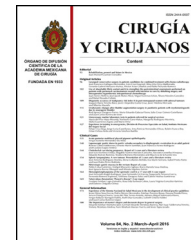




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## EDITORIAL

### Obesity: the real pandemic of the 21st century<sup>☆</sup>



### La obesidad: la verdadera pandemia del siglo XXI

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Two types of dramatic transitions are currently taking place in Mexico: demographic and epidemiological. Demographics show us that even though Mexico has a young population, the population pyramid is tending towards a progressively narrower base. Today there are a greater number of children aged 5 to 9 years than there are from 0 to 4, and more children aged 10 to 14 than 5 to 9 years. The widest point of the pyramid is currently that of 10-15 year olds.<sup>1</sup> Since fertility rates have dropped, the number of births has also dropped and the largest population groups will progressively become older. In 2050 one out of every four Mexicans will be 65 or older. These epidemiological and demographic transitions in our country are happening rapidly and are profound. Within a period of 50 years Mexico will complete an ageing process which took Europe 200 years to complete.<sup>2</sup>

Social and economic transition has demonstrated that more people lose their lives through accidents (the first cause of death in young people aged between 18 and 35), and that there are more people with different types of disabilities which are either secondary to these same accidents or progressive due to advanced age or chronic non-communicable diseases and this constitutes a major challenge. A sedentary lifestyle is highly frequent today. We all suffer from higher stress levels than we did in previous years and we often adopt unhealthy behavioural patterns

due to changes in dietary habits or other risky behaviours. This has led to a progressively serious increase in the number of people who are overweight and obese, in addition to a higher incidence of diabetes mellitus, high blood pressure and dyslipidemias in the general population. In other words, there has been an increase in people with a metabolic syndrome who are much more likely to suffer from cardiovascular problems which will shorten their life expectancy. It has also been observed that a large number of people continue being addicted to tobacco. Environmental pollution is increasingly recurrent and progressive, and climatic change has, among other things, led to the proliferation of vectors of new diseases (e.g. Zika virus) and an increase in already existing ones.

All of the above is happening in Mexico which remains a country where the problem of malnutrition has not yet been erased. Poverty continues to exist in large population centres. Many people live in overcrowded conditions, where there is promiscuity and bad hygiene and where there also is a broad scattering of communities (over 200,000 with under 2,500 inhabitants). In the light of this, despite the major advances in healthcare cover the latter remains insufficient. In many cases this is due to the complexity of access rather than the health care cover itself. Disparity in healthcare quality also results in public services which are underused.

Obesity is one of the greatest challenges to be faced by the public health service in the twenty first century. The member states of the Organisation for Economic Cooperation and Development (OECD) have reported figures which were published in 2011 by this body and Mexico ranks second among 40 countries, only behind the United States of

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America, but very close to them and with huge differences to prevalence in countries such as India, Indonesia, China, Korea, Japan, Switzerland, Norway, Italy, Sweden or France, for whom obesity is not currently a public health issue.<sup>3</sup>

The prevalence of obesity in Mexico has increased in the last 20 years. In 1994 it presented in 20.9% of adults and this percentage rose to 32.4% in 2012. There has been a much more significant increase in women (from 25.1% to 37.5%) than in men (from 14.9% to 26.8%). Distribution by Republican States report that there is greater frequency in Colima, Baja California and Baja Sur, Nuevo León, Tamaulipas, Yucatán, Jalisco, Sonora and Sinaloa, with overweight and obesity percentages surpassing 35% of the general population (2008). Only in 7 states is the rate under 25%: Hidalgo, Tlaxcala, Guerrero, Michoacán, Oaxaca, Tabasco and Chiapas. The frequency rate in the remaining States is between 25% and 35% in the general population.<sup>4</sup>

This increase in the prevalence of overweight and obesity, as previously mentioned, has been particularly dramatic in women between thirty and seventy years of age. Prevalence is over 80% in the 50 to 59 age group. An increase has also been noted in children from 5 years of age upwards and in teenagers. Indeed, one out of every three is overweight or obese. This increase has been greatest in the adult population: 7 out of every 10 suffer from one of these problems.<sup>5</sup>

The cost of obesity today is equivalent to 0.5% of the GNP and accounts for 9% of healthcare costs. Furthermore, between 8% and 10% of premature deaths in Mexico today are attributed to obesity and the cost of this premature mortality associated with obesity is estimated to be 1,390 million dollars.

But which factors have led to such a rapid spread of this epidemic in the last 20 years? There are several factors but two are of particular importance: changes in dietary habits and the reduction in physical exercise.

During the last five years of the last century food purchasing behavioural patterns were characterised by a reduction in the purchase of fruits and vegetables by 29.3%, in milk by 26.7% and in meat by 18.8%, combined with an increase in the purchase of refined sugars by 6.3% and soft drinks or sweetened drinks by 37.2%. Eating habits have changed and we tend to consume much more fast food. In general this contains more calories, more saturated fats, more added sugars and more salt. Furthermore, this type of food usually comes in large portions, with a considerable increase in calories consumption.<sup>6-9</sup>

It has also been shown that physical activity is low and progressively diminishes with age in both men and women. National surveys have shown that the prevalence of physical activity in young men aged 12 to 14 is 64%, but this drops to 34% in the 25-29 age group. The case for women is worse: 48% of girls aged between 12 and 14 carry out physical activity but this rate drops to 15% in the 25-29 age group. Other surveys have shown that at primary school the majority of children prefer to eat and chat during break time rather than do physical activity. These children frequently consume up to 1,200 calories solely in the morning because they have breakfast, then one or two snacks during break times and when they leave school the first thing they do is eat before arriving home to sit down to their actual midday meal.<sup>10,11</sup>

As a result, it has been important to promote nutritional education in schools, to establish guidelines regarding the

types of food sold at schools and those prepared at schools with emphasis placed on the consumption of water alone instead of sugary and hypercaloric drinks, on smaller portions and for pre-packaged or non-prepared foods to contain lower amounts of calories, sugars, salts, trans fats and total fats.<sup>12</sup>

We could imagine that this overweight and obesity problem would only occur in those sectors of the population with the highest income but studies conducted in 1999 and 2006 show that, with the exception of the first fifth of the income bracket population, which is a little below the other 4, the problem is greater in the other sectors and particularly so in the 2nd and 3rd fifth of the population. It is a fact, therefore, that obesity is now a cause of impoverishment and chronic poverty in many Mexican households as a result of its incidence and the need for healthcare for non-communicable chronic diseases, especially that of diabetes.

The natural history of non-communicable chronic diseases (NCDs) is the result of a combination of genetic factors, sedentary lifestyle and a diet excessive in calories, saturated fats and simple sugars, which progressively leads the individual to suffer from overweight or obesity. This is associated with other alterations such as low cholesterol linked to high density lipoproteins (HDL) in 60.5% of cases, raised triglycerides in 30.8% of cases, high blood pressure and glucose intolerance which finally leads to diabetes mellitus type 2. When a patient suffers from 3 or more of these abnormalities they present with a multi-complicated metabolic syndrome, mainly with cardiovascular problems such as heart attacks or strokes.<sup>13,14</sup>

Obesity has been shown to be a risk factor in the presentation of diabetes mellitus type 2. For example, compared with people who have a normal body weight, those with a body mass index (BMI) of between 25 and 30 double their risk of developing diabetes, those with a BMI of between 30 and 35 triple their risk and those with a BMI over 35 are 6 times more likely to develop it. Another fact is that compared with people who do not gain weight within a time period of 10 years, those who gain between 6 and 9 kilos within that same time period duplicate their risk of developing diabetes type 2, and those who increase their weight by 20 kilos quadruple the risk. In Mexico, from 1980 onwards, the number of cases of diabetes has increased by 30% and this is mainly due to the growing rise of overweight and obesity in the Mexican population.

There is therefore a parallel relationship between an increase in weight and the possibility of developing diabetes mellitus type 2 (insulin-resistant related) and other metabolic syndrome changes such as high cholesterol levels and high blood pressure, among others.

In 1994, 4% of the Mexican population was medically diagnosed with diabetes type 2. This percentage has progressively increased, rising to 5.8% in 2000, 7.2% in 2006 and 9.2% in 2012. However, if we add non diagnosed cases to these figures the percentage in 1994 would be 6.7%, in 2000 9.2% and in 2006 14.4%, which means that over 10 million Mexicans suffer from this disease. The OECD itself has established that of all its member states, Mexico is the one with the highest incidence of diabetes type 2, with all of its repercussions stemming from complications, costs, and effect on life expectancy and quality of life.<sup>13</sup>

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