

## Supplementary Materials:

# Knowledge and Behavioral Habits to Reduce Mycotoxin Dietary Exposure at Household Level in a Cohort of German University Students

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**Table S1.** Question list and design included in the online survey.

| Description   |
|---|
| <p>1. How old are you?</p> <ul style="list-style-type: none"> <li><input type="radio"/> Younger than 20 years</li> <li><input type="radio"/> 20 to 29 years</li> <li><input type="radio"/> 30 to 39 years</li> <li><input type="radio"/> 40 to 49 years</li> <li><input type="radio"/> 50 to 59 years</li> <li><input type="radio"/> 60 years or older</li> </ul>   |
| <p>2. Gender, please select one of the options</p> <ul style="list-style-type: none"> <li><input type="radio"/> female</li> <li><input type="radio"/> male</li> <li><input type="radio"/> diverse</li> </ul>  |
| <p>3. How many people, including you, live in your household?</p> <p>_____</p>  |
| <p>4. Educational level</p> <ul style="list-style-type: none"> <li><input type="radio"/> No qualification</li> <li><input type="radio"/> Special school leaving certificate</li> <li><input type="radio"/> Secondary school certificate</li> <li><input type="radio"/> Secondary school leaving certificate</li> <li><input type="radio"/> University degree</li> <li><input type="radio"/> Other: _____</li> </ul>   |
| <p>5. Monthly net income</p> <p>This means the amount that is made up of your personal income (not that of the other household members) and is left over before the deduction of current expenses.</p> <ul style="list-style-type: none"> <li><input type="radio"/> less than 250</li> <li><input type="radio"/> 250€ up to € 499</li> <li><input type="radio"/> 500 € until 999 €</li> <li><input type="radio"/> 1000 € until 1499 €</li> <li><input type="radio"/> 1500 € until 1999 €</li> <li><input type="radio"/> 2000 € until 2999 €</li> <li><input type="radio"/> 3000 € until 3999 €</li> </ul> |

|   |
|---|
| <ul style="list-style-type: none"> <li>○ 4000 € till 4999 €</li> <li>○ 5000 € and more</li> <li>○ not specified</li> </ul>  |
| <p>6. How much do you approximate spend on food each month?</p> <p>This is only your personal expenditure, not that of the other household members. If you live together as a family, divide the total amount by the number of household members.</p> <ul style="list-style-type: none"> <li>○ less than 50 €</li> <li>○ 50 till 99 €</li> <li>○ 100 till 199 €</li> <li>○ 200 till 299 €</li> <li>○ 300 till 399 €</li> <li>○ 400 till 499 €</li> <li>○ 500 € and more</li> <li>○ Not specified</li> </ul> |
| <p>7. What is your current employment status?</p> <p>Please select your main job.</p> <ul style="list-style-type: none"> <li>○ In school</li> <li>○ In apprenticeship</li> <li>○ Studying</li> <li>○ Employed</li> <li>○ Civil servant</li> <li>○ Self-employed</li> <li>○ Working in the household</li> <li>○ Unemployed / looking for work</li> <li>○ Retired</li> <li>○ Other: _____</li> </ul>  |
| <p>8. Which of the following statements applies most to you?</p> <ul style="list-style-type: none"> <li>○ I mostly cook myself</li> <li>○ Another member of my household usually does the cooking</li> <li>○ I mostly eat in a canteen or restaurant</li> <li>○ I usually get prepared food delivered (e.g. delivery service, "meals on wheels")</li> <li>○ I mostly eat ready-made meals</li> <li>○ Other: _____</li> </ul>  |
| <p>9. Which best describes your diet?</p> <p>Please select the statement that applies I mostly cook myself.</p> <ul style="list-style-type: none"> <li>○ I eat a vegan diet</li> <li>○ I eat a vegetarian diet</li> <li>○ I eat an omnivorous diet</li> <li>○ The following applies to me: _____</li> </ul>   |
| <p>10. Which of the following statements apply to you?</p> <p>Please select the statement that applies I mostly cook myself.</p> <p>(For explanation: Foodsharing is an association that rescues food from the dustbin and distributes it, for example, through distributors called "FairDistributors").</p> <ul style="list-style-type: none"> <li>○ I regularly eat food from foodsharing</li> <li>○ I eat food from dumpster diving</li> <li>○ I eat mainly organic food</li> </ul>                      |

|  |                        |                       |                       |                       |                       |
|--|------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <input type="radio"/> The following applies to me: _____<br><input type="radio"/> None of this applies to me.                    |                        |                       |                       |                       |                       |
| 11. We have compiled statements on the topic of nutrition. Please rate to what extent you agree or disagree with each statement. |                        |                       |                       |                       |                       |
|  | Do not agree<br>at all | Strongly<br>disagree  | Partly/<br>partly     | Strongly<br>agree     | Fully<br>agree        |
| Nutrition is an important topic for me.  | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I think that I am very well versed in nutritional issues.  | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I pay a lot of attention to the quality of my food.  | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| The price of food is more important to me than the quality.  | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 12. How often do you eat or use...   |                        |                       |                       |                       |                       |
|  | Daily                  | 3-6 times a<br>week   | 1-2 times a<br>week   | 1-3 times a<br>month  | Rarely or<br>never    |
| Nuts and shell fruits (e.g. hazelnuts, peanuts, almonds, pistachios)   | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Oil seeds (e.g. linseed, pumpkin seeds, sesame seeds)  | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Dried fruits   | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Cow's milk   | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Cereals, bread and other bakery products   | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Breakfast cereals (e.g. cornflakes, oatmeal)   | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Instant coffee   | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Apple juice / grape juice  | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Dried spices (e.g. chilli, paprika, nutmeg, curcuma)   | <input type="radio"/>  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 13. Do you know what mould toxins are?   |                        |                       |                       |                       |                       |
| <input type="radio"/> Yes<br><input type="radio"/> No  |                        |                       |                       |                       |                       |
| 14. Have you ever heard the term "mycotoxins"?   |                        |                       |                       |                       |                       |
| <input type="radio"/> Yes<br><input type="radio"/> No  |                        |                       |                       |                       |                       |

15. Have you ever heard of "ergot poisoning"?

- ☐ Yes
- ☐ No

## Intervention text

Here is a brief information about mycotoxins:

Mycotoxins are toxic compounds produced naturally by various species of fungi.

Mycotoxins enter the food chain as a result of infection of crops before or after harvest and typically occur in foods such as cereals, dried fruits, nuts and spices. The presence of mycotoxins in food and feed can cause adverse health effects in humans and animals, ranging from gastrointestinal and kidney diseases to immune deficiency and cancer.

Exposure to mycotoxins can occur through the consumption of contaminated food or through animals fed contaminated feed. The most common mycotoxins that pose a risk to human and animal health include aflatoxins, ochratoxin A and Fusarium toxins such as deoxynivalenol.

As temperature and humidity are important parameters for fungal growth, climate change is expected to affect the occurrence of mycotoxins.

## Golden rules

16. Below you will find some recommendations for reducing mycotoxin contamination in food.

Please tick in each case whether you currently follow this recommendation or not.

[illegible]

|   |                           |                       |                       |                       |                       |                       |
|---|---------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| "real" mould, cheese should always be stored in separate packaging.   |                           |                       |                       |                       |                       |                       |
| (R_09) Store cereals and flour in a cool, dry place and shake occasionally.   | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| (R_10) Buy fruit and vegetables that are as intact as possible, i.e. without injuries or bruises.   | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| (R_11) Mouldy jams and jellies should always be thrown away. Because of the lower sugar content, diet jams should always be stored in the refrigerator.                             | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| (R_12) Rotten fruit should neither be eaten nor processed further into compote or jam.  | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| (R_13) If there is mould on bread, it should be thrown away whole.  | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| (R_14) If meat or sausage is mouldy, both should be discarded. In the case of air-dried sausage or ham, it is possible to cut this out generously and continue to eat the products. | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| (R_15) Individual mouldy nuts should be discarded.  | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| (R_16) Spices should be bought in smaller quantities and consumed quickly.  | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| (R_17) Do not feed mouldy products to animals, as mycotoxins are just as harmful to them.   | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 17. In the following we have again compiled some statements. Please indicate to what extent you personally agree or disagree with these statements.                                 |                           |                       |                       |                       |                       |                       |
|   | Do not<br>agree at<br>all | Strongly<br>disagree  | Partly/<br>partly     | Strongly<br>agree     | Fully<br>agree        |                       |
| I try to avoid health problems even before I notice symptoms.   | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |                       |
| I think a lot about health risks and try to prevent them.   | <input type="radio"/>     | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |                       |

|   |                       |                       |                       |                       |                       |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| I try to protect myself from health risks I hear about.   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Health risks only worry me when they affect me or someone close to me.  |                       |                       |                       |                       |                       |
| Nowadays there are so many things that can harm you. I don't worry about that.  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I am often worried about health risks I have heard about, but I don't do anything about them.   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I only do something about health risks I have heard about when I have a problem with them myself.   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 18. How do you rate the following statements on mycotoxins? For each statement, please mark with a cross the extent to which you agree or disagree with it. |                       |                       |                       |                       |                       |
|   | Do not agree at all   | Strongly disagree     | Partly/ partly        | Strongly agree        | Fully agree           |
| I was already aware of the health hazards of mould toxins in food.  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| For me personally, I consider the health hazards of mycotoxins to be insignificant.   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| The described health hazards of mycotoxin exposure frighten me.   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I find the health risk from mycotoxins particularly alarming because the adverse health effects only appear after many years.                               | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I consider the health risk from mycotoxins to be insignificant for the general public in Germany.   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Mycotoxins are a great risk for young children.   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Mycotoxins have the potential to make very many people ill at once.   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Mycotoxins are a serious threat to health.  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| As a consumer, I have no way to protect myself from mycotoxin exposure.   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 19. How high do you rate your overall ability to influence the prevention of mycotoxins in your food?   |                       |                       |                       |                       |                       |

| <ul style="list-style-type: none"> <li>○ Very high</li> <li>○ Rather high</li> <li>○ Partly/Partly</li> <li>○ Rather low</li> <li>○ Very low</li> </ul>   |                       |                       |                       |                       |                       |   |               |                   |             |                |            |  |                       |                       |                       |                       |                       |  |                       |                       |                       |                       |                       |   |                       |                       |                       |                       |                       |  |                       |                       |                       |                       |                       |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---|---------------|-------------------|-------------|----------------|------------|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <p>20. To what extent do you think you can protect your health by avoiding mycotoxins in your food?</p> <ul style="list-style-type: none"> <li>○ Very strongly</li> <li>○ Rather strongly</li> <li>○ Partly/Partly</li> <li>○ Rather low</li> <li>○ Very low</li> </ul>   |                       |                       |                       |                       |                       |   |               |                   |             |                |            |  |                       |                       |                       |                       |                       |  |                       |                       |                       |                       |                       |   |                       |                       |                       |                       |                       |  |                       |                       |                       |                       |                       |
| <p>17. How do you assess the health risk posed by mycotoxins compared to other risks in food?</p> <table border="1"> <thead> <tr> <th>I rate the health risk from mycotoxins...</th> <th>Much less bad</th> <th>Somewhat less bad</th> <th>Equally bad</th> <th>Somewhat worse</th> <th>Much worse</th> </tr> </thead> <tbody> <tr> <td>compared to the risk from pesticide residues as...</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>compared to the risk from heavy metals as...</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>compared to the risk from microplastics as...</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>compared to the risk from food additives as...</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> </tbody> </table> |                       |                       |                       |                       |                       | I rate the health risk from mycotoxins... | Much less bad | Somewhat less bad | Equally bad | Somewhat worse | Much worse | compared to the risk from pesticide residues as... | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | compared to the risk from heavy metals as... | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | compared to the risk from microplastics as... | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | compared to the risk from food additives as... | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I rate the health risk from mycotoxins...   | Much less bad         | Somewhat less bad     | Equally bad           | Somewhat worse        | Much worse            |   |               |                   |             |                |            |  |                       |                       |                       |                       |                       |  |                       |                       |                       |                       |                       |   |                       |                       |                       |                       |                       |  |                       |                       |                       |                       |                       |
| compared to the risk from pesticide residues as...  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |   |               |                   |             |                |            |  |                       |                       |                       |                       |                       |  |                       |                       |                       |                       |                       |   |                       |                       |                       |                       |                       |  |                       |                       |                       |                       |                       |
| compared to the risk from heavy metals as...  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |   |               |                   |             |                |            |  |                       |                       |                       |                       |                       |  |                       |                       |                       |                       |                       |   |                       |                       |                       |                       |                       |  |                       |                       |                       |                       |                       |
| compared to the risk from microplastics as...   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |   |               |                   |             |                |            |  |                       |                       |                       |                       |                       |  |                       |                       |                       |                       |                       |   |                       |                       |                       |                       |                       |  |                       |                       |                       |                       |                       |
| compared to the risk from food additives as...  | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |   |               |                   |             |                |            |  |                       |                       |                       |                       |                       |  |                       |                       |                       |                       |                       |   |                       |                       |                       |                       |                       |  |                       |                       |                       |                       |                       |
| <p>22. Where do you most frequently obtain information on health-related topics?<br/>Please select your most frequent source of information.</p> <ul style="list-style-type: none"> <li>○ Social media</li> <li>○ Through friends / acquaintances</li> <li>○ From health professionals (doctors/pharmacists)</li> <li>○ Public online information pages and institutes, e.g. the Federal Institute for Risk Assessment</li> <li>○ Other: _____</li> </ul>   |                       |                       |                       |                       |                       |   |               |                   |             |                |            |  |                       |                       |                       |                       |                       |  |                       |                       |                       |                       |                       |   |                       |                       |                       |                       |                       |  |                       |                       |                       |                       |                       |
| <p>23. How would you rate the health risks of mycotoxins in general?</p> <ul style="list-style-type: none"> <li>○ Not at all risky</li> <li>○ Rather not risky</li> <li>○ Partly/Partly</li> <li>○ Rather risky</li> <li>○ Extremely risky</li> </ul>   |                       |                       |                       |                       |                       |   |               |                   |             |                |            |  |                       |                       |                       |                       |                       |  |                       |                       |                       |                       |                       |   |                       |                       |                       |                       |                       |  |                       |                       |                       |                       |                       |