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Fasting & Health

As the world's Muslims gear up to fast during Ramadan of each year, there is some concern particularly with those required to go without any food and water for some 17 hours a day as a test of personal strength and communication with Allah. Fasting during the month of Ramadan can have many health benefits if it's done correctly.

In recent years, numerous studies have suggested that intermittent fasting - abstaining or reducing food and drink intake periodically - can be good for us, making it one of the most popular diet trends worldwide.
Studies of intermittent fasting show that not only do people see improvements in blood pressure and their cholesterol levels, but also in their insulin sensitivity. In June 2014, *Medical News Today* reported on a study suggesting periodic fasting - defined in the study as 1 day of water-only fasting a week - may reduce the risk of diabetes among people at high risk for the condition.
Another study, found longer periods of fasting - 2-4 days - may even "reboot" the immune system, clearing out old immune cells and regenerating new ones - a process they say could protect against cell damage caused by factors such as aging and chemotherapy.

What happens to your body when you fast?

The changes that happen in the body during a fast depend on the length of the continuous fast. The body enters into a fasting state eight hours or so after the last meal, when the gut finishes absorbing nutrients from the food.
In the normal state, body glucose, which is stored in the liver and muscles, is the body's main source of energy.
During a fast, this store of glucose is used up first to provide energy. Later in the fast, once the glucose runs out, fat becomes the next source of energy for the body.
With a prolonged fast of many days or weeks, the body starts using protein and breaking down protein for energy. This is the technical description of what's commonly known as "starvation". During Ramadan, it's unlikely to reach the starvation stage because the fast is broken daily.
Some studies have found that people lose weight during Ramadan, although they tended to put this weight back on after Ramadan. If someone would like to lose weight and keep it off, then making plans to maintain a healthy diet and get active when Ramadan is finished may help them sustain any weight lost due to fasting.

How to fast safely during Ramadan

The way to approach the diet during fasting is similar to the way we should be eating outside Ramadan. A balanced diet should be followed with the right proportion of carbohydrates, fat

and protein. If not careful, food eaten during the pre-dawn and dusk meals can cause some weight gain.
Experts recommend approaching the fast with discipline and self-control which shouldn't fall apart at the end of the day; otherwise an opportunity to lose weight and be healthier could be wasted.

Fasting and Diabetes

It is a personal choice whether or not to fast. However, if diabetics who choose to fast, must consult their doctor before Ramadan.

If you decide to fast
If, after consulting with your doctor, you decide to fast:

- If you are taking insulin, you will require less insulin before the start of the fast
- The type of insulin may also need changing from your usual type
- Pre-mixed insulin is not recommended during fasting
- Before starting the fast, you should include more slowly absorbed food (low glycemic index “GI”), such as basmati rice and lentils, in your meal, along with fruit and vegetables
- Check your blood glucose levels more often than you normally would
- When you break the fast, have only small quantities food, and avoid only eating sweet or fatty foods
- Try to eat just before sunrise, when you commence the next day's fast
- At the end of fasting you should drink plenty of sugar-free and decaffeinated fluids to avoid being dehydrated.

Fasting for Patients with Known Pre-Existing Heart Disease

A relatively small number of studies have been published on the effects of fasting on cardiac patients. In a recent review of the Medline literature published between January 1980 and September 2012, revealed that the effects of fasting during Ramadan on stable patients with cardiac disease are minimal, and that patients with stable cardiac illness are able to fast during Ramadan, provided they comply with the recommended dietary and medication regimens.

Conclusions from these studies cannot be extrapolated to patients with worse functional classes or those who are unstable. Notably, most of these studies were performed in the Middle East and Gulf areas, and therefore such conclusions may not be extrapolated to patients living in North European countries, where the duration of daily fasting may be two to three hours longer.

Effect of Fasting on the Incidence of Acute Cardiac Events

Fasting during the month of Ramadan does not increase the burden of acute cardiac illness in the general population at large. Although few studies reported that the incidence of acute myocardial infarction (AMI), unstable angina and acute coronary syndrome during Ramadan was similar to other non-fasting days
Although there are no consensus guidelines, it appears prudent to advise patients with acute myocardial infarction, unstable angina, recent percutaneous cardiac intervention (PCI) or cardiac surgery to avoid fasting.

Fasting for Patients with Heart Failure

A retrospective analysis of the clinical data of patients hospitalized with heart failure over a period of 10 years (January 1991 through December 2001) showed that there was no significant difference in the number of hospitalizations for heart failure during Ramadan when compared to the non-fasting months.
However, volume-overloaded decompensated heart failure or those requiring large doses of diuretics should be advised not to fast, particularly when Ramadan falls in the summer. Since there are no current studies addressing this category of patients, an adverse outcome could potentially be life-threatening, and a prospective study is warranted.

Fasting and Hypertension

There are claims that people with mild hypertension can safely undertake Ramadan fasting with once-only daily preparations. Grade 2–3 hypertension is associated with moderate-to-very-high added cardiovascular risk, and combination therapy is recommended for effective blood pressure control in these patients. A study that was carried out when Ramadan fell in winter where fasting duration was around 12 h has concluded that taking antihypertensive medications twice daily (before fasting starts at dawn, and just after breaking fast in the evening) seems to be a suitable regimen for blood pressure control. The study has certain limitations. However, if Ramadan falls in summer time, the required period for fasting can last up to 18 h and the pharmacokinetic and pharmacodynamic effects of longer fasting periods are unknown.

Poor compliance with the treatment regimens by fasting patients or other neuroendocrine changes induced by unaccustomed hunger periods might contribute to hypertension-related visits to emergency departments in Ramadan. Diuretics are better avoided during fasting, especially in hot climates, or should be administered in the early evening. Patients with difficult-to-control hypertension should be advised not to fast until their blood pressure is reasonably controlled. Patients with hypertensive emergencies should be treated appropriately, including by intravenous medications.

People with low blood pressure who are otherwise healthy may fast. They must ensure they drink enough fluid and have enough salt.

Should I fast if I get severe migraines when I don't eat and they worsen during fasting?

People with uncontrolled migraines should not fast. But managing migraines is possible with the right medicine and certain lifestyle changes.

Fasting, eating high-sugar foods, dieting too rigorously, and skipping meals can all trigger, or make people more likely to have a headache or migraine. Even delayed or irregular meals can make a difference. This is usually due to people’s blood-glucose levels falling too low.

Headaches produced from going without food are often quite severe and accompanied by mild nausea. There is also a similarity between some of the symptoms of missing a meal and the early warning signs (premonitory) of a migraine attack, such as: yawning, pallor, sweating, headache, a craving for sweet things, and mood changes.

Headaches and migraine attacks caused by fasting may not always be due to hypoglycemia, for example they can be caused by the stress-hormones released by the body during fasting. They are also often triggered by dehydration and lack of sleep. Changes in caffeine intake, for example by drinking less tea or coffee, and changes in smoking frequency also often trigger headaches and migraines. So, it’s advised to gradually cut down on caffeine-containing products.

Ramadan, a Good Time to Quit Smoking and Other Addictions

Smoking is a bad health habit and Ramadan is a great opportunity to change unhealthy habits, including smoking.
Choose one addiction to drop this Ramadan. It could be an addiction to smoking, lying, chocolate, or even gossiping.

References:

1. www.nhs.uk/Livewell/Healthyramadan/Pages/fastingandhealth.aspx
   www.nhs.uk/Livewell/Healthyramadan/Pages/faqs.aspx
2. Chamsi-Pasha H, Ahmed W H, Al-Shaibi K F. The cardiac patient during Ramadan and Hajj. *J Saudi Heart Assoc*. 2014; 26(4): 212-215.
3. www.independent.co.uk/life-style/health-and-families/health-news/ramadan-2016-start-date-fasting-rules-health-benefits-how-celebrated-islam-muslims-holy-month-uk-a7067556.html
4. www.diabetes.org.uk/ramadan
5. www.nutrition.org.uk/healthyliving/seasons/ramadan.html
6. www.migrainetrust.org/about-migraine/trigger-factors/hypoglycaemia/

Terminology

Keloid

Hard lumpy nodule of the skin due to over growth of fibrous tissue in the dermis. It usually follows surgical or accidental trauma or burns, but, rarely, may complicate acne on the upper trunk. Most commonly seen in the skin over the sternum, shoulders and upper back; coloured people are particularly prone. Injection of corticosteroid into the keloid may cause partial resolution. Excision should be avoided.

Source: Marcovitch H. *Black's Medical Dictionary*. 41th ed. London: A&C Black Publishers Limited. 2005.

Complementary Medicine

Passionflower (زهرة الآلام)

Species (Family):

Passiflora incarnata L. (Passifloraceae)

Part(s) Used: Herb, whole plant

Constituents:

Contains alkaloids and flavonoids, in addition to cyanogenic glycosides, essential oil, amino acids, fatty acids, formic and butyric acids, sterols, sugars, and coumarins are found in the root.

Herbal Use:

Passionflower is stated to possess sedative, hypnotic, antispasmodic and anodyne properties.
Traditionally, it has been used for neuralgia, generalised seizures, hysteria, nervous tachycardia,spasmodic asthma, and specifically for insomnia.The German Commission E approved internal use for nervous restlessness. Passionflower is used in combination with valerian root and lemon balm for conditions of unrest, difficulty in falling asleep due to nervousness. Passionflower is used extensively in homeopathy.

Dosage:

Dosages for oral administration (adults) recommended for the traditional uses are:
For restlessness and resulting irritability and insomnia, and nervous tension 0.5–1 g of dried plant equivalent 3 times daily; 4–8 g herb daily.
Modern standard herbal reference texts recommend the following dosages
For oral administration (adults).For tenseness, restlessness and irritability with difficulty falling asleep: 0.5–2 g of drug three to 4r times daily; 2.5 g of drug as an infusion 3 to 4 times daily.

The pharmacological actions:

Many of the flavonoids, such as apigenin, are well known, and include antispasmodic and anti-inflammatory effects. The alkaloids and flavonoids have shown sedative activity in animals. Passionflower is the herb of choice for intransigent insomnia. It eases the transition into restful sleep without causing any next day hangover. It may be used whenever an antispasmodic is indicated (for example, for Parkinson's disease, seizures, or hysteria). It can be effective for nerve pain, such as neuralgia, and the viral infection of nerves called shingles. Passionflower may also be helpful for asthma associated with spasmodic activity and states of tension. Safety Considerations: Passionflower will potentiate the effects of sedative drugs.

Contra-indications, Warnings:

It is possible that use of doses of passionflower higher than those recommended may cause sedation to a greater extent than intended. Passionflower will potentiate the effects of sedative drugs. Theoretically, it is contra-indicated for people taking monoamine oxidase inhibitors.

Drug interactions

In view of the documented pharmacological effects, whether or not there is potential for clinically important interactions with other medicines with similar or opposing effects and used concurrently should be considered.

Pregnancy and lactation

In view of the lack of information on the use of P. incarnate during pregnancy and lactation, its use should be avoided during these periods.

Sources: *1.* Barnes J, Anderson L A, and Phillipson J D. *Herbal Medicines,* 3rd ed. London: Pharmaceutical Press; 2007.
2. Hoffmann D. *Medical Herbalism*, Rochester, Vermont: Healing Arts Press; 2003.

1. Women who are taking a combined oral contraceptive are at an increased risk of:

   A. Deep-Vein Thrombosis During Travel
   B. Fluid Retention
   C. Chloasma

2. Drugs that may cause jaundice include:

   A. Vitamin B12
   B. Clomipramine
   C. Amoxicillin

3. A patient who is on holiday presents with acute constipation. He has had the symptoms for the past 2 days.

   For the following products, place your first choice then order the remaining products ending with the one you would recommend as a last choice:

   A. Lactulose
   B. Liquid Paraffin
   C. Magnesium Sulphate
   D. Senna

Real Enquiries

At the "Drug Information Center", we respond to enquiries from the professional healthteam as well as from others. Here's one of the enquiries received at the center:

Enquiry received from: A.G. - Philippines
Enquiry: What happens if I take co-tri tablets 160/ 800 mg while I'm pregnant?
Summary of the answer:
Co-trimoxazole (active ingredient in co-tri) is an antibiotic used to treat and prevent many different bacterial infections. It contains two antibiotics in one pill and there are many brand names including Septrin, Septra, Bactrim, Co-tri and Cotrim. Co-trimoxazole should not be used in pregnancy, particularly in the first trimester, unless clearly necessary. Folate supplementation should be considered if co-trimoxazole is used in pregnancy.

Animal studies suggest that exposure to this combination drug during pregnancy may be associated with an increased risk of congenital malformations, particularly neural tube defects, cardiovascular malformations, urinary tract defects, oral clefts, and club foot.

There are no controlled data in human pregnancy:

- Sulfonamides may cause jaundice and hemolytic anemia in the newborn.
- Sulfonamides may cause kernicterus in babies during the first month of life by displacing bilirubin from plasma albumin; therefore, they should be avoided during the last month of pregnancy.
- Trimethoprim may interfere with folic acid metabolism and animal experiments have shown that administration of very high doses during organ development may cause birth defects typical of folic acid antagonism; if this drug is used during pregnancy, or if the patient becomes pregnant while taking this drug, folic acid supplementation may be required.

Pregnancy category:
Co-trimoxazole is given pregnancy category C according to the AU TGA (Australian *Therapeutic Goods Administration*), while it is category D according to the US FDA (United States Food and Drug Administration).

References:

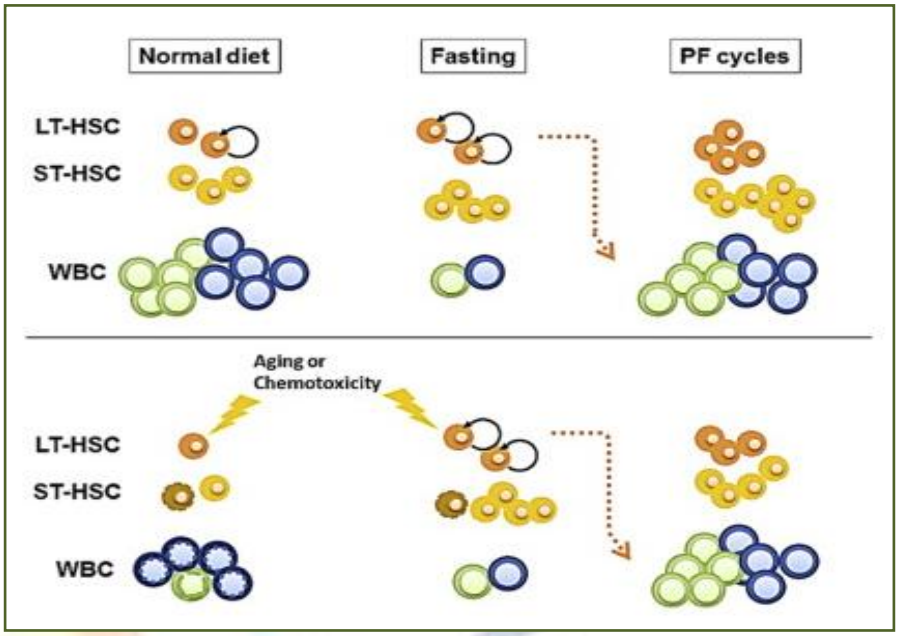
1. Schaefer C, Peters P, and Miller R. *Drugs during Pregnancy and Lactation.* Treatment options and risk assessment. 2nd ed. London: Elsevier; 2007.
2. Brigg, G G, Freeman, R K and Yaffe S J. *Drugs in Pregnancy and Lactation.*9th ed. Philadelphia: Lippincott Williams & Wilkins; 2011.www.ncbi.nlm.nih.gov/pmc/articles/PMC4331013/
3. www.drugs.com/pregnancy/sulfamethoxazole-trimethoprim.html
4. www.medicines.org.uk/EMC/medicine/23909/SPC/Co-Trimoxazole+Tablets+80+400mg/#PREGNANCY

Fasting May Protect Against Immune-Related Effects of Chemotherapy and Aging

While chemotherapy can save lives, it can also cause many side effects, including the depletion of immune cells. Also, even in the absence of chemotherapy, normal aging takes a heavy toll on the immune system, leading to immune deficiencies and a higher risk of developing leukemia and a variety of malignancies with age. Now researchers reporting — periodic fasting — may combat both chemotherapy today in the journal Cell Stem Cell, published by Elsevier's Cell Press, have found that a simple dietary intervention -induced and aging-related changes in immune cell function by replenishing stem cells in the blood.

The findings suggest that fasting may provide benefits for cancer patients, the elderly, and people with various immune defects.

It's estimated that more than one-fifth of cancer-related deaths are hastened, or even caused, by toxic effects of chemotherapy rather than the cancer itself. These toxicities can reduce the overall effectiveness of anticancer treatments by limiting the dosage and frequency of chemotherapeutic interventions that are tolerable to patients. Currently there are no interventions to lessen the side effects that chemotherapy has on the immune system or to prevent the immune cell dysfunction that occurs with aging.



The study revealed that temporary nutrient restriction could increase stem cells' resistance to certain stressors. It tested whether fasting could have protective effects for immune cells such as white blood cells. The researchers found that protection against white blood cell loss also occurred in human patients who fasted for a single 72-hour period prior to platinum-based chemotherapy as part of a phase 1 clinical trial.

With additional experiments, the investigators discovered that fasting provides its protective effects by reducing levels of insulin-like growth factor-1 (IGF-1), a protein with key roles in growth and aging. Therefore, fasting or treatments that target the IGF-1 pathway might provide similar benefits for cancer patients, the elderly, and people with immune defects.

Source: www.elsevier.com/connect/fasting-may-protect-against-immune-related-effects-of-chemotherapy-and-aging

Answers:

1. A) Travel, especially long-haul flights, is associated with an increased risk of deep-vein thrombosis. Women taking combined oral contraceptives (COCs) are at an increased risk of developing deep-vein thrombosis during travel. Fluid retention and chloasma are side-effects that are expected with COCs.

2. B) Clomipramine may cause jaundice as a side-effect. It's extensively metabolised in the liver. Clomipramine should be used with caution in patients with hepatic impairment. A symptom of a vitamin B-12 deficiency can include jaundice. Amoxicillin is largely eliminated by the kidney.

3. D) A laxative that has a rapid action is required to provide immediate relief. A stimulant laxative such as senna may be recommended as first choice for the short term. As for other products, lactulose, an osmotic laxative, has a delayed onset. It may take up to 48 h to act and therefore it is not recommended as a single agent for the management of an acute phase. Magnesium sulphate is an osmotic laxative that brings about rapid bowel evacuation. This may result in electrolyte imbalance and its use as a laxative is reserved for when complete bowel evacuation is necessary, such as before a surgical intervention. Owing to the disadvantages associated with the use of liquid paraffin, its use is not supported. It may cause anal irritation, lipid pneumonia and interference with the absorption of fat soluble vitamins.