

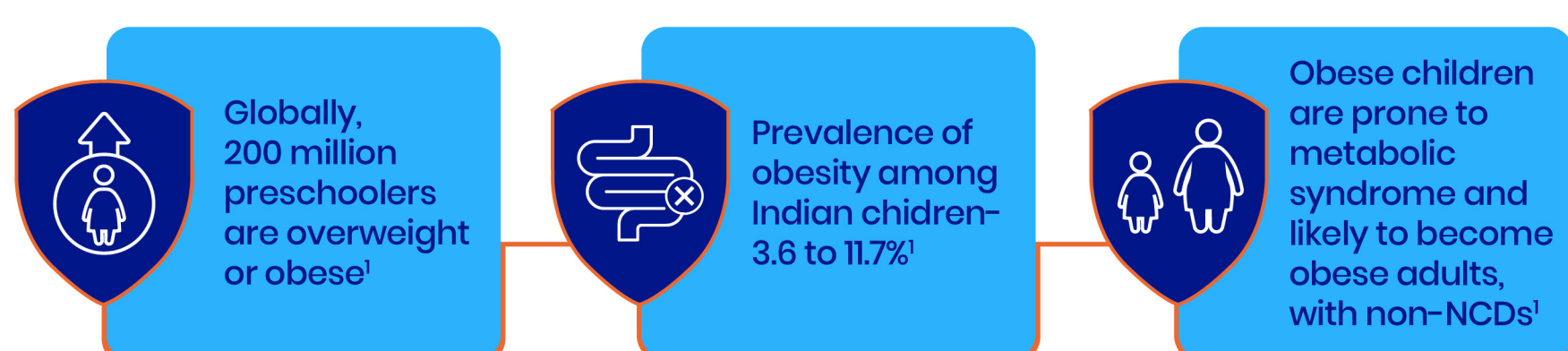
# Childhood Overweight and Obesity: A Rising Health Concern



## Prevalence of Childhood Overweight and Obesity



- Childhood overweight and obesity is a rising concern among healthcare professionals.<sup>1</sup>
- **Malnutrition** consists of **deficiencies, imbalances, or excess nutrients**, which may **lead to overweight or obesity** in children.<sup>1</sup>



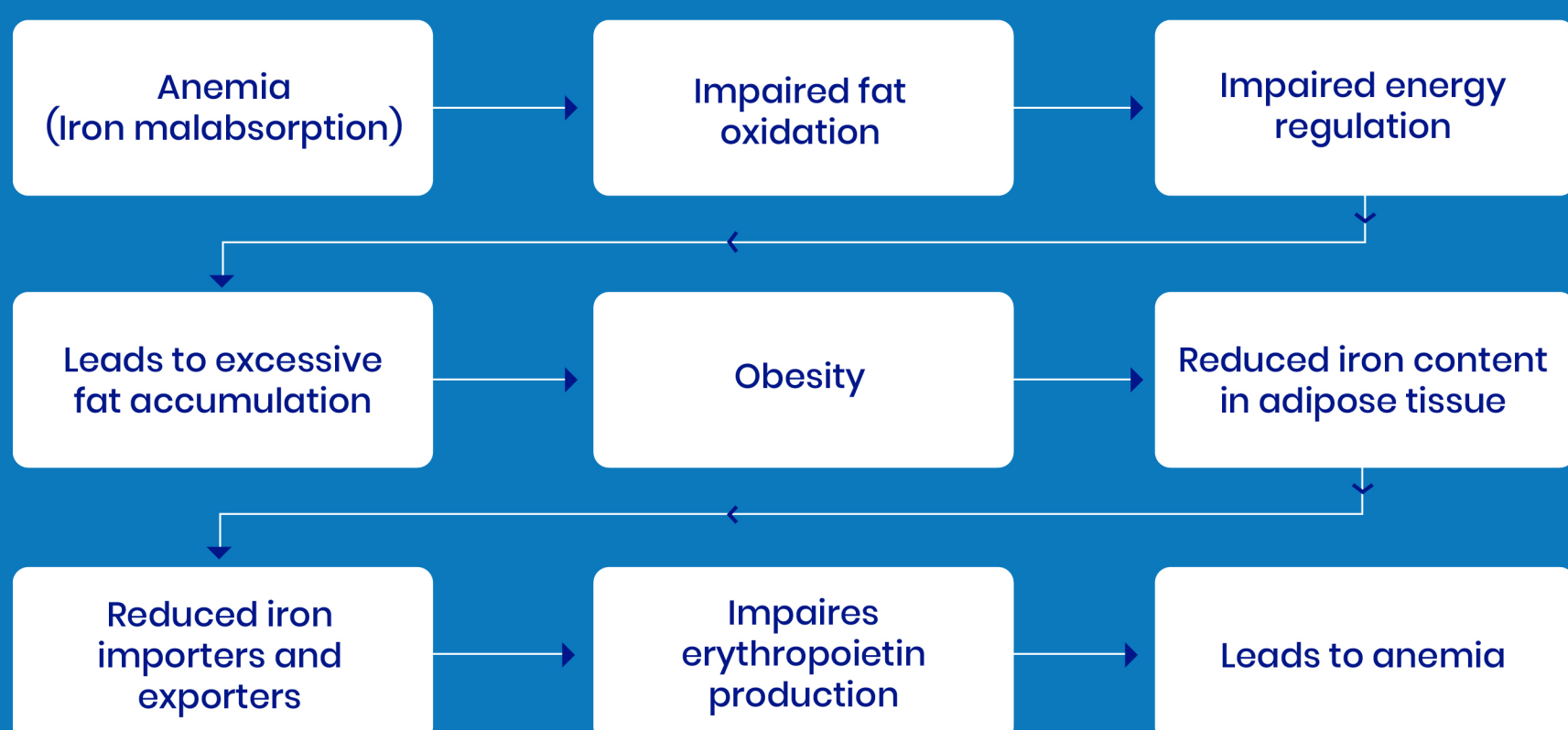
## Signs and Symptoms of Overweight and Obesity



## Malabsorption and Obesity Are Interlinked



- Malnutrition is resulting in increasingly overweight and obese children.<sup>5</sup>
- Malabsorption is one of the major causes of malnutrition.<sup>5</sup>
- Double burden of malnutrition (DBM) results in obesity, stunting, and anemia in children simultaneously.<sup>6</sup>



- The inflammation in overweight and obesity also increases hepcidin levels.<sup>6</sup>
- Hepcidin protein further reduces iron absorption in the digestive tract.<sup>6</sup>
- A higher prevalence of zinc and copper deficiency has also been observed among obese children.<sup>5</sup>

## Prebiotics for Nutrient Absorption, and Childhood Obesity Management



- Inclusion of prebiotics regulates
  - The healthy gut microbiota<sup>7</sup>
  - Facilitates nutrient absorption<sup>7</sup>
  - Influences the nutritional status and overall growth of children<sup>7</sup>:

Prebiotics support nutrient absorption

Osmotic effect of prebiotics increases the solubility of nutrients

Colonocytes absorb calcium when prebiotic fermentation produces short-chain fatty acids

Prebiotics improve iron absorption by increasing its soluble fraction

Prebiotic carbohydrates (GOS & FOS) control glucose, cholesterol, and fatty acid levels in the blood

Therefore, prebiotics minimize the risk of overweight, childhood obesity, diabetes, and atherosclerosis

- Intake of prebiotics helps to restore the normal microbiota of the gut, which gets disturbed during obesity.<sup>7</sup>
- Prebiotics along with healthy eating habits and physical activity are beneficial for overweight and obese children.<sup>7</sup>

## KEY TAKEAWAYS

- ✓ Inflammation and oxidative stress have been associated with overweight, obesity, and its complications.
- ✓ Obesity is primarily caused by dysfunctional enterocytes in the duodenum that results in the malabsorption and inefficient metabolism of nutrients.
- ✓ Molecular and cellular alterations in overweight and childhood obesity increase the risk of comorbidities.
- ✓ Prebiotics facilitate the absorption of nutrients thus supporting in the overall growth and development of children.