Future Research Assessment Programme: response from the British Neuroscience Association

Section one: purposes of research assessment

Q4. Do you have any further comments to make regarding the purposes of a future research assessment system?

The British Neuroscience Association (BNA) is the largest UK organisation representing and promoting neuroscience and neuroscientists. We have over 2500 members, whose interests cover the whole range of neuroscience, from ion channels to whole animal behaviour to real-life applications in the clinic and beyond.

We welcome the opportunity to respond to this consultation on a future research assessment system, as there is a pressing need to change how researchers are assessed in order to move away from a damaging 'publish or perish' culture that has persisted within research. This is a key moment for policymakers to make a positive impact in shifting research culture towards one that more explicitly values the credibility of research. The BNA is a signatory of the San Francisco Declaration on Research Assessment (DORA) and the Hong Kong Principles for assessing researchers (HKPs), both of which recognise the need to improve how researchers and research outputs are assessed.

As we highlight in our response to this consultation, there is strong evidence demonstrating issues of reproducibility and replicability in research, which need to be addressed in order to strengthen the credibility of exercises accessing research quality. To provide a fully credible assessment requires credibility to be embedded into the design, methodology, and reporting stages of research. At the same time, methods to improve credibility demand extra time for researchers, and future modifications of the research assessment exercise should avoid adding to that burden further.

To help inform this response, between 29 March 2022 to 15 April 2022 we surveyed the neuroscience community for their thoughts on research assessment. Around 100 neuroscience researchers provided their views, which are reflected in the sections that follow. For the full results, please visit: https://osf.io/9ad4n/

Section two: setting priorities

Q5: To what extent should the funding bodies be guided by the following considerations in developing the next assessment system? *Please rank the considerations from 1 (most important) to 9 (least important)*

1	Impact of the system on research culture
2	Ensuring that the bureaucratic burden of the system is proportionate
3	Robustness of assessment outcomes
4	Comparability of assessment outcomes (across institutions, disciplines and/or assessment exercises)
5	Impact of the system on the UK research system's international standing
6	Providing early confirmation of the assessment framework and guidance
7	Ability of the system to promote research with wider socio-economic impact
8	Impact of the assessment system on local/regional development
9	Maintaining continuity with REF 2021

Q6. Relating to research culture, to what extent should the funding bodies be guided by the following considerations in developing the next assessment system? *Please rank the considerations from 1 (most important) to 6 (least important)*

1	Impact of the system on research integrity
2	Impact of the system on open research
3	Impact of the assessment system on equality, diversity and inclusion
4	Ability of the assessment system to promote collaboration (across institutions, sectors and/or nations)
5	Impact of the assessment system on research careers
6	Impact of the system on inter- and transdisciplinary research

Q7. What, if any, further considerations should influence the development of a future assessment system? *Please set out the considerations and indicate where they should be located in the list of priorities.*

Impact of the system on research reproducibility, located second in the list.

Q8. How can a future UK research assessment system best support a positive research culture?

The BNA believes that we need to achieve a cultural change within research, and we are working towards this within neuroscience. In responses to our survey, impact on research culture was considered most important of the options listed in Q5, and impact on research integrity, research reproducibility and open research most important in Q6. [For both, we asked our respondents to rank the options using a 5-point scale, n=102].

The BNA has an ongoing programme of work aimed at ensuring that neuroscience research is as robust, reliable, replicable, and reproducible as possible. This was in response to concerns in the rise of irreproducible research across research as a whole, and a strong desire to support neuroscientists to tackle this challenge head-on. We have highlighted a need for research assessment to better recognise and incentivise reproducibility in research (see bna.org.uk/about/policy/credibility-in-neuroscience/). However, individual researchers cannot tackle all issues undermining reproducibility alone, and need a supportive environment where practices to strengthen credibility are encouraged, supported and rewarded at an institutional level (see our response to Q16).

Discipline-based peer review assessment systems do not necessarily handle interdisciplinary research well (Technopolis, 2018), and this was reflected in responses to our survey highlighting a need for the system to better promote collaboration – this includes not only inter- and trans-disciplinary research, but also research within/between institutions, international collaborations, and collaborations with industry.

Covid-19 has had a huge impact on HEIs and researchers, the effects of which may run into the period considered for the next research assessment. As highlighted by individual responses to our recent survey, the differential impact of Covid-19 on research productivity should be taken into consideration in the next assessment. As part of a broader need to promote equity, diversity and inclusion, the Equality and Diversity Advisory Panel advising the next assessment exercise should consider the long-term effects Covid-19 has had on the sector when developing guidance and criteria.

Section three: identifying research excellence

Q9. Which of the following elements should be recognised and rewarded as components of research excellence in a future assessment exercise?

Element	Response
Research inputs (e.g. research income, internal investment in research and in researchers)	Should be moderately weighted
Research process (e.g. open research practices, collaboration, following high ethical standards)	Should be heavily weighted
Outputs (e.g. journal articles, monographs, patents, software, performances, exhibitions, datasets)	Should be heavily weighted
Academic impact (contribution to the wider academic community through e.g. journal editorship, mentoring, activities that move the discipline forward)	Should be heavily weighted
Engagement beyond academia	Should be moderately weighted
Societal and economic impact	Should be moderately weighted

Q10. Do you have any further comments to make regarding the components of research excellence?

In our response on the weightings of each element in Question 9, we were informed by the respondents who were asked the same question in our recent survey (n=97), a number of whom offered suggestions on the components of research excellence.

While the highest number of responses for all six elements was in favour of them being either heavily or moderately weighted, some respondents indicated that vital fundamental research may not lead to immediate societal and economic impacts, and that this should therefore be weighted less in future research assessment.

One suggestion we received was for future exercises to attempt to diversify who receives QR funding, by considering outputs/impact in relation to the resources/funding available. This could provide a route to then enable more funding to be allocated to institutions who have traditionally received less funding following these assessments.

To add to the research processes element, we asked neuroscientists for their thoughts on recognising and rewarding open data/materials as a component of research excellence, in addition to preregistering studies to build credibility by openly stating the experimental rationale, hypothesis, methods, and intended statistical analysis. 85% of respondents supported this for open data/materials (n=96), while nearly half (46%) believe preregistration should be recognised and rewarded in assessing research excellence.

Assessment criteria

Q12. Do you have any further comments to make regarding the criteria for assessing **outputs**?

Within REF2021, rigour was defined in guidance as “the extent to which the work demonstrates intellectual coherence and integrity, and adopts robust and appropriate concepts, analyses, sources, theories and/or methodologies” and that sub-panels “welcome research practice that supports reproducible science and the application of best practice”, with a good range of examples given that includes preregistration, registered reports, open data, open code, publication of experimental materials, and use of reporting checklists. While it is helpful for this to be provided, we believe that research practices that build credibility of research outputs need to be more strongly encouraged

and incentivised to help ensure practices strengthening reproducibility are normalised. This could include explicitly asking sub-panels to look for evidence of reproducibility in order to demonstrate scientific rigour.

Q16. Do you have any further comments to make regarding the criteria for assessing **environment**?

We believe there needs to be a change to how research is assessed, so that research moves away from the 'publish or perish' culture. We are advocating for an assessment system that instead incentivises researchers to make their work as credible as possible, but this requires an environment where institutions provide researchers with the support needed to make this possible.

We have endorsed the Hong Kong Principles for assessing researchers to support a positive research culture, and we recommend institutions should be encouraged to demonstrate how they are following these principles in practice:

1. Assess responsible research practices from conception to delivery – including the development of the research idea, research design, methodology (all of which can be aided through study preregistration), execution, and effective dissemination.
2. Value complete reporting – for example, by incentivising innovations in reporting such as Registered Reports, where studies are accepted for publication in advance based solely on the quality of the study design and published regardless of the outcome of the experiments.
3. Reward the practice of open science – focusing on quality over quantity by rewarding open, reproducible science, and incentivising not only open access, but also open code and data.
4. Acknowledge a broad range of research activities – including replication, innovation, translation, synthesis, and meta-research.
5. Recognise essential other tasks like peer review and mentoring. As part of our work towards an inclusive and diverse research culture, our BNA Scholars programme supports students from underrepresented ethnic groups through pairing with mentors.

There is also a need to create career pathways that can help to fill the core expertise needed to enable research groups to manage and make available the vast amounts of alternative research outputs such as methods and data produced. Simply making the information freely available does little to enable reproducibility if outputs are not curated in a way that enable their reuse. Institutions should be incentivised to demonstrate how they are helping to provide support for managing and curating the research outputs produced.

Research institutions have a role in helping ensure sufficient training is in place for researchers to help make their work reproducible, and in making their hiring and promotion criteria value efforts on reproducibility. UKRI has recently provided additional funding to the UK Reproducibility Network to drive uptake of open research practices across the UK, through the delivery of training. Institutions should be encouraged to show how they are supporting individuals to gain the skills necessary to boost reproducibility of their research.

Section four: assessment processes

Frequency

Q17. When considering the frequency of a future exercise, should the funding bodies prioritise:

a. stability
b. currency of information

c. both a. and b.
d. neither a. nor b.
e. Don't know.

Q18. Do you have any further comments to make regarding the prioritisation of stability vs. currency of information?

In our response on the prioritisation in Question 17, we were informed by the respondents who were asked the same question in our recent survey (n=96), with option c receiving the highest number of responses (39.6%)

We also asked neuroscientists for their views on this issue of stability vs currency of information. While both were considered important to prioritise (reflected in the previous question), most of the responses suggested that stability should be considered the more important factor – reflected by this being the second highest choice selected in our survey (33.3%). For example, it was highlighted that improving the currency of information could in the process devalue long-term research, and could also increase the trend towards more short-term contracts. However, a less burdensome exercise that occurred more frequently did have some views from neuroscientists in support.

Sequencing

Q19. Should a future exercise take place on a rolling basis?

f. Yes, split by main panel
g. Yes, split by assessment element (e.g. outputs, impact, environment)
h. No
i. Don't know

Q20. Do you have any further comments to make regarding conducting future research assessment exercises on a rolling basis?

In our response on the prioritisation in Question 19, neuroscientists who were asked the same question in our recent survey (n=96) suggested uncertainty with the options presented, with the option "Don't know" receiving the highest number of responses (34%). However, there were similar responses to both rolling exercise options – split by assessment element (33.3%) and by main panel (27%). Only 5% indicated they were not supportive of a rolling exercise.

Understandably, some of the concerns neuroscientists raised in their responses relate to potentially negative effects that moving to a rolling exercise could entail – for example, this becoming more superficial to target each assessment element within the shorter deadline, and how splitting by main panel could hamper interdisciplinary collaborations. There were views also on both sides on how this might affect the negative practices associate with the REF in its current form, and which FRAP should be aiming to tackle – would a rolling exercise reduce negative behaviours, or simply spread these out?

Metrics

Q23. To what extent and for what purpose(s) should quantitative indicators be used in future assessment exercises?

a. Move to an entirely metrics-based assessment
b. Replace peer review with standardised metrics for outputs
c. Replace peer review with standardised metrics for impact
d. Replace peer review with standardised metrics for environment
e. Use standardised metrics to inform peer review of outputs

f. Use standardised metrics to inform peer review of impact
g. Use standardised metrics to inform peer review of environment
h. Should not be used at all.
i. Other (please specify)

Q24. Do you have any further comments to make regarding the use of metrics in a future research assessment exercise?

Respondents to our survey were asked a simplified version of question 23, with options being metrics only, peer review only, a combination of metrics and peer review, or other (n=96). There was clear support for a combination approach, with 88.5% of neuroscientists surveyed selecting this option.

There is considerable debate on the role of metrics, as highlighted in the Metric Tide report where essentially most metrics can be gamed and can lead to unintended consequences – with Journal Impact Factor historically being one of the clearest examples of this. A concern expressed by one respondent to our survey was that people "will find a way to game the system, regardless of the chosen assessment method". Metrics alone could therefore be a highly risky option to take, highlighted by the fact only 2.1% of neuroscientists in our survey supported this approach. The UK Forum for Responsible Research Metrics should help to develop indicators, or a range of multiple indicators, that are as gaming-proof as possible.

Burden

Q25. How might a future UK research assessment exercise ensure that the bureaucratic burden on individuals and institutions is proportionate?

For our survey, we asked respondents to first indicate whether they believed the burden of the REF on individuals is appropriate (n=96). Over half (54.2%) thought that the burden is too high, with around a quarter (27.1%) unsure. Only 16.7% felt it was an appropriate burden level. Comments included that the burden can also be very high for particular individuals, such as those involved in either the submission process or peer review.

On the burden level for institutions, 41.7% of respondents indicated this was too high (with a further 36.5% unsure), with the resources dedicated to conducting REF highlighted as a factor.

We received a number of suggestions from neuroscientists via our survey on how the burden for individuals and institutions could be reduced. These included:

- Ensuring that individuals who are involved in the assessment exercise are given enough time to do so by relieving them from other duties
- Using an ongoing monitoring system for the exercise e.g. online repositories which can regularly updated by researchers or use existing systems e.g. ORCID to capture data
- Streamlining the process e.g. by reducing the number of forms
- Increasing use of metrics
- Reducing the frequency of research assessment
- Considering whether the assessment exercise is necessary through a cost-benefit analysis

We note that the interim findings earlier this year from the independent review into research bureaucracy led by Professor Adam Tickell suggest that institutional research bureaucracy is one of the key sources indicated of unnecessary bureaucracy, and that the review has planned to gather further evidence of this before issuing its final recommendations. It is important that both this review and FRAP are aligned to ensure that opportunities to reduce the administrative burden are not missed, without compromising on the effectiveness of future assessment exercises.