Public Attitudes for Genomic Policy Brief

Return of Research Results

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Global Alliance for Genomics & Health

Understanding public and other stakeholder attitudes towards analysis and the return of clinically actionable results and other data will assist researchers, research institutions, professional bodies, and policymakers in formulating further best practice guidance and/or regulatory tools. The ***Your DNA, Your Say*** (YDYS) study examined whether the return of research results – described in terms of a readout of an individual's DNA — would influence the willingness of members of the public to donate their DNA data and medical information to research.



What do we mean by return of results?

The increasing availability and sophistication of genomic analysis is enhancing our understanding of the role of genomic variants in disease, particularly through whole genome and whole exome sequencing. Clinically actionable results, which reveal or predict conditions where preventive measures and/or treatments are available, may be generated as a result of genomic analysis of an individual's genome, occurring in both clinical or research settings. However, the precise scope of the legal and ethical

responsibility to return the results of genome analysis to research participants remains somewhat unclear, and current requirements vary between jurisdictions.

As a starting point, it is helpful to consider how 'return of results' is handled in clinical contexts. All clinical genetic testing is primarily designed to detect and return results related to the purpose of testing. Whole genome and whole exome sequencing may also detect clinically actionable genomic variation not otherwise related to the purpose of testing. Under what circumstances, if any, it is permissible, recommended, or mandatory to return such findings in clinical contexts is controversial. For example, the US-based American College of Medical Genetics and Genomics ('ACMG') has issued a set of guidelines with a 'minimum list' of variants that should be routinely assessed by clinicians on the basis that they have a high degree of clinical validity and utility. However, this approach has not been endorsed by professional bodies in some other jurisdictions.

In the research context, whether and how results should be returned has also been contested. Indeed, a recent review of international, regional and national laws relating to return of research results and incidental findings across 20 countries revealed a wide divergence in approaches. In contrast to these regulatory and legal differences between jurisdictions, there is broad consensus amongst researchers and research participants that return of results, whether related to the purpose of the research study or incidental, is desirable, especially when such findings are actionable. In light of this, in 2021 the Global Alliance for Genomics and Health (GA4GH) developed a policy addressing Clinically Actionable Genomic Research Results, which advocates for return of results to participants, without prescribing which results to return. The H3Africa Consortium has provided further guidance to inform decisions about whether to return individual genetic research findings by Consortium members to research participants.

What do we know about attitudes towards return of research results?

Understanding public and other stakeholder attitudes towards analysis and the return of clinically actionable results and other data will assist researchers, research institutions, professional bodies, and policy makers in formulating further best practice guidance and/or regulatory tools.

Multiple studies have indicated that research participants have a high interest in receiving their individual research results. Across 221 articles analysed in a recent systematic review, research participants showed high interest in receiving primary research findings (that is, findings directly related to the research question). This was found to be the case particularly when the results were clinically actionable, although the studies analysed revealed more equivocal trends with regard to secondary and incidental findings (referred to by the authors of the systematic review as 'secondary and unsolicited findings').

Overall, the authors conclude that the empirical evidence provides strong support, whether from the perspective of the potential recipients of research results or researchers and other stakeholders, for return of research results that are reliable and clinically relevant.

However, most (80%) of the studies identified by the systematic review were undertaken in the US and Canada. Given international variation in both health systems and attitudes to personal data, there remains an open question over whether the outcomes of this extensive body of empirical studies in these jurisdictions, which tend to support the return of research results, is a clear indicator of global attitudes. This points to the need to examine stakeholder views in other, more culturally diverse contexts. *Your DNA, Your Say* (YDYS) is an attempt to address this need.

What does the Your DNA Your Say Study reveal about public attitudes towards return of research results?

YDYS was a questionnaire survey that collected responses between 2017 and 2019. The YDYS dataset includes responses from 37,000 individuals across 22 countries. The study examined whether the return of research results – described in terms of a readout of an individual's DNA – would influence the willingness of members of the public to donate their DNA data and medical information to research. The study revealed substantial variation in the extent to which return of results influenced willingness to donate across the countries studied.

In 16 of the 21 countries studied in the YDYS survey, respondents were substantially less likely to be motivated by the return of research results to donate DNA or health data than those in the US and more likely to be not influenced by the return of these results at all. This was only countered by respondents from Russia, where participants were likely to be more influenced. Indeed, respondents from across 20 countries had lower odds of being partially or wholly influenced by return of results than those from the US.

Overall, 25.2% of the respondents said they would not donate their DNA and medical information (regardless of return of results); 24.4% of the respondents said their decision to donate would be partially influenced, and 18.4% of the respondents said their decision would be wholly influenced by return of results. A little more than 17% of the respondents reported that they were unsure, whereas 14.7% of the respondents reported that their decision to donate would not be influenced by return of results at all.

Responses relating to willingness to donate show that being wholly influenced by return of results was most commonly reported by respondents from Russia (32.7%), the US (30.5%), India (28%), and Pakistan (26.9%). This was least commonly reported by respondents from Japan (9.2%), Spain (11.6%), Sweden (12.7%), and the UK (13.9%). Being partially influenced by return of results was most commonly reported by respondents from China (39.4%), Poland (27.8%), and Russia (27.6%). Respondents from Brazil, Portugal and Italy were most likely to report that return of results had no influence on their willingness to donate their data (24.1%, 23.7%, and 22.2% respectively). This clearly

illustrates that there are differences in public attitudes towards return of research results between countries, and that studies focused wholly on the US and Canada do not reflect this global diversity.

Lessons from YDYS and earlier empirical studies

The comparative findings from YDYS illustrate that public attitudes to return of research results are nuanced and heterogeneous. Specifically, the findings suggest that there is a need to distinguish between peoples' general interest in information about themselves and the expectation that this will be provided as a quid pro quo for data donation, and that the importance of the latter varies across countries.

These findings are important when considering the role of public perspectives in shaping the design of return of results policies, particularly where genomics initiatives contemplate moves beyond the return of narrow predefined results (such as the list proposed by the ACMG) to more open forms of data access. It suggests that while people may be highly interested in receiving research results – and there may be other valid ethical arguments for providing these – it does not necessarily follow that not receiving results would prevent their participation.

Conclusion

The results of the YDYS study suggest that while members of the public may be guided by reciprocity in their decisions about whether or not to share their DNA and medical information, it is not necessarily in the sense of a transactional quid pro quo for participation. This suggests that, rather than a transactional arrangement, the duty of reciprocity should be seen as underpinning the evolution of a robust social contract for genomic medicine into the future.

It should be noted that further research into public attitudes towards return of research results is currently being undertaken in many jurisdictions, using a variety of methods beyond population-wide surveys.

Resources

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Further reading

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This brief is part of the Public Attitudes for Genomic Policy blog series, developed by the GA4GH Regulatory & Ethics Work Stream (REWS). ***Visit here*** *to read the past brief.*

Your DNA, Your Say

Return of research results

What results from genomics research to feed back to patients and participants is a persistent question

Genomics research produces a range of results. Policies diverge on whether to return results to patients and participants, which ones to return and how to do so.

The interest and expectations of participants related to receiving research results is an important factor in this discussion.

Multiple studies have shown that research participants are highly interested in receiving their individual research results.

clinical research setting

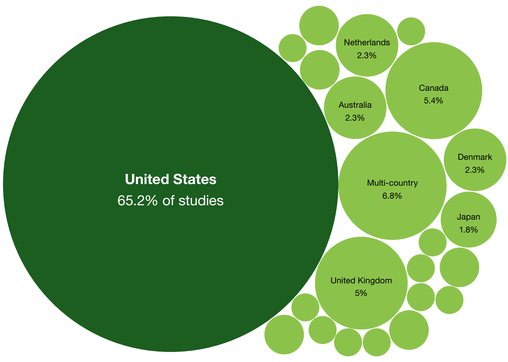
73%-95%
of the public is **interested** in individual research results

biobank setting

91%-98%
of the public is **interested** in individual research results

Data: Danya Vears et al, 'Return of Individual Research Results from Genomic Research: A Systematic Review of Stakeholder Perspectives' (2021) PLoS ONE 16(11).

However, the evidence on public attitudes towards the return of results is dominated by a small number of countries

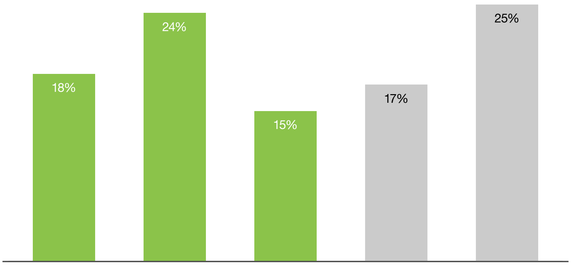


The US alone accounts for 65% of studies of public attitudes towards the return of individual research results.

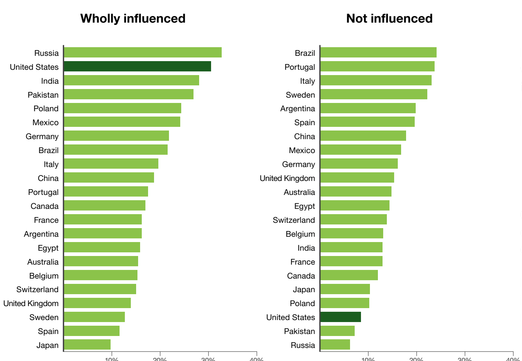
Data: Danya Vears et al, 'Return of Individual Research Results from Genomic Research: A Systematic Review of Stakeholder Perspectives' (2021) PLoS ONE 16(11).

And although we know that people are interested in receiving results we don't know whether this motivates people to donate DNA and health data

The Your DNA, Your Say study questioned 37,000 people across 22 countries about their views on genomics and data sharing. Across the 22 countries of the study there was no clear effect of return of results on whether or not people would be willing to donate their DNA and health data.



And the Your DNA, Your Say results suggest that the US does not seem to be a reliable guide to attitudes in other countries



Respondents in almost all other countries were less likely to be wholly influenced in their decision to donate by the return of results than those in the US, and more likely not to be influenced.

GA4GH policy recommends the return of clinically actionable results from genomics research.

However, there is substantial global diversity in public attitudes on the importance of return of results in motivating donation.

Milne R, Morley KI, Almarri MA ...Atutornu J, Costa A, Howard HC, Patch C, Robarts L, Roberts J, Middleton A et al (2022) Return of genomic results does not motivate intent to participate in research for all: Perspectives across 22 countries. Genetics in Research [Online] 1-10.

Your DNA, Your Say:
societyandethicsresearch.wellcomeconnectingscience.org/project/your-dna-your-say

Public attitudes for genomic policy brief:
ga4gh.org/product/public-attitudes-for-genomic-policy-blog-posts

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