

PHYSICAL ACTIVITY DURING THE MONTH OF RAMADAAN FASTING

The month of Ramadaan incorporates the fasting of Muslims for approximately 12-18 hours of the day. Because it's a month where no drink or food can be consumed during daylight, there has been a lot of speculation regarding the abstinence of exercise and physical activity during Ramadan. There have been myths with regards to a decrease in blood levels and heart function, weakening of the immunity system and syncope when exercising during Ramadan.^[1] This article is an attempt to guide readers on the importance of exercise, the 'when-what-how' and some valuable pointers to remember when exercising during Ramadaan.

The importance of exercise during Ramadaan

Research has shown that fasting for 30 consecutive days without exercise results in a regression of strength and fitness. Individuals who train a minimum of 3 days a week for 11 months but avoid training during the month of Ramadaan, puts them at a setback with regards to cardiovascular and resistance adaptations. 'You lose more than you gain and you gain less than you lose!' Therefore, it is imperative that Muslims maintain their exercise routine during Ramadan. It is advisable not to progress your exercise routine (increase in weights, sets, repetitions, speed or distance) during Ramadan, but maintain what you've done in the previous month.^[2] If one has to leave exercise for a month, it will be equal to losing 4 months of exercise. Surely, one can't afford to lose all those months of physical activity. Many Muslims would find it difficult to exercise during Ramadaan but it's integral to note that this is also a month of patience, sacrifice and exercising during Ramadaan is purely a 'mind over matter' fact.

Persons with chronic diseases, injuries and complications

Persons with the above should take caution when exercising or doing any strenuous workloads during Ramadaan. In particular, persons with Type 1 Diabetes should not exercise at all as this can hinder their glucose levels profusely. Hypoglycemia is the most common problem for Diabetics who exercise and is usually a concern for Diabetics taking insulin or oral medication.^[3] However, persons with Type 2 Diabetes ('the active' Diabetic) can exercise at a low-intensity, but for a maximum of 35 minutes focusing predominantly on aerobic and strength training. This does not contribute any adverse effects on the adequacy of diabetic control.^[4]

Persons with high blood pressure or hypertension should exercise at a low-intensity with a 75% maximum heart rate.^[4] Example: a 60-year old woman's maximum heart rate would be 160 beats per minute ($220 - 60 = 160$), 75% of 160 is 120 beats per minute. Therefore, a 60-year old hypertensive woman should not exercise in Ramadaan with a heart rate of more than 120 beats per minute. These maximum heart rates depend on age, gender and health risk factors. With a hypertensive individual, their blood pressure increases during and after exercise. After exercise, their blood pressure takes time to decrease when compared to a healthy individual. However, individuals who have their hypertension well-controlled with diet and medication in the evenings can regulate their blood pressure more effectively during and after exercise.^[5,6] The more severe the hypertension, the worse the blood pressure levels can fluctuate during exercise.^[6]

Persons with any injuries or complications should also exercise at a low-intensity for a maximum of 30 minutes because your bodies utilise more energy during the recovery phase of injury or pain, especially when fasting.^[7] Therefore, not enough energy and glycogen stores will be retained for more than 30 minutes when exercising.

In addition, persons with chronic diseases or complications are refrained from consuming medication while fasting. It is therefore difficult to manage sugar levels, cholesterol levels and blood pressure without medication during Ramadaan. Exercise can manage these as well but the above recommendations need to be adhered to when exercising during fasting. Individuals with any chronic

diseases, and in particular Diabetes and Hypertension, should consult with their physician first before implementing an exercise routine during Ramadaan.^[8]

When to exercise

After having a moderate exercise session, you will not adequately replenish the glycogen stores that you burnt during exercise, thus resulting in weight loss and dizziness.^[9] 90 minutes before sunset would be the ideal time to train because when breaking your fast, you can supplement the energy and glycogen stores lost when exercising.^[8]

Exercise Prescription during Ramadaan for Healthy Individuals^[4]

Exercise mode	Frequency	Intensity	Duration
Warm-up	Minimum 3 days/week; 24 hours rest	50% heart rate maximum	7-10 minutes
Stretching	Minimum 3 days/week; 24 hours rest	Stop stretching when muscles start to pain	20 seconds per limb/muscle
Cardiovascular	Minimum 3 day24 hours rest s/week;	50-70% of heart rate max	20 minutes
Strength training	Minimum 3 days/week; 24 hours rest	50-60% 1 repetition max	2 sets of 8-12reps
Cool-down	Minimum 3 days/week	40-50% of heart rate max	5 minutes

Maximum total duration: 45 minutes

Exercise Prescription during Ramadaan for Diabetics^[4]

Exercise mode	Frequency	Intensity	Duration
Warm-up	Minimum 2 days/week; 48 hours rest	40% heart rate maximum	7 minutes
Stretching	Minimum 2 days/week; 48 hours rest	Stop stretching when muscles start to pain.	20 seconds per limb/muscle
Cardiovascular	Minimum 2 days/week; 48 hours rest	40-60% of heart rate max	10-15 minutes
Strength training	Minimum 2 days/week; 48 hours rest	40-60% 1 repetition max	2 sets of 7-10reps
Cool-down	Minimum 2 days/week; 48 hours rest	40-50% of heart rate max	5 minutes

Maximum total duration: 35 minutes

Dietary Intake and Hydration Guidelines per day between sunset and sunrise

- 6 to 10 grams of carbohydrates per kg of body weight
- 1.2 to 1.7 grams of protein per kg of body weight
- A fat intake of 20 to 35% of the total energy intake^[10]
- Sufficient fluids to prevent a deficit of more than 3% of body mass (Calculating Body Mass: Fat mass = kg x %fat/100; Body Mass = kg – fat mass).
- Research has indicated that the absence of fluids may have a greater impact on exercising during Ramadan than the absence of food. Hydrate a lot during the night (after sunset and evening pray; keep a water bottle when going for evening prayers).^[10]
 - Guidelines also apply to individuals with Diabetes and Hypertension as their exercise intensity and duration is lower.

Guidelines

- Terminate exercise immediately when feeling dizzy or nauseous. One should only break their fast if they really feel weak and fatigued.
- Plan when to sleep and when to wake up
- Consider naps and schedule times to rest as your bodies feels more fatigue during Ramadan
- Take a working lunch (since you don't have to eat), then arrange with your boss to leave an hour earlier at the end of the day. This will allow you to get in some time for training before you break your fast.
- Intermittent exercises such as Action Soccer or Action Cricket after sunset and evening pray is a good way to maintain physical activity and fitness
- Endurance, plyometrics (power and explosive training), speed and agility training should be avoided completely as these exercises utilise more energy and can place one's body in greater strain.

REFERENCES

1. Fallah, J. Ramadaan Fasting and Exercise Performance. *Asian J of Sports Med*: 2010; 1(3): 130
2. Maughan R. The effects of fasting on metabolism and performance. *Br J of Sports Med*: 2010; 44: 490
3. Azizi F, Siahkollah B. Ramadaan Fasting and Diabetes Mellitus. *J Iranian Medicine* 2003; 6(4): 237 – 242.
4. Thompson WR. (2009). *ACSM's Guidelines for Exercise Testing and Prescription*. 8th Ed. Lippincott Williams & Wilkins: USA
5. Henry P, Thomas F, Benetos A. Impaired Fasting Glucose, Blood Pressure and Cardiovascular disease mortality. *Hypertension* 2002; 40: 458 – 463.
6. Whelton SP. Effect of aerobic exercise on blood pressure: a meta-analysis of randomised, controlled trials. *Annals of Int Medicine* 2002; 136(7): 493 – 503.
7. Ramadaan J. Does Fasting during Ramadaan alter body composition, blood constituents and physical performance? *Med PrincPract*: 2002; 11(2): 41-46
8. Shephard RJ. Physical performance and training response during Ramadaan observance, with particular reference to protein metabolism. *BJSM* 2012; 46: 477 – 484.
9. Barac-Nieto M, Ramadaan J. Cardio-respiratory responses to moderately heavy aerobic exercise during the Ramadaan fasts. *Saudi Med J*: 2000; 21(3): 238-244
10. Hormann K. (2011). *Ramadaan and the Muslim Athlete: Challenges for the Athletic Trainer*. Linfield College: Athletic Training Education Program. By presentation.



INTERNATIONAL JOURNAL OF SCIENCE AND TECHNOLOGY

ISSN-2319-2119

RESEARCH ARTICLE

MH Noorbhai , The Experiment, Feb, 2013 Vol. .7(3), 413-416

http://www.ijbnpa.org/author/manuscript/files/view.do?fileCount=0&pdfMadeInHouse=true&txt_man_id=1275597859897838&manuscriptId=1275597859897838&requestAuthorCheck=true&txt_nav=msd

¹**MH Noorbhai (BA, BSpSc (Hons) Biokinetics)**

¹MRC Exercise Science and Sports Medicine Research Unit, Department of Human Biology, Sports Science Institute of South Africa, Faculty of Health Sciences, University of Cape Town.

E mail id : (habib.noorbhai@yahoo.com)