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## Role of Junk Food On Infertility In The Present Era

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**ABSTRACT:** A food is the substance which offers fibers, carbohydrates, protein, fat, vitamins and lots of minerals. These nutrients are essential for growth and repairing of muscle mass, improvement of immunity and provide energy for activity. A healthy meal is vital for growing tissue and cells. But now-a-days human beings are keeping off the healthy food and choose the fast food for saving both money and time. This junk food is fully loaded with excessive sugar, salt, trans fat and some phthalates kinds of toxins which have harmful outcome on the body. These motive numerous metabolic disorders and systemic problems like obesity, diabetes, hormonal modification. In Ayurveda this kind of meal or food resemble as *viruddha aahara*. Excessive intake of *viruddh aahara* irritate the *doshas* from their places and stay in the body to create an obstruction of channels (*strotoavrodha*). By this obstruction nutrients cannot attain in *dhatu*s (tissue) and numerous *dhatujanya vikara* arise. Infertility is the kind of one and biggest concern of current generation. Several physiological, pathological and genetic reasons are answerable for it, but with these elements, somewhere it also happen due to improper nutritional conduct. For the management, *acharyas* mentioned about detoxification of *viruddha aahar janya vikara* through *sodhana karma* and proper diet with complete nutrients can improve the infertility.

**Key words** – *viruddha aahara*, junk food, infertility

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## INTRODUCTION:

*Aahara* plays a key role throughout the life across functions like development, nourishment, reproduction and termination of life. In the present era comprising of hectic life where everyone is so occupied with their personal and professional tasks such that they do not even have time to eat proper food. In lieu of healthy food they prefer junk food which is good in taste, easy to make and quick to consume. In terms of nutrition value junk food has it very little and contains excessive fat, sugar, salt, some of toxins and calories with little fibers, protein, vitamins or minerals. When junk food is consumed very often it increases the risk of cardiovascular disease, diabetes, metabolic disorder, weight gain, infertility and many other chronic health conditions. In Ayurvedic classics/ text junk food can be correlated to '*Viruddha Aahara*'. *Viruddha*

means opposite and *viruddha aahara* means food-food interaction, food processing interactions which have incompatibility or undesirable effects on the body. *Viruddha aahara* causes various health hazards and Infertility is one of them<sup>1</sup>. It is a rising problem of the couples in present era. It has been accepted that food habits and changing life style are closely associated with men and women reproductive health life. According to the survey, it has been found that 1 out of 10 women of childbearing age have faced various kinds of complications in getting pregnant. Most prominent reason is associated with ovulation. It's often related to the hormonal imbalance known as polycystic ovarian syndrome. The risk is directly associated with the age and it gets shoot up with the factors like smoking,

excessive alcohol consumption, stress, unhealthy diet, being overweight, or having sexual transmitted infections<sup>2</sup>. Junk food accommodates the high amount of sugar, sodium and saturated fat. Food with high fat compositions have toxic effects on the ovaries. For men's infertility, trans fat of junk food also affects the fertility as it decreases the sperm count, loss of libido etc<sup>3</sup>. Men's infertility usually caused by the problems that affect either sperm production or sperm transport which include varicocele, hormonal disturbance, infections, tumors, problem in ejaculation, defects of tubules that transport sperm etc<sup>4</sup>.

### Ayurvedic aspect of *Viruddha Aahara*-

*Viruddha aahara* is defined by *Acharya Charaka* in *sutra sthan* 26. He stated that the food which is wrong in combination, or has been processed wrongly and consumed in inappropriate dose, time and season can lead to the *viruddha aahara*.

“The food or diet which vitiates *doshas* from their places but does not eliminate it out of the body and causes several systemic disorders is said to be *viruddha aahara* or incompatible diet”<sup>5</sup>. *Acharya Charaka* has given details of 18 types of food incompatibilities which are discussed below.

**Table 1-These are the 18 food incompatibilities<sup>6</sup>**

Name	Meaning
1. <i>Desha viruddha</i>	Place incompatibilities
2. <i>Kala viruddha</i>	Time incompatibilities
3. <i>Agni viruddha</i>	Gastric/ digestive fire incompatibilities
4. <i>Matra viruddha</i>	Quantity incompatibilities
5. <i>Satmya viruddha</i>	Homologation incompatibilities
6. <i>Dosha viruddha</i>	Body humors
7. <i>Samskara viruddha</i>	Processing incompatibilities
8. <i>Veerya viruddha</i>	Potency incompatibilities
9. <i>Koshtha viruddha</i>	Bowl tendency incompatibilities

10. <i>Avastha viruddha</i>	State of health incompatibilities
11. <i>Kram viruddha</i>	Sequence incompatibilities
12. <i>Parihar viruddha</i>	Contraindication incompatibilities
13. <i>Upachar viruddha</i>	Treatment incompatibilities
14. <i>Paak viruddha</i>	Cooking incompatibilities
15. <i>Samyoga viruddha</i>	Combination incompatibilities
16. <i>Hriday viruddha</i>	Palatability incompatibilities
17. <i>Sampat viruddha</i>	Richness of quality incompatibilities
18. <i>Vidhi viruddha</i>	Rules of eating incompatibilities

### What is infertility –

According to the governing body WHO infertility has been defined as one of the diseases of the reproductive system when it is a failure to achieve a pregnancy after regular unprotected sexual intercourse throughout a year<sup>7</sup>. There are two types of infertility which are discussed below

- i. **Primary infertility** – patients who have never conceived.
- ii. **Secondary infertility** – patients with previous pregnancy but failure to conceive subsequently<sup>8</sup>.

### Causes –

**Male infertility** – Defective spermatogenesis, Obstruction of the efferent duct system, Failure to deposit

sperm high in the vagina, Errors in the seminal fluids, obesity (BMI >30), smoking and addictive substances, radiation, lack of nutrition, supplements and steroids, high testicular temperature, infections like STIs, genital injuries, varicocele, age factor<sup>9</sup>

**Female infertility** – Damage to fallopian tubes, hormonal imbalance, cervical issues, UTI, ovulation disorders like (PCOS), hypothalamic dysfunction, pelvic inflammation, endometriosis, stress, improper nutrition's<sup>10</sup>

**Why Junk food** – In this era, junk food has been becoming so popular among everyone especially in youngster. It is preferred by everyone due to their easy availability, attractive colors, tempting taste and their wonderful array of varieties and flavor

**List of various types of Junk food-<sup>11</sup>**

Food Type	Major Content	Possible Diseases
Deep Fired Stuff (Fries, Potato chips, samosa etc.)	Trans Fat, Sodium	Obesity, Hypertension, Heart Diseases
Pizza	Saturated Fat, Sodium, excessive carbohydrates	Heart diseases, cholesterol, obesity
Burger	Saturated fat, sugar and sodium	Increase cholesterol level
Candies	High level of fructose and sucrose	Increases blood sugar level
Donuts	High amount of sugar, added fats and refined flour	Diabetes, heart disease, obesity, metabolic problems
Pastries and cake	Fructose and glucose	Diabetes, weight gain heart disease
Ice Cream	Rich In sugar and fat	Obesity, decreased appetite
Carbonated Beverages	Sugar, insignificant amount of minerals, harmful chemicals	Acidity, affect development of bones due to elimination of calcium
Instant Noodles	Sodium additives, noodles covered with wax, substance like propylene glycol and MSG (monosodium glutamate)	Obesity, high cholesterol level, blood sugar level and hypertension
Processed Food (Ready to eat)	Sugar, salt, trans fat, high fructose, phthalates	Cardiovascular disease, diabetes, obesity

**Ayurveda literature also mentioned many systemic disorders caused by Viruddha Ahara**

Impotency (infertility), blindness, erysipelas, abdominal affection, eruptions, insanity, fistula, fainting/coma, intoxication, abdominal distention, stiffness in neck, anemia, indigestions, leprosy, dermatosis, assimilation disorders, edema, acid dyspepsia, fever, rhinitis, fetal diseases and death. These diseases resulted from incompatibility of diet<sup>12</sup>.

**Impact of junk food on fertility-**

**Phthalates** – as per the study published at George Washington University, it provides the confirmation of the theory that people who regularly consume junk food obtain higher levels of certain environmental toxins called phthalates. It has been found that phthalates are directly linked with male infertility and caused several endocrinal disorders<sup>13</sup>.

Phthalates are a chemical composition used in making the plastic more flexible, durable and it holds high molecular weight. Phthalates are not only present in fast food but also in various kinds of packaged and processed food. butylbenzyl

phthalates(BBzP), di-2-ethylhexyl phthalates (DEHP) mixture of di-n-octyl phthalates(DnOP) are commonly used in plastics materials such as food packaging, flooring and medical devices. After getting inside the human body they are broken down into various smaller particles which disturbed the hormonal activity regulates by endocrine and reproductive system<sup>14</sup>.

**MSG (Monosodium glutamate)** – also known as Ajinomoto, a flavor enhancer commonly used in Chinese and Mexican foods. It has been shown to cause infertility in animals. MSG is the sodium salt composition of glutamic acid<sup>15</sup>. According to Ayurveda it is considered as *kshar*, where it is mentioned that *kshar* causes *shukravaha strotodushti* i.e. vitiation of channels conveying *shukra* i.e. sperm and ovum which leads to infertility<sup>16</sup>.

**Propylene glycol** –is also referred with other names as methyl glycol, 1,2-propanediol, trimethyl glycol, 1,2-dihydroxypropane. It is a substance commonly used as a food additive or ingredient in many cosmetic and hygiene products<sup>17</sup>.

**Trans fats** - Trans fats are liquid oils that are put through a chemical process called

Hydrogenation to make them more solid and extend shelf life. Trans fats affects health through decreasing the high-density lipoprotein (HDL) cholesterol and increasing the low-density lipoprotein (LDL) cholesterol. It increases inflammation in the body, a potent risk factor for cardiovascular disease, diabetes and other diseases. It also causes weight gain, especially increasing abdominal fat which has the greatest metabolic consequences and worsen insulin resistance. Men obesity may alter hormone level which can result into poor sperm motility and low sperm count. While women obesity increases the BMI equal to or more than 25 may experience irregular menstrual cycles or stop ovulating altogether.

**High salted diet** – it can delay puberty and cause endocrinal disorder like PCOS<sup>18</sup>. In Ayurveda also mentioned that excess salt i.e. *lavana* can cause infertility.

**Sugar** – High glucose level has indirect impact on both men and women's fertility. As it raises various health complications like obesity, type 2 diabetes, lowered immunity, insulin resistance and hormonal imbalance. For conception estrogen and progesterone are very essential but due to hormonal disruption along with insulin resistance it causes ovulatory dysfunction and disorder like PCOS. In men, high blood glucose level can alter the testosterone hormone which inhibit the sperm production<sup>19</sup>.

**Fructose** - is a kind of natural sugar which can be easily found through various sources such as vegetables, fruits and specially in honey. The increase in fructose intake can cause obesity, diabetes and a new condition called nonalcoholic fatty liver disease<sup>20</sup>.

**High Sucrose** - an animal study shown that the high sucrose solution alters sperm motility and concentration in rats

**DISCUSSION –**

Ayurveda is an ancient science and has scientific methodology towards to keeping up well-beings and medical issues. In different Ayurvedic classics three *upstambha* is portrayed. These are *aahara*, *nidra* and *baramhcharya*. Three of their own significance. *Aahara* is the fundamental substance as it remains individuals healthy, and at some point cause diseases. Our body is comprised of seven *dhatu*s and three *dosh*as. For sustenance of *dhatu*s, *aahara rasa* is significance. *Aahara rasa* is the final product of *aahara dravyas* which is taken through the mouth, undergoes in the *kostha* (alimentary canal) delivered with the assistance of *jatharagni*(digestive enzymes). This *aahara rasa* circulate all over the body through the blood stream (circulatory system) in different *strotas* (tissue channels) and give sustenance to every single *dhatu*s(tissue).

Most of the junk food is *Samskar viruddha*, *Veerya viruddha* and *Samyoga viruddha* in nature. These incompatibilities of food may cause aggravation of *dosh*as from their place and without eliminating, it get accumulated over there and causes obstruction i. e. *strotoavrodha*. Due to the *strotoavrodha* process of nourishment of further *dhatu*s i. e. *utrorottar dhatuposhan prakriya* is affected and it causes *sukrakshay* (deficiency of sperm and ovum) which leads to infertility.

**CONCLUSION -**

As discussed above under various headings, it is very evident that *viruddha aahara* i.e. junk food though has become integral part of present lifestyle but also raises concerns leading to infertility. For prevention Acharya Charaka told about “*nidaan parivarjanum*” (decrease the consumption of junk food and start having a healthy diet) and *sodhan chikitsa* (helpful to reduce toxic



effects of junk food)<sup>21</sup>. For boost up the fertility chances, men and women should include following regime in their routine lifestyle<sup>22</sup>-

1. **Iron rich diet**- Iron rich vegetables and supplements in routine diet can improve the infertility and may lowered the risk associated with ovulatory dysfunctions. Addition of vitamin C can also help to absorption of iron which is easily available in berries, bell pepper and citrus fruits.
2. **Maintain ideal weight** – regular exercise and physical activities can

improve infertility in both men and women

3. **Correct eating pattern** – avoid trans fat substances and include more monosaturated fat in diet like olive oil. More vegetable protein than to animal protein.
4. **Avoid low fat dairy products** and add high fat dairy products in diet.
5. **More wholegrains and calcium rich foods.**
6. **Yoga and pranayama** - Infertility also induced by stress and inconsistent lifestyle. For healing mind, body and soul yoga and pranayama are helpful.

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