

Project abstract

Name of DKFZ research division/group:	<i>Risk Adapted Prevention Group, Division of Primary Cancer Prevention (C120)</i>
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Group homepage: Please visit our website for further information on our research and recent publications.	https://www.dkfz.de/en/employees/mahdi-fallah

PROJECT PROPOSAL

Research Focus of the Risk-Adapted Cancer Prevention (RAD) Group

The Risk-Adapted Prevention (RAD) Group works to identify people who are at higher risk for common cancers—especially colorectal, breast, and prostate cancer—so that screening can begin at the most appropriate age for each person. Our work shows that screening does not need to follow universal rules. Instead, we provide **evidence-based recommendations for the risk-adapted starting age of cancer screening**, using information that clinicians routinely collect, such as family history, personal medical history, medication use, demographic factors, and socioeconomic indicators.

We also address cancer disparities by incorporating factors that may influence risk differently across groups, including differences related to race, ethnicity, or social conditions. Our aim is to support cancer prevention that is **personalized, equitable, and cost-conscious**, while remaining practical for clinicians and policy makers.

The RAD Group has produced **about 100 peer-reviewed publications**, including numerous first- and last-author papers in leading journals such as *BMJ*, *Annals of Oncology*, *Gastroenterology*, *JAMA Oncology*, *PLOS Medicine*, *Eur Urol*, *Leukemia*, *JAMA Net Op*, *JNCCN Science Bulletin*, *Am J Gastroenterol*, etc. Many of these studies have been highlighted by major journals, featured in the media, or selected for continuing medical education activities.

Potential projects for clinician scientists

Clinician scientists joining our group will work on projects that help determine when individuals with specific risk profiles should begin cancer screening, based on evidence gained from large population-based datasets. One key resource is the Swedish Family–Disease Database, which includes more than 16 million individuals and provides rich information on cancers, diseases, and linked family history dating back to 1964. This allows



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us to quantify age-specific cancer risk and provide evidence-based recommendations for risk-adapted screening ages.

Other potential projects are on the race-adapted starting age of colorectal/prostate cancer screening. This postdoc position will be part of the big international [ACED](#) consortium, which is an approximately £50m partnership between the German Cancer Research Center (DKFZ), Cancer Research UK, Dana Farber Cancer Institute, University of Manchester, University College London, Knight Cancer Institute at OHSU and University of Cambridge. One potential postdoctoral project is to develop and refine/validate our risk-adapted model for initiating colorectal/prostate/breast cancer screening in individuals with certain characteristics related to cancer inequality, such as race, ethnicity, sex, reproductive profile, and socioeconomic status (occupation, education, income, etc.). The postdoc will have a co-mentor from another ACED partner institute in the US or UK. Participation in the ACED Alliance extends our impact in early detection by bringing together an international network of researchers who can pursue new directions beyond what a single institution could achieve. ACED has developed a program of rapid research funding that responds to the evolving questions in early detection. This program supports everything from pilot projects to large-scale initiatives and brings in a new generation of scientists through training grants and educational opportunities.

In addition, fellows will have opportunities to participate in international collaborations, including analyses of UK Biobank, US SEER data, and the Utah Family Cancer Database. These collaborations help evaluate how well our recommendations apply to different populations and health systems.

We have developed clear and transparent approaches for determining the exact risk-adapted starting age of screening, based on the age at which an individual reaches the same risk as today's guideline entry age for the average-risk population. The fellow will help test and refine these evidence-based thresholds, assess their clinical value, and support strategies for integrating these findings into screening recommendations and clinical practice. Overall, the project advances personalized cancer prevention that can be implemented in real-world settings.

Group Leader

The RAD Group is led by **Mahdi Fallah, MD, PhD**, Visiting Professor at Lund University, former Full Professor of Medicine (Epidemiology) at the University of Bergen, and former Adjunct Professor at the University of Bern. His research is dedicated to developing **risk-adapted strategies for cancer prevention** using large population-based data and international collaborations.

Desired Qualifications

- Demonstrated contribution—preferably as **first author**—to peer-reviewed publications.
- Experience with SAS (preferred), Stata, R, SPSS, or willingness to learn SAS.



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- Experience in research on cancer prevention, screening, epidemiology, or risk assessment is highly valued.

Notes for Applicants

- This fellowship is ideal for those who wish to address questions that matter in daily clinical practice, such as:
“Given my patient’s family history, health background, and socioeconomic profile, what is their 10-year cancer risk, and at what age should screening begin?”
Each clinician scientist fellow generally focuses on one cancer and one or two exposures, chosen jointly based on interest, background, and data availability.
- Candidates are encouraged to apply for external funding as part of their scientific career development.



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