The principles of humane experimental technique: Is it relevant today?

Published May 1, 2010
Animal experiments in medical research. Humane experimental technique,” which included the three Rs that form the basis for the search of alternatives to animals in research. 2. Ethics in animal testing. How should animals be treated? These questions are as relevant today as they were 10 or 20 years ago. There is no correct answer to this, which makes it even more important to discuss. Since 1959 when Russell and Burch published the principle of the three Rs, the welfare of animals has come into more focus. In the last 30 years we have seen a decline in the use of animals in research, and in countries like Great Britain and Norway the number of research animals has been halved.

Abstract

In the section on replacement in their 1959 book, The Principles of Humane Experimental Technique, Bill Russell and Rex Burch state: “As new fields of biology open in the future, it may become a matter of routine to apply the lessons of the past and turn as soon as possible to the techniques of replacement.” They foresaw in vitro techniques, in their infancy at that time, as the science of the future. Today, in the US, the National Academy of Sciences publication of Toxicity Testing in the 21st Century: A Vision and a Strategy proves their point. This pivotal publication recognizes that the future of toxicity testing lies in the use of human cells in culture and in methods that Bill Russell and Rex Burch could not have possibly conceived of in 1959 but which they identified generically as “the future.” To truly establish this 21st Century approach will require very specific training in translational toxicology (the use of clinical observations to develop in vitro methods to understand pathways and systems biology), the development of transnational programs, and ways to evaluate the accuracy, validity and importance of new and/or traditional studies. These evaluations are known at evidence-based toxicology (EBT). Science is “the art of the question.” The concepts identified above are the tools to answer these questions – and to lead us to the next round of questions. The principles that Bill Russell and Rex Burch developed during the 1954-59 writing of “The Book” may be more important today than ever before. They argued that the newest science, the most humane science is also the very best science. This hypothesis is being proven now, as each of us contributes to the world’s body of knowledge.

How to Cite