The term ‘endocrine disruptors’ (EDs) was first coined in 1991 at the Wingspread Conference Centre in the American state of Wisconsin, while the synonymous term ‘endocrine-disrupting chemicals’ was adopted for the first time in 1993 by the environmental analyst Theodora Emily Colborn (March 28, 1927 - December 14, 2014), best known for her studies on the health effects of EDs [1]. Thanks to their molecular affinity with natural hormones, these chemicals can interfere with the endocrine system by activating or blocking the receptor signal transduction [2-4]. They supposedly follows a U-shaped dose response curve: this signifies that low and high levels produce more effects than mid-level exposure [5]. A classic example is represented by diethylstilbestrol (DES), the estrogenic medication used in the past for a variety of indications, including pregnancy support in women with a history of recurrent miscarriage [6]. Subsequently, it was noticed that DES could cause clear cell adenocarcinoma of the vagina or cervix in young patients who had been exposed to it in utero, acting as a highly potent full agonist of the estrogen receptors [6-8]. According to the World Health Organization (WHO), EDs and potential EDs are mostly man-made, found in various materials such as pesticides, metals, personal care products, additives or contaminants in food, and the human exposure to EDs occurs via ingestion of food, dust and water, via inhalation of gases and particles in the air, and through the skin. In 2015, the Endocrine Society released its second scientific statement about the evidence that EDs have effects on female reproduction, breast development and hormone-sensitive cancers in females, such as breast cancer, endometrial cancer, and ovarian cancer. Therefore, prevention campaigns to reduce the female exposure to EDs and, consequently, the death burden of hormone-sensitive female cancers are needed.

Key words: Endocrine disruptors (EDs); Hormone-sensitive cancers.
References


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