

Guidance for Reporting in Preclinical Imaging

Stout et al. have published an article in the SNMMI-sponsored journal *Molecular Imaging* titled “Guidance for methods descriptions used in preclinical imaging papers” (1). This publication is the result of an initiative undertaken by the Center for Molecular Imaging Innovation and Translation (CMIIT) Preclinical Imaging Task Force. As the title suggests, it puts forward guidelines on details that should be included in describing preclinical imaging studies in peer-reviewed publications. The authors cover all of the major imaging modalities, including optical techniques (fluorescence and bioluminescence), and provide examples for each to illustrate the ways in which sufficient details can be provided in a succinct fashion. This detailed guidance on information to be included in methodology sections of papers is intended to facilitate reproducibility. Following these guidelines should also serve as encouragement for investigators to give consideration to the full range of variables that may affect their results.

The paper includes important information and guidance on aspects of animal handling, such as anesthesia and maintenance of body temperature, that can influence data. Modern preclinical imaging systems provide many options for data collection and processing, and choices made on such elements as the number of iterations used in image reconstruction have an impact on quantitation. The authors do not put forward specifications on the ways in which imaging studies should be performed, but instead focus on the level of description necessary for reported findings to be

relevant, useful, and reproducible. The reproducibility of published biomedical research results has come under scrutiny recently, with the journal *Nature* imposing more rigorous standards on methods reporting (2). An article in the open access journal *Peer J* concluded that more than half of research resources were not properly identified within the sample of papers examined (3). Although in vivo preclinical imaging has not yet been the subject of such attention, these activities suggest the timeliness of the guidelines the *Molecular Imaging* authors have put forward. Their paper has been endorsed by the CMIIT Board of Directors and the SNMMI Board of Directors. Consultation of these guidelines by both authors and reviewers will help ensure that preclinical imaging studies are properly interpretable, reproducible, and useful as building blocks for future scientific studies.

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REFERENCES

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