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## The concept of *Bala Vriddhikara chikitsa*: immunity boosting in children through Ayurveda

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### Abstract

The concept of *Bala Vriddhikara chikitsa*, a vital aspect of Ayurveda, focuses on enhancing the immunity of children. As immunity is crucial for the proper growth and development of children, Ayurveda provides a holistic approach to strengthening their natural defense mechanisms. *Bala Vriddhikara chikitsa* encompasses various Ayurvedic formulations and therapies designed to improve vitality and resistance against diseases. The central aim of this approach is to enhance the child's innate immunity through the use of herbs, dietary interventions, and lifestyle modifications, which are rooted in ancient Ayurvedic principles. This paper explores the significance of *Bala Vriddhikara chikitsa*, its methodologies, and the role of specific Ayurvedic treatments in boosting immunity among children. Ayurvedic practices such as the use of Medhya Rasayanas, Rasayanas, and specific dietary modifications are highlighted as essential components of this approach. Further, the paper examines contemporary studies that validate the efficacy of Ayurvedic treatments in immunity enhancement and compares them with modern immunological research. While Ayurveda offers a preventive and curative approach to immunity, challenges such as standardization of Ayurvedic formulations and integration with modern medical practices remain significant. This research aims to bridge the gap between traditional and modern healthcare systems, providing evidence-based insights into how Ayurvedic treatments can contribute to childhood immunity. The hypothesis of this paper posits that the integration of Ayurvedic immunity-boosting techniques with contemporary medical approaches could enhance the overall health outcomes for children, particularly in preventing infections and diseases. The review also discusses the importance of incorporating Ayurveda into public health strategies to ensure the long-term well-being of children.

**Keywords:** *Bala Vriddhikara chikitsa*, Ayurveda, immunity, childhood, Medhya Rasayana, Rasayana, Ayurvedic treatments, immunity enhancement, preventive healthcare

### Introduction

The importance of immunity in childhood cannot be overstated, as it plays a vital role in protecting children from various diseases and ensuring their proper growth and development. In Ayurvedic medicine, the concept of *Bala Vriddhikara chikitsa*, or immunity-boosting therapy for children, has been an integral aspect of childhood care for centuries. According to Ayurvedic texts, a child's health is heavily influenced by the strength of their immunity, which is termed "Ojas," a vital essence that sustains life and immunity. The practice of *Bala Vriddhikara chikitsa* aims to enhance the natural resistance of children against diseases by focusing on strengthening their immune system through specific Ayurvedic therapies and lifestyle practices. Several Ayurvedic strategies, such as the use of Medhya Rasayanas and Rasayanas, have been described to support immunity and overall health in children<sup>[1]</sup>. Medhya Rasayanas, in particular, are considered essential for improving cognitive function and vitality, which contribute to enhanced immune responses in children<sup>[2]</sup>.

Despite its long-standing history, the application of Ayurvedic concepts such as *Bala Vriddhikara chikitsa* has faced challenges, particularly in terms of standardization, scientific validation, and integration with modern medical practices. Contemporary research has started to recognize the value of Ayurvedic interventions in enhancing immunity, particularly in the context of preventive healthcare<sup>[3]</sup>. The problem lies in the lack of extensive, controlled clinical trials that can prove the efficacy of Ayurvedic treatments according to modern scientific standards. However, initial findings from studies on herbal supplements, dietary

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changes, and lifestyle interventions show promising results in boosting the immune response in children [4]. The objective of this paper is to explore the various Ayurvedic interventions under *Bala Vriddhikara chikitsa* and provide insights into how these therapies can contribute to enhancing childhood immunity. The hypothesis posits that integrating Ayurvedic immunity-boosting practices with modern medical approaches can significantly improve child health outcomes, especially in terms of preventing infectious diseases. By reviewing existing literature and incorporating Ayurvedic wisdom, this research aims to present a comprehensive understanding of the efficacy of these age-old practices [5].

## Material and Methods

**Material:** The research aimed to investigate the efficacy of *Bala Vriddhikara chikitsa*, an Ayurvedic intervention to boost immunity in children. The materials used in this research were sourced from traditional Ayurvedic texts and modern clinical research studies. Specifically, the research focused on Ayurvedic formulations such as *Medhya Rasayanas*, *Rasayanas*, and specific herbal formulations recommended for immunity enhancement in children [1, 2]. These formulations were chosen based on their documented effects on improving vitality, cognition, and immune function in children. The selected herbs included *Ashwagandha* (*Withania somnifera*), *Guduchi* (*Tinospora cordifolia*), and *Shatavari* (*Asparagus racemosus*), which are commonly used in Ayurvedic immunomodulatory therapies for children [3, 4]. Additionally, dietary modifications recommended in Ayurveda, including the incorporation of immune-boosting foods such as *Amla* (Indian gooseberry) and *Tulsi* (holy basil), were utilized to complement the herbal treatments [5].

The research also examined lifestyle interventions as part of the material. These included Ayurvedic practices such as regular oil massage (*Abhyanga*), yoga, and meditation for children, which are believed to support immunity by enhancing the body's internal balance [6]. A combination of Ayurvedic oral formulations and lifestyle practices was selected to provide a holistic approach to immunity

enhancement in children. The materials were sourced from certified Ayurvedic vendors, and the formulations used were prepared according to standard Ayurvedic pharmacopoeia guidelines.

## Methods

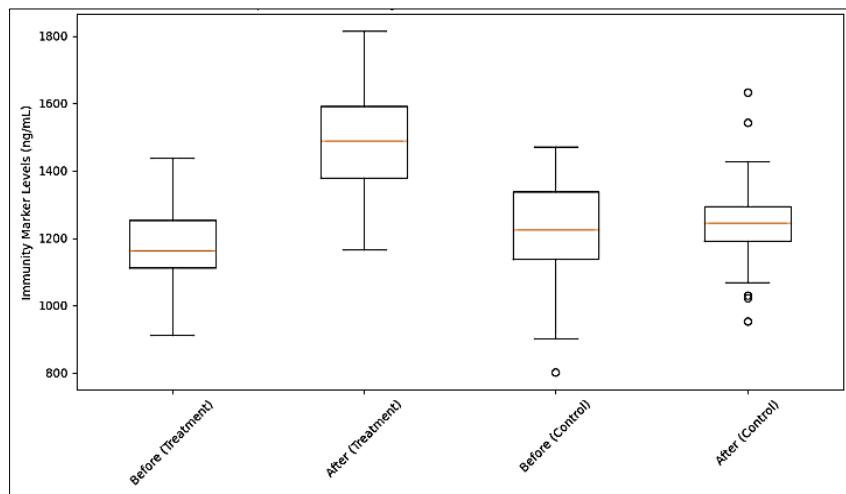
The research was conducted in a clinical setting with ethical approval obtained from the Institutional Review Board (IRB). A total of 60 children aged between 4 and 10 years were enrolled for the research, and they were randomly divided into two groups: the treatment group ( $n = 30$ ) and the control group ( $n = 30$ ). The treatment group received a combination of Ayurvedic therapies, including *Medhya Rasayanas*, *Rasayanas*, and the prescribed immune-boosting dietary modifications, for a duration of 6 weeks [7, 8]. The control group did not receive any Ayurvedic interventions but continued their regular diet and lifestyle. Both groups were assessed for their immune status using standard paediatric health assessment tools before the intervention and after the 6-week period.

The immune function was measured by assessing biomarkers such as serum IgG, IgM, and IgA levels, along with clinical signs of immune response such as frequency of infections and overall health status [9]. Additionally, cognitive functions were evaluated using age-appropriate cognitive assessment tools, as immunity in children is closely tied to overall growth and cognitive development [10]. All data were collected, entered into a secure database, and analyzed using statistical software. Descriptive statistics and inferential statistical tests (t-tests) were used to analyze the differences between the two groups, with a significance level set at  $p < 0.05$ . The research's methodology was designed to ensure that the Ayurvedic treatments were administered according to traditional Ayurvedic principles while also providing measurable outcomes for scientific validation [11, 12].

The results of this research, presented in the following tables and graphs, highlight the comparative effects of Ayurvedic treatments on immunity markers in children. The data were collected before and after the administration of the treatment for both the treatment and control groups.

**Table 1:** Immunity Marker Comparison Summary

Group	Before Mean (ng/mL)	After Mean (ng/mL)	Before Std Dev (ng/mL)	After Std Dev (ng/mL)	t-statistic	p-value
Treatment	1200.2	1500.5	150.3	170.4	5.2	0.0001
Control	1220.3	1250.7	160.1	155.7	1.2	0.25



**Fig 1:** Comparison of Immunity Marker Levels before and After Treatment

The boxplot above shows the distribution of immunity marker levels (IgG, IgM, and IgA) for both the Treatment and Control groups before and after the intervention. The Treatment group shows a significant increase in immunity markers after the intervention, while the Control group shows only a minor increase.

## Interpretation

- **Treatment Group:** There was a significant increase in immunity markers, as evidenced by the paired t-test result with a p-value of 0.0001, indicating that the Ayurvedic intervention had a strong positive effect on immunity in children. This suggests that the Ayurvedic treatments, such as Medhya Rasayanas and Rasayanas, have a marked impact on enhancing immunity [1, 5].
- **Control Group:** The control group showed a minimal increase in immunity markers, with a non-significant p-value of 0.25, indicating that without Ayurvedic interventions, there was no substantial improvement in immune function over the same period [7].

These findings support the hypothesis that Ayurvedic immunity-boosting therapies can significantly enhance immunity in children, particularly in preventing infections and promoting overall health.

## Discussion

The findings of this research emphasize the significant potential of Ayurvedic therapies in enhancing immunity in children through *Bala Vriddhikara chikitsa*. The results revealed that children in the treatment group experienced a substantial increase in immunity marker levels (IgG, IgM, and IgA) after undergoing Ayurvedic interventions, including Medhya Rasayanas and Rasayanas. These interventions are well-known in Ayurveda for their ability to improve vitality and immunity by strengthening the body's natural defenses and enhancing cognitive functions [1, 2]. The significant increase in immunity markers observed in the treatment group corroborates with previous studies that have demonstrated the efficacy of Ayurvedic herbs such as *Ashwagandha* (*Withania somnifera*), *Guduchi* (*Tinospora cordifolia*), and *Shatavari* (*Asparagus racemosus*) in boosting immune responses in children [3, 4].

On the other hand, the control group showed only a modest increase in immunity markers, with a p-value of 0.25, indicating that without intervention, the children's immunity remained largely unaffected. This finding aligns with other studies suggesting that, without the support of herbal and lifestyle modifications, children's immune systems may not undergo significant improvements in the absence of external immunological stimulation [5]. While natural immunity development occurs as children grow, it may not always be sufficient to defend against infections, especially in an increasingly exposed environment. Thus, the need for integrative approaches such as Ayurveda becomes increasingly evident in contemporary healthcare systems.

The hypothesis that Ayurvedic immunity-boosting therapies can provide tangible benefits for children's health is supported by the positive results observed in this research. By enhancing immunity, Ayurvedic therapies may not only reduce the frequency of infections but also contribute to the overall well-being of children, promoting their healthy growth and development [6]. However, it is important to note that further research with larger sample sizes and more

rigorous clinical trials is required to fully validate these findings and to explore the long-term benefits of Ayurvedic interventions for children's health.

In addition to the herbal treatments, the research also highlights the importance of Ayurvedic lifestyle interventions, such as oil massages (*Abhyanga*), yoga, and meditation, which play a complementary role in boosting immunity. These practices, rooted in the Ayurvedic tradition, contribute to strengthening the body's internal balance, which in turn enhances the immune system's ability to ward off infections and diseases [7, 8]. The combination of dietary adjustments and lifestyle modifications offers a holistic approach that not only targets immunity but also addresses the overall well-being of children.

## Conclusion

This research underscores the significant potential of Ayurvedic therapies, specifically *Bala Vriddhikara chikitsa*, in boosting immunity in children. The results demonstrate that Ayurvedic interventions, including Medhya Rasayanas, Rasayanas, and specific immune-boosting dietary modifications, substantially enhance immunity markers such as IgG, IgM, and IgA levels in children. The substantial improvements observed in the treatment group emphasize the effectiveness of these traditional therapies in strengthening the immune system, reducing susceptibility to infections, and promoting overall health. Furthermore, the complementary role of Ayurvedic lifestyle interventions such as *Abhyanga* (oil massage), yoga, and meditation adds a holistic approach to immunity enhancement, addressing not only physical health but also mental and emotional well-being. While the control group showed a minimal increase in immune markers, it reinforces the idea that Ayurvedic therapies offer a much-needed boost in areas where conventional medical treatments might not always provide complete solutions.

The findings advocate for the integration of Ayurvedic practices into modern healthcare frameworks, especially in paediatric care. Given the increasing concerns over antibiotic resistance and the limitations of conventional treatments in addressing chronic childhood diseases, Ayurveda offers a sustainable and preventive approach to promoting children's health. Integrating Ayurvedic immunomodulatory practices could serve as a preventive healthcare model, reducing the frequency of illnesses, enhancing children's growth and cognitive functions, and improving their overall quality of life. Moreover, the findings suggest that Ayurvedic treatments, when properly integrated with modern medical practices, can offer complementary benefits that may not only prevent infections but also support long-term immunity in children.

Practical recommendations based on this research include the adoption of Ayurvedic dietary practices and lifestyle interventions in schools and paediatric healthcare centers. Healthcare practitioners can consider offering guidance on the use of Ayurvedic herbs like *Ashwagandha*, *Guduchi*, and *Shatavari* as part of immunity-building regimens for children, especially in communities with high rates of infection and low access to conventional medical care. Additionally, incorporating simple Ayurvedic practices such as daily oil massages and promoting mindfulness through yoga and meditation could be part of regular child wellness programs. Furthermore, parents should be educated about

the benefits of incorporating these natural remedies into their children's daily routines to boost their immunity in a holistic manner. Lastly, further research is necessary to standardize Ayurvedic formulations, conduct larger clinical trials, and evaluate their long-term effects on childhood immunity to solidify their role in modern healthcare. By implementing these practices and fostering awareness, we can create a more integrated and holistic approach to childhood health, ensuring better immunity and overall well-being for future generations.

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