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THE EFFECT OF MONDAY THURSDAY FAST HABITS ON GLUCOSE, CHOLESTEROL, AND URIC ACID IN YOUNG ADULT WOMEN

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ABSTRACT

Excess levels of glucose, cholesterol, and uric acid can cause health problems called hyperglycemia, hypercholesterolemia, and hyperuricemia. It is better to take preventive measures than to treat patients who have been exposed to the disease. One of the preventive measures is to fast on Mondays and Thursdays when they are still younger. By fasting, food intake will be controlled so that hyperglycemia, hypercholesterolemia, and hyperuricemia can be avoided. Based on this background, this study aims to determine the effect of sunnah fasting on Mondays and Thursdays on glucose, cholesterol, and uric acid levels in young adult women. This study is an experimental study with two treatment groups, namely the group that is accustomed to fasting sunnah Monday and Thursday for 6-12 months and the group that is not accustomed to fasting as a control. The research subjects were 40 students of University of Darussalam Gontor Female, Mantingan Campus, Ngawi, East Java which were divided into 2 treatment groups. Research subjects have an age range of 19-23 years, weight 40-65 kg, and height 145-165 cm. Measurement of glucose, cholesterol and uric acid levels was carried out once on research subjects using the Easy Touch GCU tool. Analysis of the data used is the Independent-T Test with a significance level of 95% using the SPSS 16.0 statistical program. The results showed that blood glucose levels in the group of young women who were accustomed to fasting were lower than the control group (young women who were not accustomed to fasting). Meanwhile, cholesterol and uric acid levels in the group of young women who were accustomed to fasting were higher than the control group (young women who were not accustomed to fasting). Although this difference was not statistically significant (p > 0.05).

Keywords: *sunnah fasting, Monday thursday, glucose, cholesterol, uric acid*

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1. INTRODUCTION

A healthy lifestyle is an effort made by someone who wants to always be healthy, by paying attention to lifestyle including controlling activity and food intake. If this is not implemented, activities and food intake become irregular, unhealthy food consumption occurs, and in the long term will cause health problems. Over time, this will cause a buildup of food in the body, causing abnormal glucose, cholesterol and uric acid levels which can cause various diseases. Some of the health problems that occur include glucose, cholesterol, and uric acid levels that exceed normal levels called hyperglycemia, hypercholesterolemia, and hyperuricemia. In addition to excess, glucose, cholesterol, and uric acid levels can also experience levels below normal which can also cause problems, namely hypoglycemia, cancer, depression, and anxiety disorders that require immediate medical treatment.[1]

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Based on the above, it is important to do prevention efforts so that glucose, cholesterol, and uric acid levels remain in normal conditions.[2] This preventive measure should be taken immediately on every individual from a young age. According to WHO, the age of young adults is categorized when a person's age enters 17-24 years. When a person is a young adult, a person enters a phase of life with a high level of productivity and activity, so it takes good life management to be able to maintain health, namely by doing a good and healthy lifestyle. Fasting has many health benefits, so it can be classified as a healthy lifestyle. In accordance with the hadith "*From Abu Hurairoh RA. Said: Rasulullah SAW. He said: Go to war and you will get the spoils of war, fast and you will be healthy, and travel and you will be provided with enough.*"[3]

Among Muslims, Mondays and Thursdays are special because there are special features. Therefore, Rasulullah SAW gave an example of fasting on that day. In accordance with the HR. An-Nasai no. 2362 and Ibn Majah no. 1739, from 'Aisha RA. he said; "*The Messenger of Allah used to choose to fast on Mondays and Thursdays*." One of the privileges of fasting on Mondays and Thursdays is that sins are forgiven and the gates of Paradise are opened. This is based on the hadith of the Rosulullo which reads; "*The doors of heaven are opened on Mondays and Thursdays. Then on that day, every servant will be forgiven who does not associate Allah with anything, except those between himself and his brother there is enmity. Then it was said: "Look at these two people until they make peace*" (HR. Muslim)

Research on Monday-Thursday fasting as a therapy for treating blood glucose, cholesterol, and uric acid diseases has been carried out, for example research by Putranto[4] which shows the results that Monday-Thursday fasting is effective in reducing total cholesterol levels in patients with type 2 diabetes and in Saputra's study[5] which shows the results can reduce blood sugar levels before and after the intervention in the experimental group. Meanwhile, research on the effect of Monday-Thursday fasting on healthy young adult women as an effort to prevent glucose, cholesterol, and uric acid disease has never been done, so this research is important to do.

2. METHODS

This research was conducted at University of Darussalam Gontor Female, Mantingan, Ngawi, East Java. The collection and measurement of blood glucose, cholesterol and uric acid levels of research subjects was carried out in January 2020. The tools and materials used in this study included a blood check (Easy Touch GCU), blood test strips (Easy Touch for: glucose, cholesterol, and gout), blood lancet, 70% alcohol, cotton, tissue, and gloves. This research is an experimental research, with 2 groups, namely; K-1 = The group that is accustomed to fasting sunnah Monday and Thursday for 6-12 months; K-2 = Group that is not accustomed to fasting as a control.

Each treatment group used as many as 20 subjects so that the total subjects were 40 people. The research subjects were students of University of Darussalam Gontor Female, Mantingan with an age range of 19-23 years, weight 40-65 kg and height 145-165 cm. Research subjects were taken based on interviews regarding the habit of fasting Monday and Thursday and were asked to be a respondent. Research subjects were given information before becoming subjects (informed consent), then signed a letter of willingness. Taking and measuring blood glucose, cholesterol and uric acid levels in research subjects was carried out once using the Easy Touch GCU tool. The blood glucose, cholesterol and uric acid levels that are calculated are the instantaneous levels of glucose, cholesterol and uric acid. Data analysis

used the Independent-T Test and the Mann Whitney test with a significance level of 95% with the application of SPSS 16.0 statistics. Independent Analysis-T Test and Mann Whitney are parametric tests used to analyze 2 different treatments.

3. RESULT

The Effect of Monday-Thursday Fasting Habits on Blood Glucose Levels

The results of measuring blood glucose levels in the treatment group who are accustomed to fasting Monday-Thursday and the control group are shown in table 1 below.

Table 1. Glucose Levels in the Treatment Group who used to fast Monday and Thursday and the control group

Subjects accustomed to fasting (people)	Glucose levels (mg/dl)	Subjects are not accustomed to fasting (people)	Glucose levels (mg/dl)
1	84	1	90
2	85	2	73
3	63	3	117
4	93	4	78
5	89.2	5	113
6	69	6	69
7	64	7	95
8	70	8	77
9	69	9	86
10	77	10	156
11	68	11	81
12	89	12	142
13	61	13	69
14	68	14	82
15	75	15	64
16	67	16	86
17	68	17	79
18	100	18	57
19	105	19	78
20	73	20	112
Average	**76.86**	**Average**	**90.2**

The Effect of Monday-Thursday Fasting Habits on Blood Cholesterol Levels

The results of measuring blood cholesterol levels in the treatment group who are accustomed to fasting on Mondays and Thursdays and the control group are shown in table 2 below

Table 2 Cholesterol Levels in the Treatment Group who used to fast Monday and Thursday and the control group

Subjects accustomed to fasting (people)	Cholesterol levels (mg/dl)	Subjects are not accustomed to fasting (people)	Cholesterol levels (mg/dl)
1	129	1	176
2	117	2	187
3	164	3	159
4	139	4	123
5	219	5	171
6	179	6	160
7	157	7	118
8	178	8	153
9	155	9	156
10	176	10	208
11	182	11	173
12	199	12	139
13	161	13	115
14	172	14	124
15	212	15	191
16	185	16	191
17	173	17	189
18	154	18	176
19	148	19	224
20	154	20	98
Average	**167.65**	**Average**	**161.55**

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The Effect of Monday-Thursday Fasting Habits on Blood Uric Acid Levels

The results of measuring blood uric acid levels in the treatment group who are accustomed to fasting on Mondays and Thursdays and the control group are shown in table 2 below.

Table 3 Uric Acid Levels in the Treatment Group who used to fast Monday and Thursday and the control group

Subjects accustomed to fasting (people)	Uric acid levels (mg/dl)	Subjects are not accustomed to fasting (people)	Uric acid levels (mg/dl)
1	5.7	1	6.9
2	5.1	2	5.4
3	4.4	3	4.2
4	5.1	4	4.2
5	7.1	5	4.8
6	4.0	6	5.4
7	4.8	7	4.8
8	4.6	8	5.7
9	3.5	9	4.0
10	7.1	10	4.8
11	5.8	11	2.0
12	6.6	12	4.8
13	3.3	13	5.2
14	4.6	14	4.2
15	5.8	15	4.2
16	5.0	16	4.2
17	3.7	17	5.1
18	3.2	18	4.7
19	4.3	19	4.4
20	4.2	20	3.7
Average	**4.895**	**Average**	**4.635**

4. DISCUSSION

The Effect of Monday-Thursday Fasting Habits on Blood Glucose Levels

The results of the normality test of glucose level data showed that the results were not normally distributed, so that data analysis was continued with the Mann Whitney test. The results of the Mann Whitney test showed a significance value of 0.053 ($p>0.05$) so it could be concluded that there was no significant difference between the treatment group (who used to fast Monday and Thursday) and the control group (not accustomed to fasting). This insignificant result is probably due to the age factor of the subjects used in the study. The age range of the research subjects is between 19-23 years, which is the age of young adults. Blood glucose levels at this age are relatively stable or within normal levels. Usually the increase in blood glucose levels to exceed normal limits or called Diabetes Mellitus will occur with age. In addition to the age factor, it may be due to solid physical activity and food intake that is maintained in quantity and quality. This is because the research subjects are students at Darussalam Gontor University which is a boarding school-based campus with a dormitory system, where the daily food menu consumed has been determined and scheduled. So that the blood glucose levels in the treatment group subjects (who are accustomed to fasting Monday-Thursday) and the control group (not accustomed to fasting) are still in the normal range and not significantly different.

Normal human blood contains glucose in a fixed amount or concentration, which is between 70-100 mg/100 mL of blood. Glucose in the blood can increase after eating carbohydrate foods. But 2 hours later, the amount of glucose will return to its original state. In patients with diabetes mellitus, the amount of blood glucose is greater than 130/per 100 mL of blood.[6] Based on the results of the measurement of blood glucose levels in the treatment group (who are accustomed to fasting Monday-Thursday) and the control group (not accustomed to fasting) as shown in Table 1, it shows that the subjects in the control group

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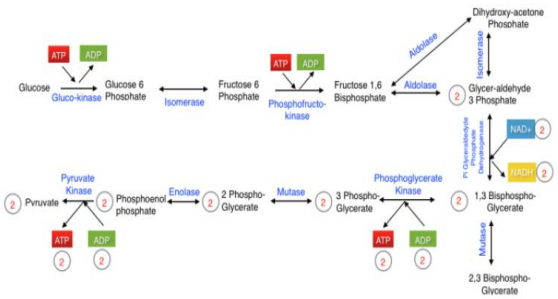
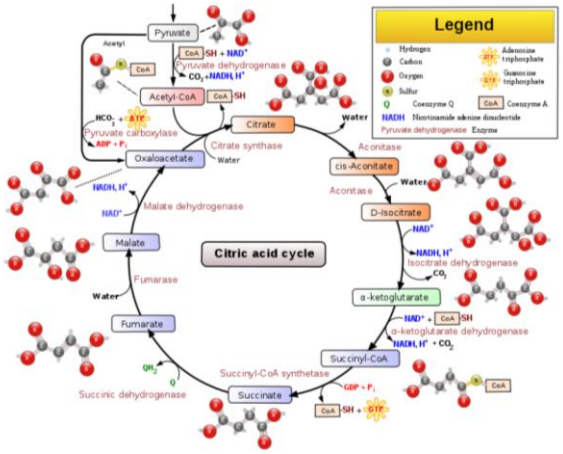
(not accustomed to fasting) there are 5 subjects who have glucose levels which are prediabetic. (>100 mg/100 ml blood), 11 subjects had normal glucose levels (70-100 mg/100 ml blood) and 4 subjects had glucose levels below normal (<70 mg/100 ml blood). While in the treatment group (who used to fast on Mondays and Thursdays) there were 1 subject who had prediabetic glucose levels (>100 mg/100 ml blood), 10 subjects had normal glucose levels (70-100 mg/100 ml blood) and as many as 9 subjects who had glucose levels below normal (<70 mg/100 ml of blood).

Based on the data in table 1, the average glucose levels in the subjects of the treatment group (who used to fast Monday-Thursday) and the control group (not accustomed to fasting) showed normal glucose levels (70-100 mg/100 ml of blood). However, the average glucose level in the treatment group subjects (who were accustomed to fasting Monday-Thursday) was lower than the control group (not accustomed to fasting). This is because when fasting, a person does not eat and drink for almost 14 hours. This reduction in food intake causes the level of glucose in the blood to decrease. According to Berg et al.,[7] a decrease in the level of glucose in the blood can cause a person to feel faint and dizzy when fasting.

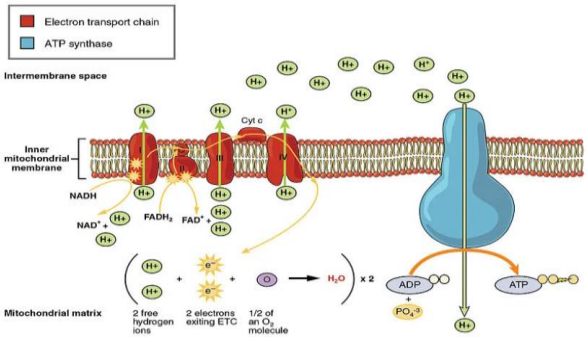
Carbohydrates are polyhydroxy alcohol compounds with a carbonyl group having an aldehyde or ketone group. Based on their chemical structure, carbohydrates are divided into monosaccharides, disaccharides and polysaccharides. Monosaccharides are simple carbohydrates that cannot be further hydrolyzed, such as glucose and fructose. Disaccharides are carbohydrates which are a combination of 2 monosaccharides, such as lactose, sucrose and maltose. While polysaccharides are carbohydrates composed of or many monosaccharides, such as starch, cellulose, glycogen and dextrin. The main function of carbohydrates is to produce energy.[8] When carbohydrates are consumed into the body through the digestive tract, carbohydrates will be hydrolyzed using enzymes to produce the simplest form, namely monosaccharides such as glucose. Glucose will be broken down to produce energy (ATP) involving 3 processes, namely glycolysis, Krebs cycle and electron transport. Glycolysis is the process of breaking down glucose into pyruvic acid as shown in Figure 1. The Krebs cycle is the process of converting pyruvic acid into acetyl CoA and then into citric acid which will be converted into oxaloacetate (Figure 2). While the electron transport chain (ETC) is a pathway consisting of a series of protein complexes that transfer electrons from electron donors to electron acceptors through redox reactions. This causes hydrogen ions to accumulate in the mitochondrial matrix. A concentration gradient is formed where hydrogen ions diffuse out of the mitochondrial matrix by passing through the ATP synthase enzyme so that ADP is phosphorylated to produce ATP (energy) (Figure 3).[9]



Picture 1 Glycolysis Process



Picture 2 Krebs Cycle



Picture 3 Electron Transport Chain (ETC) Process

When a person fasts, food intake including carbohydrates will decrease so that blood glucose levels decrease (as the results of the data in this study). Decreased glucose levels will cause the process of energy production (ATP) to decrease so that it will cause the cells in the body to lack energy and cause organs to be unable to function normally (eg weakness and dizziness). Therefore, fasting can be used as one of the prevention and treatment therapies for Diabetes Mellitus (glucose levels are more than normal), such as research conducted by Fatmaningrum, et. al.[10] and Alfin, et. al.[11].

The Effect of Monday-Thursday Fasting Habits on Blood Cholesterol Levels

The results of the normality test of cholesterol level data showed that the results were normally distributed, so that the data analysis continued with the Independent-T Test. The results showed a significance value of 0.522 ($p > 0.05$) so it was concluded that there was no significant difference between the treatment group (who used to fast Monday and Thursday) and the control group (not accustomed to fasting). This insignificant result is probably due to the age factor of the subjects used in the study. The age range of the research subjects is between 19-23 years, which is the age of young adults. Blood cholesterol levels at this age are relatively stable or within normal levels. Usually the increase in blood cholesterol levels to exceed normal limits or called hypercholesterolemia disease will occur with age. In addition to the age factor, it may be due to activity and food intake that is maintained in quantity and quality. This is because the research subjects are students at Darussalam Gontor University which is a boarding school-based campus with a dormitory system, where the daily food

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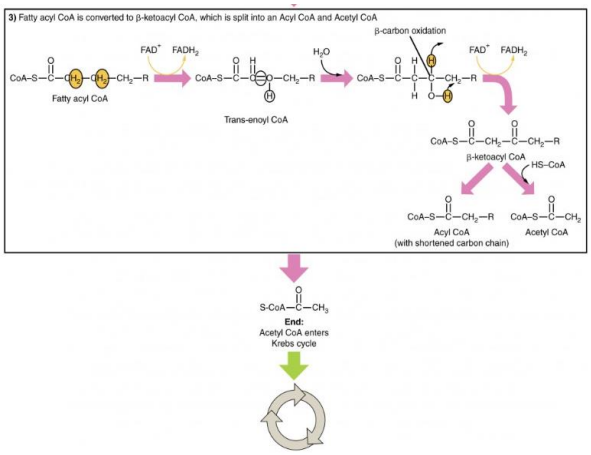
menu consumed has been determined and scheduled. So that blood cholesterol levels in the treatment group subjects (who are accustomed to fasting Monday-Thursday) and the control group (not accustomed to fasting) are still in the normal range and not significantly different.

Blood cholesterol levels are classified based on the range, namely if the blood cholesterol level is <160 mg/dL then it is classified as low, if the blood cholesterol level is 160-200 mg/dL then it is classified as normal, if the blood cholesterol level is between 200-240 mg/dL then it is called the threshold. high limit/pre-hypercholesterolemia, and if the blood cholesterol level is >240 mg/dL then it is classified as high/hypercholesterolemia.[12] Based on the results of the measurement of blood cholesterol levels in the treatment group (who are accustomed to fasting Monday-Thursday) and the control group (not accustomed to fasting) as shown in Table 2, it shows that the subjects in the control group (not accustomed to fasting) there are as many as 9 subjects who have cholesterol levels including low (<160 mg/dL blood), 9 subjects had normal cholesterol levels (160-200 mg/dL blood) and 2 subjects had cholesterol levels including prehypercholesterolemia (200-240 mg/dL blood). While in the treatment group (who used to fast Monday and Thursday) there were 8 subjects who had low cholesterol levels (<160 mg/dL blood), 10 subjects had normal cholesterol levels (160-200 mg/dL blood) and 2 subjects who have cholesterol levels are included in the prehypercholesterolemia group (200-240 mg/dL blood).

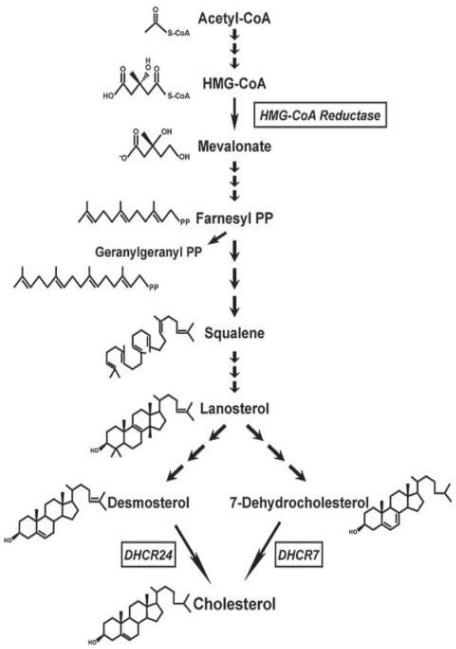
Fats and oils are esters consisting of glycerol (3 carbon sugar alcohol/polyol) and 3 fatty acids. Fatty acids are hydrocarbon chains of different lengths with varying degrees of saturation ending with a carboxylic acid group. In addition, the double bonds of fatty acids can be either cis or trans, creating different types of fatty acids. Fatty acids usually contain an even number of carbon atoms and are usually 14 to 24 carbons in length. Lipids in the body are usually in the form of triglycerides which function to store energy, provide protection to cells, and help absorb fat-soluble vitamins. Another example of lipids is fats which are usually solid at room temperature, while oils are generally liquid.[13] Cholesterol and triglycerides are nonpolar lipid molecules. Therefore, they are circulated throughout the body in polar blood plasma with the help of lipoprotein particles. The main purpose of lipoproteins is to help transport lipids (hydrophobic) in water. The structure of lipoproteins consists of triglycerides, cholesterol, phospholipids, and apolipoproteins. Apolipoproteins primarily function as carrier proteins but also serve as cofactors for enzymes that metabolize lipoproteins and aid in the exchange of lipid components between lipoproteins. Some examples of lipoproteins are chylomicrons, Very Low Density Lipoprotein (VLDL), Intermediate Density Lipoprotein (IDL), Low Density Lipoprotein (LDL), and High Density Lipoprotein (HDL). Each is used in a different phase of lipid transport.[14]

Based on the data in table 2, the average cholesterol levels in the subjects of the treatment group (who used to fast Monday and Thursday) and the control group (not accustomed to fasting) showed normal cholesterol levels (160 - 200 mg/dL blood). However, the average cholesterol levels in the treatment group subjects (who were accustomed to fasting Monday-Thursday) were higher than the control group (not accustomed to fasting). This is because when someone who is fasting experiences a decrease in food intake, it will cause carbohydrate intake to decrease so the body will look for other sources of food that can be converted into energy other than carbohydrates. When glycogen (glucose stores in the liver and muscles) are used up in the body, the body will break down fat stores in adipose tissue to produce ATP (energy). Hydrolysis of fat will produce glycerol and fatty acids. Fatty acids will be converted into acetyl CoA and some will undergo the process of gluconeogenesis, some will be oxidized to produce ATP (energy) (Figure 4) and some will be converted into

cholesterol (Figure 5) and enter the blood circulation.[15] Therefore, in people who fasted blood cholesterol levels increased, as shown in table 2 in this study. These results are in accordance with the research.[16]



Picture 4 Fat Oxidation Process Produces ATP



Picture 5 Cholesterol Synthesis Process

The Effect of Monday-Thursday Fasting Habits on Blood Uric Acid Levels

The results of the normality test of uric acid level data showed that the results were normally distributed, so that the data analysis continued with the Independent-T Test. The results showed a significance value of 0.445 ($p>0.05$) so it was concluded that there was no significant difference between the treatment group (who used to fast Monday and Thursday) and the control group (not accustomed to fasting). This insignificant result is probably due to the age factor of the subjects used in the study. The age range of the research subjects is between 19-23 years, which is the age of young adults. Blood uric acid levels at this age are relatively stable or within normal levels. Usually the increase in blood uric acid levels to

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exceed normal limits or called hyperuricemia disease will occur with age. In addition to the age factor, it may be due to activity and food intake that is maintained in quantity and quality. This is because the research subjects are students at Darussalam Gontor University which is a boarding school-based campus with a dormitory system, where the daily food menu consumed has been determined and scheduled. So that blood uric acid levels in the treatment group subjects (who are accustomed to fasting Monday-Thursday) and the control group (not accustomed to fasting) are still in the normal range and not significantly different.

Blood uric acid levels are classified in several levels, namely the low category when the level is < 2.5 mg/dl in men and < 1.5 mg/dl in women; normal category when the level is 2.5 - 7 mg/dl in men and 1.5 - 6 mg/dl in women; and high category when > 7 mg/dl in men and > 6 mg/dl in women.[17] Based on the results of the measurement of blood uric acid levels in the treatment group (who are accustomed to fasting Monday-Thursday) and the control group (not accustomed to fasting) as shown in Table 3, it shows that the subjects in the control group (not accustomed to fasting) did not have high uric acid levels. including low (<1.5 mg/dl blood), 19 subjects had normal uric acid levels (1.5 – 6 mg/dl blood) and 1 subject had high uric acid levels (> 6 mg/dl blood). While in the treatment group (who used to fast Monday and Thursday) there were no subjects who had low uric acid levels (<1.5 mg/dl blood), as many as 17 subjects had normal uric acid levels (1.5-6 mg/dl). blood) and as many as 3 subjects who had high uric acid levels (> 6 mg/dl blood).

The production and metabolism of uric acid is a complex process involving various factors, produced by the liver, and excreted by the kidneys and intestines. Uric acid is the end product of exogenous and endogenous purine metabolism. Exogenous purines vary significantly with respect to diet, and animal protein. Endogenous production of uric acid mainly from the liver, intestines and other tissues such as muscle, kidney and vascular endothelium.[18] Uric acid is a heterocyclic organic compound C5H4N4O3 (7,9-dihydro-1H-purine-2,6,8(3H)-trion) with a molecular weight of 168 Da. Many enzymes are involved in the conversion of two purine nucleic acids, adenine and guanine, to uric acid. Initially, adenosine monophosphate (AMP) is converted to inosine by two different mechanisms; first by removal of the amino group by deaminase to form inosine monophosphate (IMP) followed by dephosphorylation by nucleotidase to form inosine, or by first removing the phosphate group by nucleotidase to form adenosine followed by deamination to form inosine. Guanine monophosphate (GMP) is converted to guanosine by nucleotidase. The nucleosides, inosine and guanosine, are further converted to the purine bases hypoxanthine and guanine, respectively, by purine nucleoside phosphorylase (PNP).[19]

Hypoxanthine is then oxidized to xanthine by xanthine-oxidase (XO), and guanine is deaminated to xanthine by guanine deaminase. Xanthine is further oxidized by xanthine oxidase to form the final product, uric acid (Figure 5). When the concentration of urate increases in the blood, the formation of uric acid crystals increases. The solubility of uric acid in water is low, and in humans, the average blood concentration of uric acid is close to the solubility limit (6.8 mg/dL). When uric acid levels are higher than 6.8 mg/dL, uric acid crystals form as monosodium urate (MSU). Humans cannot oxidize uric acid to the more soluble allantoin compound because of a lack of the enzyme uricase. Normally, most of the daily excretion of uric acid occurs through the kidneys.[19]

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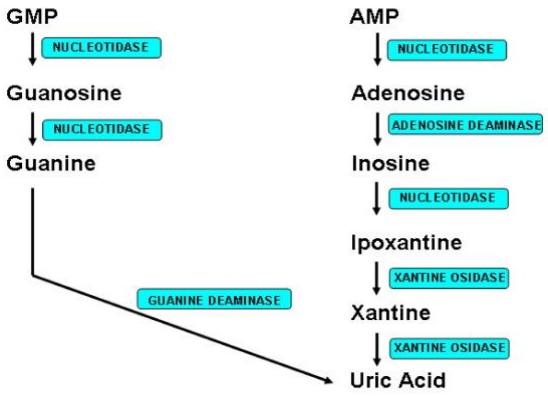

Picture 6 Synthesis Uric Acid Process

Based on the data in table 3, the average uric acid levels in the treatment group subjects (who used to fast Monday and Thursday) and the control group (not accustomed to fasting) showed normal uric acid levels (1.5 – 6 mg/dl blood). However, the average uric acid levels in the treatment group subjects (who were accustomed to fasting Monday-Thursday) were higher than the control group (not accustomed to fasting). This is because when someone who is fasting experiences a decrease in food intake, it will cause carbohydrate intake to decrease so the body will look for other sources of food that can be converted into energy other than carbohydrates. When glycogen (glucose stores in the liver and muscles) are used up in the body, the body will break down fat stores in adipose tissue to produce ATP (energy). In addition to hydrolysis of fat, the body will also break down protein into Acetyl CoA and eventually also undergo oxidation to produce energy (ATP). One of the end products of protein metabolism is uric acid.[18] Therefore, the longer a person fasts will cause a lot of protein to be oxidized to produce ATP and uric acid also increases.

The Benefits of Fasting Monday Thursday Spiritually and For Health

According to Purnama,[20] fasting in Arabic is called Ash-Shiyaam or Ash-Shaum. In language, Ash-Shiyam means Al-Imsaak, which is self-restraint. While in terms, Ash-Shiyaam means worshiping Allah SWT by abstaining from eating, drinking and other fast cancelers, from dawn to sunset. The spiritual benefits of fasting include:

1. Fasting is an incomparable act of worship. Rosulullah SAW said to Abu Umamah Al Bahili: "*You should fast because fasting is an act of worship that has no equal*" (HR. Ahmad, An Nasa-i. Authenticated by Al Albani in Sahih An Nasa-i).
2. Allah SWT entrusts fasting to Himself. Rosulullah SAW said, "*Allah said: every human action is for himself, except fasting. Because fasting is for Me and I will reward it*" (HR. Bukhari - Muslim).
3. Fasting combines 3 types of patience, namely patience in obeying Alloh, patience in avoiding things that Alloh forbids and patience in Alloh's destiny for hunger and difficulties felt during fasting.
4. Fasting will provide intercession on the Day of Resurrection. Rosulullah SAW said, "*Fasting and the Qur'an, both will intercede on the Day of Resurrection*" (HR. Ahmad, Thabrani, Al Hakim).
5. Those who fast will be rewarded with forgiveness and a great reward. Allah SWT said: "*Verily Muslim men and women, believing men and women, steadfast men and women in their obedience, truthful men and women, patient men and women, humble men and*

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women, men and women who give alms, men and women who fast, men and women who preserve their honor, men and women who mention (the name of) Allah a lot, Allah has prepared for them forgiveness and a great reward" (QS. Al Ahzab: 35).

6. Fasting is a shield from hellfire. The Prophet SAW said: "*Fasting is a shield*" (HR. Bukhari - Muslim).
7. Fasting is the reason people enter heaven. Rosulullah SAW said: "*In heaven there are eight gates, among them there is a gate called Ar-Rayyan. No one can enter it except those who are fasting*" (HR. Bukhari).

While according to health, fasting is beneficial for losing weight, lowering insulin resistance, lowering blood glucose levels, lowering blood pressure, improving lipid profile, beneficial for the health of the cardiovascular system, preventing obesity, preventing diabetes, preventing and treating cancer, protection against neurodegeneration, reduce inflammation, and can extend life.[21] In addition, fasting can also reduce LDL levels and blood pressure so that it can be used for cardiovascular disease prevention therapy.[22] Fasting can prevent degenerative diseases, lower cholesterol levels, ease the work of the kidneys, can be an alternative to lower cholesterol and hypertension levels and is useful for improving body health.[23] Fasting is also useful for reducing weight, reducing obesity, decreasing glucose and increasing HDL and total cholesterol.[24] According Al-Tuwayjiry,[25] types of fasting include:

1. Obligatory fasting, for example Ramadan fasting
2. Sunnah fasting, among others:
   a. Daud's fasting
      "The best prayer in the sight of Alloh is the prayer of Prophet Daud 'alaihis salam. And the best fast in the sight of Alloh is Daud's fast. Prophet Daud used to sleep in the middle of the night and he prayed in a third of the night and slept again in a sixth. As for Daud's fasting, it means fasting one day and not fasting the next day." (HR. Bukhari no. 1131).
   b. Fasting on the 9th, 10th and 11th of Muharram
      "Fast on the day of Asyura and fast the day before and after it and do not be like the Jews." (HR. Bukhari 3/454, 4/102-244, 7/147, 8/177,178, Ahmad 6/29, 30, 50, 162, Muslim 2/792, Tirmidhi 753, Abu Daud 2442, Ibnu Majah 1733, Nasa'i in Al-Kubra 2/319,320, Al-Humaidi 200, Al-Baihaqi 4/288, Abdurrazaq 4/289, Ad-Darimy 1770, Ath-Thohawi 2/74 and Ibnu Hibban in his Sahih 5/253).
   c. Fasting 6 days of the month of Shawwal
      "Whoever fasts Ramadan and then fasts six days in the month of Syawal, then he fasts like a whole year." (HR. Muslim)
   d. Fasting yaumul bidh (13, 14, 15 Hijri) every month
      "Fasting on three days of every month is like fasting throughout the year." (HR. Bukhari no. 1979). "*If you want to fast three days every month, then fast on the 13th, 14th, and 15th (of the Hijri month)*." (HR. Tirmidhi no. 761 and An Nasai no. 2425. Abu 'Isa Tirmidhi said that the hadith is hasan).
   e. Fasting 9 days of the month of Dzulhijjah
      "*There is no righteous deed more loved by Allah than the righteous deed done in these days (i.e. the first 10 days of the month of Dhulhijjah)." The companions asked: "Isn't there jihad in the way of Alloh?" Rosulullah, may Alloh bless him and grant him peace, replied: "There is no jihad in the way of Alloh, except for those who set out for jihad with their souls and wealth, but none of them return."* (HR. Abu Daud no. 2438, At Tirmidhi no. 757, Ibnu Majah no. 1727, and Ahmad no. 1968, from Ibnu 'Abbas. Shaykh Al Albani

said that this hadith is authentic. Shaykh Syu'aib Al Arnauth said that the chain This hadith is authentic according to the conditions of Bukhari-Muslim).

f. Fasting in the month of Sha'ban
"*The Messenger of Alloh, may Alloh bless him and grant him peace, used to fast, until we said that he did not break his fast. He also broke his fast until we said that he was not fasting. I have never seen the Messenger of Allah, may Alloh bless him and grant him peace, fast perfectly for a whole month except in the month of Ramadan. I have never seen him fast more than he fasted in the month of Sha'ban."* (HR. Bukhari no. 1969 and Muslim no. 1156)

g. Monday Thursday Fasting
According Tuasikal,[26] the spiritual virtue of fasting Monday-Thursday is being able to erase mistakes and elevate degrees, and indeed these two days are when the practice is raised before Allah so it is very good to fast. These virtues are based on several hadiths, namely:
   - From 'Aisyah radhiyallahu 'anha, she said, "*The Messenger of Allah used to choose to fast on Mondays and Thursdays*." (HR. An Nasai no. 2362 and Ibn Majah no. 1739. Hafizh Abu Thohir said that this hadith is hasan. Shaykh Al Albani said that this hadith is authentic).
   - Usamah bin Zaid said, "*I said to the Messenger of Allah, "O Messenger of Allah, you are seen fasting to the point that it is thought that there is no time for you not to fast. You also appear not to fast, to the point that it is thought that you have never fasted. Except for the two days that you met him and fasted at that time." Rosulullah SAW asked, "What are the two days?" Usamah replied, "Monday and Thursday." Then he said, "Those two days are the time when the practice is brought before the Lord of the worlds (to Allah). I really like it when my practice is exposed while I am fasting."* (HR. An Nasai no. 2360 and Ahmad 5: 201. Al Hafizh Abu Thohir said that this hadith is hasan).
   - From Abu Hurairah radhiyallahu 'anhu, Rasulullah SAW said, "*Various deeds are presented (to Allah) on Mondays and Thursdays, so I like it when my deeds are exposed while I am fasting*." (HR. Tirmidhi no. 747. At Tirmidhi says that this hadith is hasan ghorib. Al Hafizh Abu Thohir says that this hadith is hasan. Shaykh Al Albani says that this hadith is authentic lighoirihi, i.e. authentic in other ways).
   - From Abu Qotadah Al Anshori RA., Rasulullah SAW was asked about fasting on Mondays, then he replied, "*That day is the day I was born, the day I was sent or the revelation was sent down for me*." (HR. Muslim no. 1162).
   - The virtue of Mondays and Thursdays is generally explained in the following hadith of Abu Hurairah, Rasulullah SAW said, "*The gates of heaven are opened on Mondays and Thursdays. Every servant who does not shirk Allah in the slightest will be forgiven (on that day) except for someone who has a dispute (enmity) between himself and his brother. It will be said to them later, end their business until they both reconcile, end their business until they both make peace*." (HR. Muslim no. 2565).

Meanwhile, the benefits of fasting Monday and Thursday for health is that it can increase emotional intelligence,[27] [28] reduce body weight and blood glucose,[29] and can lower cholesterol in people with DM 2.[30]

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5. CONCLUSION

Blood glucose levels in the group of young women who were accustomed to fasting were lower than the control group (young women who were not accustomed to fasting). Meanwhile, cholesterol and uric acid levels in the group of young women who were accustomed to fasting were higher than the control group (young women who were not accustomed to fasting). Although this difference was not statistically significant (not significant) because the results of the Independent T-Test and Mann Whitney test resulted in a significance value of $p > 0.05$.

Glucose, cholesterol and uric acid levels are influenced by various things, such as the type and portion of food and drink consumed, activities and lifestyle. In this study, only glucose, cholesterol and uric acid were measured for a moment without considering other factors that could affect them.

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