

Appendix 1. PRISMA checklist.

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	1
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	3
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	3
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	4
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	4
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	4
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	Appendix 2
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	4
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	5
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	5

Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	NA
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	NA
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	NA

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097

For more information, visit: www.prisma-statement.org.

Appendix 2. Search strategy used in the current review.

Embase.com

('swiss chard'/de OR 'beta vulgaris extract'/de OR ('swiss chard*' OR 'beta vulgaris' OR cicla):ab,ti) AND (((('metabolism'/exp OR 'metabolomics'/exp OR 'energy metabolism'/exp OR 'metabolic activity assay'/de OR 'phytochemistry'/de OR 'phytochemical'/exp OR 'nutrient content'/de OR 'nutrient'/exp OR 'nutraceutical'/exp OR 'diet supplementation'/de OR 'pharmacokinetics'/exp OR (metabol* OR cometabol* OR co-metabol* OR nutrient* OR nutraceut* OR phytochem* OR phytopharmaceut* OR pharmacokinetic* OR ((dietary OR nutritional) NEAR/3 (supplement*)))):ab,ti) OR ('alkaloid'/exp OR 'amine'/exp OR 'amino acid'/exp OR 'carbohydrate'/exp OR 'carotenoid'/exp OR 'disaccharide'/exp OR 'fatty acid'/exp OR 'flavonoid'/exp OR 'indole derivative'/exp OR 'lignan'/exp OR 'lipid'/exp OR 'monosaccharide'/exp OR 'peptide'/exp OR 'polysaccharide'/exp OR 'protein'/exp OR 'purine derivative'/exp OR 'pyrimidine derivative'/exp OR 'stilbene derivative'/de OR 'sugar alcohol'/exp OR 'terpene'/de OR 'amide'/de OR 'avenanthramide'/exp OR ("Amino acid*" OR "Cyanogenic glucoside*" OR "Fatty acid*" OR "Nucleic acid base*" OR "Organic acid*" OR "Organosulfur compound*" OR "Phenolic acid*" OR "Sugar alcohol*" OR Alkaloid* OR Alkane* OR Amine* OR Benzenoid* OR Carotenoid* OR Chlorophyll* OR Disaccharide* OR Flavonoid* OR Indole* OR Lignan* OR Monosaccharide* OR Peptide* OR Polyacetylene* OR Polysaccharide* OR Protein* OR Purine* OR Pyrimidine* OR Stilbene* OR Terpene* OR Terpenoid* OR avenanthramid* OR amide*):ab,ti) AND ('plant extract'/de OR 'plant medicinal product'/de OR 'nutrient content'/de OR 'chromatography'/exp OR 'chemistry'/exp OR (chromatogra* OR electrochromatogra* OR ((plant OR plants) NEAR/3 (extract* OR biochem* OR preparation* OR medicinal*)):ab,ti) NOT ([Conference Abstract]/lim OR [Letter]/lim OR [Note]/lim OR [Editorial]/lim)

Web of Science (Core collection)

TS=(("swiss chard*" OR "beta vulgaris" OR cicla) AND ((metabol* OR cometabol* OR co-metabol* OR nutrient* OR nutraceut* OR phytochem* OR phytopharmaceut* OR pharmacokinetic* OR ((dietary OR nutritional) NEAR/2 (supplement*))) OR ("Amino acid*" OR "Cyanogenic glucosid*" OR "Fatty acid*" OR "Nucleic acid base*" OR "Organic acid*" OR "Organosulfur compound*" OR "Phenolic acid*" OR "Sugar alcohol*" OR Alkaloid* OR Alkane* OR Amine* OR Benzenoid* OR Carotenoid* OR Chlorophyll* OR Disaccharide* OR Flavonoid* OR Indole* OR Lignan* OR Monosaccharide* OR Peptide* OR Polyacetylene* OR Polysaccharide* OR Protein* OR Purine* OR Pyrimidine* OR Stilbene* OR Terpene* OR Terpenoid* OR avenanthramid* OR amide*)) AND (chromatogra* OR electrochromatogra* OR ((plant OR plants) NEAR/3 (extract* OR biochem* OR preparation* OR medicinal*)))) AND DT=(article)

Cochrane

("swiss chard" OR "swiss chards" OR "beta vulgaris" OR cicla) AND ((metabol* OR cometabol* OR co-metabol* OR nutrient* OR nutraceut* OR phytochem* OR phytopharmaceut* OR pharmacokinetic* OR ((dietary OR nutritional) NEAR/3 (supplement*)) OR "Amino acids" OR "Amino acid" OR "Cyanogenic glucoside" OR "Cyanogenic glucosides" OR "Fatty acids" OR "Fatty acid" OR "Nucleic acid base" OR "Nucleic acid bases" OR "Nucleic acid based" OR "Organic acid" OR "Organic acids" OR "Organosulfur compound" OR "Organosulfur compounds" OR "Phenolic acids" OR "Phenolic acid" OR "Sugar alcohol" OR "Sugar alcohols" OR Alkaloid* OR Alkane* OR Amine* OR Benzenoid* OR Carotenoid* OR Chlorophyll* OR Disaccharide* OR Flavonoid* OR Indole* OR Lignan* OR Monosaccharide* OR Peptide* OR Polyacetylene* OR Polysaccharide* OR Protein* OR Purine* OR Pyrimidine* OR Stilbene* OR Terpene* OR Terpenoid* OR avenanthramid* OR amide*) AND (chromatogra* OR electrochromatogra* OR ((plant OR plants) NEAR/3 (extract* OR biochem* OR preparation* OR medicinal*))))

PubMed

("Beta vulgaris"[mh] OR swiss chard*[tiab] OR beta vulgaris[tiab] OR cicla[tiab]) AND (("Metabolism"[mh] OR "Metabolomics"[mh] OR "Energy Metabolism"[mh] OR "Phytochemicals"[mh] OR "Nutrients"[mh] OR "Dietary Supplements"[mh] OR "Pharmacokinetics"[mh] OR metabol*[tiab] OR cometabol*[tiab] OR co-metabol*[tiab] OR nutrient*[tiab] OR nutraceut*[tiab] OR phytochem*[tiab] OR phytopharmaceut*[tiab] OR pharmacokinetic*[tiab] OR ((dietary[tiab] OR nutritional[tiab]) AND (supplement*[tiab]))) OR ("Alkaloids"[mh] OR "Amines"[mh] OR "Amino acids"[mh] OR "Carbohydrates"[mh] OR "Carotenoids"[mh] OR "Disaccharides"[mh] OR "Fatty Acids"[mh] OR "Flavonoids"[mh] OR "Indoles"[mh] OR "Lignans"[mh] OR "Lipids"[mh] OR "Monosaccharides"[mh] OR "Peptides"[mh] OR "Polysaccharides"[mh] OR "Proteins"[mh] OR "Purines"[mh] OR "Pyrimidines"[mh] OR "Stilbenes"[mh] OR "Sugar Alcohols"[mh] OR "Terpenes"[mh] OR "Amides"[mh] OR Amino acid*[tiab] OR Cyanogenic glucoside*[tiab] OR Fatty acid*[tiab] OR Nucleic acid base*[tiab] OR Organic acid*[tiab] OR Organosulfur compound*[tiab] OR Phenolic acid*[tiab] OR Sugar alcohol*[tiab] OR Alkaloid*[tiab] OR Alkane*[tiab] OR Amine*[tiab] OR Benzenoid*[tiab] OR Carotenoid*[tiab] OR Chlorophyll*[tiab] OR Disaccharide*[tiab] OR Flavonoid*[tiab] OR Indole*[tiab] OR Lignan*[tiab] OR Monosaccharide*[tiab] OR Peptide*[tiab] OR Polyacetylene*[tiab] OR Polysaccharide*[tiab] OR Protein[tiab] OR Proteins[tiab] OR Purine*[tiab] OR Pyrimidine*[tiab] OR Stilbene*[tiab] OR Terpene*[tiab] OR Terpenoid*[tiab] OR avenanthramide*[tiab] OR amide*[tiab])) AND ("Plant Extracts"[mh] OR "Chromatography, Liquid"[Mesh] OR chromatogra*[tiab] OR electrochromatogra*[tiab] OR ((plant[tiab] OR plants[tiab]) AND (extract*[tiab] OR biochem*[tiab] OR preparation*[tiab] OR medicinal*[tiab]))) NOT (letter[pt] OR news[pt] OR comment[pt] OR editorial[pt] OR congress[pt])