

# Editorial

## **Is estrogen a steroid hormone significant only to female organisms?**

Estrogen is widely known as an important steroid hormone in the female body. It has a special function in the female reproductive system during the pubertal period. However, scientific evidence demonstrates many estrogen functionalities in both female and male bodies. Current scientific evidence shows the physiological functions of estrogen in the neuroendocrine, vascular, skeletal, and immune systems. It is possible to state that estrogen plays its mechanism of action in several tissues and cells, mainly through its intracellular alpha ( $ER\alpha$ ) and beta ( $ER\beta$ ) receptors, encoded by the *ESR1* and *ESR2* genes, respectively. In craniofacial and dental research, estrogen receptors have already been identified in maxillomandibular growth sites, temporomandibular joint, dental tissues, including mesenchymal cells of the dental pulp and cells that provide dental support. Although there is such evidence, physiological aspects of the mechanism of the action itself remain obscure in the literature.

At the same time, physiological, genetic, and environmental conditions can be described as influencing the imbalance of serum estrogen levels and the expression of its intracellular receptors. Obesity, metabolic disorders, cancers, osteoporosis, lupus erythematosus, endometriosis, uterine fibroids, dental changes, and the entire craniofacial complex can be cited in association with imbalances in the levels of this hormone and its receptors. Recent scientific evidence complements the related and specific literature and helps to understand genetic conditions under serum levels of estrogen and receptors due to the frequency of genetic polymorphisms in different populations. However, about environmental factors, it is essential to mention the organic-synthetic compounds that are richly distributed today. Bisphenol-A (BPA), for example, has been widely studied for its significant harmful estrogenic activity, toxicity, and notoriety among compounds distributed in the environment. BPA is a compound often used as a raw material in the manufacture of polycarbonate plastics, epoxy resins, and non-polymeric preservatives for other types of plastic. It is not known for certain routes of exposure and metabolism of BPA in the human body. Such an assertion implies a great concern in the field of public health.

Because of all the above mentioned, the significant relevance of understanding physiological and pathological aspects of estrogen and its receptors in other cells, tissues, and systems, in addition to the reproductive organs, is highlighted. It is noteworthy, above all, that therapeutic protocols can be developed for health promotion and disease prevention/therapeutic and control.

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