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# The Ramadan Fast Does not Impact Resting or Physical Activity Energy Expenditure in Lean and Obese Men

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## Introduction

The Ramadan fast is part of the religious practice of Muslims around the World. During this period, individuals abstain from food, drinks, and sexual activity between dawn and sunset for one full month once a year. In the days of Ramadan, Muslims have only two meals one before sunrise (light meal), and the other after sundown (main meal). The beginning of this month varies from year to year depending on the particular phase of the moon. Ramadan in this study started on September 1st 2008. The average length of daily fasting during the study period was 13.9 hours.

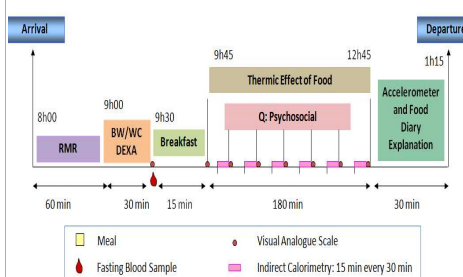
## Aim

The objective of this study was to investigate the effects of Ramadan fasting on body composition, resting metabolic rate (RMR) and physical activity EE (EE) in lean and obese males.

## Methods

We studied 10 normal weight and 10 obese males. Body weight and composition (DXA) as well as RMR (indirect calorimetry) and physical activity EE (accelerometry) were measured at 4 times points during Ramadan: 1) before; 2) 2 weeks after the beginning of fasting; 3) 3-4 weeks after and 4) after a 5 month follow-up.

## Methods...

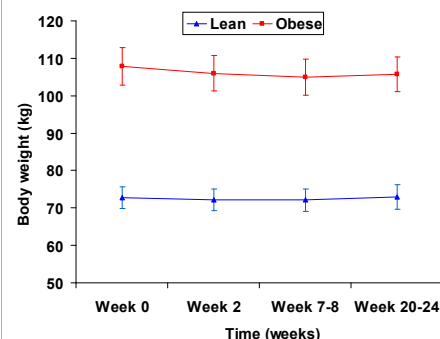


## Results

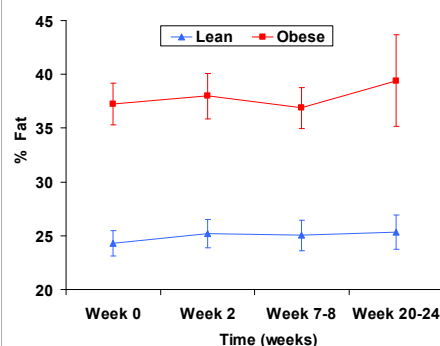
**Table 1. Subjects' characteristics at the onset of Ramadan.**

	Lean		Obese	
	Mean±SD	Range	Mean±SD	Range
Age (year)	25.4 ± 4.7	21 - 34.7	27.1 ± 4.3	20.6 - 35.6
Body weight (kg)	72.8 ± 9.2	55.5 - 84.5	107.9 ± 15.7	82.9 - 129.1
BMI (kg/m <sup>2</sup> )	24.4 ± 1.9	21.0 - 26.3	34.9 ± 3.7	30.1 - 41.8
Waist Circ (cm)	82.6 ± 6.4	71.5 - 89.3	113.1 ± 10.9	99.7 - 133.0
Fat (%)	24.3 ± 3.7	17.7 - 31.1	37.2 ± 6.2	26.8 - 45.1
RMR (kcal/day)	1605.2 ± 196.9	19.0 - 35.0	2131.7 ± 388.7	21.0 - 36.0
EE Actual (kcal/day)	796.1 ± 195.0	55.5 - 80.4	1015.1 ± 443.9	82.9 - 129.1

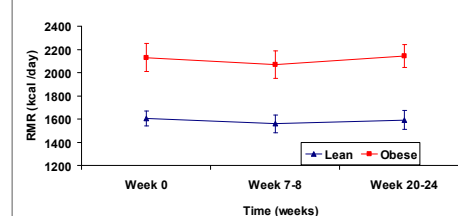
## Results...



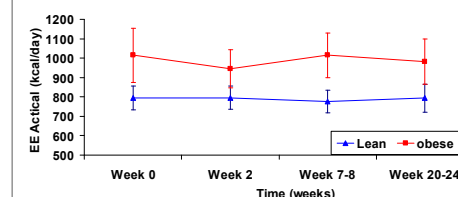
**Figure 1. Body weight before, during and after Ramadan. No significant effects of Ramadan or group by Ramadan interaction were noted.**



**Figure 2. Body fat percentage before, during and after Ramadan. No significant effect of Ramadan or group by Ramadan interaction were noted.**



**Figure 3. RMR before, during and after Ramadan. No significant effect of Ramadan or group by Ramadan interaction were noted.**



**Figure 4. Physical activity EE before, during and after Ramadan. No significant effect of Ramadan or group by Ramadan interaction were noted.**

## Conclusion

Under the conditions described in this study, we conclude that the Ramadan fast does not seem to induce either acute and longer term changes in EE.

## Acknowledgements

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