Chapter 2


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ABSTRACT

While foods of animal origin, including red meat, poultry, seafood, eggs and dairy foods, are good sources of protein and other nutrients including iron, zinc, calcium, vitamin B12 and omega-3 fatty acids, there is increasing evidence to suggest that regular consumption of animal foods may negatively impact health and disease risk. This chapter reviews the evidence linking high intakes of animal foods with chronic disease risk, particularly type 2 diabetes, cardiovascular disease and cancer, and discusses some of the possible mechanisms to explain the association between animal food intake and disease risk. The benefits of plant-based and low-animal food options as solutions to reducing these risks are also discussed, along with implications and recommendations for adopting such diets.

INTRODUCTION

It is well accepted that lifestyle factors, including diet, are a major contributor to chronic disease risk. While there is some controversy over what the optimal diet is for health, there is general consensus that the greatest benefits come from a diet which is based around plant foods (Katz & Meller, 2014).

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Plant-based diets which exclude or contain low intakes of animal foods are associated with improved health outcomes (McEvoy et al., 2012). It is likely that these benefits are the result of both an increased consumption of plant foods and a reduced consumption of animal foods (Sabaté, 2003). Plant foods including fruits, vegetables, wholegrains, legumes and nuts are rich in dietary fibre, antioxidants and phytochemicals and increased intakes are associated with reduced disease risk. On the other hand, there are a number of nutrients and other compounds typically present in animal foods which may increase disease risk, including saturated fat, dietary cholesterol, animal protein, haem iron, Advanced Glycation End Products (AGEs) and nitrates and nitrosamines in processed and cooked meats.

This chapter:

- Reviews the evidence linking high intakes of animal foods with chronic disease risk, particularly type 2 diabetes, cardiovascular disease and cancer.
- Briefly discusses possible mechanisms to explain the association between animal food intake and disease risk.
- Discusses the benefits of plant-based diets as possible solutions to reducing the health risks associated with high intakes of animal foods.

BACKGROUND

Chronic diseases including heart disease, stroke, cancer and diabetes, are the leading causes of death and disability worldwide. According to the World Health Organisation (WHO, 2017), chronic diseases are responsible for around 70% of all deaths, globally.

Lifestyle factors, particularly diet, play a significant role in the development of chronic disease. In fact, diet-related chronic disease is one of the most preventable causes of morbidity and mortality worldwide. While there is some confusion among the public about what constitutes a healthy diet, research to date overwhelmingly supports the benefits of a largely plant-based diet (Katz & Meller, 2014). Animal foods are promoted as important sources of iron, zinc, calcium, vitamin B12, protein and omega-3 fats, and concerns are raised regarding nutritional inadequacies when they are excluded from the diet. However, each of those nutrients are available from plant foods, with the exception of vitamin B12. Despite significant evidence showing health benefits of plant-based diets and negative health effects of diets high in animal foods, there continues to be a focus on what is ‘missing’ when animal foods are removed from the diet. Yet, particularly in the Western world, chronic disease is a much bigger contributor to morbidity and mortality than nutrient deficiencies. Furthermore, plant-based diets more closely match dietary recommendations for good health and prevention of chronic disease, and there is good evidence to show that plant-based diets containing little or no animal foods are associated with a reduced risk of chronic disease. The relationships between animal foods and chronic disease risk, the likely mechanisms underlying these relationships, and the reduction in chronic disease risk associated with diets low in animal foods are explored in this chapter.

A systematic search was conducted using the Medline database (www.pubmed.com; National Library of Medicine, Bethesda, MD) and Cochrane Reviews (www.cochrane.org/reviews; The Cochrane Collaboration) through to April 2017. Additional studies were obtained from reviewing the reference lists of other original studies and review papers. Due to the large number of studies, in most cases only the
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