

## THE NUTRITIONAL SITUATION IN THE METROPOLITAN AREAS OF ARGENTINA

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**SUMMARY** Argentina is possibly the Latinamerican country with the highest proportion of urban population (86%; one of every two Argentinians lives in cities over 500,000 inhabitants). It was the first country in the region to experience rapid urbanisation and also the first in which this process has slowed down. From 1880, Buenos Aires received an intense stream of European migrants which 10 years later outnumbered the native population; a second peak of migration occurred in 1945 when rural dwellers were attracted by the economic boom. At the present time 36% of homes are unable to satisfy their basic needs but a few years ago the proportion was only 11.5%; an estimated 66% of Argentinian children live in these poor homes. The proportion of income used to purchase food is 33% for one half of the population, but reaches 46 and 68% in the two lower quartiles of income. Argentina suffers the highest prevalence of cardiovascular disease in the continent and at the same time high incidence of iron, calcium, vitamin C and vitamin A deficiencies resulting from rigid feeding patterns.

### INTRODUCTION

About a century ago, more than half the present Argentinian territory was Indian territory. In one year an intense military campaign conquered it thus incorporating millions of acres of productive land in to the nation's economy.

At that time Argentina began receiving hundreds of thousands of Europeans immigrants most of whom established themselves in the largest urban conglomerates which already existed. This wave of European immigrants was so important that in the 1890 National Population Census, in Buenos Aires there were more aliens than native Argentinians.

This concentration of immigrants in the cities gave birth to small industries, usually family enterprises, which began to grow from 1920 but particularly from 1945, when the seeds of our heavy industry were planted, protected by a restrictive

legislation and financed by the wealth the country had accumulated during the pre-war and WW II years.

Coincidentally, long - postponed social laws were enforced and the medical care system was expanded, making it available to most of the population. The coincidence of all these facts gave momentum to a strong internal migratory movement from the rural areas to the cities. Rural production was, and still is, extensive (with the exception of some areas where grapes, fruits and sugar cane were cultivated) with a low requirement of manpower, which became less and less as rural activities became increasingly mechanised and electricity reached most of the countryside.

So Argentina reached in a few decades its present population pattern, with 86% of its population living in urban conglomerates of more than 2,000 inhabitants. But 56% of its population live in cities of more than 500,000 inhabitants. This pattern is similar to that of industrialised countries (Table 1).

This trend has slowed down in recent years; in the last National Census (1991) fewer people lived in Buenos Aires than in 1980. Therefore, it can be said that Argentina was, among the countries in the Region, the first one to suffer a massive urbanisation and the first one in which the process has begun to stop.

The urbanisation of Argentina has a pattern common to most Latin American countries. It can be defined as disorganised, uncoordinated and non regulated due to the government's lack of ideas and resources to control it. Endemically high inflation rates, lack of credit for purchasing land and building of houses led to the partition of available land into minimal plots, without pipewater and sewage disposal, and often even without electricity. Houses were of very poor quality and crowding was the rule. In urban areas where only the most fortunate could live crowding was also the rule for middle class employees or qualified blue collar workers. This process brought deep changes to the cultural, political, economical, sanitary and nutritional

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TABLE 1  
DEMOGRAPHIC INDICATORS

a) Annual growth rate (per thousand)	
Total in country	14.6
Urban	17.36
Rural	-1.45
b) Percentage of urban population	
Years	%
1980	83
1985	85
1990	86
1995	87
2000	88

structure of the country.

Combining certain educational, economic and household characteristics gathered in the 1980 National Census, the Map of Poverty in Argentina was published in 1985. 1,249,000 households were considered as living below the of poverty line (NBI). These poor households were subsequently divided into two further categories: those structurally poor (e.g those who have always lived in extreme poverty) and those impoverished consequent to the deteriorating economy of the country.

As expected, more children live in the poor households than in the total of non-poor households (60.3% vs 39.1% of all Argentinan children) but fewer adults do (37.4% vs 62.2% of the population older than 15y). In other words, 1 in 3 households in Argentina is poor and 2 out of 3 children live in such families (1).

According to how poverty is defined, it is more prevalent in rural than in urban areas. In the provinces with the highest percentage of rural population, the poverty rates are the highest (e.g Misiones province 39%, Chaco 44% and Formosa 63%). However, the number of people living in poverty is much higher in urban areas: in the three above mentioned provinces the number of poor people is 136,000, 182,000 and 80,200, respectively, while in Greater Buenos Aires alone the number is 1,270,000. These figures confirm the relevance of urban poverty.

Statistically, sanitary and other indicators suggest that the urban population is in better condition than the rural one and so it is, if health indicators such as infant mortality rates are considered (Table 1 and 2). In part this is due to inefficiencies in the rural primary care system which in some provinces have been brilliantly solved through effective long lasting health projects (2,3).

TABLE 2  
AVAILABILITY OF SANITARY SERVICES  
(% of households)

	Total	Urban	Rural
I) Running water	61.0	70.0	13.0
II) Water supply			
Tap inside the household	73.0	80.0	36.0
Tap outside the household but within own land	10.0	9.5	10.0
Tap outside own land	3.5	3.5	4.0
Others	13.5	7.0	50.0
III) Flushing Toilet emptying into sewage system	34.9	40.0	1.0
Flushing Toilet emptying into other systems than sewage	43.0	44.0	38.0
Non flushing Toilet	18.0	13.0	43.0
No Toilet	5.0	3.0	18.0

TABLE 3  
DOMESTIC ELECTRICITY AND FUELS  
(% of households)

	Total	Urban	Rural
I) Electricity	86.0	95.0	40.0
II) Bottled gas	59.0	60.0	52.0
Piped gas	29.0	34.0	1.0
Other fuels	12.0	6.0	47.0

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Urban life can show the health and nutritional problems of poverty distinctly and at the same time the consequences of the unlimited availability of food for those who can afford it, sedentary life, and bad eating habits due to the stressful pace of life in the cities and the high percentage of women who work.

When the country's population is divided into income quartiles and the amount of the family income that is expended on purchasing food is calculated for each quartile, it can be observed that the more privileged half spends about 1/3 of the income on food items, which according to many studies permits a nutritionally adequate diet. On the other hand, the poorest quartile spends 68% of the family income on food, it being obviously impossible to provide a reasonable diet; the second quartile spending 48% of their income on food is in an intermediate but critical condition (Figure 1) (4).

Almost all food consumed by urban populations is purchased through the commercial network because home production is almost impossible in the cities. This makes families very susceptible to market fluctuations in the price of food, to seasonal availability of some foodstuffs, and also to changes in the purchasing power of salaries. This is clearly shown in Figure 2 depicting the critical recent years of our nation's economy (5).

It is convenient to describe here some peculiarities of the nutritional condition of our urban population. First, there are differences in the length of breast feeding between urban and rural populations, it being longer among rural mothers. In both populations, breast feeding is practiced more by the poorest mothers (Table 4) (6).

FIGURE 1  
PROPORTION (QUARTILES) OF INCOME SPENT ON FOOD

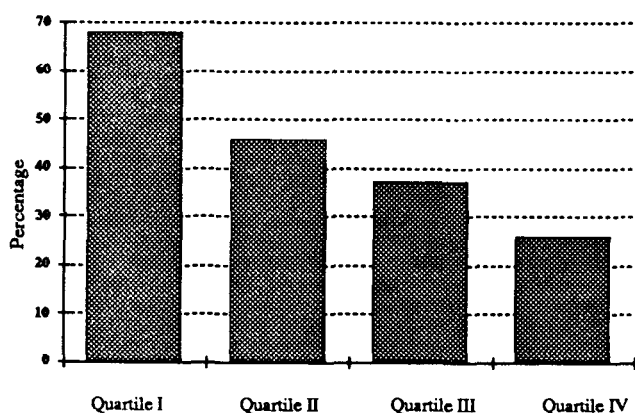


FIGURE 2  
FOOD BUYING CAPACITY

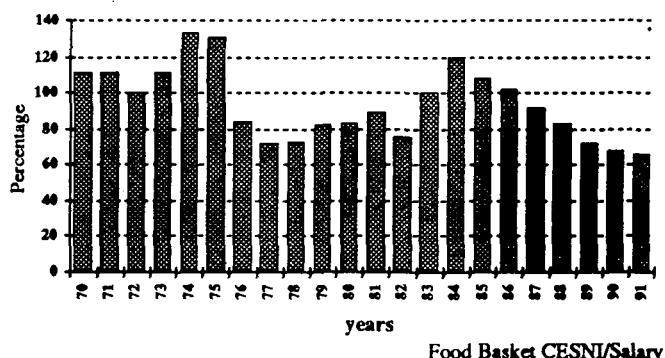


TABLE 4  
BREAST FEEDING- URBAN POPULATION

	Never	0-4months	<3 months	0-6 months	<6months
Actual n = 561		11,5	40,4		57,1
(1974) n = 500		17,0	64,0		72,8
(1981) n = 419			41,8		58,2

As a consequence of the increasing conviction of the health team about the advantage of breast feeding, a universal increase in the time it is practised can be observed, with the above mentioned differences. However, life conspires, through several mechanisms, against its practice. An early study showed differences in the feeding behaviour of mothers according to the age at which they had migrated to the city; if they had arrived at older than 15 years, they kept traditional habits; if however, they arrived before their fifteenth birthday they behaved as urban women. The same happened with multiparous women depending on whether they had resided in the city for five or more years or not(7).

Iron deficiency anaemia is highly prevalent among Argentinian infants, similar to any country which has not enforced infant food iron fortification programs. In the urban population the prevalence is as high as 48%, with slight differences depending on SEL. In the rural areas the prevalence

is as high as 56%, its origin being dietary inadequacies. The high consumption of unfortified fluid cow's milk is an important contributing factor(Figure 3) (8,9,10).

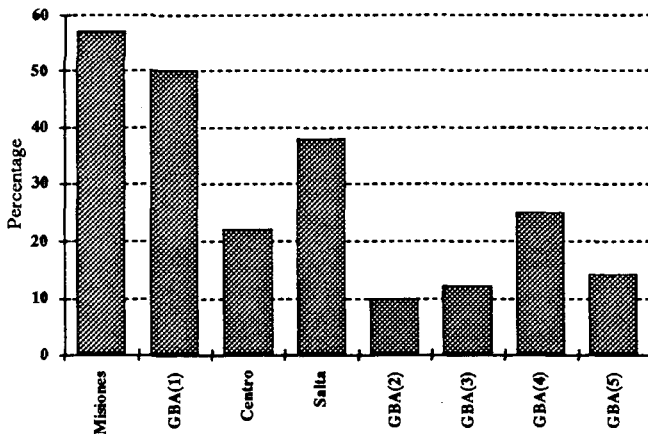
Several studies have shown that the consumption of ascorbic acid is also low, which makes an important contribution to extended dietary iron deficiency . Depending on age, 50 to 80% of children do not fulfil the dietary recommendation for Vitamin C.

Dietary intakes of vitamin A are below the recommendation in 30% of urban children; for rural children figures are 32 to 60% (Figure 4).

In Buenos Aires, calcium intakes are inadequate in 60 to 72% of school children. The information for rural children is scant but intakes seem to be worse.

Dietary protein deficiency is found in not more than 15% of children, but the usual figure in most studies is below 3%. Deficiency in energy intakes is much more prevalent, being reported in 20 to 45% of children. Urban children are more

FIGURE 3  
PREVALENCE OF ANAEMIA ACCORDING TO VARIOUS STUDIES



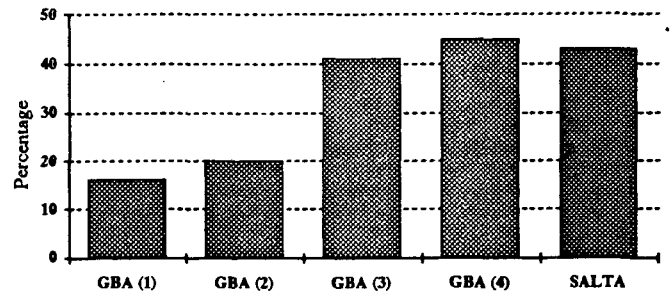
GBA 1: children 9 months to 2 years; GBA 2: children 6-8 years; GBA 3:children 8-11 years; GBA 4: boys 11-14 years; GBA 5: girls 11-14 years.

privileged than rural ones (Figure 5)(11).

Where nutritional and alimentary differences between urban and rural populations are more clearly seen is in degenerative diseases resulting from inadequate feeding patterns and an excessively sedentary lifestyle.

Argentina ranks first in America in mortality rates due to cardiovascular diseases related to atherosclerosis, followed by the US, a country so concerned with the problem and where such spectacular results have been obtained year after year through prevention campaigns. In the region, only a few English-speaking Caribbean countries show higher rates. And what is

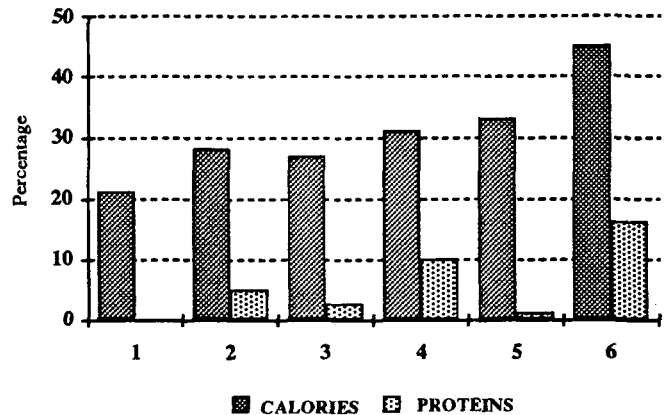
FIGURE 4  
VITAMIN A DEFICIENCY



GBA 1: less than 1 year; GBA 2: children 1-2 years; GBA 3:less than 1 year (other study); GBA 4: children 1-2 years (other study).

most worrying is our peak morbidity-mortality occurs between 45 and 55 years, meaning that thousands of young adults, in the peak of their productivity and experience, die or are crippled by severe disabilities. The cost in work losses, in medical treatments

FIGURE 5  
PERCENTAGE OF THE POPULATION BELOW THEIR RECOMMENDED DAILY ALLOWANCE



1: Preschool, Greater Buenos Aires; 2:children 2-14 years, Capital and Greater Gran Buenos Aires; 3: school children, Capital; 4: less than 2 years, Misiones; 5: school children, Greater Buenos Aires; 6: preschool children, Salta.

and rehabilitation is truly dramatic for a country with moderate resources such as ours.

Several factors are important in the origin of the problem: a) the high proportion of the population older than 15y, a demographic peculiarity of Argentina shared by only a few countries in L.A; b) a steady increase in the life expectancy of the population (e.g 1985-1990: 70.2y); c) a persistent drop in the mortality due to infectious and parasitic diseases; and d) a persistent exposure of Argentinians to major risk factors, basically hypercholesterolemia and high consumption of

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saturated fat and cholesterol.

The availability and consumption of beef in Argentina ranks among the highest in the world. In 1987 it was 109 Kg/ inhabitant/ year; cholesterol availability for 1978-1987 was 458+/-15mg/inhabitant/day. Apparent consumption of fat for the same decade was 62% of animal origin, with high percentages of saturated fat. Fat consumption shows a clear stratification according to SEL: the higher it is, the higher the consumption of saturated fat (12).

Table 5 summarises all the studies on the prevalence of hypercholesterolemia, all of them in urban areas (13). Only one of them (14) was conducted on a representative population sample, stratified by SEL; it shows a significantly higher prevalence in the upper SEL, as well as a higher consumption of fats in general and saturated fat in particular, and cholesterol (14).

When the availability of foodstuffs is analysed against income quartiles, the consumption of meat, eggs, dairy products and fats in the most privileged quartile is about twice that in the two lower ones (4).

Through the decades, food consumption by Argentinian families shows a very static rigid pattern. Twenty foodstuffs (less than 20% of the total available), and always the same foodstuffs, provide 80% of the available energy and nutrients (wheat, beef, sugar, milk, sunflower oil, potato, cheese, chicken, apple, tangerine, tomato, squash, peaches, carrots, offal such as liver or kidneys, and wine) (15).

This peculiar alimentary behaviour of Argentinian families is a serious obstacle to changing dietary patterns which lead to lowering the consumption of cholesterol and saturated fats. However, there are some hopeful signs emerging from the information on the apparent consumption of some foodstuffs (Table 6). Unfortunately this trend has not yet influenced our

TABLE 5  
PREVALENCE OF HYPERCOLESTEROLEMIA IN  
ARGENTINA

	n	Cut-off Limit (mg/dl)	Prevalence %
Adults	15604	> 240	26-51
Young adults 17-22 years		> 200	18
School children	2776	>200	5-20
Children 1-2 years		>180	5

Source :(13).

mortality rates due to cardiovascular diseases.

Although obesity and sedentary life are not ranked among the major risk factors for cardiovascular disease, both contribute to it. As was said previously, living patterns in the cities are conducive to them.

Large segments of our urban population live in small flats with minimal opportunity for physical activity for small children; elementary schools do not have facilities for sports or for leisure activities after school hours; free public parks or recreation centres for the systematic practice of sports for adolescents and adults are scant; given that usually both parents work outside of their homes, children after school hours are left under the care of some aged relative, who take advantage of candies and TV to keep them quiet. Mothers return to their homes after work, usually tired and with little time to prepare dinner, so they cook what is simplest, cheapest and fastest, usually meat and high energy density foods. Parents have their lunches at their workplaces, usually foods high in energy content, mainly because of their lower price and easy availability. Even children living in suburban areas, that could have more opportunity of living a less sedentary life, have seen this advantage curtailed

TABLE 6  
VARIATION IN THE APPARENT CONSUMPTION  
OF FOOD  
PERIOD 1970-1983

Apparent consumption	Percentage change
Beef	- 18 %
Lamb	- 49 %
Pork	- 19 %
Fish	+ 52 %
Poultry	+ 190 %
Full fat milk	- 27 %
Skimmed milk	+ 108 %
Skimmed cheese	+ 51 %
Fat	- 50 %
Skimmed Yoghurt	+ 243 %

due to the fear of mothers of growing urban violence and of drugs.

Therefore, although obesity is not yet a health problem of the magnitude of some industrialised and Caribbean countries, it is emerging as a serious concern for children and adults living in the conditions described. Such a lifestyle is also the seed of cardiovascular degenerative diseases.

Some studies of school children in Greater Buenos Aires show that obesity and overweight are three times more frequent than PEM, chronic or acute. In public schools the percentage of overweight children in the first year is significantly less than in the 7th year revealing that many of such overweight school children also have stunted growth caused by severe and long lasting nutritional harm early in their lives, which is not recovered from in spite of a present nutritionally adequate diet, all of which leads them to accumulate body fat.

While the population increases its life expectancy, health problems of the elderly become progressively more important. Bone and joint problems in osteoporotic adults are a serious public health problem, and a burden for health budgets, for patients and their families. This condition is particularly worrying in postmenopausal women where bone calcium losses are almost inescapable when oestrogen activity ceases.

In this disease, prevention plays a key role. Guidelines for prevention aim at achieving the maximal calcium density in the bones of girls so that, as with a bank account, when the unavoidable time of postmenopausal bone loss arrives, women still could have enough calcium in their bones. Recommendations are high daily calcium intakes throughout life but specially during adolescence and enough and lasting physical activity. As was commented before, this is the opposite of what is presently happening in our cities.

It is possible that the situation described for urban centres in Argentina is not much different from that of other cities in the region, with the exception of some alimentary patterns. These will surely change once the agricultural protectionism of industrialised countries diminishes their influence on our internal market for meat and meat products, because for decades, on a per gram basis, meat protein has been for Argentinians, the cheapest dietary protein source. Also a change will come when the socioeconomic condition of the region improves after our "lost decade" and once the perverse and unimaginable external debt our countries have with the rich countries is renegotiated on fairer terms.

The urbanisation of LA, part of its modernisation, is irreversible, and the prevention of degenerative and deficiency diseases, the care of our ecology and education for all will be the major issues in the years to come. International agencies and NGO from the rich countries will have to change their vision and programmes in a continent that, in spite of its conflicts, struggles and searches for identity, is closer to solving their problems than

are the African or some Asian nations. Without ignoring rural communities that are persistently in need, urban problems that until now have received little attention demand aggressive and original approaches.

In human urban settlements, where people are so exposed to their interaction with their peers, overstimulated by mass media and so dependent on the classic commercial structure for their nutritional needs, future actions will strongly depend on the interaction of the health, nutrition and economy sectors, with the strong support of human sciences to be truly effective.

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