Pollution: Treating environmental toxins

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Environmental pollution resulted from toxic chemicals is a worldwide issue due to their toxicity, persistence, bioaccumulation, and biomagnification in the food chain. Therefore, in order to decrease toxicity of these materials, using a suitable strategy is crucial to find sources of pollution, to detect types of pollutants, and treating diseases caused by toxins. Selected topics have been clearly and logically arranged in "Pollution: Treating Environmental Toxins". The book contains eight chapters; each dealing with different aspects of environmental pollution resulted from the toxins entrance from the urban environment to the natural environment. After a general description of the importance of environmental medicine to diagnosing and treating illnesses caused by toxins in the environment in Chapter 1, the author gives details about environmental diseases and tools used in diagnosing diseases in Chapter 2. In this chapter, finding the source of an environmental toxin, the most important step in epidemiology of environmental diseases is presented. The basic information about environmental medicine and epidemiology of environmental diseases have been descripted in Chapters 1 and 2. The illustration of uptake mechanisms and toxin elimination by each tissue is very important in diagnosing diseases and their effects on the body; such aspects have been neglected in these two chapters. Chapter 3 deals with classifying toxins, entry mechanisms to the body, and body detoxification mechanism of toxic chemicals. The author presents general information about toxic metals; however, such information is not comprehensive about environmental toxins. This chapter needs to describe two sections: (1) use of toxic metal bioindicators such as fish, bird, and mosses species and (2) biomarkers of metal toxicity in living organisms such as metallothioneins, phytochelatins, and antioxidant enzymes. These two parts are useful in assessing metal exposure and the prediction of potential detrimental effects induced by environmental metal contaminants. Now-a-days, researchers are interested in biomonitoring the fate of novel materials to assess the environment contamination. Chapter 4 briefly focuses on three subjects: (1) air quality and pollutants in air, (2) electromagnetic fields, and (3) noise pollution. These kinds of pollution are growing

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rapidly in developing countries and have become an emerging environmental pollution. The illustration of tables and figures about related subjects in this chapter are very good and strength for this chapter. However, the author could give a brief introduction to new tools used to measure selective pollutants in the environment and suggest methods to reduce the amount of pollutants. Moreover, indoor air pollution consists of polyscale particles and toxic gases that can harm the human body such as tobacco smoke, organic chemicals, respirable particles and so on. In Chapter 5, contamination of food and water, their routes, and importance of water and food quality are explained. One of strongest points of this chapter is the illustration of major food-borne and water-borne illnesses, infections, and main sources of these illnesses. However, this chapter suffers from not illustrating the prevention routes. The author could give methods of treating water polluted by pollutants such as heavy metal, persistent organic pollutants, algae, bacteria, etc. under

critical conditions such as flood, typhoon, earthquake, and so on. Regarding food section, it was better to present route of pollutants into the food web and the way pollutants affect the organisms, especially humans. Chapter 6 explains effective factors (such as age, health, inhabit place, and job) related to the populations at risk. Chapter 7 discusses about the use of environmental medicine in veterinary as a critical role protecting the diversity of life against environmental toxins. Finally, Chapter 8 refers to the importance of environmental medicine to human and animal as a tool to find sources of pollutions, to monitor organisms, and to improve methods for treating humans or animals' related diseases. Thus, providing general information on environmental pollution with reference to the toxicological aspects makes this book a valuable text for those concerned about environmental issues. Hence, we recommend the materials presented in this book be read by environmental scientists, researchers, and students of environmental sciences.