

# Taming the impact of obesity on fertility and joints health

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## To the Editor,

A prospective reading of the epidemiological trend affecting the large portion of eating disorders leads one to consider obesity as a major public health concern worldwide. Therefore, it represents a major challenge to be addressed not only because of the risk of a wide range of chronic diseases, but also because of its possible negative consequences on fertility and joint's function, in particular the hip and knee (1,2). It is therefore essential to undertake preventive health policy actions, first and foremost through the promotion of correct lifestyles geared towards counteracting the growing systemic effects that this condition self-fuels on several fronts: metabolic, cardiovascular, osteoarticular, and not least on fertility. Starting with the latter, in men obesity can compromise fertility because of the increase in scrotal temperature, which can affect sperm quality damaging germ cells in the testis and reducing sperm motility (3). Additionally, obesity is associated with higher estrogen production in men, negatively affecting the reproductive system and compromising sperm production.

In women, obesity can lead to hormonal imbalances, including insulin resistance and elevated levels of sex hormones, which can interfere with the ovulation process, as well as cause menstrual irregularities and increase the risk of conditions such as polycystic ovary syndrome (PCOS). PCOS is a leading cause of

female infertility through irregular menstrual cycles, abnormal ovulation and elevated levels of male hormones, which can hinder also conception ability (4). Furthermore, obesity can increase the risk of complications during pregnancy, such as gestational diabetes, hypertension and premature birth. Obese women may also have a higher risk of miscarriage and giving birth to babies with congenital defects.

Obesity exerts excessive pressure on the joints, particularly the hip and knee, resulting in early wear of cartilage lining surfaces and an increased risk of developing painful conditions such as osteoarthritis.

Strong and bidirectional links between physical inactivity and obesity is reported together with the increasing role of inactivity and obesity as immunomodulators to determine premature senescence in immune cells (5,6).

It is therefore crucial to adopt a comprehensive preventive and management approach to address this challenge, including lifestyle modifications such as balanced diet and regular physical exercise, as well as regular medical monitoring to assess and manage the dangers associated with obesity. Awareness of the potential impacts of obesity on fertility and joint health can help guide efforts to prevent and treat this condition, thereby improving overall health and well-being. Investing in the prevention and treatment of obesity can have a significant impact on long-term well-being and thus also on the appropriate allocation of resources

in the health care system. We believe it is essential to promote an awareness campaign for weight control to limit the risk of reduced fertility and painful dysfunction of joint, implementing a holistic approach involving various disciplines.

In particular, it will be necessary to promote an education and awareness campaign, offering detailed information on the relationship between obesity, fertility and joint health, promoting a balanced diet and encouraging the reduction of consumption of high-calories and saturated fat foods through educational campaigns in primary schools, workplaces and communities, using wide range of information and educational tools such as brochures, posters, informative videos and also social media. Further awareness elements include promoting the importance of regular physical activity, offering accessible fitness programs suitable for different age groups and skill levels, such as aerobics, yoga, swimming, or guided walks, but also organizing weight management programs that include individual or group consultations with nutritionists, dietitians, or fitness instructors. These programs can provide personalized support and motivation to adopt healthy eating habits and encourage regular physical activity. In schools as in workplaces, these principles should be adopted by favoring an overall organization of the timetable that is functional to these needs, with respect to workstations and meals in the first place. Ensure access to reproductive health services, including regular gynecological checks and fertility consultations, it is also pivotal. By means of awareness-raising campaigns in schools and then by inclusion in company health protocols, e.g. with a contribution from the employee or through agreements with mutual organizations or insurance companies. This could include also globally promoting spaces for physical activity, access to healthy foods and public facilities, creating safe pedestrian and cycling paths. Active community involvement in the design and implementation of awareness initiatives, such as organizing community events like health walks, farmers' markets and informative sessions to promote a healthy lifestyle and provide social support, can be crucial. Interdisciplinary collaboration between health professionals, educators, policymakers, and civil society organizations is essential to develop and implement effective strategies for obesity prevention and control.

We believe that by implementing these preventive measures and promoting a collective effort to address obesity, we can help reduce the risk of reduced fertility and painful dysfunction of the hips, thereby improving the health and well-being of the community as a whole. It will also be necessary to involve community health facilities in the fight against obesity, organizing events, courses, and support groups to motivate and support those who want to adopt a healthier lifestyle, creating health-friendly environments with accessible physical activity spaces and healthy food options. In conclusion, obesity represents an urgent challenge that requires a collective response. It will be necessary to educate, inspire and support those struggling with weight and its consequences, promoting a healthy lifestyle that can serve as a stimulus for future generations, ensuring a full and active life for all.

**Ethic Committee:** not applicable

**Conflict of Interest:** Author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article.

**Authors Contribution:** GB, LBP and MB Conceptualization; Data curation; Formal analysis; Methodology; Resources; Software; Validation; Visualization; Roles/Writing - original draft; and Writing - review & editing. VB Funding acquisition; Investigation; Project administration; Resources; Validation; and Writing - review & editing. LPT Project administration; Supervision; Validation; Visualization; and Writing - review & editing. All authors have read, reviewed, and approved the final draft of the manuscript.

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Received: 8 April 2024

Accepted: 8 May 2024

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