

# Conceptual Study on Environmental toxicity as Dushi Visha as Causative Factor in Infertility & its Ayurvedic Management

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**Abstract:** Exposure to toxic substances in the environment can lead to various health problems that persist over time. These toxic substances can come from multiple sources, such as air pollution, contaminated water, and exposure to hazardous chemicals. Such toxins have hazardous effects on human health. So, one of the effect is on the Reproductive system. Environmental toxins damage normal physiological reactions related to the reproductive system. In today's era Infertility is one of the burning issues globally. Some studies also told these environmental toxins exposure have hazardous effect on male & female reproductive system.[1] Excessive exposure to pollutants in the environment, long-term exposure of contaminated foods, Water, pesticides, industrial chemicals, toxic metals etc all of which fall under the concept of dushivisha, cause reproductive dysfunctions and infertility. One of the effects of dushivishalinked to infertility is "Kshapayetshukram" (shukramdepletion). In both the lakshana and upadrava of dushivisha, acharya sushruta mentioned sukrakshaya.[2] So in this study an effort has been put forth to make conceptual study on environmental toxins as Dushi visha as a causative factor of Infertility& its Ayurvedic management including panchakarma & Agadyog.

**Keywords:** Environmental toxicity, Dushivisha, Infertility, Ayurvedic management

## I. INTRODUCTION

Environmental toxicity is a significant factor in the development of complex chronic illnesses. Exposure to toxic substances in the environment can lead to various health problems that persist over time. These toxic substances can come from multiple sources, such as air pollution, contaminated water, and exposure to hazardous chemicals. When individuals are exposed to high levels of these toxins, it can disrupt their body's natural processes and lead to the development of chronic illnesses. In this new era infertility is the most common problem. Some studies also told these environmental toxins as endocrine disruptors that feminize the male animals and androgenize the female animals. Until now we assume and find the infertility causes in women and not in the men. Exposures to such chemicals have hazardous effects over Male and Female Reproductive system. Toxicants that target the Male Reproductive System not only affect the sperm count but also change in shape of sperm, alter sexual behaviour and also increase infertility. Many organic chlorine compounds like Dichloro -diphenyl-trichloroethane, polychlorinated biphenyls have significant effect on fertility.<sup>3</sup> According to ayurveda such toxins get accumulated inside the body and gets converted into Dushivisha. While explaining about Dushivisha, Acharya Sushruta has mentioned destruction of sperm. While explaining about the Upadras of Dushivisha Acharya Sushruta have mentioned decrease in sperm quantity. So, we can give here Swedan, Vaman, Virechanused in the treatment of Dushivisha. By this we can remove toxins outside the body. After that we can use the kalpa like Dooshivishaari Agada as the contents in it have Vishaghnaand anti infertility properties.

**Aim:** To study Environmental toxicity as Dushi Visha as Causative Factor in Infertility & its Ayurvedic Management.

**Objective:**

- To study Effect of Environmental toxicity on Reproductive system
- To study Reproductive toxicity.
- To study the ayurvedic management & preventive aspects of Reproductive Toxicity.

**Materials & Methodology:** The information was gathered from authentic Ayurvedic literature, scholarly journals, articles and the internet.

**II. LITERATURE REVIEW**

The exponential growth of pollutant discharges into the environment due to increasing industrial and agricultural activities is a rising threat for human health and a biggest concern for environmental health globally.

**ENVIRONMENTAL TOXINS CAUSING INFERTILITY**

EDCs<sup>4</sup> are endocrine disruptor chemicals. They represent a broad class of chemicals such as organochlorinated & organophosphate pesticides, industrial chemicals, plastics and toxic heavy metals (lead, Arsenic, cadmium etc.) Environmental toxins causing infertility in basically 4 ways-

- Endocrine disruption.
- Damage to the female reproductive system.
- Damage to male reproductive system
- Impaired Foetal viability

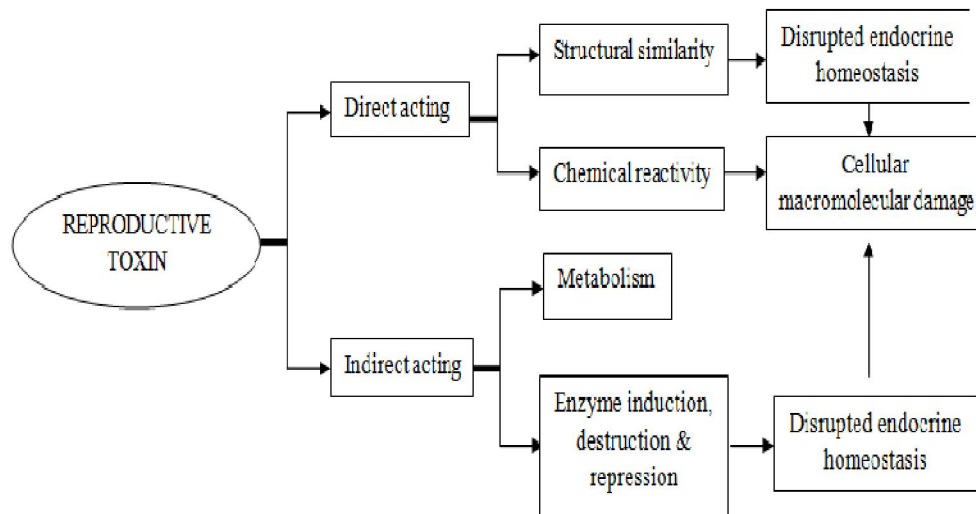
EDCs can be found in food wraps and plastic water bottles, even in the perfume you wear, the tap water you drink and cook with, and the air you breathe. And, it is their unrestricted use that is harming our ability to have natural pregnancy. They essentially disrupt the body endocrine system that monitor the hormonal balance across different glands. Sex hormones- oestrogen and progesterone in women and androgens including testosterone in men. Health defects associated with EDCs include a range of reproductive problems, from declining sperm counts and reduced fertility to male and female reproductive tract abnormalities, reduction in the number of healthy eggs in ovarian reserves, loss of foetus, early puberty and menstrual problems. Most of the EDCs are lipophilic (they can dissolve in fats and oils) and accumulate in the adipose tissue (body fat); thus, they have a very long half-life in the body. This similar pattern is seen in *Dushi visha* also. The infertile women who showed high levels of EDCs had been diagnosed with polycystic ovarian syndrome (PCOS) and endometriosis, two of the most widely reported causes of infertility among women in India. As we see in today's era workers working in the lead industry like enamel workers, glass blowers, printing works have typical chronic lead poisoning symptoms. Due to chronic exposure to lead which accumulates in the body and produces its ill effect like *Dushi Visha*. Workers in such industries come in direct contact with poisons and that too for decades of duration which ultimately leads to chronic accumulation of the poison in their body and that lead to chronic illness. This kind of exposure for a longer duration also leads to Infertility.

**Toxicants<sup>5</sup>:**

Chemicals	Sources	Reproductive or developmental Health Effect
<b>Pesticides, Organochloride Insecticides</b>	Food residues, Gardening, Agriculture, greenhouse work	Increased susceptibility to testicular cancer, Impaired foetal growth, Impaired cognitive development, Impaired neurodevelopment, Childhood cancer, Reduced sperm quality, Reduced fertility, Foetal loss, Birth defects
<b>Phthalates</b>	Plastic food container, cling wrap IV bags,	Miscarriage, testicular toxicity, shortened gestational age, Reduced

	Medical devices, cleaning and building materials, personal care products, cosmetics, pharmaceuticals, food processing, toys etc	masculine play in boys, Reduced anogenital distance, Impaired neurodevelopment in girls
<b>Bisphenol-A</b>	Used in the production of plastics	Mammary gland morphogenesis, increased formation of ovarian tumour. Increased risk of mammary gland neoplasia Recurrent miscarriage
<b>Lead</b>	Battery industries, Lead smelting, Occupational exposure occurs in battery manufacturing and recycling, car repair and welding, Paint.	Miscarriage, Premature birth, causes disruption of hormones, decrease in sperm quantity, Reduced fertility, Foetal loss, Birth defects
<b>Mercury</b>	Dental personnel, Lamp industry, Chloralkali industry, fish, frequently enters the food chain through coal combustion	Disruption of spermatogenesis, Cerebral palsy, brain malformation

**Mechanism of Reproductive Toxicity<sup>[5]</sup>**



Occupational or Environmental exposure to toxins cause

1. Alterations in sex hormone
2. Libido decreased
3. Menstrual Disorders<sup>[6]</sup>
4. Haematological effects<sup>[6]</sup>
5. Spontaneous Abortion<sup>[7]</sup>
4. Birth Defects<sup>[5]</sup>
5. Reduced birth weight<sup>[8]</sup>
6. Reduced fertility<sup>[9,10]</sup>

**Preventive measures:**

1. Top six environmental toxins to avoid
  - Pesticides
  - Formaldehyde
  - Bisphenols
  - Organic solvents
  - Unfiltered tap water
  - Unfiltered tap water
  - Heavy metals
2. Avoid consumption of Junk Food
3. Proper care should be taken by the labours in industries that cause reproductive toxicity.
4. Daily exercises

**Ayurvedic Aspect -**

1. In Ayurveda some of the heavy metals like mercury, copper are responsible for reproductive toxicity.
2. In Sushruta kalpasthanadhayay 2 diminish semen is one of the sign and symptoms of Dushivisha. *Dushi vishacauses Shukra Dhatu dushti* which further leads to *Klaibya*(Infertility). Repeated exposure to *dushitadesha, dushita kala, dushita anna, Divaswapna*etc. causes *dhatu dushti*which further lead to *dhatu prabhavavikaras (Shukrakshaya)*. *Dushi vishacrete rasadisoumya dhatu kshaya*, which causes the *rasa dhatu* to be depleted, resulting in *shukra dhatu dushti*, which eventually leads to *sukrakshaya*which impacts Fertility.

**Ayurvedic management<sup>[11]</sup> :**

Ayurveda treats the whole body not only the individual illness. The following management can be done in the reproductive toxicity.

**Swedan**

In *Swedan*the impurities get perspired and get rid out of the body. It is used to remove toxins out of the body.

**Vaman and Virechan**

It expels the toxins out of the body. As Acharya Sushruta have mentioned in the treatment of *Dushivisha*after *Swedan*we can use *Vaman* and *Virechan*here.

**Internally**

*DushivishaariAgad<sup>[12]</sup>*-can be used internally to detoxify the body and counteract the effects of substances that are reprotoxic. This will support the healthy development of foetus exposed to substances that are reprotoxic.

**III. DISCUSSION**

In the above study we studied that there are various environmental toxins with which we interact in our day-to-day life. Such toxins have hazardous effects over human reproductive reproductive health. Such toxins have major effect over fertility and cause infertility. The infertility is one of the commonest problems. We can correlate these toxins with *Dushi Visha*. In *Dushivisha* while explaining its complications *Acharya Sushruta* have mentioned destruction or decrease in sperm quantity. And so, in the treatment of this Reproductive toxicity we can give *Swedan, Vaman, Virechan* and *Dushivishaariagad* orally in the treatment of Reproductive Toxicity.

**IV. CONCLUSION**

The most common effect of reproductive toxicants is infertility. History is most important. While treating infertility we have to find reasons in both male and female. The management can be done as mentioned above. Before starting any treatment for infertility, the above protocol should be followed for the better results.

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