

Good Health and Nutrition in Ramadhaan



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Introduction

Several of the world's great religions recommend a period of fasting or abstinence for a certain period. Of these, the Islamic fast during the Muslim month of *Ramadhaan* is strictly observed every year. Islam specifically outlines one full month of fasting. The experience of fasting is intended to teach Muslims self-discipline and self-restraint and remind them of the plight of the impoverished. Muslims observing the fast are required to abstain not only from eating and drinking, but also from consuming oral medications and intravenous nutritional fluids.

The month of *Ramadhaan* contains 28 days to 30 days. The dates of observance differ each year because *Ramadhaan* is set to a lunar calendar.

Fasting extends each day from dawn until sunset, a period which varies by geographical location and season. In summer months and northern latitudes, the fast can last up to 18 hours or more. Islam recommends that fasting Muslims eat a meal before dawn, called "*Suhoor*." It was narrated that *Anas ibn Maalik* رضي الله عنه said, "The Prophet ﷺ said: ***“Eat Suhoor, for in Suhoor there is blessing.”*** (Al-Bukhaari and Muslim)

Al-Haafith Ibn Hajar رحمته الله said, 'In the Hadeeth of *Anas* رضي الله عنه: ***“Eat Suhoor, for in Suhoor there is blessing”***, what is meant by blessing is reward, or it is blessed because it gives one strength and energy to fast, and makes it less difficult.'

And it was said that the blessing comes from waking up and offering *Du'aa'* at the end of the night, before dawn.

It is most likely that the blessing of *Suhoor* comes from a number of things: it is following the *Sunnah*, differing from the People of the Book, it gives one strength for worship, increases energy, wards off a bad temper that may result from being hungry and makes one give charity to the one who asks at that time or joins him to eat. It reminds one to remember Allaah The Almighty and call upon Him at times when a response is most likely, and reminds one to form the intention of fasting for the one who forgot to do so before he went to bed. (*Fath al-Baari*, 4/140)

Shaykh Muhammad ibn Saalih al-'Uthaymeen رحمته الله said, discussing the blessings of *Suhoor*, 'One of its blessings is that it supplies nourishment to the body throughout the day and helps one to be patient in refraining from food and drink, even during the long, hot days of summer, whereas when a person is not fasting you will find him drinking five or six times a day, and eating twice. But Allaah has instilled blessing in *Suhoor*, so it makes the body able to cope with fasting.' (*Liqā' al-Baab al-Maftooh* (Introduction to no. 223).)

Ramadhaan and Muslim patients



Individuals are exempt from *Ramadhaan* fasting if they are suffering from an illness that could be adversely affected by fasting. They are

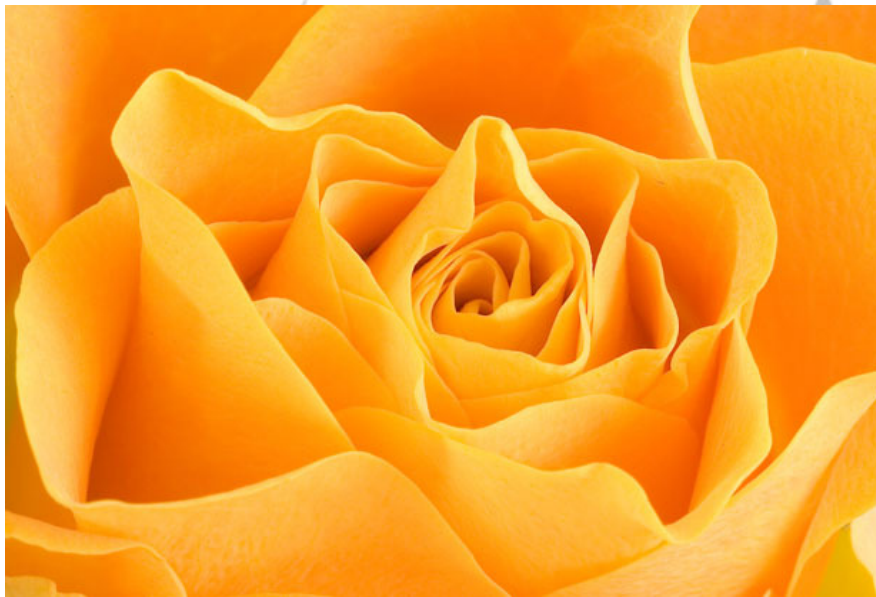
allowed to refrain from fasting for one day to all 30 days, depending on the condition of their illness.

During this month, Muslims face several health and nutrition issues that may give rise to special needs that must be addressed by health personnel. This includes providing advice on appropriate diet and on medical compliance among the Muslim population.

The observance of fasting during *Ramadhaan* constitutes one of the five pillars of Islam. The experience of fasting is intended to teach Muslims self-discipline and self-restraint, and understand a little of the plight of the less privileged (e.g., the hungry, thirsty and the poor). Furthermore, *Ramadhaan* fasting is not just about disciplining the body to refrain from eating and drinking from predawn until sunset but is also about exerting control over the mind. This involves restraining anger, doing good deeds, exercising personal discipline, and preparing oneself to serve as a good Muslim and a good person. *Ramadhaan* is a month of peace and love in which individuals are encouraged to bury differences, to forget and forgive and to renew both human and spiritual relationships. Therefore, it contributes to the overall principle of making the individual more humane, more considerate and generally a more responsible member of society. In this way, the month of *Ramadhaan* ultimately benefits society not just the individual. It does this, in part, by setting a standard for behavior not only in this month but during the rest of the year and, indeed, every year of a Muslim's life. These principal tenets of *Ramadhaan* are important when considering our intentions and subsequent actions during this spiritual month, including those pertaining to the health of the individual.

Fasting during *Ramadhaan* is prescribed for every healthy, adult Muslim whereas the weak, the sick, children, travelers and menstruating women are among those exempt. Muslims observing the fast are required to abstain not only from eating food and drinking water but also from consuming oral medicines and injecting intravenous nutritional fluids. However, not all Muslims who are ill seek this exemption and insist on fasting in any case. Fasting by Muslims during illness can cause problems if not supervised by health professionals. However, health problems during *Ramadhaan* can develop in otherwise healthy individuals and such patients could benefit from receiving advice on their diet.

The significance of the month of Ramadhaan in a Muslim's life



Ramadhaan is the month in which the first verses of the Quran were revealed by Allaah The Almighty to the Prophet *Mohammed* ﷺ. It traditionally begins when the new crescent moon (*Hilaal*) of *Ramadhaan*, the ninth lunar month of the Islamic calendar, is sighted. The period of fasting starts the morning after the sighting of the new moon and ends with the sighting of the next new moon.

If the new moon is not visible due to clouds or fog, then the beginning and end of *Ramadhaan* are determined by counting the days of the month. Fasting begins the morning after the 30th day of the previous month. Similarly, the fast is broken the morning after the 30th day of *Ramadhaan* is complete.

Fasting during the Islamic month of *Ramadhaan* can be good for one's health and personal development. *Ramadhaan* fasting is not just about disciplining the body to restrain from eating food and drinking water from predawn until sunset. The eyes, the ears, the tongue, and even the private parts are equally obligated to be restrained if a Muslim wants to gain the total rewards of fasting. *Ramadhaan* is also about restraining anger, doing good deeds, exercising personal discipline, and preparing oneself to serve as a good Muslim and a good person during and after *Ramadhaan*.

This is why the Messenger of Allaah ﷺ has been attributed, in a *Hadeeth Abu Hurayrah* رضي الله عنه to have said: ***"He who does not desist from obscene language and acting obscenely (during the period of fasting), Allaah has no need that he didn't eat or drink."*** (Al-Bukhaari & Muslim). In another *Hadeeth Abu Hurayrah* رضي الله عنه the Prophet ﷺ says: ***"Fasting is not only from food and drink, fasting is to refrain from obscene (acts). If someone verbally abuses you or acts ignorantly toward you, say (to them) 'I am fasting; I am fasting.'"*** (Ibn Khuzaymah).

Restraining oneself from food, water, and unbecoming behavior makes a person more mentally disciplined and less prone to unhealthy behavior. Fasting in *Ramadhaan* has spiritual, physical, psychological, and social benefits; however, certain problems may occur, if fasting is not properly

practiced. This book looks into some of the health issues that can arise while fasting in *Ramadhaan* and addresses means of avoiding them to maintain good health.

Diet and nutrition during Ramadhaan



First of all, we must re-examine our eating habits and our relationship with food during *Ramadhaan*. There is no need to consume excess food at *Iftaar* (the meal eaten immediately after sunset to break the fast) or at *Suhoor* (the meal generally eaten before the call to the *Fajr* prayers). The body has regulatory mechanisms that activate during fasting. There is efficient utilization of body fat and basal metabolism slows down during *Ramadhaan* fasting. A diet that is less than a normal amount of food intake but balanced is sufficient enough to keep a person healthy and active during the month of *Ramadhaan*.

Health problems can emerge as a result of excess food intake, foods that make the diet unbalanced, and insufficient sleep. Ultimately, such a lifestyle contradicts the essential requirements and spirit of *Ramadhaan*.

The body's immediate need at the time of *Iftaar* is to get an easily available energy source in the form of glucose for every living cell,

particularly the brain and nerve cells. Dates and juices are good sources of sugars. Dates and juice in the above quantity are sufficient to bring low blood glucose levels to normal levels. Juice and soup help maintain water and mineral balance in the body. An unbalanced diet and too many servings of sherbets and sweets with added sugar have been found to be unhealthy.

According to the *Sunnah* of the Prophet *Muhammad* ﷺ and research findings referred in this report, a sample dietary plan is given:

1. Bread/Cereal/Rice, Pasta, Biscuits and Cracker Group: 6-11 servings/day
2. Meat/Beans/ Nut Group: 2-3 servings/day.
3. Milk and Milk Product Group: 2-3 servings/day.
4. Vegetable Group: 3-5 servings/day;
5. Fruit Group: 2-4 servings/day.
6. Added sugar (table sugar, sucrose): sparingly.
7. Added fat, polyunsaturated oil 4-7 table spoons.

Iftaar:

1. Dates, three
2. Juice, 1 serving (4 oz.)
3. Vegetable soup with some pasta or graham crackers, 1 cup

Dinner:

Consume foods from all the following food groups:

Meat/Bean Group: Chicken, beef, lamb, goat, fish, 1-2 servings (serving size = a slice =1 oz); green pea, chickpea, green gram, black gram, lentil, lima bean and other beans, 1 serving (half cup). Meat and beans are a good source of protein, minerals, and certain vitamins. Beans are a good source of dietary fiber, as well.

Bread/Cereal Group: Whole wheat bread, 2 servings (serving size = 1 oz) or cooked rice, one cup or combination. This group is a good source of complex carbohydrates, which are a good source of energy and provide some protein, minerals, and dietary fiber.

Milk Group: milk or butter-milk (without sugar), yogurt or cottage cheese (one cup). Those who cannot tolerate whole milk must try fermented products such as butter-milk and yogurt. Milk and dairy products are good sources of protein and calcium, which are essential for body tissue maintenance and several physiological functions.

Vegetable Group: Mixed vegetable salad, 1 serving (one cup), (lettuce, carrot, parsley, cucumber, broccoli, coriander leaves, cauliflower or other vegetables as desired.) Add 2 teaspoons of olive oil or any polyunsaturated oil and 2 spoons of vinegar. Polyunsaturated fat provides the body with essential fatty acids and keto acids. Cooked vegetables such as beans, French beans, okra, eggplant, bottle gourd, cabbage, spinach, 1 serving (4 oz). Vegetables are a good source of dietary fiber, vitamin A, carotene, lycopenes, and other phytochemicals, which are antioxidants. These are helpful in the prevention of cancer, cardiovascular diseases, and many other health problems.

Fruits Group: 1-2 servings of citrus and/or other fruits. Eat fruits as the last item of the dinner or soon after dinner, to facilitate digestion and

prevent many gastrointestinal problems. Citrus fruits provide vitamin C. Fruits are a good source of dietary fiber.

Fruits and mixed nuts may be eaten as a snack after dinner or *Taraweeh* or before sleep.

Dietary Recommendations

According to the *Sunnah* of the Prophet *Muhammad* ﷺ and research findings referred in this report, a dietary plan is given:

1. Bread/Cereal/Rice, Pasta, Biscuits and Cracker Group: 6-11 servings/day
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3. Milk and Milk Product Group: 2-3 servings/day.
4. Vegetable Group: 3-5 servings/day;
5. Fruit Group: 2-4 servings/day.
6. Added sugar (table sugar, sucrose): sparingly.
7. Added fat, polyunsaturated oil 4-7 tablespoons.

Breakfast, Iftaar:

1. Dates, three
2. Juice, 1 serving (4 oz.)
3. Vegetable soup with some pasta or graham crackers, 1 cup

Pre-dawn Meal (Suhoor):

Consume a light *Suhoor*. Eat whole wheat or oat cereal or whole wheat bread, 1-2 serving with a cup of milk. Add 2-3 teaspoons of olive oil or any other monounsaturated or polyunsaturated fats in a salad or the cereal. Eat 1-2 servings of fruits, as a last item.

Diet and gastric disorders during Ramadhaan

Blood cholesterol and uric acid levels are sometimes elevated during the month of *Ramadhaan*. Contrary to popular thinking, it was found that with the intake of a moderately high-fat diet, (i.e., around 36 percent of the total energy in calories), improved blood cholesterol profile. It also prevents the elevation of blood uric acid level. The normal recommended guideline for fat is 30 percent or less energy. On the basis, suggested fat intake during *Ramadhaan* is almost the same as at normal days. Fat is required for the absorption of fat-soluble vitamins (A, D, E, K) and carotenoids. Essential fatty acids are an important component of the cell membrane. They also are required for the synthesis of the hormone prostaglandin. Keto-acids from fat are especially beneficial during *Ramadhaan* to meet the energy requirement of brain and nerve cells. Keto-acids also are useful in the synthesis of glucose through the metabolic pathway of gluconeogenesis. This reduces the breakdown of body proteins for glucose synthesis. Therefore, the energy equivalent of 1-2 bread/cereal servings may be replaced with polyunsaturated fat.

During *Ramadhaan*, increased gastric acidity is often noticed, exhibiting itself with symptoms such as a burning feeling in the stomach, heaviness in the stomach, and a sour mouth. Whole wheat bread, vegetables, humus, beans, and fruits – excellent sources of dietary fiber – trigger muscular action, churning and mixing food, breaking food into small particles,

binding bile acids, opening the area between the stomach and the duodenum-jejunum and moving digested matter in the small intestine. Thus, dietary fiber helps reduce gastric acidity and excess bile acids. In view of the role of dietary fiber in moving digested matter, it prevents constipation.

It is strongly recommended that peptic ulcer patients avoid spicy foods and consult a doctor for appropriate medicine and diet. Diabetic subjects, particularly severe type I (insulin dependent) or type II (non-insulin dependent), must consult their doctor for the type and dosage of medicine, and diet and precautions to be taken during the month. Generally, diabetes mellitus, type II, is manageable through proper diet during *Ramadhaan*.

During *Ramadhaan*, most health problems are likely to arise from inappropriate diet or as a consequence of overeating and insufficient sleep.

There is no need to consume excess food at *Iftaar* (the food eaten in the period immediately after sunset to break the fast), dinner, or *Suhoor* (the light meal generally eaten about half an hour to one hour before dawn). The reasons for this are two-fold. First, and most importantly, such a lifestyle contradicts the principal aims and spirit of *Ramadhaan*. Overeating can be seen as a reflection of weak discipline and irresponsibility. Secondly, the body has regulatory mechanisms that reduce the metabolic rate and ensure efficient utilization of body fat. Furthermore, most people assume a more sedentary lifestyle while fasting. The net result is that a balanced diet, that consists of less than the normal amount of food intake, is sufficient to keep a person healthy and active during the month of *Ramadhaan*.

To remain healthy during *Ramadhaan*, one should consume food from the major food groups: bread and cereal, milk and dairy products, fish, meat and poultry, beans, vegetables and fruits. (Vegetarians and vegans should amend this list as appropriate.) Intake of fruits after a meal is strongly suggested. Diet in *Ramadhaan* should not differ much from the normal diet and should be as simple as possible. The diet should be such that normal weight is maintained, neither losing nor gaining. However, if one is overweight, *Ramadhaan* is an ideal time to try to normalize one's weight.

In view of the long hours of fasting, the so-called "complex carbohydrates" or slow digesting foods should be consumed at *Suhoor* so that the food lasts longer (about eight hours) resulting in less hunger during the day. These complex carbohydrates are found in foods that contain grains and seeds like barley, wheat, oats, millet, semolina, beans, lentils, whole meal flour and unpolished rice.

In contrast, refined carbohydrates or fast-digesting foods last for only three to four hours and may be better taken at *Iftaar* to restore blood glucose levels rapidly. Fast-burning foods include those that contain sugar and white flour. Dates are an excellent source of sugar, fibre, carbohydrates, potassium and magnesium and have been recommended since the days of the Prophet Muhammad ﷺ as a good way of breaking the fast.

Fried foods, very spicy foods and foods containing too much sugar, such as sweets, can cause health problems and should be limited during *Ramadhaan*. They cause indigestion, heartburn and weight problems. Fasting can often increase gastric acidity levels causing a burning feeling, a heaviness in the stomach, and a sour mouth. This can be overcome by

eating foods rich in fiber such as whole wheat bread, vegetables, hummus, beans, and fruits. These foods trigger muscular action, churning and mixing food, breaking it into small particles, and thus help reduce the buildup of acid in the stomach.

Drinking of sufficient water and juices between *Iftaar* and sleep to avoid dehydration, and for detoxification of the digestive system, should be encouraged in fasting individuals. However, the intake of large amounts of caffeine-containing beverages should be avoided, especially at *Suhoor*. For example, drinking too much tea will increase urine output and inevitably cause the loss of valuable mineral salts.

Fruits such as bananas are a good source of potassium, magnesium and carbohydrates. However, bananas can cause constipation and their intake has to be balanced with adequate fiber intake.

It is recommended that everyone engage in some kind of light exercise, such as stretching or walking. Overweight people should increase the amount of exercise and reduce the amount of food intake to help reduce weight.

It is also important to follow good time management procedures for *Ibaadah* (acts of worship), sleep, studies, work, and physical activities or exercise. A good balance in the amount of time attributed for each activity will lead to a healthier body and mind in *Ramadhān*.

Special dietary needs of pregnant and lactating women

With regard to the pregnant woman: it is permissible for her not to fast if she fears some harm which she thinks will most likely affect her and/or her baby. Breaking the fast becomes obligatory if she fears that she may die or be severely harmed if she fasts. In that case she has to make up the

fast later on but she does not have to pay the *Fidyah*. This is according to the consensus of the *Fuqahaa'* (scholars), because Allaah The Almighty Says (what means):

- **{*And do not kill yourselves...*}** [Quran 4:29]
- **{*... and do not throw yourselves into destruction.*}** [Quran 2:195]

The scholars are similarly agreed that it is not obligatory to pay the *Fidyah* in this case, because a woman in this case is like one who is sick and one who fears for his life.

If the woman fears for her baby only (and not for herself), then some of the scholars are of the view that it is permissible for her to break her fast. However, they say that she must make up the fast later on and pay the *Fidyah* (which means feeding one poor person for each day not fasted).

This is because of the report narrated from *Ibn 'Abbaas* رضي الله عنه who said concerning the verse (which means): **{*And as for those who can fast with difficulty, (e.g. an old man), they have (a choice either to fast or) to feed a Miskeen (poor person) (for every day).*}** [Quran 2:184]

Ibn 'Abbaas رضي الله عنه said, “*This is a concession allowed to old men and women, who can only fast with difficulty; they are allowed to break the fast and to feed one poor person for each day of fasting missed. This also applies to pregnant and nursing women, if they are afraid.*” *Abu Daawood* رحمته said, “*That is, if they are afraid for their children, they may break the fast.*” (*Abu Daawood*, 1947; classed as *Saheeh* by *Al-Albaani in al-Irwa'*, 4/18, 25). (*See al-Mawsoo'ah al-Fiqhiyyah*, 16/272)

Hence, it is clear that if fasting will cause great harm to a woman or to her baby, she is obliged to break the fast, on condition that the doctor who states that fasting will cause harm is a doctor who can be trusted.

This has to do with breaking the fast during *Ramadhaan*. With regard to *'Aashoora*, fasting on this day is not obligatory, according to scholarly consensus; rather it is *Mustahabb*, and it is not permissible for a woman to observe a *Naafil* fast when her husband is present, except with his permission. If he tells her not to fast then she has to obey him, especially if that is in the interests of the fetus.

With regard to miscarriage,

“If the matter is as mentioned, that the miscarriage occurred in the third month of pregnancy, then the blood that comes out is not considered to be the blood of Nifaas (bleeding following childbirth), rather it is the blood of Istihaadah (non-menstrual vaginal bleeding), because what the woman passed was a clot ('Alaqah) in which there were no human features. On this basis, she should pray and fast even if she sees some blood, but she should do Wudhoo' for each prayer, and she has to make up the days when she did not fast and the prayers that she missed.”
(*Fataawa al-Lajnah al-Daa'imah*, 10.218)

With regard to the fasts that a woman may have missed: *“Everyone who owes fasts from Ramadhaan has to make them up before the next Ramadhaan. He may delay that until Sha'baan. But if the next Ramadhaan comes and he has not made them up and had no excuse for that, then he is guilty of sin and he has to make them up as well as feeding one poor person for each day, as was stated by a number of the Companions of the Prophet ﷺ. The amount to be given is half a Saa' of the local staple food for each day, which may be given to a number of poor persons or to one. However, if a person had an excuse for delaying making up the fasts, because he was sick or was travelling, then all he has*

to do is to make up the missed fasts, and he does not have to feed the poor, because of the general meaning of the verse (which means): ***{But if any of you is ill or on a journey, the same number (should be made up) from other days.}*** [Quran 2:184].

Pregnant and lactating women's needs for energy and nutrients are more critical than the needs of men. There is a possibility of health complications to the pregnant woman and the fetus or the lactating mother and the breastfed child, if energy and nutrient requirements are not met during the month of *Ramadhaan*.

Research tells us that short-term fasting (not eating) will not decrease milk supply, but that severe dehydration can decrease milk supply.

There have been a few studies on short-term fasting and breastfeeding. Prentice et. al. studied women in West Africa who were fasting for *Ramadhaan* (no food or fluids between 5:00 am and 7:30 pm) and found that milk volume was not affected but milk composition did change to a certain extent. The researchers noted that the women appeared to super-hydrate themselves overnight when fluids were allowed to lessen daytime dehydration. The breastfeeding woman's body appears to make several metabolic adaptations during short-term fasting to ensure that milk production is not affected.

Keep in mind that for mothers who have sugar metabolism problems (diabetes or hypoglycemia) or other health problems, fasting could be risky (for the mother). Since health issues are unique for each woman's circumstances, do consult both your doctor and your religious advisor if you feel that you might have health issues that preclude fasting.

Pregnant and breastfeeding women have special permission not to fast during *Ramadhaan* if they feel that they or their babies will be harmed by it, but they are not prohibited from fasting if they feel they can definitely handle it. Health should be the prime consideration in deciding whether or not to fast. Take the fast one day at a time: it is not a competition with others but an act of worship.

Governments, communities, and heads of the family must give highest priority to meet women's dietary needs. In African countries, Bangladesh, India, Pakistan and many other places malnutrition is a major problem, especially among women from low-income groups. Furthermore, it is common among these women to perform strenuous work on farms or in factories, and other places. Malnutrition and strenuous conditions may lead to medical problems and danger to life. Under these conditions one must consult a medical doctor for treatment or a *Shaykh* for postponement or other suggestions regarding fasting. The Quran and the *Sunnah* allow pregnant women and lactating mothers flexibility during the month of *Ramadhaan*.

Sample diet

For practical purposes and estimation of nutrients a sample diet is given below:

Iftaar: 3 dates, 1/2 cup of orange juice, 1 cup of vegetable soup, 2 plain graham crackers; dinner: 1 cup of vegetable salad with two teaspoons of corn oil and two teaspoon of vinegar, 2 oz. of chicken, 1/2 cup of okra, 4 oz. of cooked whole *chana* (*garbanzo*), 3 tea spoon of oil while cooking main dishes, 2 slices of whole wheat bread, 1 cup of cooked rice, 3/4 cup

of plain yogurt, one orange, 1/2 cup grapes, 1 oz of nuts-mixed roasted-without salt; *suhoor*: 2 slices of whole wheat bread, 1 cup of milk, 1/4 cup of vegetable salad with two teaspoons of corn oil and two teaspoons of vinegar, 1 skinned apple, 2 teaspoons of sugar with tea or coffee.

The energy and nutrient content in the above diet was estimated, which was as follows: energy, 2136 kilocalories; protein, 70g; carbohydrate , 286g; fat, 87g, 35 % of energy of the total intake, (saturated fat 16.9g; mono saturated, 28.4g; poly unsaturated, 34g; other 7.3g; - oleic, 25.6g; linoleic, 29.5; linolenic, 0.6g; EPA-Omega-3, 0.006g; DHA-omega-3, 0.023g; dietary fiber 34g; calcium, 1013mg; sodium, 3252 mg; potassium, 2963mg; iron 13.3mg; zinc, 10mg. When the nutrients were compared with the Recommended Dietary Allowance (RDA), for an adult non-pregnant and non-lactating female (14), the diet met 100% or more of the RDA for protein, calcium, sodium, potassium, and vitamin A, K, B₁, B₂, B₃, B₆, B₁₂, folate, and C. The energy was close to the RDA, (97%). The dietary fiber level also was met as per the recommendation (11). Consuming food in the above amount by pregnant or lactating female may not meet the RDA for all of the nutrients. They may need supplementation of some minerals and vitamins such as, iron vitamin D, and more energy through bread or rice.

Advice for patients who fast during Ramadhaan



Ramadhaan fasting is obligatory for the healthy adult but, when fasting might significantly affect the health of the fasting individual or when one is genuinely ill, Islam exempts him or her from fasting. *{Allaah intends every facility for you, he does not want to put you into difficulties.}* [Quran 2:185]. From an Islamic point of view, this exemption represents more than a simple permission not to fast. The Prophet ﷺ said: *"Allaah likes his permission to be fulfilled, as He likes his will to be executed."* In the light of this narration, many believe that any Muslim who is ailing, or whose illness would adversely affect his well-being during the fasting period, should either not fast or at least break his fast accordingly. An additional argument often used is that if the fasting by an ailing Muslim would jeopardize his health further, then this ultimately will neither benefit himself nor his role in society (*Ummah*) and he should be discouraged from observing the fast.

However, a significant number of patients, for whatever reasons, do decide to observe the fast. It is these patients who need to seek the opinion of health professionals on an individual basis.

Those suffering from minor ailments do not really have any problems fasting. Those suffering from acute conditions may need advice about

altering their dosing regimen. Drugs that are normally required to be taken frequently, such as antibiotics, can be problematic for fasting patients. However, the increasing availability of alternative drugs with long half-lives as well as the increasing formulation of short-acting drugs as sustained release preparations, have offered much needed assistance to fasting patients.

For example, patients suffering from acute upper respiratory infections, such as a severe sore throat, may still be able to fast. Such a patient might be prescribed antibiotics that have to be taken three or four times a day and would not be able to fast. However, in order to facilitate fasting, the patient could be given a long-acting antibiotic, such as co-trimoxazole, which only needs to be taken 12- hourly, or azithromycin, which only needs to be taken once daily. This can be done only when the infecting organisms are susceptible to the alternative antibiotics, and needs to be discussed with the patient's doctor.

Alternative routes of drug administration can help fasting patients. Some patients suffering from mild forms of angina pectoris could benefit from taking glyceryl trinitrate as a patch rather than sublingual tablets. The drug would enter the blood stream through the skin, and not orally (which would break the fast). Again, this may only be possible in specific patients and needs to be discussed with the patient's doctor. Pharmacists should be willing to advise patients and practitioners on the availability of alternative dosage forms for medication during *Ramadhaan*.

There is a school of thought among medical practitioners that those patients who have mild to moderate high blood pressure and are also overweight should be encouraged to fast as this may help to lower their blood pressure. Such patients should see their physician to adjust their

medication. For example, the dose of diuretics should be reduced to avoid dehydration, and sustained release formulations can be given once a day before the predawn meal.

Health advice for diabetes patients



An increasing area where practitioners are likely to advise patients on fasting is in those suffering from diabetes mellitus. Many Muslims have an increased risk of suffering from some form of diabetes. *The International Journal of Ramadhaan Fasting Research* has suggested the following guidelines for health professionals treating Muslim patients with diabetes: *"Diabetic patients who are controlled by diet alone can fast and hopefully, with weight reduction, their diabetes may even be improved. Diabetics who are taking oral hypoglycemic agents along with the dietary control should exercise extreme caution if they decide to fast. These patients should consult their medical doctor for dose adjustment. If they develop low blood sugar symptoms in the daytime, they should end the fast immediately."*

In addition, diabetic patients taking insulin should consult their doctor to see if their dose can be adjusted to allow fasting during *Ramadhaan*. In

all cases of fasting with diabetes, blood sugar levels should be closely monitored, especially before and after meals.

Islam offers an exemption to the sick from observing their fast during the holy month of *Ramadhaan*. However, some patients may be able to fast if their health is not adversely affected during the period of fasting. In such cases, advice from pharmacists and doctors about changing prescriptions to equally effective drugs that have reduced dosing, such as sustained release formulations, may be beneficial to the fasting Muslim. In all cases of illness, it is recommended that Muslim patients, if they do fast, do so under medical supervision. Pharmacists, doctors and other health professionals are undoubtedly keen to help.

Diabetic patients should seek the advice of physicians about the safety of fasting during the Islamic month of *Ramadhaan*. There have been diverse findings regarding the physiological impact of *Ramadhaan* on diabetics. However, researchers have not found pathological changes or clinical complications in any of the following parameters in diabetics who fast: body weight, blood glucose, HbA1C, c-peptide, insulin, fructoseamine, cholesterol and triglycerides.

Diabetic patients are strongly recommended to continue their regular daily activity and diet regimen. It is also critical that diabetics adjust their drug treatments, particularly those patients diagnosed with insulin dependent diabetes mellitus (IDDM). We named these three important factors— drug regimen adjustment, diet control and daily activity – the "*Ramadhaan* 3D Triangle." With 3D attention, proper education and diabetic management, we conclude that most non-insulin dependent diabetes mellitus (NIDDM) patients and occasional IDDM patients who insist on fasting can carefully observe *Ramadhaan*.

People diagnosed with diabetes fall into this category and are exempt from the fasting requirement, but they are often reluctant to accept this concession. Physicians working in Muslims countries and communities commonly face the difficult task of advising diabetic patients whether it is safe to fast, as well as recommending the dietary and drug regimens diabetics should follow if they decide to fast.

The lack of adequate literature on this subject makes it difficult to answer these questions. To judge correctly whether to grant medical permission to fast to a diabetic patient, it is essential physicians have an appreciation of the effect of *Ramadhaan* fasting on the pathophysiology of diabetes mellitus. For their benefit, let us first review principles of carbohydrate metabolism and alterations of certain biochemical variables in diabetics observing *Ramadhaan* fasting. Thereafter, we will overview current medical recommendations that allow certain diabetic patients to fast and outline terms for diabetic patients, particularly IDDM patients, who should not fast but insist on fasting.

The Physiological State of Diabetics During Ramadhaan

Carbohydrate metabolism during *Ramadhaan* fasting in healthy persons:

The effect of experimental short-term fasting on carbohydrate metabolism has been extensively studied and it has been uniformly found that a slight decrease in serum glucose to 3.3 mmol to 3.9 mmol (60 mg/dl to 70 mg/dl) occurs in normal adults a few hours after fasting has begun. However, the reduction in serum glucose ceases due to increased gluconeogenesis in the liver. That occurs because of a decrease in insulin concentration and a rise in glucagon and sympathetic activity.

In children aged one years to nine years, fasting for a 24-hour period has caused a decrease in the blood glucose to half of the baseline figure for normal children of that age group. In 22% of these children, blood glucose has fallen below 40 mg/dl. Few studies have shown the effect of *Ramadhaan* fasting on serum glucose. One study has shown a slight decrease in serum glucose in the first days of *Ramadhaan*, followed by normalization by the twentieth day and a slight rise by the twenty-ninth day of *Ramadhaan*. The lowest serum glucose level in this study was 63 mg/dl. Others have shown a mild increase or variation in serum glucose concentration, but all of them fell within physiological limits. From the foregoing studies, one may assume that the stores of glycogen, along with some degree of gluconeogenesis, maintain normal limits of serum glucose when a fast follows a large pre-dawn meal. However, slight changes in serum glucose may occur in individuals depending upon food habits and individual differences in metabolism and energy regulation.

Body weight during Ramadhaan fasting



(a) In normal subjects:

Weight losses of 1.7 kg., 1.8 kg., 2.0 kg. and 3.8 kg have been reported in normal weight individuals after they have fasted for the month of *Ramadhaan*. In one study that was over-represented by females, no change in body weight was seen. It has also been reported that overweight persons lose more weight than normal or underweight subjects.

(b) In diabetics:

A review of literature shows controversy about weight changes in diabetics during *Ramadhaan*. In one group of studies, patients had an increase in their weight. In another group, there were no change or a decrease in body weight. While no food or drink is consumed between dawn and sunset during the month of *Ramadhaan*, there is no restriction on the amount or type of food consumed at night. Furthermore, most diabetics reduce their daily activities during this period in fear of hypoglycemia. These factors may result in not only a lack of weight loss, but also a weight gain in such patients.

Blood glucose variations during Ramadhaan fasting in diabetics:

Most patients show no significant change in their glucose control. In some patients, serum glucose concentration may fall or rise. This variation may be due to the amount or type of food consumption, regularity of taking medications, overeating after the fast is broken, or decreased physical activities. In most cases, no episode of acute complications (hypoglycemic or hyperglycemic types) occurs in patients under medical management and only a few cases of biochemical hypoglycemia without clinical hazards have been reported.

Other parameters of diabetes control during *Ramadhaan* fasting:

In general, HbA1C values show no change or even improvement during *Ramadhaan*. Only two studies have reported slight increases in glycosylated hemoglobin levels. However, one report has emphasized the same increase in non-fasting patients as fasting patients, and the other has shown a return to initial levels immediately after the month of *Ramadhaan*.

The amount of fructosamine, insulin, C-peptide also has been reported to have no significant change before and during *Ramadhaan* fasting.

Energy intake and serum lipid variables during Ramadhaan fasting in diabetics:

The amount of energy (calorie) intake have been reported in some of the literature, indicating a decrease in energy intake.

Most patients with non-insulin dependent diabetes mellitus (NIDDM, diabetes type II) and insulin dependent diabetes mellitus (IDDM, diabetes type I) show no change or a slight decrease in concentrations of total

cholesterol and triglyceride. Increase in total cholesterol levels during *Ramadhaan* seldom occurs. As in healthy persons, few studies have reported increases in high-density-lipoprotein (HDL) cholesterol in diabetics during *Ramadhaan*. One report indicates an increase in low-densitylipoprotein (LDL) cholesterol and a decrease in HDL-cholesterol. Until there is a standardization of diabetes *Ramadhaan* research in three fundamental factors – the Three D Triangle of drug regimens, diet control and daily activity – the benefits or hazards of *Ramadhaan* fasting on diabetics serum lipids is unclear.

Other biological parameters during Ramadhaan fasting in diabetics:

Serum creatinine, uric acid, blood urea nitrogen, protein, albumin, alanine amino-transferase, aspartate amino-transferase values do not show significant changes during the fasting period. Slight non-significant increases in some biological parameters may be due to dehydration and metabolic adaptation and have no clinical presentation.

Fasting guidelines for Diabetics

During the last two decades, a better understanding of pathophysiological changes during *Ramadhaan* fasting in diabetic patients has provided a few guidelines on how to advise diabetics who want to fast. Physicians working with Muslim diabetics should employ certain criteria to advise their patients regarding the safety of *Ramadhaan* fasting. The following criteria should be helpful in making such a decision:

Forbid fasting in:

- All brittle type I diabetic patients
- Poorly controlled type I or type II diabetic patients
- Diabetic patients known to be non-compliant in terms of following advice on diet drug regimens and daily activity
- Diabetic patients with serious complications such as unstable angina or uncontrolled hypertension
- Patients with a history of diabetic ketoacidosis
- Pregnant diabetic patients
- Diabetic patients with inter-current infections
- Elderly patients with any degree of alertness problems
- Two or more episodes of hypoglycemia and/or hyperglycemia during *Ramadhaan*

Allow fasting in:

- Patients who do not have the aforementioned criteria
- Patient who accept medical advice.

Encourage fasting in:

- All overweight NIDDM patients (except for pregnant or nursing mothers) whose diabetes is stable with weight levels 20% above the ideal weight or body mass index (body weight, kg/height, meters squared) greater than 28.

NIDDM patients and IDDM patients who insist on fasting should be given a few recommendations about fasting. They should be forbidden from skipping meals, taking medication irregularly or overeating after the fast is broken.

The principles of pre-Ramadhaan considerations are:



- a. assessment of physical well being
- b. assessment of metabolic control
- c. adjustment of the diet protocol for *Ramadhaan* fasting
- d. adjustment of the drug regimen e.g. change long-acting hypoglycemic drugs to short-acting drugs to prevent hypoglycemia)
- e. encouragement of continued proper physical activity
- f. recognition of warning symptoms of dehydration, hypoglycemia and other possible complications

Nutrition and Ramadhaan fasting:

Dietary indiscretion during the non-fasting period with excessive or compensatory eating of carbohydrate and fatty foods contributes to the tendency towards hyperglycemia and weight gain. It has been emphasized that *Ramadhaan* fasting benefits appear only in patients who maintain their appropriate diets. Thus, in order to optimize control, diabetics must be reminded to abstain from the high-calorie and highly refined foods prepared during this month.

Physical activity and Ramadhaan fasting:

Several studies indicate that light to moderate regular exercise during *Ramadhaan* fasting is harmless for NIDDM patients. It has been shown that fasting does not interfere with tolerance to exercise. It should be impressed upon diabetic patients that it is necessary to continue their usual physical activity especially during non-fasting periods.

Drug regimens for IDDM patients:

Some experienced physicians conclude *Ramadhaan* fasting is safe for IDDM patients with proper self-monitoring and close professional supervision. It is fundamental to adjust the insulin regimen for good IDDM control during *Ramadhaan* fasting. Two insulin therapy methods have been studied successfully:

1. Three-dose insulin regimen: two doses before meals (sunset and Dawn) of short-acting insulin and one dose in the late evening of intermediate-acting insulin.

2. Two-dose insulin regimen: Evening insulin combined with short-acting and medium-acting insulin equivalent to the previous morning dosage, and a pre-dawn insulin consisting only of a regular dosage of 0.1-0.2 unit/kg.

Home blood glucose monitoring should be performed just before the sunset meal and three hours afterwards. It should also be performed before the predawn meal to adjust the insulin dose and prevent any hypoglycemia and post-prandial hyperglycemia following over-eating.

Drug regimens for NIDDM patients:

Available reports indicate that there are no major problems encountered with NIDDM overweight patients who observe fasting in *Ramadhaan*. With proper changes in the dosage of hypoglycemic agents there will be low risk for hypoglycemia and hyperglycemia.

The authors of the largest series of patients treated with glibenclamide during *Ramadhaan* recommended that diabetics switch the morning dose (together with any mid-day dose) of this drug with the dosage taken at sunset.

Health tips for diabetics:

1. Implementation of the 3D Triangle of *Ramadhaan* – drug regimen adjustment, diet control and daily activity – as the three pillars for more successful fasting during *Ramadhaan*.

2. Diabetic home management that consists of:

- Monitoring home blood glucose especially for IDDM patients, as described above
- Checking urine for acetone (IDDM patients)
- Measuring daily weights and informing physicians of weight reduction due to dehydration, low food intake, polyuria or weight increase (excessive calorie intake) above two kilograms

Recording daily diet intake (prevention of excessive and very low energy consumption).

3. Education about warning symptoms of dehydration, hypoglycemia and hyperglycemia.

4. Education about breaking fast as soon as any complication or new harmful condition occurs.

5. Immediate medical help for diabetics who need medical help quickly, rather than waiting for medical assistance the next day.

6. Further attention on fasting during the summer season and geographical areas with long fasting hours.

IDDM children and Ramadhaan fasting:

We do not encourage fasting for IDDM children. However, a few studies demonstrate that fasting is safe among diabetic adolescents. Of these studies, one study concludes that *Ramadhaan* fasting is feasible in older children and children who have had diabetes for a long time, and it concludes fasting does not alter short-term metabolic control.

Nevertheless, fasting should only be encouraged in children with good glycemic control and regular blood glucose monitoring at home.

After the month of *Ramadhaan* ends, the patients therapeutic regimen should be changed back to its previous schedule. Patients should also be required to get an overall education about the impact of fasting on their physiology.

From a methodological point of view, few research papers on *Ramadhaan* fasting are relevant because of the absence of control periods before *Ramadhaan* and afterwards, the absence of measurements during each week of *Ramadhaan*, a lack of attention to dietary habits, food composition, food value, caloric control, weight changes and the importance of the schedule during circadian periods.

It is recommended that all these factors should be taken into consideration and that all intervening and confounding variables should be under control. It is clear that more work should be done on *Ramadhaan* fasting to evaluate physiological and pathological changes with proper research methods.

Fasting during the entire month of *Ramadhaan* is reserved usually for healthy Muslims. However, many diabetic patients are allowed to fast periodically during *Ramadhaan*. The magnitude of periodic total fasting effect on blood glucose and hepatic glucagon depends on the number of fasting days, and this should be considered in all *Ramadhaan* fasting research activities.

The bulk of literature indicates that fasting in *Ramadhaan* is safe for the majority of diabetics patients with proper education and diabetic management. Most NIDDM patients can fast safely during *Ramadhaan*.


Occasional IDDM patients who insist on fasting during *Ramadhaan* can also fast if they are carefully managed. Strict attention to diet control, daily activity and drug regimen adjustment is essential for successful *Ramadhaan* fasting.

To shed more light on pathophysiological changes in *Ramadhaan* fasting, in particular in Muslims diabetics, it is recommended that a multicentric international controlled clinical trial be employed to assess the effect of differences in gender, races, physical activities, food habits, sleep patterns and other important variables on physiologic and pathologic conditions during *Ramadhaan* fasting.

Sustained release medications and fasting

The scholars have defined fasting as worshipping Allaah The Almighty by refraining from things that break the fast such as food, drink and intercourse, from the break of dawn until the sun sets. As Allaah says (what means): ***{and eat and drink until the white thread (light) of dawn appears to you distinct from the black thread (darkness of night), then complete your Sawm (fast) till the nightfall...}*** [Quran 2:187].

According to the *Hadeeth* of Abu Hurayrah رضي الله عنه the Messenger of Allaah ﷺ said: ***“Fasting is a shield, so there should be no obscene or ignorant talk, and if someone tries to fight him or insult him, let him say, ‘I am fasting, I am fasting.’ By the One in Whose hand is my soul, the smell of the mouth of the fasting person is better with Allaah, may He be exalted, than the fragrance of musk. ‘He gives up his food and drink and desire for My sake. Fasting is for Me and I shall reward for it, a tenfold reward for each good deed.’”*** (Al-Bukhaari, 1795)

Shaykh Ibn ‘Uthaymeen  said, ‘The things that spoil the fast are called by the scholars *al-Muftiraat* (things that break the fast). The basic principles concerning that are three, which were mentioned by Allaah, may He be glorified and exalted, in the verse (what means): **{So now have sexual relations with them and seek that which Allaah has ordained for you (offspring), and eat and drink until the white thread (light) of dawn appears to you distinct from the black thread (darkness of night), then complete your Sawm (fast) till the nightfall.}** [Quran 2:187]. The scholars are unanimously agreed that these three things spoil the fast.’ (Al-Sharh al-Mumti’, 6/235)

With regard to taking medicines, herbs and other substances to strengthen the body during *Ramadhaan*, then these are permissible to use and consume. One such tablet is popular in several countries and is called the “*Ramadhaan* tablet.” It contains different types of vitamins (B1, B2, B6, B12) and other substances that are beneficial to the body and which provide energy to the body during the day and reduce feelings of hunger. This is because these substances are able to help the brain to issue orders to the body to seek nutrition from excess fat in the body instead of from the empty stomach.

There is no doubt that taking these tablets and medicine during the day in *Ramadhaan* breaks the fast and no one would dispute that, because it is the kind of food which reaches the stomach directly.

With regard to the ruling on taking this tablet at night, before dawn, because this medicine has the ability to give the body ongoing energy and it has the ability to prevent feelings of hunger, some may think that it is not permissible to take it at night, because it has a lasting effect during the day. But this is mistaken thinking. Rather it is permissible to use it, so

long as it is taken at a time when it is permissible to consume food and drink.

With regard to its ongoing effect during the day, that does not mean that it cannot be taken. There is no difference between it and the food eaten at *Suhoor*. One of the important reasons for delaying eating *Suhoor* is that it gives the body more strength to be able to fast during the day. To sum up: there is nothing wrong with taking these tablets.

General Health Tips



- Drink sufficient water between *Iftaar* and sleep to avoid dehydration.
- Consume sufficient vegetables at meals. Eat fruits at the end of the meal.
- Avoid intake of high sugar (table sugar, sucrose) foods through sweets or other forms.
- Avoid spicy foods.
- Avoid caffeine drinks such as coke, coffee or tea. Caffeine is a diuretic. Three days to five days before *Ramadhaan* gradually reduce the intake of these drinks. A sudden decrease in caffeine prompts headaches, mood swings and irritability.

- Smoking is a health risk factor. Avoid smoking cigarettes. If you cannot give up smoking, cut down gradually starting a few weeks before *Ramadhaan*. Smoking negatively affects utilization of various vitamins, metabolites and enzyme systems in the body.
- Do not forget to brush or use a *Miswaak* (tender *neem* tree branch, *Azhardicta indica* or other appropriate plant in a country, about 1/4-1/2 inch diameter and 6-8 inches length, tip partially chewed and made brush like). Brush your teeth before sleep and after *Suhoor*. Brush more than two times or as many times as practicable.
- Normal or overweight people should not gain weight. For overweight people *Ramadhaan* is an excellent opportunity to lose weight. Underweight or marginally normal weight people are discouraged from losing weight. Analyzing a diet's energy and nutritional component, using food composition tables or computer software, will be useful in planning an appropriate diet.
- It is recommended that everyone engage in some kind of light exercise, such as stretching or walking. It's important to follow good time management practices for 'Ibaadah (prayer and other religious activities), sleep, studies, job, and physical activities or exercise.
- Drink any water for 15 hrs straight during our fast. Potentially a dangerous situation, particularly if you have to maintain a high level of activity during the day or be outdoors a lot. However, if we plan ahead by taking preventive measures, it will serve us well. Since water is accessible now without restrictions, take liberal advantage and drink, drink, drink as much as you can. That means

leave the sodas, the drinks, even the juices alone because none will hydrate the body (particularly in extreme heat) like water.

- Don't wait to do this, saying you will be drinking a lot of water before and after the hours of the fast to compensate for the heat. Of course, you will need to drink as much water as you can then, but it's best to hydrate your body as much as you can now so it doesn't go into *Ramadhaan* with a water deficit. Also, so you'll already have established water as your daily beverage of choice rather than giving into the taste appeal of sweet, flavored drinks.
- Know, too, that you can't sufficiently hydrate your body overnight or in a couple of days. So start now!

Conclusion

The fast of *Ramadhaan* is rigorous, particularly during long summer days when it may be required to resist all food and drink for as many as sixteen hours at a time. This strain may be too much for people with certain health conditions.

The Quran instructs Muslims to fast during the month of *Ramadhaan*, but also gives clear exemptions for those who may become ill as a result of fasting (which mean): ***{"But if any of you is ill, or on a journey, the prescribed number (of Ramadan days) should be made up from days later. For those who cannot do this except with hardship is a ransom: the feeding of one that is indigent.... Allah intends every ease for you; He does not want to put you to difficulties...."} – [Quran 2:184-185]***

In several other passages, the Quran instructs Muslims not to kill or harm themselves, or cause harm to others.

Prior to *Ramadhaan*, a Muslim should always consult with a doctor about the safety of fasting in individual circumstances. Some health conditions may be improved during fasting, while others may possibly deteriorate. If you decide that fasting could possibly be harmful in your situation, you have two options:

- If yours is a temporary, not chronic, condition you may make up the fast (a day for a day) at a later time, when your health improves.
- If yours is a permanent or chronic condition, you may make a donation in charity in lieu of fasting. The amount should be sufficient to feed one person a day, for each fasting day that is missed.

There is no need to feel guilty about taking care of your health needs during *Ramadhaan*. These exemptions exist in the Quran for a reason, as Allaah The Almighty knows best what issues we may face. Even if one is not fasting, one can feel part of the *Ramadhaan* experience through other areas of worship – such as offering additional prayers, inviting friends and family for evening meals, reading the Quran, or donating to charity.