

Scientists warn the 'truth is under attack' and provide toolkit for spotting it

August 9 2024



Credit: Pixabay/CC0 Public Domain

It is hoped a new "toolkit" will help people separate truth from lies and unsubstantiated opinion, and prevent the spread of misinformation.

The checklist, [published](#) in the journal *Experimental Physiology*, was written by scientists from the Universities of Portsmouth and Edinburgh.

They warn the "truth is under attack" and have highlighted the urgent need for [critical thinking](#) and [scientific literacy](#) to combat the rise of unfounded, misleading and often damaging claims which the experts say are amplified by social media.

From political debates to claims for new products or health-enhancing interventions, claims are frequently presented as "[scientific findings](#)" supported by "expert" opinions.

Why is getting as close as possible to the truth important?

Knowledge drives behavior and it is easy to give people "fake knowledge." Before people act on what they are told, they should try to make sure it has some basis in fact. Some years ago, a district court decided that a particular vaccine was responsible for an adverse outcome (which wasn't scientifically proven). This triggered a disastrous decrease in child vaccinations for a whole range of diseases. The transmission of the faulty conclusion was related to internet broadband access, greater access, and greater decrease in vaccinations.

Professor Mike Tipton MBE, co-founder of the University of Portsmouth's Extreme Environments Laboratory (EEL), said, "Being able to process large amounts of information in a critical way and check its veracity has become an important life skill for us all, but unfortunately not everyone knows how to do it, what questions to ask.

"We have created a checklist to show people the processes applied in scientific evaluation, which can be applied to day to day decision-

making."

The scientists have published steps to take and questions to ask when absorbing information online and in the media. These include scrutinizing the qualifications of those making the statements, the framing of the original question, the evidence supporting the claims, and potential conflicts of interest.

They also explain how social media has become a battleground for beliefs, often presenting claims that contradict established knowledge.

Dr. Gordon Drummond from the Department of Anesthesia, Critical Care and Pain Medicine at the University of Edinburgh, said, "We want to emphasize the importance of understanding basic scientific principles. For instance, statistical use of the words 'population' and 'sample' is different from everyday usage, and the ideas behind 'significance' often cause incorrect conclusions even among professionals."

"From 'spin stories' to falsehoods, we're bombarded with misinformation on a daily basis," added Professor Tipton.

"Armed with the above checklist, you can challenge and interrogate what you come across online, in the media, and even over the dinner table with friends and family.

"At the very least, the next time you hear phrases like 'they say this is great' or 'this is scientifically proven' start by asking 'who are they?' and 'which scientists, using which methods?' Be cautious and questioning; snake oil and its vendors still exist, and they come in many guises."

More information: G. Drummond et al, How to spot the truth, *Experimental Physiology* (2024). [DOI: 10.1113/EP092160](https://doi.org/10.1113/EP092160)

Provided by University of Portsmouth

Citation: Scientists warn the 'truth is under attack' and provide toolkit for spotting it (2024, August 9) retrieved 15 August 2024 from <https://phys.org/news/2024-08-scientists-truth-toolkit.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.