



## Review Article

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### A REVIEW ON PAOM (PRAKRITI, AGNI, OJAS, MANAS): THE FOUR DOMAINS OF IMMUNITY

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#### ABSTRACT

Ayurveda is a science that aims to treat disease as well as prevent the occurrence of a disease. Prevention of a disease depends on the status of the immune system that is present in an individual. Immune response varies from person to person. The reason behind this variation is still ambiguous. Prakriti, agni, ojas, and manas, the four domains explained in Ayurveda, have immense connections with our immune system. Innate immunity can be considered the weakest among Vata Prakriti individuals. Cellular metabolism and gut microbes, which come under the spectrum of agni, also play an essential role in the functioning of the immune response. Studies show that the emotional system and immune system are highly dependent. Ojas, the internal environment inside the body, can be considered the link between agni and men. Ojas itself is considered as immunity. An individual's immune system will be active based on the status of Prakriti, agni, manas and ojas.

**Keywords:** Prakriti, Agni, Ojas, Manas

#### INTRODUCTION

##### Prakriti

Prakriti can be considered as an individual's genotypic and phenotypic personality. Depending on the Prakriti, individuals can be classified under seven criteria. The physiological and psychological build of a person depends on the Prakriti.

An individual with Kapha Prakriti is considered to have much bala (strength) and vyadhi kshamatvam (immunity) compared to individuals having other Prakriti. This could be considered as the innate immunity of a person. If so, innate immunity will be weakest among vata Prakriti individuals as they are deemed to be having least bala and vyadhi kshamatvam.

Several studies suggest a relationship between immunity and the personality of individuals. If immune cells have different "personalities" just like human beings, one might wonder if there is a correlation between physiological, psychological and immunological personality. A recent meta-analysis investigated whether the five essential personality traits, often referred to as the "Big 5" personality traits<sup>1</sup> (openness to experience, conscientiousness, extraversion, agreeableness, and neuroticism), have specific immunological features or defined susceptibility to immune disorders. The study has shown a consistent association between conscientiousness and a reduced inflammatory response, as judged by the lower level of C-reactive protein (CRP) in subjects with this personality trait<sup>2</sup>.

Ground-breaking studies by Steve Cole and colleagues have further supported this concept and shown a specific association between the Big 5 and unique gene expression patterns in whole blood. Consistent with the other investigations, the study by Cole and colleagues showed that conscientiousness was associated with a reduced expression of proinflammatory factors.<sup>3</sup> We can consider that Innate immune cells are "extroverted," as they

always look out for something new from the outside world and continuously engage with the external environment.

Macrophages patrol tissues or organs, and monocytes and neutrophils quickly migrate to the site of infection during inflammation. Adaptive immune cells have an "introverted personality" because of their increased concern about creating an inner experience of life events, especially if they have been harmful to the host.

##### Agni

Agni can be considered a metabolic marker inside the body. When the functioning of agni is normal, it ensures normal metabolism. Here the word 'metabolism' implies different changes occurring in the body during the metabolism of food to cellular metabolism. The status of the agni and immune systems mirror each other. When one considers the broader importance of metabolism in fuelling cellular processes, it is not surprising that the transitions of immune cells from quiescence to activation and back to memory formation (at least for the adaptive immune cells) are highly dependent on and regulated by nutrients, metabolic intermediates, and the canonical regulators of cellular metabolism<sup>4</sup>.

Another factor that relates to the concept of the status of agni is the status of gut microbiota. Gut microbiota influences the maturation and development of immune cells, such as dendritic cells and T cells, while also regulating the synthesis of the cytokines IL-10 (suppresses Th-1 dominant proinflammatory response) and TGF- $\beta$  (promotes the development of regulatory T cells)<sup>5</sup> Lactobacillus species specifically have been recognized for their role in stimulating the innate immune response by acting as ligands for Toll-like receptors (TLR) and activating essential signalling pathways such as NF-k $\beta$ , mitogen-activated protein kinase, and peroxisome proliferator-activated receptor gamma,

all of which are involved in regulating cellular behaviours such as inflammatory responses<sup>6</sup>.

### Manas

There are studies suggesting emerging ideas that both the emotional and immune systems are highly “plastic.” The term plasticity has been used to indicate the ability to change and adjust continuously depending on external factors or living conditions. The emotional responses of the body and immune system are dynamic and constantly evolving. When we consider emotional stimuli of short duration, for example, acute, short-term psychological stress, studies have shown that these cause a selective and timely orchestrated immune response characterized by increased natural killer (NK) cells in the circulation.<sup>7-9</sup>

Down-regulation of signalling sensors of the innate immune system, such as Toll-like receptor pathways, has also been reported<sup>10</sup>. These effects seem to be linked to the release of catecholamines and their impact on leukocytosis.<sup>11-13</sup>

Several human studies have confirmed the link between a state of immunosuppression and the development of mental disorders. The most common condition that can be taken as an example is acquired immunodeficiency syndrome (AIDS). Most interestingly, and in line with what has been mentioned above, studies have found a correlation between lower CD4 counts and the emergence of emotional disorders in individuals who have recently acquired human immunodeficiency virus (HIV). A similar increased incidence of mental disorders after or before the immune disease diagnosis has been reported for systemic lupus erythematosus, multiple sclerosis, and rheumatoid arthritis.

### Ojas

The concept of Ojas can be considered as the bridge between the functioning of agni and manas. These three subdomains are interrelated, and their statuses are directly proportional. Psychological stress also impacts gut dysbiosis and permeability by increasing the corticotropin-releasing hormone and its effect on TNF $\alpha$  and other proinflammatory cytokines, which is evident in viral infections<sup>14</sup>. The body activates the fever response, which helps the immune system to clear the pathogen.<sup>15</sup>

In parallel to this, the host also experiences the sickness response,<sup>16</sup> e.g., “a coordinated set of adaptive behavioural changes” featured by “lethargy, depression, anxiety, malaise, loss of appetite, sleepiness, hyperalgesia.” The combined action of the emotional and immunological reactions induced by the infection has the ultimate aim of stopping the host from increasing the chances of worsening their condition. This is achieved by limiting the host's activity and interaction with other living beings, thus limiting exposure to potential further infection.

As ojas is the internal environment inside the body, it is vital for creating the necessary platform for the immune system to act.

### CONCLUSION

A mere supplement of Vitamin C does not enhance immunity among individuals. Instead, regimens to increase immunity should be planned based on an individual's Prakriti, agni, manas and ojas. It may vary from person to person, so only a person-specific approach can yield proper results. Ayurveda is a holistic science that advises different changes in the lifestyle of individuals based on PAOM. The path apathyas (dos and don'ts) mentioned while describing the treatment of each disease, the regimens explained to be done seasonally, the need for yoga and

pranayama, benefits of upavasam (fasting) etc., aims to enhance the immunity of individuals.

### REFERENCES

1. Goldberg LR. The structure of phenotypic personality traits. *Am Psychol.* 1993 (cited on 12/11/2021);48(1):26–34. Available from <https://www.ncbi.nlm.nih.gov/pubmed/8427480>
2. Luchetti M, Barkley JM, Stephan Y, Terracciano A, Sutin AR. Five-factor model personality traits and inflammatory markers: new data and a meta-analysis. *Psychoneuroendocrinology.* 2014 (Cited on 5/11/2021);50:181–193. Available from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4544833>
3. Vedhara K, Gill S, Eldesouky L. *et al.* Personality and gene expression: do individual differences exist in the leukocyte transcriptome? *Psychoneuroendocrinology.* 2015 (cited on 5/11/2021);52:72–82. Available from <https://www.ncbi.nlm.nih.gov/pubmed/25459894>
4. Annu. Metabolic regulation in immune response. *Rev Immunol.* 2014;32:609–634
5. Bermudez-Brito M, Plaza-Diaz J, Munoz-Quezada S, Gomez-Llorente C, Gil A. Probiotic Mechanisms of Action. *Ann Nutr Metab.* 2012 (cited On 11/11/2021);61:160–74. Available from <https://www.ncbi.nlm.nih.gov/pubmed/23037511>
6. Lescheid DW. Probiotics as regulators of inflammation: A review. *Funct Foods Health Dis.* 2014;4:299–311.
7. Bosch JA, Berntson GG, Cacioppo JT, Marucha PT. Differential mobilization of functionally distinct natural killer subsets during acute psychologic stress. *Psychosom Med.* 2005;67(3):366–375.
8. Delahanty DL, Wang T, Maravich C, Forlenza M, Baum A. Time-of-day effects on the response of natural killer cells to acute stress in men and women. *Health Psychol.* 2000;19(1):39–45.
9. Dhabhar FS, Malarkey WB, Neri E, McEwen BS. Stress-induced redistribution of immune cells - from barracks to boulevards to battlefields: a tale of three hormones - Curt Richter Award winner. *Psychoneuroendocrinology.* 2012; 37(9):1345–1368.
10. Breen MS, Beliakova-Bethell N, Mujica-Parodi LR. *et al.* Acute psychological stress induces a short-term variable immune response. *Brain Behav Immun.* 2016;53:172–182.
11. Benschop RJ, Rodriguez-Feuerhahn M, Schedlowski M. Catecholamine-induced leukocytosis: early observations, current research, and future directions. *Brain Behav Immun.* 1996;10(2):77–91.
12. Atanackovic D, Brunner-Weinzierl MC, Kroger H, Serke S, Deter HC. Acute psychological stress simultaneously alters hormone levels, recruitment of lymphocyte subsets, and production of reactive oxygen species. *Immunol Invest.* 2002;31(2):73–91
13. Kimura K, Ohira H, Isowa T, Matsunaga M, Murashima S. Regulation of lymphocytes redistribution via autonomic nervous activity during stochastic learning. *Brain Behav Immun.* 2007;21(7):921–934.
14. Vanuytsel T, Van Wanrooy S, Vanheel H, Vanormelinger C, Verschuere S, Houben E, *et al.* Psychological stress and corticotropin-releasing hormone increase intestinal permeability in humans by a mast cell-dependent mechanism. *Gut.* 2014;63:1293–9.
15. Launey Y, Nessler N, Malledant Y, Seguin P. Clinical review: fever in septic ICU patients—friend or foe? *Crit Care.* 2011;15(3):222.

16. Shattuck EC., Muehlenbein MP. Human sickness behaviour: ultimate and proximate explanations. *Am J Phys Anthropol.* 2015;157(1):1–18.

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