

From AAALAC's perspective ...

Alcohol as a disinfectant

We've heard from many people who have questions about the appropriateness and effectiveness of using alcohol as a skin and sole surgical instrument disinfectant in rodent survival surgery. For some institutions, part of the confusion stems from a sentence in the *Guide for the Care and Use of Laboratory Animals* (NRC 1996, p. 62) that says, "Alcohol is neither a sterilant nor a high-level disinfectant." No further specifics are offered.

To help clarify this statement and answer questions about the use of alcohol in rodent surgery, AAALAC's Council on Accreditation formed a subcommittee to research and address this issue. Chaired by Herod L. Howard, D.V.M., M.P.V.M., director of the Animal Resources Center for the Beckman Research Institute of the City of Hope, the

committee also included J.R. Haywood, Ph.D., professor of pharmacology at the University of Texas Health Science Center at San Antonio, and Kathy Laber, D.V.M., M.S., director of the Animal Resource Center of the Medical University of South Carolina. Their findings and recommendations are discussed below.

Alcohol as a skin disinfectant

The goal prior to surgery is to rapidly kill bacteria at the site of the planned incision. Alcohols are well-suited for this. After application, their antibacterial effects result in falling bacterial counts that can last up to several hours.

The committee noted several sources that support the use of alcohol as a skin disinfectant:

- ✓ Research has shown that a one-minute alcohol immersion or scrub is as effective as a four- to seven-minute scrub with Chlorhexidine or Iodophors.
- ✓ An article by Cunliffe-Beamer cited in the *Guide* supports alcohol for rodent skin disinfection prior to surgery.
- ✓ The World Health Organization has designated alcohol "the gold standard against which all other skin disinfectants should be measured."

For these reasons, the Council accepts alcohol as a skin disinfectant for rodent survival surgery.

Instrument sterilization

Prior to surgery, instruments should be rid of all forms of microorganisms to prevent postoperative wound infections. But this is sometimes difficult due to the grooves on

instruments that can trap protein-rich material.

According to APIC (Association for Professionals in Infection Control and Epidemiology), ethyl alcohol and isopropyl alcohol are not effective in sterilizing instruments because they lack sporicidal activity and can't penetrate protein-rich materials. Isopropyl alcohol also lacks the ability to kill hydrophilic viruses. For these reasons, alcohol is classified as an intermediate level disinfectant.

Most investigators have access to autoclaves, gas sterilizers, hot beads, flames, chemicals or boiling water which can be used to properly sterilize the equipment. The *Guide* sets the standard for aseptic technique which includes sterilizing instruments and appropriately trained personnel. In the Council's view, departure from *Guide* recommendations places an additional responsibility on the IACUC to provide appropriate scientific justification, performance data, and/or monitoring to support alternative practices.

For these reasons, the Council cannot accept blanket use of alcohol for surgical instrument preparation.

The IACUC must evaluate the use of alcohol on a case-by-case basis, look at all the variables, include a review of relevant literature, and implement ongoing monitoring procedures. In sum, they must justify the use of alcohol as the sole surgical instrument disinfectant from both scientific and animal welfare perspectives. □

If you have questions or would like additional details on the committee's review, send an e-mail to kbayne@aaalac.org.

