



**Ain Shams University**  
**Faculty of Specific Education**  
**Home Economy Department**

# **" Effect of Omega's Different Sources Supplementation on Some Biological Assessments and Mental Efficiency at Adolescence and Old-Age"**

**By**

**Sohila Ahmed Fathy Hassan**

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of Ph.D. Degree in Home Economic  
(Nutrition & Food Science)

**Under the supervision of:**

**Prof. Dr. El Sayed Abd El  
QaderZidan**

*Professor of Psychology, Ex-Dean of faculty  
Of Specific education Ain Shams University*

**Prof. Dr. El Sayed Abd El  
KhalikHassanin**

*Professor and head of Nutritional  
Biochemistry and Metabolism Department  
National Nutrition Institute- Cairo-Egypt*

**Prof. Dr. walaa Ibrahim Mohamed**

*Prof. of Nutrition & Food Sci. Home  
Economic Dept. Fac. of Specific Education  
Ain Shams University*

**Dr.RedabAbdElnaby Mohammed**

*Lecturer of Nutrition & Food Sci. (special  
education) Home Economic Dept. Fac. of  
Specific Education Ain Shams University*

## **APPROVAL SHEET**

**Student Name:** Sohila Ahmed Fathy Hassan

**Title of thesis:**

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**Degree:** Ph.D. Degree in Home Economic Dept.,  
(Nutrition & Food Science)

This Thesis for Ph.D.Degree has approved by :

**Prof. Dr. El Sayed Abd El QaderZidan** Professor of Psychology,  
Ex-Dean of faculty Of Specific education Ain Shams University

**Prof. Dr. El Sayed Abd El KhalikHassanin** Professor and head of  
Nutritional Biochemistry and Metabolism Department National Nutrition  
Institute- Cairo-Egypt

**Prof. Dr.Azza Ahmed Elbakry** Professor and Head of the Psychiatry  
Department Faculty of Medicine, Cairo University

**Prof. Dr. walaa Ibrahim Mohamed** Professor of Nutrition and Food  
Science Home Economic Dept., Faculty of Specific Education, Ain Shams  
University

**Prof. Dr. Zenab Mostafa Mosa** Professor of Nutrition and Food  
Science Home Economic Dept., Faculty of Specific Education, Ain Shams  
University

Committee in charge

Date:     /     /2018

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# **Effect of Omega's Different Sources Supplementation on Some Biological Assessments and Mental Efficiency at Adolescence and old-age**

## **ABSTRACT**

Food plays an important role in influencing the students' learning behavior and achievement through a few basics, This study aimed to improve nutritional status (especially hemoglobin and lipid profile) and developing the mental efficiency (especially perception , memory and attention) in adolescence and elderly ( Anabolism & Catabolism respectively ) using various rich sources of omegas (3,6 and 9) , Also to compare the effectiveness of natural food sources with the medical supplements of them. 48 adolescents about (12-15 yrs) and 48 elderly 60 years and over with institutionalized nutrition were subjected and divided to 3 groups ( 16/each group 8 M &8 F) with institutionalized nutrition were subjected and divided to 3 groups (16/each group 8 M &8 F) first group was served as control , while second and third were enriched and supplemented with natural and medical sources equally of omega for three consequence months. Nutritional assessment was also surveyed for the subjects ; 24 hrs. recall for three contenious days , biochemical analysis ( Hb. , AST, ALT , TG , TC , HDL-c , LDL-c , VLDL-c ) were analyzed and , psychological tests were applied pre and post supplying intervention to assess the perception , attention and process of remembering for them. Results showed that both sources supplementation increased significantly (  $p \leq 0.01$  ) Hb. and HDL-c , while decreased significantly (  $p \leq 0.01$  ) ALT , AST , TG , TC , LDL-c.VLDL-c in adolescents and elderly serum. On the other hand , psychological tests revealed significant development statistically (  $p \leq 0.01$  ) of both sources supplementation comparing with the control group or even with the pre test assessment. Conclusion : supplementation with natural or medical omega for adolescence and elderly could improve the mental efficiency (especially

perception, attention ,and process of memory) without discrimination for the source used .

**key words** : Omega , Nutrition , Supplementation , Mental efficiency , Perception , Attention , Remember , Adolescence & Elderly .

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## **LIST OF ABBREVIATION**

AA	Arachidonic Acid
ADHD	Attention Deficit Hyperactivity Disorder
ALA	Linolenic Acid
ALT	Alanine aminotransferase
ASQ	Abbreviated Symptoms Questionnaire
AST	Aspartate aminotransferase
BMI	Body mass index
CPRS	Conners Parent Rating Scale
CVD	Cardiovascular disease
DBD	Disruptive Behavior Disorders
DGLA	Dihomogamma linolenic acid
DHA	Docosahexaenoic Acid
EFA	Essential fatty Acid
EPA	Eicosapentaenoic Acid
F	Female
FDA	Food and Drug Administration
Fig.	Figure
FMRI	Functional Magnetic Resonance Imaging
GLA	Gmma linolenic acid
Hb.	Heamoglobin
HDL-C	HDL-Cholesterol
LA	Linolenic Acid
LCO-3 PUFA	Long Chain omega-3 Polyunsaturated Fatty Acids
LC-PUFAs	Long Chain Polyunsaturated Fatty Acids
LDL-C	LDL-Cholesterol
LNA	Linolenic acid
M	Male
Mg	Mailgram
MI	Mel liter
Mmol	Mill mol
MUFA	Monounsaturated Fatty Acids
NAFLD	Nonalcoholic fatty liver disease
PUFAs	Polyunsaturated Fatty Acids
R.R	Refference Range
SD	Standard Deviesion
SFA	Saturated Fatty Acid

### **LIST OF ABBREVIATION (Cont.)**

Sig.	Significant
T2DM	Type 2 diabetes mellitus
TC	Total cholesterol
TG	Triglyceroles
V.A	Vitamin A
V.C	Vitamin C
VLDL-C	VLDL-Cholesterol

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