

## Analysis of the EASAC Statement on Homeopathy 2017

The European Academies' Scientific Advisory Council (EASAC) published an online position statement, '[\*Homeopathic Products and Practices\*](#)<sup>1</sup>, in September 2017, with the aim: "to build on recent work by its member academies to reinforce criticism of the health and scientific claims made for homeopathic products".

The EASAC Statement attempts to summarise the entire field of homeopathy in only eight pages. Topics covered include the scientific implausibility of claims made about homeopathic products, clinical efficacy and placebo effects, quality control and safety, veterinary homeopathy, labelling and marketing claims and EU regulatory policy for homeopathic products available to purchase by consumers.

The Statement concludes by making a number of recommendations targeted at EU regulators of homeopathic products, aiming to accurately inform consumers and policy makers, encouraging public engagement in the debate.

The Statement was produced by a Working Group of European Science Academy members giving the Statement the appearance of scientific authority.

EASAC further increased the scientific credibility of this document by accompanying its release with a [commentary piece](#) published in the well-respected *Journal of Internal Medicine (JIM)*<sup>2</sup>. As the peer review process exercised by such journals is considered a safeguard against bias, it is worth noting that a member of the EASAC Working Group is also on the Editorial board of JIM.

Despite appearances, the EASAC Statement is unscientific, based on highly selective citation and inaccurately presents the evidence base for homeopathy, thus failing in its primary remit to accurately inform consumers and EU policy makers about the evidence for homeopathy.

Representatives of HRI and WissHom met with EASAC President Prof. Thierry Courvoisier to raise concerns over the lack of objectivity and scientific rigour in the process that led to the publication of the EASAC statement. He replied, "*It was never our intention to write a balanced statement ...*" (25 April 2018).

The [official response by BPI](#) (a German national pharmaceutical industry trade association) highlights the fact that this Statement was produced by "a working group of 11 scientists acting in an individual capacity", reminding us also that it was EASAC's own decision to produce the Statement – it was not done at the request of the European Union (EU) or by any EU Member State.

## Creation of the EASAC Statement

The aim of the EASAC Statement was to *‘reinforce criticism of the health and scientific claims made for homeopathic products’*<sup>1</sup>. This was achieved by:

### 1. Deciding on the conclusion before preparing the Statement

EASAC’s call for experts was explicit about the key messages to be included in the future Statement saying, “... homeopathic products are ineffective apart from their placebo effect and [...] there is no validated evidence to support their use. It is expected that the EASAC work will proceed from this starting point rather than re-analyse the extensive literature”<sup>3</sup>.

### 2. Only recruiting authors to the Working Group who agreed with this position

The call for experts specified: *“EASAC are looking for biological or clinical scientists [...] with knowledge about the distinction between homeopathic principles and EBM”*<sup>3</sup> assuming that homeopathy was not, and could not, be evidence-based medicine (EBM). Recruiting members of the Working Group specifically for their anti-homeopathy position, demonstrates clear recruitment bias.

### 3. Identifying and extracting evidence which supports this negative conclusion from the evidence base

The Statement only includes negative studies on homeopathy and omits all positive studies. This poor scientific practice is known as ‘selective citation or ‘cherry picking’ (see below for further details).

### 4. Compiling the selected negative data into an 8-page document and presenting it as a *‘new evaluation’ of the evidence*<sup>4</sup>

The result of this process is an online opinion piece which is highly inaccurate and thus fails in its primary remit to accurately inform consumers and EU policy makers about the evidence for homeopathy.

## HRI’s Analysis of the EASAC Statement

### 1. The EASAC Statement provides no new data or analysis

EASAC’s press release misleadingly implied that the evidence on homeopathy had been assessed again by experts and found wanting, saying, *“A new evaluation from EASAC confirms there is no robust, reproducible evidence that homeopathic products work.”*<sup>4</sup>

Yet by their own admission there is nothing new in it at all: *“our task is **not to reanalyse all of the evidence available** for or against the claims for homeopathic products”*<sup>1</sup> Instead EASAC have merely recycled the same set of flawed studies used by anti-homeopathy campaigners for years, namely the Shang et al, Lancet paper (2005), UK House of Commons

report (2011) and NHMRC Australian Report (2015 version). EASAC describe these documents as ‘*excellent science-based assessments already made by authoritative and objective bodies*’<sup>2</sup>.

This raises the question, why should we consider the EASAC Statement important or relevant?

## 2. The EASAC Statement is an example of selective citation

The EASAC Statement is a text-book example of how NOT to do science in many ways, but the most obvious is how data has been ‘cherry-picked’ to fit the pre-existing opinions of the authors:

### Clinical research

Only negative studies are included e.g. the Shang et al, Lancet paper (2005), UK House of Commons report (2011) and NHMRC Australian Report (2015 version), with none of the well-publicised scientific flaws in these documents being addressed. All positive studies are missing, with notable examples being the Mathie et al. 2014 systematic review of 22 RCTs which found that homeopathic medicines are 1.5- to 2.0-times more likely to have a beneficial effect than placebo, and the even more recent Macias-Cortes et al. 2015 randomised controlled trial with 133 women which showed homeopathy to be more efficacious than placebo for moderate-severe depression in menopausal women. Both studies are high quality and were available at the time the Statement was written.

### Mechanism of action

EASAC claim that there is a ‘lack of scientific support’ for all proposed mechanisms of action for homeopathy. A special edition of the journal *Homeopathy* on ‘Memory of Water’<sup>5</sup> included 13 papers on this topic, 1 of which took a sceptical view (Teixeira 2007)<sup>6</sup>. The only paper quoted by EASAC was Teixeira 2007.

### Previous work by academies and others

EASAC quotes online statements and non-peer reviewed reports by the Royal Swedish Academy, Hungarian Academy of Sciences and a UK parliament sub-committee, all of which were negative. The final contribution to this section is the negative NHMRC Australian Report (2015 version) which at the time of writing was well-known to be under investigation by the Commonwealth Ombudsman due to bias and misleading the public. No mention is made of the positive Swiss HTA report (2011) – a seven year review of the evidence which concluded that homeopathy is clinically effective, cost-effective and safe. Homeopathy has since become available to the Swiss public as part of their national healthcare scheme.

The only reference EASAC make to the existence of positive research is to a “debate published in the *British Medical Journal* (Fisher and Ernst, 2015)<sup>7</sup>” and a box listing “disparate sectoral sources of some of those who support or promote the claims of homeopathy and can provide leads to their own research.”

### 3. EASAC Statement makes unsubstantiated claims and is missing relevant data

EASAC make the extraordinary and defamatory claim that homeopathy practitioners “recommend products that they know are biologically ineffective”<sup>1</sup>, yet they fail to include ANY of the published data from experiments showing biological effects of homeopathic medicines e.g. in plant models and immortalised cell lines. At the very least one would expect to see reference to the most recent systematic review of in-vitro evidence (Witt et al. 2007)<sup>8</sup> which described positive findings such as homeopathic histamine causing a reaction in basophils in 8 out of 11 high quality studies.

### 4. The EASAC Statement makes irrelevant recommendations to regulators

The Statement concludes with recommendations for regulation and licensing of homeopathic products which demonstrate a lack of knowledge regarding existing quality control and safety regulations. As regulatory experts BPI expressed it in their official response, “These aspects have already been duly taken into account in the current EU legislation, there is no need for any legislative action. Instead patients’ access to safe and high-quality medicinal products of their choice needs to be maintained.”

### Who wrote the EASAC Statement?

The EASAC Statement was produced by a Working Group of 12 scientists, 11 from EU member state Academies acting “in an individual capacity”. However, we have been assured that each individual speaks ‘on behalf of the work of hundreds of members of each Academy’. This contradicts the clear use of the term ‘individual capacity’, which is legal speak for their own opinion, not necessarily representative of a larger body to which they are affiliated.

It is clear from the public profiles of a number of Working Group members that this Statement reflects their personal positions: many of the Working Group members are known and publicly active anti-homeopathy ‘sceptics’, yet no conflict of interest was declared.

The process was led by the Royal Swedish Academy of Sciences (KVA), building on previous work by the KVA<sup>9</sup>, with well-known ‘homeopathy sceptic’ Prof Dan Larhammar being a key author.

The EASAC website also highlights the close involvement of Prof. Jos van der Meer, announcing news of an honorary medal he received for this work, in acknowledgment of his contribution to the ‘fight against quackery’.

### How have EASAC defended their work?

After almost a year of negotiation via email between HRI and EASAC, HRI’s request for a meeting with members of the Working Group was finally granted in the form of a Zoom video conference on 7 November 2018.

During the meeting, it was made clear that there is no mechanism by which a formal complaint can be made to challenge the Statement and no internal processes available to amend it.

As Dr Christiane Diehl explained, *'It's such a thorough process and I want to remind you that we have 29 very solid substantial academies – each of them has 100s, sometimes 1000s of highly respected scientists. This is the pool from which we recruit our experts. We've never had the case that we were sort of correcting, i.e. "Oh actually we got that wrong, completely wrong, we made a mistake, this was incorrect".'*

The EASAC attendees were also unable to provide satisfactory answers to two key points during the meeting and so it was agreed that they would provide a response via email:

1. How does EASAC justify quoting and describing as 'excellent' the Shang et al. 2005 meta-analysis, given that the conclusions are based on only 8 out of 110 trials and the result failed sensitivity analysis, showing that the findings are not robust?
2. The most recent and robust meta-analysis of placebo-controlled clinical trials on homeopathy concluded that individually prescribed homeopathic medicines are 1.5 to 2.0 times more likely to have a beneficial effect than placebo. Why was this study (Mathie et al. 2014) not included in the Statement?

EASAC finally responded 12 weeks later (4 February 2019):

"... we think that – on the basis of standard scientific procedures – the Shang meta-analysis is methodologically transparent and fair. Therefore, given the methodological quality of the study, we have called it „excellent“, accepted its results and cited it in our statement."

However, in the following paragraph of the same email, explaining why they failed to include the Mathie et al. 2014 study they quote Prof Robert Hahn<sup>10</sup>, as saying:

"High-quality meta-analyses should include homogeneous trials using similar medical conditions and the same outcomes. It is exceedingly difficult to draw conclusions regarding any type of therapy if the meta-analysis includes heterogeneous trials with different outcomes."

Yet, the Shang 2005 study mixes trials assessing **all types of homeopathy** (individualised, non-individualised, complex remedies, single isopathic remedies etc) for all medical conditions. The Mathie 2014 study only includes trials assessing **one type of homeopathy** (individualised homeopathic treatment) for all medical conditions.

Given that the data included in the Shang study is **more heterogenous** than that of the Mathie paper, this argument simply does not hold as a justification for including and drawing conclusions from the Shang study, whilst excluding the Mathie study.

If anyone is left with any doubt as to the EASAC Statement's lack of scientific credibility, EASAC's decision to cite a flawed study that was 12 years old at the time they wrote their Statement, instead of a more rigorous study that was only 3 years old speaks for itself.

### EASAC Statement key facts

- The EASAC Statement was never intended to be a balanced statement on the evidence for homeopathy (EASAC President, April 2018) – it was prepared to *‘reinforce criticism of the health and scientific claims made for homeopathic products’*
- Was written by a Working Group of 11 scientists “acting in an individual capacity” who openly stated they would start from the premise that homeopathy is placebo because it cannot have a biological effect, and that there is no valid research supporting its use
- Contains nothing new at all: despite a press release claiming it was a *‘new evaluation from EASAC’*, the authors were clear they did *not* carry out any new evaluation or analysis
- Is an unscientific collation of largely out of date, cherry-picked negative studies, along with websites, blogs, opinion pieces, commentaries and ‘grey literature’ reports
- Makes extraordinary unsubstantiated claims and misses out entire sections of the evidence base e.g. EASAC state that homeopathy practitioners *“recommend products that they know are biologically ineffective”*<sup>1</sup>, yet fail to include ANY of the published data from experiments showing biological effects of homeopathic medicines e.g. in plant models and immortalised cell lines.
- Is an inaccurate representation of the evidence base for homeopathy, but a useful summary of arguments used by anti-homeopathy lobbyists
- Fails in its primary remit to accurately inform consumers and EU policy makers about the evidence for homeopathy

### Conclusion

Despite its esteemed authorship, the EASAC Statement cannot be considered good science, let alone ‘excellent science’. Admittedly, EASAC were clear that the Statement is a declaration of their position on homeopathy, and that they had no intention of publishing a balanced account of the evidence.

The EASAC Statement cannot therefore be used for its stated intended purpose – to inform policy makers about the evidence base on homeopathy – but it does at least clarify EASAC’s position as part of the anti-homeopathy movement.

Surprisingly, the Statement went through ‘extensive peer review for content accuracy and quality’. The fact that so little of the Statement is really science-based (as opposed to opinion-based), this raises the question of the effectiveness of EASAC’s peer review processes and who actually reviewed it. The lack of information available on this point also suggests that readers of the Statement should just trust that EASAC knows best because the authors of the statement are members of Scientific Academies. This does not, however, preclude any individual from an Academy (working in an ‘individual capacity’) being biased by their passions, or public reputation as anti-homeopathy sceptics.

The late Dr Peter Fisher, a leading expert in both conventional medicine and homeopathic research, summarised the EASAC Statement perfectly in his editorial, 'Homeopathy and intellectual honesty':

*"Homeopathic products and practices' makes no attempt at a transparent, objective or scientific view of homeopathy. It is an abuse of authority by the European Academies of Science. The motto of the UK Royal Society, a member of EASAC is 'Nullius in verba' meaning 'Take nobody's word for it'. Readers of the statement should heed that advice."*<sup>11</sup>

## References

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