

# Score and ignore

## A radio listener's guide to ignoring health stories

Do you shout at the morning radio when a story about a medical “risk” is distorted, exaggerated, mangled out of all recognition? Does your annoyance ruin your breakfast? You are not alone. **Kevin McConway** and **David Spiegelhalter** have developed a defence strategy to save their start-of-the-day sanity. Strike back at the presenters! And make it personal...

When we wake up we are among the millions all over the UK who turn on the *Today* programme on BBC Radio 4, presented by our favourite, veteran and generally excellent reporter John Humphrys. All over the US millions more tune in to similar early news programmes with their own pet presenters. On many mornings there is a report on the latest health risk story. At work we flip through popular newspapers and there are more stories reporting the latest “research”, for example on proposed links between cats and cancer or mobile phones and asthma. Our irritation at the uncritical coverage these stories generally receive has occasionally led to loud verbal abuse of the radio and of its presenters and journalists, to the detriment of peaceful digestion of toast and coffee and of the domestic harmony that should greet the new day. Our families and colleagues have encouraged us towards a more creative response.

We have therefore constructed a simple checklist for scoring such health stories. It is aimed at general consumers of media reports, so it concentrates on issues about the news process, how the story came to be reported, and what has not been reported. Our key concern is the overall value of the story to a listener or reader as a source of reliable information relevant to his or her own health.

### Our checklist

Our checklist has 12 separate items, relating to three broad aspects: study quality, standard

of reporting, and applicability. In each case, a “yes” answer to the question indicates some cause for concern about the report or the study it is reporting on. A score of 12 “no” answers implies a perfect study, perfectly reported; 12 “yes” answers calls for apoplexy and vituperative letters to editors. Here goes:

#### Study quality

- Just observing people?
  - Is it purely an observational study, that is, did it just involve observing and recording what people did when left to their own devices? You cannot infer *cause* rather than correlation unless there is some controlled experimental aspect in which, ideally, people have been randomly allocated to different interventions or treatments.
- Yet another single study?
  - Is it just one isolated study, which does not place the new findings in the broader context of what is known? No single study is sufficient to draw a firm conclusion. The ideal is to pool systematically the evidence from all available studies, as is done in reviews carried out by the Cochrane Collaboration.
- Might there be a different explanation that you are not told of?
  - Is there some plausible explanation for the results, other than the explanation that you are being given? For example, one press report<sup>1</sup> began: “Babies fed home-cooked food [when they are

weaned] are more likely to eat fruit and vegetables when they are older than those given meals from jars and packets, researchers say.” This could be because the home-cooked food causes the later eating behaviour, or it could be because some other aspect of the babies’ upbringing (a *confounder*) is associated with both the weaning food and the later diet. Wealth, social background, and whether both parents are working would be obvious confounders here. Or there might be some reasons for a systematic bias – for example, in asking people about their past use of mobile phones, people with a brain disease might simply be more likely to recall higher usage than people unaffected by the disease. A well-reported story would draw attention to issues like this. A less good effort might not, but you can still use your ingenuity to think about what alternative explanations are plausible.

- Small?
  - Size matters. If the number of people studied is too small (as a rule of thumb, in the tens rather than hundreds or thousands), then it might well be misleading. It can take some technical expertise to be clear about what an appropriate size is for a particular study, but your intuition should at least allow you to smell a rat. It is usually the number of events that is important, not the total number of individuals studied, so there might be



Credit: Tom Boulton

a study of a very rare disease where millions of people were followed up but only a handful got the disease – that makes it a small study.

#### Standard of reporting

- Original information unavailable?
  - It might be going too far to expect a link to the original report in a brief printed press story, but you should at least be able to find the original source by a simple Internet search – even if, once you have found it, it is behind an expensive paywall. But at least you may be able to read the abstract and/or the press release for nothing.
- Headline exaggerated?
  - Is it exaggerated beyond what the original study report said? For instance, in reporting on the International Agency for Research on Cancer (IARC) decision to list the radiation from mobile phones as “possibly carcinogenic to humans”, the *Daily Express*<sup>2</sup> used the headline “SHOCK WARNING: MOBILE PHONES CAN GIVE YOU CANCER”. This went considerably beyond the relatively measured tones of the IARC’s own press release<sup>3</sup> on which the story was based. However a decision on whether to score this item is not always clear-cut. Headline writers are limited to a handful of words – and they do have to try to make those words interesting.
- No independent comment?
  - Does the story seem just to be parroting a press release? Does it look at just one side of the story? Are there no quotes or comments from other scientists? The comments do not have to be negative. But comments from people with an obvious vested interest do not count.
- “Higher risk”?
  - Does the story just tell you comparative (relative) information, like how much greater the risk is if you are exposed to the potential hazard compared to if you are not? Relative information does not on its own inform decisions (essentially because twice not very much is still not very much). Ideally the story should give absolute numbers – what is the chance of the disease if you are not exposed to the possible risk factor, and what is the chance if you are exposed?
- Public relations puff?
  - Ask yourself: “Why am I reading this?” Things that look superficially scientific and objective may just be the product of a PR process, so check who sponsored the work. It is worth asking whether the original study report was subject to peer review. But beware, the most respectable journals can err – remember that Wakefield’s erroneous speculations on autism and vaccination appeared first in the *Lancet*. Further, stories may be newsworthy without actually being substantively very important; this often happens when the story mixes the mundane with the dread (such as relating cats to cancer, or relating babies’ bottles to all kinds of scary symptoms and diseases). Or a story may have been made to look more newsworthy because it is “disease-mongering”<sup>4</sup> – exaggerating, over-selling or over-medicalising a condition.
- Half the picture?
  - Ask yourself: “What am I not being told?” More broadly, does the story look at all aspects? Many substances that might harm your health might also have benefits, and

### Box 1. Magnetic fields and asthma

A report<sup>5</sup> on a possible link between exposure to low-frequency magnetic fields in pregnancy and asthma in the children resulting from the pregnancy was published on the Reuters website. Our scoring is as follows.

- J** Just observing people?  
Yes. The study was clearly observational.
- O** Original information unavailable?  
No. There is no link to the original study, but it is very easy to find in an internet search, given that the journal and lead author are named.
- H** Headline exaggerated?  
No. The headline was “Magnetic field exposure linked to asthma risk”. It summarised the story.
- N** No independent comment?  
Yes. There are appropriate remarks from the lead author, clarifying some of the limits beyond which one should not push his conclusions, but nothing independent.
- H** “Higher risk”?  
No. Absolute risks are also given.
- U** Unjustified advice?  
No. No individual advice was given.
- M** Might be explained by something else?  
Yes. The story does not mention other possibilities, although, to be fair, it does make it clear that almost anything linked to location might be a confounder.
- P** Public relations puff?  
Yes. The story does the classic mix of the

everyday (babies) with the dread (radiation), and this is probably the reason it is receiving publicity. It is in the “print it because it will sell our paper” category, rather than “print it because it is vital the world should know”.

- H** Half the picture?  
Yes. This is slightly tricky. Further investigation reveals that investigating asthma was essentially an afterthought in a study that was originally about something else. But this was not stated in the Reuters story.
- R** Relevance unclear?  
No. The study is relevant to someone who is pregnant, or planning to become pregnant, though it is not entirely clear what one might do to avoid this radiation.
- Y** Yet another single study?  
Yes.
- S** Small?  
Yes. Again, this is rather marginal. The key number is the not the relatively large number of pregnant women, but the number of children with asthma, clearly reported in the story as 130. This is getting out of the “tens” zone, but we felt it was small enough to raise some doubts.

The total score is thus **6/12**. The story and/or the study it reports on have several unsatisfactory features, but there are some good points too.

stories often do not mention these. Most new (and old) treatments have certain undesirable effects or costs as well as good effects. Are they described, and does the story make it clear how likely they are to occur? Also, was there a “fishing expedition” where a great number of possible outcomes or conditions were examined – is this the only positive result out of many looked at? Sometimes it’s hard to tell – a poor report might not mention that they investigated a lot of things and just told you about the one that came out positive.

#### Applicability

- Unjustified advice?
  - Does the story give advice on how you should behave, or change your behaviour, that is not justified by the results of the study?
- Relevance unclear?
  - Might the result simply not apply to people like you? Perhaps it was a study

in non-human animals, or perhaps it involved people who are untypical or simply not similar enough to you (a very different age, perhaps, or living in a country where conditions are sufficiently dissimilar to your own). Or perhaps it relates to some intervention or treatment which is, for whatever reason, not available to you. Perhaps it measures some surrogate outcomes, such as hormone levels in patients with cancer rather than actual health or survival outcomes. This is not to imply that studies with surrogate outcomes are necessarily bad; often they are all that is feasible at a certain stage of research. But their direct relevance to health choices is likely to be unclear.

To use the checklist, score a point for every “yes” answer – here “yes” is bad and points mean poor performance. Score a point also if you cannot tell what your answer should be (because not providing relevant information should generally

ring as many alarm bells as providing adverse information). Count up the points. The nearer the score is to 12, the less notice you should take of the story and the more you should ignore it lest it ruin your day.

To make it easier, it is well known that a mnemonic can assist greatly in making a checklist useful. We can reorder the items so that the initials give:

- J** Just observing people?
- O** Original information unavailable?
- H** Headline exaggerated?
- N** No independent comment?
  
- H** “Higher risk”?
- U** Unjustified advice?
- M** Might be explained by something else?
- P** Public relations puff?
- H** Half the picture?
- R** Relevance unclear?
- Y** Yet another single study?
- S** Small?

A little creative rewording of the headings should enable readers elsewhere to commemorate their own favourite, or less than favourite, presenters.

We illustrate the use of the John Humphrys scale by applying it to two example stories (Boxes 1 and 2).

### Conclusion

It should be borne in mind that what we are rating here is the *usefulness* of the story to a reader as a source of reliable information relevant to their own health. Because the scoring is inevitably somewhat subjective, because things are not always clear-cut, and because we are not claiming that every item should be equally weighted, there is no suggestion of some fixed cut-off value beyond which you should simply ignore the report entirely. The point is to raise questions and issues, not to make decisions.

Finally, though the John Humphrys score is primarily aimed at readers of media reports in relation to their own health concerns, we hope and believe that it may help those writing press releases or media stories to get things across more clearly and appropriately. Maybe it will even be of some use to *Today* programme presenters.

### Appendix: Other checklists and criteria

We have taken account of previous UK checklists, which include a piece on the NHS Choices website<sup>7</sup>, and another on the BBC’s website<sup>8</sup>.

Similar information sources from the USA include one<sup>9</sup> from the Statistical Assessment Service (STATS). It is a rather long document rather than an easily accessible checklist. The online Health News Review regularly rates US media stories on health according to ten criteria<sup>4</sup>. These excellent criteria differ somewhat from ours in that they are aimed most centrally at stories about treatments and interventions, rather than health risks. This may or may not

relate to a cultural difference between the UK and US media on the perceived news value of different types of health story. Somebody should do some work on that. [Any offers? We would be happy to publish it in *Significance* – Ed.] Related websites exist in several other countries as part of the international Media Doctor project; see <http://www.mediadoctor.org.au/>, <http://www.mediadoctor.ca/>, <http://www.mediendoktor.de/>, <http://www.mediadoctor.hk/> and <http://www.mediadoctor.jp/>.

[www.mediadoctor.hk/](http://www.mediadoctor.hk/) and <http://www.mediadoctor.jp/>.

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Kevin McConway is Professor at the Department of Mathematics and Statistics, The Open University. David Spiegelhalter is Winton Professor for the Public Understanding of Science at the University of Cambridge.

## Box 2. Television and length of life

The *Daily Telegraph* reported<sup>6</sup> on an Australian study about the correlation between length of life and television viewing habits. Here is our scoring.

### J Just observing people?

Yes. The study again is clearly observational.

### O Original information unavailable?

No. No link to the original study is given, but again it is very easy to find it in an internet search.

### H Headline exaggerated?

Yes. The situation here is complicated. The headline, “Every hour of TV watching shortens life by 22 minutes”, definitely sounds as if it is referring to a causal connection. Thus, on the face of it, it definitely goes beyond the evidence in the study that is being reported on. However, again as the report makes clear, the lead author of the study uses such terminology too (and, indeed, it appears in the abstract of the paper being reported on). So does that make it acceptable for the newspaper report to use the same language? In our view, no. The study does not support the wording in the headline. If the newspaper had distanced itself from the wording, by writing (say) “Scientists say every hour of TV watching shortens life by 22 minutes”, or by using quotation marks, we would not have said “Yes” for this item.

### N No independent comment?

No. There is expert comment from credible sources (if not independent researchers), and, while not criticising the causal (mis)interpretation, the comments draw attention to the importance of sedentary behaviour.

### H “Higher risk”?

No. Absolute reductions in lifetime are given.

### U Unjustified advice?

Yes. Advice specifically to avoid watching

television is given; the study outcomes do not support this.

### M Might be explained by something else?

Yes. It is true that the story deals with sedentary behaviour as a more plausible overall cause than watching television in itself, but the main thrust is that it is the TV that is the problem; alternative explanations are obvious.

### P Public relations puff?

Yes. There is no obvious PR angle, and the original report is in a peer-reviewed journal. But the concentration on the idea that some mundane and innocuous activity is going to kill you, as an angle for the press story and indeed (arguably) the original report, is enough to score here.

### H Half the picture?

Yes. The story does not make clear why watching television was picked out for attention. It says little about why these people were chosen for study or, more importantly, what other aspects of their behaviour were recorded (and could have been reported on).

### R Relevance unclear?

Yes, though marginal. It is a study of Australians – is that relevant to me as a non-Australian? – and the report does not make clear *which* Australians were sampled, so it is possible they were untypical. However, this is verging on nitpicking.

### Y Yet another single study?

Yes.

### S Small?

No. Numbers studied looks reasonable for a study of this nature (though the report does not make it clear how many deaths, the relevant events, occurred).

The total score is **8/12**. The story and/or the study it reports on have many unsatisfactory features; some stem from the original study rather than from the way it was reported.