Changes of Resting Metabolic Rate in University Athletes

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Main Information

Primary registry identifying number
LBCTR2022035012

Protocol number
BIO-2021-0404

MOH registration number

Study registered at the country of origin
No

Study registered at the country of origin: Specify
Lebanon

Type of registration
Prospective

Type of registration: Justify
N/A

Date of registration in national regulatory agency
10/02/2022

Primary sponsor
University Research Board (URB), American University of Beirut (AUB)

Primary sponsor: Country of origin
Lebanon

Date of registration in primary registry
23/05/2022

Date of registration in national regulatory agency
10/02/2022

Public title
Changes of Resting Metabolic Rate in University Athletes

Acronym

Scientific title
Changes of Resting Metabolic Rate in University Athletes

Acronym

Brief summary of the study: English

Resting Metabolic Rate (RMR), which is the energy required to sustain normal body functions, has been extensively used in the literature to establish the daily caloric requirements of athletes. However, research has mostly focused on high-intensity athletes, mainly rugby players. Therefore, in this study we aim to broaden our scope of RMR measurements among various athletes to determine the caloric requirements of different sports activities. AUB has 28 sports teams and athletes from each sports category will be invited to participate in this study where RMR will be measured by Indirect Calorimetry before, during, and after games or competitions. Three teams will be chosen, and 17 participants will be recruited from each team. Considering the game day to be at day (0), the first measurement will take place before the game day (-1), then on the day after the game day (+1), and the third measurement will be 3 days after the game day (+3). The generated data from this study will provide valuable information to optimize the performance of athletes throughout tournaments by tailoring their nutritional needs. There are four additional aims in the study, including the assessment of participants' hydrational status, amount of exercise, external demands, and dietary intake.

Brief summary of the study: Arabic

عادة، يتم استخدام معدل الأيض الأساسي لتحديد السعرات الحرارية اليومية التي يحتاجها الرياضيون. معدل الأيض الأساسي هو الطاقة المطلوبة للحفاظ على وظائف الجسم الطبيعية. غالبا ما تركز الأبحاث على دراسة اللاعبين في الرياضات العالية الكثافة، وخاصة رياضة كرة القدم الأمريكية (الركبي) . لذلك، الهدف من هذه الدراسة هو توسيع نطاق قياس معدل الأيض الأساسي ليشمل مختلف الرياضيين، والتالي تحديد فريقًا رياضيًا. سيتم إختيار ثلاثة فرق، وسيتم28السعرات الحرارية المطلوبة للأنشطة الرياضية المختلفة. تضم الجامعة الأميركية في بيروت لاعب من كل فريق للمشاركة في هذه الدراسة، حيث سيتم قياس معدل الأيض الأساسي بواسطة المسعرية غير المباشرة، قبل،أثناء17إستقطاب وبعد المباريات أو المسابقات. سيتم إعتبار أن يوم المبارة هو اليوم (صفر)، وبالتالي، سيتم قياس معدل الأيض الأساسي في اليوم الذي يسبق يوم). سنحصل من خلال هذه الدراسة على3)، وفي اليوم الثالث بعد المباراة (+1)، ثم في اليوم الذي يلي يوم المباراة (+1المباراة أي اليوم (- معلومات هامة من شأنها المساعدة في تحسين أداء اللاعبين أثناء المباريات، عبر تكييفها مع إحتياجاتهم الغذائية. هناك أربعة أهداف إضافية لهذه الدراسة، وهي تقييم مستوى الترطيب للمشاركين ، التمرين الرياضي ، المتطلبات الخارجية ، والكمية الغذائية.

Health conditions/problem studied: Specify

Subjects are athletes at the American University of Beirut. No health conditions being studied.

Interventions: Specify

Resting metabolic rate of participants will be measured after being fasted for 8h.They will undergo 15 minutes enforced rest period before starting the 15 minutes assessment where they will need to sit in an adjustable, ergonomic car seat, to measure their RMR via Indirect Calorimetry machine.
Urine samples will be collected from participants in the morning (1st void) to assess Urine color and Urine Specific Gravity (USG). They will be asked to wear an accelerometer for 1 week to record their external demands.
Multiple 24-hour dietary recalls will be performed to gather data about their food and beverages consumption to assess energy and nutrient intake of the diet.

Key inclusion and exclusion criteria: Inclusion criteria

Inclusion criteria: AUB athletes, males, ages between 18 and 35 years, with a normal body mass index (BMI).

Key inclusion and exclusion criteria: Gender

Male

Key inclusion and exclusion criteria: Specify gender

Key inclusion and exclusion criteria: Age minimum

18

Key inclusion and exclusion criteria: Age maximum

35

Key inclusion and exclusion criteria: Exclusion criteria

Subjects are excluded if they are injured or have a previous history of any limitation on physical ability, diabetes, cardiovascular disease, taking supplements or medicine that might affect their metabolic rate, claustrophobic or having unstable bodyweight during the past 6 months.

Type of study

Interventional

Type of intervention

Dietary interventions

Type of intervention: Specify type

N/A

Trial scope

Other

Trial scope: Specify scope

Study design: Allocation

Randomized controlled trial

Study design: Masking

Open (masking not used)

Study design: Control

N/A

Study phase

N/A

Study design: Purpose

Basic science

Study design: Specify purpose

N/A

Study design: Assignment

Single

Study design: Specify assignment

N/A

IMP has market authorization

IMP has market authorization: Specify

Name of IMP

Year of authorization

Month of authorization

Type of IMP

Pharmaceutical class

No pharmaceutical product

Therapeutic indication

No therapeutic indication

Therapeutic benefit

The outcome of this study will provide insights on athletes' energy requirements for better performance during competition and recovery. Findings of this study will provide more insight in tailoring nutritional needs/requirements to the unique metabolic demands of athletes.

Study model

N/A

Study model: Explain model

N/A

Study model: Specify model

N/A

Time perspective

N/A

Time perspective: Explain time perspective

N/A

Time perspective: Specify perspective

N/A

Target follow-up duration

Target follow-up duration: Unit

Number of groups/cohorts

Biospecimen retention

Samples without DNA

Biospecimen description

Urine samples will be collected to assess Urine Specific Gravity and Urine color.

Target sample size

51

Actual enrollment target size

Date of first enrollment: Type

Anticipated

Date of first enrollment: Date

15/03/2022

Date of study closure: Type

Anticipated

Date of study closure: Date

30/04/2022

Recruitment status

Pending

Recruitment status: Specify

Date of completion

IPD sharing statement plan
No

IPD sharing statement description
No IPD sharing statement plan

Additional data URL

Admin comments

Trial status
Approved

Secondary Identifying Numbers

Full name of issuing authority	Secondary identifying number
N/A	N/A

Sources of Monetary or Material Support

Name
University Review Board (URB) at Amercian University of Beirut (AUB)

Secondary Sponsors

Name
N/A

Contact for Public/Scientific Queries

Contact type	Contact full name	Address	Country	Telephone	Email	Affiliation
Public	Elie-Jacques Fares	Department of Nutrition and Food Sciences, Faculty of Agricultural and Food Sciences, American University of Beirut	Lebanon	+9617919 5509	ef08@aub.edu.lb	AUB
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Centers/Hospitals Involved in the Study

Center/Hospital name	Name of principles investigator	Principles investigator speciality	Ethical approval
N/A	N/A	N/A	NA

Ethics Review

Ethics approval obtained	Approval date	Contact name	Contact email	Contact phone
American University of Beirut Medical Center	10/02/2022	Karine Ismail	irb@aub.edu.lb	Tel:+961-1-738024 or +961-1-350000 ext: 5591

Countries of Recruitment

Name
Lebanon

Health Conditions or Problems Studied

Condition	Code	Keyword
N/A	2-Propanol (T51.2)	N/A

Interventions

Intervention	Description	Keyword
Resting metabolic rate measurement of athletes	Resting metabolic rate of participants will be measured after being fasted for 8h.They will undergo 15 minutes enforced rest period before starting the 15 minutes assessment where they will need to sit in an adjustable, ergonomic car seat, to measure their RMR via Indirect Calorimetry machine. Urine samples will be collected from participants in the morning (1st void) to assess Urine color and Urine Specific Gravity (USG). They will be asked to wear an accelerometer for 1 week to record their external demands. Multiple 24-hour dietary recalls will be performed to gather data about their food and beverages consumption to assess energy and nutrient intake of the diet.	Resting metabolic rate, external demands, 24-hour dietary recall

Primary Outcomes

Name	Time Points	Measure
Resting metabolic rate	Before, during and after games	RMR

Key Secondary Outcomes

Name	Time Points	Measure
Hydration Status	game day, 1 day after game day	Urine Specific Gravity, Urine color
External demands	During 7 days	Accelerometer

Trial Results

Summary results

Study results globally

Date of posting of results summaries

Date of first journal publication of results

Results URL link

Baseline characteristics

Participant flow

Adverse events

Outcome measures

URL to protocol files