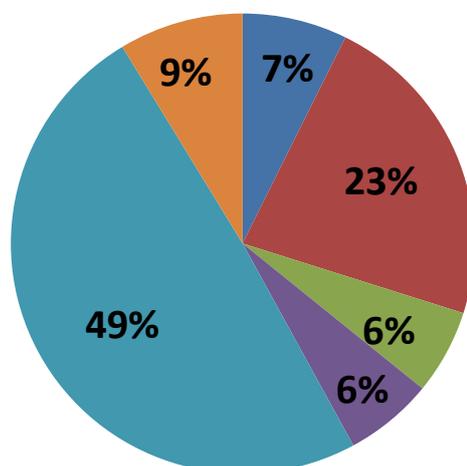
Breakdown of quantities of food consumed by adults aged 45 to 64 years

- Dairy products (including milk)
- Fruits and vegetables/foods made with fruits and vegetables (including juice)
- Meat, fish & eggs and products made with meat, fish & eggs
- Cereal products
- Water and other beverages
- Other



Breakdown of quantities of food consumed by adults aged 65 to 79 years

- Dairy products (including milk)
- Fruits and vegetables/foods made with fruits and vegetables (including juice)
- Meat, fish & eggs and products made with meat, fish & eggs
- Cereal products
- Water and other beverages
- Other



Regardless of age, fruits and vegetables, as well as yoghurts and soft white cheese (*fromage blanc*), are among the top five contributors to solid food intake, in varying proportions depending on the age group. The others are croissant-like pastries and sweet biscuits as well as pasta and other cereals for children and adolescents, and bread in addition to soups for adults.

Water (tap and bottled) accounts for half of the beverages consumed by individuals, followed by milk-based beverages for children, cold non-alcoholic beverages (CNABs) excluding fruit juice for adolescents, and hot beverages for adults.

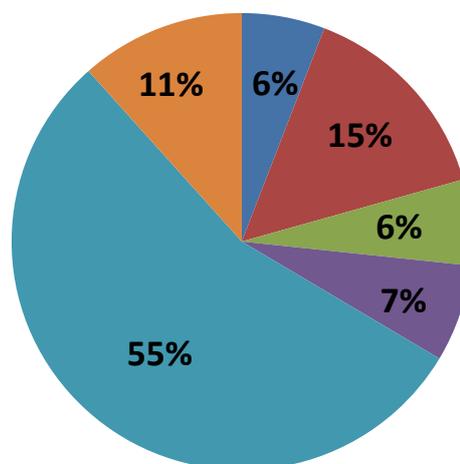


There are differences in consumption between males and females, especially in adulthood.

Foods favoured by women	Foods favoured by men
Yoghurts and soft white cheese (<i>fromage blanc</i>)	Refined cereal products
Fruit purees and fruits in syrup	Cheese
Poultry	Dairy-based desserts and cream desserts
Soups and broths	Meat
Hot beverages	Delicatessen meat
	Pulses
	Potatoes
	Sandwiches and savoury pastries
	Alcoholic beverages

Breakdown of quantities of food consumed by men aged 18 to 79 years

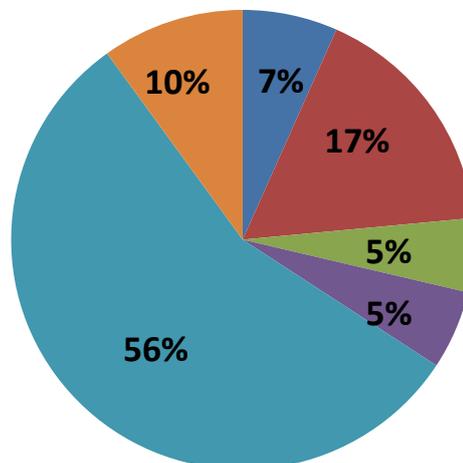
- Dairy products (including milk)
- Fruits and vegetables/foods made with fruits and vegetables (including juice)
- Meat, fish & eggs and products made with meat, fish & eggs
- Cereal products
- Water and other beverages





Breakdown of quantities of food consumed by women aged 18 to 79 years

- Dairy products (including milk)
- Fruits and vegetables/foods made with fruits and vegetables (including juice)
- Meat, fish & eggs and products made with meat, fish & eggs
- Cereal products
- Water and other beverages
- Other



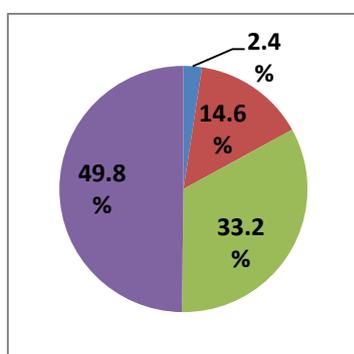
Total energy intake broadly follows the same variations according to age as food intake. It amounts to 1504 kcal/day in children aged 0 to 10 years, 1974 kcal/day in adolescents aged 11 to 17 years, and 2114 kcal/day in adults aged 18 to 79 years. Total energy intake gradually increases from 0-11 months to 18-44 years, reaching 2200 kcal/day, then decreases, particularly in 65-79-year-olds (1900 kcal/day).

In all age groups, total energy intake is higher for males than for females, by around 10% for boys, 17% for adolescents, and 38% for men.

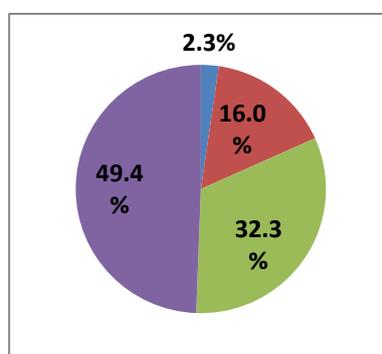
The contribution of macronutrients (protein, fat and carbohydrates) to energy intake without alcohol changes with age. In children aged 0 to 17 years, energy intake is made up of 50% carbohydrates, 32-33% fat, and 15-16% protein.

In adults, the contribution of protein and fat is slightly higher (respectively 17% and 34%) and that of carbohydrates is lower (47%) than in children.

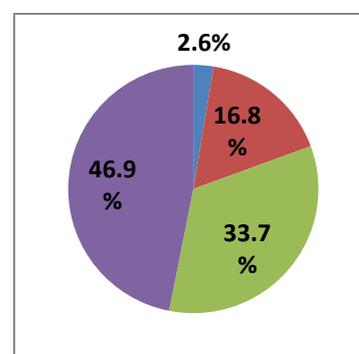
Children aged 0 to 10



Adolescents aged 11 to 17



Adults aged 18 to 79



■ Other ■ Protein ■ Fat ■ Carbohydrates

Contribution of macronutrients to energy intakes without alcohol by age group



Cereal products, dairy products, meat, fish and eggs, and fruits and vegetables account for more than half of total energy intakes (around 55%), regardless of age.

Croissant-like pastries, pastries, cakes and sweet biscuits, as well as sandwiches, pizzas, savoury pies, pastries and biscuits are also major contributors to energy intake, accounting for respectively 10% to 17% and 5% to 9% of energy intake depending on age. They are also some of the main contributors to intakes of carbohydrates, protein and fat, in children as well as in adolescents and adults.

In addition, all animal products (dairy products, meat, fish, eggs) account for around 60% of protein intakes, regardless of age.

Regarding vitamins and minerals, dairy products are major vectors of calcium, iodine, vitamin D and vitamin B12, especially for children aged 1 to 10 years (respectively 58%, 44%, 63% and 39%). The contribution of dairy products for these four minerals and vitamins decreases with age but remains high in adults (respectively 38%, 20%, 25% and 16%). Fruits and vegetables contribute enormously to vitamin C (between 65% and 75% depending on age) and vitamin B9 (between 27% and 36% depending on age) intakes.

Efforts still to be made for salt and fibre

Intakes of sugar and fat are not interpreted in this first descriptive report, since ANSES will examine them in future opinions. Two conclusions can be drawn regarding salt and fibre.

Firstly, salt intakes are estimated to be 4.4 g/day in children aged 0 to 10 years, 6.5 g/day in adolescents aged 11 to 17 years, and 8.0 g/day in adults aged 18 to 79 years (9 g/day in men and 7 g/day in women). In adults, these intakes remain higher than the nutritional public health objective set by the French National Health and Nutrition Programme (8 g/day for men and 6.5 g/day for women on average).

The main contributing foods are bread and dried bread products, sandwiches, pizzas and savoury pastries, condiments and sauces, soups, and delicatessen meats.

- ⇒ The efforts undertaken by the relevant professional sectors to reduce the salt content of foods should therefore be continued and scaled up.

Secondly, fibre intakes, which are 13 g/day on average in children aged 0 to 10 years, 17 g/day in adolescents aged 11 to 17 years, and 20 g/day in adults aged 18 to 79 years, appear too low in relation to ANSES's recommendations (30 g/day in adults).

Fruits and vegetables and cereal products are the main vectors of fibre.

- ⇒ It is therefore important to continue encouraging professional sectors to increase the fibre content of foods and advising consumers to opt for high-fibre foods (fruits and vegetables, pulses and high-fibre cereal products).

Increased consumption of processed foods

Processed foods include cooked dishes and those made up of several foods. They are dishes made with eggs, meat, fish, vegetables or starches (cereals, pulses or potatoes) as well as fruit and vegetable juices, soups and broths, sandwiches, pizzas and savoury pastries. They also include croissant-like pastries, sweet pastries and biscuits, dairy-based desserts and cream desserts, ice creams, sorbets and frozen desserts, fruit purees and fruits in syrup. Processed foods can be home-made, industrial, traditionally-made or other (fast food, take-away food, etc.).



The INCA 3 study found that the consumption of processed foods accounts for a higher percentage of the French diet than before.

It also showed that industrial agri-food products account for the majority of these processed foods consumed outside eating establishments (two thirds in children and half in adults).

Increase in the consumption of raw foods of animal origin

More than 80% of individuals aged 15 to 79 years consume raw foods of animal origin (eggs, meat, fish, molluscs).

The foodstuffs most often consumed raw are eggs or home-made preparations containing raw eggs, such as mayonnaise and chocolate mousse (65% of individuals aged from 15 to 79 years), fish, particularly in the form of sushi (31%), and molluscs (23% of adolescents and 46% of adults). Beef is the meat that is most frequently consumed raw (18% of adolescents and 30% of adults).

The consumption of raw foods of animal origin is more frequent in male individuals and in individuals with a high level of education, occupation or socio-professional category. A specific regional characteristic has also been identified in the Ile-de-France region, which has the highest rates of raw fish consumption (68% of adolescents and 48% of adults).

The consumption of raw foods of animal origin by adults has grown since the INCA 2 study, with in particular a doubling of the rate of raw fish consumers (from 15% to 31%) and a significant increase in that for raw beef (from 24% to 30%).

Common local sourcing practices

Nearly three quarters of children aged 3 to 17 years and adults aged 18 to 79 years reported having consumed foods derived from their own production (vegetable garden, livestock), foraging, hunting or fishing, or that of a friend or relation, at least once a month in the 12 months preceding the survey. Among them, three quarters stated that they consumed these foods at least once a week.

The home-produced foods consumed most often are fruits, vegetables, potatoes and eggs. Weekly consumption is less frequent in the Paris region and in urban areas than in the other French regions and in rural areas. In addition, it increases with age in adults, rising from 51% in adults aged 18 to 44 years to 63% in those aged 65 to 79 years.

Almost all households are connected to the public drinking-water supply and around a quarter of them use one or more supplementary household water treatment systems, the most common being the filter jug. Consumers said they use these different systems mainly to reduce limescale on pipes or devices (55%), improve the taste of the water (52%) or eliminate chemical contaminants (42%).

However, 7.5% of households are equipped with a private well or borehole (4.7% in the INCA 2 study), a quarter of these use it for drinking water, and a third use it to prepare meals or wash fruits and vegetables. In 64% of cases, this water is not treated before use.

More and more consumers of food supplements

The rate of consumers of food supplements (including medicinal products that are sources of nutrients) grew significantly between 2006-2007 and 2014-2015, both in children aged 3 to 17 years (from 12% to 19%) and in adults (from 20% to 29%).

In 2014-2015, the level of consumption of food supplements (excluding medicinal products that are sources of nutrients) was 14% in children aged 3 to 17 years and 22% in adults aged 18 to 79 years.



In adults, it was higher in women, individuals aged 18 to 44 years, and those with a high level of education. Seasonal consumption was also observed, with consumption being higher in winter.

Note that food supplements are mainly purchased in pharmacies (78% for children and 45% for adults), but Internet purchases have grown sharply in adults (from 1% to 11%) since the INCA 2 study (2006-2007).

- ⇒ ANSES points out that food supplements, even though they are often perceived by consumers as without danger, can under certain conditions expose them to risks. They should not be used as a substitute for a well-balanced, varied diet, and the advice of a healthcare professional should always be sought when taking them. In addition, the Agency recommends strict compliance with the instructions for use on the label. Extreme caution should also be taken with products promoted as "miracle" cures, or those sold through alternative channels, in particular through the Internet.
- ⇒ ANSES set up a nutrivigilance scheme in 2009 whose objectives are to identify, group together and assess potential adverse effects related to the consumption of food supplements (among other products). The scheme contributes to consumer safety. Its achievements have included the issuing of recommendations for a dozen different products, including energy drinks, red yeast rice-based food supplements, and recently supplements for pregnant women and athletes.
- ⇒ A more in-depth study of the food supplements consumed in the INCA 3 study may enable the Agency's expert appraisals to be adjusted taking into account updated knowledge of consumption.



New issues relating to food safety

The INCA 3 study made it possible to collect information on dietary behaviours such as the consumption of raw foods of animal origin and water from private wells, storage methods, and exceeded use-by dates (UBDs), which can all have an impact in terms of microbiological risks. The results highlight new practices defining new issues in terms of food safety.

Increased consumption of raw foods of animal origin

Many microorganisms (bacteria, viruses, parasites) can potentially contaminate food and cause various diseases. The cooking of foods is the preferred method to reduce their microbial load. The INCA 3 study showed an increase in the consumption of raw foods of animal origin, potentially exposing consumers to food-borne diseases.

Refrigerator temperatures not always appropriate

During the INCA 3 study, the temperature of the household refrigerator was measured at the homes of the survey participants. Half of the households had a refrigerator whose temperature was between 2°C and 6°C, the most commonly recorded temperature being 5°C (14%). However, although three quarters of households believed that the refrigerator temperature should be between 2°C and 6°C, 43% had a refrigerator whose temperature was higher than 6°C.

In terms of practices relating to the storage of prepared foods for later consumption, most households leave meat, vegetables, soups and starches to cool down at room temperature before placing them in the refrigerator or freezer. For more than 65% of them, this cooling-down time is less than two hours, as recommended by ANSES in 2013. In contrast, pastries and cakes are stored at room temperature by a quarter of households. Note that special attention should be paid to cream-based pastries, which need to be stored in a cool place.

Use-by dates sometimes exceeded

Concerning maximum storage periods before consumption, ham, smoked salmon and pre-packaged meat are consumed before the use-by date (UBD) by around half of households, and cooked dishes by only a third of households. Less than 1% of the participants said they consume one of these foods seven or more days after the UBD. Lastly, concerning purchases of non-pre-packaged foods cut to order or from the delicatessen counter, consumption more than three days after purchase is more frequent for cheese (60% of households) than for the other categories of products (ham, delicatessen meats and starters, meat and cooked dishes for reheating).

It is important to note that since the INCA 2 study, storage periods for perishable foodstuffs before consumption have become longer and it appears that the UBD is being exceeded more frequently.



Supply *via* channels that are not or are only partially subject to controls

Supply *via* channels that are not or are only partially subject to official safety controls by the public services (home-production, hunting, fishing, foraging, private water wells) concerns up to 75% of individuals, at varying frequencies. However, the foods derived from these channels are liable to present physico-chemical or biological contamination that has still not been adequately documented.

Work conducted by ANSES or other health agencies has shown that risks to consumers are possible, and has led to specific consumption recommendations for foods derived from these channels.

The results of the INCA 3 study show the emergence of new issues in terms of food safety. Indeed, a number of practices potentially posing a risk seem to be more frequent in the INCA 3 study than in the previous INCA 2 study: increase in the rates of consumers of raw foods of animal origin (mainly fish and beef), longer storage times before consumption of perishable foodstuffs, and a higher percentage of use-by dates exceeded.

- ⇒ ANSES insists on the need to remind consumers of essential messages relating to the rapid consumption of food prepared at home or purchased non-pre-packed without any use-by date (delicatessen products, pastries), keeping the temperature in domestic refrigerators below 4°C, and restricting the consumption of raw foods of animal origin (steak tartare, sushi, raw eggs, etc.) by certain sub-populations (young children and pregnant women in particular).
- ⇒ Assessments of the microbiological risks associated with more frequent practices concerning the consumption of raw foods of animal origin or degraded storage of perishable foodstuffs in the consumer's home should also be considered.
- ⇒ Given the share of the population concerned by home-production, ANSES recommends that additional studies be performed so as to better characterise and assess the potential risks associated with these sourcing practices. To do this, data should be acquired on levels of contamination in derived foods, as well as on consumer practices with regard to these supply channels. The Pesti'home study conducted by ANSES, whose results will be available at the end of 2017, will provide initial evidence for household practices in terms of the treatment of vegetable gardens with plant protection products.

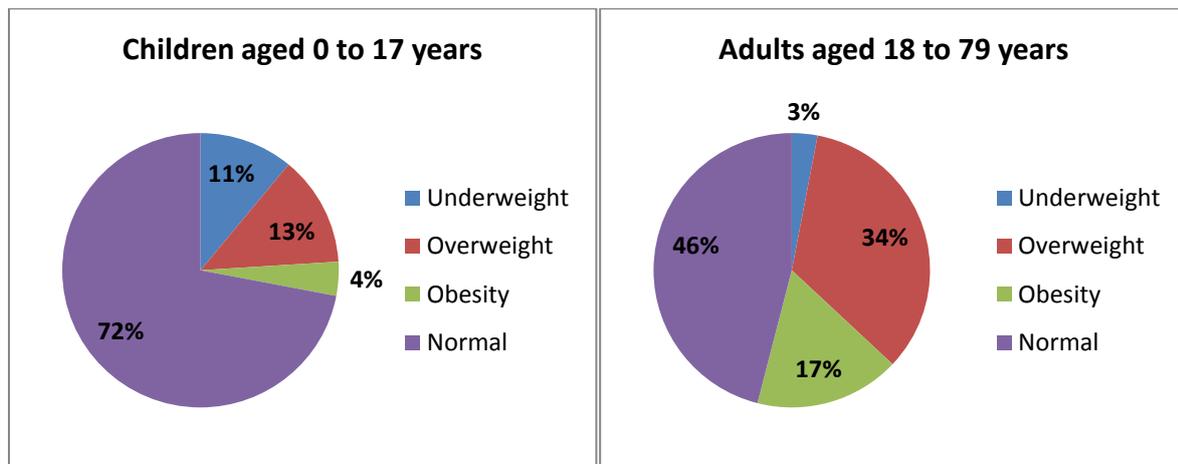
Preparation of infant bottles: Among the 193 households with a child aged between 0 and 35 months in the INCA 3 study, 80% always or often use a bottle to feed their child, mainly a plastic bottle (91%) and a silicone teat (72%). Around a quarter of households do not heat infant bottles before their use, while for the remaining three quarters, bottles are most often heated in the microwave oven (73%). This is despite the use of the microwave oven for reheating bottles being discouraged by ANSES to avoid the risk of burns.



A situation still giving cause for concern in terms of body weight status, physical activity and sedentariness

The INCA 3 study obtained data on the body weight status of the French population and its active and sedentary behaviours. The data show that the body weight status and levels of physical activity and sedentariness of the population living in metropolitan France often remain inadequate, despite the national plans implemented since 2001.

In 2014-2015, 13% of children and adolescents aged 0 to 17 years and 34% of adults aged 18 to 79 years were overweight, and respectively 4% and 17% were obese. In addition, one third of children and adults have behaviour combining physical inactivity¹ and sedentariness².



Body weight status of children and adults

The percentage of individuals with sedentary behaviour is alarming, since a quarter of children aged 3 to 10 years, half of adolescents aged 11 to 14 years, two thirds of adolescents aged 15 to 17 years and more than 80% of adults aged 18 to 79 years are concerned.

Between the INCA 2 and INCA 3 studies, the average daily time spent in front of a screen for recreation increased by around 20 minutes in children and by 1 hour and 20 minutes in adults.

Seventeen percent of children aged 3 to 6 years have sedentary behaviour versus 71% of adolescents aged 15 to 17 years. Conversely, adults are less likely to have sedentary behaviour with age: 89% of adults aged 18 to 44 years versus 72% of adults aged 65 to 79 years have sedentary behaviour.

The proportion of children aged 3 to 17 years with sedentary behaviour is lower when the level of education of the child's representative is higher: 26% for at least four years of higher education compared with 52% for a primary or middle-school education.

Conversely, in adults, the higher the individuals' level of education, the more they are likely to have sedentary behaviour for more than seven hours a day: 52% for at least four years of higher education compared with 30% for a primary or middle-school education.

¹ Physical inactivity is defined here by less than 60 minutes a day of moderate physical activity for children aged 3 to 17 years, and less than 30 minutes of moderate physical activity at least five times a week for adults aged 18 to 79 years.

² Sedentary behaviour is defined here by at least three hours of screen time a day for adolescents aged 11 to 17 years and by at least three hours of sedentary activities a day for adults aged 18 to 79 years.



The body weight status and levels of physical activity and sedentariness of the population living in metropolitan France remain inadequate, despite the national plans implemented since 2001.

The efforts made in the framework of national nutritional policy must therefore be strengthened, in particular for the most disadvantaged social categories. These efforts should focus on both improving food from a nutritional point of view and promoting physical activity.

- ⇒ Given the worrying situation in terms of sedentary behaviour, ANSES recommends defining a specific guideline on sedentariness, to supplement that for physical activity. The Agency reiterates the need to promote regular physical activity. ANSES's Opinion of 2015 on the revision of the guidelines relating to physical activity and sedentariness underlined the fact that the concomitance of an increase in physical activity and a reduction in accumulated continuous sedentary time will produce the greatest effects on health.



Individual disparities in terms of food behaviour

The INCA 3 study revealed significant disparities in behaviour within the population, in particular according to gender, age and socio-economic level.

The disparities by gender appear in adolescence and become more marked in adulthood. Women's food consumption appears to be more in line with the dietary guidelines (favouring poultry, yoghurts and soft white cheeses, fruit purees, soups, fruit juices and hot beverages) than that of men (who prefer other meats, cheeses, dairy-based desserts and cream desserts, delicatessen meats, sandwiches and savoury pastries, sweetened beverages and alcoholic beverages). Women are also less likely than men to consume raw foods of animal origin, but they consume more food supplements.

The age-dependent disparities relate more to adults, with young adults (18 to 44 years) markedly different to seniors (65 to 79 years), probably reflecting generational effects. For example, compared to younger age groups, people aged 65 to 79 years have more regular food rhythms and consume more home-made or home-produced foods, and fewer food supplements and certain processed foods (breakfast cereals, sweetened foods and beverages, sandwiches and savoury pastries). They also store perishable foods for shorter periods.

Concerning social disparities, the study showed behaviours closer to the recommendations in terms of food consumption (more fruits and fewer sweetened beverages), body weight status (less obesity) and physical activity (more active) for individuals with a high level of education, occupation or socio-professional category. These groups also have more regular food rhythms and are more likely to consume food supplements.

Individuals with at least four years of higher education consume more fruits and half as many CNABs (excluding fruit juices) compared to those with a primary or middle-school education. They consume more hot beverages and, to a lesser extent, alcoholic beverages. On the other hand, the behaviour of individuals with a lower level of education seems to be safer in terms of microbiological risks (lower consumption of raw foodstuffs, shorter storage of perishable foodstuffs before consumption).

- ⇒ These initial results emphasise the need to take account of the heterogeneity of behaviours within the population when assessing food-related risks and benefits, to ensure that the most affected population groups are targeted.
- ⇒ This diversity should also be taken into account when communicating about risks and in prevention messages to ensure that the populations most concerned are properly informed.



Limited knowledge of the dietary guidelines³

The INCA 3 study obtained data on knowledge of the dietary guidelines by the population. With the exception of the dietary guidelines on fruits and vegetables and the guidelines on physical activity, only a minority of the population knows the previous PNNS guidelines that were established in 2001.

Adolescents aged 11 to 17 years are more likely than adults to know the guidelines on fruits and vegetables (74% vs 59%), dairy products (38% vs 22%), and starches (10% vs 7%).

Conversely, adults are more likely to know the guidelines on fish (36% vs 29%) and on physical activity (71% vs 31%).

Lastly, the proportions of adults and adolescents knowing the guidelines for meat, fish and eggs are similar (respectively 52% and 51%).

Male individuals are more likely to know the guidelines concerning physical activity. Among adults, more women know the dietary guidelines than men, except for the guidelines on fruits and vegetables and starches.

Knowledge of the guidelines on fruits and vegetables and on dairy products is lower in older individuals. However, they have better knowledge of the guidelines for fish and physical activity. Individuals with only a primary or middle-school education are less likely to know the guidelines on fish.

With the exception of the dietary guidelines on fruits and vegetables, those on meat, fish and eggs, and on physical activity, the INCA 3 study revealed that only a minority of the population knows the PNNS guidelines that were established in 2001, with this proportion declining since the 2008 Health & Nutrition Barometer.

In addition, ANSES stresses the high variability in knowledge and behaviours associated with gender, age and social level and therefore insists on the need to adapt communication measures to the diversity of situations existing within the population, in order to better target messages, in particular towards those categories of the population exhibiting behaviour that strays the furthest from the national recommendations.

³ The French Public Health Agency contributed to the INCA 3 study by defining the questionnaire administered to the participants on knowledge of the dietary guidelines of the French National Health & Nutrition Programme (PNNS) and preparing and analysing the data obtained.



And after INCA 3?

The INCA 3 study is an essential database for ANSES's expert appraisal activities relating to food safety and offers multiple opportunities. Its results, compared with the data obtained by ANSES in the framework of its work on the nutrient composition or the levels of chemicals or biological agents (viruses, bacteria, parasites) in foods, can be used to estimate the energy and nutrient intakes of the population as well as dietary exposures to physico-chemical substances or biological agents.

The data collected will thus be exploited as part of ANSES's work on the assessment of food-related nutritional, physico-chemical and biological risks in metropolitan France.

However, ANSES reiterates that the INCA 3 study targeted the general population from birth to 79 years of age living in metropolitan France. Thus, certain specific populations in metropolitan France had a low level of coverage in the study (infants and children under 3 years of age, pregnant or breastfeeding women, vegetarians and vegans, people with food allergies, economically vulnerable populations, etc.), or were not addressed at all (people aged 80 years and over). There is a need for additional consumption data and a need to produce data on certain populations by setting up specific studies.

In addition, the INCA 3 study did not cover French overseas territories (DOM), which would require the protocols and survey tools to be largely adapted to the specific local dietary characteristics and data collection conditions. While studies have been undertaken to collect food consumption data for Martinique, Guadeloupe and Mayotte, additional studies should be conducted to cover French Guiana and Réunion for which no recent data on individual food consumption are available.

In the short term, ANSES is planning in-depth analyses of the data from the INCA 3 study in connection with its assessments of risks to the population. Thus, opinions resulting from ANSES's expert appraisal work will shortly be published:

- Assessment of the risks associated with inadequate physical activity and sedentariness levels in the population in view of new guidelines defined by ANSES. This work will describe physical activity and sedentariness behaviours in greater detail (types of physical activities and forms of sedentariness), their profiles within the population and their associations with other parameters such as body weight status, food consumption and nutrient intakes.
- Assessment of the risks associated with inadequate nutrient intakes of macronutrients (fat, carbohydrates, proteins), fatty acids, vitamins and minerals by adults, taking into account intakes related to food supplements and fortified foods. Before this work takes place, the usual nutrient intakes will be modelled in order to assess over the long term whether the intakes of the population are in line with the needs defined by ANSES when the food consumption guidelines were updated.

In the longer term, this work will be supplemented by expert appraisal work on the assessment of biological risks associated with changes in consumer behaviour (consumption of raw foods of animal origin, food cooking levels, food storage practices) and on the characterisation and assessment of the potential risks associated with supply channels that are not subject to health controls. Work targeting populations with particular consumption behaviour is also being considered, in order to assess the health risks and benefits associated with their dietary specificities, as are international comparisons, made possible by the choice of a new standardised methodology. Thus, the INCA 3 study is a formative component of ANSES's expert appraisal activities in food safety, insofar as it constitutes an essential tool for estimating dietary exposure and nutrient intakes. Besides the work mentioned above, this study will be exploited more extensively with regard to any topics of particular interest that emerge in the area of food safety.





French Agency for Food, Environmental and Occupational Health & Safety - ANSES

The French Agency for Food, Environmental and Occupational Health & Safety (ANSES) is a scientific body working in the areas of food, the environment, work, animal health and welfare, and plant health.

Collective and independent expert appraisal

Through its monitoring, expert appraisal, research and reference activities, ANSES assesses all the risks (microbiological, physical or chemical) to which a person may be exposed, intentionally or otherwise, at all ages and times of their life, including at work, while travelling, while engaging in leisure activities or via their food.

This is based on the deployment of independent, pluralistic scientific expertise by expert groups, also taking into account the economic and social dimensions of a risk.

To carry out its various missions, the Agency relies on a network of 11 reference and research laboratories, spread out across the country, which contribute to health monitoring. It also works in partnership with many national and international external bodies.

ANSES also assesses the effectiveness and risks of veterinary drugs, plant protection products, fertilisers, growing media and their adjuvants, as well as biocides, in order to issue marketing authorisations. It also assesses chemical products in the framework of the REACH Regulation.

An agency open to society

The Agency is committed to openness to society and works closely with its stakeholders (public authorities, professional bodies, trade unions, consumer associations, environmental associations, associations representing occupational accident victims, elected officials, qualified individuals).

The Board of Administrators, which consists of the five colleges of the *Grenelle* environmental round table, has set up thematic steering committees which help determine ANSES's policy orientations and work programme priorities, by making it aware of the main concerns of civil society.

Lastly, for subjects that are key issues for society, the Agency is also able to create specific dialogue committees with stakeholders, whose mission is to inform the Agency about society's expectations in terms of risk assessment and research.

ANSES systematically publishes its work on its website www.anses.fr and organises or participates in some 20 scientific events each year.

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