Climate Change and Food Security: Health Impacts in Developed Countries

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Abstract

Background: Anthropogenic climate change will affect global food production, with uncertain consequences for human health in developed countries.

Objectives: We investigated the potential impact of climate change on food security (nutrition and food safety) and the...
implications for human health in developed countries.

**Methods:** Expert input and structured literature searches were conducted and synthesized to produce overall assessments of the likely impacts of climate change on global food production and recommendations for future research and policy changes.

**Results:** Increasing food prices may lower the nutritional quality of dietary intakes, exacerbate obesity, and amplify health inequalities. Altered conditions for food production may result in emerging pathogens, new crop and livestock species, and altered use of pesticides and veterinary medicines, and affect the main transfer mechanisms through which contaminants move from the environment into food. All these have implications for food safety and the nutritional content of food. Climate change mitigation may increase consumption of foods whose production reduces greenhouse gas emissions. Impacts may include reduced red meat consumption (with positive effects on saturated fat, but negative impacts on zinc and iron intake) and reduced winter fruit and vegetable consumption. Developed countries have complex structures in place that may be used to adapt to the food safety consequences of climate change, although their effectiveness will vary between countries, and the ability to respond to nutritional challenges is less certain.

**Conclusions:** Climate change will have notable impacts upon nutrition and food safety in developed countries, but further research is necessary to accurately quantify these impacts. Uncertainty about future impacts, coupled with evidence that climate change may lead to more variable food quality, emphasizes the need to maintain and strengthen existing structures and policies to regulate food production, monitor food quality and safety, and respond to nutritional and safety issues that arise.

**Key words:** adaptation, climate change, food safety, food security, nutrition, regulation.


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