

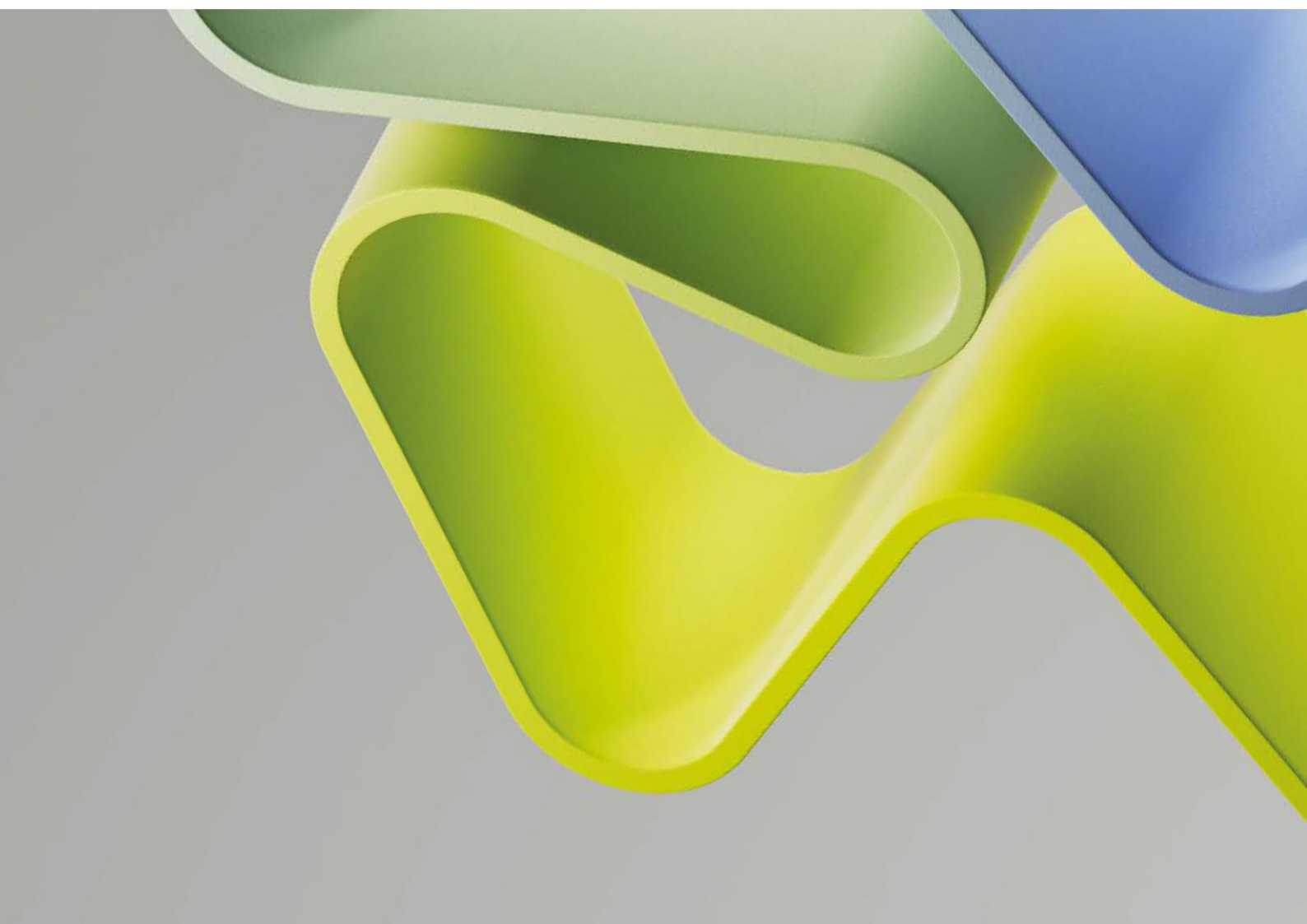
Evaluation of Medicine and Health 2023-2024

Evaluation report – Panel 5a

Research Group: Centre for Age-related Medicine (SESAM)

Administrative Unit: Stavanger University Hospital

Institution: Stavanger University Hospital



Content

Preface	4
Abstract	5
Overall assessment	5
Recommendations	6
1. Strategy, resources and organisation	7
1.1 Research group's organisation and strategy	7
1.2 Research group's resources	8
1.3 Relevance to the institution	9
2. Research quality	10
2.1 Research group's scientific quality	10
2.2 Research group's societal contribution	11
Appendices	12

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 advice 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

SESAM (Centre for Age-related Medicine) is a research group established by the Western Norway Regional Health Authority in 2010 to address the challenges associated with ageing, cognitive impairment, and dementia. SESAM conducts interdisciplinary research improving coordination, research, professional development, networking, and education in age-related medicine. The benchmark of the group is to perform high quality research on cognitive impairment and dementia in elderly in Norway and beyond. This is monitored via the institutional benchmark criteria (performance criteria) and administrative unit targets for 2025. The group employs a centralized leadership model under, with distributed leadership at the subprogram level. SESAM has demonstrated remarkable growth, expanding from 18 staff members in 2012 to 61 in 2022, with significant funding acquisitions, including major EU grants. Their research quality is evidenced by a substantial number of peer-reviewed publications, international collaborations, and involvement in major clinical trials. SESAM has performed excellently for its organisational dimensions. The research quality has been overall very good. The societal contribution aspect of SESAM is outstanding and shows excellent engagement with users specifically. Compared to similar national and international research groups, SESAM is clearly a leading group for age-related research on a national level and interacts with similar groups on an international level. This is further substantiated by its robust infrastructure, high-quality research output, extensive societal impact, and active involvement in education, economic sustainability, and societal impact. Taken together this makes SESAM's approach a lead within age-related medicine in Norway.

Overall assessment

SESAM is a very strong research group, which has the following strengths:

- Excellent organisation across various institutions
- Bringing together multi-disciplinary expertise across its networks of experts
- Excellent acquisition of national and international funding
- Excellent publications – albeit author attributions are not as clear as they could be (see also weaknesses)
- Excellent societal impact via user involvement, which should be commended.

Weaknesses:

It was not clear whether some of the key personnel's contributions could be attributed to SESAM specifically or their home institution. Clarification on this point would help to determine the research quality aspect of the application.

Grading:

Dimensions	Score
Organisational dimension (How adequate the organisational environment is in supporting the production of excellent research).	5
Quality dimension (Research and publication quality/Research group's contribution)	4/4
Societal impact dimension (Research group's societal contribution/User involvement)	5/5

Recommendations

- SESAM should continue fostering interdisciplinary collaboration among its subgroups to leverage diverse expertise and address complex challenges in age-related medicine effectively.
- While SESAM has secured substantial funding from various sources, including national and international grants, efforts should be made to secure long-term funding to reduce volatility.
- Unequal gender distribution across senior staff should be addressed by considering career planning for current junior staff.
- SESAM should maintain its focus on research quality by promoting a culture of excellence in research conduct and dissemination.
- Given SESAM's success in establishing international collaborations, efforts should be made to further expand and strengthen these partnerships.
- SESAM should continue to prioritize activities that contribute to societal impact. This includes expanding user-oriented publications, promoting public engagement, and developing innovative solutions to address societal needs.
- SESAM should invest in programs and initiatives aimed at supporting the professional development of researchers at all career stages, including mentorship, training opportunities, and career advancement pathways.

1. Strategy, resources and organisation

1.1 Research group's organisation and strategy

SESAM (Centre for Age-related Medicine) was established in 2010 by the Western Norway Regional Health Authority to enhance coordination, research, professional development, networking, and education in age-related medicine. It is an interdisciplinary group that has grown from 18 to 61 staff members by 2022, including 36 researchers and 14 PhD students. Additionally, WiseAge, a PPI program, was established in 2017 to ensure active user participation in research initiatives. SESAM's primary goal is to develop sustainable care and cure strategies for aging populations, focusing on digitisation, treatment, and care provision. The group has performed well against prior benchmarks set by the administrative unit, particularly in publications, staff development, funding acquisition, and international cooperation. The benchmark of the group is to perform high quality research on cognitive impairment and dementia in elderly in Norway and beyond. This is monitored via the institutional benchmark criteria (performance criteria) and administrative unit targets for 2025. Research group benchmarks for 2025 are clear and measurable and reflect the anticipated development of SESAM towards excellence. Specifically, the organisation met its benchmarks to meet its staffing and host institution targets. The host institution provides essential support to SESAM, including biostatistical resources, clinical research infrastructure, biobanking services, grant application support, GCP training, legal guidance, and access to national networks. There is also ongoing postgraduation education with SESAM contributing to the completion of 7 master's and 11 PhD student projects.

SESAM is a very strong, interdisciplinary group, which has clearly benefitted from bringing together people with different expertise to leverage the research further. This has resulted in meeting or exceeding many institutional targets by 2022.

Recommendations:

- Continued emphasis on interdisciplinary collaboration and user involvement.
- Exploration of opportunities for commercialization and patents to translate research into practical applications.
- Continued focus on securing international funding and expanding global partnerships.

1.2 Research group's resources

SESAM has grown significantly since inception, with 61 staff members by 2022, including 36 researchers and 14 PhD candidates with unequal gender distribution in some categories. The research group employs a centralized leadership model, supplemented by distributed leadership at subprogram levels (i.e. SESAM Care, Treat and Digitize). SESAM plays a vital role in researcher training, particularly in educating master's and PhD students across its research programs. Funding of SESAM is substantial and in total continuous including basic funding (10.5 Mio NOK per year) as well as external funding from industry/private sectors (0.2 to 36 Mio NOK per year), other national (3 to 42.8 Mio NOK per year) and international institutions (3.6 to 34.7 Mio NOK per year). However, the distribution among funding partners strongly varies across years.

SESAM has demonstrated strong growth and impact over the years, evidenced by its substantial funding portfolio and diverse sources of funding. The group's leadership structure facilitates efficient management, and its commitment to researcher training aligns with its mission. Gender equality in senior physician, physician and psychologist categories is lacking, whereas researchers/post-doc and PhD categories are rather balanced in this respect. As diverse sources of funding strongly vary across years, it may be challenging to establish a stable financial model. However, this impression may be also due to the way how funding is reported.

Overall, an excellent portfolio, however for some SESAM members it is not clear which their main institution is and how their outputs are counted towards specifically SESAM. Clarification on this point would be helpful.

Recommendations:

- Invest in leadership development programs to empower emerging leaders within the group and promote distributed leadership.
- Address unequal gender distribution in senior/clinical positions
- Clarify the overall funding/grant policy to establish stable permanent funding for infrastructures. Explore avenues for cross-disciplinary collaborations to foster innovation and address complex challenges in age-related medicine

1.3 Relevance to the institution

The group plays an important role in conducting fundamental and clinical research to impact patient treatment in their administrative unit. The respective synopsis very clearly outlines this in detail. Further, SESAM has fostered extensive international cooperation, evident from numerous collaborations and publications. The group's benchmarks align with institutional targets, including publication volume, international co-authorship, PhD completion, and funding acquisition, including to coordinate at least 1 and partner at least 2 EU research project and contribute to 3 PhD student project per year.

SESAM has demonstrated clearly achieving institutional targets and contributing to the institutional strategies. Its substantial publication output, international collaborations, and successful funding acquisitions reflect its effectiveness. However, there is an opportunity to enhance commercialization efforts to translate research into practical applications, aligning with institutional objectives.

Recommendations:

- Strengthen efforts towards commercialisation by exploring patents and commercial opportunities.
- Continue international collaborations and seek diverse funding sources to maintain financial stability.

2. Research quality

2.1 Research group's scientific quality

SESAM is at the forefront of international research in geriatric clinical science, focusing on maintaining brain health and treating neurodegenerative diseases across the 10 projects listed in the self-assessment with 50% of these projects being interventional. They support major national and international initiatives, leading to substantial international funding for clinical trials. Notable achievements include establishing new longitudinal outcomes, biomarkers, and treatment targets through initiatives like DEMVEST and the DLB consortium. Their research output is reflected in high-quality publications (i.e., 15 are listed here), with many in higher-tier journals.

Overall, SESAM demonstrates excellent research quality and productivity, contributing significantly to the field of geriatric clinical science both nationally and internationally. However, oddly the listed publications in the submission are not necessarily the highest impact publications and many are review articles. It begs the question again whether members different affiliations preclude the inclusion of certain outputs as they might be attributed to other institutions. Based on this information we could not score the research quality as high as it could have been. For the future, it would be helpful to clarify which contributions are led by SESAM or affiliated institutions. In addition, it is not evident from the list of publications to what extent early career scientists (ECS) are involved in the publication strategy of SESAM.

SESAM's ability to secure substantial international funding for clinical trials underscores their competitiveness and impact.

Recommendations:

- Continue fostering collaborations and seeking international funding opportunities to expand research initiatives and clinical trials.
- Enhance dissemination efforts to ensure research findings reach a wider audience and influence clinical practice.
- Invest in ECS and career development programs to attract and retain high-performing researchers, ensuring sustained excellence in research output.

2.2 Research group's societal contribution

SESAM makes substantial societal contributions in education, economics, and well-being. They have developed educational materials, engaged in public conferences, interviews, and campaigns to disseminate knowledge. Their e-health platform and clinical trial infrastructure contribute to cost-effective care solutions and commercial trials, positively impacting Norway's economy. Of particular note is the WiseAge patient and public involvement (PPI) program.

The group's societal impact is outstanding. Their efforts in education, economic sustainability, and societal well-being reflect a commitment to address pressing societal challenges associated with ageing and neurodegeneration. The diverse range of initiatives underscores the group's effectiveness in engaging stakeholders and disseminating valuable knowledge to various audiences. Again, of particular note is the WiseAge program which should be commended for its service user involvement in research.

Recommendations:

- Consider expand outreach efforts to reach broader demographics, including vulnerable and less reached populations.
- Strengthen collaborations with governmental and non-governmental organizations to scale up initiatives and maximize impact.
- Develop tailored educational materials and programs for specific target groups, such as caregivers and healthcare professionals, to address their unique needs.

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 5a

Name	Title	Institution
Katya Rubia (Chair)	Professor	King's College London
Gordon Harold	Professor	University of Cambridge
Frank Padberg	Professor	Ludwig-Maximilians University (LMU) - Munich
Michael Hornberger	Professor	University of East Anglia
Heleen Riper	Professor	University of Amsterdam
Veena Kumari	Professor	Brunell University London
Gordon Harold	Professor	University of Cambridge

Heleen Riper had a conflict of interest with the evaluation of the Research Group for Clinical Psychology (IKP) at the University of Bergen (report 17).

This meant that for those evaluations she did not have access to the self assessments or survey data and she did not participate in the discussion of the research group, nor did she 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): _____

Content

Introduction.....	3
Guidelines for completing the self-assessment	4
1. Organisation and strategy	5
1.1 Research group's organisation.....	5
1.2 Research group's strategy	5
1.3 Relevance to the institutions.....	6
1.4 Research group's resources	6
1.5 Research group's infrastructures	7
1.6 Research group's cooperations.....	8
2. Research quality	9
2.1 Research group's scientific quality	9
2.2 Research group's societal contribution.....	12
3. Challenges and opportunities.....	13

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).

<p>Interdisciplinary (within and beyond the group)</p>	<p>About 1/3 page</p>
<p>Collaboration with other research sectors e.g. higher education, research institutes, health trusts and industry.</p>	<p>About 1/3 page</p>
<p><u>Transdisciplinary</u> (including non academic stakeholders)</p> <p><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></p>	<p>About 1/3 page</p>

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.

Norges forskningsråd

Besøksadresse: Drammensveien 288
Postboks 564
1327 Lysaker

Telefon: 22 03 70 00

Telefaks: 22 03 70 01

post@forskningsradet.no

www.forskningsradet.no

Design: [design]

Foto/ill. omslagsside: [fotokreditt]

