

**Jones AH, McLellan F, Editors. Ethical Issues in Biomedical Publication. Baltimore: The Johns Hopkins University Press; 2000. 376 pages; ISBN 0-8018-6314-5; price: US\$ 22.50 paperback, US\$ 50.00 hardcover.**

The topic of integrity of scientific research might have caught the eye of readers who have flipped through the Editorial article in this issue of the *Croatian Medical Journal* (1), yet they should not qualify this book review as a partial repetitive publication. Let us see what "Ethical Issues in Biomedical Publication" is about.

The book is intended not only for those with general interest in problems of research integrity (in the text, "publication ethics"), but also for all scientists performing biomedical research and publishing the results. It is easily read and you can "plug in" whenever and wherever you find time for it, before, during or after the working hours, in trams, subways, or bed before sleep (in fact, I was reading it an airplane).

Editors made a great effort to gather fourteen authors from three continents to create this book. Yet, in respect of style, text structure, and its quality, the book is so well-balanced as if only one person has written it. Each of the authors, specialists from different institutions from the USA, Great Britain, and Australia, contributed by writing a chapter in the book. The chapters are then organized in three major parts. The first part, "The Major Ethical Issues", covers chapters one to seven.

The first two chapters generally discuss miscellaneous problems related to authors as subjects of scientific research and report. The first one mostly deals with a modern concept of authorship, offers its historical overview, and lists some interesting cases of scientific misconduct with the implications to co-authors (the *Darsee case* with fabricated data and the *Slutsky case* with numerous errors). The cases serve as a base for arguing the topics on guest, gift, honoree, ghost, and denied authorship. There are a few solutions suggested to biomedical journals how to fight against such problems, including advice on writing journal's authorship policies. In the second chapter, Richard Horton (editor, *The Lancet*) continues to debate the concept by offering interesting answers to the questions, such as what, in fact, is an author, who is an author, and what are his or hers responsibilities? Every principal investigator planning a study or writing a scientific report should read at least these two introductory chapters before making the final decision on whose name to include in the list of authors.

The next two chapters tell us about the publishing of research results and specifically about the ethics of peer review process. The authors state that a decision on what to publish has an obvious ethical dimension and that it should

rely on the following: it is not correct to (a) publish bad science, that is, irrelevant, inaccurate, sloppy, incomplete, and/or fraudulent science, (b) not to publish good and important science, and (c) give a credit to wrong people. Basics on peer review are given in the text, explaining the idea, advantage, and disadvantages of multiple reviews, authors' blinding, open reviewing, and publication bias, with an understanding that the peer review process is the best validation method we have today but close to useless when it comes to detecting scientific misconduct.

Although both chapters discuss peer review process, the second one explains the term from the point of Internet publishing, something that has become very important in a last few years. This chapter, together with the seventh chapter, entitled "Ethics in Cyberspace", is highly informative and valuable for editors and scientists dealing with the problem of electronic scientific publishing. Moreover, it contains material perfect for teaching medical informatics.

Repetitive, partly repetitive, and divided publications are widely discussed in the next chapter. Some basic causes of scientific fraud are listed as well. Text summarizes the well-known terms from the field of research integrity, such as: prior publications, duplicate publications, dual publications, fragmented publications, redundant publications, and "salami" science. The question of Least Publishable Unit (LPU, ref. 2), which interests me the most, is also debated. Authors describe the phenomenon of dishonesty, which comprises repetitive and duplicate publications, but also delineate acceptable types of publications and offer their examples. This chapter also covers the issues of repeated publications, publishing in journals in different languages, and publishing for different audiences. Basic piece of advice on detection and prevention of repetitive and divided publishing is given as well.

The sixth chapter deals with the growing problem of conflict of interest in biomedical research. Although generally assumed as "a conflict between the private interests and the official responsibilities of a person in a position of trust", in the text, it is more than well discussed as a predominantly financial interest. Every clinical investigator should study this chapter to learn how to recognize interests that may affect his or hers research, especially if it is government-funded.

The seventh chapter on research and cyberspace, mentioned above, closes the first part of the book.

The second part is entitled "Responses and Remedies: Law, Policy, Education" and encompasses the next four chapters. Although easy to read, it might not be transparent enough for biomedical researchers (chapters eight and nine, especially) and seems to be written for those interested in what to do when misconduct has been discovered. It covers the issues of copyright and patent definitions, official mechanisms of responding to allegations on breaches of the ethical norms of the scientific community, data fabrication, falsification, abuse of peer review process, and violation of human-subject regulations, as well as certain policy issues of scientific misconduct. In addition, chapters ten and eleven give a number of recommendations on training and education in research ethics. The message of the second part of the book is clear – when misconduct is performed, it should be detected and identified (the idea of research integrity as a scientific police!), and scientific community should fight against it. Theoretical considerations in the text are of great value. What I find more than illustrative is the concept of a "broken window": if there is a broken window on the building and it is left unrepaired for some time, all other windows will soon be broken. The parallel between the broken window and dishonest research is clear.

The book ends with "Commentaries and Epilogue". This part contains the last three chapters, which summa-

rize the whole idea of research integrity, but also offer some personal perspectives of three famous medical researchers. At the end of the book there is a well-organized *Index* following the *Selected Key Resources* that offers important and worthwhile data on literature references and Internet sites.

Despite of its evidently biomedical focus, mainly due to the numerous real-life examples of scientific misconduct, the book may also be considered as a general and highly practical handbook of research integrity rules, wherever research is performed. The idea clearly expressed in the book is that misconduct in any field is always wrongful, but medical area, meaning health and lives of the people, might be directly affected by the published data from dishonest biomedical research. This makes the book recommendable not only to biomedical scientists, but also to all those dealing with natural sciences.

- 1 Petrovečki M, Sheetz MD. Croatian Medical Journal introduces study, control, and culture of research integrity. *Croat Med J* 2001;42:11-7.
- 2 Broad WJ. The publishing game: getting more for less. *Science* 1981;211:1137-9.

Mladen Petrovečki

## Silbernagl S, Lang F. *Color Atlas of Pathophysiology*. Stuttgart - New York: Thieme; 2000. 406 pages; ISBN 3-13-116551-0 (GTV); price: DM 54

**Field of medicine:** Human pathophysiology.

**Format:** Pocketsize paperback book.

**Audience:** Although it is not aimed to serve primarily as a student textbook, this book gives the complete overview of human pathophysiology sufficient for students, who can use it as a handbook to study for exams, as well as for physicians to refresh their knowledge. Also, other experts and health professionals may use the book to get acquainted with the basics of human pathophysiology.

**Purpose:** The book provides a "clear overview in words and pictures" of the basic knowledge of modern human pathophysiology with pathobiochemical aspects.

**Content:** The book is divided into 10 chapters: fundamentals; temperature, energy; blood; respiration, acid-base balance; kidney, salt and water balance; stomach, intestine, liver; heart and circulation; metabolism; hormones; neuromuscular and sensory system. The chapters are further divided into short paragraphs that allow quick and easy orientation. In addition, literature for further reading and index are provided at the end of the book. The index enables the reader to readily find the information without reading the whole book. Margines of each chapter are marked by different colors, which additionally speeds up a search. When needed, the overview of the organ system is given at the beginning of a chapter, to refresh the reader's knowledge of the normal physiology. Also, the specificities of pathophysiological pro-

cesses in aging, pregnancy, and postsurgical condition are emphasized.

If you already have some knowledge of pathophysiology, you can start consulting the book wherever you want, but, if you are starting from scratch, you will first have to learn something about a principal unit of each living organism – *the cell*, where the life and the disease start and end.

Maintaining of body *temperature* is essential for body functioning. The effects of extreme environmental temperature on body function are explained in the chapter "Temperature, energy" as *heat and cold injuries*. Since the food is the energy source, at the end of the chapter there is a discussion on *eating disorders*, particularly obesity and anorexia.

The *blood* is first discussed in regard of general facts and formation of blood cells. The different types of blood cells are described in detail, with the explanations of relevant diseases. *Immune defense* depends on the normal function of different types of immune cells, additionally described. The "injurious stimuli" cause defense reaction called *inflammation*, which should repair or limit the damage and remove the causal agent. The end of the chapter describes the congenital and acquired *hemostasis disorders*.

The fourth chapter gives an *overview* of respiration and principles of lung *ventilation and perfusion*, discusses *diffusion* and *distribution abnormalities*, which are than

used to describe *restrictive* and *obstructive lung diseases*. The causes of *alkalosis* and *acidosis* with its *effects* on organ functions and compensatory mechanisms, which restore acid-base balance are given at the end of the chapter.

The next chapter is organized in the same way, first giving an *overview* of kidney pathophysiology, than describing the major abnormalities of *renal extraction*, *renal transport processes*, *urinary concentration*, and *glomerular function* and explaining *acute* or *chronic renal failure*. The second part of the chapter deals with abnormalities of *water and salt balance*. Finally, the *bone pathophysiology* is discussed in terms of osteomalacia and osteoporosis.

In the sixth chapter, the gastrointestinal tract is described, together with accompanied glands, pancreas and liver. The causes and mechanisms of some common symptoms, such as *nausea and vomiting*, *diarrhea*, *constipation*, and *jaundice* are discussed. Pathogenesis of *gastritis* and *ulcer* is given, emphasizing the role of infection with *Helicobacter pylori*. In addition, there is an extensive description of *cholelithiasis* and the causes of cholesterol and pigment stone formation. At the end of the chapter *portal hypertension* and *liver failure*, as well as *liver fibrosis* and *cirrhosis*, are explained.

The largest chapter in the book is "Heart and Circulation". The principals of *cardiac cycle*, *cardiac excitation*, and *electrocardiogram* are first explained in order to make the understanding of abnormal heart action easier. The chapter gives causes and consequences of congenital and acquired valve defects. In the industrialized countries hypertension "affects about 20% of the population", so it is not surprising that *arterial blood pressure*, its *measurement* and principles of the development of *hypertension* are described in detail. Another very frequent cause of morbidity among the population is the *coronary (ischemic) heart disease*, resulting in *angina pectoris* or *myocardial infraction*. Severe heart disorders can result in *heart failure*, which is described as "the state of reduced myocardial performance". Finally, the chapter deals with *atherosclerosis*, "the cause of more than half of all deaths in the western industrialized nations".

The eighth chapter deals with metabolism. Metabolic disturbances affect all organs, and metabolic abnormalities are frequently caused by "faulty endocrine regu-

lation or genetic defects of enzymes or of transport proteins". The abnormalities of *protein*, *carbohydrate*, and *lipid* metabolism are further discussed regarding their causes and effects. Among other metabolic disorders, the complex *metabolism of lipoproteins* and their abnormalities are particularly explained.

The chapter "Hormones" starts with *general pathophysiology of hormones*. Hormonal disorder occurs when the function of *endocrine regulatory circuit* is disturbed. In addition, the diseases of excess and deficiency of particular hormone are discussed. This chapter offers the answers to questions regarding *goitre*, *diabetes mellitus*, *hypoglycemia*, etc.

The last chapter includes the description of neuromuscular and sensory system. The nervous system is first *overviewed*, then the pathophysiology of *nerve cells*, *myelin sheath*, *neuromuscular transmissions*, *motor unit*, and *muscles*, as well as the lesions of certain parts of nervous system are discussed. Second part of the chapter covers the *abnormalities of the sensory system*. Pathophysiology of some other common disorders of nervous system, like *epilepsy*, *sleep disorders*, *memory disorders*, *Alzheimer's disease*, *depression*, and *schizophrenia* are also discussed.

**Highlights:** All the essential information regarding human pathophysiology is given within the text of this book and complex interactions between causal factors, different organs, and resulting disorders are presented in relatively small-size figures. All 181 colored illustrations (photographs of patients with the characteristic features, CT scans, etc) are very clear, informative, and of high quality. Most illustrations first describe the causes of the dysfunction, then the mechanisms, and finally the consequences of the pathological function in terms of a certain disease. Functional connections between different organ system are further emphasized and a reader is directed to the relevant text within the other chapters.

The book is informative, accurate, and easy-to-survey. Each right page is illustrated, offering the schematic figures of pathophysiological processes described on a correspondent left page, which makes learning both easy and exciting.

Danka Grčević