



19 December 2024

Senator Lidia Thorpe
Chair
Select Committee on PFAS (Per and Polyfluoroalkyl Substances)
Parliament House
Canberra ACT 2600

Dear Senator Thorpe

The National Health and Medical Research Council (NHMRC) welcomes the opportunity to provide a submission to the Senate Select Committee on PFAS. This submission outlines NHMRC's role and responsibility in providing human health advice regarding the effects of PFAS from drinking water and recreational water sources, and research conducted under the *Targeted Call for Research into PFAS*. NHMRC's remit and the content of this submission is particularly relevant to the [Select Committee on PFAS Terms of Reference](#) (c), the health impacts of PFAS.

About NHMRC

NHMRC is Australia's leading expert body for supporting health and medical research; for developing health advice for the Australian community, health professionals and governments; and for providing advice on ethical behaviour in health care and in the conduct of health and medical research. NHMRC is an independent statutory agency within the Health Portfolio and operates under the *National Health and Medical Research Council Act 1992* (the NHMRC Act). It comprises the Chief Executive Officer (CEO), who is advised and assisted by the Council of NHMRC, Principal Committees and staff within the office of NHMRC (ONHMRC).

Principal Committees assist Council in carrying out its functions, helping to provide an effective governance and advisory structure for NHMRC. In addition to these committees, a number of working committees and reference groups can be formed under section 39 of the NHMRC Act to advise NHMRC on issues that arise from time to time. Appointees to Council and Committees of NHMRC are required to disclose their interests in line with the *Policy on the Disclosure of Interests Requirements for Prospective and Appointed NHMRC Committee Members*. These s39 Committees report to the Council of NHMRC.

NHMRC and health advice

The role of NHMRC, as set out in Section 7 of the NHMRC Act, is to inquire into, issue guidelines on, and advise and make recommendations to the Commonwealth as well as the states and territories on matters such as public health and matters relating to the improvement of health. This includes developing nationally consistent, evidence-based advice that can be applied by jurisdictions throughout Australia in the context of their own administrative and legislative frameworks.

NHMRC has responsibility for a number of public health guidelines including the [Australian Drinking Water Guidelines](#) and the [Guidelines for Managing Risks in Recreational Water](#). NHMRC water guidelines provide nationally consistent standards to maintain public health that underpin state and territory regulations on drinking water and recreational water quality. NHMRC water guidelines also contribute to the [National Water Quality Management Strategy](#), an Australian Government initiative in partnership with state and territory governments.

NHMRC water quality guidelines are developed with the assistance of the [Water Quality Advisory Committee](#) and the [Recreational Water Quality Advisory Committee](#). NHMRC also works closely with the Department of Health and Aged Care, the Environmental Health Standing Committee (enHealth), industry groups and jurisdictional health departments or water regulators to manage this work, which ensures the national applicability of NHMRC advice.

The NHMRC guideline development process has a number of stages that are informed by best practice approaches in guideline development and are part of the [NHMRC Standards for Guidelines](#) for ensuring high quality, trusted guidelines. This includes assessing the strengths and limitations of the evidence used to develop recommendations, including funding sources and potential risk of bias. There are multiple checks including drafting by an expert committee, consultation with jurisdictional water experts, consumers, public consultation and expert review.

NHMRC guidance on PFAS in drinking water

The [Australian Drinking Water Guidelines](#) (the Guidelines) provide an authoritative reference for determining the quality of water to be supplied to consumers in all parts of Australia. The Guidelines provide guidance to water regulators and suppliers on monitoring and managing drinking water quality. They are intended to provide a framework for the good management of drinking water supplies that if implemented will assure safety at the point of use.

In Australia's system for ensuring water is safe to drink, NHMRC is responsible for producing the Guidelines which provide guidance to water regulators and suppliers on monitoring and managing drinking water quality. The Guidelines are adopted or referenced by various levels of government to develop policy, and these government departments have the responsibility to implement and monitor these policies.

Management of drinking water depends on the legislated arrangements for water supply within each jurisdiction; for example, in some states, water supply is managed by one water corporation, whereas in other states it is managed locally by numerous water suppliers. The relevant state/territory health and/or drinking water regulator is responsible for regulating supply and establishing monitoring requirements.

In 2018, NHMRC published health-based guideline values for three PFAS in the Guidelines:

- ☐ perfluorooctane sulfonate (PFOS) + perfluorohexane sulfonate (PFHxS): 70 ng/L
- ☐ perfluorooctanoic acid (PFOA): 560 ng/L

The 2018 health-based guideline values are based on the Tolerable Daily Intake developed by Food Standards Australia New Zealand (FSANZ) in 2017, which refers to the amount of a chemical that can be ingested daily over a lifetime without appreciable risk to health. They also take into account assumptions used for the Australian context in deriving drinking water guidelines, such as human weight and volume of water consumed.

Since late 2022, NHMRC has been reviewing the 2018 health-based guideline values for PFAS in drinking water with advice from the NHMRC Water Quality Advisory Committee. The scope of the current NHMRC review has been limited to PFOS, PFHxS, PFOA, PFBS and GenX chemicals, based on the [June 2022 US EPA](#) interim health advisories that prompted the review. Details of the review process for updating the PFAS guidance in the Guidelines is outlined in the [Administrative Report](#).

Public consultation on the draft PFAS guidance material was held from 21 October to 22 November 2024. The draft guidance material included an updated [PFAS fact sheet](#) with revised and newly established health-based guideline values (see Table 1), and was supported by an [NHMRC Statement](#) that provided a summary of the findings and a [CEO message](#) that highlighted key messages and addressed key concerns in plain English. NHMRC also released a [question-and-answer resource](#), the [evidence review reports](#) and an [Administrative Report](#) to support public consultation.

Table 1 Draft PFAS Guideline Recommendations for Public Consultation

PFAS	Current Guideline Recommendations (2018)	Potential Guideline Recommendations for Public Consultation (2024)
PFOA	Based on human health considerations, the concentration of PFOA in drinking water should not exceed 560 ng/L.	Based on human health considerations, the concentration of PFOA in drinking water should not exceed 200 ng/L .
PFOS	Based on human health considerations, the sum of the concentrations of PFOS and PFHxS in drinking water should not exceed 70 ng/L.	Based on human health considerations, the concentration of PFOS in drinking water should not exceed 4 ng/L .
PFHxS		Based on human health considerations, the concentration of PFHxS in drinking water should not exceed 30 ng/L .
PFBS	No health-based guideline value in the current Guidelines.	Based on human health considerations, the concentration of PFBS in drinking water should not exceed 1000 ng/L .
GenX chemicals	No health-based guideline value in the current Guidelines.	No health-based guideline value can be derived at this time.

NHMRC is currently considering feedback from consultation with advice from the Water Quality Advisory Committee. The Committee and the Council of NHMRC must have regard to the submissions from public consultation before finalising and publishing the guideline.

Human health effects of PFAS

The draft updated [PFAS fact sheet](#) outlines information that is particularly relevant to the [Select Committee on PFAS Terms of Reference](#) (c), the health impacts of PFAS.

To date the evidence on health effects of PFAS has been uncertain, draws on a mix of animal and human studies, and can be interpreted in different ways depending on the choice of health outcome (endpoints) used, methodologies, assumptions and other factors. PFAS exposure in humans has been associated with health effects such as mildly elevated levels of cholesterol (confirmed by the [2021 Australian National University \(ANU\) PFAS Study](#)), effects on kidney function and on the levels of some hormones. However, these effects are small and largely within ranges seen in the general population. The ANU PFAS study confirmed the findings of the Australian Government Expert Health Panel which determined that a range of public health impacts had been identified in international studies, but the impacts were generally small.

NHMRC's current PFAS review concluded that the most critical health effects (endpoints) include potential carcinogenicity for PFOA, potential bone marrow effects for PFOS and potential thyroid effects for PFHxS and PFBS based on animal studies. These endpoints have been used to derive proposed health-based guideline values (see Table 1).

For more information on the health effects of PFAS, including the critical health effects identified in studies underpinning the proposed health-based guideline values, see the [draft PFAS fact sheet](#) for public consultation.

NHMRC guidance on PFAS in recreational water

In August 2019, NHMRC released guidance on PFAS in recreational water as an addendum to the [Guidelines for Managing Risks in Recreational Water](#). These guidelines advise that:

- ☐ based on health considerations, the summed concentration of PFOS and PFHxS in recreational water resources should not exceed 2 µg/L.
- ☐ based on health considerations, the concentration of PFOA in recreational water resources should not exceed 10 µg/L.
- ☐ the frequency of outdoor recreational activities can vary between regions, and adjusting the frequency of these events can be used to produce location-specific guideline values in consultation with the relevant health regulator.

NHMRC developed a [Frequently Asked Questions](#) resource for this addendum.

The *Guidelines for Managing Risks in Recreational Water* are currently being updated by NHMRC's [Recreational Water Quality Advisory Committee](#), including the current health-based guideline values for PFAS in recreational water. The final drinking water guideline values will be considered as part of this process once they are published to determine if a change is warranted to existing advice for PFAS in recreational water. Public consultation on the updated recreational water quality guidelines is anticipated for mid-2025.

NHMRC-funded research on PFAS

As well as providing health advice on PFAS exposure from drinking water and recreational water sources, NHMRC has funded a number of research projects investigating the health effects of PFAS through a Targeted Call for Research (TCR). The PFAS TCR opened on 19 December 2018 and closed on 1 May 2019 and was created as part of a budget initiative after an Expert Health Panel provided an advisory report to the Department of Health and Aged Care. The report found there was little evidence on PFAS exposure and human health outcomes. Subsequently NHMRC established a reference group of experts in the field to assist in developing the scope, objectives and selection criteria of a TCR into PFAS. The reference group, considering the advice from the Department of Health's Expert Health Panel, identified gaps in research evidence that would increase an understanding of how PFAS exposure may affect human health and inform appropriate responses to managing or reducing human exposure to PFAS.

Nine research proposals through the TCR were successful and investigate issues such as:

- ☐ biological effects of PFAS exposure, molecular mechanisms, and biotransformation
- ☐ health outcomes of firefighters and the effect of PFAS on other health conditions
- ☐ exposure pathways, monitoring of exposure (including the use of biomarkers) and assessment of exposure controls.

The funding for this research (\$11.7 million) was provided by the Department of Defence and administered by NHMRC. The projects began in 2019 and are expected to end from March 2024 through to December 2025. More information about NHMRC's PFAS TCR, including annual progress reports, is available on the [NHMRC PFAS TCR page](#).

Researchers are welcome to apply to NHMRC for grants for further research into the human health effects of PFAS. NHMRC invests in health and medical research through a variety of funding schemes, as assessed through peer review. NHMRC does not generally determine the subject of research grant applications apart from priority-driven grant opportunities.

Applications are investigator-initiated and therefore based on the expertise and research interests of those applying for funding. It is also important to note that grants are awarded based on competitive peer review with the best science and most significant research proposals funded based on the available funding allocation.

I hope this information is of assistance. If you have any questions,

Yours sincerely

Professor Steve Wesselingh

Chief Executive Officer
National Health and Medical Research Council