

**University of Tripoli Alahlia**



***Department of Medical Laboratory***

**Laboratory Assessment of Healthy Status Among  
Elderly People in Tripoli, Libya**

**A Project Submitted to University of Tripoli Alahlia  
as partial fulfillment of requirements for the degree of  
Bachelor of Medical Lab**

**By**

**Malak Abdullah Ammar**

**Heba Mohammed**

**Mahanna**

**Supervisor: *Ms; Laila Elhady Mohammed Mansour***

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جامعة طرابلس الأهلية



قسم المختبرات الطبية

## التقييم المختبري للحالة الصحية بين المسنين في طرابلس ، ليبيا

مشروع مقدم لجامعة طرابلس الأهلية كجزء لتكملة متطلبات الحصول على

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من

هبة محمد مهني

ملاك عبد الله عمار

إشراف أ. ليلى الهادي محمد منصور

أكتوبر 2019

## APPROVAL PAGE

I certify that I have supervised and read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a project for the degree of Bachelor of Pharmaceutical Sciences.

.....  
**Dr. Laila Elhadi Mansur**  
Supervisor

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a project for the degree of Bachelor of Pharmaceutical Sciences.

.....  
**Dr. Mohamed Mohi Abdo**  
Examiner

This project was submitted to the Department of Pharmaceutical Science and is accepted as partial fulfilment of the requirements for the degree of Bachelor of Pharmaceutical Sciences.

.....  
**Dr. Mohamed Mohi Abdo**  
Head, Department of Medical  
Laboratories

This Project was submitted to the department of Pharmaceutical Sciences and is acceptable as partial fulfillment of the requirements for the degree of Bachelor of Medical Laboratories.

.....  
**Dr. Shereen Elmehdi Njaim**  
Dean, University of Tripoli  
Alahlia

## DEDICATION

*At times it is hard to find away to pick the perfect words.*

*This project is dedicated to our wonderful parents, who have raised us to be the person We today. You have been with our every step of the way, through good and bad times. Thank you for all the unconditional love, guidance, and support that you have always given us, helping us to succeed and instilling in us the confidence that We capable of doing anything We put our mind to.*

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.....

1- Safar- 1441, Corresponding to 30- September- 2019

Tripoli, Libya

## LIST OF ABBREVIATIONS AND ACRONYMS

**AIDS:** Acquired Immune Deficiency Syndrome.  
**AL:** Albumin.  
**ALP:** Alkaline Phosphatase.  
**ALT:** Serum Alanine Aminotransferase  
**AMM:** Ammonia  
**AMY:** Amylase.  
**ASHD:** Arteriosclerotic Heart Disease.  
**AST:** Serum Aspartate Aminotransferase.  
**BNP:** Brain Natriuretic Peptide.  
**BUN:** Blood Urea Nitrogen  
**CBC:** Complete blood count.  
**CHD:** Coronary Heart Disease.  
**CHF:** Congestive Heart Failure.  
**CHO:** Cholesterol.  
**CK:** Creatine kinase.  
**CL:** Chloride.  
**Cr:** Creatinine.  
**CRP:** C-reactive protein.  
**CVD:** Cardiovascular Disease.  
**DCM:** Diabetic Cardiomyopathy.  
**DHT:** Dihydrotestosterone.  
**DM:** Diabetes Mellitus.  
**DNA:** Deoxyribo Nucleic Acid.  
**EDTA:** Ethylenediaminetetraacetic acid.  
**ELISA:** Enzyme Linked Immunosorbent Assay.  
**ESR:** Erythrocyte Sedimentation Rate.  
**FBS:** Fasting Plasma Glucose.  
**GFR:** Glomerular Filtration Rate.  
**GGT:** Gamma-Glutamyl Transferase.  
**GLU:** Glucose Test.  
**GOT:** Serum Glutamic Oxaloacetic Transaminase  
**GPT:** Serum Glutamic Pyruvic Transaminase.  
**Hb A1c:** Hemoglobin A1c.  
**Hb:** Hemoglobin.  
**HCG:** Human Chorio Gonadotropin.  
**HDL:** High-density lipoproteins.  
**IL-6:** Interleukin -6.  
**INR:** International Normalized Ratio.  
**K :**Potassium.  
**LDH:** Lactate Dehydrogenase.

**LDL:** Low-Density Lipoproteins.  
**MB:** Myoglobin.  
**MCH:** Mean Corpuscular Hemoglobin.  
**MCHC:** Mean Corpuscular Hemoglobin Concentration.  
**MCV:** Mean Corpuscular Volume.  
**MIF:** Macrophage Migration Inhibitory Factor.  
**mL/min:** Milliliters Per Minute.  
**Na:** Sodium.  
**OGTT:** Oral Glucose Tolerance Test.  
**PCR:** Polymerase Chain Reaction.  
**PCV:** Packed Cell Volume.  
**PT :** Prothrombin time.  
**PTT:** partial thromboplastin .  
**RA:** Rheumatoid Arthritis.  
**RBC:** Red Blood Cell.  
**RDW:** Red cell distribution width .  
**SLE:** Systemic Lupus Erythematosus.  
**SPSS:** Statistical package for social sciences.  
**TLC:** Total L leukocytes count.  
**TNF-  $\alpha$ :** Tumour Necrosis Factor-Alpha.  
**TSH:** Thyroid Stimulating Hormone.  
**UA:** Urinalysis.  
**VLDL:** Very-Low-Density Lipoproteins.  
**WBC:** White blood cells.  
**WHO:** World Health Organization.

# Laboratory Assessment of Healthy Status Among Elderly People in Tripoli, Libya

## Abstract

The aging population has recently become a focus and getting the public attention in the world, hence information on morbidity profile and mortality in this population is essential for planning its health care facilities. Accordingly, between 1<sup>st</sup> January till 25<sup>th</sup> March 2019, survey study was conducted to evaluate healthy status among the elderly population in *Dar Al Wafa* retirement home for the infirm and elderly care in Tripoli, Libya. As well as to assessing the risk factors associated with the diseases. Blood samples were collected from 58 residents existing in the old people's home. Routine haematology and biochemical tests were performed, hematological parameters analyzed included the hemoglobin concentration, Haematocrit, mean cell volume (MCV), mean corpuscular hemoglobin (MCH), mean corpuscular hemoglobin concentration (MCHC), red blood cell (RBC), white blood cell (WBC) and red cell distribution width (RDW). Biochemical tests included the following; (electrolytes, urea, creatinine, uric acid, glucose, albumin, total protein, cholesterol, triglyceride, GPT, and GOT. In addition to conduct analysis of rheumatoid arthritis (RH), C-reactive protein (CRP), erythrocyte sedimentation rat (ESR), and detection of *Helicobacter pylori*.

The prevalence of anaemia was 12%. Anaemia was present in 13% of female and in 11.4% of male. Microcytic hypochromic anaemia was the most common type of anaemia. Prevalence of anaemia increases with advancing age: 9.7% among those aged 40-50 years, 15.3% in patients aged 51-60 years, and 25% in patients >60 years. The total prevalence of diabetes mellitus in this elderly population was 24.1%. Prevalence of diabetes was 28.5% for male, and 17.3% for female. Our findings shown that; 19% of elderly suffering from rheumatoid arthritis. The present study shown that; 69% of elderly suffering from high level of ESR, and 6.9% suffering from high level of CRP.

Prevalence of *H. pylori* was 72.4%. Moreover, prevalence of *H. pylori* in female was 73.9% more than male 71.4%.

Consequently, we recommend more studied or researched through community-based health on demographic and socioeconomic of general elderly people cross country. Awareness must be raised in chronic health problems among ageing population mental health problems and nutrition problems to improve the health status and the quality of life of the elderly. Also, develop a multidisciplinary care plan aimed to an integrated approach with other services to promote health care. Use specialist geriatric assessment services for patients with very complex problems, particularly where situations are unstable.

**Keywords:** Elderly, Aging, Healthy Status, Tripoli, Libya



# التقييم المختبري للحالة الصحية بين المسنين في طرابلس ، ليبيا ARABIC

المخلص بالعربية

## ABSTRACT

أصبح عدد السكان المتقدمين في السن مؤخرًا محط اهتمام وجذب انتباه البشر عالمياً، وبالتالي فإن المعلومات المتعلقة بنسب الأمراض والوفيات بين هؤلاء الناس ضرورية للتخطيط لمرافق الرعاية الصحية. تبعًا لذلك ، في الفترة ما بين 1 يناير وحتى 25 مارس 2019، أجريت دراسة استقصائية لتقييم الحالة الصحية بين كبار السن في دار الوفاء لرعاية العجزة والمسنين في طرابلس، ليبيا. وكذلك لتقييم عوامل الإخاطر المرتبطة بالأمراض. تم جمع عينات دم من 58 من الموجودين في دار رعاية العجزة والمسنين المذكور. تم إجراء اختبارات روتينية لأمراض الدم والكيمياء الحيوية، المعلمات الدموية التي تم تحليلها شملت تركيز الهيموغلوبين ، حجم مكدهم الدم (هيماتوكريت)، متوسط حجم الخلية (MCV)، هيموغلوبين الكرية الوسطي (MCH)، تركيز هيموغلوبين الكرية الوسطي (MCHC) خلايا الدم الحمراء (RBC) خلايا الدم البيضاء (WBC) وعرض توزيع الخلايا الحمراء (RDW). اختبارات الكيمياء الحيوية شملت ما يلي؛ الشوارد، البوليغليسين، حمض البوليك، الجلوكوز، الألبومين، البروتين الكلي، الكوليسترول ، الدهون الثلاثية ، إنزيمي GPT ، و GOT. بالإضافة إلى إجراء تحليل للتهاب المفاصل الروماتويدي (RH)، بروتين سي التفاعلي (CRP)، معدل ترسيب كرات الدم الحمراء (ESR)، والكشف عن البكتريا الملوية البوابية *Helicobacter pylori*.

كان معدل انتشار فقر الدم 12٪، فقر الدم كان موجودا في 13٪ من الإناث و 11.4٪ من الذكور. كان فقر الدم ناقص الصبغي الصغير أكثر أنواع فقر الدم شيوعًا. يزداد معدل انتشار فقر الدم مع تقدم العمر: 9.7٪ بين من تتراوح أعمارهم بين 40-50 سنة ، و 15.3٪ في المرضى الذين تتراوح أعمارهم بين 51-60 سنة ، و 25٪ في المرضى أكبر من 60 عاماً. كان معدل انتشار مرض السكري في هذه الفئة من كبار السن 24.1٪. كان معدل انتشار مرض السكري 28.5٪ بين الذكور ، و 17.3٪ بين الإناث. نتائجا أظهرت أن 19٪ من كبار السن يعانون من التهاب المفاصل الروماتويدي. أظهرت هذه الدراسة أن 69٪ من كبار السن يعانون من مستوى عال من معدل ترسيب كرات الدم الحمراء ESR، و 6.9٪ يعانون من ارتفاع مستوى بروتين سي التفاعلي CRP.

معدل انتشار البكتريا الملوية البوابية *H. pylori* كان 72.4٪. علاوة على ذلك ، كان معدل انتشار البكتريا الملوية البوابية *H. pylori* في الإناث أعلى بنسبة 73.9٪ منه بين الذكور 71.4٪.

وبالتالي، فإننا نوصي بمزيد من الدراسات و البحوث من خلال الصحة المجتمعية عن الجوانب الديموغرافية والاجتماعية-الاقتصادية بين المسنين عامة عبر البلاد. كما ويجب زيادة الوعي بالمشاكل الصحية المزمنة خاصة مشاكل الصحة العقلية للمسنين و الاضطرابات التغذوية لتحسين الحالة الصحية ونوعية حياة هذه الفئة من الناس. أيضا، يجب وضع خطة الرعاية متعددة التخصصات، تهدف إلى اتباع نهج متكامل مع الخدمات الأخرى لتعزيز الرعاية الصحية. اللجوء لخدمات تقييم الشيخوخة المتخصصة للمرضى الذين يعانون من مشاكل معقدة للغاية ، لا سيما عندما تكون الحالات غير مستقرة.

الكلمات الدالة: كبار السن ، الشيخوخة ، الحالة الصحية ، طرابلس ، ليبيا

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