

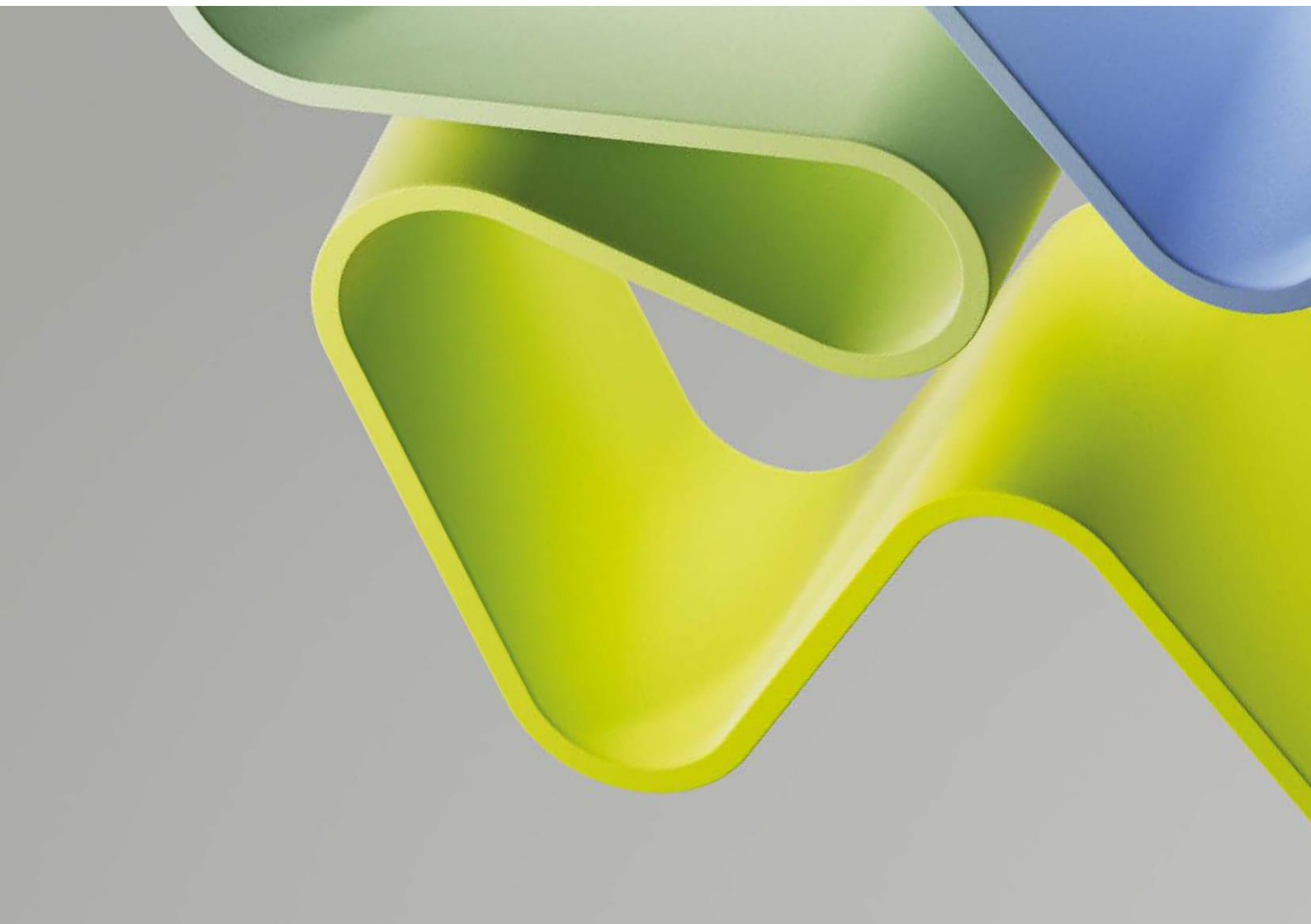
Evaluation of Medicine and Health 2023-2024

Evaluation report – Panel 5b

Research Group: Child Health and Development

Administrative Unit: Division of Mental and Physical Health

Institution: Norwegian institute of Public Health



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Preface

The Research Council of Norway (RCN) is given the task by the Ministry of Education and Research to perform subject-specific evaluations. The primary aim of the evaluation of medicine and health (EVALMEDHELSE) 2023-2024 is to reveal and confirm the quality and relevance of research performed at Norwegian Higher Education institutions, research institutions (the institute sector) and the health trusts, in an international perspective. Such knowledge is useful for the institutions that participate in the evaluation, for the Research Council who advise the authorities on how research should be developed further, and for the authorities, who set targets and frameworks for research and higher education. Research groups submitted by their administrative unit will be assessed by 18 expert panels organised by research subjects or themes. The expert panels will assess research groups across institutions and sectors based on research group's self-assessments and examples of scholarly output. These research reports will be part of the evaluation of their belonging administrative units.

Abstract

The Child Health and Development research group is a small research group established in 2022. The group comprises 5 full time members of staff, 6 post-doctoral researchers/PhD students, a research coordinator and a department leader. The goals of the research group are based on those of the core aims of the Norwegian Institute of Public Health which are to: (1) conduct internationally competitive research about child health and development and (2) to provide up to date and relevant statistical information and research-based knowledge that supports governmental agencies in meeting their goals. The research group investigates risk and protective factors for neurodevelopment, educational outcomes and mental health in children and young people. A range of study designs are used including prospective epidemiological studies and randomized controlled trials. By identifying modifiable risk and protective factors, the group aims to inform public health strategies and interventions to promote better child health. The stated benchmarks of the group are to: publish high-quality scientific papers, contribute to the relevant knowledge base for public health authorities and services, to collaborate with national and international partners within and outside academia, to increase external funding and comprehensively disseminate findings. It is noted that these benchmarks are similar to those of another group within the same division (Childhood and Families). According to these benchmark criteria, the research group is performing well: grant capture and quality of papers published over the relevant period are very good. There are strong national and international links including with branches of UNICEF for dissemination of research findings. In this report, suggestions are provided to the group in the areas they highlighted as challenging.

Overall assessment

A strength of the Child Health and Development research group is the PhD visiting internship scheme. The group also shows evidence of some international recognition in terms of scientific publications and appears to be involved at all stages of the research process and have driven the projects as evidenced by members of the research group being first or senior authors of the publications. The group has also compiled several government reports on public health related to child health.

Weaknesses are the strategic direction of the group, which was decided by the group head and was a little top heavy in terms of structure though considering the size of the group this seemed acceptable. Regular seminars and workshops are held to support research but little information on training and mentoring PhD students was included and there was little specific mention of the involvement of stakeholders in the full research process.

In terms of grant capture, several grants are listed though as the Norwegian Institute of Public Health is listed as the owner of all specified grants, it was hard as a reviewer to tell which members of the team were involved in the grants and/or whether they had a leading role.

Grading:

Dimensions	Score
Organisational dimension (How adequate the organisational environment is in supporting the production of excellent research).	3
Quality dimension (Research and publication quality/Research group's contribution)	3/4
Societal impact dimension (Research group's societal contribution/User involvement)	3/3

Recommendations

The group were performing well particularly given that the group is small and was only established recently. The panel suggest that to enhance the group's visibility and coherence and increase further the quality and impact of their research, the following actions would be helpful:

- The group studies a broad range of areas relevant to child development (e.g. reported papers were on covid infection course, prenatal diet, eating disorders during covid, gender gaps in pre-academic skills in preschool children). The panel recommends that the group clearly structures this expertise on the department website. This would help with 'marketing' the team to external experts and funders.
- International research could be a growth area for the research group. The panel recommends advertising spending time at the institute to international researchers as part of fellowship applications and so potentially increasing own grant capture by being Co-Is on international grant applications written by others.
- The group seems to be in the fortunate position of having senior administrative staff. The panel recommends that the group explores the possibility of the senior administrative team members taking over some of the administrative tasks mentioned (e.g. chasing up data requests), releasing researcher time for grant writing and other key activities.
- Team members appear to publish together quite regularly. The panel recommends building on this collaborative approach to bring together complementary methods expertise to address new topics for grant applications.

It was difficult for the panel to understand the links with other related institutes in the same Division. The panel recommends work to better communicate these linkages to an external audience.

1. Strategy, resources and organisation

1.1 Research group's organisation and strategy

The department was established in 2010 with a focus on child and youth mental health. Leadership is organized centrally and partially distributed with the departmental head having personnel responsibility for all members of the department and day to day supervision of students and post-docs falling to principal investigators. The research group investigates risk and protective factors for neurodevelopment, educational outcomes and mental health in children and young people. A range of study designs are used including prospective epidemiological studies and randomized controlled trials. By identifying modifiable risk and protective factors, the group aims to inform public health strategies and interventions to promote better child health. Core goals are to: conduct internationally competitive research about child health and development and to provide up to date and relevant statistical information and research-based knowledge that supports governmental agencies in meeting their research goals. The specified benchmarks are: high-quality scientific publishing, generate knowledge base for public health authorities, to collaborate extensively with national and international partners, to increase external research funding, and to comprehensively disseminate research findings.

The group has relevant goals and benchmarks that are clearly specified.

Recommendations:

The strategic direction of the group was decided by the group head which was a little top heavy in terms of structure though considering the size of the group this seemed acceptable. As the group grows this approach may need to be revised. The benchmarks are similar to those of another group within the same division (Childhood and Families). Clarifying how these groups link with each other and how they are distinct would have been helpful for the panel. Clarifying unique and over-lapping aims with other groups within the same department may also be helpful for promoting the profile of the research group to external partners.

1.2 Research group's resources

This is a small research group established in 2022. The group comprises 5 full time members of staff, 6 post-doctoral researchers/PhD students, a research coordinator and a department leader. Reported grant income was: 12.7M NOK (year 1); 13.7M NOK (year 2); 10.8M NOK (year 3); 11.4M NOK (year 4); 14.7M NOK (year 5). This income was total income from grants led by The Norwegian Institute of Public Health (NIPH). Grant income mainly came from national sources though one NIH international project was listed where the group was co-leading a project with the University of North Carolina, Chapel Hill.

As NIPH was listed as the owner for all reported projects, it was difficult to ascertain the extent to which research group members were leading the projects. Information on the development of the research group was as expected and included activities and events to support researcher development including seminars, reading groups and workshops. The opportunity for PhD students to visit other international research institutions for 6-12 months was a strength. The research group is doing well in terms of grant capture. The grants align with the groups research goals. The strategic direction of the group was decided by the group head which was a little top heavy in terms of structure though considering the size of the group this seemed acceptable.

Recommendations:

- To provide further details on training for PhD students and how the research culture of the group is developed and maintained.
- The group could consider possible strategies for increasing international grant capture (which is an aim of the research group).
- The panel recommends that the group could think strategically about how to increase external grant capture without over-burdening the small research team with administrative duties. The group seems to be in the fortunate position of having senior administrative staff. The panel recommends that the group explores the possibility of the senior administrative team members taking over some of the administrative tasks mentioned (e.g. chasing up data requests), releasing researcher time for grant writing and other key activities.

1.3 Relevance to the institution

One of the Norwegian Institute of Public Health's (NIPH) key responsibilities is conducting research and analysis to inform government management and decision-making. Much of this research occurs within the Division of Mental and Physical Health. This division is tasked with researching, summarizing, and disseminating knowledge on public health factors, including non-communicable diseases, mental and physical health, prevention, risk factors, health-promoting factors, and health and care services. Specifically, the Department for Child Health and Development focuses on identifying risk factors for mental health and developmental problems and evaluating interventions to mitigate these. Understanding environmental factors that contribute to positive child development is a societal imperative and aligns with several political strategies. The group's benchmarks include contributions to the public health agenda on NIPH such as generating knowledge base for public health authorities, collaborating with internal and external partners including academic and non-academic, and disseminating research and knowledge effectively. The group's research aligns closely with the institution. Government funding has reduced in recent years and the group is aiming to offset this by seeking external funding.

The group is performing well in terms of meeting the objectives of NIPH.

Recommendations: No specific recommendations

2. Research quality

2.1 Research group's scientific quality

The research group explores topics related to children's mental health and development. The overarching research focus is to investigate risk and protective factors for neurodevelopment, educational outcomes, and mental health in children and youth. The group's approach to this includes investigating factors such as: quality of kindergarten and school, the effectiveness of interventions and exposures to environmental toxins. The group mainly utilises epidemiological approaches but also performs randomized controlled trials. A range of projects are summarised including studies on prenatal exposures, the effects of ADHD treatment on educational performance, quality of kindergarten and academic success. The exact role of the research group in these projects is unclear as the Norwegian Institute of Public Health is listed as the owner of all projects. Therefore, it is not possible to work out the exact role of members of this research group in these projects. Listed publications are one estimating infectiousness through covid infection, prenatal exposures to toxic mental and child neurodevelopmental disorders, bias from loss to follow-up in cohort studies, eating disorder rates during the covid pandemic and gender differences in preacademic skills in young children. One monograph on the topic of early life exposure to toxins on neural development is included.

The quality of the publications is good. The range of topics covered is quite broad. There was one minor error in the description of publication 3 where the topic does not match the description. The papers are published in good quality journals with one paper in a Scandinavian journal. Some papers are quite specialised and published in specialist journals (e.g. the cohort bias paper and the kindergarten and prenatal exposure papers). The monograph is a book chapter in a book entitled "early-life environmental exposure and disease." It is not clear if the papers on prenatal exposures control for known confounders (i.e. shared genetic link between mother and baby, other shared confounders) using appropriate research designs e.g. sibling comparisons compared to associations in a cohort. Relevant collaborations with national and international institutes are mentioned (U of Oslo, U Trondheim, U Northumbria, Karolinska Institute). Collaborations for dissemination e.g. UNICEF Norge and UNICEF Innocenti are also mentioned.

Recommendations:

- To consider the use of research designs that control for confounders in the prenatal exposure research work. Research of the highest quality in this area typically incorporates these designs. The panel recommends that this is potentially a development area to consider.
- To undertake activities to strengthen collaborations and rather than simply listing collaborations, to describe the value of and aim of these collaborations. There were some positive statements included about supporting Open Science which is a strength.
- The remit of the group is quite diffuse and broad, and members publish together regularly, the panel recommends building on this collaborative approach to bring together complementary methods expertise to address new topics for grant applications.

2.2 Research group's societal contribution

The research group responds to queries from the department of health and has provided scientific input to policy decisions on a range of areas (e.g. child mental health, effects of the covid pandemic on child mental health). The group says it has been given the responsibility of coordinating Norwegian research on child mental health. Eight reports or briefing documents spanning the period 2020-2023 are listed. Ten outputs spanning the period 2017-2023 are listed in the publication societal output section. The documents are mainly general briefing reports about mental health in Norway, there are also some reports on prenatal toxin exposures and public health after the covid pandemic.

There was little information about the involvement of users in the research process. Primarily, outputs involve commissioning government agencies rather than those with lived experience of the conditions being studied. There was limited consideration of involving those with lived experience to advise on the research process.

Recommendations:

- To work on enhancing the involvement of those with lived experience in the full research process.
- For research to impact on the public, the panel recommends considering how to disseminate findings from reports in a more accessible user-friendly format (e.g. on a webpage).

Appendices

Evaluation of Life Sciences in Norway 2022-2024

Evaluation of Medicine and Health 2023-2024

Mandate Expert panels

The Research Council of Norway (RCN) is given the task by the Ministry of Education and Research to perform subject-specific evaluations. The Portfolio board for Life Sciences in the Research Council of Norway has decided to carry out an evaluation of medicine and health in 2023-2024 as the second of two evaluations within Life Sciences. The evaluation of biosciences takes place in 2022-2023.

1. The objective of the evaluation

The primary aim of the evaluation of Life Sciences is to reveal and confirm the quality and the relevance of research performed at Norwegian Higher Education Institutions (HEIs), by the institute sector and by health trusts.

The results of the evaluation will be used as recommendations to the institutions, the Research Council, and the ministries.

2. Tasks of the expert panels

The panels are requested to:

- evaluate the strategy, resources and organisation of/for the research groups.
- evaluate research production and quality of the research groups.
- grade and write a short evaluation text to the evaluated research groups.

Each of the expert panels will write a brief report with evaluations of the different research groups as well as specific recommendations.

3. Time schedule

Digital panel meetings will take place in the period March 15. - June 15. 2024.

Deadline for submitting panel report to the Research Council: June 15. 2024.

4. Miscellaneous

Other important aspects of Norwegian life sciences research that ought to be given consideration.

EVALMEDHELSE 2023-2024 – Panel group description – January 2024

Panel group	Description	Panel no.
Group 1 PHYSIOLOGY Physiology-related disciplines (human physiology), including corresponding translational research	Anatomy, physiology, embryology, nutritional physiology, pathology, basic odontological research, exercise physiology, neurobiology, toxicology, pharmacology, medicinal chemistry, chemistry, biology, pathology.	Panel 1a Panel 1b
Group 2 MOLECULAR BIOLOGY Molecular Biology, including corresponding translational research	Microbiology, bacteriology, inflammation and infection disease research, forensic medicine, genetics, immunology, vaccine development, microbiological diagnostics, pharmaceutical microbiology, cell biology, molecular medicine and -biophysics, medical biochemistry, omics, organoids, imaging, toxicology, pathology, drug development, cancer research, translational research, systems biology, personalized medicine, biomarkers, oncology, genetics, genomics, epigenetics, proteomics, bioinformatics-/statistics, computational science, AI, biology, virology, radiology, ionisation, molecular biology, microbiology, pharmacology, pharmacogenomics, regenerative medicine and related subjects.	Panel 2a Panel 2b Panel 2c
Group 3a CLINICAL RESEARCH	Clinical Research, including surgery and translational research within: paediatrics, women's health, gynaecology, otorhinolaryngology, head and neck surgery, oncology, haematology, radiology and medical imaging.	Panel 3a_1 Panel 3b_2
Group 3b CLINICAL RESEARCH	Clinical Research, including surgery and translational research within: general medicine, emergency medicine, anaesthesiology, neurology, geriatric medicine, rehabilitation medicine, cardiology, nephrology/urology, endocrinology, pulmonary medicine, orthopaedics, rheumatology, Infection, gastroenterology.	Panel 3b_1 Panel 3b_2 Panel 3b_3
Group 4 PUBLIC HEALTH Public Health and Health-related Research	Public health, community research, epidemiology, preventive medicine, mental health, behavioural research and ethics, medical statistics, environment, nutrition, preventive medicine, physiotherapy, sports medicine, implementation research, public health, health care services research, global health, nursing	Panel 4a Panel 4b Panel 4c

	sciences, rehabilitation sciences, public health systems, digital health care services, ICT, HTA, health competence, genetic and epigenetic epidemiology, non-communicable diseases, pharmacology, nursing research, professional research, occupational medicine.	Panel 4d Panel 4e Panel 4f
Group 5 PSYCHOLOGY Psychology and Psychiatry	Clinical psychology, personality psychology, developmental psychology, cognitive psychology, biological psychology and forensic psychology, psychiatry, including geriatric psychiatry, child and adolescent psychiatry and biological psychiatry, social-, community- and workplace psychology, organizational psychology, developmental psychology, behavioural and health psychology, health promotion and well-being.	Panel 5a Panel 5b

Panel group 5 PSYCHOLOGY

Expert panel 5b

Name	Title	Institution
Richard Hastings (chair)	Professor	University of Warwick
Anja Wittkowski	Senior Lecturer	Clinical Psychology, University of Manchester
Mads Uffe Pedersen	Professor	Center for rusmiddelforskning, Aarhus Universitet
Yvonne Forsell	Professor	Department of global Public Health, Karolinska institute
Anette Erlangsen	Professor	Danish Institute for Suicidal Prevention
Frances Rice	Professor	Cardiff University

Mads Uff Pedersen had a conflict of interest with the evaluation of KORFOR at Stravanger (report 16). Annette Erlangsen had a conflict of interest with the National Centre for Suicide Research and Prevention (report 15). She also had a conflict of interest with the evaluation of the Mental Health and Suicide Research Group within the FHI (report 3). Lastly, Richard Hastings had a conflict of interest with Behavioural principles -from animal modes to human cultures at OsloMet (report 12).

This meant that for those evaluations they did not have access to the self assessments or survey data and they did not participate in the discussion of the research group, nor did they participate in the preparation and completion of the evaluation report.



Evaluation of Medicine and Health (EVALMEDHELSE) 2023-2024

Self-assessment for research groups

Date of dispatch: **15. September 2023**
Deadline for submission: **31. January 2024**

Updated: **13. October 2023**

Institution (name and short name): _____

Administrative unit (name and short name): _____

Research group (name and short name): _____

Date: _____

Contact person: _____

Contact details (email): _____

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Introduction

The primary aim of the evaluation is to reveal and confirm the quality and the relevance of research performed at Norwegian Higher Education Institutions (HEIs), the institute sector and the health trusts. These institutions will henceforth be collectively referred to as research performing organisations (RPOs). The evaluation report(s) will provide a set of recommendations to the RPOs, the Research Council of Norway (RCN) and the responsible and concerned ministries. The results of the evaluation will also be disseminated for the benefit of potential students, users of research and society at large.

You have been invited to complete this self-assessment as a research group. The self-assessment contains questions regarding the group's research- and innovation related activities and developments over the years 2012-2022. All submitted data will be evaluated by expert panels.

Deadline for submitting the self- assessment to your administrative unit – 26 January 2024

The administrative unit will submit the research groups' completed self-assessments and the administrative unit's own completed self-assessment to the Research Council within 31 January 2024. Please submit completed self- assessment to the administrative unit no later than 26 January 2024.

Please use the following format when naming your document: [short name of the institution]_[short name of the administrative unit]_[short name of the research group], e.g. *UiT_DepPsy_Short name of the research group*.

For questions concerning the self-assessment or EVALMEDHELSE in general, please contact RCN at evalmedhelse@forskningsradet.no.

Thank you!

Guidelines for completing the self-assessment

- Please read the entire self-assessment document before answering.
- The evaluation language is English.
- Please link to websites/documents in the self-assessment where relevant.
- Please be sure that all documents linked to in the self- assessment are written in English and are accessible.
- The page format must be A4 with 2 cm margins, single spacing and Calibri and 11-point font.
- The self-assessment follows the same structure as the [evaluation protocol](#). In order to be evaluated on the two evaluation criteria described in the evaluation protocol, the research group must answer all questions.
 - ⇒ Provide information – provide documents and other relevant data or figures about the research group, for example strategy and other planning documents, as well as data on R&D expenditure, sources of income and results and outcomes of research
 - ⇒ Describe – explain and present using contextual information about the research group and inform the reader about the research group.
 - ⇒ Reflect – comment in a reflective and evaluative manner how the research group operates.
- Data on personnel should refer to data reported to DBH on 1 October 2022 for HEIs and to the yearly reporting for 2022 for the institute sector and the health authorities. Other data should refer to 31 December 2022 if not specified otherwise.
- It is possible to extend the textboxes when filling in the form. **NB!** A completed self- assessment form cannot exceed 25 pages (pdf file). Expert panels are not requested to read more than the maximum of 25 pages. Pages exceeding maximum limit of 25 pages **might not** be evaluated.
- Submit the self- assessment as a pdf (max 25 pages) to the administrative unit within **26 January 2024**. Before submission, please be sure that all text are readable after the conversion of the document to pdf. The self- assessment should be sent from the administrative unit to evalmedhelse@forskningsradet.no within **31 January 2024**.

Please note that information you write in the self assessment and the links to documents/websites in the self-assessment are the only available information for the expert panel.

In exceptional cases, documents/publications that are not openly available must be submitted as attachment(s) to the self- assessment (pdf file(s)).

1. Organisation and strategy

1.1 Research group's organisation

Describe the establishment and the development of the research group, including its leadership (e.g. centralised or distributed etc.), researcher roles (e.g. technical staff, PhD, post docs, junior positions, senior positions or other researcher positions), the group's role in researcher training, mobility and how research is organised (e.g. core funding organisation versus project based organisation etc.).

Table 1. List of number of personnel by categories

Instructions: Please provide number of your personnel by categories.

For institutions in the higher education sector, please use the categories used in DBH, <https://dbh.hkdir.no/datainnhold/kodeverk/stillingskoder>. Please add new lines or delete lines which are not in use.

	Position by category	No. of researcher per category	Share of women per category (%)	No. of researchers who are part of multiple (other) research groups at the admin unit	No. of temporary positions
No. of Personnel by position	Position A (Fill in)				
	Position B (Fill in)				
	Position C (Fill in)				
	Position D (Fill in)				

1.2 Research group's strategy

a) Describe the research group's main goals, objectives and strategies to obtain these (e.g. funding, plans for recruitment, internationalization etc.) within the period 2012-2022.

b) Please describe the benchmark of the research group. The benchmark for the research group should be written by the administrative unit in collaboration with the research group. The benchmark can be a reference to an academic level of performance (national or international) or to the group's contributions to other institutional or sectoral purposes.

Example: A benchmark for a research group is related to the research groups' aim which again is included in the strategy for the administrative unit. A guidance for the administrative unit to set a benchmark for the research group(s) can e.g. be: What do the administrative unit expect from the research group(s)?

c) Describe the research group's contribution to education (master's degree and/or PhD).

d) Describe the support the host institution provides to the research group (i.e., research infrastructure, access to databases, administrative support etc.).

1.3 Relevance to the institutions

Describe the role of the research group within the administrative unit. Consider the research group's contribution towards the institutional strategies and objectives, and relate the research group's benchmark to these.

1.4 Research group's resources

Describe the funding portfolio of the research group for the last five years (2018-2022).

Table 2. Describe the sources of R&D funding for the research group in the period 2018-2022.

	2018 (NOK)	2019 (NOK)	2020 (NOK)	2021 (NOK)	2022 (NOK)
Basic funding					
Funding from industry and other private sector sources					
Commissioned research for public sector					
Research Council of Norway					
Grant funding from other national sources					
International funding e.g. NIH, NSF, EU framework programmes					
Other					

1.5 Research group's infrastructures

Research infrastructures are facilities that provide resources and services for the research communities to conduct research and foster innovation in their fields. [These](#) include major equipment or sets of instruments, knowledge-related facilities such as collections, archives or scientific data infrastructures, computing systems communication networks. Include both internal and external infrastructures.

- Describe which national infrastructures the research group manages or co-manages.
- Describe the most important research infrastructures used by the research group.

1.6 Research group's cooperations

Table 3. Reflect on the current interactions of the research group with other disciplines, non-academic stakeholders and the potential importance of these for the research (e.g. informing research questions, access to competence, data and infrastructure, broadening the perspectives, short/long-term relations).

Interdisciplinary (within and beyond the group)	About 1/3 page
Collaboration with other research sectors e.g. higher education, research institutes, health trusts and industry.	About 1/3 page
<u>Transdisciplinary</u> (including non academic stakeholders) <i>Transdisciplinary research involves the integration of knowledge from different science disciplines and (non-academic) stakeholder communities with the aim to help address complex societal challenges.</i>	About 1/3 page

2. Research quality

2.1 Research group's scientific quality

Describe the research profile of the research group and the activities that contribute to the research group's scientific quality. Consider how the research group's work contributes to the wider research within the research group's field nationally and internationally.

Please add a link to the research group's website:

Short version

Table 4. List of projects

Instructions: Please select 5-10 projects you consider to be representative/the best of the work in the period 1 January 2012 – 31 December 2022. The list may include projects lead by other institutions nationally or internationally. Please delete tables that are not used.

Project 1 -10: <i>Project title/Project period (year from – year to)</i>	Project owner(s) (project leaders organisation)	
	Total budget and share allocated to research group	
	Objectives and outcomes (planned or actual) and link to website	

Table 5. Research group's contribution to publications

Instructions: Please select 5-15 publications from the last 5 years (2018-2022) with emphasis on recent publications where group members have a significant role. **If the publication is not openly available, it should be submitted as a pdf file attached to the self-assessment.** We invite you to refer to the Contributor Roles Taxonomy in your description: <https://credit.niso.org/>.

Cf. Table 1. List of personell by categories: Research groups up to 15 group members: 5 publications. Research groups up to 30 group members: 10 publications. Research groups above 30 group members: 15 publications.

Please delete tables that are not used.

Publication 1 -15: <i>Project title/Journal/Year/DOI/URL</i>	Authors (Please highlight group members)	
	Short description	
	Research group's contribution	

Table 6. Please add a list with the research group's monographs/scientific books.

Please delete lines which are not used.

1	Title - Authors (Please highlight group members)- link to webpage (if possible)
2	

2.2 Research group's societal contribution

Describe the societal impact of the research group's research. Consider contribution to education, economic, societal and cultural development in Norway and internationally.

Table 7. The research group's societal contribution, including user-oriented publications, products (including patents, software or process innovations

Instructions: Please select 5–10 of your most important user-oriented publications or other products from the last 5–10 years with emphasis on recent publications/products. For each item, please use the following formatting. Please delete lines which are not used.

3. Challenges and opportunities

Information about the strengths and weaknesses of the research group is obtained through the questions above. In this chapter, please reflect on what might be the challenges and opportunities for developing and strengthening the research and the position of the research group.

Short version

Scales for research group assessment

Organisational dimension

Score	Organisational environment
5	An organisational environment that is outstanding for supporting the production of excellent research.
4	An organisational environment that is very strong for supporting the production of excellent research.
3	An organisational environment that is adequate for supporting the production of excellent research.
2	An organisational environment that is modest for supporting the production of excellent research.
1	An organisational environment that is not supportive for the production of excellent research.

Quality dimension

Score	Research and publication quality	Score	Research group's contribution Groups were invited to refer to the Contributor Roles Taxonomy in their description https://credit.niso.org/
5	Quality that is outstanding in terms of originality, significance and rigour.	5	The group has played an outstanding role in the research process from the formulation of overarching research goals and aims via research activities to the preparation of the publication.
4	Quality that is internationally excellent in terms of originality, significance and rigour but which falls short of the highest standards of excellence.	4	The group has played a very considerable role in the research process from the formulation of overarching research goals and aims via research activities to the preparation of the publication.
3	Quality that is recognised internationally in terms of originality, significance and rigour.	3	The group has a considerable role in the research process from the formulation of overarching research goals and aims via research activities to the preparation of the publication.
2	Quality that meets the published definition of research for the purposes of this assessment.	2	The group has modest contributions to the research process from the formulation of overarching research goals and aims via research activities to the preparation of the publication.
1	Quality that falls below the published definition of research for the purposes of this assessment.	1	The group or a group member is credited in the publication, but there is little or no evidence of contributions to the research process from the formulation of overarching research goals and aims via research activities to the preparation of the publication.

Societal impact dimension

Score	Research group's societal contribution, taking into consideration the resources available to the group	Score	User involvement
5	The group has contributed extensively to economic, societal and/or cultural development in Norway and/or internationally.	5	Societal partner involvement is outstanding – partners have had an important role in all parts of the research process, from problem formulation to the publication and/or process or product innovation.
4	The group's contribution to economic, societal and/or cultural development in Norway and/or internationally is very considerable given what is expected from groups in the same research field.	4	Societal partners have very considerable involvement in all parts of the research process, from problem formulation to the publication and/or process or product innovation.
3	The group's contribution to economic, societal and/or cultural development in Norway and/or internationally is on par with what is expected from groups in the same research field.	3	Societal partners have considerable involvement in the research process, from problem formulation to the publication and/or process or product innovation.
2	The group's contribution to economic, societal and/or cultural development in Norway and/or internationally is modest given what is expected from groups in the same research field.	2	Societal partners have a modest part in the research process, from problem formulation to the publication and/or process or product innovation.
1	There is little documentation of contributions from the group to economic, societal and/or cultural development in Norway and/or internationally.	1	There is little documentation of societal partners' participation in the research process, from problem formulation to the publication and/or process or product innovation.

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