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Impact of heavy metals on the female reproductive system

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Abstract

Background: It has been recognized that environmental pollution can affect the quality of health of the human population. Heavy metals are among the group of highly emitted contaminants and their adverse effect of living organisms has been widely studied in recent decades. Lifestyle and quality of the ambient environment are among these factors which can mainly contribute to the heavy metals exposure in humans.

Objective. A review of literature linking heavy metals and the female reproductive system and description of the possible associations with emission and exposure of heavy metals and impairments of female reproductive system according to current knowledge.

Results. The potential health disorders caused by chronic or acute heavy metals toxicity include immunodeficiency, osteoporosis, neurodegeneration and organ failures. Potential linkages of heavy metals concentration found in different human organs and blood with oestrogen-dependent diseases such as breast cancer, endometrial cancer, endometriosis and spontaneous abortions, as well as pre-term deliveries, stillbirths and hypotrophy, have also been reported.

Conclusions. Environmental deterioration can lead to the elevated risk of human exposure to heavy metals, and consequently, health implications including disturbances in reproduction. It is therefore important to continue the investigations on metal-induced mechanisms of fertility impairment on the genetic, epigenetic and biochemical level.

Key words : heavy metals, female reproductive system, cadmium, lead .

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