ADOLESCENT ANEMIA

National Health Mission
Deptt. of Health & Family Welfare
Govt. of Odisha.
Is Anaemia A Public Health Importance?
Anaemia is a condition in which the number of RBCs, and consequently their oxygen carrying capacity, is insufficient to meet the body’s physiological needs.

What is Anaemia?
What is the meaning of anemia?

- In its broadest sense, anemia is a functional inability of the blood to supply the tissue with adequate $O_2$ for proper metabolic function.
- Anemia is not a disease, but rather the expression of an underlying disorder or disease.
What happens in anemia?

- Anemia is usually associated with decreased levels of hemoglobin and/or a decreased packed cell volume (hematocrit), and/or a decreased RBC count.

- Occasionally there is an abnormal hemoglobin with an increased O2 affinity resulting in an anemia with normal or raised hemoglobin levels, hematocrit, or RBC count.
What is normal Hemoglobin value in Blood?

Hemoglobin concentration in grams/deciliter -

- At birth the normal range is 13.5-20 g/dl
- The normal range for
  - males is 13.5-17.5 g/dl
  - females is 12-16 g/dl

RBC indices – these utilize results of the RBC count, hematocrit, and hemoglobin.

- At birth the normal range is 98-123
- In adults the normal range is 80-100
# When we call one Anemic?

<table>
<thead>
<tr>
<th>Age Groups</th>
<th>No Anaemia</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children 6–59 months</td>
<td>≥ 11</td>
<td>10 – 10.9</td>
<td>7 – 9.9</td>
<td>&lt; 7</td>
</tr>
<tr>
<td>Children 5–11 years of age</td>
<td>≥ 11.5</td>
<td>11 – 11.4</td>
<td>8 – 10.9</td>
<td>&lt; 8</td>
</tr>
<tr>
<td>Children 12–14 years of age</td>
<td>≥ 12</td>
<td>11 – 11.9</td>
<td>8 – 10.9</td>
<td>&lt; 8</td>
</tr>
<tr>
<td>Non pregnant women (15 years and above)</td>
<td>≥ 12</td>
<td>11 – 11.9</td>
<td>8 – 10.9</td>
<td>&lt; 8</td>
</tr>
<tr>
<td>Pregnant Women</td>
<td>≥ 11</td>
<td>10 – 10.9</td>
<td>7 – 9.9</td>
<td>&lt; 7</td>
</tr>
<tr>
<td>Men</td>
<td>≥ 13</td>
<td>11 – 12.9</td>
<td>8 – 10.9</td>
<td>&lt; 8</td>
</tr>
</tbody>
</table>
What are the Sign & symptoms of

- Easy fatigue and loss of energy.
- Unusually rapid heart beat, particularly with exercise.
- Shortness of breath and headache, particularly with exercise.
- Difficulty concentrating.
- Dizziness.
- Pale skin.
- Leg cramps.
- Insomnia.
What Causes Anemia?

a) Nutritional: deficiency of these nutrients due to

- Low Dietary intake of iron

and

- Low bio-availability

  - Tea with meal
  - Phytic acid and fibre in bran of cereals
  - Calcium phosphate supplement with meal
  - Phosphvitin in egg
Causes of Anaemia.....continued

b) Blood loss or destruction of blood cells due to:

- Malaria
- Parasitic (Hook/round worm) infestation
- Blood loss during menstruation
- Delivery

In addition: During adolescence & pregnancy iron needs are very high.
50% of Anaemia is due to Iron deficiency
What are the Consequences of Anaemia

• Reduced Immunity
• Decreased level of concentration and lack of interest in work
• Poor school performance
• Poor work capacity, low energy & fatigue
• Poor productivity
How to Control Iron Deficiency Anaemia?

- Food-Based Approach
  - Diversification of Food
  - Fortification of food
- Prevention of malaria
- IFA Supplementation
- Deworming
What are the foods prevent Anemia?

- Green leafy vegetables and fruits
- Liver, egg, fish, meat
- Grains - wheat, jowar, bajra, sprouted pulses, ground nut, sesame, jaggery, dried fruits
- Vitamin C rich foods help in absorption of iron. Citrus fruits (oranges, lemon), Indian gooseberry (Amla), apple, pear are rich in vitamin C.
A Snapshot of Anemia in India

Trend in Prevalence of Anemia among Children and Women

High Prevalence across all ages
Slow progress in most of the States

- 58% of children (6-59 months)
- 54% of adolescent girls (15-19 years)
- 29% of adolescent boys (15-19 years)
- 53% of women in their reproductive age
- 50% of pregnant women
- 58% of breastfeeding mothers

Trend in Prevalence of Anemia among Children and Women:
- NFHS 2: Children 74%, WRA (15-49 yrs) 52%
- NFHS 3: Children 69.4%, WRA (15-49 yrs) 55.2%
- NFHS 4: Children 58.5%, WRA (15-49 yrs) 53.1%
Anemia control efforts in India started in 1970 with supplementation of Iron and folic acid across age groups. Anemia level in various population groups remained high, IFA coverages remained less than 30%, and more than 50% cases of anemia attributed to Iron deficiency.
Anemia Among adolescent Girls (10–19 years)

- India
- Puducherry
- Gujarat
- Punjab
- Telangana
- Daman & Diu
- Lakshadweep
- Bihar
- Andhra Pradesh
- West Bengal
- Haryana
- Jharkhand
- Chandigarh
- Dadra & Nagar Haveli

Anemia Among adolescent Girls (10–19 years)
Anemia Among adolescent BOYs (10–19 years)
<table>
<thead>
<tr>
<th>Age group</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 – 59 months of age at VHND ensure by ASHAs</td>
<td>• Biweekly, 1 ml Iron and Folic Acid syrup</td>
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<tr>
<td></td>
<td>• Each ml of Iron and Folic Acid syrup containing 20 mg elemental Iron + 100 mcg of Folic Acid</td>
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<tr>
<td></td>
<td>• Bottle (50ml) to have an ‘auto-dispenser’</td>
</tr>
<tr>
<td>5– 10 years children at schools on Monday</td>
<td>• Weekly, 1 Iron and Folic Acid tablet</td>
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<tr>
<td></td>
<td>• Each tablet containing 45 mg elemental Iron + 400 mcg Folic Acid</td>
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<tr>
<td></td>
<td>• Sugar–coated, pink colour</td>
</tr>
<tr>
<td>Adolescent girls and boys, 10–19 years of age at schools in</td>
<td>• Weekly, 1 Iron and Folic Acid tablet</td>
</tr>
<tr>
<td>Monday (Out of school girls at AWCs)</td>
<td>• Each tablet containing 60 mg elemental iron + 500 mcg Folic Acid</td>
</tr>
<tr>
<td></td>
<td>• Sugar–coated, blue color</td>
</tr>
<tr>
<td>Pregnant women and lactating mothers</td>
<td>• Daily, 1 Iron and Folic Acid tablet starting from the fourth month of pregnancy (that is from the second trimester), continued</td>
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<tr>
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<td>• Throughout pregnancy (minimum 180 days during pregnancy)</td>
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<td>• To be continued for 180 days, post–partum</td>
</tr>
<tr>
<td></td>
<td>• Each tablet containing 60 mg elemental iron + 500 mcg Folic Acid</td>
</tr>
<tr>
<td></td>
<td>• Sugar–coated, red colour</td>
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</tbody>
</table>
Known Side effects of IFA

1. Epigastric discomfort
   - Nausea, diarrhoea or constipation
2. Dark stools
   - Body excretes the iron it does not need
3. Metallic taste

These effects gradually reduce when IFA is taken on full stomach and taken regularly.
## How to take IFA tablet – Do’s and Don’ts

<table>
<thead>
<tr>
<th>Dos</th>
<th>Don’ts</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Take single tablet</td>
<td>• Don’t chew</td>
</tr>
<tr>
<td>• Swallow the tablet</td>
<td>• Don’t crush</td>
</tr>
<tr>
<td>• Eat on full stomach</td>
<td>• Don’t break</td>
</tr>
<tr>
<td>• Take one glass of water after having the tablet</td>
<td>• Don’t take on empty stomach</td>
</tr>
<tr>
<td></td>
<td>• Don’t take with milk</td>
</tr>
</tbody>
</table>
Thank You

Anemia
Free India