

Ramadan Fasting and Muslim Patients

(First Edition in English)

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Ramadan Fasting and Patients

Fasting from dawn to dusk in the holy month of Ramadan for healthy adult Muslims has been ordained through the Holy Quran.

“O you who believe! Fasting has been prescribed to you as it was prescribed to those before you so that you attain Taqwa (self restraint, God Awareness)”-Holy Quran 2:183.

Quran exempts physically sick (Quran 2: 184-185), traveler on a journey, women during menstruation, pre pubertal children and pregnant and lactating women from fasting. However, many Muslims with illnesses such as mild to moderate Diabetes, Hypertension and other medical conditions do want to fast. This article is an attempt to guide those chronic illness patients and those with other medical problems, pregnant women who want to fast during the holy month of Ramadan.

Uniqueness of Ramadan Fasting

The following are the unique features in Islamic fasting

- It is a voluntary undertaking rather than being ordered by a physician
- There is no selective food intake i.e. protein only, juice only, fruit only , water only etc
- There is no total calorie malnutrition i.e. it not a semi starvation diet.
- An exercise in self discipline i.e. from constant nibbling , drinking, smoking etc
- Psychological effect and additional prayer

Effects of fasting

According to researchers, Ramadan Fasting affects the body systems in many ways. Physical effects of fasting include change in Calorie intake and fluid /water intake. This will have impact on body systems such as Digestive System, Endocrine glands, Respiratory system and Neurological System. There will be changes in Carbohydrate and Lipid Metabolism, Kidney function etc.

During Ramadan fasting, there will be slight fall in blood glucose, serum insulin with consequent increase in hormones such as glucagon and growth hormone. This will give a positive outcome in the physical health of the individual. The fall in glucose level become normal by 20th day of fasting and some rise in glucose is noticed in the 4th week.

In the endocrine system, there will be a fall in thyroid hormones such as T3 and T4 and all other hormone levels remain unaffected. In the lipid metabolism, the total cholesterol will fall in the first few days and then this effect is variable according to quality and quantity of food consumed at Iftaar and Sahur. The protective cholesterol fraction HDL increases in fasting.

In the urinary system, urinary volume, osmolality, solute and electrolyte excretion remain normal.

There will be an insignificant rise in blood urea level (BUN) and rise in uric acid to a lesser level than in prolonged fasting.

22% of fasting children may develop hypoglycemia (children are exempted from fasting).

The Health Benefits of Fasting:

Fasting is proven to have many physical benefits such as burn unnecessary fat, loose additional calories, reduce obesity, improves the brain function as well as physical well being, reduce the serum cortisol level and hence lower blood pressure, induces significant anti-inflammatory actions in the body, decrease pain and stiffness of bones and joints and reduce the need for medication etc. There will be a weight loss of 1.7-3.8 Kg (obese lost more weight than non obese) in Ramadan fasting. The other benefits of fasting include detoxification (The body process of eliminating or neutralizing toxins through the colon, liver, kidneys, lungs, lymph glands, and skin), enhanced healing process by improved immune system, increased protein synthesis resulting in healthier cells, tissues and organs, reduction in core body temperature and slower metabolic rate and general bodily functions, increased growth hormones production and feeling of rejuvenation and extended life expectancy. In addition an anti-aging hormone is also produced more efficiently in long term fasting. It is also observed that the only reliable way to extend the lifespan of a mammal is under nutrition without mal nutrition. Continuous fasting gradually shrinks your stomach and reduces the food intake and risk of overweight. Fasting also help to quit bad habits such as smoking and abstain from junk foods. In fasting state, the body metabolism become more efficient and the absorption of nutrients from food improves due to an increased secretion of a hormone called adiponectin.

Some researchers claim that fasting improves conditions such as psychosomatic disease, neurogenic bladder, psoriasis, eczema, thrombophlebitis, varicose ulcers, fibromyalgia, neuro-circulatory disease, irritable bowel syndrome, inflammatory bowel disease, bronchial asthma, lumbago, depression, neurosis, schizophrenia, duodenal ulcers, uterine fibroids, intestinal parasites, gout, allergies, hay fever, hives, multiple sclerosis, and insomnia.

Patients who should not fast:

The following categories of patients are medically unfit for fasting:

- Diabetes Mellitus Type 1
- Chronic Renal Failure including Renal Transplant and Nephrolithiasis
- Severe cardiac and pulmonary conditions
- Gastro-intestinal bleed and acute ulcers
- Severe Epilepsy
- Severe Migraine

Fasting in patients with chronic illnesses

1. Patients with diabetes mellitus:

All diabetic patients who wish to fast in Ramadan should consult his physician first to adjust his diet and medication. With the approval of the physician, he/she should switch to either long acting or twice daily medication and all elderly patients on chronic analgesic medication should have frequent monitoring of renal functions. Anticoagulant and Antiepileptic medications, if any, should be taken at night only. Proper health education is to be given to recognize the warning symptoms of dehydration, hypoglycemia, and other possible complications.

It is a good practice to have some days of trial fasting in the month of *shaban* itself. Patient should continue the diabetic diet in Iftaar and Suhar. They should be forbidden from skipping meals, taking medications irregularly, or gorging after the fast is broken.

Type 1 Diabetic patient (IDDM /Juvenile diabetic)

It is not advisable to fast those patients having Type 1 diabetic patients (those who are juvenile diabetic and on regular insulin therapy). However, if they stick on fasting, they should be supervised, their blood sugar should be monitored after Iftaar and before Suhur and also as and when they feel bad. Patients are advised to stop fasting, if the blood sugar falls below 60 or rise above 400. They should drink plenty of water at Iftaar and Sahur and not to do exercise before Iftaar

Insulin regimen:

Some experienced physicians conclude that Ramadan fasting is safe for IDDM patients with proper self-monitoring and close professional supervision. It is essential to adjust the insulin regimen for good IDDM control during Ramadan fasting. The following are the three insulin therapy methods that have been practiced 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 predawn insulin consisting only of a regular dosage of 0.1 – 0.2 unit/kg.
3. **Replacing regular insulin by insulin Lispro:** the rate of hypoglycemia is reduced by lispro, both in type 1 and type 2 diabetic patients. (Insulin Lispro (Humalog) is a rapid-acting human insulin analog produced by recombinant DNA technology utilizing a non-pathogenic laboratory strain of *Escherichia coli*).

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 postprandial hyperglycemia following overeating.

Type 11 Diabetic patient (NIDDM /Adult onset diabetic)

Type 2 diabetic can fast safely under medical supervision. All overweight type 2 patients (except for pregnant or nursing mothers) whose diabetes is stable with weight levels 20% above the ideal weight may be encouraged to fast as it will reduce their weight and improve their diabetic state.

Drug regime:

Type 2 diabetic on oral medication should control their diabetes for two months prior to Ramadan bringing HbA1c to < 8 and discontinue Metformin a week before fast.

Drugs like Avandia (rosiglitazone), Glucotol XL (glipizide) are safer for them than Diabeta (glyburide), Amyril (Glimepiride), and Starlix (Nateglinide).

Those on insulin should discontinue Insulin mixtures such as 70/30, 75/25, or Regular Insulin. If on NPH then reduce the total dose by 20% and take 2/3 at Iftaar and 1/3 at Sahur, If on Lantus then reduce by 20% and take at night -Titrate by 2 units (BG 120-140) and take 4-6 units of fast acting Insulin such as Novolog or Humalog before two meals

Stable Type 2 diabetic patients *who fast under close medical supervision can get the following health benefits in Ramadan fasting:*

- Better control of Diabetes
- Better control of Hypertension
- Better control of Lipid
- 5-10 lb weight loss

Effect of exercise in fasting type 2 diabetic patients:

Several studies indicate that light to moderate regular exercise during Ramadan fasting is harmless for type 2 diabetic 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.

In conclusion, the bulk of literature indicates that fasting in Ramadan is safe for the majority of diabetic patients with proper education and diabetic management. Most type 2 diabetic patients can fast safely during Ramadan. Occasionally type 1 diabetic patients who insist on fasting during Ramadan can also fast if they are carefully managed. Strict attention to diet control, daily activity, and drug regimen adjustment (**Ramadan 3D Triangle**) is essential for successful Ramadan fasting.

Forbid fasting in the following categories of diabetic patients

- all brittle type 1 diabetic patients;
- poorly-controlled type 1 or type 2 diabetic patients;
- diabetic patients who do not usually comply with diabetic regimens for diet, drug, and daily activity;
- diabetics with serious complications such as unstable angina or uncontrolled hypertension;
- patients with a history of diabetic ketoacidosis;
- pregnant diabetics;
- diabetic patients with intercurrent infections;
- elderly patients with any degree of alertness problems; and
- Patients with a history of two or more episodes of hypoglycemia and/or hyperglycemia during Ramadan.

Post-Ramadan supervision of fasting diabetics

After the month of Ramadan ends, the patients' therapeutic regimen should be changed back to its previous schedule. Patients should also be required to receive education about the general impacts of fasting on their physiology.

2. Hypertensive or Cardiac Patients:

Those who have mild to moderate high blood pressure along with being overweight should be encouraged to fast, since fasting may help to lower their blood pressure. They should consult their physician to adjust the medicines. Those with severe hypertension or heart diseases should not fast at all.

3. Those with Migraine Headaches:

Even in tension headache, dehydration, or low blood sugar will aggravate the symptoms, but in migraine during fasting, there is an increase in blood free fatty acids, which will directly affect the severity or precipitation of migraine through release of Catecholamines and hence the patients with migraines are advised not to fast.

Fasting in pregnancy:

There is no proven evidence of adverse outcome in normal pregnancy and new born birth weight in those who fasted.

Medical Advise to pregnant ladies on fasting:

- A healthy pregnant lady with no complications can continue her daily routine as normal.
- Allow time to rest, and stay away from stress and anxiety triggers as far as possible.
- Get the right nutrients and enough calories when you break your fast.
- In the first three months of pregnancy, the time when sickness and nausea are at their worst, try to rest as much as possible and plan to spread your meals out between dusk and dawn. If fasting makes the sickness much more pronounced, do talk to your doctor.
- If you feel any dizziness while fasting, heart palpitations, splitting headache, blurred vision, or slowing down of your baby's movements – especially during the last stage in pregnancy – break your fast and consult your doctor immediately.

A pregnant lady should follow the below mentioned practical ways throughout the Ramadan fasting:

- Break your fast gradually, by eating one small meal slowly, instead of the one big meal at once.
- Make sure you have the Suhur meal, but take it as late as possible.
- Drink plenty of fluids – aim for 8-10 glasses of water each day.
- Eat dates or dried dates to ease constipation.
- Try to eat animal proteins that are easy to digest, such as red meat, chicken, fish and eggs.
- Eat plenty of fresh fruits and vegetables including leafy greens.
- Cut back on carbohydrates and fatty foods
- avoid certain foods like pickles, spices, coffee, tea, carbonated water, and sweets.

Avoid fasting if pregnancy complicated with any of the following:

- diabetes
- chronic kidney disease
- malfunction of the liver
- bronchial asthma that requires an atomizer
- raised blood pressure, twin pregnancy, risk of premature labor, severe pregnancy sickness are other pregnancy related conditions that may prevent one from fasting.

Fasting in pregnant diabetic ladies:

Pregnancy is a state of increased insulin resistance and insulin secretion and of reduced hepatic insulin extraction. Fasting glucose concentrations are lower and postprandial glucose and insulin levels are substantially higher in healthy pregnant women than in healthy women who are not pregnant.

In general, women with pre gestational or gestational diabetes are at very high risk and may be strongly advised not to fast during Ramadan. However, if they insist on fasting, special attention should be given to their care.

Pre-Ramadan evaluation of their medical condition is essential. This includes preconception care with emphasis on achieving near-normal blood glucose and HBA1C values (an indicator of glucose control for the past 3 months), counseling about maternal and fetal complications associated with poor glycemic control, and education focused on self-management skills.

Elevated blood glucose and A1C levels in pregnancy are associated with increased risk for major congenital malformations.

Ideally, patients should be managed in high-risk clinics staffed by an obstetrician, diabetologists, a nutritionist, and diabetes nurse educators. The management of pregnant patients during Ramadan is based on an appropriate diet and intensive insulin therapy.

TO THE READERS....

Medicine is an ever changing subject. This booklet is intended to give baseline information to people who wish to fast during Ramadan. So when a person with chronic illness like diabetes mellitus, hypertension and also pregnant ladies with or without other complications should consult his/her doctor before they decide to fast. Adjust the medications as per the advice and supervision of the treating physician only.
