



**HEALTH & SCIENCE**  
Editor  
Prof. Dr. Arif AYAR **2025-III**

**EFE ACADEMY PUBLISHING**



**HEALTH & SCIENCE**  
**2025-III**

Editor  
Prof. Dr. Arif AYAR

**EFE ACADEMY PUBLISHING**

HEALTH & SCIENCE 2025-III ● Editor: Prof. Dr. Arif AYAR

**HEALTH & SCIENCE**  
**2025**  
**-III-**

**Editor**  
Prof. Dr. Arif AYAR

 **EFE ACADEMY  
PUBLISHING**

## HEALTH & SCIENCE 2025-III

### Editor

Prof. Dr. Arif AYAR

ORCID (0000-0003-0473-4653)

**ISBN:** 978-625-392-661-8

**E-ISBN:** 978-625-392-662-5

**DOI:** <https://doi.org/10.59617/efepub2025168>

**First Edition:** October 2025

This book; publication, sale and copying rights belong to EFE ACADEMY.

### Library Card

HEALTH & SCIENCE 2025-III

AYAR, Arif

First Edition, 448 p., 160 x 235 mm.

Type : Original Scientific Book

Keywords:

1. Disease 2. Health 3. Medicine 4. Research 5. Science

#### Design

İsa Burak GÜNGÖR  
(burakgungor@efeakademi.com)

#### Cover Design

Gamze DURLU  
(gamzedumlu.2710@gmail.com)

Certificate No

49168

Printing Certificate No

49168

Efe Akademik Publishing

Cağaloğlu Yokuşu Cemal Nadir Sokak  
Büyük Milas Han No: 24/125  
Fatih/ İSTANBUL  
0212 520 52 00 - www.efeakademi.com

Efe Akademik Publishing  
Printing Adress:

Cağaloğlu Yokuşu Cemal Nadir Sokak  
Büyük Milas Han No: 24/125  
Fatih/ İSTANBUL  
0212 520 52 00 - www.efeakademi.com



## **PREFACE**

Health has been one of the most important issues sought by humankind since the beginning of human existence. Throughout history, it has always stood at the center of science and technology, while at the same time guiding their development. In this respect, health has long been one of the most extensively studied areas of science.

Specialization plays a key role in the advancement of scientific knowledge. Today, under the broad umbrella of natural and social sciences, there exist many specialized fields. Among them, health stands out as the discipline that interacts most closely with other scientific domains. Therefore, health sciences represent a truly multidisciplinary field that maintains strong connections with numerous areas of study.

Due to its many sub-disciplines and its interaction with other sciences, health sciences encompass a wide range of topics. Within this broad framework, it is crucial for researchers and professionals in the field to possess both fundamental and up-to-date knowledge, approached from a multidisciplinary perspective. With this aim, the Health & Science book series has been designed to compile scientific studies from various disciplines of health sciences in our country and to present fundamental and current insights to our valued readers.

We sincerely thank all the chapter authors for their valuable contributions to Health & Science 2025–III.

*Editor*  
*Prof. Dr. Arif AYAR*

*---HEALTH & SCIENCE 2025-III---*

## **CONTENTS/CHAPTERS**

<b>THE EVOLUTION OF GENE EDITING IN HEMATOLOGICAL DISORDERS.....</b>	<b>9</b>
<i>Hamide DOGAN, Ahmet Ata OZCIMEN</i>	
<b>GENETIC VARIATIONS AND COGNITIVE FUNCTION IN FIBROMYALGIA.....</b>	<b>25</b>
<i>Selin AKDEMIR, Oznur Ozge OZCAN</i>	
<b>ASSESSING DIGITAL PCR AND NEXT-GENERATION SEQUENCING: A COMPARATIVE ANALYSIS OF EFFICACY, ACCURACY AND APPLICATIONS IN NON-INVASIVE PRENATAL TESTING .....</b>	<b>45</b>
<i>Mehmet Ali ERGUN, Hasan Hüseyin KAZAN, Meral YIRMIBES KARAOGUZ, Esra TUG, Tuncay NAS, Ekin CELIK</i>	
<b>CO-CULTURE TECHNIQUES AND CELL CULTURE APPLICATIONS IN CANCER RESEARCH.....</b>	<b>55</b>
<i>Kevser YASAR, Ahmet Ata OZCIMEN</i>	
<b>THE ROLE OF MICROBIAL BIOFILMS IN NOSOCOMIAL AND FOODBORNE INFECTIONS.....</b>	<b>65</b>
<i>Ceren BASKAN</i>	
<b>MULTIDRUG-RESISTANT PATHOGENS: INFECTION CONTROL CHALLENGES IN THE ERA OF ANTIBIOTIC OVERUSE .....</b>	<b>85</b>
<i>Aytan SEYDALIYEVA, Buket ERTURK SENDEL</i>	
<b>ENVIRONMENTAL SOURCES OF NON-TUBERCULOUS MYCOBACTERIA CAUSING DISEASE IN HUMANS.....</b>	<b>97</b>
<i>Funda SAHIN, Hakan TEMIZ</i>	
<b>DOES HEPATITIS B VACCINE IMMUNITY LAST YEARS AFTER PRIMARY VACCINATION ADMINISTERED EARLY IN LIFE? ...</b>	<b>113</b>
<i>Halil Ibrahim ERDOGDU</i>	
<b>THE ADVERSE EFFECTS OF PROPYLTHIOURACIL AND METHIMAZOLE AND THEIR MANAGEMENT .....</b>	<b>121</b>
<i>Halil Ibrahim ERDOGDU</i>	
<b>NEW ENDOCRINE FACTORS IN OBESITY AND DIABETES.....</b>	<b>129</b>
<i>Muzaffer KATAR</i>	

<b>PREVENTIVE STRATEGIES IN CARDIOVASCULAR DISEASE</b> .....	<b>145</b>
<i>Mehmet ESEN</i>	
<b>CHRONIC OBSTRUCTIVE PULMONARY DISEASE: INNOVATIVE MANAGEMENT STRATEGIES</b> .....	<b>161</b>
<i>Mehmet ESEN</i>	
<b>GEROSCIENCE: AGING MECHANISMS AND INTERVENTION STRATEGIES</b> .....	<b>177</b>
<i>Elif Zeynep OZTURK</i>	
<b>MOLECULAR MECHANISMS IN NEURODEGENERATIVE DISEASES</b> .....	<b>193</b>
<i>Cigdem BILKAN, Mustafa Tugfan BILKAN</i>	
<b>NEUROSURGICAL TREATMENTS FOR PARKINSON'S DISEASE</b> .....	<b>211</b>
<i>Hasan IDIZ</i>	
<b>PROPARGYLAMINE DERIVATIVE MAO-B ENZYME INHIBITORS AS HEALING FACTORS OF PARKINSON'S DISEASE</b> .....	<b>221</b>
<i>Omer OZTEN</i>	
<b>THE IMPORTANCE OF HEALTH-RELATED QUALITY OF LIFE IN DIFFERENTIATED THYROID CANCER</b> .....	<b>235</b>
<i>Aziz GULTEKIN</i>	
<b>THE ROLE OF INFLAMMATION IN CANCER INITIATION</b> .....	<b>251</b>
<i>Rawezh Ahmed Mohammed MOHAMMED, Erkan ALABAS, Ahmet Ata OZCIMEN</i>	
<b>INFLUENCE OF THE MICROBIOME IN GASTROINTESTINAL CANCERS</b> .....	<b>265</b>
<i>Sumeyya CAPUK, Aysin Seher UZUNOGLU, Merve Saide UZUNOGLU, Sevgi KALKANLI TAS</i>	
<b>INDIVIDUALIZED CANCER: A TARGETED, PROGRESSIVE PROCESS</b> .....	<b>291</b>
<i>Mustafa TASTAN, Betül YUKSEL</i>	

<b>MINIMALLY INVASIVE SURGERY: RECENT DEVELOPMENTS AND FUTURE DIRECTIONS.....</b>	<b>307</b>
<i>Huseyin ALAKUS, Mustafa GOKSU</i>	
<b>EMERGENCY SERVICE MANAGEMENT AND PRIORITY INTERVENTION IN ADULT PATIENTS WITH PENERTRAITNG THORACIC TRAUMA.....</b>	<b>325</b>
<i>Ayhan TABUR, Alper TABUR</i>	
<b>BUCCAL MYOMUCOSAL FLAP IN MAXILLOFACIAL RECONSTRUCTION.....</b>	<b>345</b>
<i>Elif M OZCAN</i>	
<b>MANAGEMENT OF BITE WOUNDS IN THE MAXILLOFACIAL REGION .....</b>	<b>355</b>
<i>Elif M OZCAN</i>	
<b>LOCAL AND SYSTEMIC COMPLICATIONS OF LOCAL ANESTHESIA IN PEDIATRIC DENTISTRY .....</b>	<b>365</b>
<i>Fatma Nur KIZILAY, Turkan UNAL, Esra Nur YILDIRIM</i>	
<b>ADVANCED TECHNOLOGIES IN TREATMENT AND CARE MANAGEMENT IN BURN INJURIES: REFLECTIONS OF INNOVATIVE TECHNOLOGIES ON NURSING CARE .....</b>	<b>391</b>
<i>Kıymet OZTEPE YESILYURT, Cemile CELEBI, Merve OZSOY DURMAZ</i>	
<b>NEW TECHNOLOGY APPLICATIONS IN ASSISTED REPRODUCTIVE TREATMENT METHOD .....</b>	<b>413</b>
<i>Nazli CAN</i>	
<b>THE IMPORTANCE OF PLAY AND PLAY PRACTICES IN VISUALLY IMPRAIED CHILDREN.....</b>	<b>425</b>
<i>Cigdem Muge HAYLI, Ramazan KARATAS, Dilek DEMIR KOSEM</i>	
<b>AUDITORY DEPRIVATION AND DISRUPTION OF AUDITORY PROCESSING.....</b>	<b>437</b>
<i>Fatma YURDAKUL CINAR</i>	