

Supplementary Table S2

Domain-level methodological appraisal of original research on dietary patterns and mental health outcomes

Scope and assessment conventions

Evidence set. 33 principal published analyses: eight randomised controlled trials (RCTs), 18 longitudinal/cohort analyses, one observational target-trial emulation, and six analytical cross-sectional analyses. Outcome-specific RCT rows do not constitute additional studies.

Methods. RCT outcomes: Cochrane RoB 2 (D1-D5). Cohort studies: JBI 11-item critical-appraisal checklist. Analytical cross-sectional studies: revised JBI 8-item checklist. Observational target-trial emulation: descriptive ROBINS-I-informed domain appraisal, not a formally completed ROBINS-I assessment.

Rating conventions. RoB 2 reports Low risk, Some concerns, or High risk for each assessed result. JBI lower/moderate/higher concern labels are author-defined qualitative syntheses of methodological limitations, not official JBI scores or cut-offs. Yes/No/Unclear/N/A ratings are retained as recorded.

Outcome specificity. PREDIDEP recurrence (clinician-assessed) and depressive symptoms (BDI) are assessed separately. IMPACT-BCN perceived stress (PSS) and anxiety (STAI) are assessed separately.

Source-based limitations. Original full texts for [20] Gómez-Donoso, [21] Ferreira, and [42] Khodadadi were used to clarify previously uncertain appraisal domains. Unclear/No ratings remain where the reports do not establish sufficient certainty. ELSA-Brasil reports unusually narrow confidence intervals for some persistence estimates; these values have not been altered. The present table does not claim a new independent full-text re-audit of every domain for all 33 reports.

Interpretation. Overlapping source cohorts are complementary published analyses rather than independent replications. Cohort Q6 is outcome-specific and may be N/A for repeated symptom burden or changes rather than incident disease; revised cross-sectional Q8 describes reporting completeness and does not automatically determine internal bias.

Tables S2A-S2D contain the full domain judgements, followed by the appraisal-question key and primary-source index. For readability, wide JBI matrices are displayed in consecutive panels without deleting any ratings.

S2A. Randomised trials - RoB 2 domain judgements

Eight RCT reports; ten outcome-specific judgements. D1-D5 are defined in the appraisal key.

Ref	Study	Assessed result	D1	D2	D3	D4	D5	Overall
[10]	Jacka et al. (SMILES)	Depressive symptoms (MADRS)	Some concerns	Some concerns	Low risk	Low risk	Low risk	Some concerns
[11]	Bayes et al. (AMMEND)	Depressive symptoms (BDI-II)	Some concerns	Some concerns	Low risk	High risk	Low risk	High risk
[12]	Parletta et al. (HELFIMED)	Depression (DASS-21)	Low risk	Some concerns	Some concerns	High risk	Low risk	High risk
[13]	Francis et al.	Depression (CESD-R / DASS-21)	Some concerns	Some concerns	Some concerns	High risk	Low risk	High risk
[14]	Cabrera-Suárez et al. (PREDIDEP)	Depression recurrence (clinician SCID-I)	Low risk	Some concerns	Some concerns	Some concerns	Low risk	Some concerns
[14]	Cabrera-Suárez et al. (PREDIDEP)	BDI depressive symptoms (self-reported)	Low risk	Some concerns	Some concerns	High risk	Low risk	High risk
[15]	Radkhah et al.	Depression/anxiety/stress (DASS-21)	Low risk	Some concerns	Low risk	High risk	Some concerns	High risk
[16]	Mela et al.	Human depressive symptoms (BDI only)	Some concerns	High risk	High risk	High risk	Some concerns	High risk
[17]	Casas et al. (IMPACT-BCN)	PSS perceived stress	Low risk	Some concerns	Some concerns	High risk	Some concerns	High risk
[17]	Casas et al. (IMPACT-BCN)	STAI anxiety	Low risk	Some concerns	Some concerns	High risk	Some concerns	High risk

Abbreviations: MADRS, Montgomery-Åsberg Depression Rating Scale; BDI, Beck Depression Inventory; DASS-21, Depression Anxiety Stress Scales; PSS, Perceived Stress Scale; STAI, State-Trait Anxiety Inventory. No summary row substitutes for the assessed-outcome-specific RoB 2 judgments.

S2A. Study-specific reasons and target effects

Ref	Study and outcome	Target effect	Study-specific appraisal rationale	Source
[10]	Jacka et al. (SMILES) Depressive symptoms (MADRS)	Effect of assignment to randomised intervention	Randomization was appropriate, but authors noted the fixed block size may not fully protect allocation concealment; participants were unblinded. Primary MADRS assessment and analysis were comparatively strong.	Article
[11]	Bayes et al. (AMMEND) Depressive symptoms (BDI-II)	Effect of assignment to randomised intervention	Very low attrition and pre-registration are strengths, but the trial was explicitly open-label and the primary BDI-II outcome was self-reported; allocation concealment was not clearly described in the main report.	Article
[12]	Parletta et al. (HELFI-MED) Depression (DASS-21)	Effect of assignment to randomised intervention	Randomization was independent, but the primary mental-health outcome was self-reported after allocation was known, and attrition was substantial. The intervention also combined diet with fish oil, limiting diet-specific attribution.	Article
[13]	Francis et al. Depression (CESD-R / DASS-21)	Effect of assignment to randomised intervention	Computer-generated randomization was used, but allocation schedule was managed by recruitment staff; participants and outcome-administering staff knew allocation, outcomes were self-reported, and complete-case loss was appreciable.	Article
[14]	Cabrera-Suárez et al. (PREDIDEP) Depression recurrence (clinician SCID-I)	Effect of assignment to randomised intervention	Recurrence was ascertained using SCID-I clinical interview in the prospectively described trial; blinding of outcome assessors and outcome-specific missingness remain incompletely documented. The secondary self-reported BDI outcome has different measurement bias.	Article

S2A. Reasons and target effects (continued)

Ref	Study and outcome	Target effect	Study-specific appraisal rationale	Source
[14]	Cabrera-Suárez et al. (PREDIDEP) BDI depressive symptoms (self-reported)	Effect of assignment to randomised intervention	Repeated BDI was participant-reported after knowledge of diet counselling; expectancy effects may influence ratings. BDI missingness differs from recurrence ascertainment and should not inherit the recurrence outcome risk judgement.	Article
[15]	Radkhah et al. Depression/anxiety/stress (DASS-21)	Effect of assignment to randomised intervention	Random allocation software and registration are strengths, but credible double blinding is questionable for distinct diet instructions, outcomes were self-reported, adherence was low, and results change materially across analytic models.	Article
[16]	Mela et al. Human depressive symptoms (BDI only)	Effect of assignment; published analysis used per-protocol BDI data	64 randomised (32 per arm), 37 finished; human BDI analysed for 30 (18 Mediterranean, 12 ketogenic). Open-label self-report, differential completion and a per-protocol analysis limit interpretation of the assignment effect. Anxiety-like outcomes in mice were not human anxiety outcomes.	Article
[17]	Casas et al. (IMPACT-BCN) PSS perceived stress	Effect of assignment to intervention; report uses questionnaire-completers	Central allocation concealment was documented in the parent IMPACT-BCN protocol. PSS/STAI were listed as measured outcomes, but specific analyses were not prospectively confirmed. The open-label, self-reported mental-health subanalysis included 680/814 participants allocated to the diet/usual-care arms; incomplete questionnaires could introduce missing-outcome bias.	Article
[17]	Casas et al. (IMPACT-BCN) STAI anxiety	Effect of assignment to intervention; report uses questionnaire-completers	Central allocation concealment was documented in the parent IMPACT-BCN protocol. PSS/STAI were listed as measured outcomes, but specific analyses were not prospectively confirmed. The open-label, self-reported mental-health subanalysis included 680/814 participants allocated to the diet/usual-care arms; incomplete questionnaires could introduce missing-outcome bias.	Article

S2B. Cohort/longitudinal studies - JBI questions Q1-Q5

Eighteen published analyses. The second panel presents Q6-Q11 for the same studies; outcomes and author-defined overall concerns are preserved.

Ref	Cohort analysis	Assessed outcome	Q1	Q2	Q3	Q4	Q5	Overall concern
[18]	Samuthpongton et al.	Incident depression	Yes	Yes	Yes	Yes	Yes	Lower concern
[19]	Adjibade et al.	Incident depressive symptoms (CES-D)	Yes	Yes	Yes	Yes	Yes	Lower-to-moderate concern
[20]	Gómez-Donoso et al. (SUN)	Incident depression	Yes	Yes	Yes	Yes	Yes	Lower-to-moderate concern
[21]	Ferreira et al. (ELSA-Brasil)	Incident and persistent depression	Yes	Yes	Yes	Yes	Yes	Lower-to-moderate concern
[22]	Lane et al. (Melbourne)	Elevated psychological distress (K10 ≥ 20)	Yes	Yes	Unclear	Yes	Yes	Moderate concern
[24]	Chen et al. (UK Biobank, 2023)	PHQ-9 depression; GAD-7 anxiety	Yes	Yes	Yes	Yes	Yes	Lower-to-moderate concern
[25]	Sun et al. (UK Biobank)	Incident depression and anxiety	Yes	Yes	Unclear	Unclear	Unclear	Lower-to-moderate concern
[26]	Wu et al. (multicohort)	Incident depressive symptoms / clinical records	Yes	Yes	Yes	Yes	Yes	Lower-to-moderate concern
[27]	Yin et al. (Sweden)	Clinically ascertained incident depression	Yes	Yes	Yes	Yes	Yes	Lower concern
[28]	Zhang et al. (China)	Incident ICD-10 depression (F32/F33)	Yes	Yes	Yes	Yes	Yes	Lower-to-moderate concern
[29]	Gianfredi et al. (Maastricht)	Incident depressive symptoms (annual PHQ-9)	Yes	Yes	Yes	Yes	Yes	Moderate concern
[30]	Vermeulen et al. (Whitehall II)	Incident/recurrent depressive symptoms	Yes	Yes	Yes	Yes	Yes	Moderate concern
[31]	Pei et al. (CLHLS)	Incident depressive symptoms	Yes	Yes	Unclear	Yes	Yes	Moderate concern
[32]	Bizzozero-Peroni et al. (Seniors-ENRICA)	Incident physician-diagnosed depression and/or GDS-10 symptoms	Yes	Yes	Yes	Yes	Yes	Lower-to-moderate concern
[33]	Bracone et al. (Moli-sani)	PHQ-2 depressive symptom change	Yes	Yes	Unclear	Unclear	Unclear	Moderate concern
[34]	Chen et al. (Shanghai, 2025)	BDI-II depressive symptom onset/improvement/progression	Yes	Yes	Yes	Yes	Yes	Moderate concern
[35]	Cherian et al. (MAP)	Repeated CES-D-10 depressive symptoms	Yes	Yes	Yes	Yes	Yes	Moderate concern
[36]	Das et al. (CHAMP)	Incident GDS ≥ 5 depressive symptoms	Unclear	Yes	Yes	Yes	Unclear	Moderate concern

S2B. Cohort/longitudinal studies - JBI questions Q6-Q11

Ref	Cohort analysis	Q6	Q7	Q8	Q9	Q10	Q11
[18]	Samuthpongton et al.	Yes	Yes	Yes	Yes	Yes	Yes
[19]	Adjibade et al.	Yes	Yes	Yes	Unclear	Yes	Yes
[20]	Gómez-Donoso et al. (SUN)	Yes	Yes	Yes	No	No	Yes
[21]	Ferreira et al. (ELSA-Brasil)	Yes (incidence); N/A (persistence)	Yes	Yes	No	No	Unclear
[22]	Lane et al. (Melbourne)	Unclear	Yes	Yes	Unclear	Unclear	Yes
[24]	Chen et al. (UK Biobank, 2023)	Yes	Yes	Yes	Unclear	Yes	Yes
[25]	Sun et al. (UK Biobank)	Unclear	Unclear	Yes	Unclear	Unclear	Yes
[26]	Wu et al. (multicohort)	Yes	Yes	Yes	Yes	Yes	Yes
[27]	Yin et al. (Sweden)	Yes	Yes	Yes	Unclear	Unclear	Yes
[28]	Zhang et al. (China)	Yes	Yes	Yes	Unclear	Unclear	Unclear
[29]	Gianfredi et al. (Maastricht)	Yes	Yes	Yes	No	Yes	Yes
[30]	Vermeulen et al. (Whitehall II)	Yes (incident analysis)	Yes	Yes	Unclear	Unclear	Yes
[31]	Pei et al. (CLHLS)	Unclear	Yes	Yes	Unclear	Unclear	Unclear
[32]	Bizzozero-Peroni et al. (Seniors-ENRICA)	Yes	Unclear	Yes	Unclear	Unclear	Yes
[33]	Bracone et al. (Moli-sani)	N/A (repeated symptom change)	Yes	Yes	Unclear	Unclear	Unclear
[34]	Chen et al. (Shanghai, 2025)	Yes for onset; N/A for change	Yes	Yes	Unclear	Unclear	Yes
[35]	Cherian et al. (MAP)	N/A (repeated symptom change)	Yes	Yes	Unclear	Unclear	Unclear
[36]	Das et al. (CHAMP)	Yes	Yes	Yes	No	Unclear	Unclear

S2B. Study-specific reasons for cohort judgements

Ref	Cohort analysis	Study-specific appraisal rationale	Source
[18]	Samuthpongton et al.	Large prospective cohort, repeated validated FFQs, long follow-up, extensive confounder adjustment and lag analysis; outcome/generalizability limitations remain.	Article
[19]	Adjibade et al.	Repeated diet records, baseline outcome exclusion and prospective analysis are strengths; volunteer cohort and self-reported CES-D create selection/measurement concerns.	Article
[20]	Gómez-Donoso et al. (SUN)	Full text verified (pp. 1094-1098; Fig. 1): 14,907 SUN alumni, median 10.3-year follow-up; NOVA-defined UPF assessed by a validated 136-item FFQ. Incident depression was reported physician diagnosis or habitual antidepressant use, validated against SCID-I in a subsample; this is not universal interview-confirmed diagnosis. Multivariable Cox models prespecified broad demographic, lifestyle, dietary and baseline psychological covariates; baseline/first-2-year cases were excluded. Retention was 91% (1,482 lost); reasons for nonresponse and a loss-specific attrition adjustment were not reported. Hence Q9/Q10=No despite strong overall follow-up.	Article
[21]	Ferreira et al. (ELSA-Brasil)	Full text verified (pp. 631-635; Table 5): ELSA-Brasil included 14,465 baseline-eligible participants; 13,870 were depression-free for incidence, whereas the persistence classification used 11,898 with depression status in all three waves. NOVA UPF came from a validated 114-item FFQ with independent classification review; depression used CIS-R, with shorter sections administered at wave 2. Multivariable Cox and multinomial models adjusted measured confounders. Covariate multiple imputation was reported, and attrition/survival IPW was applied to the separate longitudinal symptom mixed model, not explicitly to the principal incidence or persistence estimates. Death/loss to follow-up was substantial, warranting Q9/Q10 concerns. Table 5 reported implausibly narrow adjusted persistence OR CIs (e.g. Q4 1.58, 95% CI 1.56-1.60) for only 258 persistent cases; figures are reproduced as published, not silently corrected; Q11 remains Unclear.	Article
[22]	Lane et al. (Melbourne)	Baseline K10 psychological distress was not measured; baseline medication was used as an imperfect proxy. Prospective elevated K10 cannot be classified as incident clinical depression; attrition and exposure measurement are relevant limitations.	Article
[24]	Chen et al. (UK Biobank, 2023)	Strong temporal ordering, repeated validated dietary tool, baseline outcome exclusion and extensive adjustment; selection into the dietary/MH questionnaire subsample remains a concern.	Article

S2B. Study-specific reasons (continued)

Ref	Cohort analysis	Study-specific appraisal rationale	Source
[25]	Sun et al. (UK Biobank)	UK Biobank: ultra-processed foods were quantified with different servings, energy and weight approaches. Clarification of endpoint/model-specific confounders, temporal ascertainment and attrition was limited by reporting.	Article
[26]	Wu et al. (multicohort)	Two large cohorts, clear temporal sequence, broad adjustment and sensitivity analyses; dietary-pattern derivation and different outcome ascertainment across cohorts reduce comparability.	Article
[27]	Yin et al. (Sweden)	Swedish study: outcomes from specialist-care registers may miss primary-care-only depression; complete-covariate samples were smaller than baseline responders; attrition remains a concern.	Article
[28]	Zhang et al. (China)	Chinese cohort with ICD-10 outcomes and baseline exclusion; incomplete selection and follow-up information, and a discrepancy between model numbering in the text and tables, limit confidence in some domains.	Article
[29]	Gianfredi et al. (Maastricht)	Maastricht cohort (n=2,646): only 28.2% completed the year-7 assessment by the reported cut-off, partly because follow-up remained ongoing. The prospective design supports temporal ordering, but does not establish complete follow-up; attrition may affect estimates.	Article
[30]	Vermeulen et al. (Whitehall II)	Prospective temporal design and validated tools, but single diet assessment, occupational cohort selection and uncertainty around attrition/incomplete follow-up handling remain.	Article

S2B. Study-specific reasons (continued)

Ref	Cohort analysis	Study-specific appraisal rationale	Source
[31]	Pei et al. (CLHLS)	CLHLS: two survey waves, n=2,873 reported in the appraisal; baseline depressive-symptom exclusions and loss-to-follow-up details were not fully resolved. Symptoms were not clinically confirmed diagnoses.	Article
[32]	Bizzozero-Peroni et al. (Seniors-ENRICA)	Seniors-ENRICA: two older-adult cohorts combined; self-reported physician diagnoses and GDS symptom screens are not identical outcomes. Confounding control and follow-up completeness differ by component.	Article
[33]	Bracone et al. (Moli-sani)	Repeated Mediterranean-diet and UPF changes were related to PHQ-2 symptom change, not incident clinically diagnosed depression. Several confounding and attrition details are unclear; baseline outcome absence is not applicable to symptom change.	Article
[34]	Chen et al. (Shanghai, 2025)	Dense daily dietary data and prospective exposure window are strengths; single-university selection, incomplete capture of off-campus food, pandemic confounding and extensive multiple comparisons are important concerns.	Article
[35]	Cherian et al. (MAP)	MAP: repeated CES-D-10 symptom burden, rather than incident clinical depression. DASH/MIND were inverse, Mediterranean null and Western adverse. The article labels its repeated-measure analyses inconsistently (GEE versus mixed-model wording); missingness remains unclear.	Article
[36]	Das et al. (CHAMP)	CHAMP: baseline dietary assessment included 794 men; both Australian and Mediterranean dietary-pattern estimates were null. Diet-score-specific adjusted sample size was not reported; attrition and competing death may be informative.	Article

S2C. Observational target-trial emulation - ROBINS-I-informed appraisal

[23] Mengist et al. (ASPREE/ALSOP). Outcomes: CES-D-10 depressive symptoms; SF-12 mental score.

Overall concern: Moderate risk of bias (author-defined, ROBINS-I-informed)

Appraisal domain	Recorded domain judgement
Confounding	Moderate (measured by IPTW; residual/unmeasured confounding, E-value 1.43)
Exposure classification	Moderate (NOVA screener item classification; one baseline dietary assessment)
Selection into study	Moderate (ASPREE/ALSOP selection; diet/outcome availability required)
Deviations	Moderate (baseline exposure assumed stable; intake change unmeasured)
Missing data	Moderate (missing exposure/outcome excluded; covariate PMM imputation)
Outcome measurement	Moderate (validated CES-D-10≥8, SF-12 MCS; self-report)
Reported result selection	Low-to-moderate concern; analysis prespecification not verified

Study-specific rationale. Observational target-trial emulation (n=11,192) compared baseline UPF ≥4 versus <4 servings/day. Propensity weighting and sensitivity analyses addressed measured confounding, but residual confounding, baseline-only exposure, selection and missing-data issues persist. This is a structured ROBINS-I-informed judgement, not a completed official ROBINS-I instrument.

Primary article: <https://link.springer.com/article/10.1186/s12916-025-04002-4>

S2D. Analytical cross-sectional studies - JBI Q1-Q4

Ref	Study	Assessed outcomes	Q1	Q2	Q3	Q4	Overall concern
[37]	Hecht et al. (NHANES)	PHQ-9 depressive symptoms (primary appraisal); self-reported anxious/mentally unhealthy days separately	Yes	N/A	Yes	Yes	Lower-to-moderate concern
[38]	Godos et al. (Italy)	CES-D-10 depressive symptoms	Yes	N/A	Yes	Yes	Moderate concern
[39]	Achour et al. (ALIMENTAL)	CES-D-20 depressive symptoms; probable episode screen	Yes	N/A	Yes	Yes	Moderate concern
[40]	Houminer-Klepar & Dopelt	GAD-7 anxiety and PHQ-9 depression	Unclear	N/A	Unclear	Yes	Moderate-to-higher concern
[41]	Zamani et al.	DASS-21 depression, anxiety and stress symptoms	Yes	N/A	Yes	Yes	Higher concern
[42]	Khodadadi et al.	Iranian DASS-21 depression, anxiety and stress symptoms	Yes	N/A	Yes	Yes	Moderate-to-higher concern

Q2 is reported as N/A when the appraisal question does not apply to the particular selection/outcome definition. The Q5-Q8 panel follows.

S2D. Analytical cross-sectional studies - JBI Q5-Q8

Ref	Study	Q5	Q6	Q7	Q8
[37]	Hecht et al. (NHANES)	Yes	Yes	Yes	Yes
[38]	Godos et al. (Italy)	Yes	Yes	Yes	Yes
[39]	Achour et al. (ALIMENTAL)	Yes	Yes	Unclear	Yes
[40]	Houminer-Klepar & Dopelt	Yes	Yes	Yes	Yes
[41]	Zamani et al.	Yes	Yes	Unclear	Yes
[42]	Khodadadi et al.	Yes	Yes	Yes	Yes

Q8 relates to completeness of participant/setting reporting and is not automatically counted as an internal-bias domain in the author-defined overall concern labels.

S2D. Study-specific reasons for cross-sectional judgements

Ref	Study	Study-specific appraisal rationale	Source
[37]	Hecht et al. (NHANES)	NHANES: PHQ-9 depression measurement is preferable to the single-item anxious and mentally unhealthy days questions; outcome measurement certainty differs by endpoint. Cross-sectional design limits temporal interpretation.	Article
[38]	Godos et al. (Italy)	Regional Italian sample and single dietary assessment; symptom-screening outcome and cross-sectional timing introduce measurement, residual confounding and reverse-causation concerns.	Article
[39]	Achour et al. (ALIMENTAL)	ALIMENTAL: online volunteer recruitment and empirically derived dietary patterns restrict generalisability and causal interpretation. One published subgroup has point estimate OR 1.21 outside its own 95% CI (1.07–1.18); its numerical value was not silently corrected.	Article
[40]	Houminer-Klepar & Dopelt	Israeli study: recruitment versus analysis counts (303 vs 253) need cautious interpretation. Its processed-food score is not a NOVA-UPF measure; associations depend on model specification.	Article
[41]	Zamani et al.	Iranian women-only sample; DASS-21 symptom categories dichotomised using sample-specific medians, which are not clinical diagnoses. Selection, residual confounding and reverse causation remain major concerns.	Article
[42]	Khodadadi et al.	Full text verified (pp. 1371-1377; Fig. 1; Table 3): YaHS/TAMYZ cross-sectional sample n=7,165 after stated exclusions; inclusion/exclusion criteria, recruitment setting and sample flow are reported, although the age-eligibility sentence contains a typographical inconsistency. Diet exposure used an interviewer-administered, locally validated 178-item FFQ and Paleolithic score; outcomes used a validated Persian DASS-21. Adjusted logistic models identified age, sex, BMI, smoking, physical activity, diet and other candidate confounders. Higher Paleolithic adherence was inversely associated with anxiety (Q4 vs Q1 Model 3 OR 0.68, 95% CI 0.48-0.96), while depression and stress results were null. Cross-sectional temporality, selective cohort participation, potential residual confounding and minor model/text inconsistencies retain moderate-to-higher concern despite improved reporting.	Article

Appraisal-domain key and methodological sources

Instrument	Code	Appraisal-domain explanation	Method source
RoB 2	D1	Method used to generate and conceal the random sequence and baseline balance.	Method
RoB 2	D2	Departures from the planned intervention relevant to the chosen target effect.	Method
RoB 2	D3	Availability of the outcome and possibility that missing data distort the result.	Method
RoB 2	D4	Validity and comparability of outcome measurement, including awareness of assignment.	Method
RoB 2	D5	Risk that a particular reported estimate was chosen among measurements or analyses.	Method
JBI cohort	Q1	Comparable exposure groups drawn from the same underlying population.	Method
JBI cohort	Q2	Comparable exposure measurement across exposure categories.	Method
JBI cohort	Q3	Validity and reproducibility of the dietary exposure measurement.	Method
JBI cohort	Q4	Potential confounding factors identified.	Method
JBI cohort	Q5	Methods used to address confounding described.	Method
JBI cohort	Q6	Participants free of the outcome at exposure/baseline for incident-outcome analyses; N/A to analyses of repeated burden or change.	Method
JBI cohort	Q7	Adequacy of the outcome assessment method.	Method
JBI cohort	Q8	Adequacy of the observation/follow-up interval.	Method
JBI cohort	Q9	Completeness of follow-up and reporting of losses.	Method
JBI cohort	Q10	Methods to address loss to follow-up.	Method
JBI cohort	Q11	Appropriateness of statistical methods for the estimand and design.	Method

Appraisal-domain key (continued)

Instrument	Code	Appraisal-domain explanation	Method source
JBI cross-sectional	Q1	Whether eligibility criteria for the study population were specified.	Method
JBI cross-sectional	Q2	Whether a relevant condition was classified using an objective standard; N/A if the study was not designed around such a condition.	Method
JBI cross-sectional	Q3	Validity and reproducibility of the dietary exposure measure.	Method
JBI cross-sectional	Q4	Validity and reproducibility of the specified mental-health outcome measure.	Method
JBI cross-sectional	Q5	Whether potential confounding factors were recognised.	Method
JBI cross-sectional	Q6	Whether methods for addressing confounding were reported.	Method
JBI cross-sectional	Q7	Suitability of statistical analysis of the specific reported association.	Method
JBI cross-sectional	Q8	Comprehensiveness of setting and participant description (reporting, not an internal-bias domain).	Method
ROBINS-I-informed	Confounding	Residual confounding in the observational UPF contrast.	Method
ROBINS-I-informed	Exposure classification	Errors in identifying high versus low UPF consumption.	Method
ROBINS-I-informed	Selection into study	Selection into analysis based on participant characteristics or data availability.	Method
ROBINS-I-informed	Deviations	Differences from the hypothesized dietary exposure strategy over follow-up.	Method
ROBINS-I-informed	Missing data	Consequences of missing exposure, covariate and outcome information.	Method
ROBINS-I-informed	Outcome measurement	Validity and comparability of symptom/quality-of-life outcomes.	Method
ROBINS-I-informed	Result selection	Whether chosen contrasts and models may reflect reporting choices.	Method

Primary-source index

Every article URL below corresponds to the relevant study-specific rationale above. Study references retain the manuscript numbering.

Ref	Study	Primary-source URL (clickable)
[10]	Jacka et al. (SMILES)	https://doi.org/10.1186/s12916-017-0791-y
[11]	Bayes et al. (AMMEND)	https://doi.org/10.1093/ajcn/nqac106
[12]	Parletta et al. (HELFIMED)	https://doi.org/10.1080/1028415X.2017.1411320
[13]	Francis et al.	https://doi.org/10.1371/journal.pone.0222768
[14]	Cabrera-Suárez et al. (PREDIDEP)	https://doi.org/10.1080/1028415X.2023.2283290
[15]	Radkhah et al.	https://doi.org/10.1016/j.pmedr.2023.102469
[16]	Mela et al.	https://doi.org/10.1016/j.bbi.2025.106167
[17]	Casas et al. (IMPACT-BCN)	https://pmc.ncbi.nlm.nih.gov/articles/PMC10223296/
[18]	Samuthpongton et al.	https://doi.org/10.1001/jamanetworkopen.2023.34770
[19]	Adjibade et al.	https://doi.org/10.1186/s12916-019-1312-y
[20]	Gómez-Donoso et al. (SUN)	https://doi.org/10.1007/s00394-019-01970-1
[21]	Ferreira et al. (ELSA-Brasil)	https://doi.org/10.1016/j.jand.2024.10.012
[22]	Lane et al. (Melbourne)	https://doi.org/10.1016/j.jad.2023.04.124
[23]	Mengist et al. (ASPREE/ALSOP)	https://link.springer.com/article/10.1186/s12916-025-04002-4
[24]	Chen et al. (UK Biobank, 2023)	https://doi.org/10.1186/s12916-023-03019-x
[25]	Sun et al. (UK Biobank)	https://doi.org/10.1039/D3FO01120H
[26]	Wu et al. (multicohort)	https://doi.org/10.1186/s12966-023-01461-x

Primary-source index (continued)

Ref	Study	Primary-source URL (clickable)
[27]	Yin et al. (Sweden)	https://doi.org/10.1186/s12966-021-01227-3
[28]	Zhang et al. (China)	https://doi.org/10.3390/nu17060942
[29]	Gianfredi et al. (Maastricht)	https://doi.org/10.3390/nu13031034
[30]	Vermeulen et al. (Whitehall II)	https://doi.org/10.1093/jn/nxy154
[31]	Pei et al. (CLHLS)	https://doi.org/10.3390/nu14245230
[32]	Bizzozero-Peroni et al. (Seniors-ENRICA)	https://doi.org/10.1016/j.clnu.2022.10.007
[33]	Bracone et al. (Moli-sani)	https://doi.org/10.1016/j.clnu.2026.106627
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