



SMC criteria for scientists' comments for Roundups and Rapid Reactions

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Introduction

The SMC has a goal of raising standards in science communication and science reporting. This means we have criteria for what we do and don't want in written comments from experts – comments need to be from scientists with research expertise on the subject, need to be scientific and about evidence, and need to comment specifically on the development in question. We are not looking for general advice or opinions. This is what marks scientists as distinct from anyone else – evidence is your currency.

The SMC is just one piece of the science communication puzzle – we understand and respect that some scientists will want to campaign, to make political statements or to give your views as citizens. There are other platforms and avenues for you to do that. But if you are commenting via the SMC we ask you to follow our criteria for comments.

Many scientists we work with do this brilliantly already and this policy isn't a change of direction, so many of you won't notice any difference. Encouraged by our Trustees and Advisory Group we are distilling here what SMC comments are for and the kinds of assessment they need to give.

Criteria for what is ruled in and out

Who we want comments from

The SMC was set up by and represents the mainstream scientific community. Experts commenting via the SMC need to be:

- at **postdoc level or above** (or the equivalent in engineering);
- at a **reputable research institution**;
- research active, and commenting on their **area of research expertise**.

We don't work with very early-career scientists are not the place to go for mavericks.

1. SMC Roundups – expert scientists critiquing new scientific studies

Roundups can help science journalists decide whether and how prominently to cover a new study, as well as providing quotes they can include in their reporting to ensure it's more measured and accurate.

Comments must first and foremost address the **quality, robustness, strengths** and **limitations** of the study in question.

Comments can discuss how and whether the new evidence fits into what is already known from the weight of good evidence but should avoid just giving general health advice.

Even where a study reports findings that are unsurprising or that confirm consensus, we still need an assessment of its quality and robustness – scientists need to read the paper and comment on its merit rather than giving it a pass because the claims have been established in previous good quality research.

Comments should address:

- Is this good quality research? Are the conclusions backed up by solid data?
- How does this work fit with the existing evidence? Does it challenge it – and if so does it provide sufficient strong evidence to do so?
- Have the authors accounted for confounders? If not, do the confounders fatally undermine this study?
- Are there important limitations to be aware of? Are there any flaws or weaknesses in this work that journalists need to know about?
- What are the implications in the real world? Is there any overspeculation?
- Does the press release accurately reflect the science? Is it responsibly written?

Examples of what we want and what we don't want

Roundup on a study linking cabbage to dementia

Type of comment we **don't** want:

"This study reports an increased risk of dementia in people who eat cabbage but we know that eating plenty of fruit and veg is a healthy habit for our brain and our bodies. Everyone should aim for at least five portions of fruit and veg every day. The public needs better availability of cheaper, healthier foods so that we can all choose to eat more fresh food – but it's also up to the government to bring in regulation to incentivise food companies and supermarkets to produce and display healthier options as it can't just be up to individuals."

Type of comment we **do** want:

"This study doesn't provide evidence that eating cabbage causes dementia. Firstly, it is an observational study so can only find associations between things, not show that one causes the other. Secondly, it is a very small study with only 10 people in each group so any findings should be treated with caution. Thirdly, the authors didn't control for factors which might themselves be related to dementia risk such as age, sex, smoking status and obesity – the people that reported eating cabbage were very different to the people that reported not eating cabbage. And finally, rather than following people through time and observing what they ate and whether they developed dementia (which

would still only be an observational study) this study asked people with dementia whether they had eaten cabbage much over the last few decades. This isn't high quality science."

Roundup on a study linking global heating to stroke

Type of comment we **don't** want:

"Climate change is a global emergency and this study shows that people are very literally dying. There's only one answer to this – we need to stop extracting and burning fossil fuels and move to renewable energy. We also know that in the long run the economy will be helped by the transition towards renewables and some of the money saved could be redirected into health services including looking after stroke patients."

Type of comment we **do** want:

"This study doesn't make sense to me because the authors looked at stroke numbers globally and they suggest that higher temperatures as a result of climate change are responsible – but crucially they did not look separately at parts of the world that have got hotter versus parts that have become wetter or had more extreme cold spells etc. We know from other evidence that climate change will affect different parts of the world differently so this study is very crude and I don't think it adds any meaningful evidence about the relationship between heat or other climate factors and stroke. There are plenty of well-evidenced harms of climate change and there is no doubt from previous research that there are health impacts – but this study doesn't show it."

2. SMC Rapid Reactions – scientists responding to breaking news

Rapid Reactions to breaking news enable the news media to access the voices of scientists, so that journalists and the public hear from scientists as well as commentators, politicians and campaigners. They help ensure that the media is reporting on evidence and data as well as ideology and opinion.

Comments should focus on **specialist knowledge of the topic** (if not the specific event) and must **refer to evidence**. Comments can highlight unknowns and uncertainties, or point to compelling evidence and a scientific consensus. An example would be engineers commenting on what we know from evidence about rail safety and different possible reasons for incidents, rather than needing to specifically speculate why a new train crash has happened.

Examples of what we want and what we don't want

Rapid Reaction to death of a child after receiving a vaccine

Type of comment we **don't** want:

"The death of a child is extremely sad. It's important parents and children have confidence in vaccines rather than focussing on these media headlines. Vaccines save lives."

Type of comment we **do** want:

"It's impossible to comment on the cause of death of any individual, especially at this early stage. It's premature to jump to any conclusions about why this child has very sadly died. What we do know from extensive evidence and decades of scientific research and real-world safety monitoring of this specific vaccine is that it has a very good safety profile and serious adverse events are extremely rare."

When someone dies shortly after another notable event it is understandable to ask whether there is a link between those two things – but we can't jump to that conclusion without more information. At the moment the health authorities will be investigating what happened in this case – they will likely be looking at things like whether this child had an underlying health condition."

3. A note on libel

SMC press officers have libel training and will flag to scientists when they think a comment is libellous – this is often when scientists question the motives of others, suggesting purposeful spin or hyping because of vested interests (both ideological and financial). Apart from being libellous these sorts of comments are also not what we want for the reasons given above. Scientists with biases can still do high-quality studies and scientists free of bias can also do poor-quality studies – what matters for SMC comments is whether the study is good quality or not. Anyone can question the motives of someone but only scientists can properly assess the quality of research – we ask scientists to 'play the ball not the man'.

Examples of what we want and what we don't want

Roundup on a study linking a supplement to reduced rates of depression

Type of comment we **don't** want:

"The scientist has purposefully cherry-picked the data to support their hypothesis. They have a clear conflict of interest because they proposed this hypothesis and their institute funds their lab to work on it so I don't trust it."

Type of comment we **do** want:

"This study has significant limitations – there were only 30 people in the study, and they were all students who attended one university and were studying the same course. None of them were asked about their history of mental health problems and they were aware of what the study was investigating so their pre-conceptions would have been hard to control for. Most egregiously, there was no control group who weren't given the supplement so it's impossible to claim any 'improvement'. Due to these and more problems with the study, I don't trust it."