

# Housing Rodents on Wire Mesh Flooring Guidelines

## I. Overview

Proper housing is essential to animal well-being, to the quality of research data and to the health and safety of animal personnel. The primary document specifying housing requirements for rodents used in research and testing is the *Guide*<sup>(1)</sup>. Although the *Guide* does not mandate a specific housing method for rodents, solid-bottomed caging with bedding is recommended.

Historically, rodents have often been housed on wire mesh flooring, suspended above a collection pan. Such housing enhanced sanitation of the cage by enabling urine and feces to pass through to the collection tray. However, evidence suggests that solid-bottomed caging with bedding is preferred by rodents, allows establishment of a favorable micro-environment and may be more humane<sup>2, 3, 4, 5, 6, 7, 8</sup>. Solid-bottomed caging with bedding is the standard housing method for rodents at UC Merced.

Proposals to house rodents on wire mesh flooring must be detailed in the animal care and use protocol, and must include justification as to why standard solid-bottomed caging with bedding is not appropriate or is contraindicated in the study. This justification must include a balance between the aims of the study and the pathological conditions that may develop as a result of the flooring. For example, many metabolic studies require the collection of feces, urine, and uneaten feed. Wire mesh flooring facilitates this type of experiment. Balance the benefit of collecting specimens against the anatomical damage and pathological conditions that may develop as a result of the wire mesh flooring.

## II. Guidelines:

- Use of wire mesh flooring must be reviewed and approved by the IACUC prior to use.
- Rodents with litters must have solid flooring with bedding.
- Animal care and investigative staff observing clinical signs of discomfort or lesions related to wire flooring must immediately provide solid flooring with bedding.

## III. References:

<sup>1</sup> National Resource Council. (1996). *Guide for the care and use of laboratory animals*. National Academy Press, Washington, D.C.

<sup>2</sup> Fullerton, P.M. and Gilliatt, R.W. (1967). Pressure neuropathy in the hind foot of the guinea pig. *J Neurol. Neurosurg. Psychiat.* 30:18-25.

<sup>3</sup> Grover-Johnson, N. and Spencer, P.S. (1981). Peripheral nerve abnormalities in aging rats. *J Neuropath. Exp. Neurol.* 40(2):155-165.

<sup>4</sup> Ortman, J.A., Sahenk, Z. and Mendell, J.R. (1983). The experimental production of renaud bodies. *J Neurol. Sci.* 62:233-241.

<sup>5</sup> Blom, H.J.M., Van Tintelen, G., Van Vorstenbosch, C.J.A.H.V., Baumans, V. and Beyen, A.C. (1996). Preferences of mice and rats for types of bedding material. *Lab. Animals* 30:234-244.

<sup>6</sup> Manser, C.E., Elliot, H., Morris, T.H. and Broom, D.M. (1986). The use of novel operant test to determine the strength of preference for flooring in laboratory rats. *Lab. Animals* 30:1-6.

<sup>7</sup> Manser, C.E., Morris, T.H. and Broom, D.M. (1995). An investigation into the effects of solid or grid cage flooring on the welfare of laboratory rats. *Lab. Animals* 29:353-363.

<sup>8</sup> Rock, F.M., Landi, M.S., Hughes, H.C. and Gagnon, R.C. (1997). Effects of caging type and group size on selected physiologic variables in rats. *Contemp. Topics in Lab. Anim. Sci.*, 36(2):69-72.