

Week 9 — Transparency & reproducibility

Can others check the field’s work or rebuild its results — that is, are data, materials, and code actually shared?

Objective evidence review · companion to Week 9 · prepared July 2026

Scope & method. Rapid narrative review, not a systematic review. Structured search of the sport-science and biomedical transparency literature (PubMed, JOSPT, BMJ Open, Sports Medicine, J. Clinical Epidemiology). Findings reported as the cited studies state them; biomedical sources on data-sharing behaviour are flagged as adjacent.

The principle under review

WEEK 9 · SHARING DATA, MATERIALS, AND CODE

Week 9 distinguishes reproducibility (same data + same analysis → same numbers) from replicability (a new study), and argues that both require the study’s data, materials and analysis code to be shared — “as open as possible, as closed as necessary.” The empirical questions are whether the field shares these, whether nominal “availability” translates into actual access, and whether results can therefore be checked.

1 · How well is it currently applied?

THE EVIDENCE

9% / 1% of sport-medicine studies shared open data / analysis code — Bullock et al. 2023	0% of sports-medicine trials deposited open data (74% stated “available on request”) — Schulz et al. 2022	6.8% of “available on request” authors actually shared data when asked — Gabelica et al. 2022
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Data and code are rarely shared

Sharing is uncommon at every level. Bullock and colleagues (2023), reviewing 243 studies in the top five sports-medicine journals, found only 9% provided open data and 1% shared analysis code, with a median of 2 of 12 open-science practices per study. Schulz and colleagues (2022) found that none of the 163 sports-medicine trials they examined deposited open data, although 74% of those with a data statement said data were “available on request.” Because a result cannot be reproduced — let alone replicated — without its data and code, these rates place a hard limit on the checkability of the field’s conclusions.

“Available on request” rarely means available

The gap between stated and actual availability is large and well documented. In a study of biomedical articles with mandatory data-availability statements, Gabelica, Bojčić and Puljak (2022) found that of authors whose statements indicated willingness to share, 93% either did not respond or declined, and among “available on request” authors only 6.8% actually shared data when contacted. Although this evidence is biomedical, it directly undercuts the “on request” model that dominates sport-medicine data statements (Schulz et al., 2022), indicating that nominal availability substantially over-states real access.

The consequence is visible in the field’s own replication work

These limits are not hypothetical. In reflecting on the field’s large replication project, Murphy and colleagues (2025) report that low data sharing and low author response rates hindered replication efforts, with teams struggling to obtain the original data needed to reproduce and replicate studies. The infrastructure to fix this exists — the Open Science Framework and the TOP guidelines (Nosek et al., 2015; Munafò et al., 2017) — and adoption is being called for in the field (Caldwell et al., 2020), but current practice falls well short.

Source	Finding	Implication
Bullock et al. (2023) <i>JOSPT</i>	9% shared open data; 1% shared code; median 2/12 open-science practices	Data and code sharing is rare

Schulz et al. (2022) <i>BMJ Open</i>	0% deposited open data; 74% stated “available on request”	Availability is nominal, not actual
Gabelica, Bojčić & Puljak (2022) <i>J. Clin. Epidemiology</i> (adjacent)	93% did not share despite a willing statement; 6.8% of “on request” shared	“On request” rarely delivers data
Murphy et al. (2025) <i>Sports Medicine</i>	Low data sharing and response hindered the field's replication project	The gap blocks reproduction and replication in practice
Twomey et al. (2021) <i>Comms. in Kinesiology</i>	Limited trial registration and data accessibility across 300 articles	Corroborates low transparency
Nosek et al. (2015); Munafò et al. (2017) <i>Science; Nat. Hum. Behav.</i> (adjacent)	TOP guidelines and reproducibility manifesto define the standards	Infrastructure and standards already exist

2 • Is there cause for concern?

OBJECTIVE ASSESSMENT

ASSESSMENT **Substantial concern**

Transparency is the precondition for the self-correction the whole course depends on, and the field currently supplies little of it: open data is shared in under a tenth of studies, code almost never, and the “available on request” model that nominally covers the rest almost never delivers in practice. The direct consequence — the inability to reproduce or replicate published work — has been observed in the field's own replication project. This is a substantial and foundational weakness.

The concern is bounded by two facts. The remedy is well defined and freely available (OSF, TOP guidelines, data-availability standards that require deposit rather than “on request”), and open-access publication is associated with markedly higher sharing, indicating that policy levers work. The problem is one of practice and enforcement, not of missing tools, and is therefore correctable through journal and funder requirements.

3 • Immediate steps to improve

ACTIONABLE

1. **Deposit de-identified data and analysis code in a repository** (e.g., the OSF) with a persistent link, rather than stating “available on request.”
2. **Share materials and a documented, re-runnable analysis** so a competent stranger — or future you — can rebuild the result from the raw data.
3. **Apply “as open as possible, as closed as necessary,”** de-identifying athlete data and using controlled access where needed, and stating why anything is restricted.
4. **Keep raw data untouched and do all processing in a script,** so the path from raw files to final result is fully documented.
5. **As journals and funders, require deposit rather than “on request,”** since that model demonstrably fails to deliver access.

References

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Improving Research Practices in Sport & Exercise Science — a free short course for the Sports Science Replication Centre. Current State Review, Week 9. Figures are reported as stated in the cited sources; adjacent-field sources flagged. For education.