

WHY GUJARAT'S ANEMIA PROBLEM WON'T BE SOLVED BY IRON TABLETS ALONE

— EVIDENCE FROM THE FIELD AND THE POLICY ROOM



Gujarat is one of India's most economically advanced states. It has paved highways, industrial corridors, and a GDP that outpaces most of its neighbors. And yet, more than six in ten pregnant women and adolescent girls in the state are anemic. Not improving. Not plateauing. Still stubbornly, alarmingly high.

This is the uncomfortable truth that a comprehensive 2025 biochemical and dietary assessment — conducted by AIIMS Rajkot in collaboration with the State Health System Resource Centre, Gujarat — has now put into sharp relief. The findings challenge long-held assumptions about what is driving anaemia, and demand a fundamental rethink of how we respond to it.

64.2%

Pregnant women with anaemia
across 10 districts

60.9%

Adolescent girls affected, rising to
75% in some districts

5,620

Participants across Anand, Dahod,
Navsari, Jamnagar & more

The Iron Myth

Ask most people what causes anemia, and they'll say iron deficiency. It's the assumption baked into decades of policy. It's why the government distributes Iron-Folic Acid (IFA) tablets at scale. It's the foundation of the Anemia Mukh Bharat programme

The problem? The data tells a different story.

"Among pregnant women with anemia, only 17.2% had absolute iron deficiency. Among adolescent girls, it was 21.2%. The vast majority — over 80% in both groups — had anemia driven by something else entirely."

What is driving the rest? The study points to a cascade of overlapping deficiencies: Vitamin B12, folate, protein-energy malnutrition, chronic inflammation, and in some cases, inherited blood disorders like beta-thalassemia trait and sickle cell. Anemia here is not a single disease. It is a symptom of systemic nutritional failure.

Key nutritional gaps identified:

1. **Vitamin B12 deficiency:** 69.9% of adolescent girls and 60.3% of pregnant women — the single most widespread nutritional gap found
2. **Folate deficiency:** Present in 37% of pregnant women and 26.9% of adolescents, limiting red blood cell production
3. **Chronic inflammation:** Elevated CRP found in 34.7% of pregnant women and 29.7% of girls — blocking iron from being used even when present
4. **Protein malnutrition:** Low prealbumin in 33.3% of pregnant women and 24.4% of girls, hampering overall nutritional function

Who is most at risk — and why

Geography matters enormously. Tribal pregnant women had an anaemia rate of 71.2%; tribal adolescent girls reached 73.6%. Districts like Navsari (74.3%), Dahod (74.4%), and Sabarkantha (75.0%) bore the heaviest burdens. Urban areas, while still alarming, fared comparatively better.

But geography is really a proxy for something deeper. The study found strong associations between anaemia and illiteracy (74.7% prevalence among illiterate women), living in temporary housing, belonging to Scheduled Tribe households, having no health insurance, and worrying about whether the family will have enough food. These are not medical variables. They are social ones.

Diet compounds everything. Over 68% of pregnant women had low food diversity scores. Predominantly vegetarian diets — the norm across much of Gujarat — correlate with higher anemia prevalence, because plant-based iron is poorly absorbed, especially when paired with the tea that most families drink throughout the day.

“Low dietary diversity, Vitamin B12 deficiency, and chronic inflammation are more predictive of anemia than iron deficiency alone — yet programmes remain iron-centric.”

The IFA paradox

Perhaps the most striking finding in the report is what happens when women actually take their iron tablets. Among pregnant women who reported consuming IFA supplements, 64.9% were still anemic. Among adolescent girls, 62.1% were still anemic despite taking the tablets.

IFA supplementation is necessary — but nowhere near sufficient. A programme that treats only iron deficiency in a population suffering primarily from B12, folate, protein, and inflammation-related anemia will always underperform.

This is not an argument against IFA. Compliance needs strengthening — counselling on timing (with lemon water, not tea), side effect management, and supervised intake all remain important. But the evidence strongly suggests that the intervention portfolio needs to be expanded.

What needs to change

Both the AIIMS Rajkot report and the accompanying SHSRC policy brief converge on a set of urgent course corrections. They are not easy, but they are clear.

1. **Move from iron-only to multi-micronutrient supplementation.** Vitamin B12, folate, and broader nutritional support must be integrated into existing IFA distribution frameworks.
2. **Prioritize tribal and high-burden districts** with district-specific action plans, mobile health units, and targeted screening.
3. **Promote dietary diversity aggressively** — kitchen gardens, food fortification through the Public Distribution System, and IEC campaigns on local iron-rich foods.
4. **Screen for inflammation and haemoglobinopathies.** Routine CRP testing and hemoglobin variant screening (for thalassemia, sickle cell) must enter standard anemia protocols.
5. **Address the social determinants.** Female literacy, access to health insurance, food security, and sanitation infrastructure are not peripheral to anemia — they are central to it.
6. **Harness digital reach.** Over 90% of study participants had access to mobile devices. SMS reminders, local-language audio-visual content, and chatbots can dramatically extend programme reach.
7. **Reallocate budgets.** The policy brief notes that over 75% of nutrition programme budgets currently go to procurement, while behavior change communication and frontline training receive barely 1%.

The bigger picture

Solving Gujarat's anemia problem requires a paradigm shift – moving beyond a narrow focus on iron tablets to a holistic approach that tackles the root causes. By investing in nutrition, sanitation, and healthcare, we can create a healthier and more productive future for all.

Gujarat is not failing for want of programmes. Anaemia Mukt Bharat, POSHAN Abhiyaan, WIFS, and multiple state-level schemes are all active. What this research reveals is that the design of these programmes has not kept pace with what the evidence shows about the actual causes of anemia on the ground.

The good news is that the solutions are known. Participatory learning sessions have improved hemoglobin levels in tribal populations. Facebook-based awareness campaigns have reached millions. School-based supplementation works when sustained. Peer educators change behaviour in communities that health workers alone cannot reach.

The question is not whether we know what to do. The question is whether stakeholders are willing to let the evidence — rather than inertia — guide the next phase of action.

Because for the 64% of pregnant women and 61% of adolescent girls who are anemic in one of India's most prosperous states, the status quo is simply not good enough.

Sources

Prevalence and Determinants of Anemia in Pregnant Women and Adolescent Girls in Gujarat: A Biochemical and Dietary Assessment 2025, AIIMS Rajkot & SHSRC-Gujarat

Maternal and Child Nutrition — Policy Effectiveness, System Gaps, and Strategic Interventions in Gujarat, SHSRC-Gujarat

National Family Health Survey-5 (NFHS-5, 2019–21)

