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David Gee  
European Environment Agency  
Kongens Nytorv, 6  
DK 1050 Copenhagen  
Denmark  
Email: [david.gee@eea.europa.eu](mailto:david.gee@eea.europa.eu)

## **Evaluating environmental impacts on health: A sufficiency of evidence for action**

David Taylor Gee (EEA, Copenhagen, Denmark)

In November 2006, the ‘Weybridge+10’ Conference summarised the results of 10 years of the European research on Endocrine Disrupting Substances and their impacts on health. Evaluating such evidence requires a systematic approach to association and causality.

In 1965, Sir Bradford Hill proposed such an approach based on several features of the epidemiological and toxicological evidence which could be used to help support statements about causality. Two of them, Temporality and Consistency will be reviewed in light of multi-causality.

Bradford Hill also introduced the idea of “differential standards before we convict” i.e. a case specific sufficiency of evidence. He illustrated it with three strengths of evidence that could be sufficient for “Action” appropriate for situations where the consequences of being wrong in taking or not-taking action would be very different. “Relatively slight evidence” was deemed sufficient for banning a pill for early morning sickness in pregnant women; “fair evidence” was sufficient for eliminating a probable occupational carcinogen; and “very strong evidence” was required for restricting the smoking or consumption of fats and sugars.

This idea has been taken up by the International Panel on Climate Change and used to evaluate the evidence on climate change over time. The European Environment Agency has further developed the idea of a sufficiency of evidence for different types of action. It will be illustrated by applying the current stock of knowledge on endocrine disrupting substances in light of multi-causality and the timing of exposure.