



SPECIAL **Raw food**

## **Imprint**

BfR Consumer Monitor 2023 | Special Raw food

Publisher: German Federal Institute for Risk Assessment (BfR)  
Max-Dohrn-Straße 8–10  
10589 Berlin  
bfr@bfr.bund.de  
www.bfr.bund.de/en

Photo: Mara Zemgaliete/stock.adobe.com

Layout/Realisation: Kern GmbH, Bexbach

Druck: Pinguin Druck GmbH, Berlin

Translation: KERN AG, Frankfurt am Main

As of: December 2022

Use of the results published here is possible with mention of the source “BfR Consumer Monitor 2023 | Special Raw food”.

This text version is a translation of the original German text, which is the only legally binding version.

ISBN 978-3-948484-59-0

## Foreword

Dear Readers,

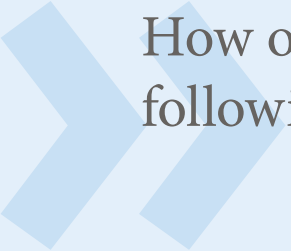
Generally speaking, neither animal or plant foods pose any health hazard if they are produced, processed and sold hygienically – but this does not mean zero risk. This is especially true for those foods that are eaten raw. Natural, raw foods are generally considered “healthy”, while pretreated foods are wrongly considered less healthy and “risky”.

Foodborne infections are mostly caused by *Campylobacter*, enterohaemorrhagic *Escherichia coli* (EHEC), *Listeria* and *Salmonella*, which can be contained on or in various foods. Therefore, good kitchen hygiene when handling raw food is essential to minimise the risk of disease. These pathogens can be life-threatening in extreme cases especially for people whose body’s immune systems are impaired or not yet fully developed. To avoid foodborne infections, consumers should know the health risk, especially if they belong to a risk group.

The BfR commissioned a nationwide survey to find out which food groups are consumed raw and how often, how the population in Germany assesses their benefits and health risks, and which pathogens are associated with which foods. The results of the survey can be found in this special issue of the BfR Consumer Monitor.

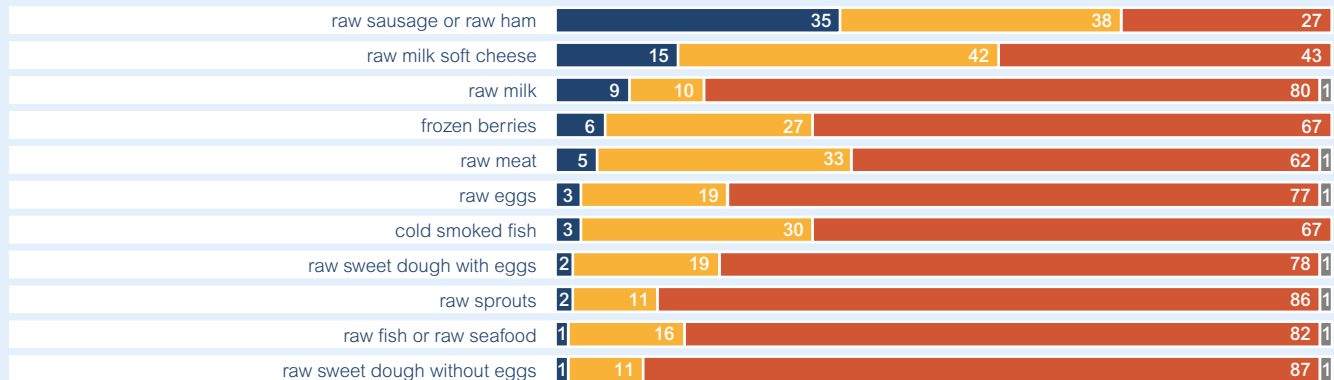


Professor Dr. Dr. Andreas Hensel  
President German Federal Institute for Risk Assessment (BfR)



How often do you typically eat the following raw or uncooked foods?


## Consumption behavior



daily / several times a week
  once a week / one to three times a month
  less than once a month / not at all
  not specified

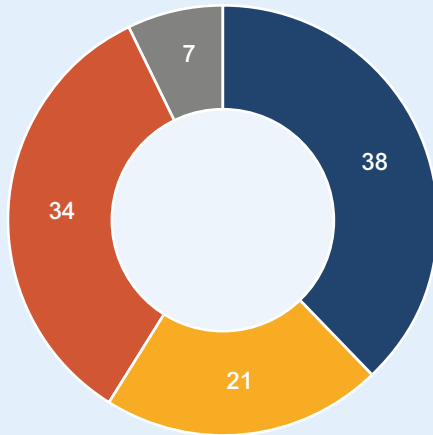
Response scale: 1 "every day", 2 "several times a week", 3 "about once a week", 4 "about once to three times a month", 5 "less than once a month", 6 "not at all"

Basis: 1,004 respondents; Figures given in percentages



What do you think: Is snacking on raw dough that contains flour harmless to health?

## Is snacking on raw dough – harmless to health?



yes


yes, but only if the dough does not contain an egg

no

not specified

Response scale: 1 "yes", 2 "yes, but only if the dough does not contain an egg", 3 "no"

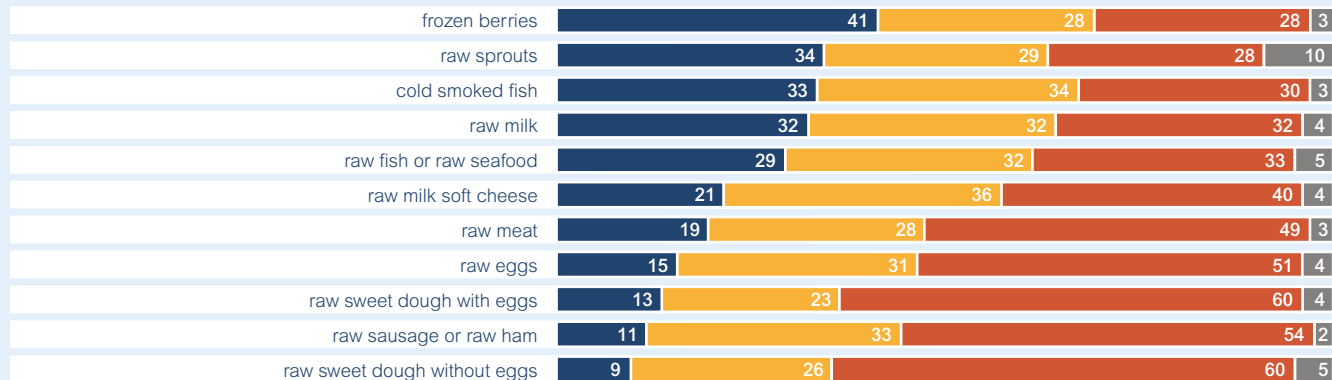
Basis: 1,004 respondents; Figures given in percentages



How do you rate the health benefits of eating the following foods?




## Assessment of health benefits



(very) high
  medium
  (very) low
  not specified

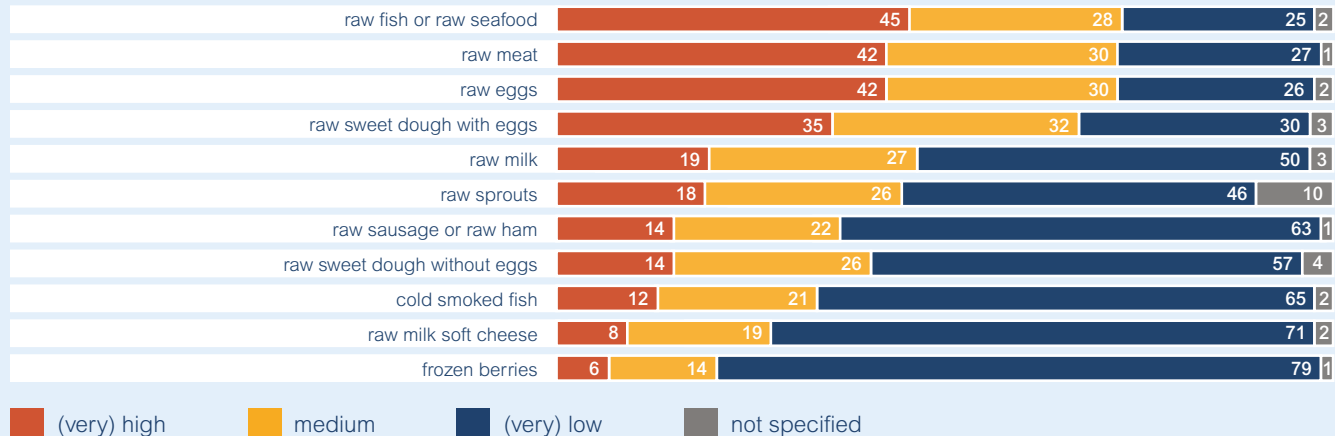
Response scale: 1 "very low" to 5 "very high"

Basis: 1,004 respondents; Figures given in percentages




How do you rate the health risks of eating the following foods?

## Assessment of health risks



Response scale: 1 "very low" to 5 "very high"

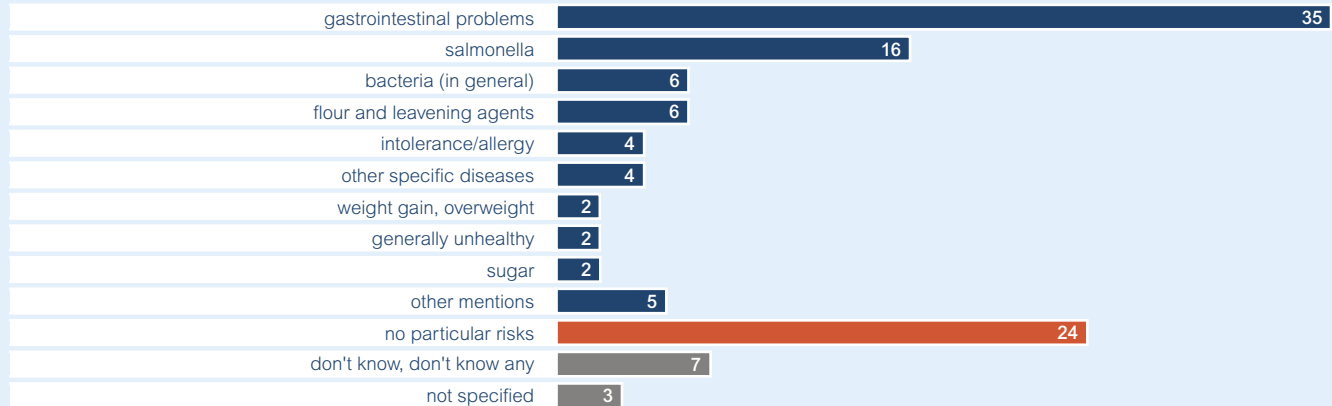
Basis: 1,004 respondents; Figures given in percentages



What health risks can you imagine from eating raw dough without eggs?


You can name up to three risks.

## Possible health risk



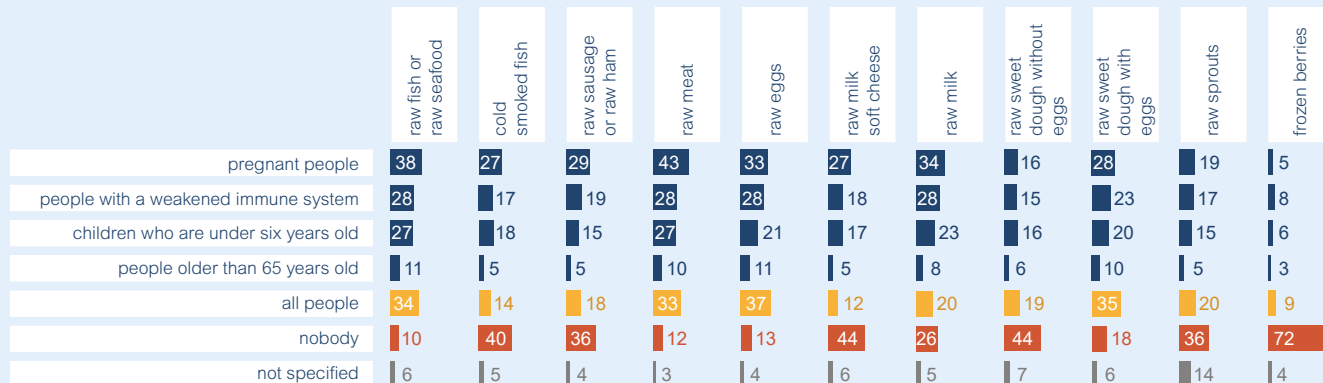
Shown: Replies > 2% (multiple replies possible)

Basis: 401 respondents (40%) indicating a medium to (very) high risk of eating raw dough without eggs; numbers in percent



What do you think: For which people could the following foods pose a health risk?


## Assessment of risk



Multiple responses

Shown: Response category "there is a health risk"

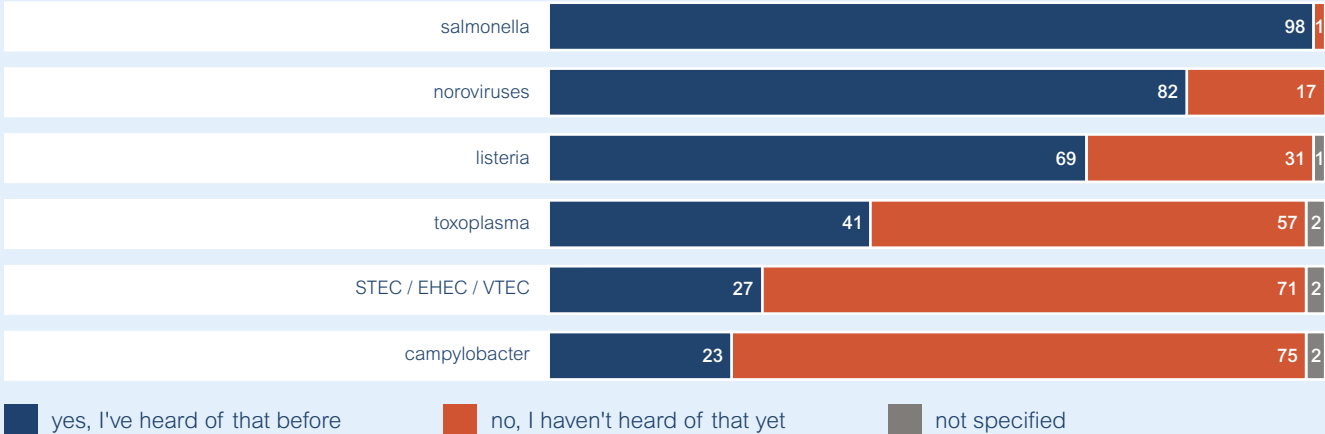
Basis: 1,004 respondents; Figures given in percentages




Have you ever heard of the following pathogens?



### Familiarity with specific pathogens

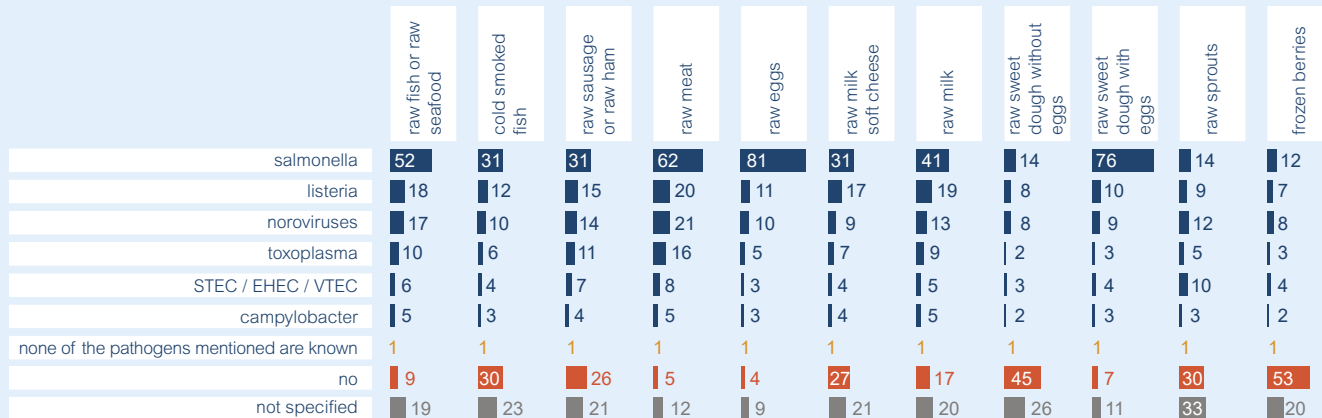


Basis: 1,004 respondents; Figures given in percentages



What do you think: Can one or more of the pathogens mentioned lead to a food-borne infection when eating the following foods?


## Knowledge about risk of infection



Multiple responses

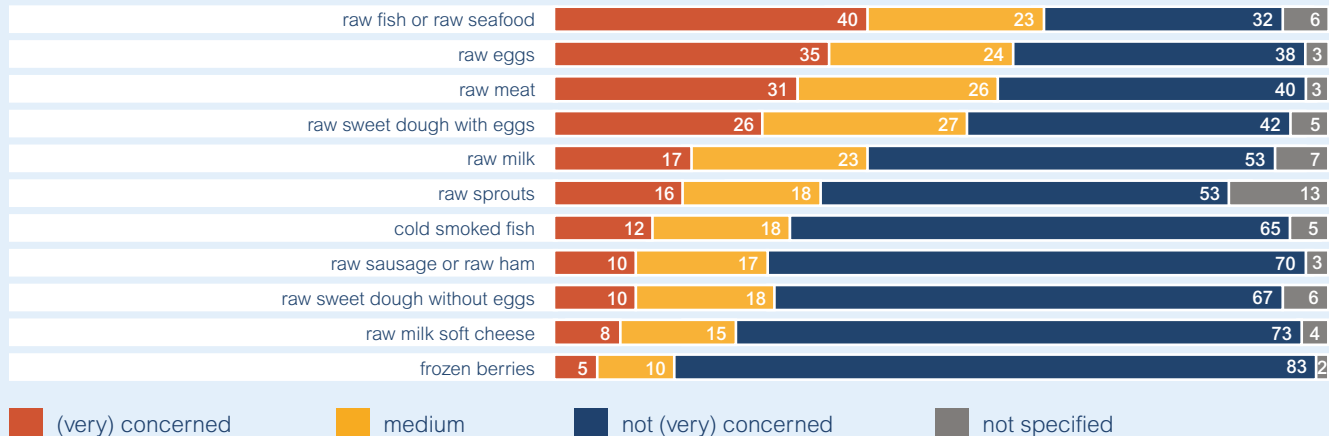
Shown: Response category "yes, for the viruses and bacteria mentioned"

Basis: 1,004 respondents; Figures given in percentages




How worried are you about getting a food-borne infection from eating the following foods?

## Concern for raw foods



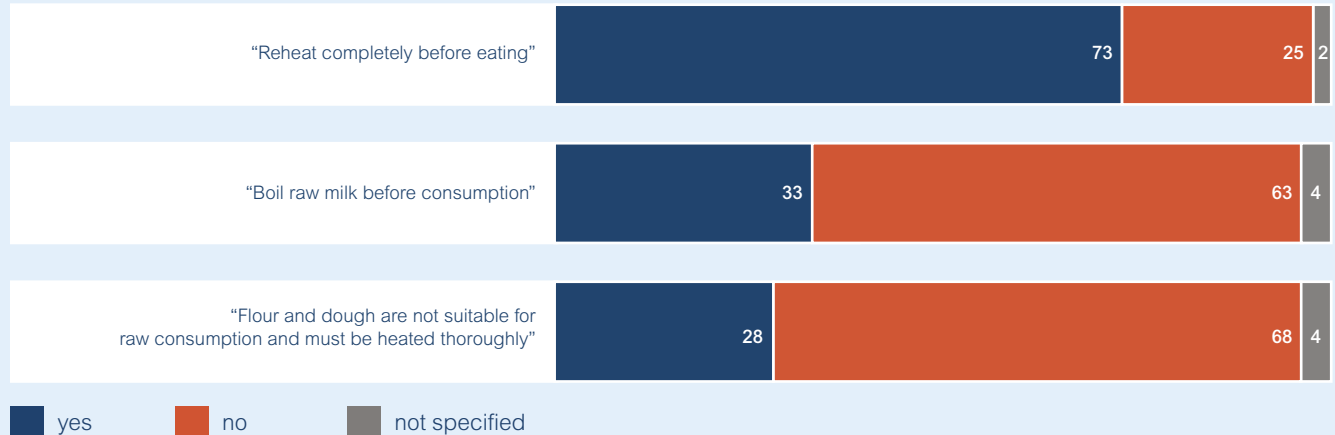
Response scale: 1 "not very concerned" to 5 "very concerned"

Basis: 1,004 respondents; Figures given in percentages

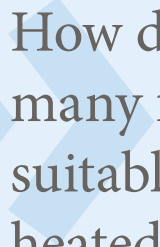


Have you ever read the following  
consumer warnings on food packaging  
or information signs in the sales area?

## Knowledge of consumer warnings



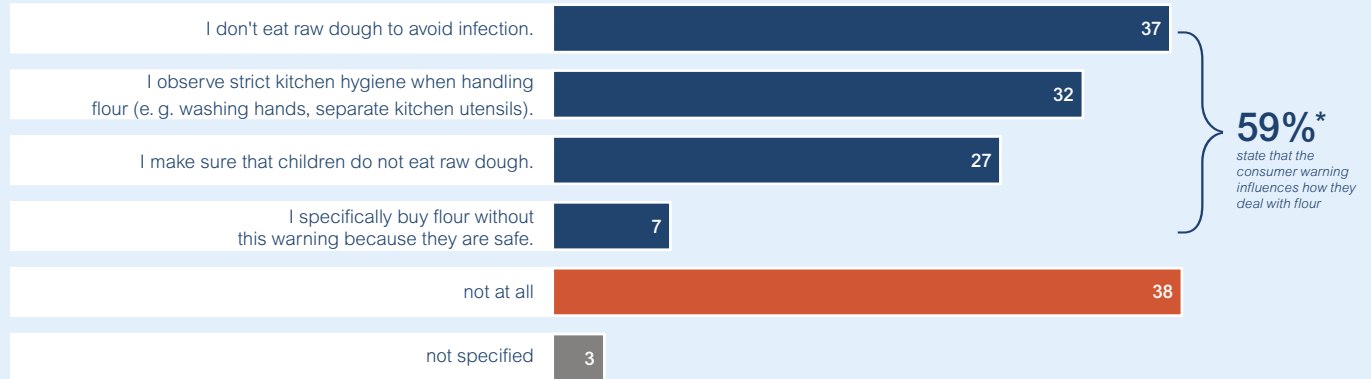
Basis: 1,004 respondents; Figures given in percentages



How does the consumer warning, found on many flour packets, “Flour and dough are not suitable for raw consumption and must be heated thoroughly” influence your handling of flour?



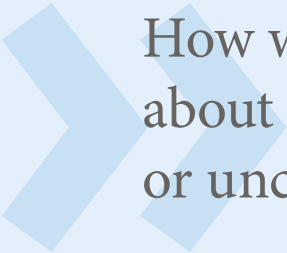
## Perception of consumer warnings



Basis: 275 respondents (28%) who have already noticed the consumer warning "Flour and dough are not suitable for raw consumption and must be heated thoroughly"; Figures given in percentages;

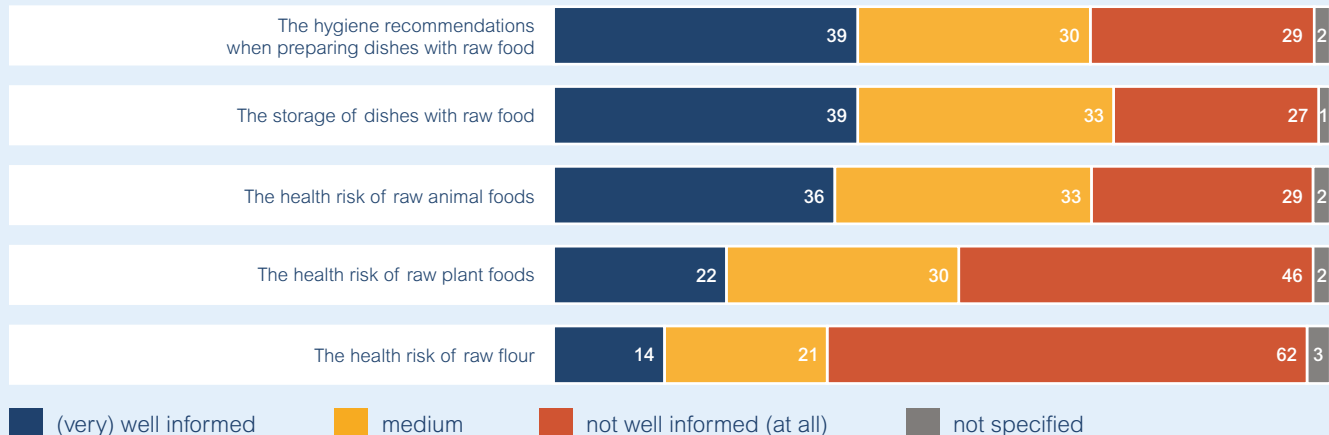
\* The number summarises all responses shown as blue bars (100%–3%–38%)=59%

Multiple responses



How well informed do you feel  
about the following aspects of raw  
or uncooked foods?

## Perception of information provided



Response scale: 1 "not well informed at all" to 5 "very well informed"

Basis: 1,004 respondents; Figures given in percentages

## How were the data collected?

<b>Survey period:</b>	01 to 11 September 2022
<b>Number of respondents:</b>	1,004
<b>Sample:</b>	Participants from an online access panel in Germany aged 16 years and over
<b>Representativeness:</b>	Random sample of panel participants with representative quota control according to gender, age, education, and region Additional weighting according to gender, education, age, employment, size of city, German federal state, and household size
<b>Survey method:</b>	Online survey (CAWI)
<b>Presentation of results:</b>	All figures given in percentages; rounding differences possible
<b>Conducted by:</b>	INFO GmbH

## Raw food

Food is usually not germ-free. Desirable microorganisms, such as lactic acid bacteria and cultured mould, and sometimes also undesirable germs can be found in food. Raw animal products in particular, but also plant-based products, can contain spoilage germs and pathogens. Poultry, meat, eggs and milk in particular can be contaminated in their raw state with pathogens such as *salmonella* or *campylobacter*. Every year in Germany alone, more than 100,000 cases of disease are reported that may have been caused by bacteria, viruses or parasites in food; the number of unreported cases is likely to be much higher. Young, old, pregnant women and immuno-compromised persons (YOPIs) are particularly susceptible.

Even though you cannot see, smell or taste the pathogens, you must always expect their presence in raw food. They can be transferred to other foods by hands and utensils and can multiply very quickly if stored unrefrigerated. Therefore, good kitchen hygiene should be observed when handling raw food at the dining table and during preparation in the kitchen. For example, foodborne infections can be avoided if raw meat and poultry are prepared separately from ready-to-eat food. Snacking on raw dough can also become a health risk. It's not only eggs that are a possible source of infection, but flour too.

## About the BfR

Do nanoparticles promote the occurrence of allergies? Does apple juice contain too much aluminium? The German Federal Institute for Risk Assessment, or BfR for short, is responsible for answering questions on all aspects of the health assessment of foods and feeds, consumer products and chemicals. Through its work, it makes a decisive contribution towards ensuring that food, products and the use of chemicals have become safer in Germany. The Institute's main tasks comprise the assessment of existing health risks and identification of new ones, the development of recommendations to limit risks and the transparent communication of this process. This work results in the scientific advice given to political decision makers. To help with the strategic alignment of its risk communication, the BfR conducts its own research in the field of risk perception. The Institute is independent in its scientific assessments, research and communication. The BfR belongs to the portfolio of the Federal Ministry of Food and Agriculture (BMEL).

**i** More information at: [www.bfr.bund.de/en](http://www.bfr.bund.de/en)

> *A-Z Index > B > bacteria*

> *A-Z Index > C > campylobacter*

> *A-Z Index > E > EHEC – Enterohämorrhagische Escherichia coli*

> *A-Z Index > E > eggs*

> *A-Z Index > E > Escherichia coli*

> *A-Z Index > F > fish*

> *A-Z Index > F > food hygiene*

> *A-Z Index > H > hygiene*

> *A-Z Index > L > Listeria monocytogenes*

> *A-Z Index > M > meat products*

> *A-Z Index > N > noroviruses*

> *A-Z Index > P > parasite*

> *A-Z Index > R > raw milk*

> *A-Z Index > S > salmonella*

> *A-Z Index > T > toxoplasmosis*

> *A-Z Index > V > viruses*

> *A-Z Index > Z > zoonoses*

> *Food safety > microbial risks in foods*

**German Federal Institute for Risk Assessment (BfR)**

Max-Dohrn-Straße 8–10  
10589 Berlin  
GERMANY

Phone +49 30 18412-0  
Fax +49 30 18412-99099  
[bfr@bfr.bund.de](mailto:bfr@bfr.bund.de)  
[www.bfr.bund.de/en](http://www.bfr.bund.de/en)