

# The role of plant-based dietary approach in managing type 2 diabetes in South Africa

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The rising prevalence of type 2 diabetes mellitus is of great global health concern as it accounts for over 90% of all diabetes globally.<sup>1</sup> Furthermore, the International Federation of Diabetes has reported that increasing overweight and obesity, decreasing levels of physical activity and rapid urbanisation have led to a rising burden of type 2 diabetes in the world.<sup>1</sup> An estimated 462 million individuals are living with type 2 diabetes, which is approximately 6.28% of the global population,<sup>2</sup> with projections of 643 million (11.3%) by 2030.<sup>1</sup> A recent systematic review reported the prevalence of diabetes to be over 15% in South Africa.<sup>3</sup> From 2018 to 2020, diabetes ranked first and second as a natural cause of death in South Africa, with an increase from 5.9% to 6.6%.<sup>4</sup>

The increment of diabetes prevalence over the last decades is partly due to significant diet changes, including reduced consumption of vegetables, fruits, and legumes, coupled with increased consumption of animal-derived and processed food products.<sup>5</sup> The consumption of plant-based diets has been linked with lowering the risk of non-communicable diseases (NCDs) such as diabetes, on top of being more sustainable.<sup>6</sup> These diets constitute a diverse range of dietary patterns that emphasise foods derived from plant sources coupled with lower consumption of animal products.<sup>7</sup> Recent studies have also shown that high fruit and vegetable intake is associated with lower risks of other cardiovascular diseases such as heart disease and stroke.<sup>8,9</sup>

A cohort study reported that when participants followed a healthy plant-based diet that focused on whole grains, fruits, and vegetables, and was low in refined grains, sugar sweetened beverages and red and processed meats, there was an associated 34% reduction in diabetes risk.<sup>10</sup> A plant-based eating approach is effective as a weight management control strategy,<sup>11,12</sup> with a major portion of weight loss attributable to a loss of visceral fat, a major advantage for reducing insulin resistance and inflammation.<sup>13</sup> A meta-analysis of six randomised controlled trials demonstrated that vegetarian diets were associated with a 0.4% greater reduction in glycated haemoglobin (HbA1c) when compared with other prescribed eating patterns for diabetes.<sup>14</sup>

The current study by Wyma et al, featured in this edition of the SAJCN<sup>15</sup> focusing on the management of type 2 diabetes following a plant-based dietary approach over 21 days, called the “Diabetes Reversal Challenge”, also reported similar results. The study followed a multi-case study design with ten (10) type 2 diabetic participants and four (4) physicians. Participants reported experiencing health benefits such as improving glycaemic control, weight loss and improved energy levels and mood.<sup>15</sup> One participant mentioned that

“On the 17th day, I was off my medication”. However, participants faced some challenges as some were not well informed on the benefits of plant-based diet. Additionally, physician 1 noted that at initiation, participants experienced some irritability and headaches which all subsided from the 4th day.<sup>15</sup> Furthermore, negative attitudes towards the consumption of plant-based diets are associated with backward nutrition transition as the animal-based diet is now regarded as the standard diet in South Africa and there can never be a grand celebration without meat. The case study shows positive health outcomes as evidenced by weight loss and improved glycaemic control.

The EAT-Lancet report recommends a planetary health diet which is healthy for people and the planet.<sup>5</sup> This is a diet that contains more plant-based foods with fewer animal source foods and is sustainable and healthy. Furthermore, it states that “global consumption of fruits, vegetables, nuts and legumes will have to double, and consumption of foods such as red meat and sugar will have to be reduced by more than 50%”. Foods from animal sources such as red meat, tend to have high carbon footprints.<sup>16</sup> Additionally, this has an impact on greenhouse gas emissions, biodiversity loss and land use.

Transforming to healthy diets is crucial in achieving the United Nations Sustainable Development Goals and the Paris Agreement, for healthy diets and sustainable food production.<sup>5</sup> Changes in the current diets to more healthier diets can significantly benefit human health and prevent between 10–12 million deaths yearly, a decrease of over 19%.<sup>5</sup>

The 21-day challenge following a plant-based diet proved that this dietary approach plays a vital role in the management of type 2 diabetes.<sup>15</sup> Therefore, efforts should be made on disseminating information on plant-based diets. Awareness and educational programmes about the benefits of plant-based diets can improve knowledge of health professionals, who will educate the population at large. For instance, a study in KwaZulu Natal on the opinions of dietitians on plant-based diets reported that a significant proportion of dietitians were interested in improving their knowledge on plant-based diets so that they could prescribe it to the patients with confidence.<sup>17</sup> This can increase the consumption of plant-based eating and in turn contribute to reducing the increasing type 2 diabetes prevalence and other NCDs.

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