

# EFFECT OF FEEDING BEBA NOODLES (EEL AND SPINACH) ON INCREASING LEVELSHEMOGLOBIN SCHOOL CHILDREN AT LUBUK PAKAM STATE PRIMARY SCHOOL

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## EFFECT OF FEEDING BEBA NOODLES (EEL AND SPINACH) ON INCREASING LEVELS HEMOGLOBIN SCHOOL CHILDREN AT LUBUK PAKAM STATE PRIMARY SCHOOL

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### ABSTRACT:

Anemia is a condition where the hemoglobin (Hb) level is below normal. Anemia that occurs in elementary school students can cause physical growth and development disorders, low body resistance to disease, decreased learning achievement due to lack of ability to concentrate on learning, disrupt the growth of both body cells and brain cells, causing symptoms of a pale, tired, tired face. Lethargy and get tired quickly. The aim of this research is to determine the effect of giving Beba Noodles (Eel and Spinach) on increasing levels of Hemoglobin school children at SD Negeri 104241 Lubuk Pakam for 30 days. This type of research is Quasi Experimental with a Pre and Post Test Design. Data analysis used a paired t test to determine the effect of intervention on increasing levels Hemoglobin. The results and conclusions of this study show that there is an effect of giving Beba Noodles on increasing Hemoglobin levels with a value of ( $p=0.00 < 0.05$ ).

**Keywords:** Beba Noodles, Levels hemoglobin, Primary school

### INTRODUCTION

The problem of blood deficiency in the elementary school student population remains a significant nutritional issue and has not yet been fully resolved. This factor is caused by the fact that the prevalence of

blood deficiency in school-aged children exceeds the national standard threshold set, namely exceeding 20% (Riawan & Dewi, 2023). Data taken from the 2013 Riskedas report proves that around 21.7% of the Indonesian population is anemic. In addition,

there is a proportion of around 26.4% who experience anemia in the group of children aged 5-14 years in Indonesia (Ministry of Health of the Republic of Indonesia, 2013). According to the 2018 Riskesdas Report, 26.8% of elementary school children experienced anemia (Ministry of Health of the Republic of Indonesia, 2018).

Anemia is a condition when the hemoglobin level in the body is below the normal threshold. The condition of anemia in elementary school students has the potential to cause disturbances in physical growth and development, reduce the body's resistance to disease, reduce learning ability due to lack of focus in the learning process, resulting in pale faces, tiredness, lethargy and exhaustion (Safitri, 2019).

The occurrence of anemia in children can be influenced by several factors, one of which is unhealthy eating habits, intake of substances that have the potential to stimulate anemia due to their ability to inhibit iron absorption (for example tea), use of certain drugs such as antibiotics, and conditions such as burns, diarrhea, and impaired kidney function (Prasetya, 2019).

The consequences of anemia have an impact on reducing individual productivity and society as a whole. Anemia is triggered by a number of factors which result in a decrease in the body's response resistance to infection, interference in achieving learning progress due to difficulty focusing and decreased thinking capacity. In school-going children, there is a visible relationship between hemoglobin levels and their

learning ability. In anemic conditions, the ability to concentrate in the learning process shows a decline. (Suryani & Satriyasa, 2018).

Noodles are a variant of food consisting of carbohydrates, and are known as an option that can replace rice, is in demand by various age groups. In 2019, the amount of instant noodle consumption reached 290 million portions every day throughout the world. According to data from the World Instant Noodles Association, at the same time, demand for instant noodles in Indonesia reached 12,520 million portions. Factors such as ease of serving, affordable prices, and delicious taste are the main drivers of the high consumption of instant noodles in the group. The results of research conducted by Ratnasari show that around 87.5% of elementary school students have the habit of consuming instant noodles 2-3 times a week. However, instant noodles currently available on the market generally have minimal nutritional content, especially protein, while the sodium content tends to be high (Roziana et al., 2020).

Eel is a type of freshwater fish that is rich in protein, fat, potassium, vitamin A and calcium. The iron content in eel is quite high so it is good for elementary school children to consume to prevent anemia. The nutritional composition of eel meat contains an energy value of around 303 kilocalories, protein of around 14 grams, fat of around 27 grams, phosphorus around 200 milligrams, calcium around 200 milligrams, iron around 20 milligrams, vitamin A around 1600 international units, vitamin B around 0, 1

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milligram, vitamin C around 2 milligrams, and water content around 58 grams. When fresh, eel has a total protein proportion of 79 percent, with a protein content of around 66.7 percent, fat around 10.74 percent, and ash around 7 percent. On the other hand, eel that has been processed into smoke has a total protein composition of around 76 percent, with a protein content of around 57.1 percent, fat around 9.82 percent, and ash around 6 percent (Kurnia et al., 2019).

Spinach is a type of green vegetable that has potential in treating anemia, due to its high content of minerals, vitamins and especially significant iron (Dhilon et al., 2020). Spinach is a type of green leafy plant that has abundant nutritional content, especially iron (Fe), which reaches quite high amounts, namely around 6.43 mg per 180 gram serving. Apart from that, there are no substances harmful to the body found in spinach. Spinach is a type of food that is easily damaged, so noodle products are made to retain the iron in spinach and it has become a food product that is very popular with elementary school children (Dhen Rohmatika, 2019).

Mie Beba is a processed food made from eel and spinach, which is used as a snack that is good for elementary school children to consume, because it contains high nutrients. The nutritional content of beba noodles is 302 kcal energy which has reached the recommended daily energy requirement standard based on the 2019 AKG, namely 1900 kcal (15.8%), 30.4 grams

of protein which has reached the recommended daily protein requirement standard of 55 grams ( 55.2%), iron 2.3 mg which has reached the recommended daily iron requirement of 19 mg (12.1%), Vitamin C 8.5 mg which has reached the recommended daily requirement of Vitamin C of 50 mg ( 17 %), calcium 116.3 mg which has reached the recommended standard daily calcium requirement of 1200 mg (9.7%), zinc 1.15 mg "which has reached the recommended standard daily requirement of zinc of 8 mg (14.3 % ).

The findings from <sup>3</sup> this study are in line with research carried out by (Safitri, 2019) in the title The effect of giving red spinach juice, sunkissed oranges, honey on hemoglobin levels in pregnant women who experience anemia at the UPT Puskesmas Kampar in 2019. The results of this research show that giving spinach juice red has the potential to increase levels hemoglobin in pregnant women who experience anemia, with a p-value of 0.000.

The results of this research are also in line with findings in research by (Dhilon et al., 2020) entitled The effect of giving green spinach juice on maternal hemoglobin levels pregnant at PMB Rosmidah <sup>10</sup> in the working area of the Community Health Center Kuok. This research showed an average increase in hemoglobin levels in pregnant women of 2.0 gr/dl from consuming green spinach juice for 7 days. From the results of this research, researchers were interested in giving beba

noodles for 30 days to see an even higher increase in Hb levels due to the additional days and also by adding other ingredients such as eel. This intervention will be provided at SD Negeri 104241 Lubuk Pakam in the classroom during break time at 09.15 WIB.

From the initial survey carried out by measuring hemoglobin levels using the digital test method in class V at SD Negeri 104241 Lubuk Pakam, of the 10 children whose Hb levels were checked, it was found that 5 students (50%) showed hemoglobin levels below the normal threshold, with an average of The average hemoglobin in children is 10.9 gr/dl. And after being interviewed, it was found that the cause was rarely eating breakfast and a lack of iron intake. So noodles are made which many children like, made from eel and spinach, which is a product that has many benefits for increasing Hb levels, because both are high in iron and are good for children's learning achievement.

Based on the background above, researchers want to know the effect of giving Beba Noodles (Eel and Spinach) on increasing the Hb levels of school children at SD Negeri 104241 Lubuk Pakam.

## RESEARCH METHODS

This research was carried out at SD Negeri 104241 Lubuk Pakam and the Food Technology Laboratory, Nutrition Department, Medan Health Polytechnic. As for exploration location and permits have been carried out on July 16 2022.

Intervention will be implemented from January - February 2023. Type This research is a Quasi Experiment with rancangan Pre and Post Test Design.

Population in this research are all class students V SD Negeri 104241 Lubuk The number of packs 49 people. Sample is part of the population of children at SD Negeri 104241 Lubuk Pakam from classes VA and VB, totaling 30 people, the sample was determined using criteria inclusion. Type data which is used in Research is primary data and secondary data obtained directly nor through recording data from second-hand sources .

## RESULTS AND DISCUSSION

### A. Results Study

#### 1. Description General Place Study

School SDN 104241 Syahmad is located at Jl. Holy Gg. Katu. Syahmad Village, Lubuk District Pakam, Deli Regency Serdang, North Sumatra 20515 . This school has Accreditation C which was established in 1975 and operated in 1975, land area is 1439 m<sup>2</sup>, the area of the school building is 626 m<sup>2</sup>, the area of the school yard is 240 m<sup>2</sup>. With the status of a government-owned building, this school is led by a female principal, namely Asiah, S.Ag.

Composed from 9 classrooms , 1 library , 1 office, 1 teacher's room and 1 WC. There are 18 teachers. 58% of students graduated in 2019, 60% in 2020, 66% in 2021. Meanwhile, 58% of students continued their studies to junior high school in 2019, 77% in 2020, 66% in 2021. The

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condition of the school is quite beautiful with lots of green trees and flowers, there is also a school garden, waste bank, fish pond and composting area. This school has many achievements, the school achievements that have been achieved are, Adiwiyata at Regency Level in 2014, Adiwiyata at Provincial Level in 2015, Adiwiyata at National Level in 2019, and the achievements achieved by students are, Second Runner Up in the Regency Level Environmental Knowledge Competition in

2017, Third Runner Up in the 2017 Regency Level Environmental themed Painting Competition.

**2. Characteristics Sample**

Characteristics sample refers to its properties must have by sample, in this study the sample characteristics included: class, age and gender. Sample characteristics are obtained by method digging information from location research using the interview method. Sample characteristics are described in table 10.

**Table 10**  
**Characteristics Sample**

Characteristics Sample	Category	Amount	
		N	%
Class	AND	13	43.3
	VB	17	56.7
	Amount	30	100.0
Age	10	15	50.0
	11	14	46.7
	12	1	3.3
	Amount	30	100.0
Gender	Man	14	46.7
	Woman	16	53.3



Amount	30	100.0
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Table 10 shows that the dominant class is in the VB class 17 people (56.7%), class VA as many as 13 people (46.7%). Meanwhile, the largest sample age is dominated by the 10 year age group 15 people (50.0%) , aged 11 years 14 people (46.7%) and 12 years old 1 person (3.3 %). And the most gender female gender namely as many as 16 people (53.3%) and as many men 14 people (46,7 %).

### 3. Hemoglobin Levels Before and After Administration

Measurement Hb levels were carried out twice before and after the intervention. Distribution up to Hb before and after giving can seen from table 11.

**Table 11**  
**Sample Distribution Based on Hb Levels**

	Kategori					p Value
	N	Mean	Min	Max	SD	
Kadar Hb Sebelum	30	11.873	8.7	13.7	1.2196	0.000
Kadar Hb Sesudah	30	12.490	9.9	14.1	1.0665	

From Table 11 it can be seen that the minimum Hb level value before giving Beba noodles was 8.7 mg/dl and after giving Beba noodles it increased to 9.9 mg/dl. The average before administration was 11,873

mg/dl and after administration of Beba noodles it increased to 12,490 mg/dl, meaning that there was an effect of giving Beba noodles because it could increase the average Hb level by 0.617 mg/dl.

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**Table 12**  
**Anemia Category**

No	Kategori	Sebelum		Sesudah	
		N	%	N	%
1	Anemia	15	50.0	6	20.0
2	Normal	15	50.0	24	80.0
Total		30	100	30	100

Table 12 shows that the Hb levels of children before and after being given Beba noodles increased. Where the anemia category before giving was 15 people (50%) and had exceeded the national standard by 20%, resulting in a decrease in school children's learning concentration and after giving it the number of children who Anemia decreased to 6 people (20%) and 9 people (30%) had reduced anemia, meaning there was an influence from giving free noodles.

**4. Children's Food Intake**

Food intake is information about the amount and type of food eaten or consumed by a person or group of people at a certain time. Children's nutritional intake during the research was obtained using the interview method *food recall* 24 hours which is done twice before giving and after giving beba noodles. Food intake consists of Fe, Protein, Vitamin C. The distribution of food intake values before and after giving beba noodles can be seen in the table below.

**a. Iron Intake**

**Table 13**  
**Iron Intake**

Kategori	Sebelum Intervensi		Sesudah Intervensi	
	N	%	N	%
<b>Asupan Zat Besi</b>				
Baik	5	16.7	28	93.3
Sedang	10	33.3	2	6.7
Kurang	6	20.0	0	0.0
Defisit	9	30.0	0	0.0
Total	30	100.0	30	100.0



Table 13 shows that children's iron intake before and after being given Beba noodles increased. Where the category of food intake that was classified as good before being given Beba noodles was 5 people (16.7%) and after being given Beba noodles it was 28 people (93.3%) meaning

that children's iron food intake increased. Iron is very good in the formation of red blood cells and prevents anemia due to a lack of red blood cells.

**b. Protein**

**Table 14**  
**Protein Intake**

Protein Intake Category	Before Intervention		An Intervention	
	N	%	N	%
Good	11	36.7	30	100
Currently	7	23.3	0	0.0
Less	9	30.0	0	0.0
Deficit	3	10.0	0	0.0
<b>Total</b>	<b>30</b>	<b>100.0</b>	<b>30</b>	<b>100.0</b>

Table 14 shows that there is an increase in protein intake in children. Where the category of food intake that was classified as good before being given Beba noodles was 11 people (36.7%) and after being given Beba noodles it was 30 people (100%) meaning that children's protein food intake increased. Protein is very good in

helping the formation of red blood cells, protein is also good for the growth of school children. So school children need high levels of protein to improve children's health and prevent anemia due to a lack of red blood cells in the child's body.

**c. Vitamin C**

**Table 15**  
**Vitamin C Intake**

Vitamin C Intake Categories	Before Intervention		After Intervention	
	N	%	N	%
Good	6	20.0	26	86.7
Currently	6	20.0	3	10.0
Less	10	33.3	1	3.3
Deficit	8	26.7	0	0,0
<b>Total</b>	<b>30</b>	<b>100.0</b>	<b>30</b>	<b>100.0</b>

Table 15 shows that there has been an increase in vitamin C intake in children. Where the category of food intake that was classified as good before being given Beba noodles was 6 people (20.0%) and after being given Beba noodles it was 26 people (86.7%) meaning that children's Vitamin C food intake increased.

**d. Average Child Food Intake**

**Table 16**  
**Children's Food Intake**

Intake	N	Before	After	p-value
		Rate-rate	Rate-rate	
Iron (mg)		5.2367	7.3767	0.000
Vitamin C (mg)	30	32.9667	47.9733	0.000
Protein (gr)		49.9117	80.8765	0.000

From Table 16, it can be seen that the average intake of iron before was 5.2367 mg and iron after 7.3767 mg, for intake of vitamin C before 32.9667 mg and vitamin C after 47.9733 mg, while protein intake before was 49.9117 grams and protein after was 80.8765 grams. . Test results *statistic t dependent* Iron intake was assessed  $p = 0.000$ , vitamin c intake value  $p = 0.000$  and

protein intake value  $p = 0.000$  where value  $p < 0.05$ , then  $H_0$  is rejected and  $H_a$  is accepted. So it can be concluded that there is a significant difference in the average intake of iron and protein before and after giving beba noodles.

**5. The effect of giving Beba noodles on increasing Hb levels**

**Table 17**  
**Rata-rata Kadar Hb**

	Category					p Value
	N	Mean	Min	Max	SD	
Hb Rate Before	30	11.873	8.7	13.7	1.2196	0.000
Hb Level After	30	12.490	9.9	14.1	1.0665	

From Table 17 it is obtained bahwa track-track much Hb from 30 students before giving namely 11,873 mg/dl while the average much Hb after administration is 12,490 mg/dl. So you can see an increase rate by rate much Hemoglobin was 0.617 mg/dl.

According to the results statistical test analysis of Hb levels using the test *Paired T Test* obtained mark  $p=0,000 < 0,05$ , then  $H_0$  is rejected and  $H_a$  accepted. So it is concluded that there is influence giving Beba Noodles to school children's Hb levels and this intervention can contribute to increasing Hb levels.

Beba noodles are given to school children every 09.15 WIB during their break. Noodles are given every day as much as 100 g/day. Supervision of noodle consumption is carried out by researchers and enumerators. Mie beba was given at SDN 104241 Lubuk Pakam for 30 days. Beba noodles can be increase much HB because high Fe, Vitamin C and Protein

content. Nutritional value Iron 2.3 mg, Vitamin C 8.5 mg and Protein 30.4 gr.

## B. Discussion

### 1. Much *Hemoglobin* Before and After Intervention

Hemoglobin levels are used to determine the amount of hemoglobin in the blood. Hb levels below 12 g/dl are called anemia. Study This there are 30 samples who has done inspection much hemoglobin before and after giving mie baby.

Before giving Mie Beba, there were 15 (50%) children who were anemic. When we looked at children's food intake, there were several children who liked to consume sweets, chocolate and tea after eating, which hampered the absorption of iron. Many children also rarely had breakfast before going to school because wake up late. If this continues, the impact will be greater, such as the child's concentration on learning will decrease so that they cannot focus on studying and have difficulty understanding

the lesson, there are children who are menstruating but do not consume TTD, this also has the impact of anemia in children.

After giving Beba Noodles, there were 6 (20%) children who experienced anemia and this had decreased from before giving it as many as 9 (30%) children experienced anemia. There was a difference in the average increase in HB levels, because each person's iron absorption was different. When seen results of food intake There are still samples who like foods and drinks that inhibit iron absorption, such as consuming tannin, namely tea, so that iron absorption is less than optimal. In terms of time, it is still not enough, giving beba noodles is only done for 30 days, while the formation of red blood cells should be done in the long term. at least 3 months. It is best to continue to educate children about anemia so that children can learn and know what foods they can and cannot consume, and improve their diet by having breakfast, taking TTD for female students, especially those who are already menstruating, and taking worm pills.

Results this research shows that rate by rate hemoglobin levels before given beba noodles was 11,873 mg/dl then after given the noodle intervention, the average hemoglobin level rose to 12,490 mg/dl with a difference of 0.617. These results are in accordance with research conducted by (Dhilon et al., 2020) entitled The effect of giving green spinach juice on the hemoglobin levels of pregnant women in the PMB Rosmidah working area of the Kuok Health Center which stated that hemoglobin levels

increased in pregnant women who consumed green spinach juice during After 7 days, changes in hemoglobin levels were found with an average increase of 2.0 gr/dl.

From the test results *statistic t dependent* obtained  $p = 0.000 < 0.005$  so that  $H_a$  is accepted where there is a significant difference before and after giving beba noodles, and it is concluded that there is an effect of giving beba noodles on increasing Hb levels.

## 2. Intake of Fe, Protein, Vitamin C Before and After Intervention

Food intake is the average amount of consumption per day that children must increase, therefore children need calories from macronutrients. and micro Which more for support child growth and makes children more focused when studying. In research This be found 30 samples Which already do recall before and after giving free noodles.

The researcher carried out the intervention for 30 days *food recall* 2 times before and after administration value is obtained track-track intake Fe, before the intervention amounted to 5.2367 mg, protein intake of 49.9117 g and intake vitamin C amount 32.9667 mg. Based on numbers adequacy nutrition (AKG) 2019, the recommended intake of Fe, Protein and vitamin C for school children aged 10-12 years is Fe 8 mg, protein 50 g and vitamin C 50 mg per day. So the intake of Fe, Protein, Vitamin C on the sample still below sufficiency. This can be caused

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Because lack combination food Which can affect hemoglobin levels.

Beba noodles given for 30 days as much as 100 g/day have an effect to rate increase Hemoglobin sample .Pg this is because rate by rate The sample's food intake consumption has increased from before the study. The average Fe intake after administration was 7.3767 mg, protein 80.8765 g, vitamin C 47.9733 mg. So that protein intake has reached the RDA.

Intake substance iron plays an important role in hemoglobin formation . Intake iron has reserves in the liver. When the reserves run out, it will causing a decline Hb levels by starting decline much ferritin . Iron serves as essential in the body, namely as a means of transporting oxygen from the lungs to body tissues (Thamrin & Masnilawati, 2021). The average iron intake before the study was 5.2367 mg, when compared with the RDA of school children of 8 mg, the average iron intake had not yet reached the RDA, this is because sample still consume frequently foods that can inhibit absorption of substances iron such as frequently drinking drinks containing tannin such as tea results in intake iron is not yet sufficient substance daily iron. However, after giving it, the average iron intake of children increased by 7.3767 mg, and when compared with the RDA of school children, the average iron intake of children did not reach the RDA, it can be concluded that Beba noodles influenced the increase in the

average iron intake of school children. The iron contribution made from Mie Beba is 2.3 mg.

According to Almatsir (2009) Protein role important in transport substance deep iron body, because of protein functions as energy, building materials and regulator. Without sufficient amounts of protein, iron supplies cannot be delivered to the body's organs. The protein that carries iron is transferrin. This protein plays a central role in iron metabolism in the body, as transferrin transports circulating iron to places where it is needed, such as from the intestines to the bone marrow to form new hemoglobin. (Rahmadona, 2022). The average protein intake before the study was 49.9117 g, when compared with the RDA of school children of 55 g, the average protein intake had not yet reached the RDA, this was because the sample still often consumed food from plant protein sources, resulting in protein intake not meeting daily protein needs. However, after giving it, the average protein intake of children increased by 80.8367 mg, and when compared with the RDA of school children, the average protein intake of children had reached the RDA, it can be concluded that Beba noodles influenced the increase in the average protein intake of school children. beba noodles amounting to 30.4 mg.

11 Vitamin C is an important element that the body needs in the process of forming red blood cells. Vitamin C will provide an acidic environment, making it



easier to reduce iron into iron which is more easily absorbed by the small intestine. Absorption of non-heme iron increases fourfold in the presence of vitamin C (Supriadi et al., 2022). The average intake of Vitamin C before the study was 32.9667 mg, when compared with the RDA of school children of 50 mg, the average intake of Vitamin C had not yet reached the RDA, this was because school children still did not consume enough foods containing vitamin C such as vegetables and fruit. Foods containing vitamin C will help reduce iron from ferric to ferrous form. Iron in the form of ferric to ferrous is more easily absorbed in the small intestine so that the absorption of non-heme iron can increase. However, after administration the average intake of vitamin C in children increased by 47.9733 mg, and when compared with the AKG of school children the average intake of vitamin C children have not yet reached the AKG, it can be concluded that Beba noodles influence the increase in the average protein intake of school children. The contribution of vitamin C provided by Beba noodles is 8.5 mg.

Results Study This show that rate by rate food consumption before given a gift i beba noodles are iron 5.2367 mg, protein 49.9117 g and vitamin C 32.9667 mg after being given the beba noodle intervention. Iron 7.3767 mg, protein 80.8765 g, vitamin C 47.9733 mg. From the resultstest, *statistic t dependent* obtained  $p < 0.05$  so  $H_a$  is accepted and it can be concluded that there is a difference before and after the intervention, meaning There

is effect giving free noodles school children's food intake. Matter This because beba noodles contain high nutrients.

### 3. The Effect of Giving Beba Noodles on Increasing Hemoglobin Levels in School Children

Giving Mie Beba to the increase in the Hb level of the sample has a positive relationship. Based on the test results *statistic t dependent* obtained  $p = 0.000 < 0.005$  so that  $H_a$  is accepted where there is a significant difference before and after giving beba noodles, and it is concluded that there is an effect of giving beba noodles on increasing Hb levels. This means that giving beba noodles can help samples meet their nutritional needs in the formation of blood hemoglobin.

Eel is a food that contains substances necessary for the formation of red blood cells and preventing anemia. The nutritional content of eel meat is 70 kcal energy, 14.6 g protein, 1.5 mg iron, 155 mg phosphorus. Eel can be processed into noodles as an alternative to prevent anemia.

Spinach is a green vegetable that is rich in iron. Spinach is a vegetable that is commercially available in both rural and urban areas. Starting from markets to supermarkets. Spinach is a good source of vitamins A, C, Fe, Ca and K. The Fe or iron content in spinach is 2 times higher than other vegetables (Sembiring, 2019). Spinach is a green plant that is rich in various nutrients, including iron (Fe), which is quite rich, namely up to 3.5 mg per 100 grams. Spinach is a type of food that is easily



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damaged, so noodle products are made to maintain the iron in spinach and has become a food product that is very popular with elementary school children (Dheny Rohmatika, 2019).

Mie beba is a food made from eel and spinach which is used as a snack for elementary school children. Beba noodles can increase Hb levels because of their high Fe, Vitamin C and Protein content. Nutritional value of Fe 2.3 mg, Vitamin C 8.5 mg and Protein 30.4 gr. Beba noodles are given to school children every 09.15 WIB during breaks. Noodles are given every day as much as 100 g/day. Noodle consumption monitoring is carried out by researchers and enumerators. Mie beba was given at SDN 104241 Lubuk Pakam for 30 days.

After giving beba noodles, there is a difference in the average increase in Hb levels because each person's iron absorption is different, then when you look at the results *food recall* There are several samples who like to consume foods that inhibit iron absorption, such as consuming tannins such as tea, while vegetables and fruit are rarely consumed because many samples don't like them.

### CONCLUSION

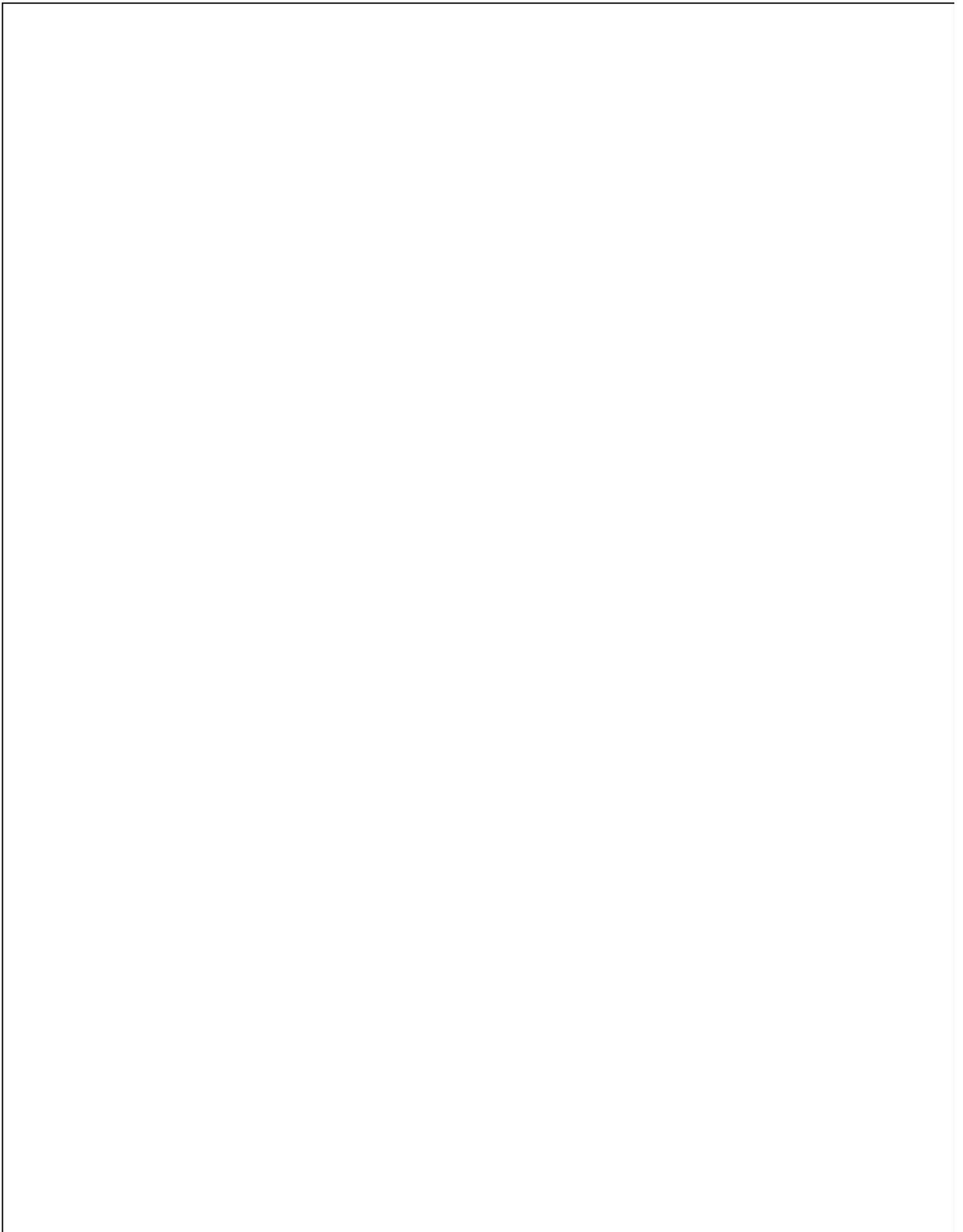
From the research that has been carried out, it can be concluded that there are Enhancement The Hb level was 0.617 mg/dl

from giving free noodles. The average Fe intake before administration was 5.2367 mg and after administration was 7.3767 mg. The average protein intake before administration was 49.9117 g and after administration was 80.9063 g. The average intake of Vitamin C before administration was 32.9667 mg and after administration was 47.9733 mg. There was an effect of giving Beba Noodles on increasing Hb levels with a value ( $p = 0.000 < 0.05$ ). There is an effect of giving Beba Noodles on food intake (fe, protein, and Vitamin C) with value ( $p = 0.000 < 0.005$ ) towards school children

### BIBLIOGRAPHY

- Dheny Rohmatika, I. S. W. (2019). Analysis of the Impact of Combination Therapy of Green Spinach Juice, Guava and Honey on Hemoglobin Levels and Performance. *Indonesian Midwifery*, 10(1), 86–95.
- Dhilon, D. A., Lubis, D. S., & Arsita, E. (2020). The Effect of Giving Green Spinach Juice on Hemoglobin Levels of Pregnant Women in Pmb Rosmidah, Kuok Health Center Working Area. *Doppler Journal*, 4(2), 140–145.
- Indonesian Ministry of Health. (2013). *BASIC HEALTH RESEARCH*.
- Indonesian Ministry of Health. (2018). 2018 Basic Health Research Results. *Indonesian Ministry of Health*, 53(9), 1689–1699.

- Kurnia, I. T., Uswatun, U. N., Studi, P., Klinik, G., Negeri, P., & Timur, J. J. (2019). *Bisbel Guava (Red Guava Eel Biscuit) as an Alternative to Fe Tablets in Efforts to Prevent Anemia in Adolescent Girls. 1.*
- Prasetya, K. A. H. (2019). The Relationship Between Anemia and Learning Achievement in Class XI Female Students at SMAN 1 Abiansemal, Badung. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2017*, 41(2), 84–93.
- Rahmadona, R. (2022). The Effect of Temvita Cookies as a Healthy Snack on Haemoglobin Levels of Adolescents with Anemia. *Photon: Journal of Science And Health*, 12(2), 103–110. <https://doi.org/10.37859/jp.v12i2.3703>
- Riawan, A., & Dewi, M. (2023). *The Relationship between Nutrient Intake and Hemoglobin Levels in Elementary School Children in Cijeruk, Bogor.* 23(1), 84–90. <https://doi.org/10.24815/jks.v23i1.27326>
- Roziana, R., Fitriani, F., & Marlina, Y. (2020). The Effect of Giving Wet Patin Fish Noodles on Energy Intake, Protein and Body Weight of Elementary School Students in Pekanbaru. *Journal of Nutrition College*, 9(4), 285–289. <https://doi.org/10.14710/jnc.v9i4.28785>
- Safitri, Y. (2019). The Effect of Giving Red Spinach Juice, Orange Sunkis, Honey on Hemoglobin Levels in Pregnant Women Who Experience Anemia at Upt Puskesmas Kampar in 2019. *Nurses Journal*, 3(23), 72–83.
- Sembiring, V. A. (2019). Processing Spinach Flour as a Substitute for Glutinous Rice Flour in Making Klepon. *Tourism Journal*, 6(1), 56–70. <https://doi.org/10.31311/par.v6i1.4828>
- Supriadi, D., Budiana, T. A., & Jantika, G. (2022). Incidence of Anemia Based on Energy Intake, Vitamin B6, Vitamin B12, Vitamin C and Dietary Diversity in Elementary School Children in Mi Pui, Cimahi City. *Bhakti Husada Health Sciences Journal: Health Sciences Journal*, 13(01), 103–115. <https://doi.org/10.34305/jikbh.v13i1.467>
- Suryani, I. A. M., & Satriyasa, B. K. (2018). General Description of Anemia Status and Learning Achievement of Elementary School Age Children at SD Negeri 4 Abiansemal. *Udayana Medika E-Journal*, 7(4), 181–188.
- Thamrin, H., & Masnilawati, A. (2021). Relationship between Knowledge, Consumption Levels of Protein, Iron, and Vitamin C with Hemoglobin Levels in Female Midwifery Students. *Forikes Voice Health Research Journal*, 12(1), 30–33. <https://doi.org/10.33846/sf12nk206>



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