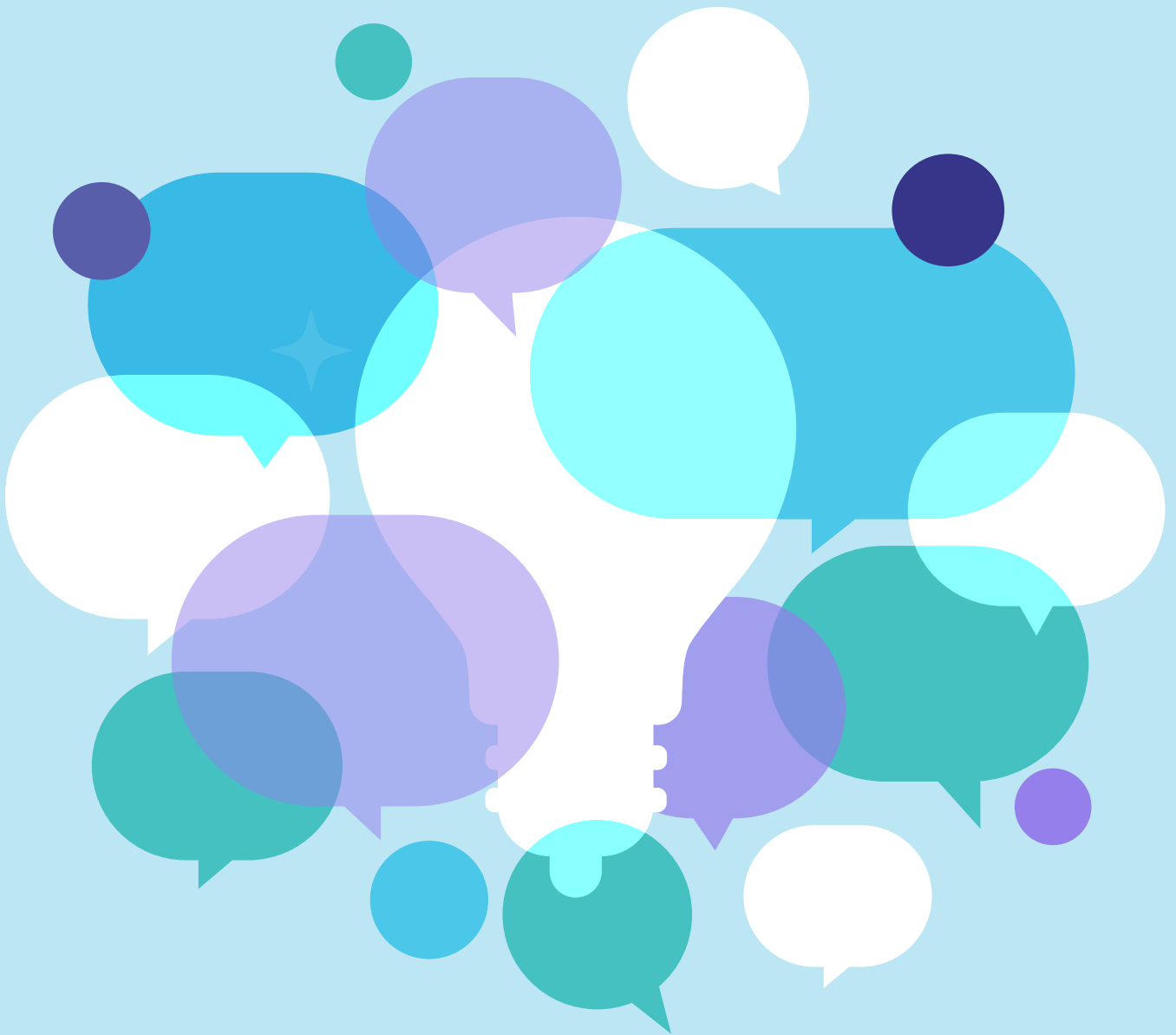




NHMRC's peer review models



NHMRC funding for research is provided through a range of competitive research grant schemes and is one part of a complex funding system that supports scientific discovery in Australia. NHMRC supports the highest-quality research identified through peer review processes designed to ensure rigour, fairness, and transparency in allocating public research funds.

The processes are designed to:

- ✓ **Support excellence in research**
Peer review helps NHMRC identify the highest-quality health and medical research proposals. Expert reviewers assess applications against published assessment criteria to ensure that funded projects are scientifically sound and likely to deliver meaningful outcomes.
- ✓ **Ensure impartiality and integrity**
By relying on independent experts, NHMRC minimises bias and promotes impartial decision-making. This strengthens trust in the funding system and upholds the integrity of Australia's research sector.
- ✓ **Leverage expertise across diverse fields**
Health and medical research spans many disciplines. Peer review brings together specialists with expertise across different fields of inquiry, consumer interests and industry to evaluate proposals, ensuring nuanced and informed judgments.
- ✓ **Promote transparency and accountability**
Application of NHMRC's peer review principles require clear documentation of assessments, conflict-of-interest management, and adherence to published guidelines. This makes the process transparent and fair.

Peer review underpins NHMRC's mission to build a healthy Australia by identifying and funding research that improves health outcomes for Australians. It ensures that limited resources are allocated to research of the highest quality and with the greatest potential impact, based on expert judgment.

NHMRC uses both panel-based and application-centric peer review models to support the rigour, flexibility, and fairness of our grant funding recommendations. Recognising that no single peer review model suits all funding schemes, the diversity in scheme objectives, application volume, and varying expertise requirements calls for tailored approaches.

Table 1: Applications and reviewers in funding round/s conducted across 2024–25 (Medical Research Endowment Account schemes¹)

Panel-based peer review
Centres of Research Excellence
Partnership Projects
Targeted Calls for Research
Clinical Trials and Cohort Studies
Application-centric peer review
Ideas
Investigator
Synergy
Postgraduate Scholarships
Development Grants
e-ASIA Joint Research Program (JRP) ²

1 Medical Research Future Fund (MRFF) grant opportunities that are managed by NHMRC also use panel-based peer review.
2 Most international collaborative research schemes use peer review panels (either jointly organised or centrally managed by one of the funding agencies). In the case of the e-ASIA JRP, each international funder undertakes its own review in parallel, prior to a joint decision-making process. NHMRC uses an application-centric process for its peer review.

Panel-based peer review

Most of NHMRC's smaller and targeted schemes use panel-based peer review models to assess grant applications. NHMRC's panel-based review model brings a group of peer reviewers together – either in person or virtually – to evaluate a set of applications collectively. After reviewers are recruited and briefed, they declare conflicts of interest and confirm suitability before receiving their allocated application packs.

Some schemes also provide training/mentorship sessions for their health and medical researcher (HMR) or consumer and community representative (CCR) reviewers. Members are assigned as spokespersons for applications aligned with their subject matter expertise, and they may record preliminary scores to enable shortlisting prior to a structured panel meeting. At the panel meeting facilitated by a chair, spokespersons lead discussions on shortlisted applications with other peer reviewers regarding the strengths, weaknesses, and scheme-specific considerations such as consumer input. Through dialogue and calibration, panel members resolve discrepancies and submit their final scores to produce a ranked list. NHMRC undertakes quality assurance and probity checks before funding recommendations are finalised.

This approach is particularly suited to assessing complex partnerships, multi-faceted projects (e.g. clinical trials) or more targeted schemes where multidisciplinary deliberation and breadth of expertise across the panel adds value to the process.

Advantages of panel-based peer review

- **Direct discussion:** In-depth dialogue, calibration and shared responsibility for probity among reviewers, and opportunity to share knowledge and resolve discrepancies through discussion.
- **Face-to-face interactions at the panel meeting:** Promotes accountability of peer reviewer's assessments.
- **Panel size:** The ability to include a larger number of reviewers on panels, providing broader expertise coverage for multidisciplinary, multifaceted or multi-sectoral applications. Such applications are becoming more common, particularly in highly collaborative proposals (e.g. clinical trials).
- **Panel structure:** The ability to have a standardised combination of reviewers for all applications; for example clinicians, consumers, health economists, biostatisticians and implementation scientists.
- **Professional development for panel members:** Building shared understanding and social capital among early- and mid-career researchers, other health and medical researchers, and consumer and community or industry representatives.
- **Participation of reviewers with different perspectives:** The ability to include and incorporate insights from consumers, Indigenous health experts, industry or policy reviewers, who can play a valuable and active role with their unique perspectives, often introducing new considerations that contribute to robust assessments and shifting of scores.

Limitations of panel-based peer review

- **Limited expertise across all applications:** Does not allow optimal matching of reviewers to individual applications; may require multiple disciplines to be covered by a single panel with generalist expertise.
- **Necessity of shortlisting steps:** Depending on the number of applications received, sometimes up to 80% of applications may be removed from the panel meeting following initial assessment by spokespersons. These applications may not always receive detailed feedback.
- **Time commitments:** Specified meeting times can restrict gender-balanced, equitable or diverse involvement due to incompatibility with personal or professional commitments.
- **Scheduling complexities:** Peer reviewers from different time zones may restrict involvement of geographically diverse experts. Seasonal conference travel also creates scheduling difficulties when recruiting panel members.
- **Cultural and social dynamics of meeting-style interactions:** May present barriers to open, balanced and honest contributions from all peer reviewers (although reviewers score applications independently and meeting discussions do not aim to determine a panel consensus view)
- **Accessibility:** Complexities to appropriately and accessibly support abilities and special needs within the context of panel discussions which can create barriers to equitable involvement.
- **Administrative and operational logistics:** Increases the overall time and resources required for a grant round.

Application-centric peer review

For schemes that regularly attract a high number of applications, or submission that are diverse and cover the full spectrum of health and medical research, NHMRC employs an application-centric model. Investigator and Ideas Grants are the key examples of these schemes, but the model is also well-suited, and utilised, for Synergy, Postgraduate Scholarships and some international partnerships.

NHMRC's application-centric peer review model assigns each application to highly suitable, non-conflicted reviewers rather than convening a panel. After building a large reviewer pool (e.g. 870 individuals for Ideas Grants 2025), the model uses algorithmic matching based on self-declared expertise and application classifications to allocate up to 5 expert reviewers to every application. After briefing and the provision of guidance materials, reviewers assess and score independently against published criteria, providing detailed feedback. New procedures allow reviewers to view each other's assessments and refine their own evaluations. Scores are then aggregated into a ranked list according to scheme rules, followed by quality assurance and probity checks before funding recommendations are finalised.

Use of application-centric peer review was carefully considered and evaluated before being fully implemented by NHMRC in 2021. Analysis of scoring changes and outcomes of panel discussions from historic panel-based rounds (specifically, that panel discussion does not significantly change final scoring results¹), data from comparable published studies², lessons from other funding agencies, and reviewer feedback of their own experiences throughout piloted application-centric rounds all provides very strong evidence it is a reliable alternative to panel-based review.

Advantages of application-centric peer review:

- **Easier reviews due to better expertise matching:** Reviewers are selected for each application based on self-declared expertise, which improves the quality and relevance of reviews. Under the former panel-based model, less than 30% of Investigator Grant applications were assessed by peer reviewers who declared a 'Yes' suitability match. Since the shift to application-centric peer review in 2021, 75 to 90% of assessments are undertaken by reviewers who declare 'Yes' suitability.
- **Efficient scalability and broader reach:** It is well-suited for managing high application volumes and drawing on a broader and more diverse reviewer pool across disciplines, institutions and locations.
- **Workload benefits:** Greater flexibility to reduce the average number of applications allocated to each peer reviewer.
- **Flexibility:** Independent assessment allows reviewers to participate without the scheduling constraints of a panel format. This is particularly beneficial for part-time employment and individuals with carer responsibilities, many of whom are women.
- **Independent assessments:** Mitigates the possibility of dominant or domineering individuals impacting others' assessments and avoids biases that can arise from group dynamics (for example, conformity bias).
- **Administrative and operational logistics:** Application-centric processes reduce the resources required and the time between a scheme opening and the release of outcomes.

Limitations of application-centric peer review:

- **Independent assessments only:** Does not allow discussion of issues or calibration of scoring with other reviewers (note an assessment review stage pilot is underway to further enhance transparency).
- **Recruitment logistics:** Very large numbers of peer reviewers result in an increased requirement for secretariat support and demand for large-scale training services.
- **Fewer on-the-ground learning opportunities:** Without the opportunity to listen and learn from other peer reviewers it can be harder for early- and mid-career researchers (EMCRs), consumers and community or industry representatives to develop peer reviewing skills.
- **Participation of reviewers with different perspectives harder to implement.**
- **Rewards for reviewers:** Reviewers not remunerated if not participating in briefings. The lack of direct communication with other peer reviewers also removes an opportunity for participants to have their expertise recognised, develop their own social capital, and create new professional connections.

1 CEO communique on application centric peer review | NHMRC

2 Cited in Pier et al, Res Eval. 2017 26(1): 1-14

Monitoring and continuing to improve NHMRC peer review practices

By employing both panel-based and application-centric peer review models, NHMRC seeks to strike a careful balance between rigour and responsiveness whilst ensuring that the [principles of peer review](#) are upheld.

NHMRC continues to explore opportunities to analyse, further refine, adapt and optimise both styles of peer review practice, and is actively consulting with our principal committees and international counterparts on evidence-based improvements and ways to monitor for and reduce bias in outcomes.

Enhancing transparency and accountability of application-centric peer review

For larger schemes undertaking application-centric peer review, applicant feedback is now shared with other reviewers of the same application. This step was introduced to increase transparency and accountability, enable peer reviewers to assist NHMRC in identifying errors, as well as allowing reviewers to gauge how their review compared to others whilst still maintaining independence.

In addition, NHMRC is currently piloting an 'assessment review stage' to further strengthen transparency and accountability of the application-centric peer review processes. After completing independent assessments, peer reviewers can view the individual criterion scores and identities of their peers who assessed the same applications. They will also be able to revise or adjust their own scores and feedback, before assessments are finalised, where they may have overlooked or underweighted a crucial piece of information. This pilot has been run for the Investigator Grants 2026 round, and evaluation will determine rollout across other application-centric schemes.

Consumers in peer review

NHMRC continues to champion consumer involvement. We recognise that consumer involvement in research, including in peer review and assessment processes, enhances the relevance and impact of research, improves transparency and the communication of the whole pathway of research, enhances accountability and encourages innovation.

Since 2023 consumer and community members have scored grant applications in NHMRC's Targeted Calls for Research grant scheme. The weighting for the consumer involvement criteria is 20% of the overall assessment.

This approach is now also being implemented in the Clinical Trials and Cohort Studies (CTCS) grant scheme. The 2025 CTCS process will also include multiple mentoring workshops for consumers by experienced consumer and community representatives to ensure they are fully supported throughout the peer review journey. Similar mentoring workshops will also be held for health and medical research panel members. Highly experienced panel Chairs will be engaged to guide the panel meeting discussions.

NHMRC will evaluate the process with all peer review participants and identify opportunities for improvement and implementation more broadly.

Benefit for Aboriginal and/or Torres Strait Islander health

A key finding from the 2023 [Indigenous Research Excellence Criteria Review](#) was strong support for adoption of an approach where all NHMRC applications answer a question about how the proposed research will benefit Aboriginal and/or Torres Strait Islander health. This is aligned with the [National Agreement on Closing the Gap](#) which aims to enable Aboriginal and Torres Strait Islander people and governments to work together to overcome the inequality experienced by Aboriginal and Torres Strait Islander people, and achieve life outcomes equal to all Australians.

As a result, NHMRC piloted the introduction of a question in the 2025 Centres of Research Excellence grant opportunity that all applicants were required to address: How does your application benefit Aboriginal and/or Torres Strait Islander health and contribute to Closing the Gap targets? The response was considered by peer reviewers in the overall assessment of the application within the specific context of the research and where it is positioned along the research pathway.

The pilot will continue in 2026 with the Centres of Research Excellence and Synergy Grant schemes, and evaluation of applicant and peer reviewer surveys.

Support and training to build peer reviewer capabilities

To encourage shared knowledge and understanding of peer review processes, NHMRC routinely delivers webinars about the peer review process, applicant feedback review and writing. Webinars can also include interactive modules to illustrate and discuss common issues. Esteemed and highly skilled researchers are appointed to serve as peer review mentors who make themselves available to answer questions. For some schemes, live Q&A drop-in sessions facilitated by mentors are held to focus on various aspects of peer review, such as scoring, validation, eligibility, and budget reviews.

For large-scale schemes like Ideas and Investigator Grants, participation rates for such training and mentor support programs have increased each year, indicating increasing sector engagement. NHMRC will continue to evaluate training outcomes to inform future improvements.

Monitoring peer review processes

Reporting and funding outcomes

NHMRC reports on funding outcomes by grant opportunity, including chief investigators, fields of research, institutions, organisation type and jurisdiction (state/territory). Detailed datasheets by year are available online at [Outcomes and data on research](#). NHMRC also produces and publishes factsheets for specific schemes which can include more detailed data on funding distribution, for example, by broad research area, gender or career-stage.

Consideration of state and territory bias

The priorities, scale and scope of health and medical research activity across Australian states and territories vary considerably, as do the workforce and infrastructure support mechanisms of different jurisdictions. As a result, there are differences in the funded rates and numbers of grants awarded to researchers in different states and territories.

Attention is regularly drawn to comparison rates for researchers in states and territories where the scale of the health and medical research sector is smaller, with concerns that unconscious state-based bias may exist where grants reviewed by local or interstate reviewers.

As part of ongoing quality assurance processes for peer review, NHMRC recently conducted an analysis of the 2 largest grant schemes to investigate whether assessors have bias for applications originating from their own state or territory

NHMRC did not observe evidence that suggests the presence of systematic bias, when examining score differences between local and interstate assessors. The full report is available online at [NHMRC peer review analysis](#).

Expert advice and feedback across the community

NHMRC will continue to draw on the outcomes of its [Peer Review Analysis Committee \(PRAC\)](#) and other data, feedback from applicants and peer reviewers, and the experience of other national and international funders in further developing peer review processes and training activities.

More information about our peer review models and rationale is available at the following links:

- **Application-centric peer review:** www.nhmrc.gov.au/funding/peer-review/application-centric-peer-review
- **Peer review at NHMRC – Principles and Approach:** www.nhmrc.gov.au/about-us/resources/principles-peer-review
- **Peer Review Analysis Committee (PRAC) report:** www.nhmrc.gov.au/about-us/leadership-and-governance/committees/peer-review-analysis-committee
- **Guiding principles for peer reviewer nomination and appointments:** www.nhmrc.gov.au/funding/peer-review-system/guiding-principles-peer-review-panel-membership-nomination-and-appointments