

Preface

Trauma and exposure to toxic and infectious agents invariably lead to organ damage followed by significant morbidity and mortality. Although these conditions have typically been associated with the battlefield, today they are more prevalent in urban areas. The events of September 11, 2001 have brought this problem to the forefront of national and international concern. The demand for solutions is justifiably high, and the research community needs to adjust its efforts appropriately.

Combat Medicine is meant to be a concise manual for the young clinical or basic investigator who is studying organ injury following trauma or toxic or infectious assaults either in an urban or battlefield setting, with an emphasis on current research issues in emergency and military medicine. The aim of *Combat Medicine* is to inspire surgical and medical residents and fellows, as well as biology and biochemistry students and fellows, to pursue research careers in the fields of military, trauma, and emergency medicine. *Combat Medicine* is not intended to be an exhaustive review; rather it is an introduction to key principles of this field.

The area of combat medicine research is enormously diverse, and in many ways it has not yet been defined. Mechanisms that lead to tissue damage include apoptosis, abnormalities in nitric oxide production, and disturbance of cell biochemistry. The affected organs are equally diverse and include the skin, the lungs, and the nervous system. Accordingly, we elected to divide the book into two parts. In the first, we asked experts to discuss the basic mechanisms that are invariably involved in the development of organ injury, such as apoptosis, nitric oxide production regulation, complement activation, and immune cell response to stressors. For the second part, we asked colleagues to discuss the current concepts that govern research aimed at understanding and reversing damage to major organs.

The authors explore mechanisms involved in the development of injury, review animal and, when available, human studies, and focus attention on future directions for research.

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Combat Medicine

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