

## Editorial

## Stabilization in the Prevalence of Overweight and Obesity in Spanish Children and Young Adolescents



## Estabilización en la prevalencia de niveles de sobrepeso y obesidad de la población infantil española

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Childhood and adolescent obesity is a multifactorial disease caused by excess accumulation of fat mass and is one of the main health problem worldwide, with mid- and long-term consequences that may trigger a public health care crisis.<sup>1</sup> Adipose tissue is regulated by diverse physiological mechanisms that are influenced by various environmental and genetic factors, including diet, physical activity (PA), and sedentary behavior. Although weight gain is largely due to an imbalance between energy intake and expenditure, disrupted glucose metabolism has also been suggested to cause chronic hyperinsulinemia that induces adipose tissue accumulation. The worldwide prevalence of overweight and obesity in school-aged children is currently 6.7%.<sup>2</sup> The direct consequence of childhood obesity is extremely worrying, given its relationship with adult obesity,<sup>3</sup> which is one of the leading causes of death due to cardiovascular disease.<sup>4</sup> Fortunately, the latest reports indicate that the tendency for increased weight gain described in recent decades appears to have stabilized, although the rates of both overweight and obese individuals continue to be unacceptably high.<sup>5</sup>

Data presented by Ramiro-González et al.<sup>6</sup> in an article published in *Revista Española de Cardiología* reveal a stabilization in the prevalence of overweight and obesity in individuals aged 5 to 14 years between 2006 to 2007 (30.1% and 29.7%, respectively) and 2011 to 2012 (9.6% and 9.7%), based on an analysis of body mass index (BMI) calculations made using data recorded in the Spanish National Health Survey (ENSE). This plateau in the changes in the rates of overweight and obese individuals in the last decade is not new in the Spanish literature because it was already described in the Aladino study.<sup>7</sup> However, the strength of these results support, among other variables, the effectiveness of

government health strategies, such as the *Nutrición, Actividad Física y Prevención de la Obesidad* (Nutrition, Physical Activity and Obesity Prevention [NAOS]) program, whose main objective is “to reverse the trend in obesity prevalence through the promotion of healthy diet and physical exercise”.<sup>8</sup> One of the most important findings reported by the authors is an increase in parental misperception of the weight-to-height ratio of their children. These values are extremely high, with about two-thirds of parents being mistaken about their children’s optimal weight, at 71.4% and 63.8% for overweight and obesity, respectively. This variable could be considered a bias in studies that have used questionnaires, placing the validity of the published data into question, given that the information is provided by parents. Rather than being a limitation of the study itself, this could represent a weakness in the interpretation of the ENSE database, which should be corrected by taking into account the significant increase in this variable. Although the authors themselves and others have already noted that questionnaires tend to overestimate height and underestimate weight,<sup>9</sup> some studies performed in young people have found that self-completed questionnaires can effectively categorize individuals as overweight and obese.<sup>10</sup> At the very least, this discrepancy indicates that we need to be particularly cautious when transferring the information on the stabilization in the prevalence of overweight in children to society at large until the variables involved, such as weight, height, and fat mass, have been directly measured by researchers.<sup>11</sup> In addition, we must not forget that Spain has one of the highest rates of childhood obesity in the world.<sup>12</sup>

The previously proposed evaluation of the validity of the use of BMI as an indirect indicator of fat mass is no longer required because Ortega et al.<sup>13</sup> recently found that this index is as clinically meaningful in terms of cardiovascular disease mortality as other more precise measures that estimate total fat mass. Although BMI can detect excess weight in children, there is often no relationship between the data presented on weight and height and fat mass percentage. Moreno et al.<sup>14</sup> measured fat in a sample of 800 Spanish adolescents, finding that, despite the stabilization in trends in BMI, waist circumference, and the percentage of fat mass in males,

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females showed similarly lower BMI and waist circumference levels but a higher percentage of body fat mass.

In addition, reduced energy intake has been suggested as the main determinant of weight loss in children<sup>15</sup> and adults, ahead of physical exercise. Ramiro-González et al.<sup>6</sup> compared sedentary activity time and saw no changes between the periods evaluated (50% of the population exceeded the recommended maximum of 2 h/d in activities classified as sedentary leisure activities). Although the authors did not report data on PA, using the report on Spanish sporting behavior published by the Spanish National Sports Council in 2015,<sup>16</sup> the percentage of adolescents exercising on a weekly basis has increased from 60% in 2010 to 76% in 2015, possibly indicating a change in the behavior of young people. Currently, a new concept is being introduced in the calculation of energy expenditure, related to health, which is based on the relationship between physical exercise and time spent in sedentary behavior, instead of the traditional isolated study of each individual variable. This new concept provides a more accurate view of the association between cardiorespiratory fitness and rates of cardiovascular mortality.<sup>17</sup>

In another recent article published in *Revista Española de Cardiología*, de Ruiter et al.<sup>18</sup> analyzed the historical change in the BMI from 1983 to 2011 using the same ENSE database and the cutoff points for overweight and obesity proposed by the International Obesity Task Force. Although the rates of overweight and obese individuals in these 2 articles of *Revista Española de Cardiología*<sup>6,18</sup> do not exactly agree due to various methodological considerations, both studies found that the prevalence of overweight and obesity in individuals younger than 14 years has stabilized in the last decade. Another characteristic common to both studies is that the prevalence of obesity in the adolescent sample was significantly lower than that observed in children. Because this finding has also been corroborated in studies with international samples, it is appropriate to ask if the cutoff points used by both the International Obesity Task Force and the World Health Organization are sufficiently sensitive to control for the morphological changes undergone by young people during the change from prepubescence to adolescence. In addition, there may be a relationship between the discrepancy in the data on parental perception of excess weight and the reduction in obesity in adolescence. Hence, parents are not overly concerned about overweight in their prepubescent children because they believe it to be normal for their age and that it will resolve in due course (adolescence). De Ruiter et al.<sup>18</sup> stress the study of the prevalence of underweight, particularly in girls aged 2 to 5 years (13.7%–22.6%) and in boys (18.8%–23.0%) in 1983 and 2011, respectively. However, in the 1993 sample, the rates were 19.3% and 23.2% in girls and boys, respectively. Likewise, the prevalences were stable in the other age groups, both male and female, albeit somewhat lower. The emphasis placed by the authors of that study on these lower-than-normal rates of underweight in girls should not be considered symbolic, but something that should be taken into account when promoting healthy habits because a certain sector of society could be particularly sensitive to low weight-related health problems. In addition, both studies agree that the economic crisis triggered poor nutritional habits that particularly affected more disadvantaged social classes. Accordingly, Ramiro-González et al.<sup>6</sup> mention the excellent study by Franco et al.<sup>19</sup> Taking advantage of the opportunity provided by the economic crisis suffered by the Cuban population from 1991 to 1995, the researchers observed a significant reduction in the average weight of the population (5.5 kg), which was associated with reduced energy intake and

increased PA. Crucially, the authors found that, after the economic crisis, this population showed a significant increase in energy intake (33%) and a 20% reduction in PA, leading to increased rates of obesity and diabetes that even exceeded the precrisis period.

Undoubtedly, the light shed by both studies on the epidemiological features of the indices of childhood overweight and obesity, as well as the environmental variables mentioned, are a reason for cautious optimism. Their findings should be used as references for the changes in the last 2 decades and should be confirmed through longitudinal studies with direct measurements of body composition variables.

## CONFLICTS OF INTEREST

None.

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