# Nutritional Habits of Children with Iron Deficiency Anemia in Jeddah City: A Cross-sectional Study

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Received: April 2025. Accepted: May 2025; Published:June 1, 2025.
Citation: Moufag Mohammed Saeed Tayeb. Nutritional Habits of Children with Iron Deficiency Anemia in Jeddah City: A Cross-sectional Study. World Family Medicine. June 2025; 23(4): 14 - 25. DOI: 10.5742/MEWFM.2025.795257867

## Abstract

Background: Iron deficiency anemia (IDA) in children is primarily caused by poor nutritional habits.

Objective: This study investigated the nutritional habits of children with IDA in Jeddah city.

Methods: This cross-sectional study used a multiple-choice Arabic language electronic questionnaire on Google Forms about the nutritional habits of 120 children with IDA (71 boys and 49 girls) in Jeddah city. T he mothers of the affected children answered a questionnaire in a private clinic. They were asked about iron-rich foods from animals, vegetables, fruits, and legumes. Multiple choices were divided into five stages: small (0%–20%), few (20%–40%), middle (40%–60%), moderate (60%–80%), and huge (80%–100%).

Results: Consumption of foods high in iron was low, whereas consumption of low-quality foods was high. Consumption as follows: animal sources (eggs and red meats in moderate quantities, followed by fish, salmon, and tuna in middle quantities), vegetable sources (tomato) only in moderate quantities, and fruit sources (apples, watermelons, and bananas in moderate quantities, followed by berries in middle quantities).

Conclusions: In Jeddah city, children with IDA do not eat foods high in iron but consume several low-quality foods. Most legume and vegetable sources of iron are not consumed except for a few ones (lentils and tomatoes). Seafood and animal livers are not consumed. Cow's milk is the only type of food that is consumed in large quantities. The good news is that fruits are consumed in sufficient quantities. Therefore, IDA in children is primarily caused by poor dietary habits. Mothers must be educated about the consumption of foods high in iron in children, consumption of iron-fortified foods or milk formulas in early infancy, regular clinic visits, avoiding exclusive breastfeeding, starting oral iron at 4–6 months of age, weaning foods high in iron, and consuming artificial cow's milk in small quantities only.

Keywords: anemia, nutrition, iron, ferritin, children

## Introduction

Red blood cells synthesis by bone marrow is called erythropoiesis and it is dependent on the presence of iron. The main source of iron is food and in its absorption from intestines; enterocytes absorb iron then transfer it to bone marrow by transferrin. This is the normal homeostasis of iron. However, in an iron deficiency state the amount of iron transferred to bone marrow is less and RBCs synthesis will also be less. Iron plays a role in transferring oxygen from the lungs to tissues because it is carried by red blood cells. This indicates that Iron Deficiency Anaemia (IDA) causes a lack of oxygen transfer to tissues. This will affect the child's growth and causes pallor, fatigue, rapid breathing, and frequent infections, as in Figure1.

The causes of hypochromic anemia in children differ according to age. Anemia in children <2 years is mainly caused by IDA, whereas anemia in schoolchildren is possibly due to other causes, such as thalassemia or celiac disease. In girls aged 11–18 years, IDA is mostly attributed to heavy menstrual cycles. The prevalence rate of anemia in children aged <2 years is 10.11%, and this is mostly due to IDA. In contrast, its prevalence among schoolchildren is 37.1%, and it can be caused by IDA, thalassemia, or celiac disease. Therefore, the target age for IDA among children is <2 years [2,3,4].

Causes of anemia due to iron can be either due to a decreased amount of available iron or increased iron needs. Decreased iron availability can be due to GIT factors like low nutritional iron, antiacids, celiac, Gastroesophageal reflux disease (GERD) and other factors, or it can be due to generalized diseases outside GIT like chronic inflammatory diseases, heart failure, chronic kidney diseases and obesity. However, causes of increased iron needs may happen in pregnancy, extreme exercise or blood loss from any organ. Figure 2 summarizes the causes of IDAs.

**Figure-1: red blood cells formation and iron homeostasis [1]**

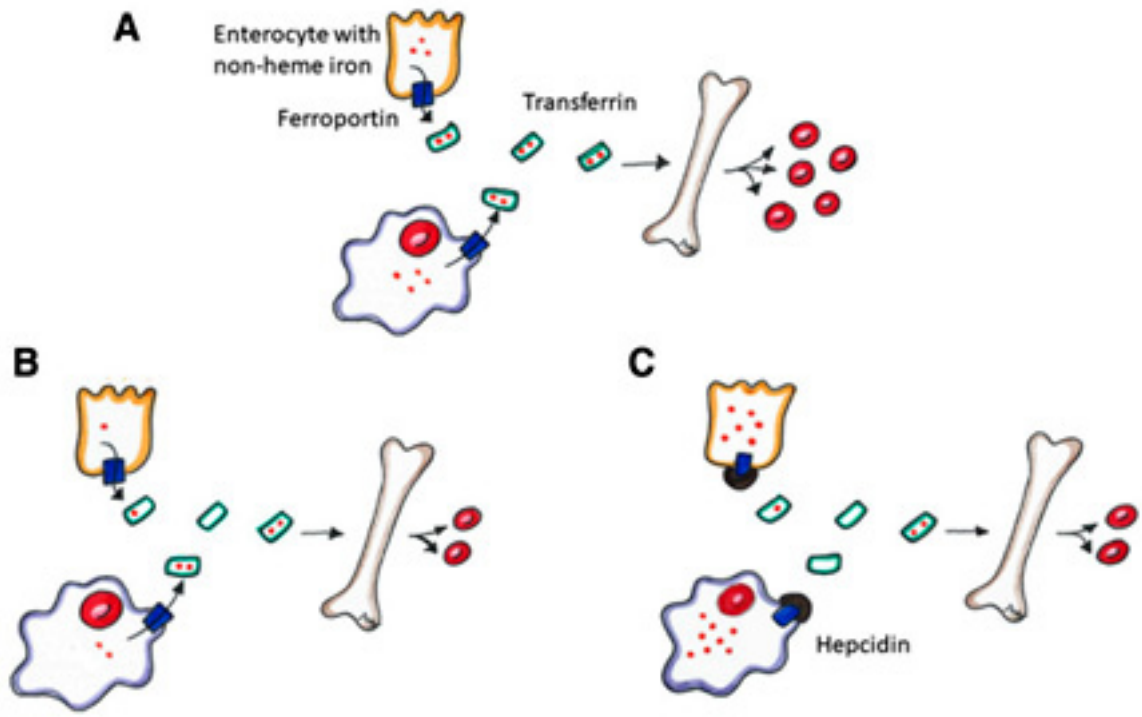
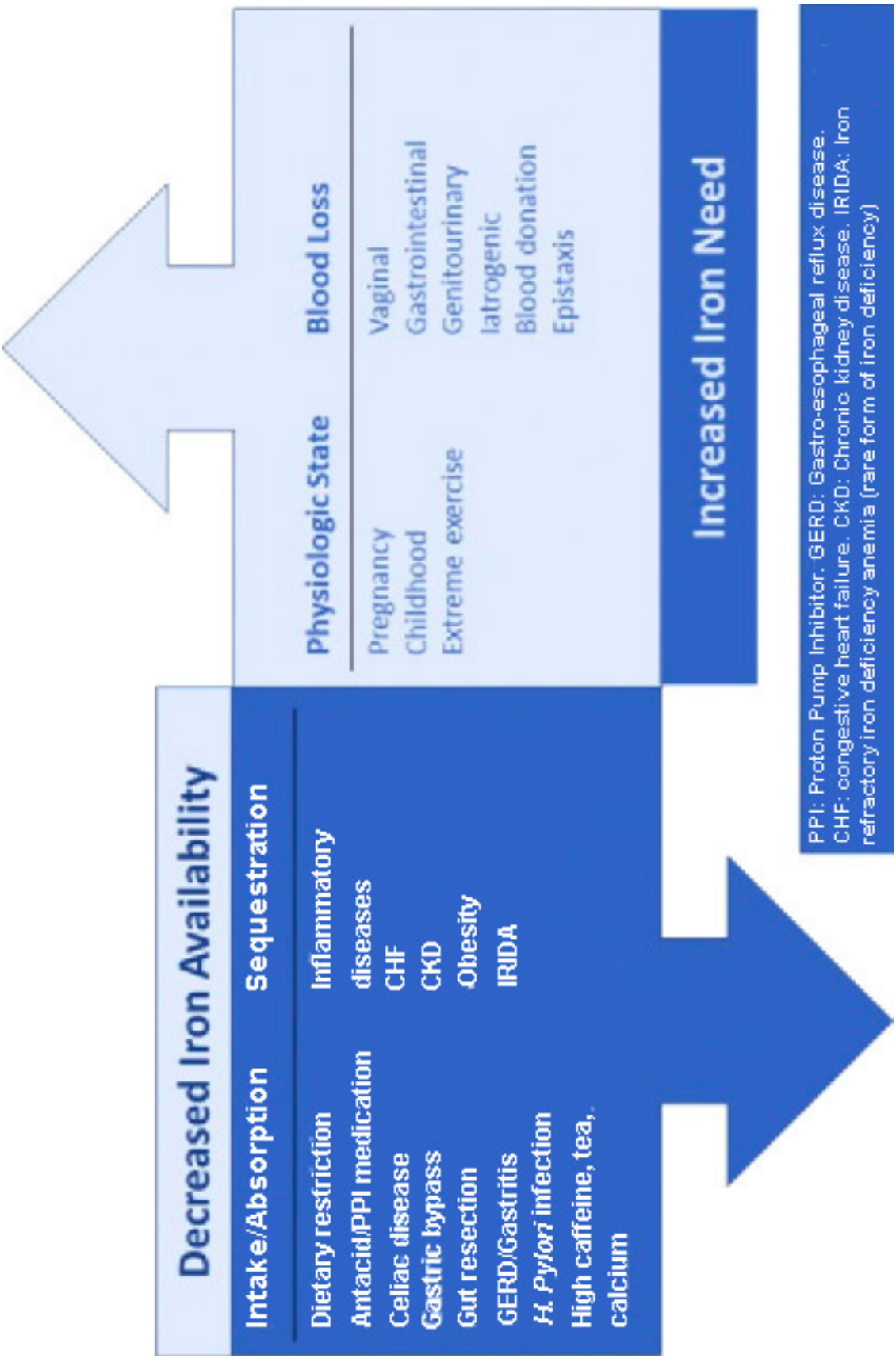


**Figure 2: Causes of IDA in children [1]**



The prevalence of IDA is significantly higher in developing countries than in rich countries. Mothers in poor countries are not educated enough about the importance of the early introduction of iron-fortified foods to their children. Unfortunately, they give low-iron foods for a long time until IDA occurs. Therefore, it is crucial to educate these mothers about the importance of early iron-fortified foods or administering oral iron drops, if necessary. Early introduction means starting iron sources in a child age below 2 years. Campaigns for health education can provide mass teaching to large numbers of mothers at the same time. Governments must support these campaigns through their Ministries of Health. Meanwhile, iron-fortified foods and oral iron supplements are readily available at markets and pharmacies [5,6].

Do we need to screen for IDA in each child or not? The answer is no. We do not need to screen each child except in certain situations. These situations include premature and low-birth-weight children and any child aged 6–24 months who is on a low-iron diet, especially in poor areas. Any child in a poor area should be screened for IDA routinely. Screening for IDA is a cheap, effective, and easy laboratory test. A complete blood count should be performed to measure blood hemoglobin level, reticulocyte count, and serum iron and ferritin levels. Any child discovered to have IDA must receive iron-fortified foods and oral iron supplements [7.8.9]. Figure 3 shows how to differentiate between the types of hypochromic anemias.

**Figure 3: differential diagnosis of hypochromic anemias [10]**

| | Ferritin | Serum iron | TIBC | Transferrin saturation | Red cell distribution width | Marrow storage iron |
|---|---|---|---|---|---|---|
| Iron deficiency anemia | Low | Low | High | Low | High | Low |
| Thalassemias | Normal to high | Normal to high | Low to normal | Normal to high | Normal | Normal to high |
| Sideroblastic anemias | High | Normal to high | Low to normal | High | High | High |
| Anemia of chronic disease | Normal to high | Low | Low to normal | Low | Normal | Low to normal |

Education about the correct weaning process is essential to prevent future IDA. Mothers should begin adding semisolid foods to breastfeeding milk at the age of 6 months. Semisolid foods provide iron to infants. It is crucial to educate mothers that breastfeeding alone is associated with low-iron levels. Another method is to start iron-fortified milk formulas at the age of 6 months of age. However, some mothers continue breastfeeding alone (exclusive breastfeeding) or start weaning with low-iron foods. Early diagnosis and treatment of IDA is important to protect infants from IDA disadvantages.

The main aim of this paper is to determine the impact of nutritional status of children in Jeddah city on the prevalence of IDA and to determine the bad habits of eating low iron foods and ignoring high iron foods. What is the impact of cow's milk on IDA? What is the effect of educational level of mothers on IDA? What will be the effect of early health education on the prevention of IDA in children?

In a large retrospective Saudi study on 498 children with IDA, results show that the largest prevalence was in infants. Early education and prevention is the major advice and regular monitoring is the key [11].

To our knowledge, this is the only study in Jeddah city which links the nutritional habits of children with different factors related to IDA. This link is crucial to direct health professionals to give more effort to early education of mothers on IDA parameters to prevent IDA in future. However, more studies are needed with larger samples and in multicentre to be more representative of Jeddah city.

## Material and Methods

This study was conducted in a private clinic in Jeddah city. It was of one year duration between 2023 to 2024. Study model is cross sectional, and electronic questionnaires based which were used to evaluate the children's nutritional habits related to consumption of high iron foods. It was in Arabic language. Questions were divided into two areas: the first area asked about how much iron-rich foods children ate, and the second area asked about how many children ate harmful or low-iron foods. Sample size was 120 children (71 boys and 49 girls). All children with the diagnosis of IDA were included, while others were excluded. Electronic questionnaires were given to mothers of IDA children to fill out. Ethical approval was taken from the ethical committee in the clinic. Mothers were fully informed about what was needed and their written consent was taken.

Iron sources included animal, plant, grain, and legume sources, and iron-fortified foods. Generally, fast and harmful foods are low in iron. Figure-4 gives an idea about the amount of elemental iron in milligrams per certain foods. The highest sources are seafoods and meats. Other foods do contain iron in smaller amounts. This table must be given to mothers in primary care. Education about amounts of iron in foods is the simplest way to avoid IDA in future.

This questionnaire was electronically provided on Google Forms as a multiple-choice questionnaire and was given to mothers at each child visit in 2023. The questionnaire comprised five parts: small (0%–20%), few (20%–40%), middle (40%–60%), moderate (60%–80%), and huge (80%–100%). The data was documented in an Excel sheet. Regression analysis was the way used to analyze the data in SPSS software.

The first part of the questionnaire asked the mothers about the animal sources of iron:
(a) Determine the proportion of your child's intake of sea oysters or mussels.
(b) Determine the proportion of your child's intake of fish, salmon, or tuna.
(c) Determine the proportion of your child's intake of beef or chicken liver.
(d Determine the proportion of your child's intake of egg whites or yolks.
(e) Determine the percentage of your child's consumption of red meat.

The second part of the questionnaire asked the mothers about the vegetable sources of iron:
(a) Determine the proportion of your child's intake of spinach, kale, and beets.
(b) Determine the proportion of your child's intake of tomatoes or tomato paste.
(c) Determine the proportion of your child's intake of oyster or white mushrooms.

The third part of the questionnaire asked the mothers about the fruit sources of iron:
(a) Determine the proportion of your child's intake of peaches or peach juice.
(b) Determine the proportion of your child's intake of berries.
(c) Determine the proportion of your child's intake of watermelons.
(d) Determine the proportion of your child's intake of figs.
(e) Determine the proportion of your child's intake of bananas.
(f) Determine the proportion of your child's intake of apples.

The fourth part of the questionnaire asked the mothers about the cereal and legume sources of iron:
(a) Determine the proportion of your child's intake of chickpeas.
(b) Determine the proportion of your child's intake of white beans.
(c) Determine the proportion of your child's intake of pumpkin, sesame, and flax seeds.
(d) Determine the proportion of your child's intake of lentils.
(e) Determine the proportion of your child's intake of soybeans or its products, such as tofu.

The fifth part of the questionnaire asked mothers about low-iron foods or those that are harmful for children:
a) Determine the proportion of your child's intake of chips.
b) Determine the proportion of your child's consumption of fast food.
c) Determine the proportion of your child's consumption of canned juices.
d) Determine the proportion of your child's intake of sweets and candies.
e) Determine the proportion of your child's intake of colorful foods.
f) Determine the percentage of your child's intake of artificial cow's milk or its derivatives.

Figure 4 gives an idea about iron contents in certain foods. Figure-4 shows that the highest foods which contain iron are infant cereals followed by infant formulas. Both also contain other vitamins and minerals which are necessary for infants. It's good advice to give to mothers to use these two sources during infancy.

**Figure 4: Amount of iron in foods sources [12]**

| 4 - 5.9 months | | | 6 - 8.9 months | | | 9 - 11.9 months | | |
|---|---|---|---|---|---|---|---|---|
| **Food group** | **% total iron intake** | **SE** | **Food group** | **% total iron intake** | **SE** | **Food group** | **% total iron intake** | **SE** |
| Infant formula | 60.0 | 3.1 | Infant cereal | 47.9 | 3.0 | Infant cereal | 35.3 | 3.4 |
| Infant cereal | 36.4 | 3.2 | Infant formula | 41.9 | 2.6 | Infant formula | 33.7 | 2,4 |
| Vitamin/mineral supplements | 1.2 | 0.8 | Vitamin/mineral supplements | 1.4 | 0.8 | Non-infant cereal | 8.1 | 1.8 |
| | | | Non-infant cereal | 1.3 | 0.4 | Vitamin/mineral supplements | 4.7 | 2.1 |
| | | | Crackers/ Pretzels/Rice cakes | 1.2 | 0.3 | Crackers/ Pretzels/Rice cakes | 1.7 | 0.3 |
| | | | | | | Beef | 1.7 | 1.1 |
| | | | | | | 100% juice | 1.2 | 0.2 |
| | | | | | | Pasta | 1.0 | 0.3 |
| | | | | | | Baby Food dinners | 1.0 | 0.2 |

## Results

Table 1 shows that most animal sources of iron are not consumed by children with IDA, except eggs (white or yolk) and red meat, which are eaten in moderate quantities (60%–80%). If we add the numbers of (always plus sometimes) eaten eggs (white or yolk) and red meat, it will be 74.5% and 73.9%, respectively.

Fish, salmon, and tuna are consumed in middle quantities (40%–60%). If we add the numbers of (always and sometimes) consumed, it will be 54.2%.

Sea oysters or mussels and beef or chicken livers are not consumed by children with IDA. If we add (rare plus never) used for sea oysters or mussels and beef or chicken livers, it would be 95% and 81.3%, respectively. Both are used in small amounts (0%–20%): sea oysters and mussels (5%) and beef or chicken livers (18.7%).

This indicates that animal sources are not consumed in sufficient quantities by children with IDA, except eggs (white or yolk) and red meat, which are consumed in moderate quantities (60%–80%), followed by fish, salmon, and tuna, which are consumed in middle quantities (40%–60%).

**Table 1: The percentage of the animal sources of iron that are consumed by children with IDA**

| | Always | Sometimes | Rarely | Never |
|---|---|---|---|---|
| Sea oysters or mussels | 0 | 5.1% | 15.3% | 79.7% |
| Fish, salmon, or tuna | 16.10% | 38.1% | 22.9% | 22.9% |
| Beef or chicken liver | 3.4% | 15.3% | 9.3% | 72% |
| Egg whites or yolks | 54.2% | 20.3% | 6.8% | 18.6% |
| Red meat | 34.7% | 39% | 11% | 15.3% |

Table 2 shows that most vegetable sources of iron are not consumed by children with IDA, except tomatoes, which are consumed in moderate quantities (60%–80%). If we add (always plus sometimes) tomatoes, the total will be 78.8%.

If we add (rare plus never) spinach, kale, and beets, it would make 79.9%. If we add (rare plus never used) mushrooms (oyster or white), the result will be 90.7%. Both are consumed in small or few negligible quantities; spinach, kale, and beets in few quantities (20.1%); and mushrooms (oyster or white) in small quantities (9.3%).

This indicates that children with IDA do not consume vegetable sources of iron in sufficient quantities, except tomatoes, which are consumed in moderate quantities (60%–80%).

**Table 2: Percentage of vegetable sources of iron consumed by children with IDA**

| | Always | Sometimes | Rarely | Never |
|---|---|---|---|---|
| Spinach, kale, and beets | 3.4% | 16.9% | 21.2% | 58.5% |
| Tomatoes or tomato paste | 53.4% | 25.4% | 11% | 10.2% |
| Mushrooms (oyster or white) | 3.4% | 5.9% | 11.9% | 78.8% |

Table 3 shows that most fruit sources of iron, except apple, watermelon, and banana, are not consumed by children with IDA. If we add (always and sometimes) apple, watermelon, and banana, the results will be 83.9%, 78%, and 72.9%, respectively.

Berries are consumed in middle quantities. If we add (always plus sometimes) berries, the total is 56%.

If we add (rare and never) figs and peaches, the results will be 79.6% and 72.9%, respectively. Figs and peaches are consumed at negligible quantities (20.4% and 27.1%, respectively).

This indicates that fruits are not consumed by children with IDA, except apple, watermelon, and banana, which are consumed in moderate quantities (60%–80%), followed by berries, which are consumed in middle quantities (40%–60%).

**Table 3: Percentage of fruit sources of iron consumed by children with IDA**

| | Always | Sometimes | Rarely | Never |
|---|---|---|---|---|
| Peaches or peach juice | 5.9% | 21.2% | 33.1% | 39.8% |
| Berries | 15.3% | 40.7% | 19.5% | 24.5% |
| Watermelon | 28% | 50% | 8.5% | 13.6% |
| Figs | 3.4% | 16.9% | 25.4% | 54.2% |
| Banana | 47.5% | 25.4% | 10.2% | 16.9% |
| Apples | 54.2% | 29.7% | 6.8% | 9.3% |

Table 4 shows that most cereal and legume sources of iron are not consumed by children with IDA, except lentils.

If we add (always plus sometimes) lentils and chickpeas, it will be 48.3% and 32.2%, respectively.

If we add (rare plus never) soybeans; white beans; pumpkin, sesame, and flax seeds; and chickpeas, it will be 80.5%, 78.8%, 75.4%, and 67.8%, respectively. These are consumed in small to few quantities (0%–40%): soybeans (19.5%); white beans (21.2%); and pumpkin, sesame, and flax seeds (24.6%).

This indicates that cereal and legume sources of iron are not consumed by children with IDA, except lentils, which are consumed in middle quantities (40%–60%), followed by chickpeas; white beans; and pumpkin, sesame, and flax seeds in few quantities (20%–40%).

**Table 4: Percentage of cereal and legume sources of iron consumed by children with IDA**

| | Always | Sometimes | Rarely | Never |
|---|---|---|---|---|
| Chickpeas | 9.3% | 22.9% | 21.2% | 46.6% |
| White beans | 2.5% | 18.6% | 18.6% | 60.2% |
| Pumpkin, sesame, and flax seeds | 10.2% | 14.4% | 17.8% | 57.6% |
| Lentils | 10.2% | 38.1% | 24.6% | 27.1% |
| Soybeans or its products, such as tofu | 7.6% | 11.9% | 13.6% | 66.9% |

Table 5 presents the consumption of low-quality foods by children with IDA. Low-quality foods are either low in iron or harmful to child's health. Unfortunately, low-quality foods are frequently consumed by children with IDA.

If we add (always plus sometimes) artificial cow's milk or its derivatives; chips; canned juices; sweets, candies, and fast food; and colorful foods, it will be 81.3%, 77.1%, 75.4%, 72%, and 50%, respectively.

This indicates that most low-quality foods, such as cow's milk and its derivatives, are consumed in large quantities (80%–100%), and chips, canned juices, sweets and candies, and fast foods, except colorful foods, are consumed in middle quantities (60%–80%).

**Table 5: Percentage of children who consumed foods that do not contain iron or are harmful for children with IDA.**

| | Always | Sometimes | Rarely | Never |
|---|---|---|---|---|
| Chips | 51.7% | 25.4% | 8.5% | 14.4% |
| Fast food | 32.2% | 39.8% | 11.9% | 16.1% |
| Canned juices | 55.9% | 19.5% | 10.2% | 14.4% |
| Sweets and candies | 48.3% | 23.7% | 15.3% | 12.7% |
| Colorful foods | 23.7% | 26.3% | 25.4% | 24.6% |
| Artificial cow's milk or its derivatives | 66.9% | 14.4% | 6.8% | 11.9% |

Table 6 presents a summary of foods consumed by children with IDA:
1–Most legume and vegetable sources are not consumed except for a few.
2–Animal sources, such as seafood and animal livers, are not consumed.
3–Most fruits are consumed in good quantities.
4–All low-quality foods are consumed in large quantities.
5–Cow's milk is the only food consumed in huge quantities.

**Table 6: Summary of foods consumed by children with IDA.**

| Type of food | Small quantity 0%–20% | Few quantities 20%–40% | Middle quantities 40%–60% | Moderate quantities 60%–80% | Huge quantities 80%–100% |
|---|---|---|---|---|---|
| **Animals** | Sea oysters and mussels Beef and chicken livers | | Fish, Salmon, and tuna | Eggs (white or yolk) and red meats | |
| **Vegetables** | Mushrooms (oyster or white) | Spinach, kale, and beets | | Tomatoes | |
| **Fruits** | | Peaches and figs | Berries | Apples, watermelon, and banana | |
| **Legumes** | Soybeans | Chickpeas; white beans; and pumpkin, sesame, and flax seeds | Lentils | | |
| **Low-quality foods** | | | Colorful foods | Chips, canned juices, sweets, candies, and fast foods | Cow's milk and its derivatives |

**Figure 5: the needed amounts of elemental iron [18]**

| *Age* | *Iron supplementation or requirement* |
|---|---|
| Preterm (< 37 weeks' gestation) infants: 1 to 12 months | 2 mg per kg per day supplementation if exclusively breastfed<br>1 mg per kg per day supplementation if using iron-fortified formula |
| Term infants: 4 to 6 months to 12 months | 1 mg per kg per day supplementation if exclusively breastfed<br>Supplementation not needed if using iron-fortified formula |
| Toddlers 1 to 3 years | Requires 7 mg per day; modify diet and/or supplement if anemic |
| Children 4 to 8 years | Requires 10 mg per day; modify diet and/or supplement if anemic |

## Discussion

Health professionals should be aware of the risk factors of IDA in children because early detection facilitates prevention. The risk factors associated with mothers are maternal age, low education level, and maternal anemia, particularly during pregnancy. The risk factors associated with children are premature age, child <2 years of age, child who consumes high quantities of cow's milk, infants who breastfeed exclusively, children with diarrhea or respiratory infections, obese children, and children on foods low in iron. Financial risk factors for IDA are also important because IDA is more common in poor areas with inadequate hygiene [13,14].

The primary risk factor of IDA among children in the future is excessive consumption of cow's milk or its derivatives. Therefore, history taking from mothers about the type of cow's milk consumed, its amount, and frequency is crucial to expect IDA. Additionally, it is very important to screen for IDA in a child who consumes excessive quantities of cow's milk. Furthermore, it is critical to give clear advice about the importance of breastfeeding, and if the child will consume cow's milk, it should be in small quantities. Cow's milk sources for children include milk, yogurt, butter, cheese, ice cream, and chocolate [15,16,17].

IDA can be easily prevented through maternal health education. Mass educational campaigns targeting mothers are effective. The most important clear and effective message to be given to mothers is the importance of the early introduction of iron-fortified foods to their children. This message is cheap and simple and can be easily applied in daily life. This simple step can decrease hospitalization and emergency visits due to IDA. Governments and ministries of health must support these campaigns because of their low cost and high yield, especially in poor areas. Figure-5 shows the amounts of elemental iron needed in infants, toddlers and children.

Infants who are breastfed exclusively without any other food are at risk of developing IDA at 9–12 months of age. The best approach is to start iron-fortified milk formula and foods early enough. To prevent IDA, mothers who exclusively breastfeed should start oral iron drops at 4 months of age. When mothers start weaning at 4–6 months, they should start iron-rich foods. Early initiation of iron-fortified milk or foods is the simplest, cheapest, and most effective step to prevent IDA. It is advisable to add vitamin C because it increases iron absorption. Vitamin C is found in strawberries, tomatoes, cantaloupes, and vegetables [19,20,21,22,23].

Dietary and therapeutic interventions are key steps in IDA management. The most important dietary intervention is iron-rich foods. However, oral iron drops are not needed in some cases. In mild cases of IDA, it is advisable to start intermittent oral iron drops, whereas continuous oral iron drops are recommended in moderate cases. Intravenous (IV) iron is needed in severe cases only. IV iron was administered under medical supervision in the day care department. If IDA does not respond to treatment, we must consider other causes of microcytic hypochromic anemia like β thalassemia trait, anemia of chronic disease, and celiac disease [24,25,26,27,28].

Changes in hematological parameters after iron administration to children must be monitored. The reticulocyte count is the first laboratory parameter to improve within several days after iron supplementation. However, hemoglobin levels take several weeks to improve. We must also monitor other related laboratory tests, including mean corpuscular volume, serum iron, and ferritin levels. Nevertheless, the most important parameter to be monitored is clinical improvement in symptoms after iron supplementation. History is an essential determinant of infant symptom improvement. Thus, mothers must visit clinics regularly with their infants [29,30].

IDA may disturb the neurological function of children if not treated and ignored for a long time. Chronic untreated IDA may affect growth; several papers say that untreated IDA may affect infant' neurological system development. In schoolchildren, IDA may affect a child's academic performance, concentration, and behavior. IDA can also affect child movement. Some studies advise health professionals to perform IDA laboratory tests on any child with autism or attention-deficit disorder because it may be caused by IDA. Thus it is crucial to treat IDA early enough to prevent possible neurological problems in children [31,32].

The relationship between IDA and Helicobacter pylori is controversial. Some studies say H. pylori has no role in IDA, whereas others have stated that it does. Studies claim there is a role report that H. pylori causes rapid iron uptake from the stomach. We do not know the specific reasons for this action by H. pylori. This possibility raises the point that we must always ask mothers whether their child has symptoms of gastroesophageal reflux disease. If these symptoms are present, it is important to perform H. pylori testing, including breath and stool tests. If H. pylori test results are positive, the condition must be treated early enough to prevent future IDA [33].

**Conclusions:** In Jeddah city, children with IDA do not eat iron-rich foods but consume huge quantities of low-quality foods. Most legume and vegetable sources of iron are not consumed, except a few (lentils and tomatoes). Many seafoods and animal livers are not consumed. All low-quality foods are consumed in large quantities. Cow's milk is the only type of food consumed in large quantities. The good news is that fruits are consumed in sufficient quantities. Foods high in iron that are consumed in moderate quantities include animals (eggs and red meats), vegetables (tomatoes), fruit (apples, watermelon, and banana). This indicates that IDA in children is mostly due to their dietary habits. Health education is the main solution. Mothers must be educated about the consumption of foods high in iron in children, consumption of iron-fortified foods or milk formulas in early infancy, regular clinic visits to check for IDA, avoiding exclusive breastfeeding, starting oral iron at 4–6 months of age, weaning foods high in iron, and consuming artificial cow's milk in small quantities only.

**Acknowledgement**
I offer my appreciation to the workers in Laluna private clinic in Jeddah city who helped me in distributing and collecting questionnaires and consents from mothers of IDA children.

**Conflict of Interest Disclosure**
I declare that there is no conflict of interest in this paper.

**FUNDING**
None.

**ETHICS STATEMENT**
Ethical approval was taken from the ethical committee in Laluna clinic in Jeddah city.

**AVAILABILITY OF DATA**
The data produced and/or analysed are accessible from the corresponding author upon sensible demand.

**Informed Consent Statement**
Mothers were fully informed, and their written consents were taken.

**Authors' Contribution**
I am a single author of this paper who fully supervised collecting data, then analyze it and write
up the manuscript.

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