

FDI POLICY STATEMENT

Research and Scientific Integrity in Oral Health

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CONTEXT

Scientific research is a cornerstone of oral health advancement and addressing the rising global burden of oral diseases. It drives innovation, informs education, and underpins the development of safe, effective, and equitable oral healthcare. In an era of rapid technological and societal change, the role of science in improving population health and strengthening healthcare systems is more critical than ever. Oral health research enables the discovery of new preventive strategies, diagnostic tools, therapies, and models of care that respond to evolving needs.

Across the globe, evidence-based healthcare has emerged as the standard, aligning clinical decision-making with the best available research, clinical expertise, and patient values. Yet research is not immune to carelessness or even malpractice, and the consequences of flawed or biased science can undermine trust, waste resources, and harm patients. That is why the oral health community relies on a dynamic and trustworthy scientific ecosystem. The latter should encourage excellence, relevance, transparency, and integrity in the creation and application of knowledge.

SCOPE

FDI reaffirms its commitment to advancing oral health through research. This policy statement provides recommendations to nurture a global research environment that is inclusive, collaborative, and ethical. It should also be designed to produce knowledge that (1) benefits patients, practitioners, healthcare systems, and society, (2) encourages meaningful patient and public involvement in research design and dissemination, (3) informs policy, and (4) supports evidence-based care. It is directed toward researchers and research institutions, including funders, educators, industry, and consumers of research including clinicians, patients, policymakers, and the wider public. This statement does not replace national legislation, local ethical regulations, or jurisdiction-specific technical guidelines.

DEFINITIONS

Predatory journals: Publications that claim to be legitimate scholarly journals but misrepresent their publishing practices¹.

Findable, Accessible, Interoperable, and Reusable (FAIR Principles): Guidelines to ensure data are FAIR, facilitating transparency and reproducibility in science².

Open science: An approach to research that promotes transparency, accessibility, and collaboration throughout the research process. It includes practices such as open

access publishing, sharing research data, code, protocols, and materials, preregistration of studies, and open peer review, with the goal of making scientific knowledge more accessible, reproducible, and reusable (<https://www.unesco.org/en/open-science>).

PRINCIPLES

FDI affirms the following principles in support of oral health research:

- **Value of science:** Scientific research is essential to improving oral health, reducing disparities, and optimizing care delivery. It is a public good that contributes to better patient outcomes, informed health systems, and resilient communities.
- **Evidence-based practice:** High-quality research is the foundation of evidence-based healthcare and enables practitioners to deliver care that is safe, effective, and tailored to patient needs.
- **Ethics and integrity:** All research must uphold the highest ethical standards and be subject to oversight by recognized ethics committees. Researchers should disclose and appropriately manage conflicts of interest, prevent fabrication, falsification and plagiarism, and ensure that errors or misconduct are corrected through appropriate mechanisms, including corrections or retractions where warranted. Scientific integrity safeguards trust in research and protects patients, participants, and the profession, and includes (among other aspects) transparency in reporting, management of conflicts of interest, responsible authorship, and data stewardship.
- **Collaboration and inclusion:** Research benefits from diverse perspectives and shared knowledge. It requires cooperation and collaboration across disciplines, sectors, and countries to accelerate discovery and ensure global relevance.
- **Sustainability and impact:** Scientific systems should prioritize quality, reproducibility, and social benefit, and facilitate translation of scientific knowledge into clinical practice, education, and public policy. The value of research lies not only in publication, but in its ability to improve practice, shape policy, impact oral health and well-being, and serve society.

POLICY

FDI:

- reaffirms the importance of research as essential to advancing oral health and strengthening healthcare systems. Research should be adequately funded, strategically prioritized, and designed to address both basic understanding and real-world needs.
- encourages national and international agencies to recognize the impact of oral diseases on health, well-being, quality of life and the environment, and establish sustainable, targeted funding mechanisms commensurate with their burden.
- supports good scientific practice. Researchers must uphold honesty, transparency (including display of industry involvement), accountability, patient safety, and respect, and should ensure integrity of the research process from its conception to its publication. They should adhere to legal and ethical requirements as well as scientific standards, including those of the Enhancing the Quality and Transparency of Health Research Network (<https://www.equator-network.org>), fostering replicability.

- encourages the timely integration of research into clinical practice, including practice-based and implementation research, using replicable and patient- or healthcare-relevant outcomes.
- encourages the inclusion of research in the undergraduate curriculum (including research methodology, bioethics, scientific integrity, critical appraisal and responsible data management), and mechanisms to promote and encourage the development of early career researchers.
- prioritizes research with high population and public health impact, including research on accessibility and equity of care, disability, healthy ageing, and common risk factors of oral and systemic conditions.
- supports the development of research infrastructure, including registries, national oral health surveillance systems, linked administrative datasets, data platforms, and analytical tools that facilitate collaboration, reproducibility, and innovation.
- encourages open science practices, including including open access publishing, preregistration of studies, open protocols, open data where appropriate, open-source software, transparent peer-review, and adherence to FAIR principles.
- promotes equitable and inclusive research practices that ensure fair representation of underserved and underrepresented populations and strengthen research capacity in low- and middle-income countries. International collaborations should promote local leadership, capacity building, fair authorship practices, and equitable distribution of benefits, particularly in low- and middle-income countries. Patients, caregivers, and communities should be meaningfully involved in the design, conduct, dissemination, and implementation of research whenever appropriate.
- emphasizes that AI should be used responsibly and transparently in research and scientific publishing, with researchers retaining full accountability for the integrity, accuracy, and originality of their work.
- warns against the influence of low-quality or predatory publishing practices and urges institutions and researchers to establish incentives for prioritizing high-quality research over quantity.
- endorses fair and responsible research evaluation, to align with internationally recognized principles of responsible research assessment, recognizing scientific quality, transparency, collaboration, societal impact, mentorship and reviewership, and knowledge translation rather than publication metric
- encourages National Dental Associations and health authorities to support or initiate research programs and policies aligned with these principles, and to establish integrity policies, periodic training programs, reporting mechanisms, and procedures for investigating scientific misconduct.
- encourages the development of national oral health research strategies and investment into research workforce according to contextualized national priorities.

KEYWORDS

Conflict of Interest, open science, peer review, research integrity, scientific publishing.

DISCLAIMER

The information in this policy was based on the best available scientific evidence at the

time. It may be interpreted to reflect prevailing cultural sensitivities and socio-economic factors.

REFERENCES

1. Elmore, S.A. and E.H Weston, Predatory Journals: What They Are and How to Avoid Them. *Toxicol Pathol*, 2020. 48(4): p.607-610. doi: 10.1177/0192623320920209. Epub 2020 Apr 22. PMID: 32319351; PMCID: PMC7237319.
2. Wilkinson, M.D., et al., The FAIR Guiding Principles for scientific data management and stewardship. *Scientific Data*, 2016: 3:160018. doi: 10.1038/s41597-019-0009-6. PMID: 26978244; PMCID: PMC4792175.