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Food-based berry intervention studies and blood pressure: a systematic review of randomised controlled trials

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Berries are a rich source of polyphenols, which may contribute to the prevention of cardiovascular disease (CVD) through effects on blood pressure, lipid profile and vascular endothelial function[1]. The aim of this review was to evaluate the health effects of berry consumption reported in randomised controlled trials (RCTs). Key terms associated with berry types, cardiovascular outcomes and human intervention studies of at least 2 weeks duration were combined and searched within the PubMed and Web of Science databases (from their inception until January 2015). A total of 1219 articles met the inclusion criteria. After removal of duplicates in EndNote, abstracts or full text articles (*n* 1090) were independently assessed by two researchers for suitability. Excluded articles were mainly studies that did not include the exposure or outcome of interest (*n* 1041), irrelevant (*n* 24) or conducted in animal (*n* 8) or *in vitro* (*n* 9) models. Eight RCTs that investigated the effects of berry consumption on blood pressure among adults were included.

Reference	Study participants (*n*)	Mean Age (y)	Baseline SBP/DBP (mmHg)	Study duration (weeks)	Intervention	Daily dose	BP Findings (mmHg)
(2)	Healthy (66)	53	130/82LD 127/ 79HD	6	Blackcurrant juice	250 ml	−SBP, –DBP
(3)	Healthy (35)	31	125/81	2	Goji berry Juice	120 ml	−SBP, –DBP
(4)	Male smokers (18)	48	121/79	6	Blueberry beverage	250 ml	−SBP, –DBP
(5)	Smokers (20)	27	130/ 82	3	Fresh blueberries	250 g	−SBP, –DBP
(6)	Hyperlipidemic (30)	62	111/68	4	Fresh strawberries	454 g	−SBP, –DBP
(7)	Metabolic syndrome (48)	50	Not reported	8	Blueberry beverage	480 ml	↓SBP (7·8) ↓DBP (2·5)
(8)	Elevated BP[a] adults (71)	58	128/80	4	Mixed berries, purée, juice	Fresh (100 g) Puree (100 g) Juice (70 ml)	↓SBP (1·5)
(9)	Elevated BP[a] (60)	48	128/83LD 136/ 86HD	12	Strawberry beverage	475 ml	−SBP, –DB

Systolic blood pressure (SBP), diastolic blood pressure (DBP) Low dose (LD), high dose (HD);
[a]SBP(140–159 mmHg), DBP (90–99 mmHg).

Results from this review suggest that currently there is insufficient data to establish the effects of berry consumption on blood pressure due to the small number of studies conducted and the heterogeneity between studies in terms of participant profiles, products, duration and baseline BP. A meta-analysis is being prepared to evaluate overall treatment effects.

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