

**EFFECT OF RAMADAN FASTING ON HEALTH****Mehdi Dehghani Firoozabadi<sup>1</sup> and Mohammad Ali Sheikhi<sup>2\*</sup>**

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**ABSTRACT**

One of the 5 fundamental rituals of Islam, the religion professed by over one billion people, is Fasting during the month of Ramadan. The time of observance differs each year because it is a lunar calendar. Fasting is from dawn to sunset, a period that varies with the geographical site and the season. In summer months and northern latitudes, the fast can last up to 18 hours or more. Muslims observing the fast must not only abstain from eating and drinking, but also from taking oral medications as well as intravenous fluids and nutrients. Fasting is not obligatory for children, menstruating women, sick, and traveling people. During the Ramadan fast, Muslims eat 2 meals, one before sunrise and the other shortly after sunset. Changes in sleep habit (shortening of time to sleep) accompany the change of meal schedule. Fasting during Ramadan may have effects on cardiac patients; the obligation that the daily calorie intake has to be taken in one or 2 meals instead of is an effort. Also, the obligation that they perform heavy

physical worship after a heavy meal. But the importance face of Fasting, is mental and healthiness effect on people because people can change their bad habit with confidence after this month.

**KEYWORDS:** the Ramadan fast, Muslims eat 2 meals, one before sunrise and the other shortly after sunset.

## INTRODUCTION

### Ramadhan Fasting

One of the 5 fundamental rituals of Islam, the religion professed by over one billion people, is Fasting during the month of Ramadan. The time of observance differs each year because it is a lunar calendar. Fasting is from dawn to sunset, a period that varies with the geographical site and the season. In summer months and northern latitudes, the fast can last up to 18 hours or more. Muslims observing the fast must not only abstain from eating and drinking, but also from taking oral medications as well as intravenous fluids and nutrients. Fasting is not obligatory for children, menstruating women, sick, and traveling people.<sup>[2-4]</sup> During the Ramadan fast, Muslims eat 2 meals, one before sunrise and the other shortly after sunset. Changes in sleep habit (shortening of time to sleep) accompany the change of meal schedule.<sup>[1]</sup> Fasting during Ramadan may have effects on cardiac patients; the obligation that the daily calorie intake has to be taken in one or 2 meals instead of.<sup>[4-5]</sup> is an effort. Also, the obligation that they perform heavy physical worship after a heavy meal.<sup>[6]</sup> But the importance of Fasting, is mental and healthiness effect on people because people can change their bad habit with confidence after this month. We can see verses of this fact on the holy Quran and we write this versus at the below.

### Fasting in Qoran

#### Al Baqarah<sup>[1]</sup>

Perform the pilgrimage and the visit (to Mecca) for Allah. And if ye are prevented, then send such gifts as can be obtained with ease, and shave not your heads until the gifts have reached their destination. And whoever among you is sick or hath an ailment of the head must pay a ransom of fasting or almsgiving or offering. And if ye are in safety, then whosoever contenteth himself with the visit for the pilgrimage (shall give) such gifts as can be had with ease. And whosoever cannot find (such gifts), then a fast of three days while on the pilgrimage, and of seven when ye have returned; that is, ten in all. That is for him whoso folk are not present at the Inviolable Place of Worship. Observe your duty to Allah, and know that Allah is severe in punishment. (verse196)

O ye who believe! Fasting is prescribed for you, even as it was prescribed for those before you, that ye may ward off (evil); (verse 183) (Fast) a certain number of days; and (for) him who is sick among you, or on a journey, (the same) number of other days; and for those who can afford it there is a ransom: the feeding of a man in need - but whoso doeth good of his

own accord, it is better for him: and that ye fast is better for you if ye did but know - (verse 184)

The month of Ramadan in which was revealed the Qur'an, a guidance for mankind, and clear proofs of the guidance, and the Criterion (of right and wrong). And whosoever of you is present, let him fast the month, and whosoever of you is sick or on a journey, (let him fast the same) number of other days. Allah desireth for you ease; He desireth not hardship for you; and (He desireth) that ye should complete the period, and that ye should magnify Allah for having guided you, and that peradventure ye may be thankful. (verse 185)

It is made lawful for you to go unto your wives on the night of the fast. They are raiment for you and ye are raiment for them. Allah is Aware that ye were deceiving yourselves in this respect and He hath turned in mercy toward you and relieved you. So hold intercourse with them and seek that which Allah hath ordained for you, and eat and drink until the white thread becometh distinct to you from the black thread of the dawn. Then strictly observe the fast till nightfall and touch them not, but be at your devotions in the mosques. These are the limits imposed by Allah, so approach them not. Thus Allah expoundeth His revelation to mankind that they may ward off (evil). (verse 187)

### **Al maeda**

O ye who believe! Kill no wild game while ye are on the pilgrimage. Whoso of you killeth it of set purpose he shall pay its forfeit in the equivalent of that which he hath killed, of domestic animals, the judge to be two men among you known for justice, (the forfeit) to be brought as an offering to the Ka'bah; or, for expiation, he shall feed poor persons, or the equivalent thereof in fasting, that he may taste the evil consequences of his deed. Allah forgiveth whatever (of this kind) may have happened in the past, but whoso relapseth, Allah will take retribution from him. Allah is Mighty, Able to Requite (the wrong).<sup>[95]</sup>

### **Effect of Ramadhan Fasting on health**

Globally, approximately 800 million Muslims strictly observe Ramadan fasting without food and water from dawn to sunset during the entire month.<sup>[7]</sup> Despite various studies concerning the metabolic changes in the human body caused by fasting during Ramadan, most of the researches are conducted on a small number of healthy young individuals. Although pregnant women are exempted from fasting, most women chose to fast during pregnancy with a prevalence of 80% in Singapore<sup>15</sup> and 75% in Birmingham.<sup>[8]</sup> Despite this high prevalence,

few studies have been carried out on pregnant women. In Turkey, we have no indication of how many women in the study adhered to Ramadan during pregnancy, but it seems that most Turkish mothers do observe the fast. Apart from religious and spiritual considerations, it is often a subject of discussion whether Ramadan fasting confers any harmful effects on the body. Changes in eating pattern and infrequent meals lead to reduced food intake, which may alter important enzymatic and metabolic responses. Nutritional studies have shown that with a reduction in the frequency of meals, food intake is generally lower, with a reduction in body weight, more significant in women. Similar metabolic changes have been described in pregnant women who observe the Ramadan fast in Gambia.<sup>[9]</sup> and Birmingham.<sup>5</sup> Also, some other studies showed Ramadan has no effect on breast milk quality and composition, moreover, any effect on the prevalence of low birth weight in babies born at full term. But, further studies in larger pregnant women groups are needed to determine the effects of malnutrition, dehydration and prolonged fasting on women's and fetus health. However, there may be undesirable biochemical consequences in pregnant individuals, as the nutrient intakes do not meet the requirements for pregnant women.<sup>[10]</sup>

### **Migraine during Fasting and its guideline**

The occurrence of headache during fasting.<sup>[11]</sup> is well known in the public and was established in the medical literature, especially with regard to short-term fasting such as the Yom-Kippur.<sup>[12,13]</sup> fast and the first day of Ramadan.<sup>[14]</sup> It seems to be associated with dehydration and caffeine withdrawal, and to be more common among sufferers of primary headaches. It is possible that other factors associated with changes in life style and stress also contribute to this phenomenon. it seemed to be less pronounced in patients experiencing throbbing headaches and in married patients. Previous prophylactic therapy did not dampen this. Physicians treating Muslim migraine patients should discuss potential Ramadan month exacerbation with their patients and provide counseling regarding the prevention of dehydration and caffeine withdrawal. Pharmacological prophylactic treatment should be considered.<sup>[15]</sup>

### **Obesity and Ramadhan Fasting**

A short-term fasting study (7 days) showed a significant reduction in levels of urinary 15FIP among females.<sup>[16]</sup> Ramadan intermittent fasting (RIF) is considered a unique model of intermittent fasting.<sup>[17]</sup> as food and fluid intake becomes exclusive at nocturnal time without restriction on the type or amount of food intake. Ramadan fasting is associated with alteration

in meal frequency, sleep duration, and reduction in physical activity during the day.<sup>[18]</sup> Many physiological and psychological changes are observed during RIF.<sup>[17]</sup> Despite the marked changes in food intake habits, some studies showed that RIF has no effect on body weight or body mass index (BMI).<sup>[17-20]</sup> while other studies showed that RIF is associated with significant weight loss.<sup>[21]</sup> On the other hand, Ramadan fasting showed no significant change in levels of serum malondialdehyde (MDA) as indicators of lipid peroxidation, or protein carbonyl, with a slight significant reduction of lipid peroxidation in erythrocytes.<sup>[19]</sup> In ezzat faris study indicated that Ramadan fasting activates metabolic changes such as increasing fat oxidation, in order for the body to adapt to the alteration in feeding pattern during the month of Ramadan, and to maintain the body composition within the physiological range. The main findings of this study are that the body weight and BMI remained unchanged after Ramadan, with the significant increase in fat mass%, which may be strongly related to the marked variation in qualitative food intake. These changes in eating patterns during Ramadan may be responsible also for the decrease in LDL and the increase in HDL levels and may contribute to lowering the risks of coronary heart disease. Finally 15FIP was found to be positively associated with obesity and to increase significantly after Ramadan which was parallel to the increase in fat mass.<sup>[22]</sup>

### **Serum bilirubin during Ramadan**

Azizi et al say that In regard to increase in serum bilirubin during Ramadan. it is now well documented that continuous fasting in normal subjects results in a rise in the unconjugated fraction of serum bilirubin. The rise becomes significant after 15 hours of fasting. Refeeding with carbohydrates or a mixed diet. but not by amino acids or fat.reverses fasting hyperbilirubinemia." It is of interest that the degree of hyperbilirubinemia was significantly less on days 20 and 29 when compared with day of Ramadan. The fall in serum bilirubin coincided with a rise in serum glucose levels during the latter days of Ramadan. suggesting carbohydrate dependency of amelioration of fasting hyperbilirubinemia. We conclude that changes in serum concentrations of glucose. bilirubin and calcium occur during Ramadan in men, and physicians working in Muslim countries and those caring for Muslims in other regions should be aware of these physiological alterations.<sup>[23]</sup>

### **Metabolic changes during Ramadan**

Various metabolic changes occur in healthy adults taking part in such a fast. Mustafa et al found increases in serum uric acid and lipid concentrations as well as changes in overall fluid

balance.<sup>[24,25]</sup> Furthermore, nutritional studies have shown that with a reduction in the frequency of meals food intakes are generally lower, with overall reduction in body weight, more significant in women.<sup>[26]</sup> Similar metabolic changes have been described in pregnant women who observe the Ramadan fast in Gambia and Birmingham.<sup>[27]</sup> and these included reduced blood glucose concentrations and raised plasma concentrations of free fatty acids and ketones. The clinical importance of these metabolic changes and in particular their effect on the outcome of pregnancy is however unclear. The effect of Ramadan on the prevalence of low birth weight was less clear cut. Both the cumulative and three of the four periods of the quinquennial analysis suggested that when Ramadan began in the middle trimester there was an increase in the proportion of low birthweight babies subsequently born at full term. During the second trimester mothers lay down stores of fat in anticipation of later fetal demands and failure to do so is associated with lower birth weight among Asian mothers.<sup>[28]</sup>

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