Review of Diversity and Inclusion details section of BHF grant application forms

September 2025

British Heart Foundation

Contents

Introduction and background

BHF's Equality, Diversity and Inclusion Strategy Igniting Change was launched in 2022, setting out an ambition that, by 2025, our research community would be actively considering strategies to improve the representativeness of their research.

To this end, between January and June 2023, a new Diversity and Inclusion details section was introduced across most BHF research grant application forms, where grant applicants are asked to provide information on:

- Whether and how they have considered factors such as age, sex, gender or ethnicity in the design of their research project
- Male/female representation in the proposed study

BHF committee members and external reviewers are asked to take this information into account when assessing the design and methods of funding applications.

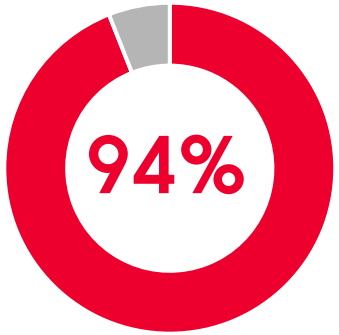
This paper summarises applicants' responses to the questions in the Diversity and Inclusion section of research grant application forms over the first two years of its implementation.

Research grant applicants were asked to provide a response to Diversity and Inclusion questions if the proposed research involves human participants, animals, or samples/data relating to humans or animals.

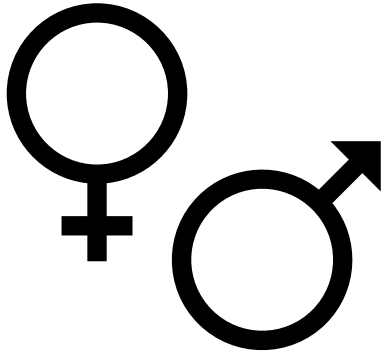
571 research grant applications considered at BHF committee meetings between April 2023 and June 2025 are included in this review.

Applications that were withdrawn or did not provide a response to the Diversity and Inclusion details section have been excluded.

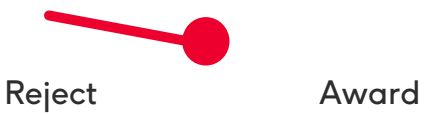
Summary of key findings



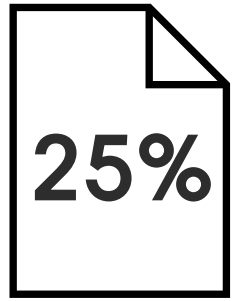
Most BHF grant applicants indicate that they have considered factors such as age, sex, gender or ethnicity in the design of their research project.



Most research applications involving animals or humans outline plans to involve both sexes and roughly equal numbers of male and females.



Single sex research projects are less likely to be awarded than applications planning to involve both sexes.



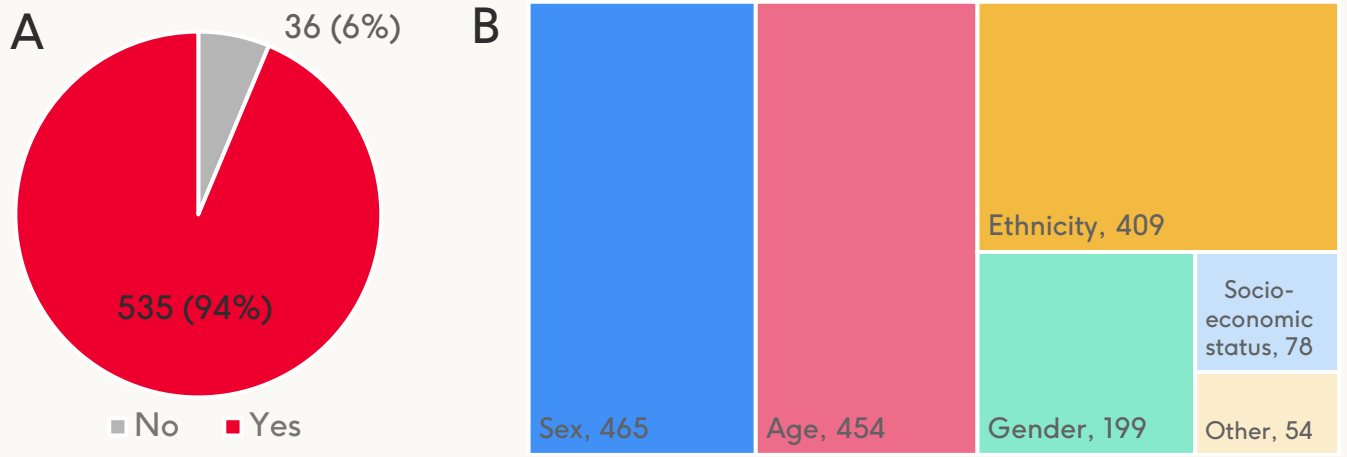
25% of independent expert reviews assessed contain comments relevant to the Diversity and Inclusion details section – suggesting this information is being considered by committee members and external reviewers when assessing applications.

Consideration of factors such as age, sex, gender or ethnicity in research design and topic

Applicants are asked to respond Yes/No to whether they have considered factors including, but not limited to, age, sex, gender or ethnicity in the designing of their research question, research methods, or in how they plan to collect and analyse their data. If Yes, they are asked to provide details. If No, they are asked to explain why this doesn't apply or is not feasible for the study.

A 'Yes' response was provided for 553 (94%) of applications assessed (Figure 1A). Sex and age were the most frequently mentioned demographic factors (Figure 1B), likely reflective of applications focused on pre-clinical models, but the majority of applications also mention other factors - 383 (67%) applications mention 3+ factors. An analysis separating animal studies from human studies was not possible, as all the studies involving animals assessed also included tissue/samples/data relating to humans (e.g. validation of findings in human cells).

Figure 1A: Applicant responses to the questions: 1. Have you considered how factors such as age, sex, gender or ethnicity could be relevant to the design of your research project and/or the topic being studied? 2. If Yes, please provide details. A: Proportion of 571 research grant applications considered at BHF committee meetings between April 2023 and June 2025 with Yes/No to question 1. **B: Demographic factors mentioned in details provided for the 553 applications with answer Yes to question 1.** The details provided by applicants giving a 'Yes' response were coded based on the presence of key words for relevant demographic factors (e.g. sex was counted as being considered by the applicant if the question response contained the words sex, male or female). Other includes sexual orientation, individuals living in rural or remote areas, first language other than English.



Consideration of factors such as age, sex, gender or ethnicity in research design and topic

Applicants are asked to respond Yes/No to whether they have considered factors including, but not limited to, age, sex, gender or ethnicity in the designing of their research question, research methods, or in how they plan to collect and analyse their data. If Yes, they are asked to provide details. If No, they are asked to explain why this doesn't apply or is not feasible for the study.

A 'No' response was provided for 36 (6%) of applications assessed (Figure 1A). Of these responses, 5 appeared to be in error. For example, one applicant responded 'No', but described how they plan to involve both male and female animals in their research project as relevant to their research question and report both combined and sex-disaggregated data. The most common reasons provided for not considering diversity in research design were:

Not relevant for research question	10 of 36, e.g., projects to demonstrate technical feasibility of a technique or biochemical studies
Limited sample availability	7 of 36, e.g., research using rare donor heart samples
Using retrospective data	4 of 36, e.g., research using data from an older cohort study with limited demographic data collection
Using commercially available cells where demographic data is not known	4 of 36

Other reasons provided included that the study proposed was not powered to look for differences between demographic groups, study ethics not allowing demographic data collection, or research using early embryos where sex cannot be determined.

Male and female representation

Applicants are asked to provide information on whether they plan to include both male and female human participants/animals, or tissue/samples/data from both male and female participants/animals and provide a brief description of the proposed sex balance. For animal studies, applicants can answer 'Unknown' where the nature of the experimental work prevents biological sex from being determined (e.g., some developmental biology studies). Where there are no plans to involve both male and female human participants or animals in the research, applicants are asked to provide a brief explanation.

Applications involving animals

For 188 applications involving animals or animal tissue/samples/data, 160 (85%) stated that both sexes would be included (Figure 2A). There were 9 applications where sex cannot be determined in the biological model to be used (e.g. Zebrafish larvae).

For applications involving both sexes, the majority (148 [93%]) planned to involve equal or roughly equal numbers of male and female animals. There were 8 applications planning to involve a higher proportion of male (3) or female (5) animals. In most cases, this was due to sex-specific models being used for specific experiments (e.g. projects involving cremaster muscle studies, or assessment of placental and uterine artery function).

For the 19 applications involving a single sex, the most common justifications provided were:

To minimise experimental variability	8 of 19
Due to the model being used	5 of 19, e.g., studies involving pigs preferring females as they can be more easily housed as a group
Due to the research area	4 of 19, e.g., female animals used due to females having a higher incidence of pulmonary arterial hypertension
To minimise research costs	2 of 19

Male and female representation

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Applications involving humans

For 571 applications involving human participants or human tissue/samples/data, 532 (92%) stated that both sexes would be included (Figure 2B).

For applications involving both sexes, the majority (382 [72%]) planned to involve equal or roughly equal numbers of male and female participant/samples/data. There were 64 applications planning or anticipating involving a higher proportion of male participants/samples/data, due to either the demographics of their proposed patient population, or using existing cohort data/samples with a higher proportion of male participants. There were 31 applications planning or anticipating involving a higher proportion of female participants/samples/data, due to the demographics of their proposed patient population (e.g. spontaneous coronary artery dissection).

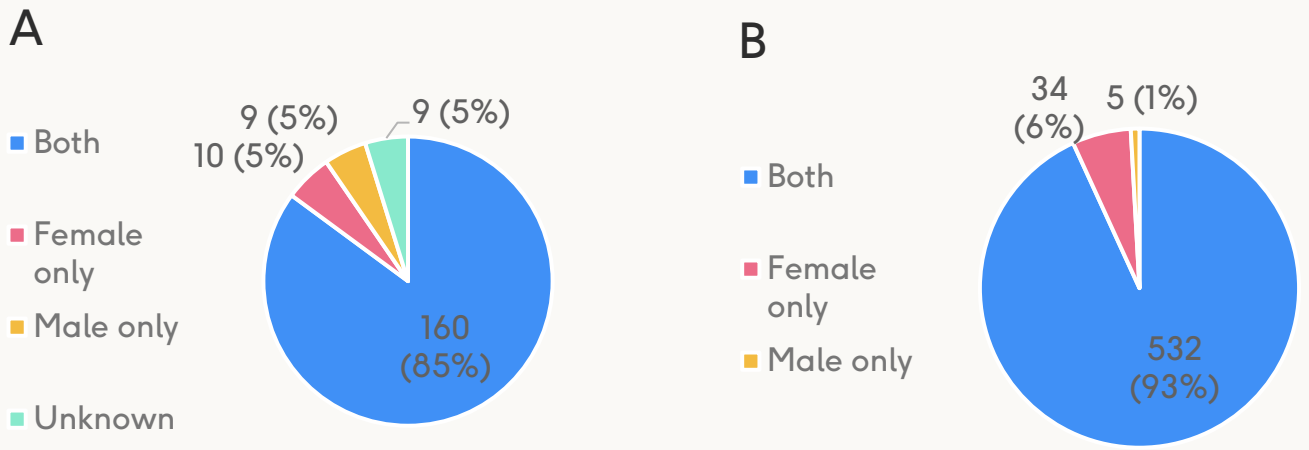
For the 16 applications involving a single sex, the justifications provided were:

Female only studies	Due to the specific research area (e.g. peripartum cardiomyopathy)
	The research proposed using only a genetically female stem cell line
Male only studies	To minimise research costs
	Only male data/samples available for the research (e.g. a project using data from a male only cohort study)

Male and female representation

Applicants are asked to provide information on whether they plan to include both male and female human participants/animals, or tissue/samples/data from both male and female participants/animals and provide a brief description of the proposed sex balance. For animal studies, applicants can answer 'Unknown' where the nature of the experimental work prevents biological sex from being determined (e.g., some developmental biology studies). Where there are no plans to involve both male and female human participants or animals in the research, applicants are asked to provide a brief explanation.

Figure 2. Male/female representation in grant applications considered at BHF committee meetings between April 2023 and June 2025. A: Proportion of 188 applications involving animals or animal tissue, samples or data planning to include both sexes, a single sex or unknown (where the nature of the experimental work prevents biological sex from being determined – e.g. some developmental biology studies). **B:** Proportion of 571 applications involving human participants or human tissue, samples or data planning to include both sexes or a single sex.



Award rates by sex representation

While the number of single-sex research applications are relatively small, they are less likely to be awarded than applications planning to involve both sexes.

This suggests that some of the justifications provided for conducting a single sex study are not viewed as sufficient by reviewers and committee members (see examples, right).

		Awarded	Rejected	Award %
Both sexes	Animal	159	373	30%
	Human	52	109	33%
Female only	Animal	3	34	8%
	Human	4	30	13%
Male only	Animal	2	7	22%
	Human	0	5	0%
Unknown	Animal	3	6	33%

For the two single sex animal research applications where cost was provided as the justification, 2 of 5 reviewers and 1 of 4 reviewers commented that this was not an adequate justification.

For 4 out of these 5 applications, at least one reviewer commented that being including only male participants, tissue or samples was a limitation of the proposed research.

Use of Diversity and Inclusion details by BHF committee members and externals reviewers

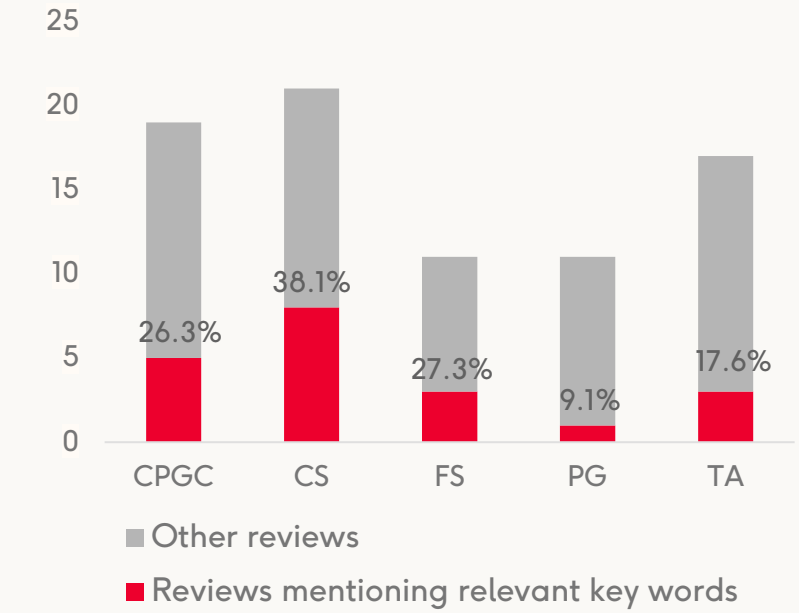
BHF committee members and external reviewers are asked to consider information provided in the Diversity and Inclusion details section of information when assessing the design and methods of research applications.

Three funding applications considered by each committee since the section was implemented were randomly selected to assess whether the written reviews received referred to the Diversity and Inclusion information provided.

20 (25%) of 79 written reviews assessed includes comments relevant to this section (Figure 3), suggesting that this information is being considered as part of BHF funding decisions.

Figure 3. Mention of Diversity and Inclusion information in written reviews in 15 randomly selected grant applications considered at BHF committee meetings between April 2023 and June 2025. 3 applications were randomly selected per committee for review. Committee codes: CPGC, Chairs and Programme Grants Committee. CS, Clinical Studies. FS, Fellowships. PG, Project Grants. TA, Translational. **A**: Proportion of reviews by committee including comments relevant to this section (e.g. mentioning diversity, representation, under-served groups, sex/gender/ethnicity/etc). **B:** Examples of relevant reviewer comments.

A



B

"The applicants have considered differences between the sexes and intend to conduct studies in male and female primary cells."

"It would be good to emphasise/include tests for any markers in different demographic or ethnic groups."

"Will the results only be applicable to men? Why not aim to include equal proportions of men and women?"

Conclusion and recommendations

Overall, this review suggests that BHF's current application form processes may help encourage applicants to consider strategies to improve the representativeness of their research, and this information may be considered by committee members and reviewers when assessing applications.

However, the following steps would help make it clearer that it is important to BHF that the research we fund is as representative as possible of the relevant population.

These changes will be implemented by the end of 2025, in parallel with other changes being made to BHF funding schemes in line with our 2025 research strategy.

Publish a brief formal policy on diversity in research design, in line with recommendations from the MESSAGE (Medical Science Sex and Gender Equity) initiative (which BHF is a contributor to).

Make the Diversity and Inclusion section mandatory to complete when applying for BHF funding for a defined research project.

Grant applicants/holders for studies involving recruiting/following up living patients/people should be asked about demographics of the study population and plans to recruit a representative group of participants (as is currently the case for Clinical Study Grants).

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