

## EFFECTS OF JUNK FOOD / FAST FOOD ON MENSTRUAL HEALTH: A REVIEW STUDY

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### ABSTRACT

Food plays a decisive role in development, sustenance, reproduction and termination of life. Through centuries, food has been recognized as an important factor for human beings, in health and diseased state. Food (*Aahar*) supplies bio-energy to body. In today's life style, fast food/ junk food is very popular. High content of trans-fat in such food items affect the health adversely. They are known to have increased the incidence of diabetes and obesity. This habit leads to increase the incidence of obesity. People who eat fast food consume extra fat, sodium and saturated fat. With increase in consumption of junk food / fast food there is increase in the menstruation related problems in women i.e. early menarche, irregular menses, dysmenorrhea and excessive menses. Hence, it is the need of hour to evaluate the food habits, sedentary lifestyle and estimate their influence on menstrual disorders. **Aim and objective:** - To find out relation of junk food / fast food with menstrual disorders. **Material and methods:** - Authoritative treatises on *Ayurveda*, Articles published Thesis, pubmed, urbanwired.com, live strong.com, umm.edu, woderlist.com, thehealthlist.com, food.ndtv.com etc. **Discussion:** - Junk food / fast food affect the hypo-thalamo- pituitary- ovarian axis by disturbing the hormonal levels. **Conclusions:** - By correcting the food habits and life style there will be definite reduction in the menstrual disorders.

**Keywords:** food habit, menstrual irregularities, early menarche, *Pathya Ahara*, *Apathy Ahara*

### INTRODUCTION

*Aahar*, *Nidra* and *Brahamchrya* are basic need of life. Among them *Aahar* plays a decisive role in development, sustenance, reproduction and termination of life. With the changing life style, fast food and Junk food are becoming part of food habit. Such food is high in trans-fat and has comparatively less nutritive value, resulting in health issues like weight gain and obesity. Ayurveda also mentions *Atibhojana*, *Abhojana*, *Adhyashana*, *Vishamashana*,

*Paryushana* (over eating, less eating, spicier, oilier). Food Environmental factors like eating fast food regularly could increase the undesired risk of obesity. Fast food/ junk food have high fat, sodium and saturated fat content making it unsuitable for health. It also increases the menstruation related problems, such as early menarche, irregular menses, dysmenorrhea, and excessive menses etc.

**AIMS AND OBJECTIVE:**

To find out relation of junk food / fast food with menstrual disorders.

**MATERIAL AND METHODS:**

Authoritative treatises on *Ayurveda*, Articles published Thesis, urbanwired.com, live strong.com, umm.edu, woderlist.com, thehealthlist.com, food.ndtv.com etc.

Junk food is high in sugar, fat and calories, but low in nutrients<sup>1</sup>. It causes stroke risk, obesity. Gastrointestinal problem<sup>2</sup>. Fast food can be a good way to save time, but it is not the proper way for nutrition<sup>3</sup>. Junk food causes deficiencies in vitamins and minerals. High-energy-dense foods often lack protein; calcium; iron; vitamins A, C, D and E; B vitamins; potassium; zinc; and monounsaturated fats. A deficiency in any of these nutrients compromises your immune system and puts you at risk for illness and infection<sup>4</sup>, nutritional deficiency leads to feelings of anxiety, depression and irritability.

Aerated drinks, Fried foods, Burgers, French fries, Pizzas, Micro waved and fried snacks, packaged chips, packaged candies and chocolates, Cheese, Salty snacks, Packaged ice creams

- Eggs that are in junk food are not actually real eggs but prepared from an egg blend that includes propylene glycol (found in petrol), ter-

tiary butyl hydroquinone (found in nail polish) and calcium silicate<sup>5</sup>.

- Chicken products are made up of chicken that is factory bred and fed with large quantities of antibiotics and chemicals to give the meat a plump appearance<sup>6</sup>.
- Chips are coated with a chemical substance called Poly-dimethylsiloxane which is a silicone based plastic coating to help maintain its color and flavor<sup>7</sup>.
- Any nugget that is deep fried is not actually made up of the ingredient it boasts of, whether it is chicken or potato or veggies. It is made up of a pre-nugget mix which contains a mesh found in plastics and artificial coloring and then flavors are added to it<sup>8</sup>.

These junk food facts are not only shocking but also damaging to the body and the overall health of a person. That’s why a quick food fix is not a solution<sup>9</sup>.

A lot of hormonal changes occur in teenagers, which makes them susceptible to mood swings and behavioral changes. And a healthy diet plays an important role in maintaining that hormonal balance. Because junk food lacks those essential nutrients, the likelihood of teenagers to suffer from depression is increased by 58 percent.<sup>10</sup> Nutritional deficiency is considered one of the important factors that induce hypothalamic-pituitary-ovarian dysfunction.<sup>11</sup>

**Table 1:** Review articles related to junk food and menstrual health.

Sr. No.	Research	Findings
1	Goel et al <sup>12</sup> .	Premenstrual symptoms were significantly high in girls who were regularly eating junk food.
2	Anandha <sup>13</sup> Lakshmi et al	Premenstrual symptoms were significantly high in girls who were regularly eating junk food.
3	Fujiwara et al <sup>14</sup>	Intensity of dysmenorrhea was high in those with a history of dieting in adolescence with consuming junk food /fast food very frequently <sup>15</sup>
4	Teixeira AL et al <sup>16</sup>	Junk foods being deficient in micronutrients like vitamin B <sub>6</sub> , calcium, magnesium and potassium, might also be responsible for triggering premenstrual symptoms. Premenstrual symptoms were also significantly high in girls who did not do regular physical activity
5	Dr. Minu Pandey-Shah <sup>17</sup>	The incidence of young girls diagnosed with PCOS has also risen from 1 in 15 to nearly 1 in 3 young girls in recent years. Consumption of junk food, sugary foods, etc and irregular eating schedules causes a fluctuation in glucose levels and a hormonal imbalance leading to deposition of fat in the hips and abdomen in particular.

6	Dr Loveleena Nair <sup>18</sup>	Indulging in comfort foods like gooey chocolate bars, gulping down cups of coffee/tea or skipping meals because of feeling bloated is certainly not going to help. These will, in fact, aggravate the vulnerability of PMS symptoms
7	Dr Shipra Saklani Mishra <sup>19</sup>	Listed food should and should not eat to bring PMS symptoms under control included junk food/fast food.
8	Bethany Wheeler, RD <sup>20</sup>	Many females report cravings of 'unhealthy' foods while on their menstrual cycle, and many report that it is difficult to avoid the temptation to eat the foods they crave
9	Dr Saman Guna Herath <sup>21</sup>	Premenstrual symptoms are significantly high in girls who consume excessive junk food. Menarche is, also influenced by fast-food intake. There is a negative association between the frequency of fast-food intake and age at menarche. This observation suggests that alterations in diet may be one of the causes for decrease in age at menarche from 15 to 16 years in the past to less than 13 years currently.

Results of the study showed that menarche varied between the age group of 10 and 16 years in school-going girls. Age at menarche was less in girls who consumed fast food more frequently. In girls with higher intake of fast food, duration of menstrual flow for more than 7 days was observed in 19.23% girls, whereas it was 6.20% in those with lower intake of fast food. The length of menstrual cycle in girls with higher intake of fast food was also longer as compared with those with lower intake of fast food. Junk food is nothing but *Apathya Ahara*

#### **Pathya and Apathya:**

According to *Acharya charaka* Pathya means the wholesome Ahara (and drugs), which do not adversely affect the body and mind, while those, which adversely affect the body and mind, are considered as *Apathya*<sup>22</sup>. A drug or diet not causing harmful effects to any channel of body and which is comfortable to Manas is granted as "Pathya". Although pungent and bitter cause discomfort at a time to mind but it is ultimately comfortable for body, so it is taken as "Pathya". Thus, anything producing discomfort to mind initially or later on is granted as "Apathya" otherwise taken under "Pathya". The "Pathya" in

fact changes its qualities, depending on the *Matra* (dose), *Kala* (time), *Kriya* (method of preparation), *Bhumi* (habitate), *Deha* (body) and *Dosha* (Vatadi body component)<sup>23</sup>. As *Acharya charaka* has stated, if one takes *Pathya Ahara*, there is no chance for disease pathogenesis<sup>24</sup>.

**Nidana [Etiology]:** For the proper understanding, the *Nidanas* are broadly classified under the following headings.

**Aharaja Hetu [Dietetic factors]:** All the factors mentioned below will cause the disease if they are consumed in excess amount. *Acharya charaka - Lavana* (Salty), *Amla* (Sour), *Guru* (heavy), *Katu* (hot), *Vidahi* (producing burning sensation) and *Snigdha* (Unctuous substances), *Mamsa* (meat of domestic, aquatic and fatty animals), *Krsara* (olio made with rice and pulses), *Payasa* (rice cooked with milk and sweetened), *Dadhi* (curd), *Sukta* (vinegar) *Mastu* (curd water) and *Sura* (wine).

*Viruddhasana* (Incompatible diet), *Adhyasana*, *Ajirnasana* (eating before the previous meal digests), *Atikarsana* (emaciation) *Viharaja Hetu* (Habitual irregularities).

**Table 2:** *Nidana* and their effect

<b>Amla Rasa causes</b>	<b>Lavana causes</b>	<b>Katu causes</b>	<b>Guru and Snigdha</b>	<b>Vidahi</b>	<b>Dadhi</b>
liquification of <i>Kapha</i>	vitiating of <i>Pitta</i>	emaciation	vitiating of <i>Kapha</i> with <i>Rakta</i>	aggravate <i>Pitta</i> and <i>Rakta</i>	vitiates <i>Rakta</i> , <i>Kapha</i> and <i>Pitta</i>
aggravation of <i>Pitta</i>	aggravation of <i>Rakta</i>	vitiating of <i>Pitta</i> and <i>Vata</i>			
vitiating of <i>Rakta</i>	<i>Darana</i>	aggravation of <i>Rakta</i>			

*Viruddhasana* causes vitiation of *Vata*, *Pitta* and *Kapha Dosh*, *Agnimandya*, *Ama* formation. *Adhyasana* and *Ajirnasana* aggravate all the three *Doshas* and are responsible for formation of *Ama* and causes *Agnimandya*. *Guru*, *Suska* (dry) and *Vidahi* type of diet is also responsible for formation of *Ama* and hence *Agnimandya*<sup>25</sup>. Emaciation results in vitiation of *Vata Dosh*. On the basis of '*Guna Samanya*' the *Pitta Dosh* vitiating factors, augment the *Rakta* and *Artava*.

### **Samprapti (Pathogenesis)**

*Samprapti* is the process of the manifestation of the disease. It deals with as to how *Dosha – Dusya Sammurcchana* occurs. This is the course of disease right from the affliction (due the etiological factors) till its manifestation. A good understanding of it is essential for early diagnosis, prognosis and for adopting preventive and curative measures.

**Table 3: Samprapti Ghataka**

<b>Dosha</b>	<i>Vata – Vyana, Apana</i>	<b>Srotasa</b>	<i>Rasavaha, Raktavaha, Artavavaha</i>
	<i>Pitta – Ranjaka and Pacaka</i>	<b>Srotodusti Prakara</b>	<i>Ati Pravrtti, Vimargagamana, Sanga</i>
	<i>Kapha – Present as Anubandhita Dosh</i>	<b>Rogamarga</b>	<i>Abhyantara</i>
<b>Dusya</b>	<i>Rasa, Rakta, Artava</i>	<b>Adhithana</b>	<i>Artavavaha Srotasa, Rajovahi Sira, Garbhasaya</i>
<b>Agni</b>	<i>Jatharagni, Upadhatvagni, Rasagni, Raktagni</i>		

Vitiated *Vyana Vayu* is responsible for conduction of excessive amount of blood to *Rajovahi Sira* (uterine vessels). *Apana Vayu* is responsible for intensive excretion of uterine product and *Sthanika Kha Vaigunya*. Vitiated *Pitta* due to *Drava*, *Sara* and *Usna Guna* further augments the quantity of *Rakta* and also vitiates the *Rakta* and *Artava* due to *Guna Samanya*. Vitiated *Kapha* along with *Pitta* is responsible for vitiation of *Rakta*. Vitiating factors of *Kapha* similes with those of *Rasa* result in augmentation of *Rasa*. Since *Artava* is produced from essence part of *Rasa*, impure *Rasa* causes impure production of *Artava*.

The process is explained as under:

*Acharya charaka*: The etiological factors provoke *Vata Dosh* to augment in its quantity. Due to specific *Nidanas Rakta* get vitiated along with *Pitta Dosh*. Sometimes *Kapha* followed by *Pitta*, augments the *Rakta*. Then increased quantity of *Rakta* is driven by vitiated *Vata* through *Rajovahi Sira* enters the *Garbhasaya* (uterus). In the uterus vitiated and augmented *Rakta* gets mixed with *Artava* and thus increases immediately the amount of *Raja*<sup>26</sup>.

Since *Artava* is formed from the essence part of *Rasa*, so in the physiological state it is present and

formed in specific normal amount. In the present pathological condition, it is vitiated and augmented; hence the quantitatively increased status of *Artava* and its relation with *Rasa Dhatu* is indicated by *Acharya charaka*<sup>27</sup>. There is one more condition of *Asrgdara* elucidated by *Acarya Acharya charaka* in *Cikitsasthana* with reference to '*Avrtatva of Vata Dosh*'.

Vitiated *Pitta* obstructs the '*Prakrta Gati*' of *Vata*, which further causes the vitiation of *Apana Vayu*. This vitiated *Apana* results in to manifestation of *Asrgdara*.

*Acharya charaka* has mentioned two basic causes of Vitiation of *Vata Dosh*.

1. Due to obstruction to the flow of *Vata Dosh*.
2. Deterioration of *Dhatu*.

Third cause is due to its own etiological factors. In the first *Samprapti*, it is vitiated due to its own etiological factors and in the latter one due to obstruction in its way. *Vata* plays important role in the pathogenesis.

## DISCUSSION

Junk food / fast food affect the hypo-thalamo-pituitary- ovarian axis by disturbing the hormonal levels. Junk food / fast food is *Virudhahar* or *Paryushitanna*, *Shushka Aahar*. *Mithyachar* is the one of the most predominant cause of the *Yonivyapada*. *Mithyachara* means *Ahitakara Ahara Vihara*. *Amatra*, *Atimatra*, *Shuskanna*, *Akale bhojana*, leads to *Ambuvaha srotodushti*, *Annavaaha srotodushti*, *Rasavaha srotodushti*, *Raktavaha srotodushti*, *Maansvaha srotodushti*, *Medovaha srotodushti*. Due to excessive consumption junk food, vitiation of *Apana Vayu*, *Vyana Vayu* results in *Dhatu Ksaya* condition. It is also responsible for pelvic congestion. *Vayu* is responsible for all types of *Gati* or movements in the body. The excess movements like *Atiyanasevena* and *Atigamana* cause vitiation of *Vyana Vayu* and *Apana Vayu* respectively by '*Karma Samanya*'. *Ati Bharavahana* causes vitiation of *Vata Dosha*. *Diva Swapa* results in augmentation of *Kapha*. Consumption of Junk food / fast food leads to *Rasadushti*, *Raktadushti*, *Artvavadushti*, hormonal disturbance also causes *Yonivyapada*, *Ashtau Aartvadáshti*

## CONCLUSIONS

As we reduce the consumption of junk food/ fast food, state of *Agni* is maintained and formation of all the *Dhatus* and *Upadhatus* take place. With reduction in consumption of junk food/ fast food reduction in hormonal disturbance takes place which ultimately leads to reduction in menstruation related problems.

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