The Old School, Brewhouse Hill, Wheathampstead,
Hertfordshire AL4 8AN, UK
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Housing condition and nesting experience do not affect the Time to Integrate to Nest Test (TINT)

ML Rock*[†] AZ Karas[‡], MS Gallo[†], K Pritchett-Corning[§¶] and BN Gaskill[§#]

[†] Tufts University Cummings School of Veterinary Medicine, 200 Westboro Road, North Grafton, MA, USA
[‡] Department of Clinical Sciences, Tufts University Cummings School of Veterinary Medicine, 200 Westboro Road, North Grafton, MA, USA
[§] Charles River, 251 Ballardvale Street, Wilmington, MA 01887, USA
[#] Purdue University, 625 Harrison St, West Lafayette, IN 47906, USA
[¶] Harvard University, Cambridge, MA, USA
* Contact for correspondence and requests for reprints: meaganrock@gmail.com

Abstract

*Managing and assessing well-being in laboratory mice (*Mus musculus*) is both challenging and necessary. Assessments intended to detect negative welfare states in mice are usually performed via observation of animals in the home cage, but a substantial amount of time and skill may be required to detect subtle behavioural changes. The Time to Integrate to Nest Test (TINT) is a simple, cage-side assessment tool that identifies the presence or absence of a highly motivated normal behaviour in mice. The test is conducted by adding a small amount of new nesting material to a mouse cage. A positive outcome is achieved when this new material is integrated into the home nest within 10 min. This study examined whether housing condition or nesting experience affects TINT outcome. Single or group housing did not influence the TINT outcome, but a significant difference in latency to integration was found; singly housed mice took longer than group-housed mice to integrate TINT substrate. Mice which were raised naïve to nesting material had no significant delays when tested. However, experience with the TINT procedure showed increased speed to incorporate the testing substrate, indicating that previous experience to the paradigm prior to experimental testing may be necessary. These findings help to define the expected outcomes of the TINT, better positioning it for use as an assessment tool in varied research settings.*

Keywords: *animal welfare, behaviour, husbandry, mice, nest building, stress*