



## EDITORIAL

### The little and large of pediatric obesity prevention<sup>☆</sup>



### Lo pequeño y lo grande en la prevención de la obesidad infantil

Manuel Moya

*Universidad Miguel Hernández, Campus de San Juan de Alicante, Alicante, Spain*

Why should obesity prevention start in early life? There are four main reasons: prevalence, clinical burden (comorbidities already in pediatric age), tracking and poor therapeutic results once it has been established. In this human and preventive context the fundamental reason is that 30% of all obese adults began to be so before adolescence. When we consider that 2500 million individuals (older than 18 years) suffer from overweight and obesity, this percentage has a very practical preventive sense.<sup>1</sup> In addition and in a global context among children and adolescents 10% are overweight and 3% obese. Furthermore since 1980 up to the present decade the prevalence of pediatric obesity has tripled in many parts of the world even in low- and middle-income countries (LMIC). Lastly, obesity treatment implies a long, bitter, costly and frequent path to overweight and seldom to normal weight. A particular phenomenon related to the four pointed out reasons is the varied scientific response toward obesity prevention and treatment, to which the (e-) extended panorama of shamanistic or magical cures should be added.<sup>2</sup> In order to obtain reliable information, the evidence methods applied to systematic reviews, randomized controlled trials and observational studies can assess the degree of evidence and subsequent recommendation. These research studies are qualified through a rating system

going from the wide one of the Center for Evidence-Based Medicine, Oxford to GRADE, or the simpler SORT. Another general preventive aspect is the homogenization of anthropometric measurements assessment. Body mass index ( $\text{kg}/\text{m}^2$ ) and waist circumference Z-scores are probably the most appropriate in clinical grounds.<sup>3</sup>

Present ways for prevention: To gain efficacy, prevention has been divided into three levels for application: Primary prevention (before disease), Secondary prevention (latent disease) and Tertiary prevention (for disease consequences). The normal flow goes from global and/or national organizations to community organizations, at which stage there is a diversion addressed to environment and at individual level: family/child, individual clinicians, nurses, health workers... This sequence should run smoothly but in fact it has some obstacles between levels. However, the preventive reduction is more drastic when considering the individual level which is in fact the other interface of prevention concept. To support this not very optimistic evolution I have revised 56 plans for obesity prevention issued from 2010 up to the present day: Perhaps it could be said that the main preventive lines are all similar and not varying greatly from those of 50 years ago.

The classical questions raised by the population Health Promotion: What, Who and How can be applied to pediatric obesity prevention but with a pragmatic profile.

To the first one WHAT kind of prevention, the response would be general and individual. The General approach is a competency of health authorities, i.e. the recent WHO Commission on Ending Child Obesity, FAO HLPE Nutrition

<sup>☆</sup> Please cite this article as: Moya M. Lo pequeño y lo grande en la prevención de la obesidad infantil. An Pediatr (Barc). 2017;87:243–244.

E-mail address: [manuel.moya@umh.es](mailto:manuel.moya@umh.es)

and Food System for malnutrition in its three forms, EU EATWELL project, the EU Commission on Public health designed a general program for obesity prevention. In this there are three stepping stones: Primary care (health professionals, barriers, and efficacy), Community and School Programs (education, diets, physical activity) and Administrative Programs (play and sport grounds, food energy regulations, etc.) clearly implying the state support. Unfortunately results are still to come. Due to obesity spreading, a series of national or community programs have been issued to which the local scientific societies or expert groups should be added. A new study Cochrane Review on the prevention of obesity in children showed an improvement on the studies quality despite that from 93 reviews only 37 (279,946 children) could be included in the meta-analysis. It was concluded that programs were effective to reduce adiposity, all individual interventions were not equally successful and the heterogeneity was largely unexplained (the impossible assessment of energetic balance?).

The next point is to WHOM prevention should be addressed. This has changed due to the earliest prevention concept. According to this, obesity prevention should start even preconceptionally, diminishing gestational excessive weight gain, gestational diabetes and large for gestational age (>4.0kg) newborns (epigenetic changes). These are linked to adult obesity and comorbidities. After birth, prevention should focus on the weight gain in the first 3–6 months and to achieve breastfeeding longer than six months. Therefore the classical recommendation to start prevention between 4 and 6 years of age must be revised in the lights of the 'early rebound' of BMI (BMI-Zs 1–1.9 SD).

HOW prevention can be done at individual level. This stage represents the crucial point where the policymakers and targets meet, i.e. primary care health professionals and child/families. The preliminary and perhaps most important action is the education of the pediatrician or primary health care professional on healthy habits, obesity risks and early recognition of overweight, and providing them with basic tools to transmit them to the family and the child. The concise directions given by WHO could be sufficient.<sup>4</sup> The first principle of thermodynamic balance according to which if the energy intake exceeds the expenditure, the difference will be stored as body fat should be given. The 'how' prevention is carried out, is a large chapter beyond the present scope and can be seen elsewhere for children<sup>5</sup> and adults. The individual preventive points are not complicated nor require complementary exams or specialists (psychiatrics) cooperation, but they require time (not less than 30'/visit) and a fixed follow up schedule, unfortunately not many

primary care points/settings have these possibilities. Although prevention activities at small-scale only produce small-scale results until the moment of general prevention it is functioning globally (as in many infectious diseases), this action if well designed, is the only one to cope with the spreading problem.

As a final reflection it could be said if there are good preventive programs why has obesity been increasing until now and probably will continue up to 2030 or even to the more realistic date of 2060. On the positive side there have been important clinical advances but ambitious projects such as energy food content laws in vending machines or restaurants (US Affordable Care Act), agriculture changes and food chains (EU), will need more time to show their efficacy.

On the dark side, apart from minor slips (Fat letters; more than 50 food pyramids) the following facts can be included: It is difficult to apply the evidence criteria for assessing prevention effectivity, this is not a health characteristic and it also occurs in another fields, i.e. in conflicts prevention. There are too many plans/guidelines not all with the desirable quality and wide covering. The flow from global directions to individual preventive level is slow moving even in high-income countries (HIC) with integrative approaches. The continuous evaluation of the applied procedures is far from generalized. Important actions such as labeling (Fla-bel in EU), fast food advertising, taxes for sugary drinks, school-lunch programs and so many others, still have an unknown impact on obesity reduction. In HIC the specific budget for prevention is considerably lower than that of acute care. In LMIC nothing is done apart from punctual and tiny actions consequently in a few decades obesity will be a problem there added to the treatment lag of these regions.

## References

1. Bouchard C. Obesity in adulthood. The importance of childhood and parental obesity. *N Eng J Med.* 1997;337:926–7.
2. Klaber RE, Blair M, Lemer C, Watson M. Whole population integrated child health: moving beyond pathways. *Arch Dis Child.* 2017;102:5–7.
3. Waters E, de Silva-Sanigorski A, Hall BJ, Brown T, Campbell KJ, Gao Y. Interventions for preventing obesity in children. *Cochrane Database Syst Rev.* 2011;CD 001871, <http://dx.doi.org/10.1002/14651858.CD001871.pub3>.
4. WHO. Obesity and overweight. Fact sheet N°311. Jan 2015. Available in: <http://who.int/mediacentre/factsheets/fs311/eng/>
5. Moya M. An update in prevention and treatment of pediatric obesity. *World J Pediatr.* 2008;4:173–85.