Beyond DASH: Examining the efficacy of the Mediterranean diet as a nutritional strategy for overweight or obese hypertensive children – A Systematic Review.

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Introduction

The Mediterranean diet (MedDiet) is believed to be one of the healthiest dietary patterns and is associated with reduced cardiovascular risk and better weight management in adults. For these reasons, consideration for its use as a therapeutic option for primary pediatric hypertension (PPH) is warranted.

Objectives

- 1) to update research on the efficacy of the MedDiet for use in PPH.
- 2) to provide RDs with evidence-based therapeutic guidelines in practice.

Methods

Results

- Greater adherence to the key components of the MedDiet including: fruit and vegetables, whole grains, legumes, nuts and seeds, fish, as well as olive oil result in decreased cardiometabolic risk and better weight management.
- Risk factors identified include: lower indices of arterial stiffness, lower prevalence of metabolic syndrome, lower BMI, decreased visceral adiposity and obesity, better lipid and blood glucose profile and healthier metabolic profile overall.
- Further, results also indicate that weight reduction and BMI play a role in blood pressure regulation in this population.
- A summary of the findings can be found in Table 1.

Results

Table 1: Summary of findings from journal articles

Intervention	Journal	Findings
Adherence to MedDiet or Elements of MedDiet	J Hum Hypertens. 2009; 23(7)	• An inverse association was found between adherence to MedDiet and diastolic blood pressure.
	Eur J Pediatr. 2012; 17(9)	• BMI and eating in front of the TV were positively associated with BP.
	Nutr Metab Cardiovasc Dis. 2011; 21(6)	• Adherence to MedDiet was associated with augmentation index.
	Int J Cardiol. 2016;225	• Heart rate, height and BP were found to be significant factors in arterial stiffness.
	BioMed Res Int. 2017	• Higher BMI and waist circumference resulted in peripheral and central BP.
	J Adolesc Health. 2007;40(2)	• The proportion of adolescents with 1 or more risk factors for metabolic syndrome increased with obesity.
	Nutr Metab Cardiovasc Dis. 2014; 24(2)	• Higher adherence to the Med Diet was shown to be associated with lower risk of metabolic syndrome.
	BMC Pediatr. 2014;14	• Poor adherence to MedDiet and low physical activity among children and adolescents resulted in a 7-fold increase in metabolic syndrome prevalence.
	Br J Nutr. 2014;112(10)	• Adherence to MedDiet and physical fitness was associated with a reduction in body weight, BMI, waist circumference, fat mass, waist to hip ratio, and fat free mass.
	Obes Res Clin Pract. 2017; 11(2)	• Sedentary activities and BMI were found to be positively associated with systolic blood pressure with every 1 hour increase in sedentary behavior associated with 0.2 mmHg increase in SBP.
No Association with MedDiet	Ecol Food Nutr. 2019	• In 12-15 y.o. group for every 1 hour increase in watching TV/videos increased systolic blood pressure by 0.5 mmHg.
	J Hypertens. 2011;29(6)	• Calcium and fibre after adjusting for energy were negatively associated with systolic blood pressure
Sodium & MedDiet	J Hypertens. 2011;29(6)	• High IMDS was inversely associated with being overweight or obese, and fat mass.
	J Hypertens. 2011;29(6)	• High IMDS at baseline had a protective effect against increases in BMI, waist circumference, waist to height ratio and fat mass.

Conclusions

Research supporting the use of the Mediterranean diet as a therapeutic strategy for primary pediatric hypertension remains limited. There is convincing evidence for cardiometabolic risk reduction and weight management with the adherence to the key components of the Mediterranean diet.

Significance to Dietetics

An RD-supervised nutrition care plan that focuses on the Mediterranean diet may prove to be an effective tool for overweight or obese hypertensive pediatric patients.