

## **COUNTDOWN TO RAMADAN**

In the Name of Almighty Allah Most Beneficent, Most Merciful

The countdown has already begun for the arrival of the Most Holy and auspicious month of Ramadan. The very name of Ramadan evokes a feeling of expectant joy and pleasure in the heart of the Muh'min. A restlessness overtakes the Muh'min in eager anticipation of this most Holy month. Sometimes, this feeling even turns to fear and anxiety.

### **The Fasting – its Benefits**

The original meaning *sawm* is to **be at rest**. We give rest to the gastro-intestinal tract, the sexual organs, the tongue, the eyes and ears, etc. The transit time for a bolus of food from the mouth to the end of the large intestine, called colon, is about 14 hours. This is the period - of 14 hours - during which we fast and withhold any stimulus, reaching the stomach and the digestive system.

In fact, fasting is an additional safety device for the regenerative processes of the body. The repair processes of the body and the brain, including the memory molecules take place when the body is at rest, especially during the stage of deep sleep. Sleeping during Ramadan is much deeper than in other times. Two hours of sleep during Ramadan are more satisfying and refreshing than more hours of sleep otherwise.

Fasting significantly increases deep sleep and reduces the dreaming time, which takes place during the Rapid Eye Movement (REM) sleep. Therefore, it is more beneficial for the elderly to fast because their normal hours of deep sleep in the non-fasted state are much less.

Fasting is a divine prescription, because Allah Himself prescribed it in the Qur'an. Because the Islamic fast does not exceed 14 hours or so, the normal steady state of the body is maintained as a result of coordinated physiological mechanisms. Hence, nearly all the biochemical results in the laboratory are normal.

### **During fasting, serum magnesium is increased and...**

- Magnesium has cardio-protective effects and it is being used in prevention and treatment of heart attacks.
- It has anti-platelet properties and prevents extension of the clot.
- It is a membrane stabilizer acting on the sodium/potassium/calcium flux at the membrane level. Hence, it prevents cardiac and cerebral dysrhythmias.
- Fasting, through the beneficial effects of magnesium, prevents the formation of atheroma as well as dissolves atheromatous plaques which are responsible for heart attacks and strokes. Hence, fasting takes an active part in the rejuvenating processes of the body through many channels.
- It increases the fibrinolytic activity of the blood, which leads to prevention and also dissolution of any recent clot.

Ramadan puts a healthy mind into a healthy body. During fasting, there is increased secretion of the growth hormone by the pituitary gland. It is an anabolic hormone for synthesis of proteins and collagen, which produces a positive nitrogen balance. It also stimulates erythropoiesis, as well as collagen synthesis. During the exercise of fasting, prayers and different spiritual experiences of Ramadan, certain endogenous substances are released by the brain and spinal cord into the body called opioids, which include enkephalins and endorphins. These are responsible for euphoria, tranquility and serenity during such periods.

Endorphins and enkephalins are natural painkillers. Endorphins may be responsible for the "feel nice" effects, experienced by many people after rigorous exercise. Endorphins and enkephalins are derived from beta-lipotropin. On release, it is cleaved to form three major active products: called met-enkephalin, gamma-endorphin, and beta-endorphin.

Beta-endorphin is most active, and is about 20 times as potent as morphine. In addition to their painkilling properties, the narcotic analgesics cause a profound feeling of well-being (euphoria). It is this feeling that is in part responsible for the psychological drive of certain persons who are fasting. Other mechanisms reduce pain sensation by blocking the transmission of pain message to the brain.

To alter the pain sensation, the brain and spinal cord release specialized neurotransmitters called endorphins and enkephalins. These chemicals interfere with pain impulse transmission by occupying the nerve cell receptors, required to send the impulse across the synapse. By making the pain impulse travel less efficiently, endorphins and enkephalins can significantly lessen the perception of pain. In extreme circumstances, they can even make severe injuries nearly painless.

If an athlete is injured during the height of competition, or a soldier injured during a fight, or persons who are fasting, they may not realize they have been hurt, until after the stressful situation has ended! This happens because the brain produces abnormally high levels of endorphins or enkephalins, in periods of intense stress, excitement or fasting.

### **Fasting and bio-rhythm:**

Muslims who have been fasting regularly since childhood have been exposed to different sleep/wake and light/darkness cycles on a daily basis in one annual lunar month. Hence, it may be easier for such persons to synchronize at a faster rate their circadian, circa-lunar and circa-annual bio-rhythms, under difficult conditions.

Therefore it is expected that Muslims who fast regularly would least suffer from jet lag while traveling in a plane from West to East and that health problems in Muslim shift-workers would be minimal. In fact, the central circadian biological clock is located in the suprachiasmatic nucleus of the hypothalamus. It is a cluster of about 10,000 neurons on either side of the mid line, above the optic chiasma about 3 cm behind the eye.

Re-setting proceeds at the rate of 1-2 hours/day to adapt to a reversed shift pattern. There are widespread individual variations in the rapidity of resynchronization. Muslims who fast regularly and who have had disturbed wakefulness/sleep cycles on a daily lunar annual basis, can adapt themselves much faster to different conditions during international travel. This is while crossing time zones and do not suffer from the ill effects of jet lag. It is also a common observation that as soon as Ramadan is over, normal circadian rhythms are established within the fasted Muslim, with such great rapidity on the first day of the following month of Shawal. This means that `Eid-ul-Fitr (Minor Feast) is to be at par with pre-Ramadan levels.

Normally, a period of three weeks is required for resynchronization, among shift workers. As the fasting Muslim attunes himself to resynchronization processes, during the space of just over four weeks in Ramadan, his health problems - as a shift worker - would be negligible. His synchronization processes would be more rapid, whether during Ramadan or any other time.