Does bread cause bloating?

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Background

• It seems a common perception that bread causes bloating.
• Reports in the media have suggested bread is associated with bloating.
• Some claimed that the Chorleywood Bread Process could be to blame for this.
Review of the evidence

• Does bread cause bloating?
• Is there evidence that bread made with the Chorleywood Bread Process (CBP) is linked with gastrointestinal symptoms?

What is bloating?

• It is often assumed that bloating is simply caused by excess amounts of gas.
• Studies have shown that people who feel bloated do NOT generally produce more gas than people without symptoms.
• People who feel bloated may have a gut that is more sensitive to distension.
• Gas may not pass as easily or gas passage may be inhibited voluntarily.
• Feeling bloated can also be due to constipation/slow transit.
Modern vs. traditional bread making

- No published studies investigating whether the use of the CBP affects gastrointestinal health in a different way than bread made using more traditional methods.
- This means that claims made blaming modern bread making for bloating are not supported by published evidence.

Coeliac disease – a possible explanation?

- It has been suggested some may suffer from coeliac disease without knowing it, but not all experts agree.
- Some studies suggest that when using sourdough to make bread some of the gluten is broken down.
- Therefore, it has been suggested bread made with sourdough may cause less symptoms in coeliac patients.
- However, experts warn that levels of gluten remain too high for bread to be appropriate for coeliac sufferers.
Wheat allergy

- Many people believe they are allergic to wheat.
- As with other forms of allergy, the proportion of people who believe they are allergic to wheat is clearly higher (up to 10fold) than the actual prevalence.
- A recent report* estimated the prevalence rates to be around 0.1-0.4% in children. No data available for adults.


Wheat allergy

- If an allergy is suspected standardised tests should be used for diagnosis.
- Unnecessary wheat avoidance may lead to inadequate intakes of key nutrients and fibre.
Does bread cause bloating in healthy people?

- No studies were identified that specifically looked at whether bread causes bloating in healthy people.
- The most likely bread component to be linked to flatulence is dietary fibre.
- Some bread varieties can provide substantial amounts of fibre.
- In the UK diet, on average, bread provides a fifth of total dietary fibre intake.

Could dietary fibre be linked to feeling bloated?

- Dietary fibre cannot be digested in the small intestine and passes into the large intestine (colon).
- Some fibre is fermented by gut bacteria and this produces gas.
- The amount of gas produced depends on the type and amount of fibre, but also on our gut flora.
Could dietary fibre be linked to feeling bloated?

- People with low fibre intakes who suddenly increase their fibre intake (e.g. by eating bread) can experience symptoms associated with bloating.
- In most cases, the gut adapts to increased fibre intake and any symptoms usually normalise.
- Sufficient water intake and regular physical activity help avoid such symptoms.

Dietary fibre - important for a healthy gut

- Some types of fibre act as fuel for gut bacteria and are therefore important for a healthy gut flora.
- Some types of fibre bind water and bulk up faecal mass, which speeds up intestinal transit.
- People with low intakes of fibre can suffer from constipation, which can make them feel bloated.
Dietary fibre - important for a healthy gut

- Most of us eat too little fibre and therefore it is not advisable to cut out fibre rich foods.
- These include starchy carbohydrate foods such as bread, cereals, pasta (particularly wholemeal/wholegrain varieties), fruit and vegetables.

IBS sufferers – an exception when it comes to fibre

- Although most people would benefit from increased fibre intakes, for some irritable bowel syndrome (IBS) sufferers reducing fibre intake (in particular bran fibre) can help relieve gastrointestinal symptoms.
- In this case wholemeal/wholegrain products should be avoided and white bread or other white cereal based products should be eaten instead.
Could the yeast in bread make us feel bloated?

- It has been suggested that because more yeast is added to the dough in the initial step of the CBP this could lead to gastrointestinal symptoms.
- Yeast multiplies during fermentation. Fermentation time in CBP is much shorter so yeast has less time to multiply.
- All the yeast is killed during baking.
- No published evidence was found that yeast is associated with bloating.

Is modern bread less nutritious?

- Bread made with the CBP is not less nutritious than bread made with more traditional bread making processes.
- The type of flour used (white or wholemeal) and the addition of nutrients to restore those lost during milling have the most significant impact on nutrient content.
**Contribution of bread to nutrient intake in the UK diet**

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Contribution to total intake</th>
</tr>
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<tbody>
<tr>
<td>Thiamin</td>
<td>14%</td>
</tr>
<tr>
<td>Niacin</td>
<td>11%</td>
</tr>
<tr>
<td>Folate</td>
<td>11%</td>
</tr>
<tr>
<td>Iron</td>
<td>15%</td>
</tr>
<tr>
<td>Calcium</td>
<td>19%</td>
</tr>
<tr>
<td>Magnesium</td>
<td>13%</td>
</tr>
<tr>
<td>Zinc</td>
<td>11%</td>
</tr>
<tr>
<td>Copper</td>
<td>14%</td>
</tr>
<tr>
<td>Manganese</td>
<td>26%</td>
</tr>
</tbody>
</table>

Nutrients where there is evidence of low intakes and/or status in the UK population

**Summary**

- For the average healthy consumer, there is no evidence that regular consumption of bread, produced by modern or traditional methods, causes bloating.
- No evidence to support claims that modern bread making has a different effect on gastrointestinal system compared to more traditional methods.
- Dietary fibre is important for gut health and cutting out fibre may negatively affect gut health.
- Bread provides many other nutrients that are important for health.
For more information

- The paper is available for free at http://onlinelibrary.wiley.com
- For more information on healthy eating visit www.nutrition.org.uk.
- Make use of the BNF’s free media service by calling 02074046504 or send an email to postbox@nutrition.org.uk.