

# Anemia in Adolescence

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## ABSTRACT

Adolescent anemia is a global health problem. Prevalence of anemia in girls in India is estimated to be around 56%. Various risk groups are prone to anemia and it leads to long-term consequences. Government has launched national programs to fight adolescent anemia by identifying high-risk groups, supplementing with iron and folic acid tablets and raising awareness about the nutritional anemia.

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## INTRODUCTION

The World Health Organization (WHO) defines adolescence as the period of life between 11 and 19 years.<sup>1</sup> These are most formative years in terms of physical, intellectual, emotional, psychological, and behavioral development. Also, this is the most vulnerable period for development of anemia, especially in adolescent girls. Iron deficiency anemia (IDA) is a major public health concern both nationally and globally.<sup>2</sup> Adolescent age group is also the opportunity for us to correct nutritional deficiencies to prevent the long-term consequences. Among adolescents, girls are more vulnerable and more neglected as far as their nutrition, health, education, and overall growth and development is concerned.

## PREVALENCE OF ANEMIA

It has been estimated that the prevalence of anemia in adolescent girls in India is around 56%, which means at any point of time 64 million adolescent girls are suffering from anemia.<sup>3</sup> In India, various studies conducted in different regions show the prevalence of anemia as follows: Madhya Pradesh 52.5%, Gujarat 37%, Uttar Pradesh 56.3%, Andhra Pradesh 77.73%, Tamil Nadu 58.4%, Maharashtra 85.4%, Shimla 21.5%, Karnataka 41.5%.<sup>4</sup>

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## RISK GROUPS FOR ADOLESCENT ANEMIA

- Underweight and malnourished adolescents
- Low dietary intake and increased demands due to growth spurt. Iron requirement peaks in adolescence due to rapid growth spurt and increase in blood volume and lean body mass. The iron requirement increases from preadolescent levels of 0.7–0.9 to 1.37–1.88 mg per day for adolescent boys and 1.40 to 3.27 mg per day for adolescent girls.<sup>5</sup>
- Adolescents with chronic illness
- Heavy menstrual blood loss (>80 mL)
- Obese and overweight adolescents (iron deficiency in these individuals may be due to low-quality food and increased body requirements due to increased weight.<sup>6</sup>
- Hand hygiene and worm infestation in India is also a major contributor of anemia in girls. One study has reported that one third of girls had worm infestation,<sup>7</sup> and prevalence of anemia is almost double in these girls as compared with girls who were not having worm infestation.
- Adolescent pregnancy is also one of the major risk factors for IDA. The culture of early marriage and pregnancy further depletes their already low stores of iron and folic acid. Social pressure does not allow them to delay first pregnancy after marriage and majority of young adolescent girls conceive soon after marriage.

## ADVERSE EFFECTS OF ANEMIA IN ADOLESCENCE

As adolescent age is the formative years for development, anemia at this stage of life has some long-term consequences, such as

- Stunted growth
- Poor school performance, reduced attention span, memory loss, increased school drop-out rate
- Reduced immunity and increased infection rate
- Delay in onset of menarche and menstrual irregularities if already attained
- If anemic girl becomes pregnant, chances of intrauterine growth restriction, low birth weight, increased perinatal morbidity and mortality, and also increased maternal morbidity and mortality<sup>8</sup>
- Directly or indirectly it affects the national and economic growth as well. It can have economic implications and

can be estimated by the costs incurred to prevent this condition, impact of maternal and infant morbidity and mortality, and also due to impaired mental development and poor capital formation of the country.

## HOW TO FIGHT ADOLESCENT ANEMIA?

It requires a multipronged approach to fight this multifactorial disorder. Adolescence is the best time to intervene not only because of growth and development but also because we can catch them easily through school health program involvement and get good results.

Strategic focus is very important to prevent IDA from the point of view of productivity gains from proper physical and mental development and improved pregnancy outcomes, lesser economic burden, and more intergenerational benefits.

## ADOLESCENT ANEMIA CONTROL PROGRAMME (AACP)

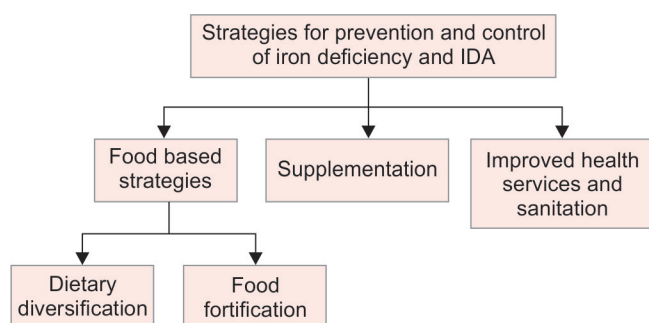
To overcome the problem of adolescent anemia, the Government of India has launched National Programme for Control of Adolescent Anaemia in conjunction with United Nations Children's Fund.

### Objectives of AACP

- Providing iron and folic acid supplementation on a weekly basis
- Biannual deworming
- Dietary education and nutritional counseling
- Formation of Balika Mandals and identifying peer educators
- Information, Education and Communication interventions to amplify family and community endorsements.

Flow Chart 1 shows the strategies for prevention and control of IDA. Source: Iron deficiency anaemia:

**Flow chart 1:** Shows the strategies for prevention and control of IDA.



Assessment, prevention and control. A guide for programme managers; WHO 2001 – WHO/NHD/01.3

## Prevention of Anemia in Adolescent Girls (Source: [www.cdc.gov](http://www.cdc.gov))

- Encourage them to take iron-rich diets
- Guiding them in optimizing adequate iron-rich diets
- Screening of all nonpregnant women for anemia starting in adolescence every 5 to 10 years through routine health examinations
- Screening of women who are at risk of IDA (heavy menstrual bleeding, worm infestation, low-iron diets). They should be screened annually.

## Treatment of Anemia in adolescent Girls (Source: [www.cdc.gov](http://www.cdc.gov))

- Counseling them for correction of anemia through iron-rich diets
- Prescribing iron supplements 60 to 120 mg per day.
- For cases of confirmed anemia, iron treatments should continue for at least 2 to 3 months.
- If after 4 weeks also, anemia does not respond in spite of iron-rich food intake and adhering to treatment, further evaluation is required.

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