

# Internal Medicine. T.1

## Про книгу

Textbook in Internal medicine consists of 31 chapters, in which the basics of cardiology, rheumatology, nephrology are presented. This textbook is made up of text material and enough illustrations, including clinical findings and schematic figures. The textbook is intended for English-speaking students of medical and pharmaceutical faculties of higher educational establishments of Ukraine.

Підручник з внутрішньої медицини складається з 31 розділу, у яких представлені основи кардіології, ревматології та нефрології. Містить текстові матеріали та достатньо ілюстрацій, у тому числі клінічні матеріали та схематичні рисунки. Підручник призначений для англomовних студентів медичних та фармацевтичних факультетів вищих навчальних закладів України.

MINISTRY OF HEALTH OF UKRAINE  
National Pirogov Memorial Medical University, Vinnytsya

# INTERNAL MEDICINE

*Textbook for English-speaking  
students of higher medical educational establishments*

Edited by Professor M. A. Stanislavchuk  
and Professor V. K. Sierkova

## Part 1

CARDIOLOGY  
RHEUMATOLOGY  
HAEMATOLOGY

Vinnytsya  
**Nova Knyha**  
2019

УДК 616(075.8)

B60

*Recommended by the Academic Council of National Pirogov Memorial Medical University,  
Vinnytsya as a textbook for English-speaking students of medical and pharmaceutical faculties of  
higher educational establishments of Ukraine*

**Authors:**

Kateryna M. Amosova, Oleg Ya. Babak, Ivan P. Katerenchuk, Liudmyla A. Kovalevska, Valentyna K. Sierkova, Igor M. Skrypnyk, Svitlana I. Smiyan, Mykola A. Stanislavchuk, Anatolii S. Svintsitsky, Natalia M. Zhelezniakova, Natalia A. Zolotaryova, Anastasiia O. Andrieieva, Natalia V. Bereza, Olga M. Bereziuk, Galyna K. Berko, Andrii B. Bezrodnyi, Liudmyla V. Burdeina, Olga V. Dzekan, Marta B. Dzhus, Olga G. Gaponova, Oleksandr F. Gopko, Svitlana Yu. Kalinina, Tetiana A. Karasevska, Roman R. Komorovsky, Ganna S. Maslova, Volodymyr I. Molodan, Galyna V. Mostbauer, Olena I. Ostapchuk, Oksana L. Poberezhets, Kostyantyn O. Prosolenko, Oksana I. Rokyta, Maksym I. Romanchenko, Yuliia V. Rudenko, Olena V. Solomko, Svitlana I. Sorokina, Igor A. Svintsitskyi, Tetiana B. Yevdokymova, Olga Ye. Zaichenko, Iryna I. Zelena.

**Edited by Professor M. A. Stanislavchuk and Professor V. K. Sierkova**

**Внутрішня медицина = Internal medicine** : Part 1 : textbook  
B60 for English-speaking students of higher medical schools / edited  
by Professor M. A. Stanislavchuk and Professor V. K. Sierkova. –  
Vinnytsya : Nova Knyha, 2019. – 408 p.  
ISBN 978-966-382-733-9

Textbook in Internal medicine consists of 30 chapters, in which the basics of cardiology, rheumatology, nephrology are presented.

This textbook is made up of text material and enough illustrations, including clinical findings and schematic figures.

The textbook is intended for English-speaking students of medical and pharmaceutical faculties of higher educational establishments of Ukraine.

**УДК 616(075.8)**

Підручник з внутрішньої медицини складається з 30 розділів, у яких представлені основи кардіології, ревматології та нефрології. Містить текстові матеріали та достатньо ілюстрацій, у тому числі клінічні матеріали та схематичні рисунки.

Підручник призначений для англomовних студентів медичних та фармацевтичних факультетів вищих навчальних закладів України.

# Contents

List of Authors .....	3
Foreword .....	5
List of abbreviations .....	6

## Section 1.

### CARDIOLOGY

<b>Chapter 1.</b> Arterial hypertension (Liudmyla V. Burdeina, Olena I. Ostapchuk) .....	13
<i>Essential hypertension</i> (Liudmyla V. Burdeina) .....	13
<i>Secondary hypertension</i> (Olena I. Ostapchuk) .....	25
<b>Chapter 2.</b> Atherosclerosis (Oksana I. Rokyta) .....	36
<b>Chapter 3.</b> Coronary artery disease (Galyna K. Berko, Galyna V. Mostbauer, Andrii B. Bezrodnyi) .....	49
<i>Angina pectoris</i> (Galyna K. Berko) .....	52
<i>Acute coronary syndrome</i> (Galyna V. Mostbauer, Andrii B. Bezrodnyi) .....	63
<i>Acute myocardial infarction</i> (Galyna V. Mostbauer, Andrii B. Bezrodnyi) .....	63
<b>Chapter 4.</b> Myocarditis (Kateryna M. Amosova, Tetiana A. Karasevska) .....	74
<b>Chapter 5.</b> Cardiomyopathies (Kateryna M. Amosova, Valentyna K. Sierkova) .....	83
<i>Hypertrophic cardiomyopathy</i> (Kateryna M. Amosova) .....	84
<i>Dilated cardiomyopathy</i> (Kateryna M. Amosova) .....	91
<i>Restrictive cardiomyopathy</i> (Valentyna K. Sierkova) .....	98
<b>Chapter 6.</b> Heart failure (Natalia V. Bereza) .....	104
<b>Chapter 7.</b> Cardiac arrhythmias and conduction disturbances (Roman R. Komorovsky) .....	114
<i>Arrhythmias</i> .....	114
<i>Extrasystoles</i> .....	127
<i>Bradyarrhythmias</i> (bradycardia and heart blocks) .....	132
<b>Chapter 8.</b> Pericarditis (Galyna V. Mostbauer, Marta B. Dzhus) .....	143
<b>Chapter 9.</b> Infective endocarditis (Svitlana I. Smiyan) .....	156
<b>Chapter 10.</b> Congenital heart diseases (Galyna V. Mostbauer, Marta B. Dzhus) .....	169
<b>Chapter 11.</b> Valvular heart disease (Svitlana I. Smiyan) .....	183
<i>Mitral regurgitation</i> .....	183
<i>Mitral stenosis</i> .....	186
<i>Aortic stenosis</i> .....	194
<i>Aortic regurgitation</i> .....	199
<i>Tricuspid and pulmonary valve disease</i> .....	201
<b>Chapter 12.</b> Acute pulmonary embolism (Yuliia V. Rudenko) .....	210
<b>Chapter 13.</b> Chronic cor pulmonale (Galyna V. Mostbauer, Andrii B. Bezrodnyi) .....	218
<b>Chapter 14.</b> Vegetative-vascular fatigue (neurocirculatory dystony – NCD) (Natalia V. Bereza) .....	224

## Section 2.

### RHEUMATOLOGY

<b>Chapter 15.</b> Acute rheumatic fever (Anatoliy S. Svintsitskyy) . . . . .	231
<b>Chapter 16.</b> Rheumatoid arthritis (Mykola A. Stanislavchuk) . . . . .	241
<b>Chapter 17.</b> Systemic lupus erytematosus (Mykola A. Stanislavchuk) . . . . .	254
<b>Chapter 18.</b> Systemic sclerosis (Igor A. Svintsitskyi) . . . . .	267
<b>Chapter 19.</b> Dermatomyositis and polymyositis (Anatoliy S. Svintsitskyy) . . . . .	274
<b>Chapter 20.</b> Systemic vasculitis (Anatoliy S. Svintsitskyy, Liudmyla A. Kovalevska) . . . . .	282
<i>Polyarteritis nodosa</i> (Anatoliy S. Svintsitskyy) . . . . .	287
<i>IgA vasculitis</i> (Liudmyla A. Kovalevska) . . . . .	295
<b>Chapter 21.</b> Osteoarthritis (Natalia A. Zolotaryova) . . . . .	297
<b>Chapter 22.</b> Ankylosing spondylitis (Anatoliy S. Svintsitskyy) . . . . .	
<b>Chapter 23.</b> Reactive arthritis (Maksym I. Romanchenko) . . . . .	304
<b>Chapter 24.</b> Gout (Anatoliy S. Svintsitskyy) . . . . .	310

## Section 3.

### HAEMATOLOGY

<b>Chapter 25.</b> Anemia (Svitlana Yu. Kalinina) . . . . .	337
<i>Iron deficiency anemia</i> . . . . .	323
<i>Megaloblastic anemia</i> . . . . .	326
<i>Hemolytic anemia</i> . . . . .	333
<i>Hereditary hemolytic anemia</i> . . . . .	334
<i>Acquired hemolytic anemia</i> . . . . .	340
<b>Chapter 26.</b> Acute leukemia (Igor M. Skrypnyk, Ganna S. Maslova) . . . . .	345
<b>Chapter 27.</b> Chronic leukemia (Igor M. Skrypnyk, Ganna S. Maslova) . . . . .	354
<i>Chronic myelogenous leukemia</i> . . . . .	354
<i>Chronic lymphoid leukemia</i> . . . . .	359
<b>Chapter 28.</b> Lymphoma (Olena V. Solomko) . . . . .	366
<b>Chapter 29.</b> Idiopathic thrombocytopenic purpura (Liudmyla A. Kovalevska) . . . . .	373
<b>Chapter 30.</b> Hemophilia (Liudmyla A. Kovalevska) . . . . .	382
<b>References.</b> . . . . .	389

# List of Authors

**Kateryna M. Amosova** – MD, PhD, DSci., Professor, Corresponding Member of the National Academy of Medical Science of Ukraine, Professor of Internal Medicine Department No 2 of Bogomolets National Medical University, Kyiv;

**Oleg Ya. Babak** – MD, PhD, DSci., Professor, Honored Scientist of Ukraine., Head of Internal Medicine Department No 1 of Kharkiv National Medical University;

**Ivan P. Katerenchuk** – MD., PhD., DSci., Professor, Head of Internal Medicine Department No 2 of Ukrainian Medical Stomatological Academy, Poltava;

**Liudmyla A. Kovalevska** – MD., PhD., DSci., Professor, Professor of Internal Medicine Department No 4 of Odessa National Medical University;

**Valentyna K. Sierkova** – MD., PhD., DSci., Professor, Honoured Master of Science and Technology of Ukraine, Professor of Internal Medicine Department No 1 of National Pirogov Memorial Medical University, Vinnytsya;

**Igor M. Skrypnyk** – MD., PhD., DSci., Professor, Honoured Master of Science and Technology of Ukraine, Vice-Rector of the Science Pedagogical Work and Postgraduate Education, Professor of Internal Medicine Department No 1 of Ukrainian Medical Stomatological Academy, Poltava;

**Svitlana I. Smiyan** – MD., PhD., DSci., Professor, Honored Scientist of Ukraine, Head of Internal Medicine Department No 2 of I. Horbachevsky Ternopil State Medical University;

**Mykola A. Stanislavchuk** – MD., PhD., DSci., Professor, Head of Internal Medicine Department No 1 of National Pirogov Memorial Medical University, Vinnytsya;

**Anatolii S. Svintsitskyi** – MD., PhD., DSci., Professor, Head of Internal Medicine Department, Faculty of Dentistry of Bogomolets National Medical University, Kyiv;

**Natalia M. Zhelezniakova** – MD., PhD., DSci., Professor, Professor of Internal Medicine Department No 1 of Kharkiv National Medical University;

**Natalia A. Zolotaryova** – MD., PhD., DSci., Professor, Head of Internal Medicine Department No 4 of Odessa National Medical University;

**Anastasiia O. Andrieieva** – MD., PhD., Assistant of Internal Medicine Department No 1 of Kharkiv National Medical University;

**Natalia V. Bereza** – MD., PhD., Assistant of Internal Medicine Department No 2 of Bogomolets National Medical University, Kyiv;

**Olga M. Bereziuk** – MD., PhD., Associate Professor, Docent of Internal Medicine Department No 1 of National Pirogov Memorial Medical University, Vinnytsya;

**Galyna K. Berko** – MD., PhD., Associate Professor, Docent of Internal Medicine Department No 1 of National Pirogov Memorial Medical University, Vinnytsya;

**Andrii B. Bezrodnyi** – MD., PhD., Associate Professor, Docent of Internal Medicine Department No 2 of Bogomolets National Medical University, Kyiv;

**Liudmyla V. Burdeina** – MD., PhD., Associate Professor, Docent of Internal Medicine Department No 1 of National Pirogov Memorial Medical University, Vinnytsya;

**Olga V. Dzekan** – MD., PhD., Docent of Internal Medicine Department No 1 of National Pirogov Memorial Medical University, Vinnytsya;

**Marta B. Dzhus** – MD., PhD., Associate Professor, Docent of Internal Medicine Department

No 2 of Bogomolets National Medical University, Kyiv;

**Olga G. Gaponova** – MD., PhD., Assistant of Internal Medicine Department No 1 of Kharkiv National Medical University;

**Oleksandr F. Gopko** – MD., PhD., Associate Professor, Docent of Internal Medicine Department No 1 of Ukrainian Medical Stomatological Academy, Poltava;

**Svitlana Yu. Kalinina** – MD., PhD., Associate Professor, Docent of Internal Medicine Department No 2 of Bogomolets National Medical University, Kyiv;

**Tetiana A. Karasevska** – MD., PhD., Associate Professor, Docent of Internal Medicine Department No 2 of Bogomolets National Medical University, Kyiv;

**Roman R. Komorovsky** – MD., PhD., Associate Professor, Docent of Internal Medicine Department No 2 of I. Horbachevsky Ternopil State Medical University;

**Ganna S. Maslova** – MD., PhD., Associate Professor, Head of Internal Medicine Department No 1 of Ukrainian Medical Stomatological Academy, Poltava;

**Volodymyr I. Molodan** – MD., PhD., Associate Professor, Docent of Internal Medicine Department No 1 of Kharkiv National Medical University;

**Galyna V. Mostbauer** – MD., PhD., Associate Professor, Head of Internal Medicine Department No 2 of Bogomolets National Medical University, Kyiv;

**Olena I. Ostapchuk** – MD., PhD., Associate Professor, Docent of Internal Medicine Department No 1 of National Pirogov Memorial Medical University, Vinnytsya;

**Oksana L. Poberezhets** – MD., PhD., Docent of Internal Medicine Department No 1 of National Pirogov Memorial Medical University, Vinnytsya;

**Kostyantyn O. Prosolenko** – MD., PhD., Associate Professor, Docent of Internal Medicine Department No 1 of Kharkiv National Medical University;

**Oksana I. Rokyta** – MD., PhD., Assistant of Internal Medicine Department No 2 of Bogomolets National Medical University, Kyiv;

**Maksym I. Romanchenko** – MD., PhD., Assistant of Internal Medicine Department No 4 of Odessa National Medical University;

**Yuliia V. Rudenko** – MD., PhD., DSci., Associate Professor, Professor of Internal Medicine Department No 2 of Bogomolets National Medical University, Kyiv;

**Olena V. Solomko** – MD., PhD., Assistant of Internal Medicine Department No 4 of Odessa National Medical University;

**Svitlana I. Sorokina** – MD., PhD., Associate Professor, Docent of Internal Medicine Department No 1 of Ukrainian Medical Stomatological Academy, Poltava;

**Igor A. Svintsitskyi** – MD., MSci., Assistant of Internal Medicine Department, Faculty of Dentistry of Bogomolets National Medical University, Kyiv;

**Tetiana B. Yevdokymova** – MD., PhD., Associate Professor, Docent of Internal Medicine Department No 4 of Odessa National Medical University;

**Olga Ye. Zaichenko** – MD., PhD., Associate Professor, Docent of Internal Medicine Department No 1 of Kharkiv National Medical University;

**Iryna I. Zelena** – MD., PhD., Docent of Internal Medicine Department No 1 of Kharkiv National Medical University.



*Навчальне видання*

**Амосова Катерина Миколаївна**  
**Бабак Олег Якович**  
**Катеренчук Іван Петрович та ін.**

## **Внутрішня медицина**

### **Частина 1**

Підручник (англійською мовою)

*За редакцією: М. А. Станіславчука, В. К. Серкової*

Редактор *О. В. Марчук*  
Технічні редактори *Ж. С. Швець, Ю. П. Тертун*  
Коректори: *Ю. В. Анвар, Анвар Рушді Шейх*  
Комп'ютерна верстка: *О. С. Парфенюк*

Підписано до друку 04.12.18. Формат 70×100/16. Папір офсетний.  
Гарнітура Segoe UI. Друк офсетний. Ум. друк. арк. 33,06. Зам. № 1014.

ПП “Нова Книга”  
21029, м. Вінниця, вул. М. Ващука, 20  
Свідоцтво про внесення суб'єкта видавничої справи  
до Державного реєстру видавців, виготівників  
і розповсюджувачів видавничої продукції  
ДК № 2646 від 11.10.2006 р.  
Тел. (0432) 56-01-87. Факс 56-01-88  
E-mail: [info@novaknyha.com.ua](mailto:info@novaknyha.com.ua)  
[www.novaknyha.com.ua](http://www.novaknyha.com.ua)

**ridmi**  
ТВІЙ УЛЮБЛЕНИЙ КНИЖКОВИЙ

**КУПИТИ**