Effect of Plant-based Diet on Type 2 Diabetes Risk: A Review of the Literature

Ruixin Liu *
Northwest A&F University, Yang Ling, Shaanxi 712100, China
* Corresponding author Email: liuruixin@nwafu.edu.cn

Abstract: With the growth of global economy, people's dietary quality requirements and dietary quality level are also improving, but there are more bad diet and living habits. As a chronic metabolic disease, the incidence of diabetes has been increasing in recent years, which has seriously affected people's life quality and increased the economic burden of families. Adjust their own living habits, ensure a healthy diet and rest, in order to effectively reduce the incidence of diabetes. Plant-based diet consists of a variety of ingredients, including grains, nuts, vegetables and fruits, etc. Through scientific dietary nutrition combination and appropriate formulation, it can play a good role in helping the human body. Based on domestic and foreign research literature, this paper discusses the improvement of plant-based diet on type 2 diabetes risk, and puts forward suggestions on related diets and nutritional ways, in order to provide guidance for people's dietary habits.

Keywords: Type 2 Diabetes; Plant-based Diet; Plant-based Foods.

1. Introduction
With the improvement of people's demand for a better life and the pursuit of high standard dietary goals, dietary collocation has been widely concerned by the food industry and healthcare industry. Therefore, it is very important to study the proper dietary combination methods to avoid the damage to human health and property caused by improper food combination. Type 2 diabetes is a highly regarded research area that has received increasing attention from medical practitioners and food researchers over the past few decades.

When people study how to effectively manage the onset of type 2 diabetes, researchers have found that adjusting dietary patterns can effectively reduce the occurrence of this condition. Plant-based diet, as a popular healthy diet at this stage, can not only reduce the incidence of obesity, but also regulate blood sugar and lipids, which is beneficial to human endocrine and circulatory system. There are many studies on the regulation of diabetes by plant-based diet, but there are few studies that systematically summarize its impact on type 2 diabetes, and few studies that overall explain what plant foods can prevent the occurrence of type 2 diabetes, and which plant foods are harmful to type 2 diabetes.

In the word, we summarized the key research results of the impact of plant-based diet on type 2 diabetes, and proposed reasonable consumption of plant-based food according to the impact of plant-based food on human body, and put forward feasible recommendations for plant-based diet.

2. Dietary Changes to Reduce Diabetes Risk
In order to pursue a healthier life style, the research on adjusting dietary pattern and achieving a higher quality of life has certain practical significance. It is widely accepted that the Chinese diet and lifestyle have contributed to the growing prevalence of diabetes. The research concluded that the intake of refined grains instead of whole grains in conjunction with a high BMI is a crucial factor in the increased incidence of diabetes within the Chinese population. This suggests that unhealthy dietary patterns may increase the incidence of diabetes to some extent [1].

Numerous studies conducted in the Chinese domestic setting have indicated that risk can be reduced via adopting a plant-based diet. The correlation between them deserves further investigation since there are still few researches and incomplete researches in China. Because the plant diet index does not completely exclude the influence of animal foods while evaluating vegetarianism, it is generally accepted. The research [2] in rural Henan Province recruited 37,985 participants, and conducted positive and negative scores on 12 kinds of food to establish the plant-based diet index. After multivariate adjustment, it was found that the increase of plant-based diet index significantly reduced the incidence of type 2 diabetes. The study highlights a shift in eating patterns towards plant-based diets in order to achieve a healthy diet. The transition does not need an intact rejection of animal foods, but a change in intake of plant-based and animal-based diets [3]. In the prospective study, it was indicated that a plant-based dietary can effectively lower the risk, and this association remained significant even after accounting for the influence of BMI in people 18 years of age and older. A Survey was conducted between 2004 to 2006 on 11,580 adult participants. These participants were then followed up between 2009 and 2015 with a follow-up rate of 73.4%. In this larger study, sticking to a diet with more plant helped reduce the risk in adults. In particular, the effect was more pronounced in adults younger than 55 years old [4].

In developed countries, many scholars and studies have conducted in-depth studies on plant-based diet, extending the content to food, nutrition, and other fields. A study of three large cohorts from the United States showed that improving and adhering to an overall healthy diet with more plant can reduce this risk over the 4-year period. But people who do not continue to follow this healthy eating pattern are at increased risk of type 2 diabetes [5].
3. The Effect of Different Types of Plant-Based Foods on the Risk of Type 2 Diabetes

A negative correlation between diabetes risk and the plant-based diet index, that is, an increase in the plant-based diet index decreases the risk of diabetes [6]. Ambika Setia et al have also studied the relationship between men and women in the United States, suggesting that not all plant-based diets are necessarily beneficial for type 2 diabetes risk. The diets were divided into three categories: healthy plant foods; Less healthy foods such as potatoes, refined grains, desserts, sweet drinks and fruit juices; Foods such as poultry/red meat, eggs, dairy products and animal fats and seafood are animal-based diets. Of the three categories, all scored positive except for the animal-based diet, which was negative. Based on the distribution of these food points, create the total number of less Plant-based healthy diets. The eating habits of the subjects were recorded periodically using a semi-quantitative survey. The results suggest that a well-balanced diet is associated with a decreased likelihood of developing type 2 diabetes, whereas poor plant-based diets increase the risk.

This suggests that there is a need to classify plant-based foods as healthy or unhealthy. Traditional processed grains and legumes, as well as whole grains, have been shown to help prevent diabetes in a study of vegetarian diets and type 2 diabetes. Sticky fiber, soybean, vegetable protein and phytosterols can improve serum until it is abnormal. A healthy plant-based diet that includes dietary fiber, antioxidants, micronutrients, and unsaturated fatty acids can help improve diabetes. Increasing the intake of dietary fiber can effectively reduce the obesity phenomenon caused by fat accumulation caused by energy intake greater than energy consumption, and also reduce the incidence of diabetes.

To improve China's poor diet, the researchers suggest replacing refined grains with whole grains and increasing the consumption of fruits, vegetables and nuts to slow the country's diabetes epidemic [1]. Another study of 461,211 participants without cancer, diabetes or cardiovascular disease found that eating more fruits and vegetables reduced the risk [7].

Another study, the Guangzhou Nutrition and Health Study of 1,879 middle-aged and elderly people, further investigated the relationship between vegetable and fruit intake and type 2 diabetes, and investigated the relationship between the gut microbiome, and type 2 diabetes. Higher adherence to a healthy plant-based diet index decreases the risk of diabetes in comparison to those who adhered to other dietary patterns.

4. Conclusion

Domestic scholars have made a detailed analysis of the influence of plant-based diet on type 2 diabetes, but have not conducted in-depth research on one aspect. This is due to the late acceptance of plant-based diet in China and the imperfect understanding of the diet system. In addition to this reason, it is also caused by imperfect diabetes prevention measures, weak propaganda of diabetes prevention diet and unclear cognition of type 2 diabetes. In order to effectively prevent type 2 diabetes, it is necessary to reduce the precision of grain processing and the sugar content of foods, and reduce the intake of high-sugar foods and refined grains. Also, choose healthy plant-based foods, such as nuts, whole grains, fruits, and vegetables.

References