

## **Immunology: An Ayurvedic Aspect with reference to *Oja* and *Vyadhikshamatva***

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### **Abstract**

Maintenance of healthy status of an individual is very important especially in today's era. Globally as well as nationally the number of individuals surrendering to any diseased conditions is increasing alarmingly day by day. The immunity of an individual is being compromised today. This is due to negligence towards one's health due to sedentary, busy and a hectic lifestyle. The dietary changes and consumption of junk and fast food has contributed a lot in all this. Basically this immunity factor in body is encroached by *ojas* as per *Ayurveda*. The resistance power, immunity is together manifested by this *ojas* component present throughout the body. According to *Ayurveda* *ojas* is stated as cause and its effect being the resistance power viz. *bala*. So *Ayurveda* has given significant importance to *ojas* due to its presence needed exclusively for survival and performing important functions inside the body. Even though this *ojas* is essence of all the *dhatu*s inside the body, its production, maintenance, storage, utilization and proper circulation inside body must be consistent and proportionate. The *ojas* being practically invisible is very well known by its functions and symptoms manifested on the living body. The present review explores some more info about the *ojas* and its basics.

### **Keywords**

*Ojas, Bala, Dhatu, Resistance Power, Immunity*



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## INTRODUCTION

Today man is emerged into highly developing, technical era as compared to ancient time period. The working pattern, living standard, daily routine has become more comfortable, pleasant and with more ease. The sedentary lifestyle thus has given man almost every type of happiness; joy that too in a much reduced efforts. This has made man lethargic somehow compromising and affecting the health factor overall. All the things are thus in hand and efforts are minimized, and this compensation is paid on its behalf by impairing the immunity or resistance power of man. The energy resource which is gained by a man is only through the diet which is being ingested. Moreover, it is accompanied on a large scale by synthetic molecules in a number of forms as like antioxidants, nutritional supplements, cytokines, hormones and so on. After proper digestion the partially digested food viz., *ahara rasa*, is important as it nourishes all the *dhatu*s at their respective level<sup>1</sup>. All together its output is the essence of all *dhatu*s called as – *ojas*<sup>2</sup>. The *ojas* is principally responsible for the immunity inside body. The *ojas* and resistance power or immunity is proven by the cause effect relationship. For proper production, storage and utilization of *ojas*, it is essential to have a look over its review and this is here.

## OBJECTIVES

- 1) To highlight immunity and its basics from *Ayurvedic* perspective.
- 2) To impart in detail about *ojas* and overall basics concerned from immunological perspective.

## REVIEW OF LITERATURE

The prime most definition of *ojas* itself states that it is the essence present in every *dhatu* (tissue) and is the collective *sara* (nectar) of all the *dhatu*s from *rasa* to *shukra* which is mainly responsible for strength, vigor and vitality of life. Sushruta describes *ojas* as the paramateja of the *saptadhatu*s and as the *bala* or biological strength of an individual. The presence of *ojas* in body is relevant as like ghee<sup>3</sup> present in milk itself. Being cumulated at every *dhatu* level and highly nutritive in nature it is said to be extreme purest, finest *sara* part of *sneha*. Moreover being omnipresent it represents *bala*, *veerya*, *prana*, *prakriti* and *kapha* of body. *Ojas* and *bala* in body explains the cause effect relationship where *ojas* is cause and *bala* or strength being the ultimate effect of the same. Our physical, mental and spiritual strength totally depends on *ojas* which is manifested by its own symptoms.



## FORMATION OF OJAS

*Ojas* along with its manifesto in body is having controversies about its formation also. Some scholars say that *ojas* is formed after digestion of *rasa dhatu* and before formation of *rakta dhatu* in *saumya* form<sup>4</sup>.

Even in intra-uterine period, in the fetal stage in a mother, the *ojas* is present in *shukra* and *shonita* in the form of *sara*<sup>5</sup>. After the formation of *garbha* by combination of sperm and ova along with soul, then the *ojas* is present in the form of *garbha sara* in *kalala* (morulla) stage. The *ojas* exists in body before the pregnancy of a woman and is carried forward. In 8<sup>th</sup> month of pregnancy the mother is said to be prone to have a high risk as *ojas* is unstable due to lack of *sthira guna* of *ojas*. It is foresaid that *ojas* in this month is exchanged from mother to fetus and back to mother through blood vessels. If it moves in mother then fetus is prone to many infectious disorders due to lack of immunity whereas mother feels happy emotionally. So delivery in 8<sup>th</sup> month proves to be dangerous and risky. It dwells in body throughout the life inevitably until death, manifesting its own symptoms.

The formation of *ojas* is best ever explained by ancient scholars. Thousands of honey bees collect nectar from each and every flower into their hives to form essence part honey similarly *ojas* is the

nectar or essence cumulatively collected by metabolism of various physiological processes occurring at *dhatu* (tissue) level in body.

Existence of *oja* in body can be stated in three ways-

- 1) Before formation of *garbha* in the form of *sara* in sperm and ovum.
- 2) After formation of *garbha* in the form of *sara* in *garbha* at morulla stage.
- 3) Then persisting throughout lifetime which is omnipresent in body.

## LOCATION AND TYPES OF OJA

*Ojas* is considered to be of two kinds namely 1. *para ojas* and 2. *apara ojas*<sup>6</sup>. *Para ojas* is subtle in nature which resides in heart and is in very minute quantity measuring only eight drops while *apara ojas* is gross measuring half an *anjali* in quantity and which is omnipresent<sup>7</sup>. This two types of *ojas*, accounts for different functions in body. *Para ojas* is vitality, life factor and its injury or any diminution in its volume may lead to instantaneous death whereas *apara ojas* is responsible for overall immune strength of the body.

Scholar *Bhela* has mentioned in its treatise that *ojas* in our body resides all together at total 12 places. Which are- *Rasa* (Lymphatics), *Rakta* (Blood with components), *Mamsa* (Muscle tissue), *Meda* (Adipose tissue), *Asthi* (Osseous

tissue), *Majja* (Nervous tissue & Bone marrow), *Shukra* (Reproductive tissue), *Sveda* (Sweat), *Pitta* (Gastric secretions), *Shleshma* (Mucoid

secretions), *Mutra* (Urine & its products) and *Purish* (Fecal matter)<sup>8</sup>.

### QUALITIES OF OJA

**Table 1** Qualities of *Oja* mentioned in *brihatrayi*-

Sr.No	<i>Charaka</i> <sup>9</sup>	<i>Sushruta</i> <sup>10</sup>	<i>Ashtang Hridaya</i> <sup>11</sup>
1	<i>Guru</i> (Heavy)	<i>Somatmaka</i> (Cool like moon)	<i>Snigdha</i> (Unctuous)
2	<i>Shita</i> (Cold)	<i>Shukla</i> (Whitish)	<i>Somatmaka</i> (Cool like moon)
3	<i>Mrudu</i> (Soft)	<i>Sara</i> (Liquid or Movable in nature)	<i>Ishat lohita pitakam</i> (faint reddish yellow)
4	<i>Shlakshna</i> (Smooth)	<i>Vivikta</i> (Clear or Transparent)	
5	<i>Bahal</i> (Ease to get in minute channels)	<i>Mrutsna</i> (Slimy)	
6	<i>Madhur</i> (Sweet)	<i>Pranaytana uttamam</i> (Superior among all sites where <i>prana</i> dwells)	
7	<i>Sthira</i> (Stable)		
8	<i>Prasanna</i> (Cherish able)		
9	<i>Pichhila</i> (Sticky)		
10	<i>Snigdha</i> (Unctuous)		

### CHARACTERISTICS FEATURES OF OJA<sup>12</sup>

1. Color - Whitish, Red or Yellowish
2. Appearance – Resembles to *Ghee* (clarified butter)
3. Taste – like *Madhu* (Honey)
4. Smell – like *Laja* (Pori or Puffed rice)

### FUNCTIONS OF OJA<sup>13</sup>

As from above contexts it is very clear that the *oja* present inside the body is responsible for the strength, vigor, vitality of body on a gross aspect. But to be specific, *oja* has its own manifestations which are known to be functions of the same.

- 1) **Bala-** *Apara oja* especially is responsible to sustain the immunity in body. It provides the nutrition to body and its components by enhancing the immune strength. Besides this,



*apara oja* is also responsible for retarding the ageing process of body. This is done by reducing the oxidative stress at molecular level. The free radicals produced after every chain reaction is combined to form a compound to reduce the oxidative stress, and thus prevents ageing. This can be happen by the consistent nature of body tissues whose optimum nutritive structure is maintained by proper nourishment and essence provided by the *oja* to them.

- 2) ***Sthira upachita mamsata***- Along with nourishing the body and its components it plays a role to sustain the stability inside the body. With the help of *sthira guna* it can be said that *ojas* maintains integrity of body by bringing stability in muscle tissues as well. It thus helps to make a proper stability and growth of *mamsa dhatu* (muscle tissue) so as to build up a considerable strength, stamina inside body.
- 3) ***Sarva cheshta swapratighata***- All the actions which are needed to be performed continuously and inevitably throughout life needs power to keep on going which is supplied by *ojas*. It helps to perform physical, psychological, spiritual all actions continuously that too without any hindrances.

- 4) ***Swara varna prasado***- It also helps to develop your speech orientation, complexion.
- 5) With the help of *oja*, the external and internal *Indriyas* are able to perform their own functions without any hindrance throughout the lifetime.
- 6) ***Jeevana***- All life sustaining factors and components are stable due to existence of *Oja* in body.
- 7) ***Preenana***- Presence of *Oja* in the body is essential for proper growth, development and nourishment of organs and ultimately whole body

## IMMUNOLOGY IN AYURVEDA

Since ancient times practically *ojas* is a significant parameter with controversies. However, it cannot be practically dissociated even though they had mentioned its quantity. Thus it implies a measurable fact. Quantity wise its proportion must be maintained in body for manifestation of strength and immunity in body. The stream of immunology as today was uprooted from *Ayurveda* science itself also. The immune disorders at that time were classified broadly under three aspects of – *Oja Vistramsa*, *Oja Vyapat* and *Oja Kshaya*<sup>14</sup>, means the abnormality of *ojas* which itself implies *vyadhikshamatva* viz. immunity itself.

*Vyadhikshamatva* implies prevention of the occurrence of new disease and retarding the progression of existing disease. It is clearly stated for the subject to be disease free. Any disease to be retarded is mainly achieved by significantly positive and imposing status of *Ojabala* and *Dosha bala*.

The *oja bala* is then classified in three categories<sup>15</sup>-

- 1) *Sahaj bala* (Primary) - It is primary immunity which is gained or transferred from generation to generation.
- 2) *Kalaj bala* (Acquired) - It is a type of acquired immunity which is dependent on environmental factors such as climate, age.
- 3) *Yuktikrut bala* (Artificial) – It is the immunity which is either induced or gained by nutritive diet regimen, exercise and healthy workouts.

The immune disorders are classified broadly as – *Oja Vistramsa*, *Oja Vyapat* and *Oja Kshaya*. Where *oja vistramsa* may be understood by fluctuating immunity, unstability and autoimmune generated disorders; *oja vyapat* reveals hypersensitivity and allergic disorders while *oja kshaya* relates with immune deficiency diseases. The *oja vistramsa* thereby can be managed by *shodhan* and *stambhan* treatment modality which helps to restore the *sthira guna* of *oja*. Whereas *oja vyapat* can be managed by the herbal and other medicinal treasure mentioned in *Ayurveda* and which are known to induce immune response in body, thus enhancing the resistance power against diseases. *Oja kshaya* can be managed by implementation of both above so as to increase the *oja bala* in body which is essential to guard body against diseases.

**Table 2** Table showing symptoms of *oja dushti* mentioned by different *Acharyas*

Sr. No.	<i>Vistramsa</i> <sup>16</sup>	<i>Vyapat</i> <sup>17</sup>	<i>Kshaya</i> <sup>18</sup>
1	<b>Sandhi vishlesh</b> – lethargic and looseness in joints	<b>Stabdha guru gatrata</b> – feeling of stiffness and rigidity in body	<b>Murcha</b> – fainting or unconsciousness <b>Mamsa kshaya</b> – emaciation and muscle tissue wasting
2	<b>Gatra sadanam</b> – fatigue and weakness in body	<b>Vata shofa</b> – edematous swelling due to vitiation of <i>vata dosha</i>	<b>Moha</b> – giddiness, lack of decisive power
3	<b>Dosha chyavanam</b> – vitiated <i>doshas</i> migrates from their own locations and are capable to create disease where they gets lodged in body ( <i>kha-vaigunya</i> )	<b>Varna bheda</b> – change in normal complexion	<b>Pralapa</b> – irrelevant talk <b>Marana</b> – death

*Glani* – tiredness and prone to sleepy

<p>4 <i>Kriya sannirodha</i> – obstruction or hampering the physical, vocal and mental actions.</p>	<p><i>Nidra</i> – more sleepy</p> <hr/> <p><i>Tandra</i> - drowsiness</p>	<p><i>Charaka</i><sup>19</sup> -  <i>Bibheti</i> - constantly feeling under some threat, inferiority and negativity complex  <i>Durbala Abhikshna</i> – general debility  <i>Dhyayati</i> – constant worrying without any significant reason  <i>Vyathit indriya</i> – impairment or misjudgment of sense and motor organs.  <i>Dushchhaya</i> – loss of luster, complexion  <i>Durmana</i> – lack of confidence, self esteem  <i>Ruksha</i> – dry or rough skin and body  <i>Kshama</i> – blackish discoloration of body</p>
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**Factors responsible for oja kshaya<sup>20</sup>**

- |   |  |
|---|--|
| 1) <i>Abhighatat</i> – Trauma or any grievous injury  | 6) <i>Shramat</i> – Excessive physical workouts                |
| 2) <i>Kshayat</i> – Emaciation  | 7) <i>Akshudha</i> – Starvation, lack of nutritive diet        |
| 3) <i>Kopat</i> – Angriiness  | 8) <i>Ativyayama</i> – Excessive exercise                      |
| 4) <i>Shokat</i> – Constant under depression  | 9) <i>Atimadyapaan</i> – Excessive alcohol intake              |
| 5) <i>Dhyanat</i> – Cinstant worrying   | 10) <i>Ativyavaya</i> – Excessive sexual exercise              |
| 11) Excessive expulsion of <i>Kapha</i> (Mucoïd secretions), <i>Shonita</i> (Blood), <i>Mutra</i> (Urine) and <i>Purish</i> (Fecal matter). | irritating) and <i>Laghu</i> (light weighted) dietary regimen. |

**Factors nourishing oja-**

- |   |  |
|---|--|
| 1) <i>Mana prasannata</i> – satisfaction through psyche, happiness                                  | 4) Herbal drugs mentioned in <i>Jeevaniya gana</i> as like – <i>Jeevak</i> , <i>Rushbhak</i> , |
| 2) <i>Madhur</i> (Sweet), <i>Snigdha</i> (Unctous and nutritive), <i>Shita veerya</i> (Calm and not | <i>Ashwagandha</i> , <i>Kakoli</i> , <i>Ksheer kakoli</i> .                                    |



However the strength or power of body is assessed by the examining the relevant factors as mentioned below<sup>21</sup>-

1) **Sama Mamsa Pramana-** The person who is fledged with well developed, proportionate *mamsa* (muscle tissue) as per the age and other organs of body, even though while mentioning *praman* of all *dhatu*s *acharyas* had not mentioned about the *mamsa dhatu* but here it can be considered in a proportionate ratio as well.

2) **Sama Samhanana-** *Samhanana* indicates the well developed, proportionate body with all its components. This together forms the constitution of a physical body. This is also a necessary factor involved in adequacy of strength, power or stamina in an individual.

3) **Dhrudendriya-** The *Indriya* are meant to conjoin with their own objects and perceive the knowledge of particular aspect. It is also necessary that these *Indriya* must be stable, organized, well coordinated to work out the process and helps to attain and achieve stability and strength.

## DISCUSSION

*Ayurved* science accepts the *vata*, *pitta*, *kapha* these biological humors to be

regulating the body at physical level whereas *sattva*, *raja* and *tama* at psychological level. Nevertheless, the quantitatively measuring of these parameters is not possible yet but even though their actions and functions performed may be measured and are countable facts. The *vata dosha* is broadly responsible for all movement and regulatory activities inside body along with process of transduction, *pitta* whereas performs the process of transformation and conversion while *kapha dosha* is responsible for stability and general build up of proteins essential for growth and development of body. Moreover the *kapha dosha* has constitution of *Prithvi* and *Aapa mahabhuta* which are meant for structural development to provide *moorta swaropa* to any object. Thus this *kapha dosha* may resemble with *oja* which is said as *Somatmaka* due to presence of *Aapa mahabhuta*. The material which is stored in body and utilized as energy to sustain overall life activities and to combat against various diseases is *kapha dosha* which in other sense creates a defense system of body. Then any impairment in factors responsible for increase or decrease of *kapha dosha* leads to same of *oja*. So it is essential to store and protect the existing *oja*



or *kapha dosha* and related matter in body so as to sustain the immune response and keep the defense system of body active. It may be managed by *samshodhan* and *samsashaman* treatment modality but prior to that *Nidan parivarjanam* is main one. *Rasa* and *Rakta* in our body have capacity to combat against foreign bodies and virulent creating diseases in body as these are the two *dhatu*s having *gati* and flourishes as a media to circulate any substance whether harmful or harmless throughout the body. Thus *oja* is also termed as in context of the same *Rasa* when supplies useful, essential and beneficial substances throughout body which may help to build up a certain immunity. *Rasa-Rakta* contains variety of antibodies, white blood cells which are meant to fight against antigens and foreign particles and sustaining immunity. Most of these procedures include phagocytosis, pinocytosis, opsonization, agglutination, direct combat mechanism. All this is done by the cells dwelling in blood which are basically derived from the bone marrow tissue. There are also some cases where the antibodies or bodies own tissues have self-destructive capacities leading to auto-immune diseases. These are nothing but the intermediate products resulted prior to

completion of a any complete reaction. These substances sustain inside body and later on crown outside manifesting any symptom or any complete disease as well. This thing is termed as *Ama* in *Ayurveda*. The *Ama* conjoining with the *doshas* vitiate the *doshas* and seeking to any *strotovaigunya* or *khavaigunya* inside body results into proliferation of a disease. All these facts and things needed to go through before coming to a clean point over pathophysiology of immunity and immune related disorders.

## CONCLUSION

*Oja* which is omnipresent is essence of all the *dhatu*s is responsible for *bala*, immunity in body. Immunology has its roots in *Ayurved* science also which are refered through this *oja* and immune disorders as *oja vistramsa*, *oja vyapat* and *oja kshaya*. Many of daily routine factors are responsible for depletion of *oja* and nourishment of the same in body as like *ativyayama*, *ativyavay*, excessive thinking, depression, alcohol intake and felling of happiness, satisfaction, sweet and desirable food. Out of many synonyms of *oja*, *kapha* proves to be most suitable one. As the diet and medicines

enhancing *kapha dosha* are same improving the quality status of *oja* in body. The *sneha guna* is suggested as the unique of *kapha dosha* while *oja* is the *sneha* of all the *dhatu*s. *Oja* can also be closely related with the bone marrow tissue which produces the cells responsible for sustaining, developing and enhancing the immune response of body. *Rasa* (lymphatics and blood capillaries along with whole blood) is also one of the closely resembling synonyms of *oja* as it contains antibodies and cells which develop the immunity power of body. The stability, resistance, immunity and defense combat mechanism is very well achieved and sustained in body by *Oja*, *Kapha dosha* and *Shukra dhatu*. All these factors have *Dhairya* (Patience), *Dhruti* (Controlling power), *Kshama* (Forgivingness), *Priti* (Cheerfulness), *Bala* (Strength), *Vyadhikshamatva* (Immunity) as their ultimate function.

The immunity or resistance capita in body is altogether achieved by phagocytosis, pinocytosis, opsonization, agglutination. The recovering capacities of body are highly engrossed by steroids and modern medicines to restore the health are generously explained by in-built *oja*.



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