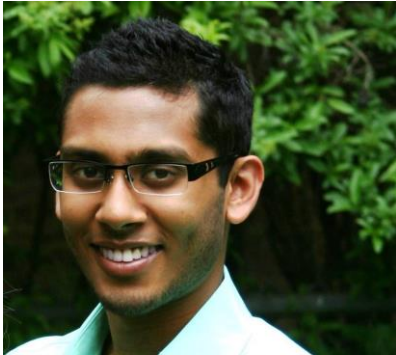


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## An analysis of higher protein diets on renal function

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Globally, the leading causes of mortality in industrialized countries are cardiovascular disease (CVD), stroke, and type 2 diabetes (T2D).<sup>1,2</sup> Deaths from these chronic diseases now outpace deaths due to malnutrition.<sup>3</sup> Being overweight and obese increases the risk of both morbidity and mortality from CVD, stroke, and T2D. Global rates of overweight and obesity have now reached ‘epidemic’ proportions and the World Health Organization has stated that, “... [a] global epidemic of overweight and obesity – ‘globesity’ – is taking over many parts of the world. If immediate action is not taken, millions will suffer from an array of serious health disorders.”<sup>4</sup> Over the past 20-30 years, the popularity of higher protein energy restricted diets has grown due to the potential benefits regarding weight loss, appetite regulation, and maintenance of lean (muscle) mass.<sup>5</sup> Additionally, the expansion of the global ‘middle-class’ has resulted in families allocating more income towards meat products as a primary protein source in their diet.<sup>6</sup>

A health concern is that higher protein intake may have an adverse effect on kidney function. In individuals with chronic kidney disease, higher protein diets have been shown to result in further renal impairment.<sup>7</sup> However, the effects of increased protein intake in healthy populations are unclear. The aim of this systematic review and meta-analysis was to compare higher versus lower protein diets on kidney function in healthy populations based on the literature to date. This was accomplished by looking at changes in glomerular filtration rate (the rate at which kidneys filter blood), which is the ‘gold standard’ marker of kidney function.<sup>8</sup>

**Conclusion:** Higher protein diets were associated with increased GFR, however, these results were inconclusive due to significant heterogeneity and overestimation by random effect analyses. There is still no clear evidence that high protein diets negatively impact renal function in healthy populations.

### Global Health Relevancy

In the context of population health among both developed and developing countries, the findings presented in this meta-analysis have varied implications. Current evidence is insufficient to state that higher protein intake conclusively increases GFR and that this leads to progressive renal disease. The absence of this does not mean that an increase in dietary protein intake is recommended for all communities around the world, however, this should be taken into consideration when responding to the ever-increasing global consumption of protein and the current obesity pandemic. Important factors to consider when interpreting the results of this review are: the heterogeneity of the global population, the sustainability of protein consumption, and rising middle-class populations who are consuming more protein (in particular from meat sources) around the world.