

## **Dr. David Klonoff argues in favor of making research code executable, citable, and reusable – January 23, 2026**

*JDST article promotes use of an updatable, open-access repository that allows for bug fixes, documentation improvements, and future extensions*

In a timely perspective published in the *Journal of Diabetes Science and Technology*, “[Research Code Sharing in Support of Gold Standard Science](#),” Dr. David Klonoff (Diabetes Research Institute, Mills-Peninsula Medical Center [Sutter Health]) and 83 international co-authors make the case for research code that meets modern standards of academic rigor and trust. Framed around the NIH’s [Gold Standard Science](#) (GSS) initiative, the article argues that data sharing alone is no longer sufficient for research reproducibility. Instead, they promote sharing the code and specific computing environments used to improve research transparency.

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### **Recommendations to make research code more actionable**

The article asserts that most shared research code today is not executable. Specifically, about three-quarters of publicly available analysis code fails to run without error. Without additional environment specifications and clear documentation, even code sharing is not enough to ensure reproducibility. By contrast, “executable code” – code paired with additional details like environment files, provenance notes, and licensing – allows reviewers and other researchers to validate results and detect errors.

A central recommendation in the perspective is the routine use of “companion code repositories,” which pair a paper’s cited data with environment-specific code. The authors advocate for: (i) archiving code with persistent identifiers (like DOIs) that correspond exactly to published analyses; and (ii) maintaining an updatable, open-access repository that allows for bug fixes, documentation improvements, and future extensions without altering the original scientific record. This mirrors best practices that are already common in software engineering but inconsistently applied to medical research.

The article points out that submitting code enhances a research study’s visibility and overall impact within the research community. Furthermore, code sharing increases the credibility and trustworthiness of the published results and could lead to higher citation rates and greater recognition for the research.

### **Tips for safe implementation of these practices**

The authors emphasize that code repositories are complements, not replacements, for already established data repositories. They also acknowledge real-world constraints like time burden, funding limitations, privacy concerns, and intellectual property restrictions, particularly in industry-sponsored research. Still, the article anticipates growing encouragement from journals and research funders, as well as increasing voluntary adoption by investigators, to make research code more reproducible.

### **Close Concerns’ Questions**

1. How can journals adopt a consistent approach to promoting the use of these recommendations?
  2. What additional time and resources are required from researchers to implement these recommendations?
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*--by Jeremy Alkire, Kat Moon, and Kelly Close*