

**THE RELATIONSHIP BETWEEN THE SUITABLE
NUTRITIONAL DIET AND THE IMPROVEMENT OF JUNIOR
ATHLETES PERFORMANCE**

Submitted By

Rezk Mohamed Abdel Fattah Youssef

M.B.B. Ch.– Faculty of Medicine- Ain Shams University, 1984

Master of Orthopedic Surgery– Faculty of Medicine - Ain Shams University, 1990

A Thesis submitted in Partial Fulfillment
Of
The Requirement for the Doctor of Philosophy Degree
In
Environmental Science

Department of Environmental Medical Science
Institute of Environmental Studies and Research
Ain Shams University

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Abstract

Background: Nutrition is the study of food and nutrients and their effect on health, growth, and development. Sports nutrition applies nutrition principles to sports with the intent of maximizing performance. **Objectives:** Improving the performance of junior athletes through improving their nutrition. **Methods:** To achieve this work through a plan using subjects from school of talent and clubs.

About 30 junior athletes in different sports like football, judo, and other sports with age range 12-18 years old. They were divided into two groups: test group and control group with a period of follow up ranging from 3-6 month. The athletes will have different educational levels. Different information were used include history, examination, laboratory and radiological investigations, different measurements.

, sex male, test had done in talented athlete's school, they classified into two groups according to their age, First group: 12-15, Second group: 16-18, both age groups are classified according to test into two groups :a- Control group: consisted of 16 athletes (8 of them from 12-15 years old and the other 8 from 16-18 years old) and they followed a regular food diet .and b- Test group: consisted of 14 athletes (7 of them from 12 -15 years old and the other from 16 – 18 years old) and they followed a healthy nutritional program, Data analysis collected for each athlete: pre-test, during the study and post test. The nutritional program include: Carbohydrates, fats, proteins, amino-acid, minerals, fluids, electrolytes, micronutrients, vitamins, The program take in consideration the training program for each athlete (either in competition or out of competition), **Results:**

There was a significant correlation healthy food and performance . **Conclusion:**The age between 12 and 18 is critical age associated with both physiological and mental changes affect eating behavior and sleep behavior changes ,teaching programs for the athletes , medical staff , technical and administration and parents are very important for improve their eating behavior , so improve performance and making a hero for a golden medals in world championship and Olympic games.

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List of abbreviations

ADA =American Dietetic Association.

AI = Adequate intake.

AID =Auto immune disease

ATP =adenosine-triphosphate.

BMC =Bone mineral contents

BMD =Bone mineral density.

B.M.I. =body mass index

B.M.R. =basal metabolic rate

CA =calcium.

C.B.C =complete blood picture

CE =cycle ergo-merry

CHO = carbohydrates

CHO_{endo} =endogenous carbohydrates

CHO_{exo} =exogenous carbohydrates

C.T =computerized tomography

DNA = deoxyribonucleic acid

DRI =Dietary Reference Intakes

DPT =diphtheria, pertusis, tetanus.

DXA =dual energy x-ray absorbmetry .

E.A.R = estimated average requirement

EE =energy expenditure

E.E.G =electro encephalon grame

EFA =essential fatty acids.

E.K.G. =electo-cardio grame .

FFM = free fat mass

GH =growth hormone .

GHRH =Growth hormone releasing hormone

GHRHR =Growth hormone releasing hormone receptor

GHSR =Growth hormone secretary gouged receptors

G.I.T =gastro intestinal tract

GXT =graded exercise tests

HMP =hexose mono phosphate .

IU =international unit

IUD =Intrauterine device

Kcal =kilocalorie

LA =linoleic acid.

LNA =alph linoleic acid .

LBM =lean body mass

M =meter

MCH =melanin concentrating hormone

METs =Metabolic equivalent

M.R.I =magnetic resonant imaginagtion.

NAC =N-acetyl cysteine

OBLA =Onset of blood lactate accumulation

P.B.F. =percentage body fat.

PCBs =polychlorinated biphenyls.

PCR =creatine phosphate =phosphor creatine system .

PG =prostaglandins.

PMS =pre menstrual syndrome

PTH =parathyroid hormone

RDA =recommended daily allow

RDA =required daily allowness .

RER =respiratory exchange ratio

RNA = ribonucleic acid.

SAT =saturated adipose tissue

STD =sexually transmitted disease .

TAP =time allocation pattern

TAT =Total adipose tissue

T.B.W. =total body water

TE =treadmill exercise

USDA =united state dietetic association

VAT =visceral adipose tissue

VLDL =very low density lipo-protein .

W.H.R. =waist hip ratio

WPC =Whey protein concentrate

WPI =Isolates Whey protein

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