

EDITORIAL:

Ramadhan Fasting (صوم): The True Rejuvenation of Body and Mind.

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The ninth month of the Islamic calendar is Ramadan, the holy month of fasting observed by Muslims around the world. It is not just a religious and spiritual journey but also a potential period of physical and mental rejuvenation. Islam, with about two billion followers, is one of the largest religions globally and projected to outnumber Christians by 2050.¹ Abstinence from food and drink from dawn to dusk for a month of Ramadan can bring about significant changes in the body and mind, promoting overall well-being.

Ramadan fasting is a deeply spiritual practice that promotes self-discipline, empathy, and spiritual reflection. It is also a significant cultural and religious tradition that promotes social connection, contributing to mental rejuvenation. It can improve biochemical parameters and reduced risk of metabolic disorders (diabetes, hypertension and obesity) leading to physical rejuvenation.²

Health Protective Effects

It has health protective effects, including improvements in body weight and metabolic parameters, promoting overall well-being.³

Physiological Changes

Fasting induces variable physiological changes at cellular and organ levels. Fundamental change occurs in cellular physiology. Glucose provides energy to the body through the process of glycolysis. During initial stages of fasting the body utilizes glycogen stores in the liver and skeletal muscles. The drastic change in metabolism that follows glycogen depletion is primarily dependent on the metabolism of triglyceride stores in adipose tissue. Triglycerides are separated into free fatty acids and glycerol that the liver respectively converts into ketone bodies and glucose. Through the process of ketogenesis, Ketone bodies are made from free fatty acids. These ketone bodies travel through the body and are reconverted back into acetyl-CoA at the tissues requiring energy. In addition to adipose catabolism, protein catabolism, through the process of gluconeogenesis, simultaneously takes place in times of fasting.

Human studies of intermittent fasting also demonstrate promising results in protection against metabolic syndrome and other lifestyle diseases including diabetes and cardiovascular disease. A notable cellular process that is upregulated during times of fasting includes the inhibition of the tyrosine kinase enzyme. Inhibition of this enzyme is a backbone for the treatment of many types of cancer. However, further studies need to be conducted to determine whether fasting regimens can be used augmented with chemotherapy to improve the prognosis of fatal disorders.⁴

Pancreas is the most important and immediate organ affected by a fasting. When there is low plasma glucose, the pancreas releases excessive glucagon from the alpha cells in the islets of Langerhans. Glucagon mainly affects most of the body glycogen stored in the liver. Since skeletal muscle comparatively contains a low glycogen concentration so skeletal muscles are less affected by the glucagon. When glycogen stores in the liver are depleted, the body uses adipose tissue and protein for energy. Liver play active role in the metabolism of fats as the main oxidizer of triglycerides. All such changes lead to alertness and well-being, contributing to the rejuvenation of mind and body.⁵

Physical Rejuvenation

Cellular Detoxification: During fasting, the body enters a metabolic state called ketosis, where it starts burning fat for energy instead of glucose. This process triggers autophagy, a cellular "clean-up" mechanism that removes damaged proteins and toxins, potentially reducing the risk of chronic and debilitating diseases such as cancer and Alzheimer's disease.⁶

Metabolic Reset

Fasting can improve insulin sensitivity, regulating blood sugar levels and potentially aiding in weight management. Decreased fasting blood sugar and HbA1c levels in diabetics during Ramadan have been observed.⁷

Boosting gastrointestinal (Gut) Health

Ramadan-associated intermittent fasting can have positive impact on the gut microbiome composition, leading to increase beneficial bacteria and hence promoting digestive health. Favorable improvement has been noticed in the anti-inflammatory bacteria *Lactobacillus* and *Bifidobacterium* while there is reduction in the pathogenic bacteria.⁸⁻⁹

Intermittent fasting during Ramadan increases microbiome diversity that specifically help in upregulation of the Clostridiales order-derived Lachnospiraceae and Ruminococcaceae bacterial families. It is imperative to note that on the cessation of intermittent feeding, microbiome composition returned to baseline.¹⁰

Effects of Ramadan fasting on blood pressure

London Ramadan Study (LONRAN), a meta-analysis study revealed beneficial effects of Ramadan fasting on blood pressure independent of changes in weight, total body water, and fat mass supporting recommendations in the official guidelines supporting Ramadan fasting for hypertensive patients.¹¹

Impact on Mental Well-being

Ramadan fasting has profound effects on both the mind and body, due to the physiological changes and metabolic adaptations. It is often accompanied by an increased level of alertness, contributing to improved cognitive function and mental rejuvenation.

Fasting in Ramadan nourish tolerance (sabr), willpower, Mindfulness and self-control responsible for variety of desires, emotions and acts including anger, aggression, violence, substance abuse/addiction, gambling, infidelity etc.

Mood and Well-being

Fasting has been associated with improved mood, subjective well-being, and enhanced mental clarity, fostering emotional balance and mental rejuvenation

Neurological Benefits

Fasting is also recognized for its neurological benefits, contributing to mental rejuvenation and cognitive enhancement, promoting overall well-being.

Cognitive Clarity

Fasting is associated with enhanced cognitive function, improved mental clarity, and increased alertness, contributing to mental rejuvenation. Cognitive and Emotional Benefits

Emotional Balance

The practice of fasting fosters emotional balance, mental resilience, and a sense of inner peace, promoting overall well-being.

Holistic Health Benefits

Scientific research supports the holistic health benefits of Ramadan fasting, encompassing both physical and mental rejuvenation leading to enhanced brain function through the production BDNF (Brain-Derived Neurotrophic Factor, a important protein for neuronal growth and learning.¹²

Stress Reduction

Fasting has been linked to reduced stress levels and improved emotional well-being, contributing to mental rejuvenation. The spiritual focus and mindful eating habits cultivated during Ramadan can promote stress reduction, lowering cortisol levels, the stress hormone.¹³

Improved Cognitive Function

Fasting can boost focus, concentration, and memory, potentially due to changes in brain chemistry and increased BDNF levels.¹⁴

Lifestyle and Dietary Choices

Healthy Lifestyle Practices

Fasting promotes healthy lifestyle practices, including mindful eating, balanced nutrition, and regular physical activity, contributing to overall well-being

Dietary Consciousness

The fasting period encourages dietary consciousness, promoting mindful food choices and nutritional awareness, contributing to mental and physical rejuvenation.

Sleep duration and diet

The duration of sleep and dietary cholesterol intake significantly decreased during the month of Ramadan compared to the levels at pre-fasting period while total sugars, polyunsaturated fats , vitamins C and E, omega-3 fatty acids, and lycopene levels significantly increased.¹⁵

Sustainable Well-being

Fasting supports sustainable well-being, emphasizing the importance of holistic health and self-care, promoting overall well-being

Mindful Living Practices: Fasting encourages the art of mindful living, promoting conscious choices, emotional balance, and spiritual well-being, contributing to overall well-being.

Sustainable Health: The practice of fasting supports sustainable health, emphasizing the importance of holistic well-being and self-awareness, contributing to overall well-being.

Scientific Endorsement: Scientific research endorses the practice of mindful living and its profound impact on mental and physical rejuvenation, contributing to overall well-being.

Holistic Wellness Practices-Mind-Body Harmony

Fasting fosters mind-body harmony, integrating spiritual and physical well-being for holistic wellness, contributing to overall well-being

Self-Care and Reflection

The fasting period encourages self-care, mindful reflection, and emotional well-being, contributing to overall well-being.

Embracing Mind-Body Rejuvenation

Fasting supports cognitive clarity, emotional balance, and the nurturing of mind-body harmony for sustained well-being, contributing to overall well-being with clarity in cognition and emotional balance.

Key Principles to Maximize the Benefits of Ramadan Fasting for Mind and Body

- Gradual Preparation: Prior to Ramadan, gradually adjust your eating habits to avoid the shock of sudden fasting.
- Hydration is Key: Drink plenty of water after *iftari* to prevent dehydration and optimize bodily functions.
- Balanced Post-Fast Meals: Prioritize nutrient-rich, wholesome foods during *Suhoor* and Iftar to replenish essential nutrients and fuel the body.
- Prioritize Sleep: Maintain a regular sleep schedule to enhance cognitive function and overall well-being.
- Engage in Mindful Activities: Practice meditation, prayer, or other spiritual activities to deepen self-awareness and manage stress.

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