

# Differences in immune systems of men and women can impact diseases: Research

In the book *Sex Hormones and Immunity to Infection*, Sabra Klein, PhD, assistant professor at the Johns Hopkins Bloomberg School of Public Health's W. Harry Feinstone Department of Molecular Microbiology and Immunology, explores the differences in the immune systems of men and women and how these differences can impact disease. Klein and co-editor, Craig Roberts, PhD, offer a fresh perspective for the treatment and management of infectious diseases through analyses of published research. In addition, they highlight areas where sex differences research is lacking and recommend areas for additional research.

"There is a growing appreciation within the scientific community that the immune systems of men and women differ, which impacts development of infectious diseases," said Klein. "While it is known that infectious diseases affect males more frequently and intensely, the heightened immunity that females experience also makes them more vulnerable to developing immunopathology and autoimmune diseases."

Through 12 chapters, *Sex Hormones and Immunity to Infection* investigates the role biological sex plays in immune responses to infection and the possibility that males and females may differ in their responses to treatments. It is a reference resource for researchers, clinicians, teachers and doctoral students in endocrinology and immunology.

Recognised as a leading expert on sex differences in susceptibility to infection, Klein has published more than 60 peer-reviewed publications and, most recently, was awarded the Society for Women's Health Research Medtronic Prize for Scientific Contributions to Women's Health. Her research focuses on the impact of hormones on immune responses to viruses and examines how immunological, hormonal and genetic differences between males and females affect sex differences in susceptibility to viruses such as influenza viruses, human papillomavirus and hantaviruses. Klein's research indicates that females typically mount more robust immune responses than males, which can be beneficial for clearance of viruses, yet can be detrimental by causing immunopathology.

Source: Johns Hopkins University Bloomberg School of Public Health