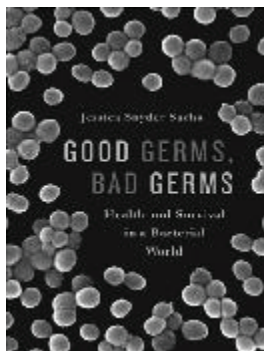


## BOOK REVIEW

GOOD GERMS, BAD GERMS:  
HEALTH AND SURVIVAL IN THE BACTERIAL WORLD*Reviewed by David Kudlowitz\**

Farrar, Straus and Giroux  
 October 2007  
 \$25.00, Hardcover  
 \$14.00, Paperback

From terrorism to the next flu epidemic, there are plenty of reasons to be scared to leave your house. In “Good Germs, Bad Germs,” we learn of a college football player killed by an infection of methicillin-resistant *Staphylococcus aureus* (MRSA). This new superstrain comes largely from overuse of antibiotics in animal feed and abuse of antibiotics in general practice.

In this highly understandable and fascinating book, Sachs investigates our evolutionary and ecological relationship with bacteria. She describes why the overuse of antibiotics is not only leading to stronger, more resistant strains of deadly diseases, but also how antibiotics are killing the very bacteria we need in to survive in our daily lives. The human body must be thought of as an ecosystem with a variety of bacterial species that are essential to our existence. From every microscopic piece of a person’s skin to the inner digestive tract, bacteria reside in abundance. When antibiotics deplete these bacterial colonies, this unique ecosystem can no longer properly function.

The first section of this book focuses upon this issue in its discussion of the Hygiene Hypothesis. This scientific argument seeks to attribute the influx of allergies and sicknesses today to too much cleanliness. By allowing our immune systems to remove foreign invaders and form a memory against them, we become primed to face disease. For immune systems that do not face “dirtiness” (or perhaps adequate exposure to bacteria and viruses) early on in life, the consequences could be an excess of sickness. Too much cleanliness can range from using large quantities of bleach as a cleaning product to the modern Caesarian section, which prevents the newborn from coming in contact

with the bacteria in the uterine canal.

Afterwards the reader is introduced to the world of immunological research from efforts to introduce pig whipworm eggs as treatments for Crohn’s and other intestinal disorders to viruses as targeted treatments for bacterial infection. At the same time Sachs notes that molecular biologist and Noble laureate Joshua Lederberg himself has indicated the need for humans to consider themselves as a “superorganism” of human and non-human cells that must coexist. Can we afford to wage constant war against our bacterial residents?

In sum, Sachs, a professional science writer and professor, has put forth a strong argument and an interesting read. Although at times the gloom of our disinterest in antibiotics and bacterial research is evident, the author demonstrates avenues of ongoing research to prevent a major catastrophe from resulting via strains of resistant bacteria (including research into the disruption of bacterial processes without killing the bacteria). A fascinating section on the immune system and its possible role in depression further develops the theme of the work. “Good Germs, Bad Germs,” reveals a complex and engrossing world of bacterial science and evolution and helps us to understand and acknowledge the complicated effects of our own technological advancements.

*\*Reviewed by David Kudlowitz, a Managing Editor of TuftScope.*