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**About perceived and real risks**

The term risk refers to the likelihood of damage depending on the potential hazard as well as the exposure to such a hazard. These expert assessment criteria differ from those of lay persons, who turn to parameters such as the prominence of a risk, controllability, potential for catastrophe, the voluntary principle as well as the degree of dreadfulness. Thus, perceived risks seem to result from the fact that risks have not been communicated clearly, understandably and at the same time in a differentiated manner.

How can risks be communicated in such a way that the type, extent and significance of a risk can be adequately assessed by both experts and lay persons? How should public institutions, especially in times of crisis, deal with scientific uncertainty? In the first half of the year 2011, increased dioxin levels in eggs and meat made headlines in the press. The EHEC outbreak between May and July 2011 led to over 50 casualties and was the most severe food-borne bacterial outbreak to hit Germany since World War II. In the second half of the year 2012, several thousand persons were taken ill with gastroenteritis which in all probability was caused by norovirus contained in frozen strawberries.

A clear understanding of how risks are perceived and what factors influence risk perception are indispensable for adequate risk communication. Scientifically speaking, a “risk” denotes the extent of possible damage and the probability of it occurring. Perceived risks can arise in cases where the authorities have failed to communicate a risk in a clear and understandable way without oversimplifying it or because people misunderstand or do not understand at all the results of scientific risk assessment. To a large extent, risk perception is determined by the following factors: to what extent people feel they have a choice in relation to the risk, how natural and controllable, and how familiar it is.

The way in which risk measurement results are portrayed can impact on the perception of the risk. Risk comparisons and graphic representations are seen as important aids in improving the informative value of quantitative risk descriptions, since they can help to make risks easier to understand. Consumers expect easy-to-follow tips and clear information that are helpful to them in their everyday life. For this reason, the BfR always begins its scientific opinions with a summary that includes concrete recommendations, written in language that the general public can understand. In addition, a risk profile has been developed which summarises the key points of the opinions in the form of a graph, thereby visualising the described risk. The risk profile aims to help readers to quickly grasp the situation and the central features of the risk

assessed in the opinion. The information thus conveyed includes the affected group of persons, the probability and severity of health problems resulting from exposure, the informative value of the available data, and the extent to which consumers can control the risk.

Especially in times of crisis or crisis-type events, open, transparent and active risk communication is imperative. Apart from the scientific insights which form the basis of any risk assessment, insufficient knowledge and uncertainties in the interpretation of scientific data must be disclosed to ensure transparency.

## **CV**

PD Dr. Gaby-Fleur Bül is Head of the interdisciplinary Department Risk Communication at the Federal Institute for Risk Assessment (BfR) in Berlin since 2006 and also teaches at the University of Potsdam. She studied biochemistry in Hannover, where she completed her doctorate in cellular signal transduction at the Hannover Medical School. She then went on to receive her post doctorate degree on the relationship between diet and cancer at the German Institute of Human Nutrition (DIfE). In the area of consumer health protection, the Department of Risk Communication at the BfR is in charge of a participative dialogue with interests groups ranging from politics, science, industry, the public sector, associations, media, non-governmental organisations and consumers.

BfR risk communication focuses on risk perception, how to handle perceived risks and scientific uncertainty as well as the evaluation of risk communication measures in areas such as novel technologies, e.g. nano technology, or the differentiation between food supplements and medicinal products.