

Editorial

Environment and PregnancyAntonio Ragusa^{1,*}¹Department of Obstetrics and Gynecology, San Giovanni Calibita Fatebenefratelli Hospital, 00186 Rome, Italy*Correspondence: antonio.ragusa@gmail.com (Antonio Ragusa)

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According to the report of Healthy environment, Healthy lives of the European agency for the environment (EEA) about 400,000 Europeans die prematurely due to air pollution every year: 12,000 due to noise pollution, 218,000 due to climate change such as frost, floods or heat waves. In total, 630,000 deaths a year are attributable to environmental degradation, with most of these occurring in low-income nations. For instance, the reduction in the years of life of Norwegians due to phenomena of environmental degradation is 9% against 27% for Bosnians. Given that even within the same nation, those who suffer most from environmental degradation—to the point of dying—are the poorest sections of the population, the authors of the report strongly emphasise the need to limit city traffic, provide more green areas and improve the structure of urban planning of our cities [1].

When the poorest people of the population are pregnant women, the problems are amplified and are transmitted between one generation and the next. Given the choice, where is the best place to be born in? The British weekly “The Economist” compiled a list of the States in which it is best to be born in, based on where the new individual has the best prospects for a rosy future. The newspaper used some statistical indicators including income, cost of living, inflation, literacy, the percentage of the population with the highest level of education, respect for human rights, life expectancy, the index of cultural crudeness, the index of boredom, etc [2]. However, the journal did not consider one of the most important factors for the future life of the individual, which is the level of pollution of the place where the gestation takes place. The influence that the environment has on gestation is still underestimated, despite the recognition of the importance of environmental changes and their effects on pregnancy and therefore on the fate and health of the mother and the unborn child. Up to a few years ago scientific literature was not particularly rich in notions and knowledge on this topic. This trend seems to have changed rapidly; in fact, the number of publications on the subject has increased significantly in recent years. To get an idea of how important the environment is, just think that even a simple change in temperature can have long-term consequences on the unborn child. An interesting study was recently conducted on 237,585 pregnant women followed over a long period of time—from January 1, 2001 to December 31, 2010—by Queensland Health Sistem, Australia.

The study examined the association between maternal exposure to ambient temperature (high and low temperature, early or late pregnancy) and two obstetric outcomes: gestation duration and birth weight. A J-shaped association was observed between minimum temperature at conception and duration of gestation, after adjusting for seasonality and other confounding factors. Compared to women who were exposed to the minimum temperature of 15–20 °C in the first week of gestation, exposure to the minimum temperature >20 °C significantly increased the duration of gestation by 0.029 weeks. A cumulative effect was found when the exposure in the first four weeks was examined. There was an inverted U-shaped relationship between the minimum temperature at the time of delivery and the duration of gestation. Compared to women exposed to 15–20 °C, exposure to a minimum temperature >20 °C and ≤ 10 °C was associated with a reduced gestation of 0.030 weeks and 0.018 weeks, respectively. Conversely, an inverse relationship was observed between maximum temperature and birth weight. Compared with exposure to maximum temperature >30 °C in the last week of pregnancy, maternal exposure at 20–25 °C and <20 °C significantly increased birth weight by 0.011 kg and 0.018 kg, respectively. Similarly, a slight cumulative effect was observed when the exposure to maximum temperature in the four weeks prior to delivery was assessed. The authors conclude by supporting the importance of maintaining an optimal temperature range during pregnancy to reduce the risk of preterm delivery and low birth weight [3].

Environmental pollution interferes with reproductive processes and negatively affects foetal development. The fine particles together with other pollutants in the air are responsible for increased spontaneous abortion, intrauterine growth retardation, preterm birth, stillbirths and underweight babies [4–6]. On the other hand, green spaces, smoke-free environments, and clean air are important aspects to protect the health of children, already during pregnancy [7]. Many scientific experiments and investigations conducted in various parts of the world, often having a multidisciplinary character, show that it is possible to improve human health conditions through an intelligent and structured use of green spaces.



ONE HEALTH is a health model based on the integration of different disciplines: medicine, veterinary medicine and ecology, together with economics and sociology. It is based on the recognition that human health, animal health and the health of the ecosystems are inextricably linked. This model should be implemented and applied by all governments.

In this special issue we will try to understand which good practices to adopt during pregnancy in order to reduce the risks brought forward by exposure to toxic environments and investigate ways to increase exposure to favourable environments. Seeing as sustainable development meets the needs of the present generation without compromising the ability of future generations to meet their, it is fundamental to support this path.

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AR conceived, wrote and revised the manuscript. AR read and approved the final manuscript.

Ethics Approval and Consent to Participate

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Conflict of Interest

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