**ADDITIONAL FILE 2**

**Empirical evidence of study design biases in nutrition randomised controlled trials: a meta-epidemiological study**

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# Content

|  | | Risk Ratio | Risk Ratio |
| Study or Subgroup | Weight | IV, Random, 95% CI | IV, Random, 95% CI |
| --- | --- | --- | --- |
| **RCTs low risk of bias** | | | |
| AlphaOmega - EPA+DHA 2010 | 6.7% | 1.02 [0.88, 1.17] | |
| AREDS2 2014 | 4.6% | 0.94 [0.77, 1.14] | |
| Baldassarre 2006 | 0.0% | 3.00 [0.13, 70.99] | |
| Brox 2001 | 0.0% | 0.17 [0.01, 4.05] | |
| DART 1989 | 9.5% | 0.96 [0.88, 1.05] | |
| Derosa 2016 | 0.1% | 0.68 [0.12, 3.98] | |
| DO IT 2010 | 1.2% | 0.89 [0.57, 1.38] | |
| Doi 2014 | 0.6% | 0.46 [0.24, 0.89] | |
| EPE-A 2014 | 0.2% | 0.37 [0.12, 1.18] | |
| EPIC-1 2008 | 0.0% | 2.97 [0.12, 72.40] | |
| EPOCH 2014 | 0.2% | 1.61 [0.54, 4.83] | |
| FAAT 2005 | 1.3% | 0.80 [0.52, 1.23] | |
| FORWARD 2013 | 0.1% | 1.03 [0.26, 4.07] | |
| FOSTAR 2016 | 0.7% | 1.13 [0.61, 2.08] | |
| GISSI-HF 2008 | 12.2% | 0.97 [0.92, 1.01] | |
| GISSI-P 1999 | 8.4% | 0.90 [0.81, 1.00] | |
| HARP 1995 | 0.3% | 0.95 [0.37, 2.46] | |
| JELIS 2007 | 5.8% | 0.81 [0.69, 0.95] | |
| Kumar 2013 | 0.0% | 1.00 [0.06, 15.43] | |
| MAPT 2017 | 4.9% | 1.19 [0.99, 1.43] | |
| OMEGA 2009 | 4.2% | 1.19 [0.97, 1.46] | |
| ORIGIN 2012 | 12.1% | 0.98 [0.93, 1.03] | |
| Proudman 2015 | 0.0% | 1.84 [0.08, 44.38] | |
| Puri 2005 | 0.0% | 3.05 [0.13, 73.40] | |
| Raitt 2005 | 0.1% | 0.40 [0.08, 2.01] | |
| Risk & Prevention 2013 | 8.7% | 0.99 [0.89, 1.10] | |
| Sandhu 2016 | 0.0% | 1.98 [0.18, 21.53] | |
| SCIMO 1999 | 0.8% | 0.65 [0.37, 1.13] | |
| Shinto 2014 | 0.0% | 3.00 [0.13, 67.52] | |
| SHOT 1996 | 0.5% | 1.16 [0.55, 2.43] | |
| SOFA 2006 | 2.3% | 1.05 [0.77, 1.42] | |
| SU.FOL.OM3 2010 | 6.7% | 1.04 [0.90, 1.20] | |
| THIS DIET 2008 | 0.5% | 1.37 [0.67, 2.80] | |
| **Subtotal (95% CI)** | 92.8% | 0.97 [0.94, 1.01] | |
| Heterogeneity: Tau² = 0.00; Chi² = 34.79, df = 32 (P = 0.34); I² = 8% | | | |
| Test for overall effect: Z = 1.63 (P = 0.10) | | | |
| | | | |
| **RCTs unclear/high risk of bias** | | | |
| AFFORD 2013 | 0.5% | 1.94 [0.96, 3.91] | |
| DART2 2003 | 4.5% | 1.31 [1.07, 1.59] | |
|  | 0.6% | 0.38 [0.20, 0.72] | |
| Nutristroke 2009 | 0.0% | 0.10 [0.01, 1.79] | |
| OFAMI 2001 | 1.6% | 1.17 [0.80, 1.71] | |
| **Subtotal (95% CI)** | 7.2% | 0.99 [0.60, 1.62] | |
| Heterogeneity: Tau² = 0.20; Chi² = 17.63, df = 4 (P = 0.001); I² = 77% | | | |
| Test for overall effect: Z = 0.05 (P = 0.96) | | | |
| | | | |
| **Total (95% CI)** | 100.0% | 0.99 [0.94, 1.04] | |
| Heterogeneity: Tau² = 0.00; Chi² = 58.46, df = 37 (P = 0.01); I² = 37% | | | |
| Test for overall effect: Z = 0.54 (P = 0.59) | | | |
| Test for subgroup differences: Chi² = 0.00, df = 1 (P = 0.95), I² = 0% | | | |

0.01    0.1    1    10    100
Favours Omega-3   Favours control

**Figure S1**: Example of calculating effect estimates for randomised controlled trials at low risk of bias and unclear/high risk of bias; domain: random sequence
CI: confidence interval; df: degrees of freedom; I²: heterogeneity measure; IV: inverse variance; RCT: randomised controlled trial

## Methodological trial characteristic: Random Sequence

| Reference | Intervention | Outcome | Ratio of Risk Ratios | RRR | 95%-CI | Weight |
|-----------|--------------|---------|---------------------|-----|--------|--------|
| Abdelhamid 2018a | Omega-3 | Cardiovascular mortality | | 1.24 | [0.77; 2.00] | 1.0% |
| Abdelhamid 2018a | Omega-3 | Cardiovascular disease | | 1.02 | [0.62; 1.68] | 0.9% |
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular disease | | 1.24 | [0.90; 1.71] | 2.2% |
| Abdelhamid 2018a | Omega-3 | All-cause mortality | | 1.18 | [1.00; 1.38] | 7.1% |
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular mortality | | 1.05 | [0.57; 1.95] | 0.6% |
| Abdelhamid 2018a | α-Linolenic acid | Coronary heart disease | | 1.31 | [0.87; 1.97] | 1.4% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | | 1.00 | [0.78; 1.29] | 3.3% |
| Abdelhamid 2018b | Polyunsaturated fat | Coronary heart disease | | 0.34 | [0.20; 0.59] | 0.8% |
| Adler 2014 | Low-sodium | All-cause mortality | | 0.94 | [0.63; 1.40] | 1.4% |
| Adler 2014 | Low-sodium | Cardiovascular mortality | | 1.03 | [0.17; 6.13] | 0.1% |
| Adler 2014 | Low-sodium | Cardiovascular disease | | 1.26 | [0.26; 6.02] | 0.1% |
| Avenell 2014 | Vitamin D | Hip fracture | | 1.10 | [0.63; 1.92] | 0.7% |
| Avenell 2014 | Vitamin D | Any fracture | | 0.92 | [0.66; 1.27] | 2.1% |
| Bjelakovic 2012 | β-carotene | All-cause mortality | | 0.65 | [0.39; 1.09] | 0.9% |
| Bjelakovic 2012 | Vitamin E | All-cause mortality | | 0.89 | [0.80; 1.00] | 11.8% |
| Bjelakovic 2012 | Vitamin C | All-cause mortality | | 0.77 | [0.54; 1.10] | 1.8% |
| Bjelakovic 2012 | Vitamin A | All-cause mortality | | 1.09 | [0.45; 2.64] | 0.3% |
| Bjelakovic 2014 | Vitamin D | All-cause mortality | | 0.97 | [0.91; 1.03] | 20.8% |
| Bjelakovic 2014 | Vitamin D | Cardiovascular mortality | | 3.06 | [0.13; 71.27] | 0.0% |
| Bjelakovic 2014b | Vitamin D | Cancer | | 2.97 | [0.31; 28.12] | 0.0% |
| De-Regil 2015 | Folate | Neural tube defect | | 1.32 | [0.30; 5.82] | 0.1% |
| De-Regil 2015 | Folate | Congenital cardiovascular anomalies | | 1.48 | [0.15; 14.63] | 0.0% |
| Hofmeyr 2018 | Calcium | Pre-eclampsia | | 0.47 | [0.24; 0.91] | 0.5% |
| Hofmeyr 2018 | Calcium | High blood pressure | | 0.47 | [0.21; 1.02] | 0.4% |
| Hooper 2012 | Low-fat/modified fat | Cardiovascular mortality | | 1.09 | [0.66; 1.78] | 0.9% |
| Hooper 2012 | Low-fat/modified fat | All-cause mortality | | 0.91 | [0.58; 1.42] | 1.1% |
| Hooper 2012 | Low-fat/modified fat | Combined cardiovascular events | | 1.00 | [0.79; 1.26] | 3.9% |
| Hooper 2018 | Omega-6 | Combined cardiovascular events | | 0.36 | [0.01; 10.54] | 0.0% |
| Hooper 2018 | Omega-6 | All-cause mortality | | 0.75 | [0.40; 1.40] | 0.6% |
| Hooper 2018 | Omega-6 | Cardiovascular mortality | | 0.08 | [0.01; 1.04] | 0.0% |
| Keats 2019 | Micronutrients | Preterm birth | | 1.03 | [0.86; 1.23] | 6.1% |
| Keats 2019 | Micronutrients | Low birth weight | | 1.02 | [0.91; 1.15] | 10.7% |
| Keats 2019 | Micronutrients | Small gestational age | | 0.92 | [0.77; 1.11] | 5.8% |
| Rees 2013b | Selenium | All-cause mortality | | 0.99 | [0.76; 1.28] | 3.2% |
| Rees 2013b | Selenium | Cardiovascular mortality | | 0.70 | [0.42; 1.17] | 0.9% |
| Rees 2013b | Selenium | Combined cardiovascular events | | 0.96 | [0.74; 1.25] | 3.1% |
| Vinceti 2018 | Selenium | Cancer | | 1.41 | [0.95; 2.07] | 1.5% |
| Yao 2017 | Fibre | Colorectal cancer | | 1.28 | [0.18; 8.91] | 0.1% |
| Yao 2017 | Fibre | Colorectal adenoma | | 0.91 | [0.72; 1.15] | 3.8% |
| **Random effects model** | | | | 0.97 | [0.93; 1.02] | 100.0% |
| **Prediction interval** | | | | | [0.88; 1.08] | |

Heterogeneity: $I^2 = 28\%$, $\tau^2 = 0.0019$, $p = 0.05$

0.01  0.1  1  10  100
RR in high/unclear RoB < RR in low RoB     RR in high/unclear RoB > RR in low RoB

**Figure S2:** Random sequence: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

| Reference | Intervention | Outcome | Ratio of Risk Ratios | RRR | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| Abdelhamid 2018a | Omega-3 | Cardiovascular mortality | | 1.24 | [0.77; 2.00] | 3.1% |
| Abdelhamid 2018a | Omega-3 | All-cause mortality | | 1.18 | [1.00; 1.38] | 9.7% |
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular mortality | | 1.05 | [0.57; 1.95] | 2.1% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | | 1.00 | [0.78; 1.29] | 7.0% |
| Abdelhamid 2018b | Polyunsaturated fat | Coronary heart disease | | 0.34 | [0.20; 0.59] | 2.5% |
| Adler 2014 | Low-sodium | All-cause mortality | | 0.94 | [0.63; 1.40] | 4.1% |
| Adler 2014 | Low-sodium | Cardiovascular mortality | | 1.03 | [0.17; 6.13] | 0.3% |
| Avenell 2014 | Vitamin D | Hip fracture | | 1.10 | [0.63; 1.92] | 2.5% |
| Bjelakovic 2012 | β-carotene | All-cause mortality | | 0.65 | [0.39; 1.09] | 2.8% |
| Bjelakovic 2012 | Vitamin E | All-cause mortality | | 0.89 | [0.80; 1.00] | 11.2% |
| Bjelakovic 2012 | Vitamin C | All-cause mortality | | 0.77 | [0.54; 1.10] | 4.8% |
| Bjelakovic 2012 | Vitamin A | All-cause mortality | | 1.09 | [0.45; 2.64] | 1.1% |
| Bjelakovic 2014 | Vitamin D | All-cause mortality | | 0.97 | [0.91; 1.03] | 12.5% |
| Bjelakovic 2014 | Vitamin D | Cardiovascular mortality | | 3.06 | [0.13; 71.27] | 0.1% |
| Bjelakovic 2014b | Vitamin D | Cancer | | 2.97 | [0.31; 28.12] | 0.2% |
| De-Regil 2015 | Folate | Neural tube defect | | 1.32 | [0.30; 5.82] | 0.4% |
| De-Regil 2015 | Folate | Congenital cardiovascular anomalies | | 1.48 | [0.15; 14.63] | 0.2% |
| Hofmeyr 2018 | Calcium | Pre-eclampsia | | 0.47 | [0.24; 0.91] | 1.8% |
| Hofmeyr 2018 | Calcium | High blood pressure | | 0.47 | [0.21; 1.02] | 1.4% |
| Hooper 2012 | Low-fat/modified fat | Cardiovascular mortality | | 1.09 | [0.66; 1.78] | 3.0% |
| Hooper 2012 | Low-fat/modified fat | All-cause mortality | | 0.91 | [0.58; 1.42] | 3.5% |
| Hooper 2018 | Omega-6 | All-cause mortality | | 0.75 | [0.40; 1.40] | 2.1% |
| Hooper 2018 | Omega-6 | Cardiovascular mortality | | 0.08 | [0.01; 1.04] | 0.1% |
| Keats 2019 | Micronutrients | Preterm birth | | 1.03 | [0.86; 1.23] | 9.2% |
| Rees 2013b | Selenium | All-cause mortality | | 0.99 | [0.76; 1.28] | 6.9% |
| Rees 2013b | Selenium | Cardiovascular mortality | | 0.70 | [0.42; 1.17] | 2.8% |
| Vinceti 2018 | Selenium | Cancer | | 1.41 | [0.95; 2.07] | 4.3% |
| Yao 2017 | Fibre | Colorectal cancer | | 1.28 | [0.18; 8.91] | 0.2% |
| **Random effects model** | | | | 0.94 | [0.85; 1.03] | 100.0% |
| **Prediction interval** | | | | | [0.69; 1.26] | |
| Heterogeneity: $I^2 = 42\%$, $\tau^2 = 0.0186$, $p = 0.01$ | | | | | | |

0.01  0.1  1  10  100
RR in high/unclear RoB < RR in low RoB   RR in high/unclear RoB > RR in low RoB

**Figure S3:** Random sequence: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Sensitivity analysis: Excluding highly correlated outcomes

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method



| Reference | Intervention | Outcome | Ratio of Risk Ratios | RRR | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular disease | | 1.24 | [0.90; 1.71] | 3.5% |
| Abdelhamid 2018a | Omega-3 | All-cause mortality | | 1.18 | [1.00; 1.38] | 10.4% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | | 1.00 | [0.78; 1.29] | 5.3% |
| Adler 2014 | Low-sodium | All-cause mortality | | 0.94 | [0.63; 1.40] | 2.3% |
| Avenell 2014 | Vitamin D | Any fracture | | 0.92 | [0.66; 1.27] | 3.4% |
| Bjelakovic 2012 | β-carotene | All-cause mortality | | 0.65 | [0.39; 1.09] | 1.4% |
| Bjelakovic 2012 | Vitamin E | All-cause mortality | | 0.89 | [0.80; 1.00] | 15.8% |
| Bjelakovic 2012 | Vitamin C | All-cause mortality | | 0.77 | [0.54; 1.10] | 2.9% |
| Bjelakovic 2012 | Vitamin A | All-cause mortality | | 1.09 | [0.45; 2.64] | 0.5% |
| Bjelakovic 2014a | Vitamin D | All-cause mortality | | 0.97 | [0.91; 1.03] | 24.1% |
| Bjelakovic 2014b | Vitamin D | Cancer | | 2.97 | [0.31; 28.12] | 0.1% |
| De-Regil 2015 | Folate | Neural tube defect | | 1.32 | [0.30; 5.82] | 0.2% |
| Hofmeyr 2018 | Calcium | Pre-eclampsia | | 0.47 | [0.24; 0.91] | 0.9% |
| Hooper 2012 | Low-fat/modified fat | Combined cardiovascular events | | 1.00 | [0.79; 1.26] | 6.0% |
| Hooper 2018 | Omega-6 | All-cause mortality | | 0.75 | [0.40; 1.40] | 1.0% |
| Keats 2019 | Micronutrients | Preterm birth | | 1.03 | [0.86; 1.23] | 9.1% |
| Rees 2013b | Selenium | All-cause mortality | | 0.99 | [0.76; 1.28] | 5.0% |
| Vinceti 2018 | Selenium | Cancer | | 1.41 | [0.95; 2.07] | 2.4% |
| Yao 2017 | Fibre | Colorectal adenoma | | 0.91 | [0.72; 1.15] | 5.9% |
| **Random effects model** | | | | 0.98 | [0.92; 1.04] | 100.0% |
| **Prediction interval** | | | | | [0.85; 1.12] | |
| Heterogeneity: $I^2 = 28\%$, $\tau^2 = 0.0032$, $p = 0.13$ | | | | | | |

0.1  0.5 1 2  10
RR in high/unclear RoB < RR in low RoB   RR in high/unclear RoB > RR in low RoB

**Figure S4:** Random sequence: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Sensitivity analysis: Including only one outcome per comparison from each included systematic review

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

| Reference | Intervention | Outcome | Ratio of Risk Ratios | RRR | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| **Fatty acids** | | | | | | |
| Abdelhamid 2018a | Omega-3 | Cardiovascular mortality | | 1.24 | [0.77; 2.00] | 1.0% |
| Abdelhamid 2018a | Omega-3 | Cardiovascular disease | | 1.02 | [0.62; 1.68] | 0.9% |
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular disease | | 1.24 | [0.90; 1.71] | 2.2% |
| Abdelhamid 2018a | Omega-3 | All-cause mortality | | 1.18 | [1.00; 1.38] | 7.1% |
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular mortality | | 1.05 | [0.57; 1.95] | 0.6% |
| Abdelhamid 2018a | α-Linolenic acid | Coronary heart disease | | 1.31 | [0.87; 1.97] | 1.4% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | | 1.00 | [0.78; 1.29] | 3.3% |
| Abdelhamid 2018b | Polyunsaturated fat | Coronary heart disease | | 0.34 | [0.20; 0.59] | 0.8% |
| Hooper 2018 | Omega-6 | Combined cardiovascular events | | 0.36 | [0.01; 10.54] | 0.0% |
| Hooper 2018 | Omega-6 | All-cause mortality | | 0.75 | [0.40; 1.40] | 0.6% |
| Hooper 2018 | Omega-6 | Cardiovascular mortality | | 0.08 | [0.01; 1.04] | 0.0% |
| Random effects model | | | | 0.97 | [0.76; 1.23] | 17.9% |
| Prediction interval | | | | | [0.46; 2.02] | -- |
| Heterogeneity: $I^2 = 62\%$, $\tau^2 = 0.0915$, $p < 0.01$ | | | | | | |
| **Micronutrients** | | | | | | |
| Adler 2014 | Low-sodium | All-cause mortality | | 0.94 | [0.63; 1.40] | 1.4% |
| Adler 2014 | Low-sodium | Cardiovascular mortality | | 1.03 | [0.17; 6.13] | 0.1% |
| Adler 2014 | Low-sodium | Cardiovascular disease | | 1.26 | [0.26; 6.02] | 0.1% |
| Avenell 2014 | Vitamin D | Hip fracture | | 1.10 | [0.63; 1.92] | 0.7% |
| Avenell 2014 | Vitamin D | Any fracture | | 0.92 | [0.66; 1.27] | 2.1% |
| Bjelakovic 2012 | β-carotene | All-cause mortality | | 0.65 | [0.39; 1.09] | 0.9% |
| Bjelakovic 2012 | Vitamin E | All-cause mortality | | 0.89 | [0.80; 1.00] | 11.8% |
| Bjelakovic 2012 | Vitamin C | All-cause mortality | | 0.77 | [0.54; 1.10] | 1.8% |
| Bjelakovic 2012 | Vitamin A | All-cause mortality | | 1.09 | [0.45; 2.64] | 0.3% |
| Bjelakovic 2014 | Vitamin D | All-cause mortality | | 0.97 | [0.91; 1.03] | 20.8% |
| Bjelakovic 2014 | Vitamin D | Cardiovascular mortality | | 3.06 | [0.13; 71.27] | 0.0% |
| Bjelakovic 2014b | Vitamin D | Cancer | | 2.97 | [0.31; 28.12] | 0.0% |
| De-Regil 2015 | Folate | Neural tube defect | | 1.32 | [0.30; 5.82] | 0.1% |
| De-Regil 2015 | Folate | Congenital cardiovascular anomalies | | 1.48 | [0.15; 14.63] | 0.0% |
| Hofmeyr 2018 | Calcium | Pre-eclampsia | | 0.47 | [0.24; 0.91] | 0.5% |
| Hofmeyr 2018 | Calcium | High blood pressure | | 0.47 | [0.21; 1.02] | 0.4% |
| Keats 2019 | Micronutrients | Preterm birth | | 1.03 | [0.86; 1.23] | 6.1% |
| Keats 2019 | Micronutrients | Low birth weight | | 1.02 | [0.91; 1.15] | 10.7% |
| Keats 2019 | Micronutrients | Small gestational age | | 0.92 | [0.77; 1.11] | 5.8% |
| Rees 2013b | Selenium | All-cause mortality | | 0.99 | [0.76; 1.28] | 3.2% |
| Rees 2013b | Selenium | Cardiovascular mortality | | 0.70 | [0.42; 1.17] | 0.9% |
| Rees 2013b | Selenium | Combined cardiovascular events | | 0.96 | [0.74; 1.25] | 3.1% |
| Vinceti 2018 | Selenium | Cancer | | 1.41 | [0.95; 2.07] | 1.5% |
| Random effects model | | | | 0.96 | [0.92; 1.00] | 72.3% |
| Prediction interval | | | | | [0.91; 1.00] | -- |
| Heterogeneity: $I^2 = 2\%$, $\tau^2 = 0$, $p = 0.44$ | | | | | | |
| **Dietary approach** | | | | | | |
| Hooper 2012 | Low-fat/modified fat | Cardiovascular mortality | | 1.09 | [0.66; 1.78] | 0.9% |
| Hooper 2012 | Low-fat/modified fat | All-cause mortality | | 0.91 | [0.58; 1.42] | 1.1% |
| Hooper 2012 | Low-fat/modified fat | Combined cardiovascular events | | 1.00 | [0.79; 1.26] | 3.9% |
| Random effects model | | | | 0.99 | [0.82; 1.20] | 5.9% |
| Prediction interval | | | | | [0.29; 3.41] | -- |
| Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0$, $p = 0.87$ | | | | | | |
| **Other** | | | | | | |
| Yao 2017 | Fibre | Colorectal cancer | | 1.28 | [0.18; 8.91] | 0.1% |
| Yao 2017 | Fibre | Colorectal adenoma | | 0.91 | [0.72; 1.15] | 3.8% |
| Random effects model | | | | 0.91 | [0.72; 1.15] | 3.8% |
| Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0$, $p = 0.73$ | | | | | | |
| **Random effects model** | | | | 0.97 | [0.93; 1.02] | 100.0% |
| **Prediction interval** | | | | | [0.88; 1.08] | |
| Heterogeneity: $I^2 = 28\%$, $\tau^2 = 0.0019$, $p = 0.05$ | | | | | | |

0.01  0.1  1  10  100
RR in high/unclear RoB < RR in low RoB    RR in high/unclear RoB > RR in low RoB

**Figure S5:** Random sequence: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Subgroup analysis: Clusters of interventions

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

| Reference | Intervention | Outcome | Ratio of Risk Ratios | RRR | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| **Cardiovascular disease** | | | | | | |
| Abdelhamid 2018a | Omega-3 | Cardiovascular mortality | | 1.24 | [0.77; 2.00] | 1.0% |
| Abdelhamid 2018a | Omega-3 | Cardiovascular disease | | 1.02 | [0.62; 1.68] | 0.9% |
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular disease | | 1.24 | [0.90; 1.71] | 2.2% |
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular mortality | | 1.05 | [0.57; 1.95] | 0.6% |
| Abdelhamid 2018a | α-Linolenic acid | Coronary heart disease | | 1.31 | [0.87; 1.97] | 1.4% |
| Abdelhamid 2018b | Polyunsaturated fat | Coronary heart disease | | 0.34 | [0.20; 0.59] | 0.8% |
| Adler 2014 | Low-sodium | Cardiovascular mortality | | 1.03 | [0.17; 6.13] | 0.1% |
| Adler 2014 | Low-sodium | Cardiovascular disease | | 1.26 | [0.26; 6.02] | 0.1% |
| Bjelakovic 2014 | Vitamin D | Cardiovascular mortality | | 3.06 | [0.13; 71.27] | 0.0% |
| Hooper 2012 | Low-fat/modified fat | Cardiovascular mortality | | 1.09 | [0.66; 1.78] | 0.9% |
| Hooper 2012 | Low-fat/modified fat | Combined cardiovascular events | | 1.00 | [0.79; 1.26] | 3.9% |
| Hooper 2018 | Omega-6 | Combined cardiovascular events | | 0.36 | [0.01; 10.54] | 0.0% |
| Hooper 2018 | Omega-6 | Cardiovascular mortality | | 0.08 | [0.01; 1.04] | 0.0% |
| Rees 2013b | Selenium | Cardiovascular mortality | | 0.70 | [0.42; 1.17] | 0.9% |
| Rees 2013b | Selenium | Combined cardiovascular events | | 0.96 | [0.74; 1.25] | 3.1% |
| Random effects model | | | | 0.96 | [0.79; 1.17] | 15.8% |
| Prediction interval | | | | | [0.54; 1.71] | — |
| Heterogeneity: $I^2 = 45\%$, $\tau^2 = 0.0618$, $p = 0.03$ | | | | | | |
| **All-cause mortality** | | | | | | |
| Abdelhamid 2018a | Omega-3 | All-cause mortality | | 1.18 | [1.00; 1.38] | 7.1% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | | 1.00 | [0.78; 1.29] | 3.3% |
| Adler 2014 | Low-sodium | All-cause mortality | | 0.94 | [0.63; 1.40] | 1.4% |
| Bjelakovic 2012 | β-carotene | All-cause mortality | | 0.65 | [0.39; 1.09] | 0.9% |
| Bjelakovic 2012 | Vitamin E | All-cause mortality | | 0.89 | [0.80; 1.00] | 11.8% |
| Bjelakovic 2012 | Vitamin C | All-cause mortality | | 0.77 | [0.54; 1.10] | 1.8% |
| Bjelakovic 2012 | Vitamin A | All-cause mortality | | 1.09 | [0.45; 2.64] | 0.3% |
| Bjelakovic 2014 | Vitamin D | All-cause mortality | | 0.97 | [0.91; 1.03] | 20.8% |
| Hooper 2012 | Low-fat/modified fat | All-cause mortality | | 0.91 | [0.58; 1.42] | 1.1% |
| Hooper 2018 | Omega-6 | All-cause mortality | | 0.75 | [0.40; 1.40] | 0.6% |
| Rees 2013b | Selenium | All-cause mortality | | 0.99 | [0.76; 1.28] | 3.2% |
| Random effects model | | | | 0.96 | [0.88; 1.04] | 52.3% |
| Prediction interval | | | | | [0.80; 1.16] | — |
| Heterogeneity: $I^2 = 19\%$, $\tau^2 = 0.0050$, $p = 0.26$ | | | | | | |
| **Bone health** | | | | | | |
| Avenell 2014 | Vitamin D | Hip fracture | | 1.10 | [0.63; 1.92] | 0.7% |
| Avenell 2014 | Vitamin D | Any fracture | | 0.92 | [0.66; 1.27] | 2.1% |
| Random effects model | | | | 0.96 | [0.73; 1.27] | 2.9% |
| Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0$, $p = 0.57$ | | | | | | |
| **Cancer** | | | | | | |
| Bjelakovic 2014b | Vitamin D | Cancer | | 2.97 | [0.31; 28.12] | 0.0% |
| Vinceti 2018 | Selenium | Cancer | | 1.41 | [0.95; 2.07] | 1.5% |
| Yao 2017 | Fibre | Colorectal cancer | | 1.28 | [0.18; 8.91] | 0.1% |
| Yao 2017 | Fibre | Colorectal adenoma | | 0.91 | [0.72; 1.15] | 3.8% |
| Random effects model | | | | 1.13 | [0.77; 1.68] | 5.4% |
| Prediction interval | | | | | [0.29; 4.45] | — |
| Heterogeneity: $I^2 = 33\%$, $\tau^2 = 0.0609$, $p = 0.21$ | | | | | | |
| **Pregnancy outcomes** | | | | | | |
| De-Regil 2015 | Folate | Neural tube defect | | 1.32 | [0.30; 5.82] | 0.1% |
| De-Regil 2015 | Folate | Congenital cardiovascular anomalies | | 1.48 | [0.15; 14.63] | 0.0% |
| Hofmeyr 2018 | Calcium | Pre-eclampsia | | 0.47 | [0.24; 0.91] | 0.5% |
| Hofmeyr 2018 | Calcium | High blood pressure | | 0.47 | [0.21; 1.02] | 0.4% |
| Keats 2019 | Micronutrients | Preterm birth | | 1.03 | [0.86; 1.23] | 6.1% |
| Keats 2019 | Micronutrients | Low birth weight | | 1.02 | [0.91; 1.15] | 10.7% |
| Keats 2019 | Micronutrients | Small gestational age | | 0.92 | [0.77; 1.11] | 5.8% |
| Random effects model | | | | 0.98 | [0.90; 1.07] | 23.7% |
| Prediction interval | | | | | [0.88; 1.10] | — |
| Heterogeneity: $I^2 = 38\%$, $\tau^2 = 0$, $p = 0.14$ | | | | | | |
| **Random effects model** | | | | 0.97 | [0.93; 1.02] | 100.0% |
| **Prediction interval** | | | | | [0.88; 1.08] | |
| Heterogeneity: $I^2 = 28\%$, $\tau^2 = 0.0019$, $p = 0.05$ | | | | | | |

0.01　0.1　1　10　100
RR in high/unclear RoB < RR in low RoB　RR in high/unclear RoB > RR in low RoB

**Figure S6:** Random sequence: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Subgroup analysis: Clusters of outcomes

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

| Reference | Intervention | Outcome | Ratio of Risk Ratios | RRR | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| **all-cause mortality** | | | | | | |
| Abdelhamid 2018a | Omega-3 | All-cause mortality | | 1.18 | [1.00; 1.38] | 7.1% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | | 1.00 | [0.78; 1.29] | 3.3% |
| Adler 2014 | Low-sodium | All-cause mortality | | 0.94 | [0.63; 1.40] | 1.4% |
| Bjelakovic 2012 | β-carotene | All-cause mortality | | 0.65 | [0.39; 1.09] | 0.9% |
| Bjelakovic 2012 | Vitamin E | All-cause mortality | | 0.89 | [0.80; 1.00] | 11.8% |
| Bjelakovic 2012 | Vitamin C | All-cause mortality | | 0.77 | [0.54; 1.10] | 1.8% |
| Bjelakovic 2012 | Vitamin A | All-cause mortality | | 1.09 | [0.45; 2.64] | 0.3% |
| Bjelakovic 2014 | Vitamin D | All-cause mortality | | 0.97 | [0.91; 1.03] | 20.8% |
| Hooper 2012 | Low-fat/modified fat | All-cause mortality | | 0.91 | [0.58; 1.42] | 1.1% |
| Hooper 2018 | Omega-6 | All-cause mortality | | 0.75 | [0.40; 1.40] | 0.6% |
| Rees 2013b | Selenium | All-cause mortality | | 0.99 | [0.76; 1.28] | 3.2% |
| Random effects model | | | | 0.96 | [0.88; 1.04] | 52.3% |
| Prediction interval | | | | | [0.80; 1.16] | -- |
| Heterogeneity: $I^2 = 19\%$, $\tau^2 = 0.0050$, $p = 0.26$ | | | | | | |
| **mostly subjectively assessed** | | | | | | |
| Abdelhamid 2018a | Omega-3 | Cardiovascular mortality | | 1.24 | [0.77; 2.00] | 1.0% |
| Abdelhamid 2018a | Omega-3 | Cardiovascular disease | | 1.02 | [0.62; 1.68] | 0.9% |
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular disease | | 1.24 | [0.90; 1.71] | 2.2% |
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular mortality | | 1.05 | [0.57; 1.95] | 0.6% |
| Abdelhamid 2018a | α-Linolenic acid | Coronary heart disease | | 1.31 | [0.87; 1.97] | 1.4% |
| Abdelhamid 2018b | Polyunsaturated fat | Coronary heart disease | | 0.34 | [0.20; 0.59] | 0.8% |
| Adler 2014 | Low-sodium | Cardiovascular mortality | | 1.03 | [0.17; 6.13] | 0.1% |
| Adler 2014 | Low-sodium | Cardiovascular disease | | 1.26 | [0.26; 6.02] | 0.1% |
| Avenell 2014 | Vitamin D | Hip fracture | | 1.10 | [0.63; 1.92] | 0.7% |
| Avenell 2014 | Vitamin D | Any fracture | | 0.92 | [0.66; 1.27] | 2.1% |
| Bjelakovic 2014 | Vitamin D | Cardiovascular mortality | | 3.06 | [0.13; 71.27] | 0.0% |
| Bjelakovic 2014b | Vitamin D | Cancer | | 2.97 | [0.31; 28.12] | 0.0% |
| Hooper 2012 | Low-fat/modified fat | Cardiovascular mortality | | 1.09 | [0.66; 1.78] | 0.9% |
| Hooper 2012 | Low-fat/modified fat | Combined cardiovascular events | | 1.00 | [0.79; 1.26] | 3.9% |
| Hooper 2018 | Omega-6 | Combined cardiovascular events | | 0.36 | [0.01; 10.54] | 0.0% |
| Hooper 2018 | Omega-6 | Cardiovascular mortality | | 0.08 | [0.01; 1.04] | 0.0% |
| Rees 2013b | Selenium | Cardiovascular mortality | | 0.70 | [0.42; 1.17] | 0.9% |
| Rees 2013b | Selenium | Combined cardiovascular events | | 0.96 | [0.74; 1.25] | 3.1% |
| Vinceti 2018 | Selenium | Cancer | | 1.41 | [0.95; 2.07] | 1.5% |
| Yao 2017 | Fibre | Colorectal cancer | | 1.28 | [0.18; 8.91] | 0.1% |
| Yao 2017 | Fibre | Colorectal adenoma | | 0.91 | [0.72; 1.15] | 3.8% |
| Random effects model | | | | 1.00 | [0.87; 1.14] | 24.0% |
| Prediction interval | | | | | [0.69; 1.44] | -- |
| Heterogeneity: $I^2 = 35\%$, $\tau^2 = 0.0260$, $p = 0.06$ | | | | | | |
| **pregnancy outcomes** | | | | | | |
| De-Regil 2015 | Folate | Neural tube defect | | 1.32 | [0.30; 5.82] | 0.1% |
| De-Regil 2015 | Folate | Congenital cardiovascular anomalies | | 1.48 | [0.15; 14.63] | 0.0% |
| Hofmeyr 2018 | Calcium | Pre-eclampsia | | 0.47 | [0.24; 0.91] | 0.5% |
| Hofmeyr 2018 | Calcium | High blood pressure | | 0.47 | [0.21; 1.02] | 0.4% |
| Keats 2019 | Micronutrients | Preterm birth | | 1.03 | [0.86; 1.23] | 6.1% |
| Keats 2019 | Micronutrients | Low birth weight | | 1.02 | [0.91; 1.15] | 10.7% |
| Keats 2019 | Micronutrients | Small gestational age | | 0.92 | [0.77; 1.11] | 5.8% |
| Random effects model | | | | 0.98 | [0.90; 1.07] | 23.7% |
| Prediction interval | | | | | [0.88; 1.10] | -- |
| Heterogeneity: $I^2 = 38\%$, $\tau^2 = 0$, $p = 0.14$ | | | | | | |
| **Random effects model** | | | | 0.97 | [0.93; 1.02] | 100.0% |
| **Prediction interval** | | | | | [0.88; 1.08] | |
| Heterogeneity: $I^2 = 28\%$, $\tau^2 = 0.0019$, $p = 0.05$ | | | | | | |

0.01  0.1  1  10  100

RR in high/unclear RoB < RR in low RoB  RR in high/unclear RoB > RR in low RoB

**Figure S7:** Random sequence: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Subgroup analysis: Subjective versus objective outcomes

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

| Reference | Intervention | Outcome | Difference of SMD | DSMD | 95%-CI | Weight |
|-----------|--------------|---------|-------------------|------|--------|--------|
| Abdelhamid 2018a | Omega-3 | Body weight | | -0.53 | [-1.31; 0.25] | 1.1% |
| Adler 2014 | Low-sodium | Systolic blood pressure | | 0.00 | [-0.40; 0.40] | 3.9% |
| Adler 2014 | Low-sodium | Diastolic blood pressure | | -0.05 | [-0.37; 0.27] | 5.8% |
| Cormick 2015 | Calcium | Systolic blood pressure | | -0.11 | [-0.34; 0.12] | 9.3% |
| Cormick 2015 | Calcium | Diastolic blood pressure | | 0.05 | [-0.30; 0.40] | 5.0% |
| Hartley 2013 | Fruit & Vegetables | Systolic blood pressure | | 0.18 | [-0.14; 0.50] | 5.8% |
| Hartley 2013 | Fruit & Vegetables | Diastolic blood pressure | | 0.20 | [-0.11; 0.51] | 5.9% |
| Hartley 2016 | Fibre | Systolic blood pressure | | 0.56 | [ 0.01; 1.11] | 2.2% |
| Hartley 2016 | Fibre | Diastolic blood pressure | | -0.13 | [-0.69; 0.43] | 2.2% |
| Hooper 2015a | Low-fat | Body weight | | -0.07 | [-0.20; 0.06] | 18.3% |
| Kelly 2017 | Whole grains | Body weight | | -0.16 | [-0.56; 0.24] | 4.0% |
| Kelly 2017 | Whole grains | Systolic blood pressure | | -0.09 | [-0.45; 0.27] | 4.8% |
| Kelly 2017 | Whole grains | Diastolic blood pressure | | -0.14 | [-0.46; 0.18] | 5.6% |
| Palacios 2019 | Vitamin D | Birth weight | | -0.11 | [-0.65; 0.43] | 2.3% |
| Rees 2013 | Healthy diet | Systolic blood pressure | | 0.53 | [ 0.09; 0.97] | 3.4% |
| Rees 2013 | Healthy diet | Diastolic blood pressure | | 0.53 | [ 0.10; 0.96] | 3.5% |
| Rees 2019 | Mediterranean diet | Systolic blood pressure | | -0.01 | [-0.57; 0.55] | 2.1% |
| Rees 2019 | Mediterranean diet | High Density Lipoprotein | | 0.17 | [-0.20; 0.54] | 4.5% |
| Rees 2019 | Mediterranean diet | Triglycerides | | -0.12 | [-0.52; 0.28] | 4.0% |
| Usinger 2012 | Fermented milk | Systolic blood pressure | | -0.40 | [-0.94; 0.14] | 2.3% |
| Usinger 2012 | Fermented milk | Diastolic blood pressure | | -0.12 | [-0.52; 0.28] | 3.9% |
| **Random effects model** | | | | 0.01 | [-0.08; 0.09] | 100.0% |
| **Prediction interval** | | | | | [-0.18; 0.19] | |

Heterogeneity: $I^2 = 28\%$, $\tau^2 = 0.0061$, $p = 0.11$

SMD in high/unclear RoB < SMD in low RoB   SMD in high/unclear RoB > SMD in low RoB

**Figure S8:** Random sequence: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for continuous outcomes as pooled difference of standardised mean difference

CI: confidence interval; DSMD: difference of standardised mean differences; $I^2$: heterogeneity measure; RoB: risk of bias; SMD: standardised mean difference; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

**Figure S9 forest plot**

| Reference | Intervention | Outcome | DSMD | 95%-CI | Weight |
|---|---|---|---|---|---|
| Abdelhamid 2018a | Omega-3 | Body weight | -0.53 | [-1.31; 0.25] | 1.7% |
| Adler 2014 | Low-sodium | Systolic blood pressure | 0.00 | [-0.40; 0.40] | 5.9% |
| Cormick 2015 | Calcium | Systolic blood pressure | -0.11 | [-0.34; 0.12] | 14.1% |
| Hartley 2013 | Fruit & Vegetables | Systolic blood pressure | 0.18 | [-0.14; 0.50] | 8.8% |
| Hartley 2016 | Fibre | Systolic blood pressure | 0.56 | [0.01; 1.11] | 3.4% |
| Hooper 2015a | Low-fat | Body weight | -0.07 | [-0.20; 0.06] | 27.8% |
| Kelly 2017 | Whole grains | Body weight | -0.16 | [-0.56; 0.24] | 6.0% |
| Kelly 2017 | Whole grains | Systolic blood pressure | -0.09 | [-0.45; 0.27] | 7.2% |
| Palacios 2019 | Vitamin D | Birth weight | -0.11 | [-0.65; 0.43] | 3.4% |
| Rees 2013 | Healthy diet | Systolic blood pressure | 0.53 | [0.09; 0.97] | 5.1% |
| Rees 2019 | Mediterranean diet | High Density Lipoprotein | 0.17 | [-0.20; 0.54] | 6.8% |
| Rees 2019 | Mediterranean diet | Triglycerides | -0.12 | [-0.52; 0.28] | 6.1% |
| Usinger 2012 | Fermented milk | Systolic blood pressure | -0.40 | [-0.94; 0.14] | 3.5% |
| **Random effects model** | | | -0.01 | [-0.12; 0.09] | 100.0% |
| **Prediction interval** | | | | [-0.22; 0.20] | |

Heterogeneity: $I^2 = 36\%$, $\tau^2 = 0.0061$, $p = 0.10$

SMD in high/unclear RoB < SMD in low RoB   SMD in high/unclear RoB > SMD in low RoB

**Figure S9:** Random sequence: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for continuous outcomes as pooled difference of standardised mean differences. Sensitivity analysis: Excluding highly correlated outcomes

CI: confidence interval; DSMD: difference of standardised mean differences; $I^2$: heterogeneity measure; RoB: risk of bias; SMD: standardised mean difference; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

**Figure S10 forest plot**

| Reference | Intervention | Outcome | DSMD | 95%-CI | Weight |
|---|---|---|---|---|---|
| Abdelhamid 2018a | Omega-3 | Body weight | -0.53 | [-1.31; 0.25] | 2.4% |
| Adler 2014 | Low-sodium | Systolic blood pressure | 0.00 | [-0.40; 0.40] | 7.6% |
| Cormick 2015 | Calcium | Systolic blood pressure | -0.11 | [-0.34; 0.12] | 15.9% |
| Hartley 2013 | Fruit & Vegetables | Systolic blood pressure | 0.18 | [-0.14; 0.50] | 10.8% |
| Hartley 2016 | Fibre | Systolic blood pressure | 0.56 | [0.01; 1.11] | 4.6% |
| Hooper 2015a | Low-fat | Body weight | -0.07 | [-0.20; 0.06] | 25.8% |
| Kelly 2017 | Whole grains | Systolic blood pressure | -0.09 | [-0.45; 0.27] | 9.1% |
| Palacios 2019 | Vitamin D | Birth weight | -0.11 | [-0.65; 0.43] | 4.6% |
| Rees 2013 | Healthy diet | Systolic blood pressure | 0.53 | [0.09; 0.97] | 6.7% |
| Rees 2019 | Mediterranean diet | Triglycerides | -0.12 | [-0.52; 0.28] | 7.8% |
| Usinger 2012 | Fermented milk | Systolic blood pressure | -0.40 | [-0.94; 0.14] | 4.7% |
| **Random effects model** | | | -0.01 | [-0.13; 0.12] | 100.0% |
| **Prediction interval** | | | | [-0.29; 0.28] | |

Heterogeneity: $I^2 = 42\%$, $\tau^2 = 0.0118$, $p = 0.07$

SMD in high/unclear RoB < SMD in low RoB   SMD in high/unclear RoB > SMD in low RoB

**Figure S10:** Random sequence: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for continuous outcomes as pooled difference of standardised mean differences. Sensitivity analysis: Including only one outcome per comparison from each included systematic review

CI: confidence interval; DSMD: difference of standardised mean differences; $I^2$: heterogeneity measure; RoB: risk of bias; SMD: standardised mean difference; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

**Methodological trial characteristic: Allocation concealment**

| Reference | Intervention | Outcome | Ratio of Risk Ratios | RRR | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| Abdelhamid 2018a | Omega-3 | Cardiovascular mortality | | 0.84 | [0.54; 1.31] | 0.8% |
| Abdelhamid 2018a | Omega-3 | Cardiovascular disease | | 0.97 | [0.76; 1.24] | 2.5% |
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular disease | | 1.24 | [0.90; 1.71] | 1.5% |
| Abdelhamid 2018a | Omega-3 | All-cause mortality | | 0.76 | [0.54; 1.08] | 1.3% |
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular mortality | | 1.05 | [0.57; 1.95] | 0.4% |
| Abdelhamid 2018a | α-Linolenic acid | Coronary heart disease | | 1.31 | [0.87; 1.97] | 0.9% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | | 0.93 | [0.76; 1.14] | 3.5% |
| Abdelhamid 2018b | Polyunsaturated fat | Coronary heart disease | | 0.68 | [0.41; 1.14] | 0.6% |
| Adler 2014 | Low-sodium | All-cause mortality | | 1.41 | [0.85; 2.36] | 0.6% |
| Adler 2014 | Low-sodium | Cardiovascular mortality | | 0.64 | [0.15; 2.70] | 0.1% |
| Adler 2014 | Low-sodium | Cardiovascular disease | | 0.72 | [0.34; 1.50] | 0.3% |
| Avenell 2014 | Vitamin D | Hip fracture | | 1.21 | [0.58; 2.50] | 0.3% |
| Avenell 2014 | Vitamin D | Any fracture | | 1.41 | [0.94; 2.12] | 0.9% |
| Bjelakovic 2012 | β-carotene | All-cause mortality | | 0.75 | [0.36; 1.58] | 0.3% |
| Bjelakovic 2012 | Vitamin E | All-cause mortality | | 0.89 | [0.80; 0.99] | 9.8% |
| Bjelakovic 2012 | Vitamin C | All-cause mortality | | 0.92 | [0.72; 1.18] | 2.4% |
| Bjelakovic 2012 | Vitamin A | All-cause mortality | | 0.93 | [0.70; 1.24] | 1.9% |
| Bjelakovic 2014 | Vitamin D | All-cause mortality | | 1.02 | [0.96; 1.09] | 18.3% |
| Bjelakovic 2014 | Vitamin D | Cardiovascular mortality | | 2.03 | [0.42; 9.90] | 0.1% |
| Bjelakovic 2014b | Vitamin D | Cancer | | 1.67 | [0.49; 5.71] | 0.1% |
| De-Regil 2015 | Folate | Neural tube defect | | 0.76 | [0.20; 2.85] | 0.1% |
| De-Regil 2015 | Folate | Congenital cardiovascular anomalies | | 6.60 | [0.39; 111.46] | 0.0% |
| Hofmeyr 2018 | Calcium | Pre-eclampsia | | 0.28 | [0.08; 1.04] | 0.1% |
| Hofmeyr 2018 | Calcium | High blood pressure | | 0.25 | [0.11; 0.58] | 0.2% |
| Hooper 2012 | Low-fat/modified fat | Cardiovascular mortality | | 1.04 | [0.83; 1.31] | 2.8% |
| Hooper 2012 | Low-fat/modified fat | All-cause mortality | | 1.06 | [0.95; 1.19] | 8.9% |
| Hooper 2012 | Low-fat/modified fat | Combined cardiovascular events | | 1.01 | [0.80; 1.29] | 2.6% |
| Hooper 2015b | Low saturated fat | All-cause mortality | | 1.13 | [0.88; 1.46] | 2.4% |
| Hooper 2015b | Low saturated fat | Cardiovascular mortality | | 1.10 | [0.77; 1.56] | 1.2% |
| Hooper 2015b | Low saturated fat | Combined cardiovascular events | | 0.94 | [0.69; 1.29] | 1.6% |
| Hooper 2018 | Omega-6 | Combined cardiovascular events | | 0.57 | [0.35; 0.92] | 0.7% |
| Hooper 2018 | Omega-6 | All-cause mortality | | 0.62 | [0.39; 0.99] | 0.7% |
| Hooper 2018 | Omega-6 | Cardiovascular mortality | | 0.62 | [0.34; 1.15] | 0.4% |
| Keats 2019 | Micronutrients | Preterm birth | | 1.02 | [0.89; 1.17] | 6.6% |
| Keats 2019 | Micronutrients | Low birth weight | | 1.07 | [0.97; 1.18] | 11.5% |
| Keats 2019 | Micronutrients | Small gestational age | | 1.04 | [0.90; 1.21] | 6.0% |
| Palacios 2019 | Vitamin D | Gestational diabetes | | 0.55 | [0.11; 2.62] | 0.1% |
| Palacios 2019 | Vitamin D | Preterm birth | | 0.98 | [0.37; 2.64] | 0.2% |
| Palacios 2019 | Vitamin D | Pre-eclampsia | | 1.46 | [0.52; 4.09] | 0.1% |
| Rees 2013b | Selenium | All-cause mortality | | 0.99 | [0.76; 1.28] | 2.2% |
| Rees 2013b | Selenium | Cardiovascular mortality | | 0.70 | [0.42; 1.17] | 0.6% |
| Rees 2013b | Selenium | Combined cardiovascular events | | 0.96 | [0.74; 1.25] | 2.1% |
| Tieu 2017 | Healthy diet | Gestational diabetes | | 0.29 | [0.01; 5.55] | 0.0% |
| Vinceti 2018 | Selenium | Cancer | | 1.41 | [0.95; 2.07] | 1.0% |
| Yao 2017 | Fibre | Colorectal cancer | | 0.78 | [0.11; 5.48] | 0.0% |
| Yao 2017 | Fibre | Colorectal adenoma | | 0.88 | [0.60; 1.29] | 1.1% |
| **Random effects model** | | | | **1.00** | **[0.96; 1.04]** | **100.0%** |
| **Prediction interval** | | | | | **[0.92; 1.08]** | |

Heterogeneity: $I^2 = 27\%$, $\tau^2 = 0.0013$, $p = 0.05$

0.01  0.1  1  10  100

RR in high/unclear RoB < RR in low RoB    RR in high/unclear RoB > RR in low RoB

**Figure S11:** Allocation concealment: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

| Reference | Intervention | Outcome | Ratio of Risk Ratios | RRR | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| Abdelhamid 2018a | Omega-3 | Cardiovascular mortality | | 0.84 | [0.54; 1.31] | 1.4% |
| Abdelhamid 2018a | Omega-3 | All-cause mortality | | 0.76 | [0.54; 1.08] | 2.2% |
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular mortality | | 1.05 | [0.57; 1.95] | 0.7% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | | 0.93 | [0.76; 1.14] | 5.7% |
| Abdelhamid 2018b | Polyunsaturated fat | Coronary heart disease | | 0.68 | [0.41; 1.14] | 1.0% |
| Adler 2014 | Low-sodium | All-cause mortality | | 1.41 | [0.85; 2.36] | 1.0% |
| Adler 2014 | Low-sodium | Cardiovascular mortality | | 0.64 | [0.15; 2.70] | 0.1% |
| Avenell 2014 | Vitamin D | Hip fracture | | 1.21 | [0.58; 2.50] | 0.5% |
| Bjelakovic 2012 | β-carotene | All-cause mortality | | 0.75 | [0.36; 1.58] | 0.5% |
| Bjelakovic 2012 | Vitamin E | All-cause mortality | | 0.89 | [0.80; 0.99] | 13.9% |
| Bjelakovic 2012 | Vitamin C | All-cause mortality | | 0.92 | [0.72; 1.18] | 4.0% |
| Bjelakovic 2012 | Vitamin A | All-cause mortality | | 0.93 | [0.70; 1.24] | 3.1% |
| Bjelakovic 2014 | Vitamin D | All-cause mortality | | 1.02 | [0.96; 1.09] | 22.1% |
| Bjelakovic 2014 | Vitamin D | Cardiovascular mortality | | 2.03 | [0.42; 9.90] | 0.1% |
| Bjelakovic 2014b | Vitamin D | Cancer | | 1.67 | [0.49; 5.71] | 0.2% |
| De-Regil 2015 | Folate | Neural tube defect | | 0.76 | [0.20; 2.85] | 0.2% |
| De-Regil 2015 | Folate | Congenital cardiovascular anomalies | | 6.60 | [0.39; 111.46] | 0.0% |
| Hofmeyr 2018 | Calcium | Pre-eclampsia | | 0.28 | [0.08; 1.04] | 0.2% |
| Hofmeyr 2018 | Calcium | High blood pressure | | 0.25 | [0.11; 0.58] | 0.4% |
| Hooper 2012 | Low-fat/modified fat | Cardiovascular mortality | | 1.04 | [0.83; 1.31] | 4.6% |
| Hooper 2012 | Low-fat/modified fat | All-cause mortality | | 1.06 | [0.95; 1.19] | 12.8% |
| Hooper 2015b | Low saturated fat | All-cause mortality | | 1.13 | [0.88; 1.46] | 4.0% |
| Hooper 2015b | Low saturated fat | Cardiovascular mortality | | 1.10 | [0.77; 1.56] | 2.1% |
| Hooper 2018 | Omega-6 | All-cause mortality | | 0.62 | [0.39; 0.99] | 1.2% |
| Hooper 2018 | Omega-6 | Cardiovascular mortality | | 0.62 | [0.34; 1.15] | 0.7% |
| Keats 2019 | Micronutrients | Preterm birth | | 1.02 | [0.89; 1.17] | 10.0% |
| Palacios 2019 | Vitamin D | Gestational diabetes | | 0.55 | [0.11; 2.62] | 0.1% |
| Palacios 2019 | Vitamin D | Preterm birth | | 0.98 | [0.37; 2.64] | 0.3% |
| Palacios 2019 | Vitamin D | Pre-eclampsia | | 1.46 | [0.52; 4.09] | 0.3% |
| Rees 2013b | Selenium | All-cause mortality | | 0.99 | [0.76; 1.28] | 3.7% |
| Rees 2013b | Selenium | Cardiovascular mortality | | 0.70 | [0.42; 1.17] | 1.0% |
| Tieu 2017 | Healthy diet | Gestational diabetes | | 0.29 | [0.01; 5.55] | 0.0% |
| Vinceti 2018 | Selenium | Cancer | | 1.41 | [0.95; 2.07] | 1.8% |
| Yao 2017 | Fibre | Colorectal cancer | | 0.78 | [0.11; 5.48] | 0.1% |
| **Random effects model** | | | | 0.98 | [0.93; 1.03] | 100.0% |
| **Prediction interval** | | | | | [0.87; 1.09] | |

Heterogeneity: $I^2 = 29\%$, $\tau^2 = 0.0023$, $p = 0.06$

0.01   0.1   1   10   100

RR in high/unclear RoB < RR in low RoB    RR in high/unclear RoB > RR in low RoB

**Figure S12:** Allocation concealment: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Sensitivity analysis: Excluding highly correlated outcomes

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method
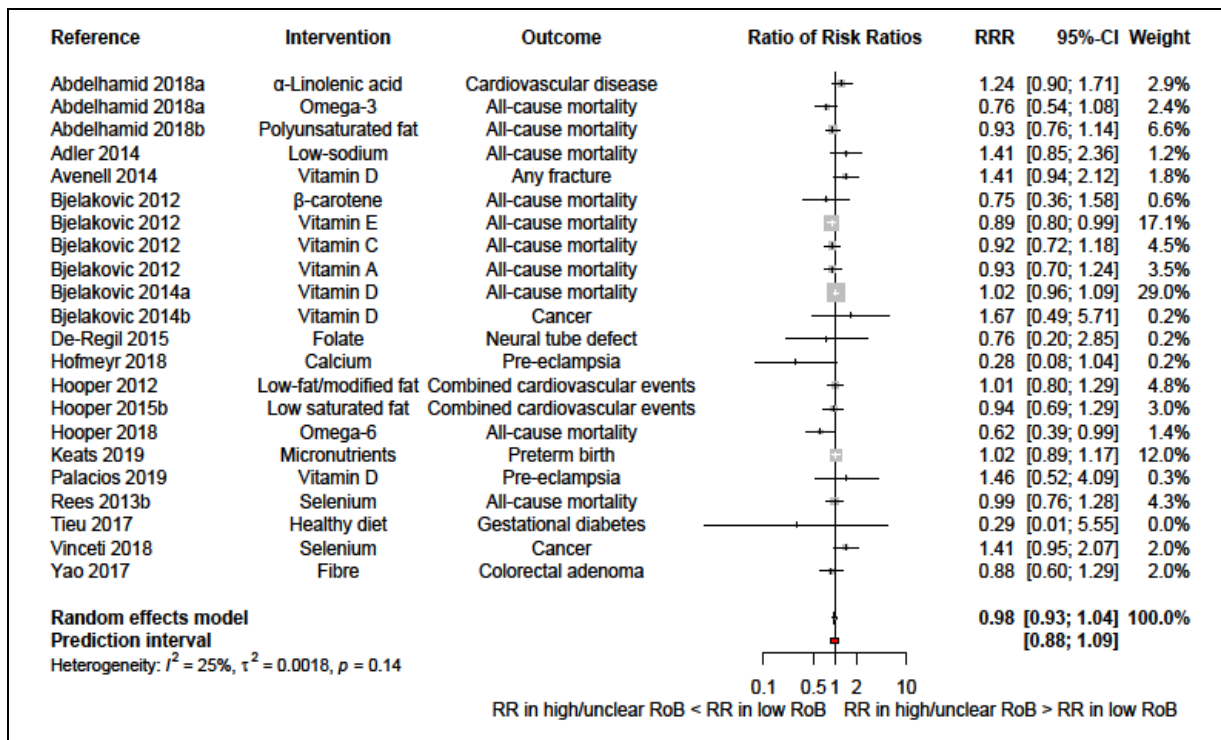
**Figure S13:** Allocation concealment: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Sensitivity analysis: Including only one outcome per comparison from each included systematic review

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

| Reference | Intervention | Outcome | Ratio of Risk Ratios | RRR | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| **Fatty acids** | | | | | | |
| Abdelhamid 2018a | Omega-3 | Cardiovascular mortality | | 0.84 | [0.54; 1.31] | 0.8% |
| Abdelhamid 2018a | Omega-3 | Cardiovascular disease | | 0.97 | [0.76; 1.24] | 2.5% |
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular disease | | 1.24 | [0.90; 1.71] | 1.5% |
| Abdelhamid 2018a | Omega-3 | All-cause mortality | | 0.76 | [0.54; 1.08] | 1.3% |
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular mortality | | 1.05 | [0.57; 1.95] | 0.4% |
| Abdelhamid 2018a | α-Linolenic acid | Coronary heart disease | | 1.31 | [0.87; 1.97] | 0.9% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | | 0.93 | [0.76; 1.14] | 3.5% |
| Abdelhamid 2018b | Polyunsaturated fat | Coronary heart disease | | 0.68 | [0.41; 1.14] | 0.6% |
| Hooper 2015b | Low saturated fat | All-cause mortality | | 1.13 | [0.88; 1.46] | 2.4% |
| Hooper 2015b | Low saturated fat | Cardiovascular mortality | | 1.10 | [0.77; 1.56] | 1.2% |
| Hooper 2015b | Low saturated fat | Combined cardiovascular events | | 0.94 | [0.69; 1.29] | 1.6% |
| Hooper 2018 | Omega-6 | Combined cardiovascular events | | 0.57 | [0.35; 0.92] | 0.7% |
| Hooper 2018 | Omega-6 | All-cause mortality | | 0.62 | [0.39; 0.99] | 0.7% |
| Hooper 2018 | Omega-6 | Cardiovascular mortality | | 0.62 | [0.34; 1.15] | 0.4% |
| Random effects model | | | | 0.93 | [0.83; 1.05] | 18.6% |
| Prediction interval | | | | | [0.70; 1.25] | -- |
| Heterogeneity: $I^2 = 37\%$, $\tau^2 = 0.0144$, $p = 0.08$ | | | | | | |
| **Micronutrients** | | | | | | |
| Adler 2014 | Low-sodium | All-cause mortality | | 1.41 | [0.85; 2.36] | 0.6% |
| Adler 2014 | Low-sodium | Cardiovascular mortality | | 0.64 | [0.15; 2.70] | 0.1% |
| Adler 2014 | Low-sodium | Cardiovascular disease | | 0.72 | [0.34; 1.50] | 0.3% |
| Avenell 2014 | Vitamin D | Hip fracture | | 1.21 | [0.58; 2.50] | 0.3% |
| Avenell 2014 | Vitamin D | Any fracture | | 1.41 | [0.94; 2.12] | 0.9% |
| Bjelakovic 2012 | β-carotene | All-cause mortality | | 0.75 | [0.36; 1.58] | 0.3% |
| Bjelakovic 2012 | Vitamin E | All-cause mortality | | 0.89 | [0.80; 0.99] | 9.8% |
| Bjelakovic 2012 | Vitamin C | All-cause mortality | | 0.92 | [0.72; 1.18] | 2.4% |
| Bjelakovic 2012 | Vitamin A | All-cause mortality | | 0.93 | [0.70; 1.24] | 1.9% |
| Bjelakovic 2014 | Vitamin D | All-cause mortality | | 1.02 | [0.96; 1.09] | 18.3% |
| Bjelakovic 2014 | Vitamin D | Cardiovascular mortality | | 2.03 | [0.42; 9.90] | 0.1% |
| Bjelakovic 2014b | Vitamin D | Cancer | | 1.67 | [0.49; 5.71] | 0.1% |
| De-Regil 2015 | Folate | Neural tube defect | | 0.76 | [0.20; 2.85] | 0.1% |
| De-Regil 2015 | Folate | Congenital cardiovascular anomalies | | 6.60 | [0.39; 111.46] | 0.0% |
| Hofmeyr 2018 | Calcium | Pre-eclampsia | | 0.28 | [0.08; 1.04] | 0.1% |
| Hofmeyr 2018 | Calcium | High blood pressure | | 0.25 | [0.11; 0.58] | 0.2% |
| Keats 2019 | Micronutrients | Preterm birth | | 1.02 | [0.89; 1.17] | 6.6% |
| Keats 2019 | Micronutrients | Low birth weight | | 1.07 | [0.97; 1.18] | 11.5% |
| Keats 2019 | Micronutrients | Small gestational age | | 1.04 | [0.90; 1.21] | 6.0% |
| Palacios 2019 | Vitamin D | Gestational diabetes | | 0.55 | [0.11; 2.62] | 0.1% |
| Palacios 2019 | Vitamin D | Preterm birth | | 0.98 | [0.37; 2.64] | 0.2% |
| Palacios 2019 | Vitamin D | Pre-eclampsia | | 1.46 | [0.52; 4.09] | 0.1% |
| Rees 2013b | Selenium | All-cause mortality | | 0.99 | [0.76; 1.28] | 2.2% |
| Rees 2013b | Selenium | Cardiovascular mortality | | 0.70 | [0.42; 1.17] | 0.6% |
| Rees 2013b | Selenium | Combined cardiovascular events | | 0.96 | [0.74; 1.25] | 2.1% |
| Vinceti 2018 | Selenium | Cancer | | 1.41 | [0.95; 2.07] | 1.0% |
| Random effects model | | | | 1.00 | [0.95; 1.06] | 66.1% |
| Prediction interval | | | | | [0.90; 1.11] | -- |
| Heterogeneity: $I^2 = 33\%$, $\tau^2 = 0.0018$, $p = 0.05$ | | | | | | |
| **Dietary approach** | | | | | | |
| Hooper 2012 | Low-fat/modified fat | Cardiovascular mortality | | 1.04 | [0.83; 1.31] | 2.8% |
| Hooper 2012 | Low-fat/modified fat | All-cause mortality | | 1.06 | [0.95; 1.19] | 8.9% |
| Hooper 2012 | Low-fat/modified fat | Combined cardiovascular events | | 1.01 | [0.80; 1.29] | 2.6% |
| Tieu 2017 | Healthy diet | Gestational diabetes | | 0.29 | [0.01; 5.55] | 0.0% |
| Random effects model | | | | 1.05 | [0.96; 1.15] | 14.3% |
| Prediction interval | | | | | [0.85; 1.29] | -- |
| Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0$, $p = 0.83$ | | | | | | |
| **Other** | | | | | | |
| Yao 2017 | Fibre | Colorectal cancer | | 0.78 | [0.11; 5.48] | 0.0% |
| Yao 2017 | Fibre | Colorectal adenoma | | 0.88 | [0.60; 1.29] | 1.1% |
| Random effects model | | | | 0.88 | [0.60; 1.27] | 1.1% |
| Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0$, $p = 0.91$ | | | | | | |
| **Random effects model** | | | | 1.00 | [0.96; 1.04] | 100.0% |
| **Prediction interval** | | | | | [0.92; 1.08] | |
| Heterogeneity: $I^2 = 27\%$, $\tau^2 = 0.0013$, $p = 0.05$ | | | | | | |

0.01    0.1    1    10    100

RR in high/unclear RoB < RR in low RoB    RR in high/unclear RoB > RR in low RoB

**Figure S14:** Allocation concealment: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Subgroup analysis: Clusters of interventions
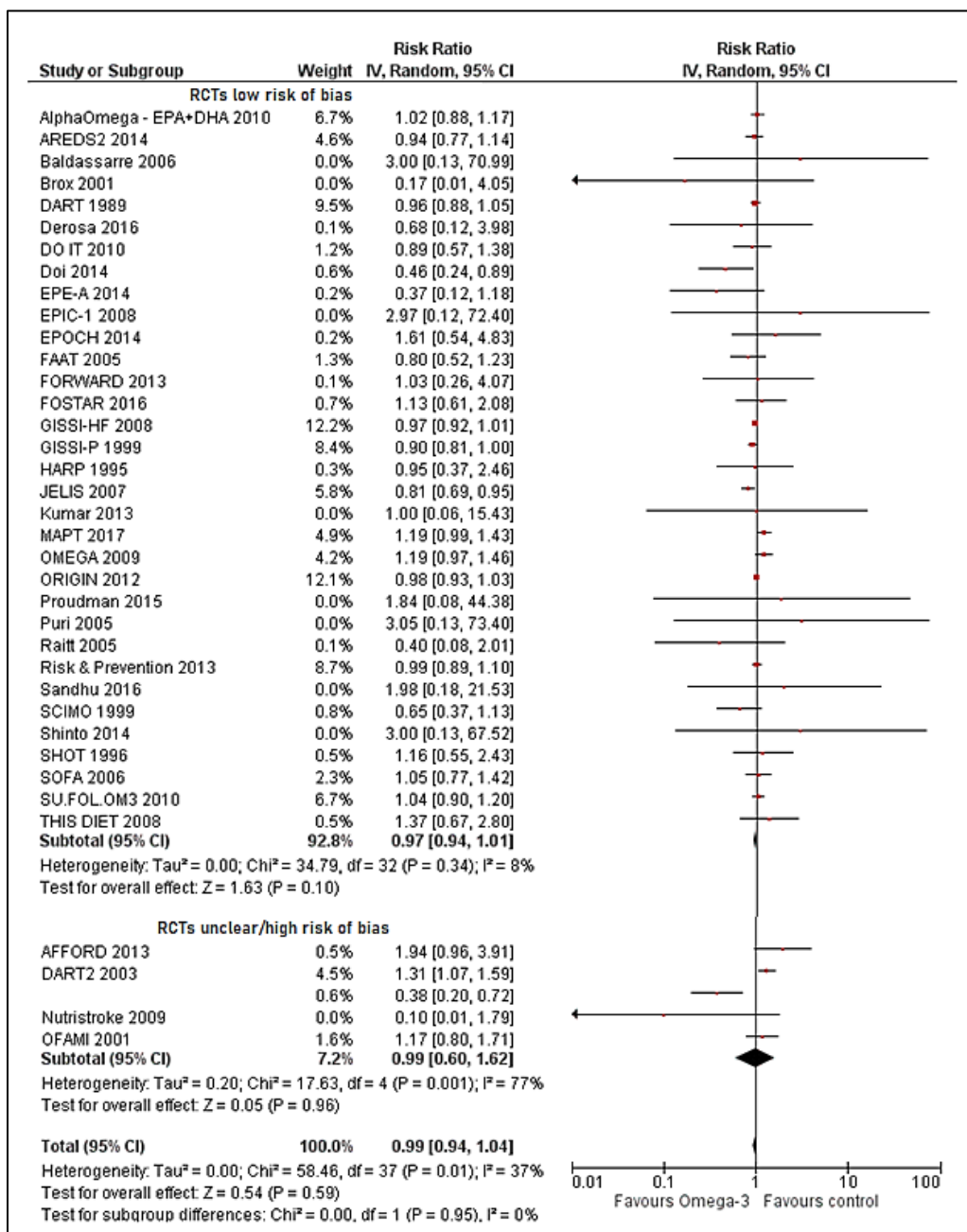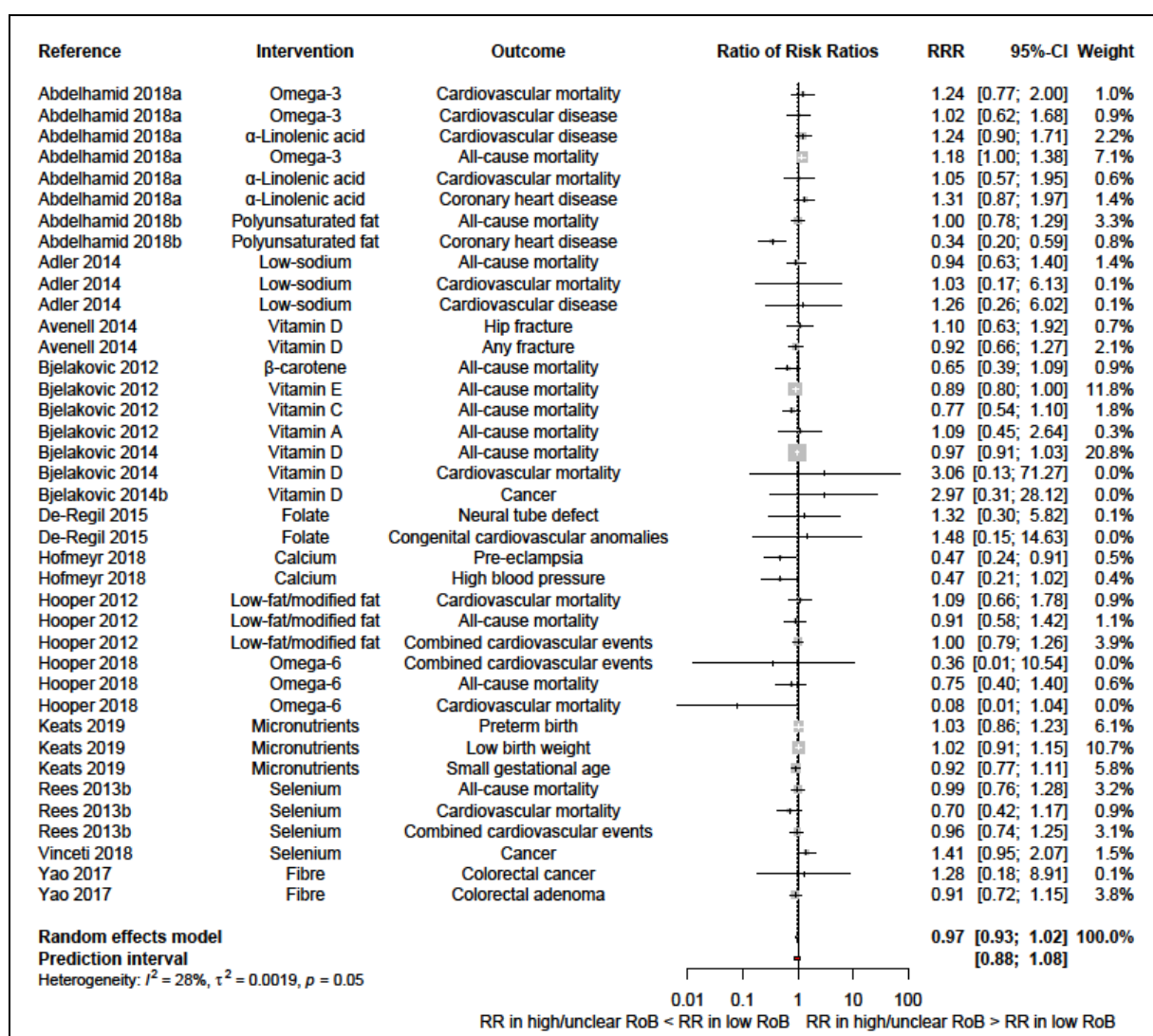
CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method
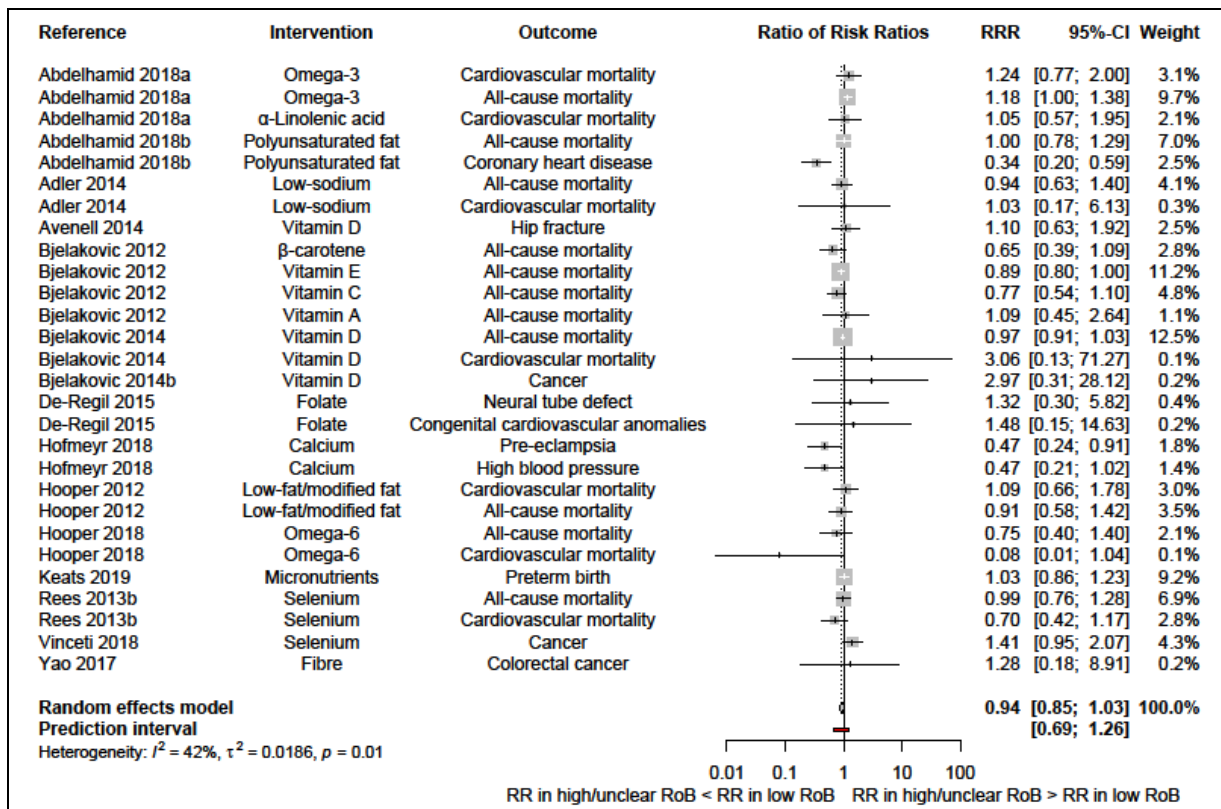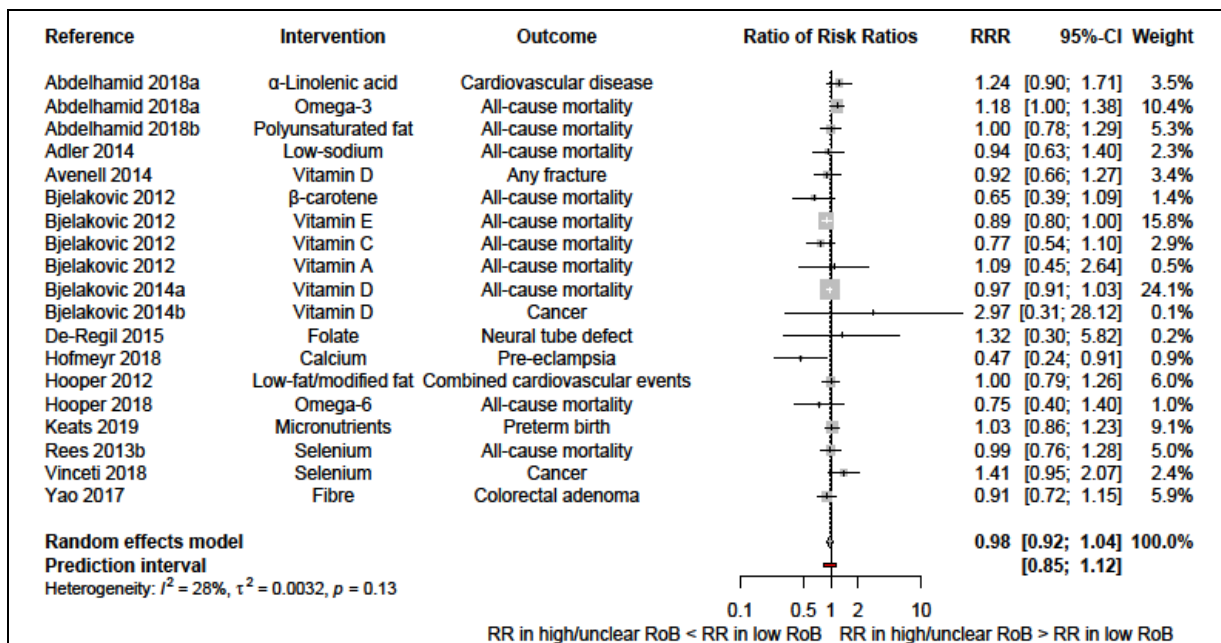
| Reference | Intervention | Outcome | Ratio of Risk Ratios | RRR | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| **Cardiovascular disease** | | | | | | |
| Abdelhamid 2018a | Omega-3 | Cardiovascular mortality | | 0.84 | [0.54; 1.31] | 0.8% |
| Abdelhamid 2018a | Omega-3 | Cardiovascular disease | | 0.97 | [0.76; 1.24] | 2.5% |
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular disease | | 1.24 | [0.90; 1.71] | 1.5% |
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular mortality | | 1.05 | [0.57; 1.95] | 0.4% |
| Abdelhamid 2018a | α-Linolenic acid | Coronary heart disease | | 1.31 | [0.87; 1.97] | 0.9% |
| Abdelhamid 2018b | Polyunsaturated fat | Coronary heart disease | | 0.68 | [0.41; 1.14] | 0.6% |
| Adler 2014 | Low-sodium | Cardiovascular mortality | | 0.64 | [0.15; 2.70] | 0.1% |
| Adler 2014 | Low-sodium | Cardiovascular disease | | 0.72 | [0.34; 1.50] | 0.3% |
| Bjelakovic 2014 | Vitamin D | Cardiovascular mortality | | 2.03 | [0.42; 9.90] | 0.1% |
| Hooper 2012 | Low-fat/modified fat | Cardiovascular mortality | | 1.04 | [0.83; 1.31] | 2.8% |
| Hooper 2012 | Low-fat/modified fat | Combined cardiovascular events | | 1.01 | [0.80; 1.29] | 2.6% |
| Hooper 2015b | Low saturated fat | Cardiovascular mortality | | 1.10 | [0.77; 1.56] | 1.2% |
| Hooper 2015b | Low saturated fat | Combined cardiovascular events | | 0.94 | [0.69; 1.29] | 1.6% |
| Hooper 2018 | Omega-6 | Combined cardiovascular events | | 0.57 | [0.35; 0.92] | 0.7% |
| Hooper 2018 | Omega-6 | Cardiovascular mortality | | 0.62 | [0.34; 1.15] | 0.4% |
| Rees 2013b | Selenium | Cardiovascular mortality | | 0.70 | [0.42; 1.17] | 0.6% |
| Rees 2013b | Selenium | Combined cardiovascular events | | 0.96 | [0.74; 1.25] | 2.1% |
| Random effects model | | | | 0.97 | [0.89; 1.06] | 19.2% |
| Prediction interval | | | | | [0.88; 1.07] | -- |
| Heterogeneity: $I^2 = 9\%$, $\tau^2 = 0$, $p = 0.34$ | | | | | | |
| **All-cause mortality** | | | | | | |
| Abdelhamid 2018a | Omega-3 | All-cause mortality | | 0.76 | [0.54; 1.08] | 1.3% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | | 0.93 | [0.76; 1.14] | 3.5% |
| Adler 2014 | Low-sodium | All-cause mortality | | 1.41 | [0.85; 2.36] | 0.6% |
| Bjelakovic 2012 | β-carotene | All-cause mortality | | 0.75 | [0.36; 1.58] | 0.3% |
| Bjelakovic 2012 | Vitamin E | All-cause mortality | | 0.89 | [0.80; 0.99] | 9.8% |
| Bjelakovic 2012 | Vitamin C | All-cause mortality | | 0.92 | [0.72; 1.18] | 2.4% |
| Bjelakovic 2012 | Vitamin A | All-cause mortality | | 0.93 | [0.70; 1.24] | 1.9% |
| Bjelakovic 2014 | Vitamin D | All-cause mortality | | 1.02 | [0.96; 1.09] | 18.3% |
| Hooper 2012 | Low-fat/modified fat | All-cause mortality | | 1.06 | [0.95; 1.19] | 8.9% |
| Hooper 2015b | Low saturated fat | All-cause mortality | | 1.13 | [0.88; 1.46] | 2.4% |
| Hooper 2018 | Omega-6 | All-cause mortality | | 0.62 | [0.39; 0.99] | 0.7% |
| Rees 2013b | Selenium | All-cause mortality | | 0.99 | [0.76; 1.28] | 2.2% |
| Random effects model | | | | 0.97 | [0.91; 1.04] | 52.3% |
| Prediction interval | | | | | [0.85; 1.12] | -- |
| Heterogeneity: $I^2 = 33\%$, $\tau^2 = 0.0029$, $p = 0.13$ | | | | | | |
| **Bone health** | | | | | | |
| Avenell 2014 | Vitamin D | Hip fracture | | 1.21 | [0.58; 2.50] | 0.3% |
| Avenell 2014 | Vitamin D | Any fracture | | 1.41 | [0.94; 2.12] | 0.9% |
| Random effects model | | | | 1.36 | [0.95; 1.94] | 1.2% |
| Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0$, $p = 0.71$ | | | | | | |
| **Cancer** | | | | | | |
| Bjelakovic 2014b | Vitamin D | Cancer | | 1.67 | [0.49; 5.71] | 0.1% |
| Vinceti 2018 | Selenium | Cancer | | 1.41 | [0.95; 2.07] | 1.0% |
| Yao 2017 | Fibre | Colorectal cancer | | 0.78 | [0.11; 5.48] | 0.0% |
| Yao 2017 | Fibre | Colorectal adenoma | | 0.88 | [0.60; 1.29] | 1.1% |
| Random effects model | | | | 1.13 | [0.78; 1.66] | 2.2% |
| Prediction interval | | | | | [0.33; 3.96] | -- |
| Heterogeneity: $I^2 = 12\%$, $\tau^2 = 0.0469$, $p = 0.33$ | | | | | | |
| **Pregnancy outcomes** | | | | | | |
| De-Regil 2015 | Folate | Neural tube defect | | 0.76 | [0.20; 2.85] | 0.1% |
| De-Regil 2015 | Folate | Congenital cardiovascular anomalies | | 6.60 | [0.39; 111.46] | 0.0% |
| Hofmeyr 2018 | Calcium | Pre-eclampsia | | 0.28 | [0.08; 1.04] | 0.1% |
| Hofmeyr 2018 | Calcium | High blood pressure | | 0.25 | [0.11; 0.58] | 0.2% |
| Keats 2019 | Micronutrients | Preterm birth | | 1.02 | [0.89; 1.17] | 6.6% |
| Keats 2019 | Micronutrients | Low birth weight | | 1.07 | [0.97; 1.18] | 11.5% |
| Keats 2019 | Micronutrients | Small gestational age | | 1.04 | [0.90; 1.21] | 6.0% |
| Palacios 2019 | Vitamin D | Gestational diabetes | | 0.55 | [0.11; 2.62] | 0.1% |
| Palacios 2019 | Vitamin D | Preterm birth | | 0.98 | [0.37; 2.64] | 0.2% |
| Palacios 2019 | Vitamin D | Pre-eclampsia | | 1.46 | [0.52; 4.09] | 0.1% |
| Tieu 2017 | Healthy diet | Gestational diabetes | | 0.29 | [0.01; 5.55] | 0.0% |
| Random effects model | | | | 1.04 | [0.97; 1.11] | 25.0% |
| Prediction interval | | | | | [0.96; 1.12] | -- |
| Heterogeneity: $I^2 = 47\%$, $\tau^2 = 0$, $p = 0.04$ | | | | | | |
| **Random effects model** | | | | **1.00** | **[0.96; 1.04]** | **100.0%** |
| **Prediction interval** | | | | | **[0.92; 1.08]** | |
| Heterogeneity: $I^2 = 27\%$, $\tau^2 = 0.0013$, $p = 0.05$ | | | | | | |

0.01  0.1  1  10  100

RR in high/unclear RoB < RR in low RoB    RR in high/unclear RoB > RR in low RoB

**Figure S15:** Allocation concealment: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Subgroup analysis: Clusters of outcomes

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method
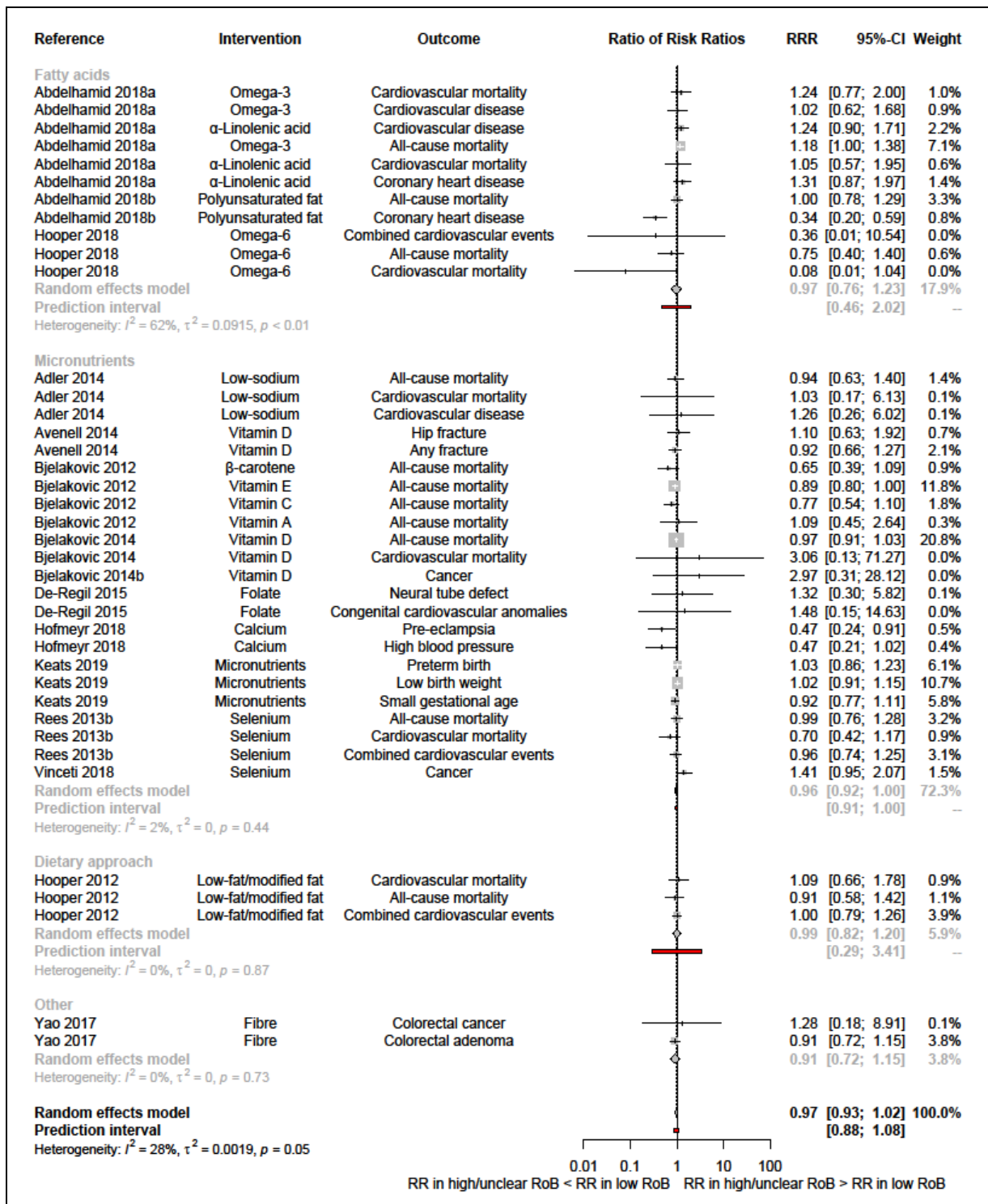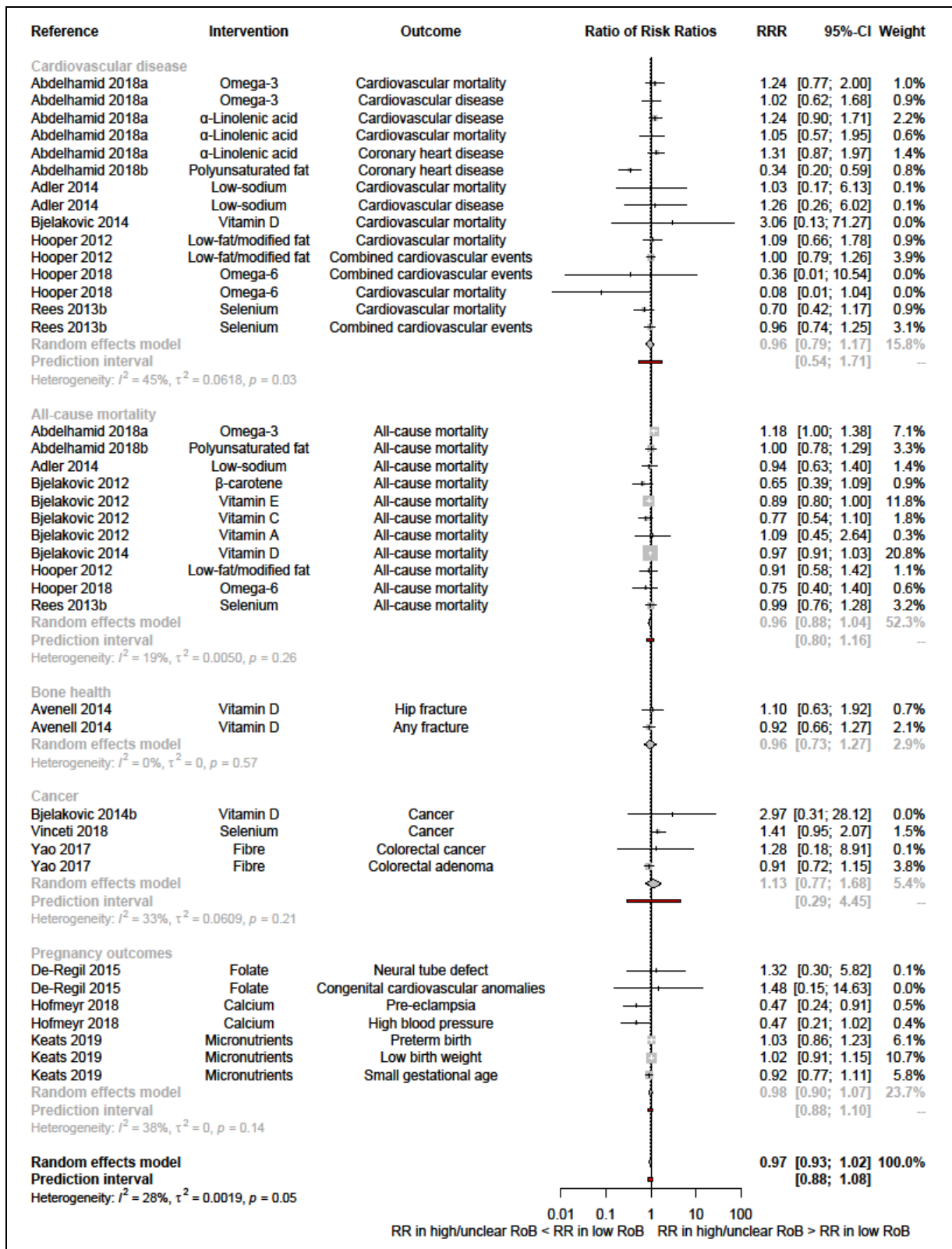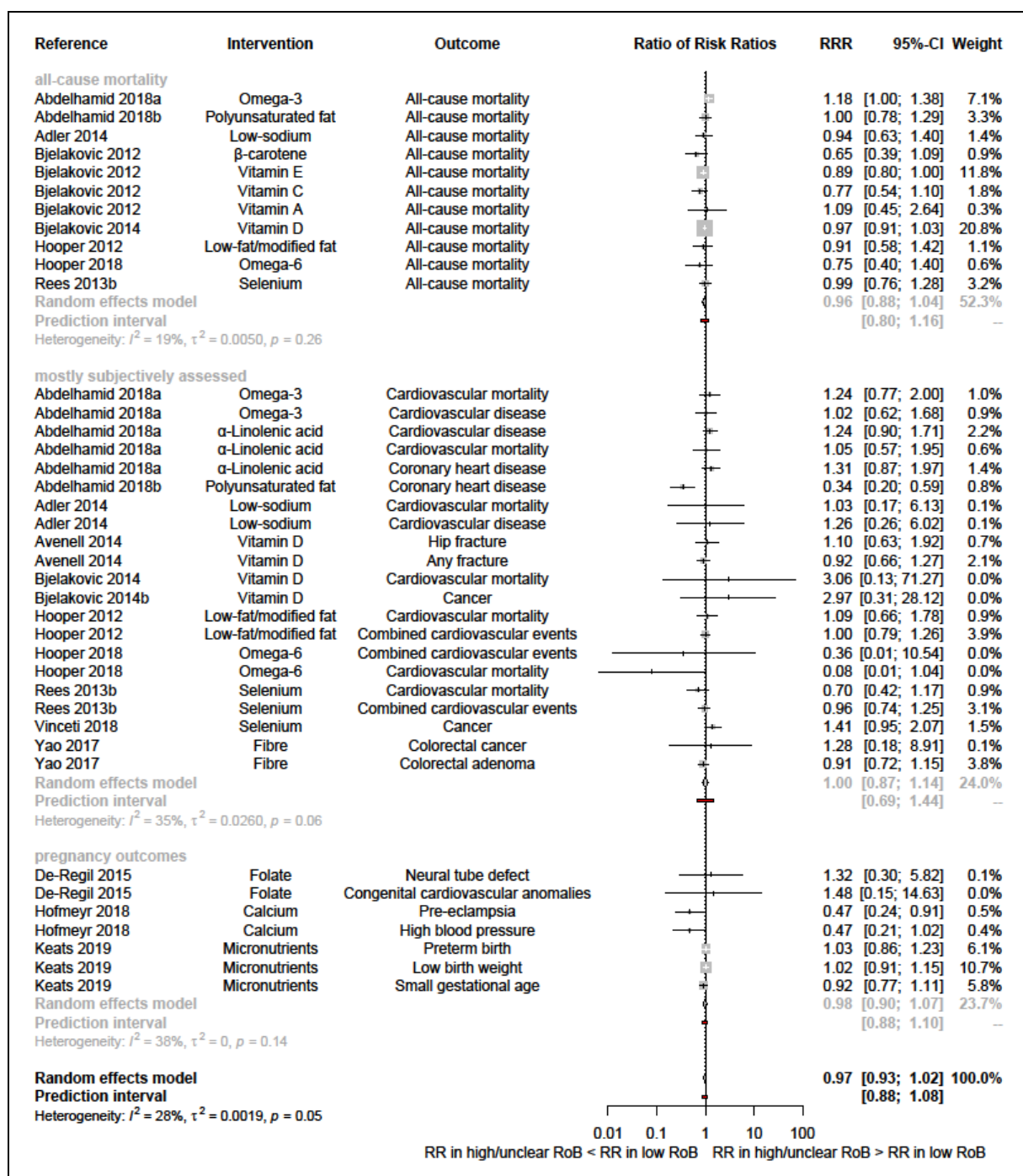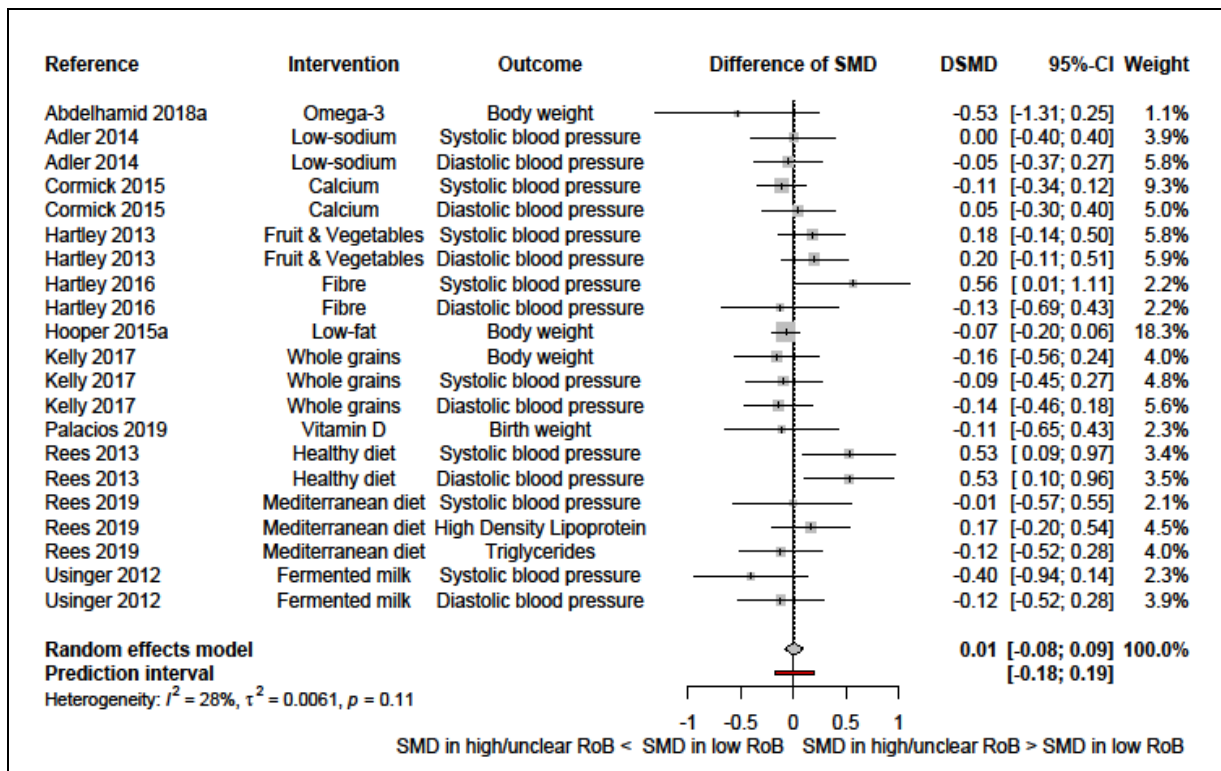
| Reference | Intervention | Outcome | Ratio of Risk Ratios | RRR | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| **all-cause mortality** | | | | | | |
| Abdelhamid 2018a | Omega-3 | All-cause mortality | | 0.76 | [0.54; 1.08] | 1.3% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | | 0.93 | [0.76; 1.14] | 3.5% |
| Adler 2014 | Low-sodium | All-cause mortality | | 1.41 | [0.85; 2.36] | 0.6% |
| Bjelakovic 2012 | β-carotene | All-cause mortality | | 0.75 | [0.36; 1.58] | 0.3% |
| Bjelakovic 2012 | Vitamin E | All-cause mortality | | 0.89 | [0.80; 0.99] | 9.8% |
| Bjelakovic 2012 | Vitamin C | All-cause mortality | | 0.92 | [0.72; 1.18] | 2.4% |
| Bjelakovic 2012 | Vitamin A | All-cause mortality | | 0.93 | [0.70; 1.24] | 1.9% |
| Bjelakovic 2014 | Vitamin D | All-cause mortality | | 1.02 | [0.96; 1.09] | 18.3% |
| Hooper 2012 | Low-fat/modified fat | All-cause mortality | | 1.06 | [0.95; 1.19] | 8.9% |
| Hooper 2015b | Low saturated fat | All-cause mortality | | 1.13 | [0.88; 1.46] | 2.4% |
| Hooper 2018 | Omega-6 | All-cause mortality | | 0.62 | [0.39; 0.99] | 0.7% |
| Rees 2013b | Selenium | All-cause mortality | | 0.99 | [0.76; 1.28] | 2.2% |
| Random effects model | | | | 0.97 | [0.91; 1.04] | 52.3% |
| Prediction interval | | | | | [0.85; 1.12] | -- |
| Heterogeneity: $I^2 = 33\%$, $\tau^2 = 0.0029$, $p = 0.13$ | | | | | | |
| **mostly subjectively assessed** | | | | | | |
| Abdelhamid 2018a | Omega-3 | Cardiovascular mortality | | 0.84 | [0.54; 1.31] | 0.8% |
| Abdelhamid 2018a | Omega-3 | Cardiovascular disease | | 0.97 | [0.76; 1.24] | 2.5% |
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular disease | | 1.24 | [0.90; 1.71] | 1.5% |
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular mortality | | 1.05 | [0.57; 1.95] | 0.4% |
| Abdelhamid 2018a | α-Linolenic acid | Coronary heart disease | | 1.31 | [0.87; 1.97] | 0.9% |
| Abdelhamid 2018b | Polyunsaturated fat | Coronary heart disease | | 0.68 | [0.41; 1.14] | 0.6% |
| Adler 2014 | Low-sodium | Cardiovascular mortality | | 0.64 | [0.15; 2.70] | 0.1% |
| Adler 2014 | Low-sodium | Cardiovascular disease | | 0.72 | [0.34; 1.50] | 0.3% |
| Avenell 2014 | Vitamin D | Hip fracture | | 1.21 | [0.58; 2.50] | 0.3% |
| Avenell 2014 | Vitamin D | Any fracture | | 1.41 | [0.94; 2.12] | 0.9% |
| Bjelakovic 2014 | Vitamin D | Cardiovascular mortality | | 2.03 | [0.42; 9.90] | 0.1% |
| Bjelakovic 2014b | Vitamin D | Cancer | | 1.67 | [0.49; 5.71] | 0.1% |
| Hooper 2012 | Low-fat/modified fat | Cardiovascular mortality | | 1.04 | [0.83; 1.31] | 2.8% |
| Hooper 2012 | Low-fat/modified fat | Combined cardiovascular events | | 1.01 | [0.80; 1.29] | 2.6% |
| Hooper 2015b | Low saturated fat | Cardiovascular mortality | | 1.10 | [0.77; 1.56] | 1.2% |
| Hooper 2015b | Low saturated fat | Combined cardiovascular events | | 0.94 | [0.69; 1.29] | 1.6% |
| Hooper 2018 | Omega-6 | Combined cardiovascular events | | 0.57 | [0.35; 0.92] | 0.7% |
| Hooper 2018 | Omega-6 | Cardiovascular mortality | | 0.62 | [0.34; 1.15] | 0.4% |
| Rees 2013b | Selenium | Cardiovascular mortality | | 0.70 | [0.42; 1.17] | 0.6% |
| Rees 2013b | Selenium | Combined cardiovascular events | | 0.96 | [0.74; 1.25] | 2.1% |
| Vinceti 2018 | Selenium | Cancer | | 1.41 | [0.95; 2.07] | 1.0% |
| Yao 2017 | Fibre | Colorectal cancer | | 0.78 | [0.11; 5.48] | 0.0% |
| Yao 2017 | Fibre | Colorectal adenoma | | 0.88 | [0.60; 1.29] | 1.1% |
| Random effects model | | | | 1.00 | [0.92; 1.09] | 22.7% |
| Prediction interval | | | | | [0.92; 1.09] | -- |
| Heterogeneity: $I^2 = 13\%$, $\tau^2 = 0$, $p = 0.29$ | | | | | | |
| **pregnancy outcomes** | | | | | | |
| De-Regil 2015 | Folate | Neural tube defect | | 0.76 | [0.20; 2.85] | 0.1% |
| De-Regil 2015 | Folate | Congenital cardiovascular anomalies | | 6.60 | [0.39; 111.46] | 0.0% |
| Hofmeyr 2018 | Calcium | Pre-eclampsia | | 0.28 | [0.08; 1.04] | 0.1% |
| Hofmeyr 2018 | Calcium | High blood pressure | | 0.25 | [0.11; 0.58] | 0.2% |
| Keats 2019 | Micronutrients | Preterm birth | | 1.02 | [0.89; 1.17] | 6.6% |
| Keats 2019 | Micronutrients | Low birth weight | | 1.07 | [0.97; 1.18] | 11.5% |
| Keats 2019 | Micronutrients | Small gestational age | | 1.04 | [0.90; 1.21] | 6.0% |
| Palacios 2019 | Vitamin D | Gestational diabetes | | 0.55 | [0.11; 2.62] | 0.1% |
| Palacios 2019 | Vitamin D | Preterm birth | | 0.98 | [0.37; 2.64] | 0.2% |
| Palacios 2019 | Vitamin D | Pre-eclampsia | | 1.46 | [0.52; 4.09] | 0.1% |
| Tieu 2017 | Healthy diet | Gestational diabetes | | 0.29 | [0.01; 5.55] | 0.0% |
| Random effects model | | | | 1.04 | [0.97; 1.11] | 25.0% |
| Prediction interval | | | | | [0.96; 1.12] | -- |
| Heterogeneity: $I^2 = 47\%$, $\tau^2 = 0$, $p = 0.04$ | | | | | | |
| **Random effects model** | | | | 1.00 | [0.96; 1.04] | 100.0% |
| **Prediction interval** | | | | | [0.92; 1.08] | |
| Heterogeneity: $I^2 = 27\%$, $\tau^2 = 0.0013$, $p = 0.05$ | | | | | | |

0.01  0.1  1  10  100
RR in high/unclear RoB < RR in low RoB    RR in high/unclear RoB > RR in low RoB

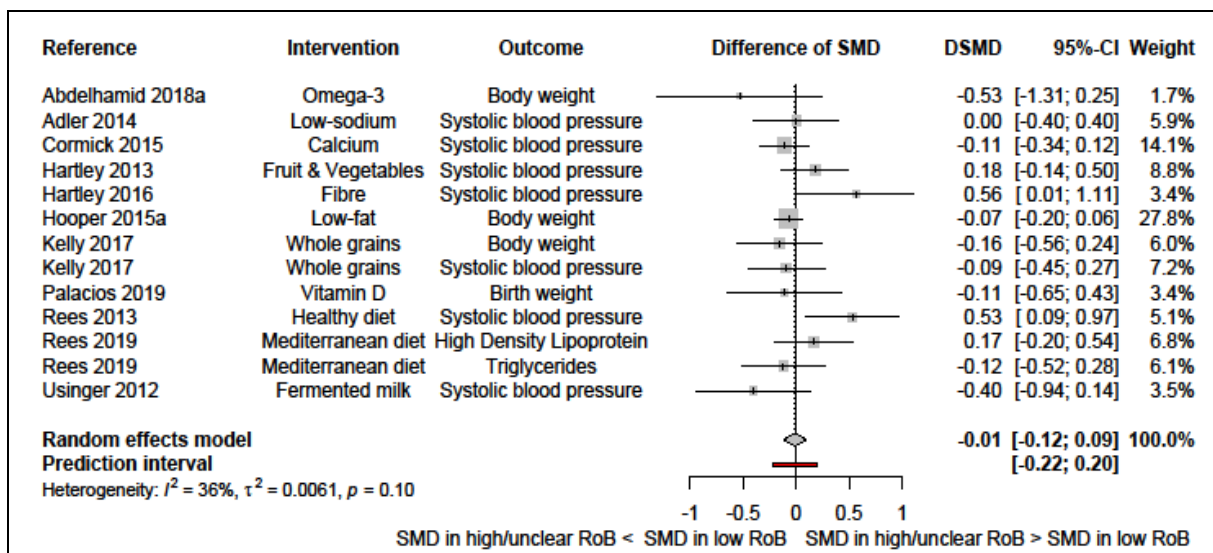**Figure S16:** Allocation concealment: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Subgroup analysis: Subjective versus objective outcomes

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

| Reference | Intervention | Outcome | Difference of SMD | DSMD | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| Abdelhamid 2018a | Omega-3 | Body weight | | -0.03 | [-0.35; 0.29] | 4.8% |
| Adler 2014 | Low-sodium | Systolic blood pressure | | 0.13 | [-0.39; 0.65] | 2.7% |
| Adler 2014 | Low-sodium | Diastolic blood pressure | | -0.47 | [-0.99; 0.05] | 2.6% |
| Cormick 2015 | Calcium | Systolic blood pressure | | 0.03 | [-0.12; 0.18] | 8.2% |
| Cormick 2015 | Calcium | Diastolic blood pressure | | 0.12 | [-0.18; 0.42] | 5.3% |
| Hartley 2016 | Fibre | Systolic blood pressure | | 0.56 | [ 0.01; 1.11] | 2.5% |
| Hartley 2016 | Fibre | Diastolic blood pressure | | -0.13 | [-0.69; 0.43] | 2.4% |
| Hooper 2012 | Low-fat | Body weight | | -0.04 | [-0.38; 0.30] | 4.6% |
| Hooper 2015a | Low-fat | Body weight | | -0.37 | [-0.55; -0.19] | 7.5% |
| Kelly 2017 | Whole grains | Body weight | | -0.06 | [-0.49; 0.37] | 3.5% |
| Kelly 2017 | Whole grains | Systolic blood pressure | | 0.33 | [ 0.02; 0.64] | 5.0% |
| Kelly 2017 | Whole grains | Diastolic blood pressure | | 0.13 | [-0.17; 0.43] | 5.3% |
| Palacios 2019 | Vitamin D | Birth length | | -0.02 | [-0.23; 0.19] | 7.0% |
| Palacios 2019 | Vitamin D | Birth weight | | -0.08 | [-0.30; 0.14] | 6.7% |
| Palacios 2019 | Vitamin D | Head circumference at birth | | -0.09 | [-0.31; 0.13] | 6.6% |
| Rees 2013 | Healthy diet | Systolic blood pressure | | 0.53 | [ 0.09; 0.97] | 3.4% |
| Rees 2013 | Healthy diet | Diastolic blood pressure | | 0.53 | [ 0.10; 0.96] | 3.5% |
| Rees 2019 | Mediterranean diet | Systolic blood pressure | | 0.32 | [-0.30; 0.94] | 2.0% |
| Rees 2019 | Mediterranean diet | High Density Lipoprotein | | -0.03 | [-0.34; 0.28] | 5.0% |
| Rees 2019 | Mediterranean diet | Triglycerides | | 0.08 | [-0.25; 0.41] | 4.8% |
| Tieu 2017 | Healthy diet | Birth weight | | -0.27 | [-0.84; 0.30] | 2.3% |
| Usinger 2012 | Fermented milk | Systolic blood pressure | | -0.20 | [-0.91; 0.51] | 1.6% |
| Usinger 2012 | Fermented milk | Diastolic blood pressure | | 0.09 | [-0.40; 0.58] | 2.9% |
| **Random effects model** | | | | 0.03 | [-0.07; 0.12] | 100.0% |
| **Prediction interval** | | | | | [-0.32; 0.37] | |

Heterogeneity: $I^2 = 51\%$, $\tau^2 = 0.0249$, $p < 0.01$

SMD in high/unclear RoB < SMD in low RoB    SMD in high/unclear RoB > SMD in low RoB

**Figure S17** Allocation concealment: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for continuous outcomes as pooled difference of standardised mean differences

CI: confidence interval; DSMD: difference of standardised mean differences; $I^2$: heterogeneity measure; RoB: risk of bias; SMD: standardised mean difference; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method
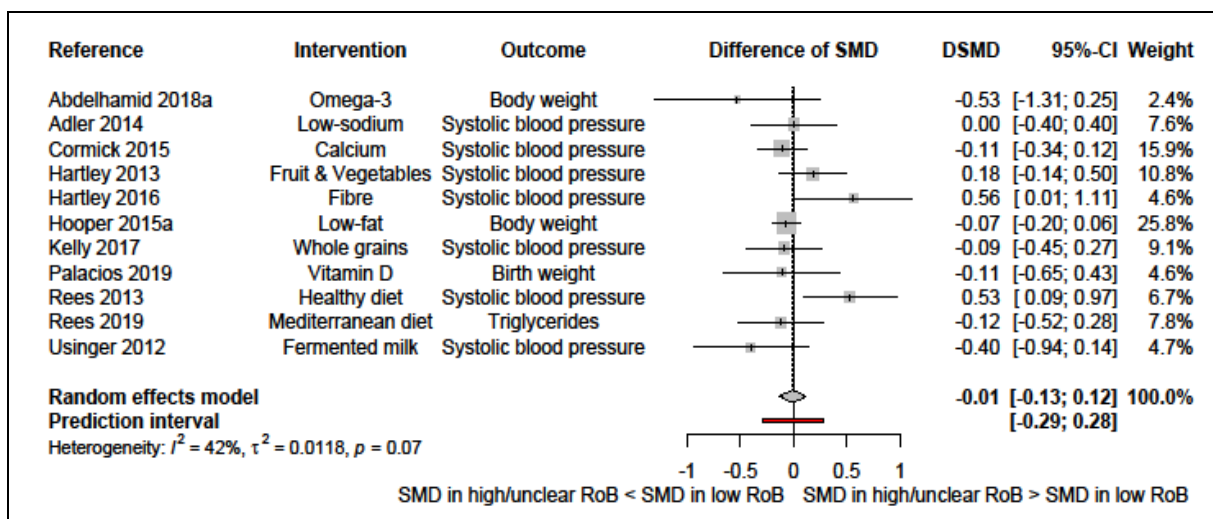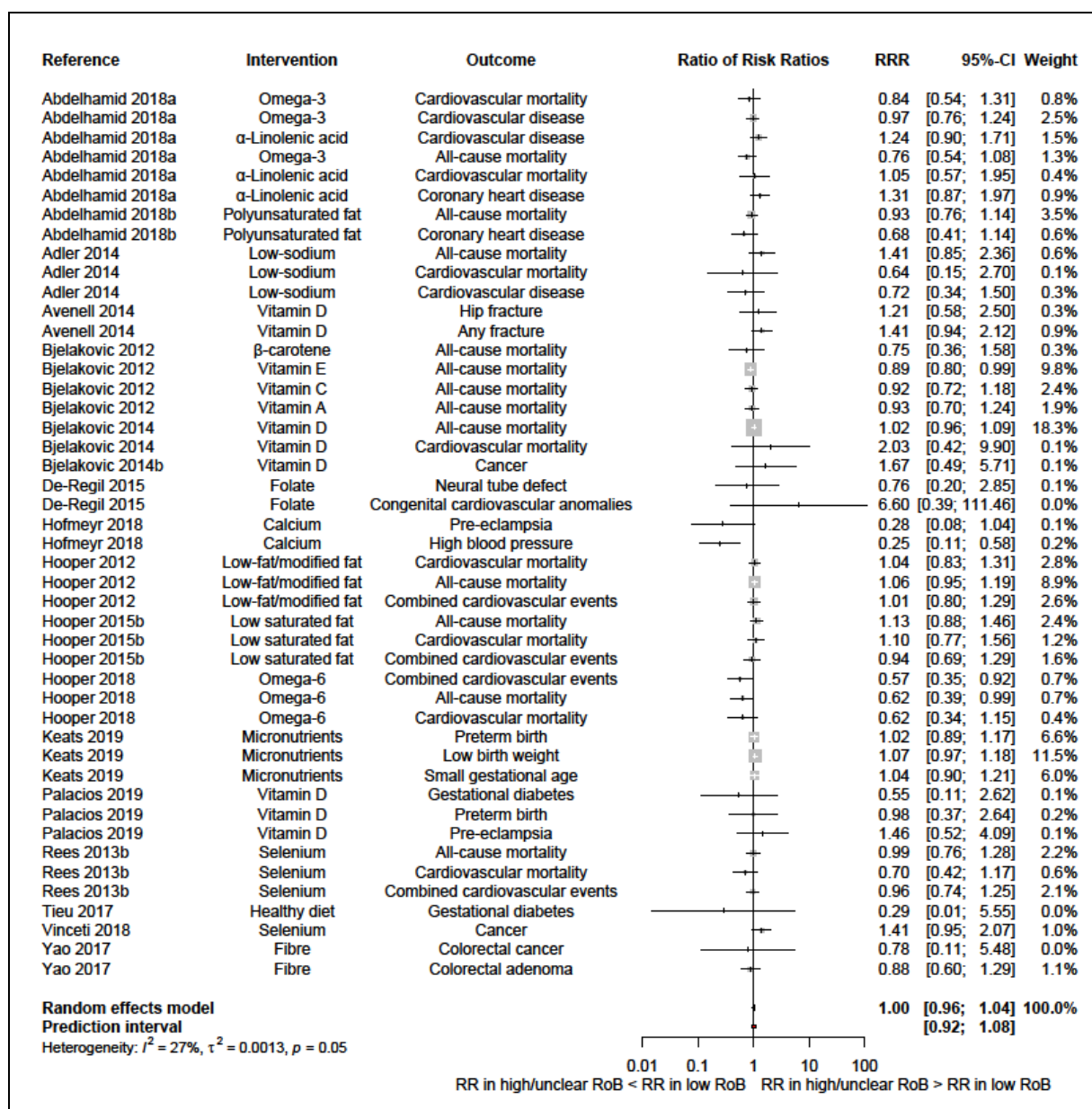
**Figure S18:** Allocation concealment: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for continuous outcomes as pooled difference of standardised mean differences. Sensitivity analysis: Excluding highly correlated outcomes

CI: confidence interval; DSMD: difference of standardised mean differences; $I^2$: heterogeneity measure; RoB: risk of bias; SMD: standardised mean difference; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method



**Figure S19:** Allocation concealment: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for continuous outcomes as pooled difference of standardised mean differences. Sensitivity analysis: Including only one outcome per comparison from each included systematic review

CI: confidence interval; DSMD: difference of standardised mean differences; $I^2$: heterogeneity measure; RoB: risk of bias; SMD: standardised mean difference; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

**Methodological trial characteristic: Blinding of participants and personnel**

| Reference | Intervention | Outcome | Ratio of Risk Ratios | RRR | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| Abdelhamid 2018a | Omega-3 | Cardiovascular mortality | | 0.92 | [0.77; 1.09] | 8.9% |
| Abdelhamid 2018a | Omega-3 | Cardiovascular disease | | 0.94 | [0.85; 1.03] | 28.6% |
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular disease | | 0.74 | [0.16; 3.35] | 0.1% |
| Abdelhamid 2018a | Omega-3 | All-cause mortality | | 0.93 | [0.83; 1.05] | 18.6% |
| Abdelhamid 2018a | α-Linolenic acid | Coronary heart disease | | 2.87 | [0.12; 70.08] | 0.0% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | | 0.99 | [0.82; 1.19] | 7.7% |
| Abdelhamid 2018b | Polyunsaturated fat | Coronary heart disease | | 0.91 | [0.61; 1.35] | 1.6% |
| Abdelhamid 2018b | Polyunsaturated fat | Major cardiovascular events | | 1.43 | [1.04; 1.99] | 2.5% |
| Adler 2014 | Low-sodium | All-cause mortality | | 1.30 | [0.77; 2.19] | 1.0% |
| Adler 2014 | Low-sodium | Cardiovascular mortality | | 1.03 | [0.17; 6.13] | 0.1% |
| Adler 2014 | Low-sodium | Cardiovascular disease | | 0.91 | [0.36; 2.32] | 0.3% |
| Bjelakovic 2014b | Vitamin D | Cancer | | 0.71 | [0.41; 1.24] | 0.8% |
| Bjelakovic 2014b | Vitamin D3 | Breast cancer | | 0.60 | [0.22; 1.68] | 0.2% |
| Bjelakovic 2014b | Vitamin D3 | Lung cancer | | 0.31 | [0.04; 2.73] | 0.1% |
| Hofmeyr 2018 | Calcium | Pre-eclampsia | | 0.28 | [0.08; 1.04] | 0.2% |
| Hofmeyr 2018 | Calcium | High blood pressure | | 0.25 | [0.11; 0.58] | 0.4% |
| Hooper 2018 | Omega-6 | Combined cardiovascular events | | 1.04 | [0.78; 1.40] | 3.0% |
| Hooper 2018 | Omega-6 | All-cause mortality | | 0.83 | [0.58; 1.20] | 1.9% |
| Hooper 2018 | Omega-6 | Cardiovascular mortality | | 1.59 | [0.84; 3.01] | 0.6% |
| Keats 2019 | Micronutrients | Preterm birth | | 1.14 | [0.93; 1.40] | 6.2% |
| Keats 2019 | Micronutrients | Low birth weight | | 0.93 | [0.60; 1.44] | 1.4% |
| Keats 2019 | Micronutrients | Small gestational age | | 0.96 | [0.75; 1.22] | 4.4% |
| Palacios 2019 | Vitamin D | Gestational diabetes | | 0.86 | [0.34; 2.21] | 0.3% |
| Palacios 2019 | Vitamin D | Preterm birth | | 0.98 | [0.37; 2.64] | 0.3% |
| Palacios 2019 | Vitamin D | Pre-eclampsia | | 2.15 | [0.60; 7.71] | 0.2% |
| Rees 2013b | Selenium | All-cause mortality | | 0.99 | [0.77; 1.27] | 4.1% |
| Rees 2013b | Selenium | Cardiovascular mortality | | 0.70 | [0.42; 1.17] | 1.0% |
| Rees 2013b | Selenium | Combined cardiovascular events | | 0.96 | [0.74; 1.25] | 3.7% |
| Yao 2017 | Fibre | Colorectal adenoma | | 0.70 | [0.48; 1.01] | 1.9% |
| **Random effects model** | | | | **0.95** | **[0.91; 1.00]** | **100.0%** |
| **Prediction interval** | | | | | [0.90; 1.01] | |

Heterogeneity: $I^2 = 23\%$, $\tau^2 = 0$, $p = 0.13$

0.1  0.5 1 2  10

RR in high/unclear RoB < RR in low RoB    RR in high/unclear RoB > RR in low RoB

**Figure S20:** Blinding of participants and personnel: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method
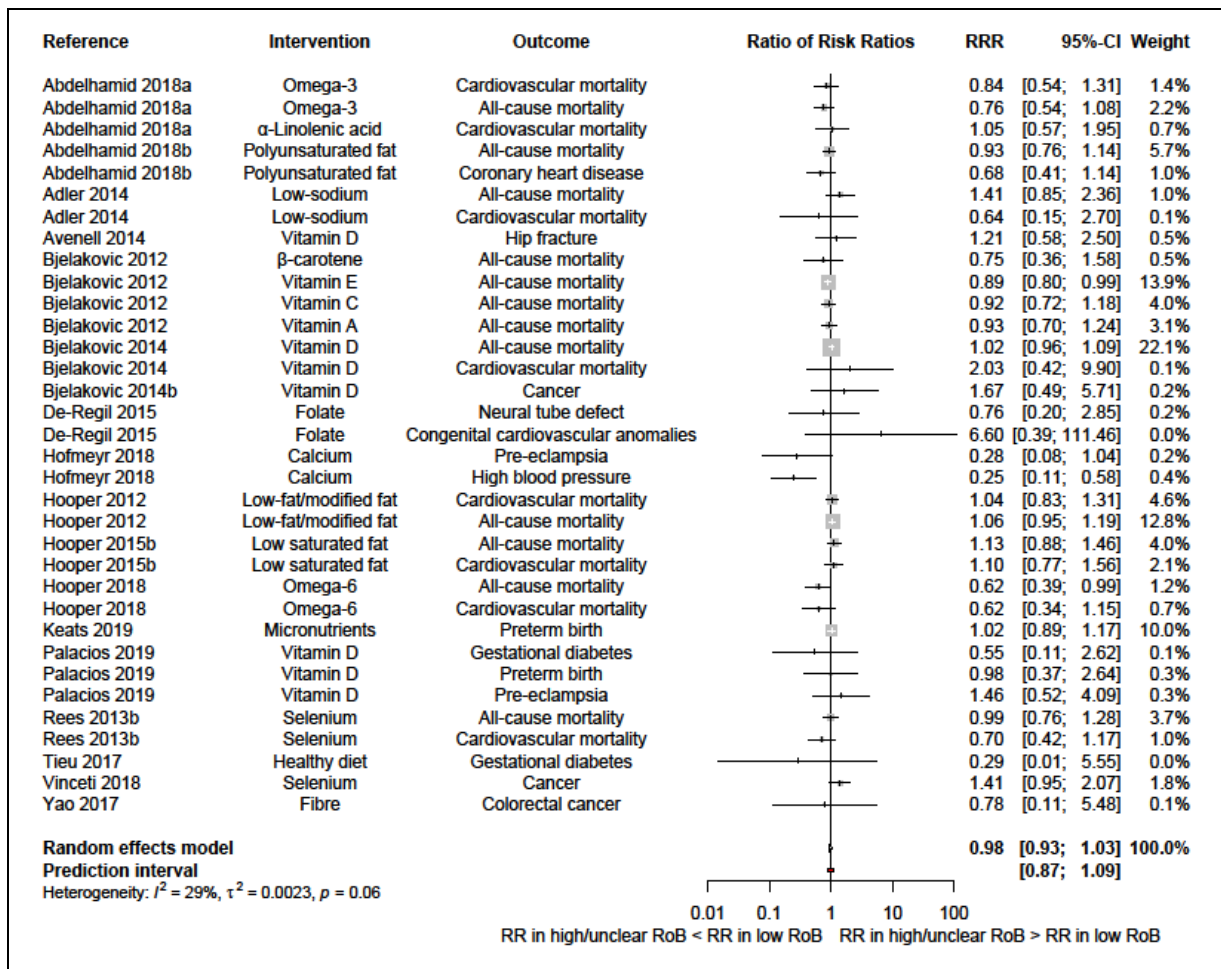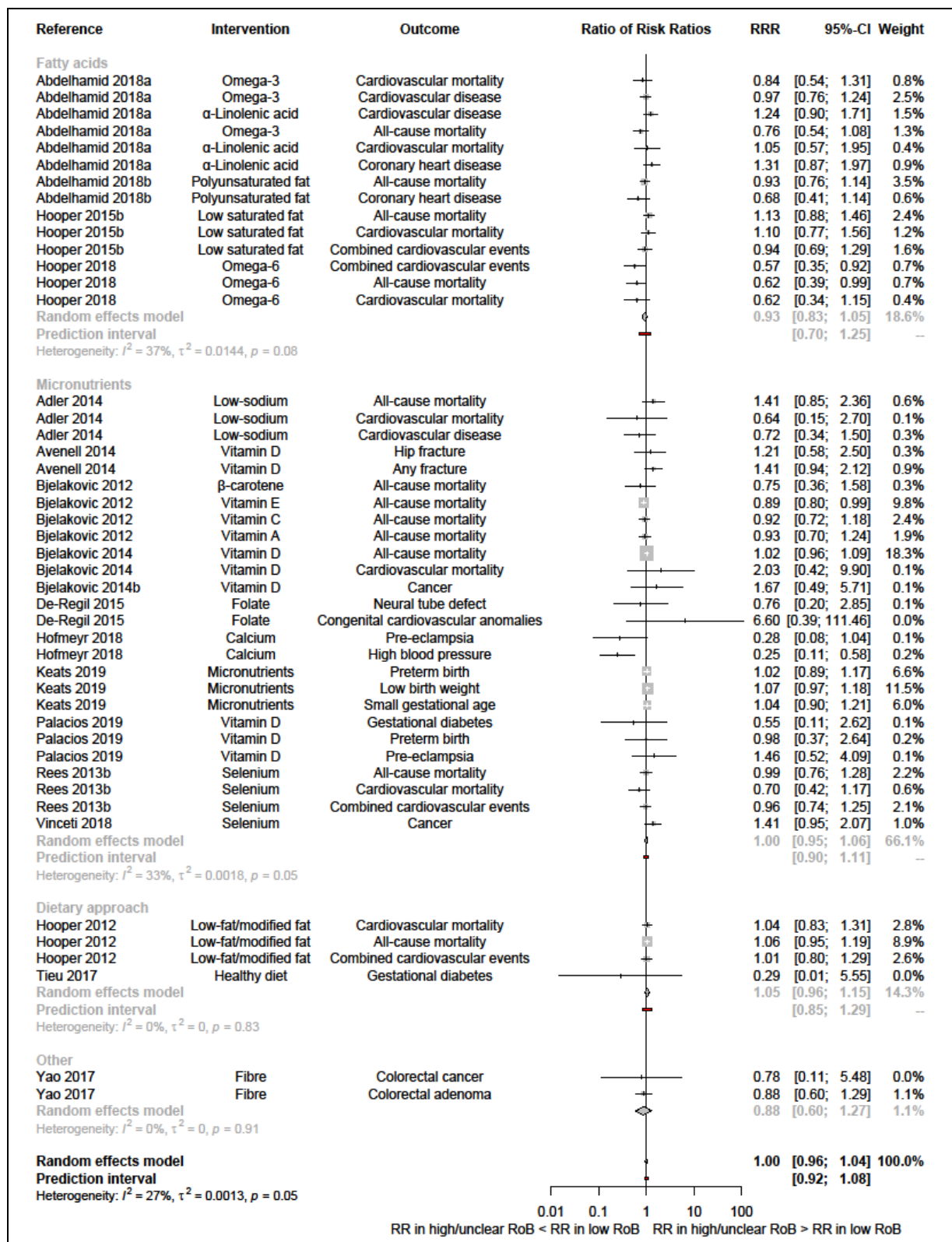
**Figure S21 forest plot**

| Reference | Intervention | Outcome | RRR | 95%-CI | Weight |
|---|---|---|---|---|---|
| Abdelhamid 2018a | Omega-3 | Cardiovascular mortality | 0.92 | [0.77; 1.09] | 16.0% |
| Abdelhamid 2018a | Omega-3 | All-cause mortality | 0.93 | [0.83; 1.05] | 33.5% |
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular disease | 0.74 | [0.16; 3.35] | 0.2% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | 0.99 | [0.82; 1.19] | 13.9% |
| Abdelhamid 2018b | Polyunsaturated fat | Coronary heart disease | 0.91 | [0.61; 1.35] | 3.0% |
| Adler 2014 | Low-sodium | All-cause mortality | 1.30 | [0.77; 2.19] | 1.7% |
| Adler 2014 | Low-sodium | Cardiovascular mortality | 1.03 | [0.17; 6.13] | 0.1% |
| Bjelakovic 2014b | Vitamin D | Cancer | 0.71 | [0.41; 1.24] | 1.5% |
| Hofmeyr 2018 | Calcium | Pre-eclampsia | 0.28 | [0.08; 1.04] | 0.3% |
| Hooper 2018 | Omega-6 | All-cause mortality | 0.83 | [0.58; 1.20] | 3.5% |
| Hooper 2018 | Omega-6 | Cardiovascular mortality | 1.59 | [0.84; 3.01] | 1.2% |
| Keats 2019 | Micronutrients | Preterm birth | 1.14 | [0.93; 1.40] | 11.2% |
| Palacios 2019 | Vitamin D | Gestational diabetes | 0.86 | [0.34; 2.21] | 0.5% |
| Palacios 2019 | Vitamin D | Preterm birth | 0.98 | [0.37; 2.64] | 0.5% |
| Palacios 2019 | Vitamin D | Pre-eclampsia | 2.15 | [0.60; 7.71] | 0.3% |
| Rees 2013b | Selenium | All-cause mortality | 0.99 | [0.77; 1.27] | 7.4% |
| Rees 2013b | Selenium | Cardiovascular mortality | 0.70 | [0.42; 1.17] | 1.8% |
| Yao 2017 | Fibre | Colorectal adenoma | 0.70 | [0.48; 1.01] | 3.4% |
| **Random effects model** | | | **0.95** | **[0.89; 1.02]** | **100.0%** |
| **Prediction interval** | | | | **[0.88; 1.02]** | |

Heterogeneity: $I^2 = 6\%$, $\tau^2 = 0$, $p = 0.38$

0.1 0.5 1 2 10
RR in high/unclear RoB < RR in low RoB   RR in high/unclear RoB > RR in low RoB

**Figure S21:** Blinding of participants and personnel: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Sensitivity analysis: Excluding highly correlated outcomes

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method
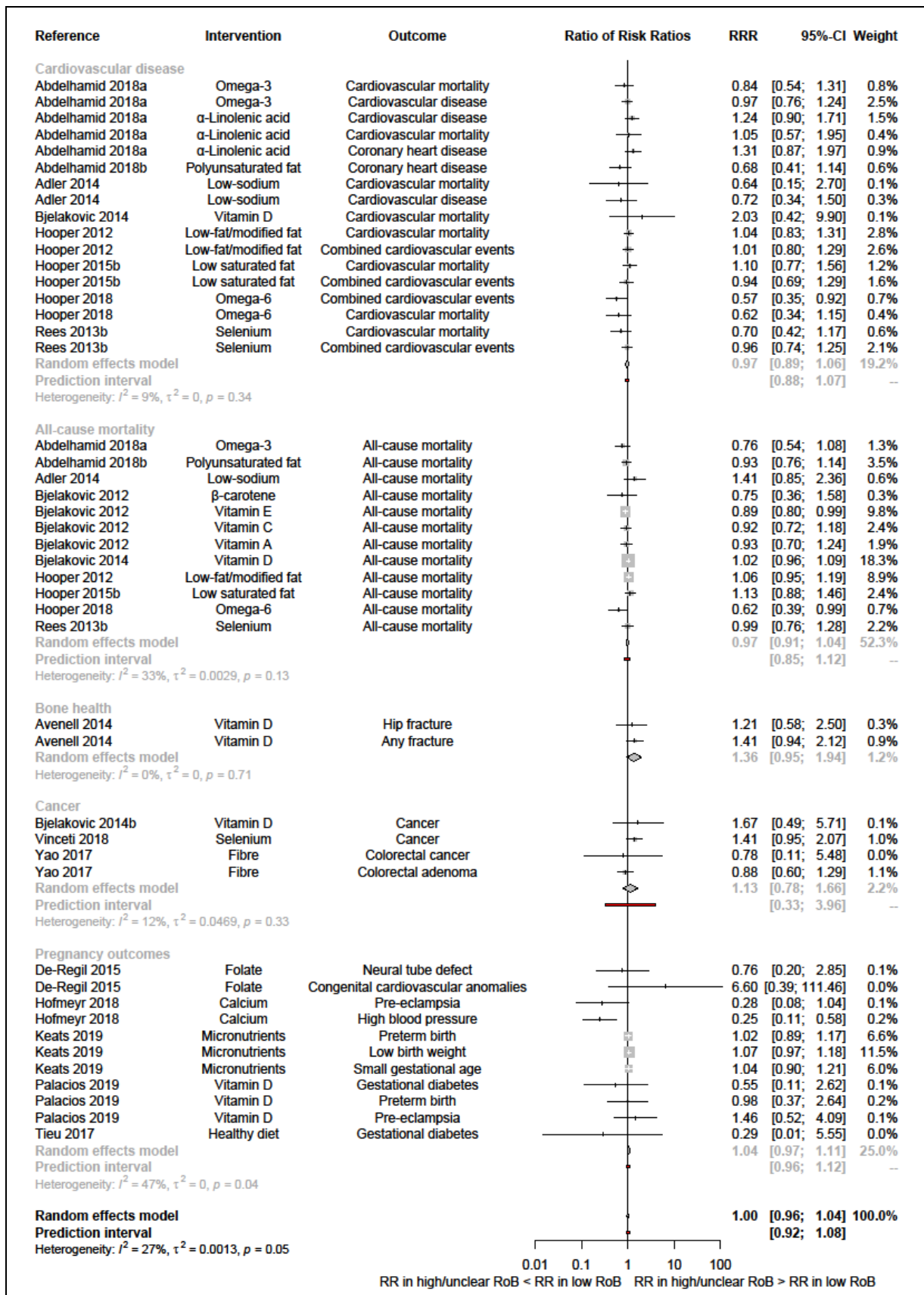
**Figure S22 forest plot**

| Reference | Intervention | Outcome | RRR | 95%-CI | Weight |
|---|---|---|---|---|---|
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular disease | 0.74 | [0.16; 3.35] | 0.3% |
| Abdelhamid 2018a | Omega-3 | All-cause mortality | 0.93 | [0.83; 1.05] | 43.6% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | 0.99 | [0.82; 1.19] | 18.1% |
| Adler 2014 | Low-sodium | All-cause mortality | 1.30 | [0.77; 2.19] | 2.2% |
| Bjelakovic 2014b | Vitamin D | Cancer | 0.71 | [0.41; 1.24] | 2.0% |
| Hofmeyr 2018 | Calcium | Pre-eclampsia | 0.28 | [0.08; 1.04] | 0.4% |
| Hooper 2018 | Omega-6 | All-cause mortality | 0.83 | [0.58; 1.20] | 4.6% |
| Keats 2019 | Micronutrients | Preterm birth | 1.14 | [0.93; 1.40] | 14.5% |
| Palacios 2019 | Vitamin D | Pre-eclampsia | 2.15 | [0.60; 7.71] | 0.4% |
| Rees 2013b | Selenium | All-cause mortality | 0.99 | [0.77; 1.27] | 9.6% |
| Yao 2017 | Fibre | Colorectal adenoma | 0.70 | [0.48; 1.01] | 4.4% |
| **Random effects model** | | | **0.96** | **[0.89; 1.04]** | **100.0%** |
| **Prediction interval** | | | | **[0.88; 1.05]** | |

Heterogeneity: $I^2 = 28\%$, $\tau^2 < 0.0001$, $p = 0.18$

0.1 0.5 1 2 10
RR in high/unclear RoB < RR in low RoB   RR in high/unclear RoB > RR in low RoB

**Figure S22:** Blinding of participants and personnel: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Sensitivity analysis: Including only one outcome per comparison from each included systematic review

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method
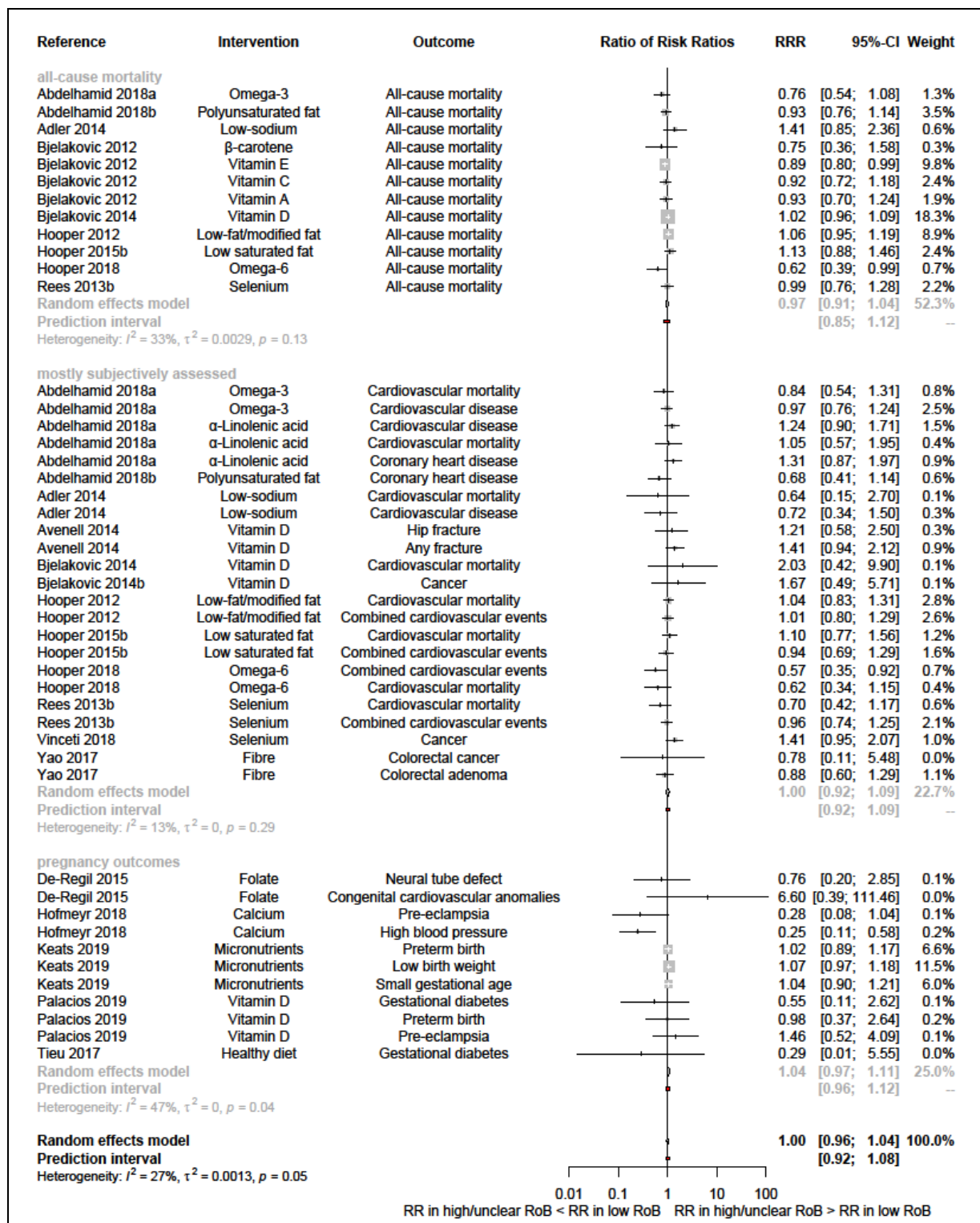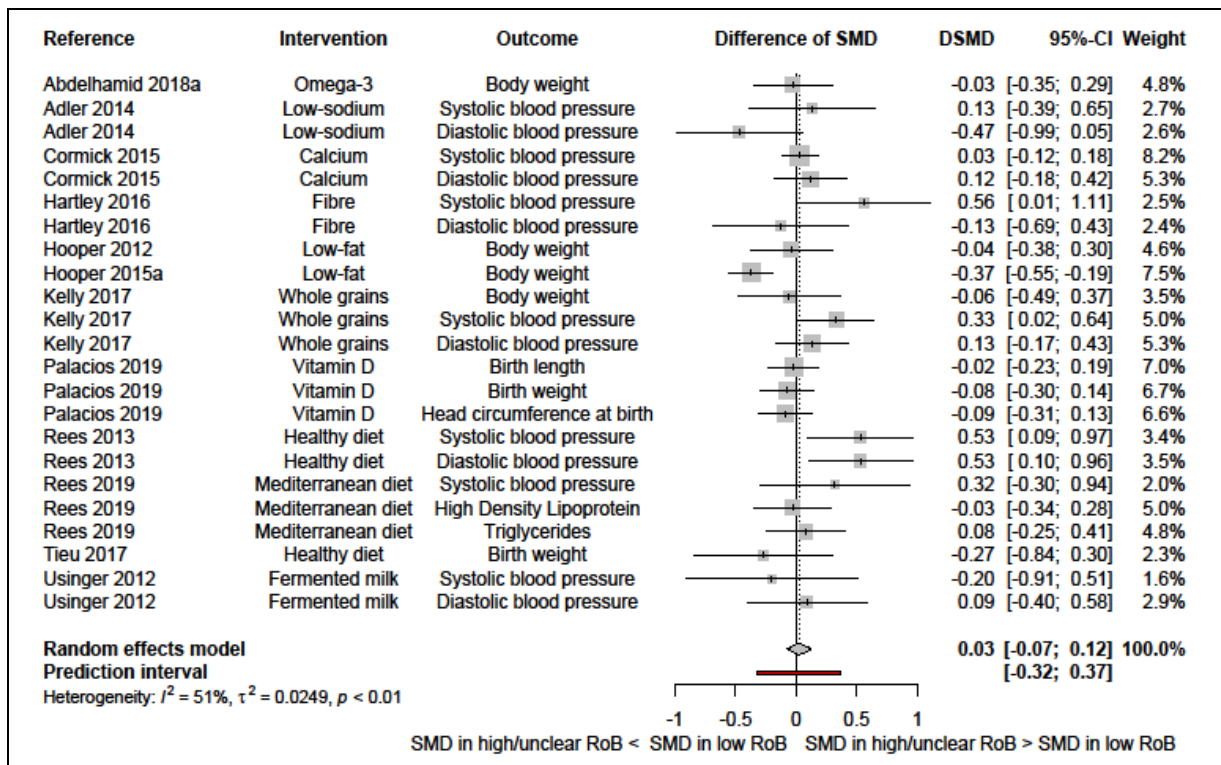
| Reference | Intervention | Outcome | Ratio of Risk Ratios | RRR | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| **Fatty acids** | | | | | | |
| Abdelhamid 2018a | Omega-3 | Cardiovascular mortality | | 0.92 | [0.77; 1.09] | 8.9% |
| Abdelhamid 2018a | Omega-3 | Cardiovascular disease | | 0.94 | [0.85; 1.03] | 28.6% |
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular disease | | 0.74 | [0.16; 3.35] | 0.1% |
| Abdelhamid 2018a | Omega-3 | All-cause mortality | | 0.93 | [0.83; 1.05] | 18.6% |
| Abdelhamid 2018a | α-Linolenic acid | Coronary heart disease | | 2.87 | [0.12; 70.08] | 0.0% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | | 0.99 | [0.82; 1.19] | 7.7% |
| Abdelhamid 2018b | Polyunsaturated fat | Coronary heart disease | | 0.91 | [0.61; 1.35] | 1.6% |
| Abdelhamid 2018b | Polyunsaturated fat | Major cardiovascular events | | 1.43 | [1.04; 1.99] | 2.5% |
| Hooper 2018 | Omega-6 | Combined cardiovascular events | | 1.04 | [0.78; 1.40] | 3.0% |
| Hooper 2018 | Omega-6 | All-cause mortality | | 0.83 | [0.58; 1.20] | 1.9% |
| Hooper 2018 | Omega-6 | Cardiovascular mortality | | 1.59 | [0.84; 3.01] | 0.6% |
| **Random effects model** | | | | 0.96 | [0.90; 1.02] | 73.6% |
| **Prediction interval** | | | | | [0.89; 1.03] | -- |
| Heterogeneity: $I^2 = 6\%$, $\tau^2 = 0$, $p = 0.39$ | | | | | | |
| | | | | | | |
| **Micronutrients** | | | | | | |
| Adler 2014 | Low-sodium | All-cause mortality | | 1.30 | [0.77; 2.19] | 1.0% |
| Adler 2014 | Low-sodium | Cardiovascular mortality | | 1.03 | [0.17; 6.13] | 0.1% |
| Adler 2014 | Low-sodium | Cardiovascular disease | | 0.91 | [0.36; 2.32] | 0.3% |
| Bjelakovic 2014b | Vitamin D | Cancer | | 0.71 | [0.41; 1.24] | 0.8% |
| Bjelakovic 2014b | Vitamin D3 | Breast cancer | | 0.60 | [0.22; 1.68] | 0.2% |
| Bjelakovic 2014b | Vitamin D3 | Lung cancer | | 0.31 | [0.04; 2.73] | 0.1% |
| Hofmeyr 2018 | Calcium | Pre-eclampsia | | 0.28 | [0.08; 1.04] | 0.2% |
| Hofmeyr 2018 | Calcium | High blood pressure | | 0.25 | [0.11; 0.58] | 0.4% |
| Keats 2019 | Micronutrients | Preterm birth | | 1.14 | [0.93; 1.40] | 6.2% |
| Keats 2019 | Micronutrients | Low birth weight | | 0.93 | [0.60; 1.44] | 1.4% |
| Keats 2019 | Micronutrients | Small gestational age | | 0.96 | [0.75; 1.22] | 4.4% |
| Palacios 2019 | Vitamin D | Gestational diabetes | | 0.86 | [0.34; 2.21] | 0.3% |
| Palacios 2019 | Vitamin D | Preterm birth | | 0.98 | [0.37; 2.64] | 0.3% |
| Palacios 2019 | Vitamin D | Pre-eclampsia | | 2.15 | [0.60; 7.71] | 0.2% |
| Rees 2013b | Selenium | All-cause mortality | | 0.99 | [0.77; 1.27] | 4.1% |
| Rees 2013b | Selenium | Cardiovascular mortality | | 0.70 | [0.42; 1.17] | 1.0% |
| Rees 2013b | Selenium | Combined cardiovascular events | | 0.96 | [0.74; 1.25] | 3.7% |
| **Random effects model** | | | | 0.95 | [0.85; 1.07] | 24.5% |
| **Prediction interval** | | | | | [0.79; 1.15] | -- |
| Heterogeneity: $I^2 = 31\%$, $\tau^2 = 0.0043$, $p = 0.11$ | | | | | | |
| | | | | | | |
| **Other** | | | | | | |
| Yao 2017 | Fibre | Colorectal adenoma | | 0.70 | [0.48; 1.01] | 1.9% |
| | | | | | | |
| **Random effects model** | | | | 0.95 | [0.91; 1.00] | 100.0% |
| **Prediction interval** | | | | | [0.90; 1.01] | |
| Heterogeneity: $I^2 = 23\%$, $\tau^2 = 0$, $p = 0.13$ | | | | | | |

0.1  0.5 1 2   10

RR in high/unclear RoB < RR in low RoB    RR in high/unclear RoB > RR in low RoB
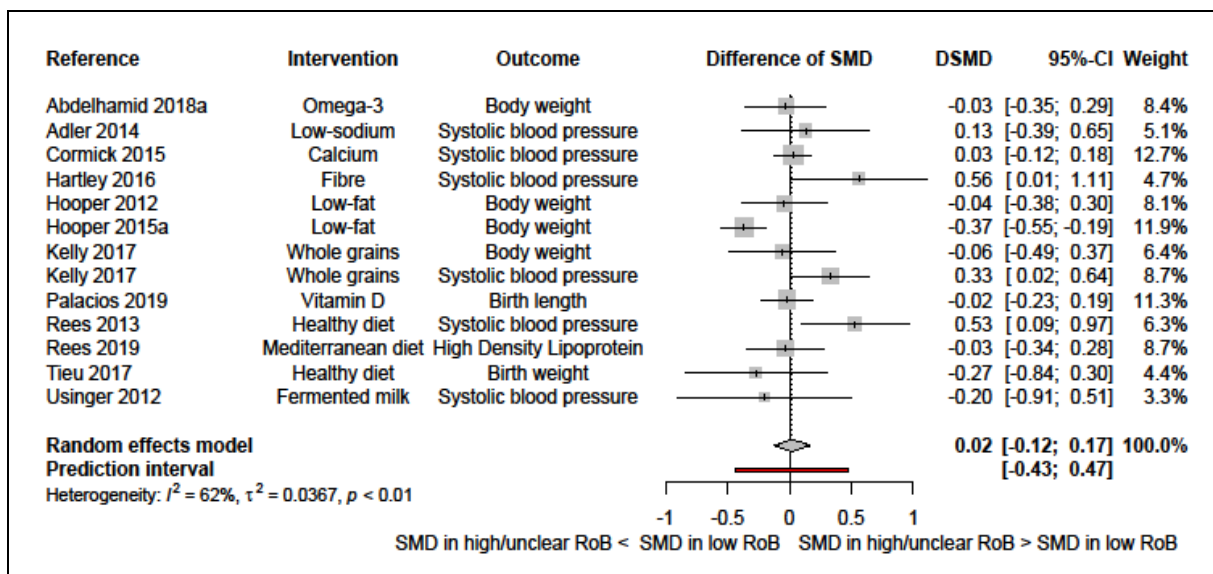
**Figure S23:** Blinding of participants and personnel: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Subgroup analysis: Clusters of interventions

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

| Reference | Intervention | Outcome | Ratio of Risk Ratios | RRR | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| **all-cause mortality** | | | | | | |
| Abdelhamid 2018a | Omega-3 | All-cause mortality | | 0.93 | [0.83; 1.05] | 18.6% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | | 0.99 | [0.82; 1.19] | 7.7% |
| Adler 2014 | Low-sodium | All-cause mortality | | 1.30 | [0.77; 2.19] | 1.0% |
| Hooper 2018 | Omega-6 | All-cause mortality | | 0.83 | [0.58; 1.20] | 1.9% |
| Rees 2013b | Selenium | All-cause mortality | | 0.99 | [0.77; 1.27] | 4.1% |
| Random effects model | | | | 0.95 | [0.87; 1.04] | 33.3% |
| Prediction interval | | | | | [0.83; 1.10] | -- |
| Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0$, $p = 0.69$ | | | | | | |
| **mostly subjectively assessed** | | | | | | |
| Abdelhamid 2018a | Omega-3 | Cardiovascular mortality | | 0.92 | [0.77; 1.09] | 8.9% |
| Abdelhamid 2018a | Omega-3 | Cardiovascular disease | | 0.94 | [0.85; 1.03] | 28.6% |
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular disease | | 0.74 | [0.16; 3.35] | 0.1% |
| Abdelhamid 2018a | α-Linolenic acid | Coronary heart disease | | 2.87 | [0.12; 70.08] | 0.0% |
| Abdelhamid 2018b | Polyunsaturated fat | Coronary heart disease | | 0.91 | [0.61; 1.35] | 1.6% |
| Abdelhamid 2018b | Polyunsaturated fat | Major cardiovascular events | | 1.43 | [1.04; 1.99] | 2.5% |
| Adler 2014 | Low-sodium | Cardiovascular mortality | | 1.03 | [0.17; 6.13] | 0.1% |
| Adler 2014 | Low-sodium | Cardiovascular disease | | 0.91 | [0.36; 2.32] | 0.3% |
| Bjelakovic 2014b | Vitamin D | Cancer | | 0.71 | [0.41; 1.24] | 0.8% |
| Bjelakovic 2014b | Vitamin D3 | Breast cancer | | 0.60 | [0.22; 1.68] | 0.2% |
| Bjelakovic 2014b | Vitamin D3 | Lung cancer | | 0.31 | [0.04; 2.73] | 0.1% |
| Hooper 2018 | Omega-6 | Combined cardiovascular events | | 1.04 | [0.78; 1.40] | 3.0% |
| Hooper 2018 | Omega-6 | Cardiovascular mortality | | 1.59 | [0.84; 3.01] | 0.6% |
| Rees 2013b | Selenium | Cardiovascular mortality | | 0.70 | [0.42; 1.17] | 1.0% |
| Rees 2013b | Selenium | Combined cardiovascular events | | 0.96 | [0.74; 1.25] | 3.7% |
| Yao 2017 | Fibre | Colorectal adenoma | | 0.70 | [0.48; 1.01] | 1.9% |
| Random effects model | | | | 0.94 | [0.88; 1.01] | 53.5% |
| Prediction interval | | | | | [0.88; 1.02] | -- |
| Heterogeneity: $I^2 = 10\%$, $\tau^2 = 0$, $p = 0.34$ | | | | | | |
| **pregnancy outcomes** | | | | | | |
| Hofmeyr 2018 | Calcium | Pre-eclampsia | | 0.28 | [0.08; 1.04] | 0.2% |
| Hofmeyr 2018 | Calcium | High blood pressure | | 0.25 | [0.11; 0.58] | 0.4% |
| Keats 2019 | Micronutrients | Preterm birth | | 1.14 | [0.93; 1.40] | 6.2% |
| Keats 2019 | Micronutrients | Low birth weight | | 0.93 | [0.60; 1.44] | 1.4% |
| Keats 2019 | Micronutrients | Small gestational age | | 0.96 | [0.75; 1.22] | 4.4% |
| Palacios 2019 | Vitamin D | Gestational diabetes | | 0.86 | [0.34; 2.21] | 0.3% |
| Palacios 2019 | Vitamin D | Preterm birth | | 0.98 | [0.37; 2.64] | 0.3% |
| Palacios 2019 | Vitamin D | Pre-eclampsia | | 2.15 | [0.60; 7.71] | 0.2% |
| Random effects model | | | | 0.84 | [0.59; 1.20] | 13.2% |
| Prediction interval | | | | | [0.30; 2.33] | -- |
| Heterogeneity: $I^2 = 59\%$, $\tau^2 = 0.1411$, $p = 0.02$ | | | | | | |
| **Random effects model** | | | | 0.95 | [0.91; 1.00] | 100.0% |
| **Prediction interval** | | | | | [0.90; 1.01] | |
| Heterogeneity: $I^2 = 23\%$, $\tau^2 = 0$, $p = 0.13$ | | | | | | |

0.1    0.5 1 2    10
RR in high/unclear RoB < RR in low RoB    RR in high/unclear RoB > RR in low RoB

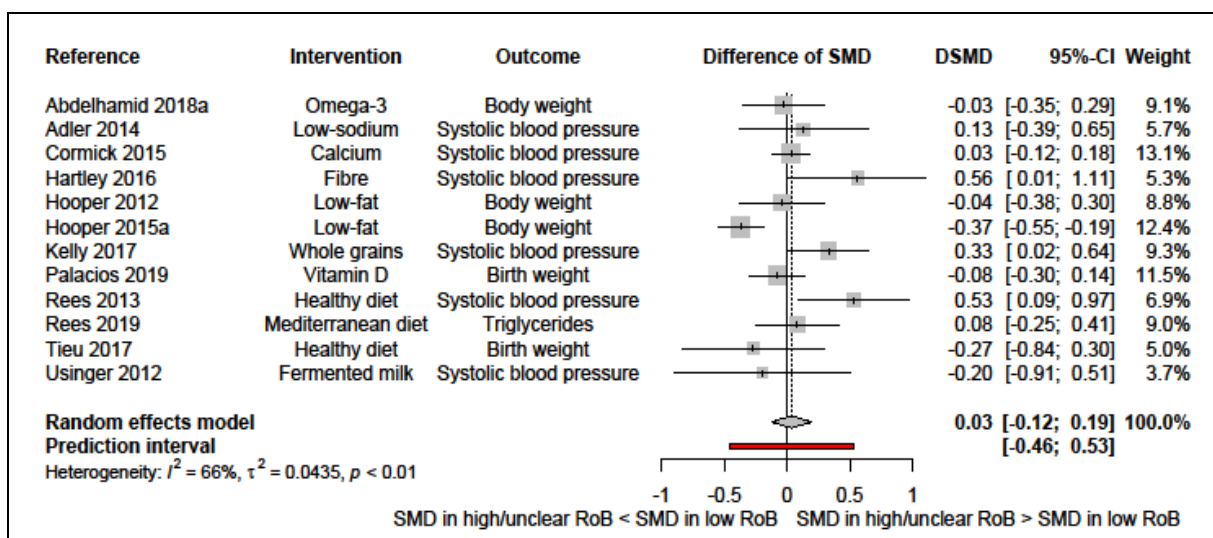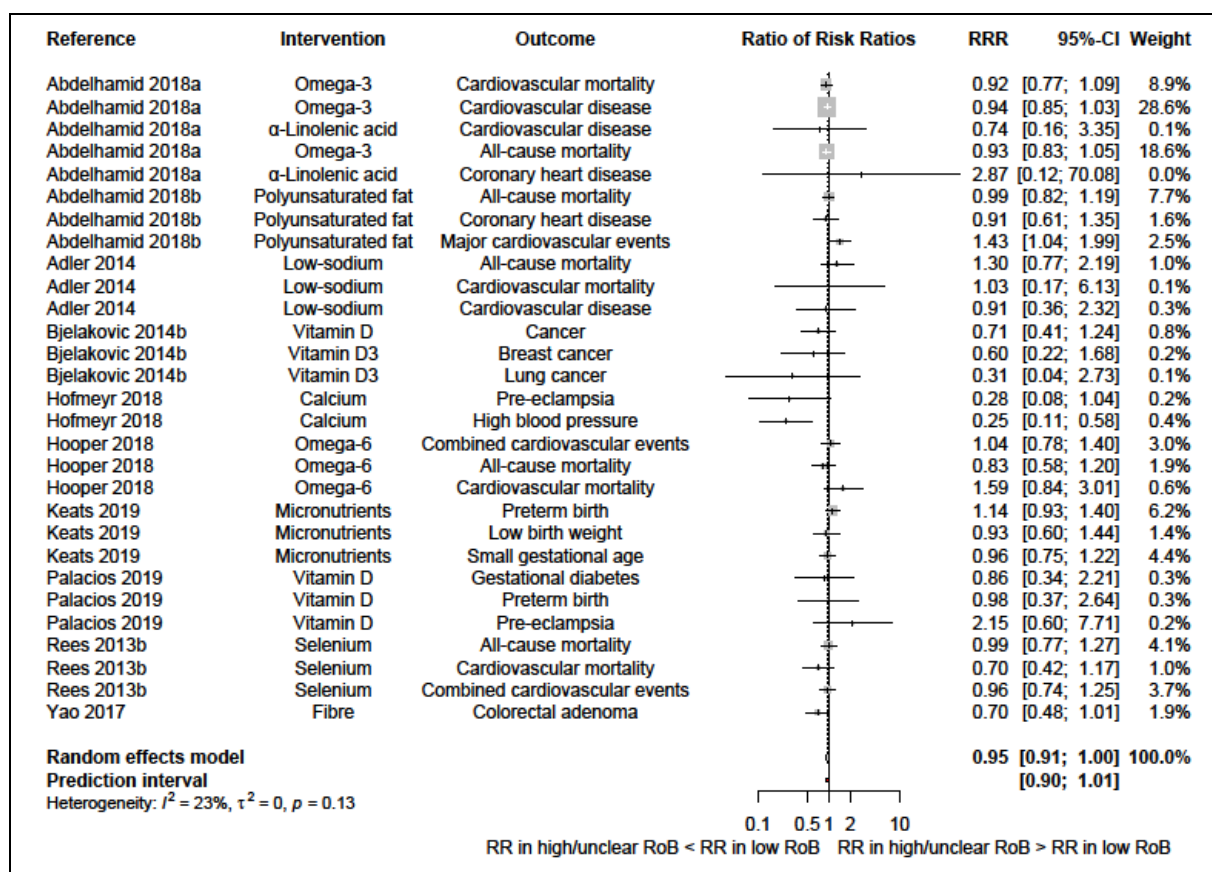**Figure S24:** Blinding of participants and personnel: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Subgroup analysis: Subjective versus objective outcomes

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

**Figure S25:** Blinding of participants and personnel: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Subgroup analysis: Clusters of outcomes

CI: confidence interval; I²: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; τ²: heterogeneity value with Restricted Maximum-likelihood estimation method
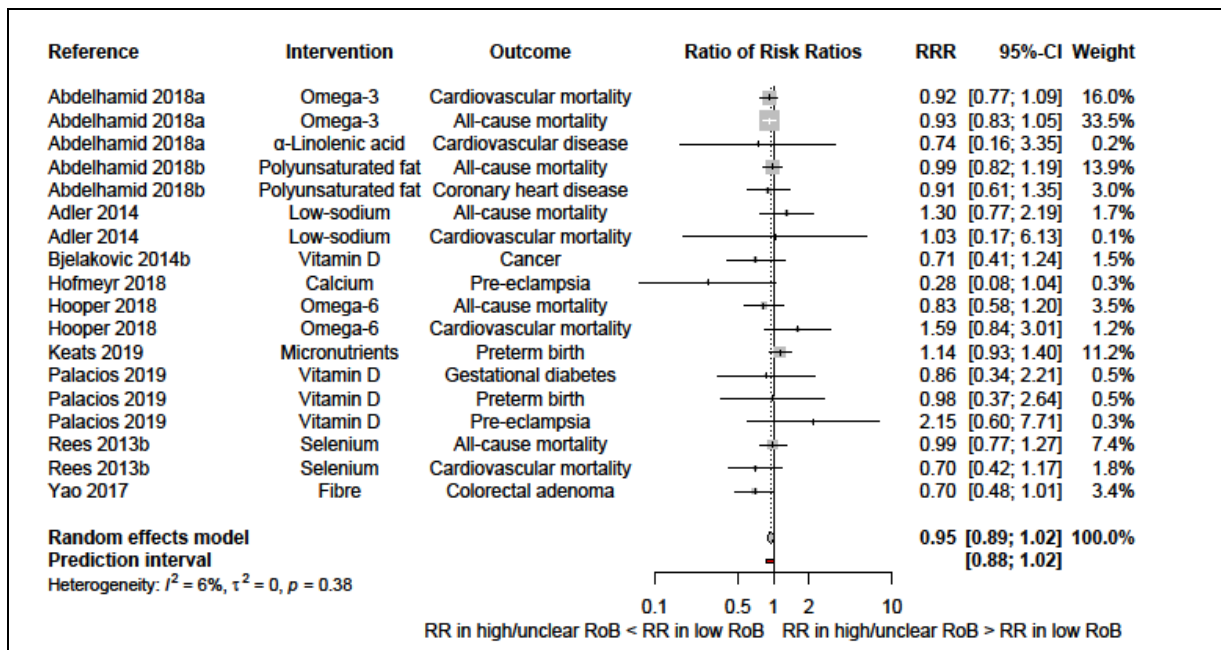
| Reference | Intervention | Outcome | Difference of SMD | DSMD | 95%-CI | Weight |
|-----------|-------------|---------|-------------------|------|--------|--------|
| Abdelhamid 2018a | Omega-3 | Body weight | | 0.04 | [-0.27; 0.35] | 7.8% |
| Adler 2014 | Low-sodium | Systolic blood pressure | | -0.17 | [-0.46; 0.12] | 8.9% |
| Adler 2014 | Low-sodium | Diastolic blood pressure | | -0.25 | [-0.58; 0.08] | 6.9% |
| Cormick 2015 | Calcium | Systolic blood pressure | | -0.06 | [-0.32; 0.20] | 11.3% |
| Cormick 2015 | Calcium | Diastolic blood pressure | | 0.20 | [-0.10; 0.50] | 8.5% |
| Hartley 2016 | Fibre | Systolic blood pressure | | -0.26 | [-0.88; 0.36] | 1.9% |
| Hartley 2016 | Fibre | Diastolic blood pressure | | -0.29 | [-0.68; 0.10] | 4.8% |
| Palacios 2019 | Vitamin D | Birth length | | -0.02 | [-0.23; 0.19] | 17.1% |
| Palacios 2019 | Vitamin D | Birth weight | | -0.18 | [-0.38; 0.02] | 18.0% |
| Palacios 2019 | Vitamin D | Head circumference at birth | | -0.09 | [-0.31; 0.13] | 14.9% |
| **Random effects model** | | | | -0.09 | [-0.17; 0.00] | 100.0% |
| **Prediction interval** | | | | | [-0.19; 0.01] | |

Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0$, $p = 0.52$

SMD in high/unclear RoB < SMD in low RoB    SMD in high/unclear RoB > SMD in low RoB

**Figure S26:** Blinding of participants and personnel: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for continuous outcomes as pooled difference of standardised mean differences

CI: confidence interval; DSMD: difference of standardised mean differences; $I^2$: heterogeneity measure; RoB: risk of bias; SMD: standardised mean difference; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

| Reference | Intervention | Outcome | Difference of SMD | DSMD | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| Abdelhamid 2018a | Omega-3 | Body weight | | 0.04 | [-0.27; 0.35] | 16.6% |
| Adler 2014 | Low-sodium | Systolic blood pressure | | -0.17 | [-0.46; 0.12] | 18.9% |
| Cormick 2015 | Calcium | Systolic blood pressure | | -0.06 | [-0.32; 0.20] | 24.0% |
| Hartley 2016 | Fibre | Systolic blood pressure | | -0.26 | [-0.88; 0.36] | 4.1% |
| Palacios 2019 | Vitamin D | Birth length | | -0.02 | [-0.23; 0.19] | 36.4% |
| **Random effects model** | | | | **-0.06** | **[-0.18; 0.07]** | **100.0%** |
| **Prediction interval** | | | | | **[-0.26; 0.15]** | |

Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0$, $p = 0.83$

-0.5   0   0.5

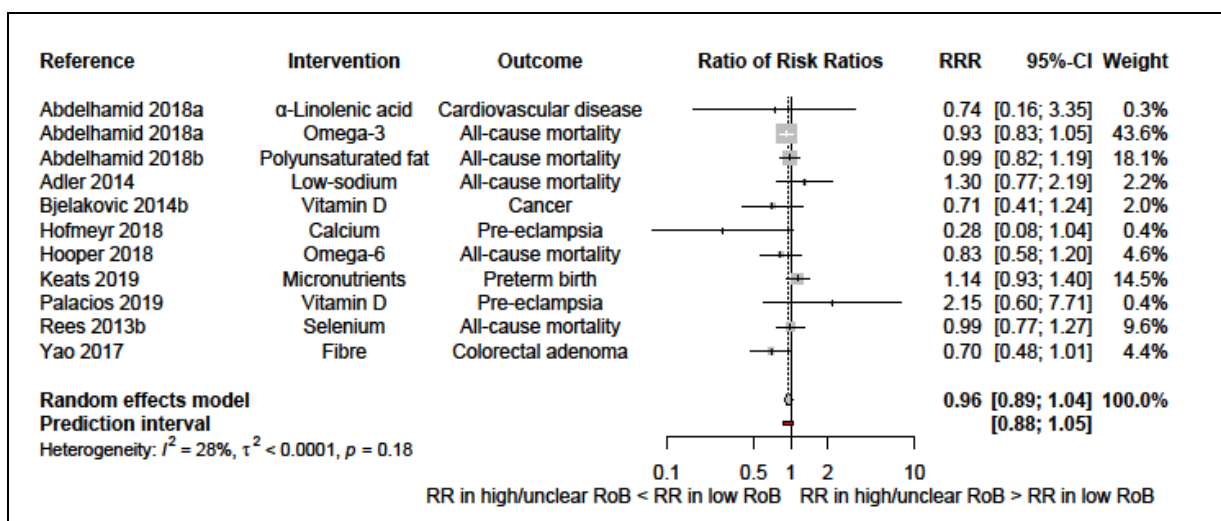SMD in high/unclear RoB < SMD in low RoB    SMD in high/unclear RoB > SMD in low RoB

**Figure S27:** Blinding of participants and personnel: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for continuous outcomes as pooled difference of standardised mean differences. Sensitivity analysis: Excluding highly correlated outcomes

CI: confidence interval; DSMD: difference of standardised mean differences; $I^2$: heterogeneity measure; RoB: risk of bias; SMD: standardised mean difference; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method



| Reference | Intervention | Outcome | Difference of SMD | DSMD | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| Abdelhamid 2018a | Omega-3 | Body weight | | 0.04 | [-0.27; 0.35] | 16.3% |
| Adler 2014 | Low-sodium | Systolic blood pressure | | -0.17 | [-0.46; 0.12] | 18.6% |
| Cormick 2015 | Calcium | Systolic blood pressure | | -0.06 | [-0.32; 0.20] | 23.6% |
| Hartley 2016 | Fibre | Systolic blood pressure | | -0.26 | [-0.88; 0.36] | 4.0% |
| Palacios 2019 | Vitamin D | Birth weight | | -0.18 | [-0.38; 0.02] | 37.5% |
| **Random effects model** | | | | **-0.12** | **[-0.24; 0.01]** | **100.0%** |
| **Prediction interval** | | | | | **[-0.32; 0.08]** | |

Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0$, $p = 0.76$

-0.5   0   0.5

SMD in high/unclear RoB < SMD in low RoB    SMD in high/unclear RoB > SMD in low RoB
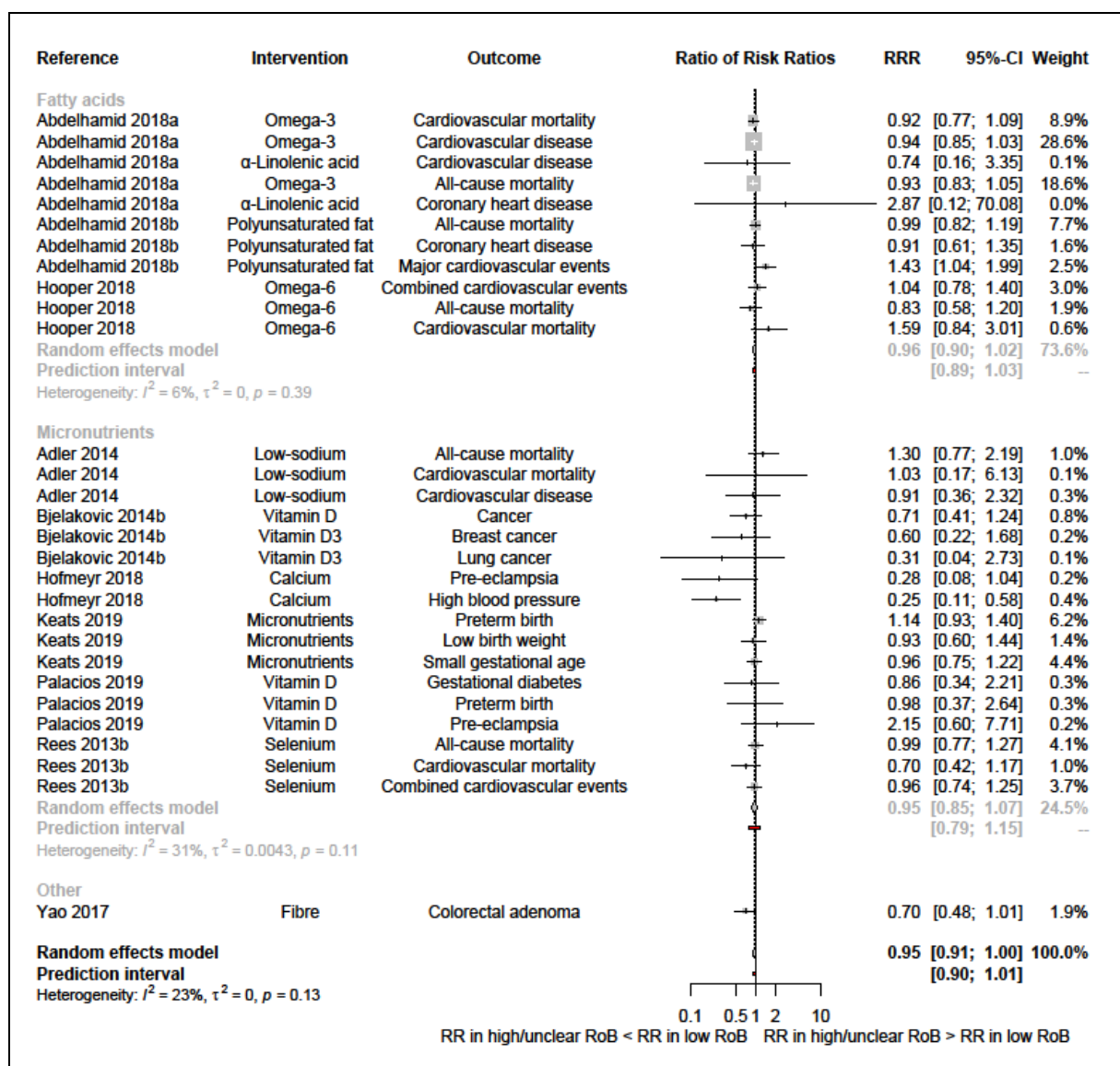
**Figure S28:** Blinding of participants and personnel: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for continuous outcomes as pooled difference of standardised mean differences. Sensitivity analysis: Including only one outcome per comparison from each included systematic review

CI: confidence interval; DSMD: difference of standardised mean differences; $I^2$: heterogeneity measure; RoB: risk of bias; SMD: standardised mean difference; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

**Methodological trial characteristic: Blinding of outcome assessment**

| Reference | Intervention | Outcome | Ratio of Risk Ratios | RRR | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| Abdelhamid 2018a | Omega-3 | Cardiovascular mortality | | 0.39 | [0.07; 2.07] | 0.8% |
| Abdelhamid 2018a | Omega-3 | Cardiovascular disease | | 0.77 | [0.39; 1.50] | 3.8% |
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular disease | | 0.74 | [0.16; 3.35] | 0.9% |
| Abdelhamid 2018a | Omega-3 | All-cause mortality | | 0.63 | [0.30; 1.31] | 3.3% |
| Abdelhamid 2018a | α-Linolenic acid | Coronary heart disease | | 2.87 | [0.12; 70.08] | 0.2% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | | 0.68 | [0.40; 1.15] | 5.4% |
| Abdelhamid 2018b | Polyunsaturated fat | Coronary heart disease | | 0.34 | [0.15; 0.79] | 2.7% |
| Adler 2014 | Low-sodium | All-cause mortality | | 1.04 | [0.06; 17.00] | 0.3% |
| Bjelakovic 2014b | Vitamin D | Cancer | | 0.71 | [0.41; 1.24] | 5.0% |
| Bjelakovic 2014b | Vitamin D3 | Breast cancer | | 0.60 | [0.22; 1.68] | 1.9% |
| Bjelakovic 2014b | Vitamin D3 | Lung cancer | | 0.31 | [0.04; 2.73] | 0.5% |
| Hofmeyr 2018 | Calcium | Pre-eclampsia | | 0.28 | [0.08; 1.04] | 1.2% |
| Hofmeyr 2018 | Calcium | High blood pressure | | 0.25 | [0.11; 0.58] | 2.6% |
| Hooper 2018 | Omega-6 | Combined cardiovascular events | | 0.36 | [0.01; 10.54] | 0.2% |
| Hooper 2018 | Omega-6 | All-cause mortality | | 0.71 | [0.38; 1.32] | 4.3% |
| Hooper 2018 | Omega-6 | Cardiovascular mortality | | 0.08 | [0.01; 1.04] | 0.3% |
| Keats 2019 | Micronutrients | Preterm birth | | 1.15 | [0.94; 1.41] | 12.8% |
| Keats 2019 | Micronutrients | Low birth weight | | 0.97 | [0.53; 1.74] | 4.6% |
| Keats 2019 | Micronutrients | Small gestational age | | 0.96 | [0.67; 1.36] | 8.7% |
| Palacios 2019 | Vitamin D | Gestational diabetes | | 0.86 | [0.34; 2.21] | 2.2% |
| Palacios 2019 | Vitamin D | Preterm birth | | 0.98 | [0.37; 2.64] | 2.0% |
| Palacios 2019 | Vitamin D | Pre-eclampsia | | 2.15 | [0.60; 7.71] | 1.3% |
| Rees 2013b | Selenium | All-cause mortality | | 0.99 | [0.76; 1.28] | 11.2% |
| Rees 2013b | Selenium | Cardiovascular mortality | | 0.70 | [0.42; 1.17] | 5.6% |
| Rees 2013b | Selenium | Combined cardiovascular events | | 0.96 | [0.74; 1.25] | 11.0% |
| Tieu 2017 | Healthy diet | Small gestational age | | 1.16 | [0.29; 4.70] | 1.1% |
| Tieu 2017 | Healthy diet | Gestational diabetes | | 0.76 | [0.27; 2.13] | 1.9% |
| Yao 2017 | Fibre | Colorectal adenoma | | 0.87 | [0.47; 1.63] | 4.3% |
| **Random effects model** | | | | 0.81 | [0.70; 0.94] | 100.0% |
| **Prediction interval** | | | | | [0.54; 1.23] | |

Heterogeneity: $I^2$ = 26%, $\tau^2$ = 0.0342, $p$ = 0.10

0.01  0.1  1  10  100

RR in high/unclear RoB < RR in low RoB    RR in high/unclear RoB > RR in low RoB

**Figure S29:** Blinding of outcome assessment: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method
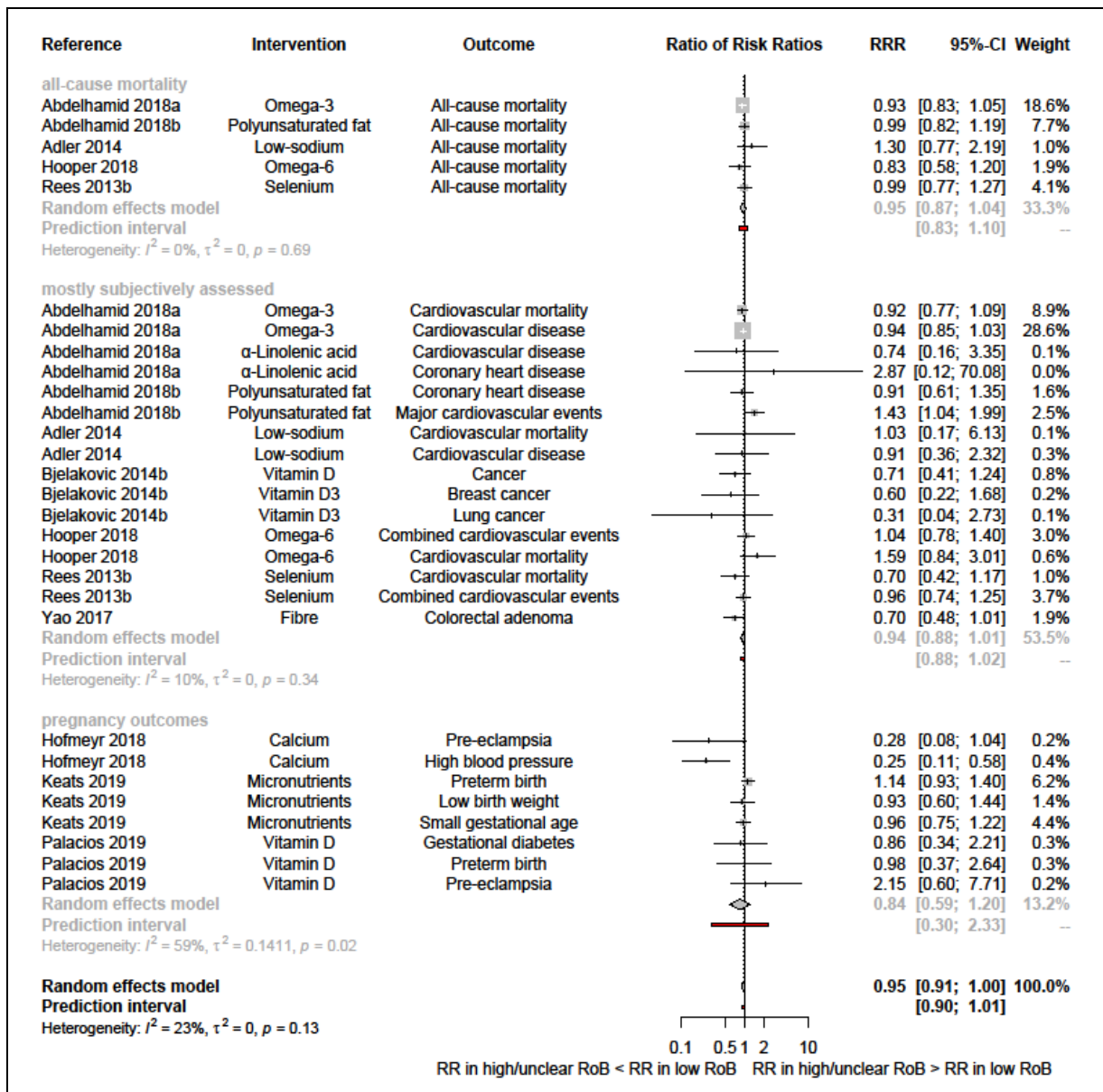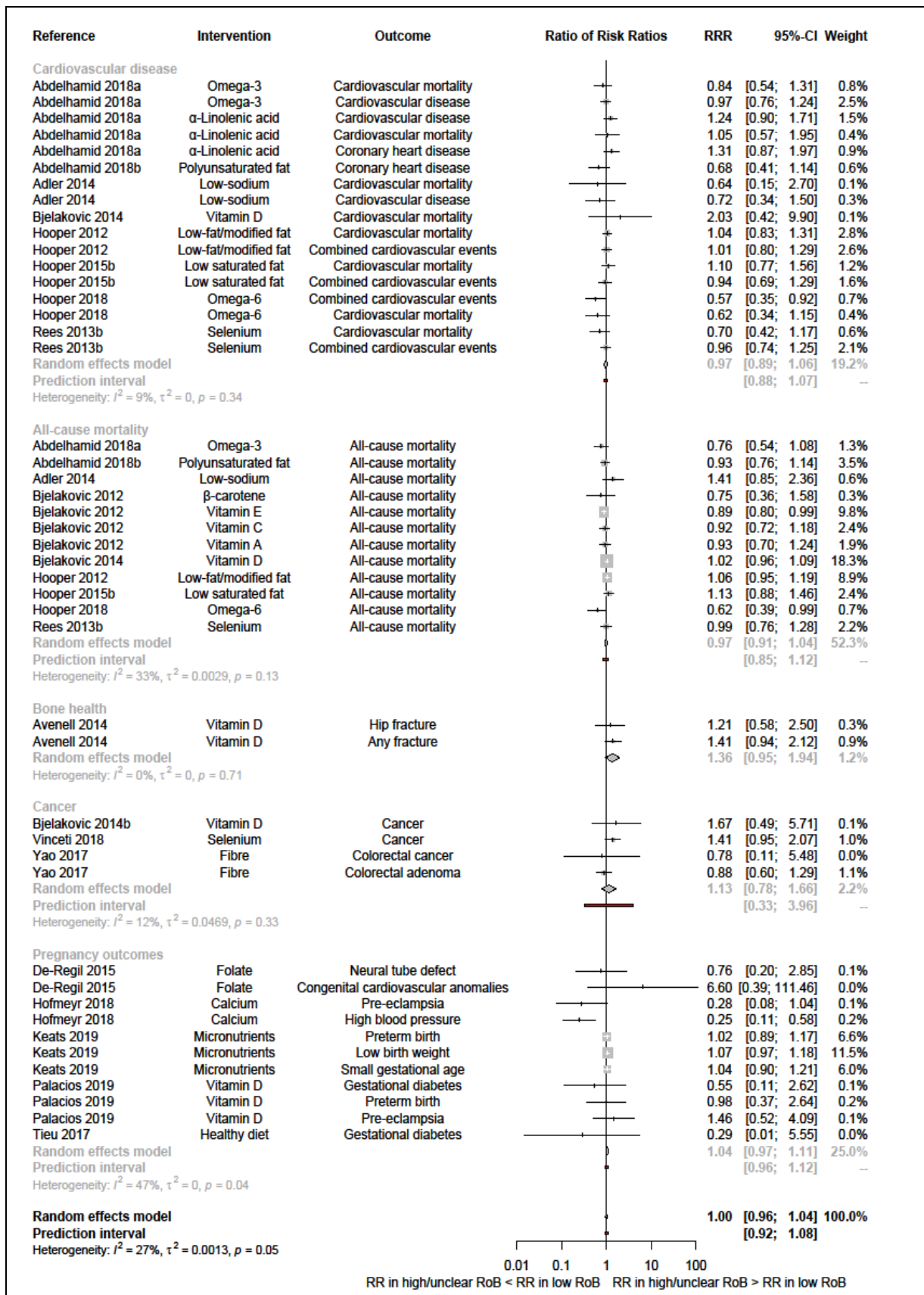
**Figure S30:** Blinding of outcome assessment: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Sensitivity analysis: Excluding highly correlated outcomes

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method



**Figure S31:** Blinding of outcome assessment: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Sensitivity analysis: Including only one outcome per comparison from each included systematic review

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method
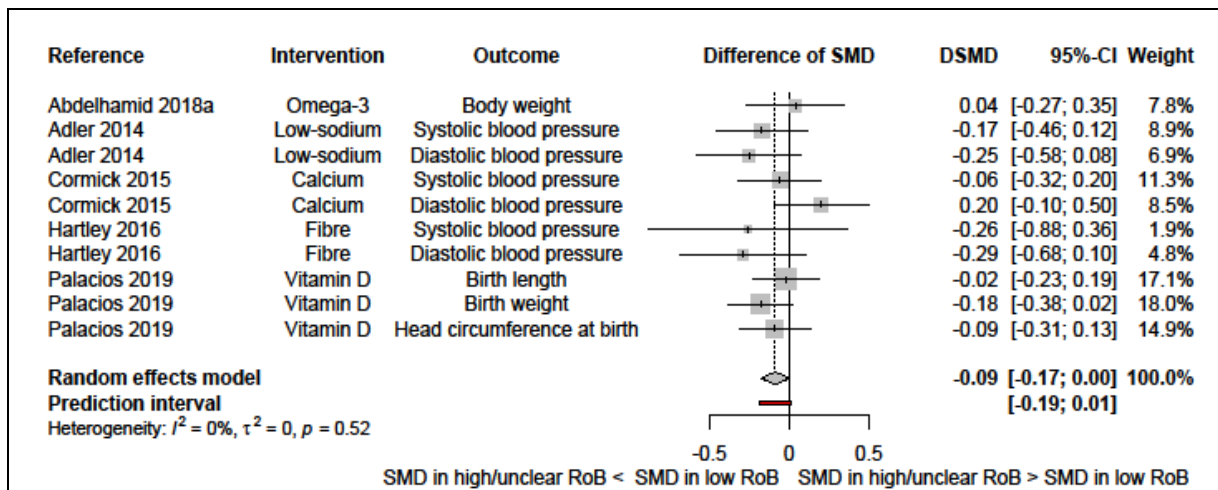
| Reference | Intervention | Outcome | Ratio of Risk Ratios | RRR | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| **Fatty acids** | | | | | | |
| Abdelhamid 2018a | Omega-3 | Cardiovascular mortality | | 0.39 | [0.07; 2.07] | 0.8% |
| Abdelhamid 2018a | Omega-3 | Cardiovascular disease | | 0.77 | [0.39; 1.50] | 3.8% |
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular disease | | 0.74 | [0.16; 3.35] | 0.9% |
| Abdelhamid 2018a | Omega-3 | All-cause mortality | | 0.63 | [0.30; 1.31] | 3.3% |
| Abdelhamid 2018a | α-Linolenic acid | Coronary heart disease | | 2.87 | [0.12; 70.08] | 0.2% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | | 0.68 | [0.40; 1.15] | 5.4% |
| Abdelhamid 2018b | Polyunsaturated fat | Coronary heart disease | | 0.34 | [0.15; 0.79] | 2.7% |
| Hooper 2018 | Omega-6 | Combined cardiovascular events | | 0.36 | [0.01; 10.54] | 0.2% |
| Hooper 2018 | Omega-6 | All-cause mortality | | 0.71 | [0.38; 1.32] | 4.3% |
| Hooper 2018 | Omega-6 | Cardiovascular mortality | | 0.08 | [0.01; 1.04] | 0.3% |
| Random effects model | | | | 0.62 | [0.47; 0.82] | 22.0% |
| Prediction interval | | | | | [0.45; 0.86] | -- |
| Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0$, $p = 0.70$ | | | | | | |
| **Micronutrients** | | | | | | |
| Adler 2014 | Low-sodium | All-cause mortality | | 1.04 | [0.06; 17.00] | 0.3% |
| Bjelakovic 2014b | Vitamin D | Cancer | | 0.71 | [0.41; 1.24] | 5.0% |
| Bjelakovic 2014b | Vitamin D3 | Breast cancer | | 0.60 | [0.22; 1.68] | 1.9% |
| Bjelakovic 2014b | Vitamin D3 | Lung cancer | | 0.31 | [0.04; 2.73] | 0.5% |
| Hofmeyr 2018 | Calcium | Pre-eclampsia | | 0.28 | [0.08; 1.04] | 1.2% |
| Hofmeyr 2018 | Calcium | High blood pressure | | 0.25 | [0.11; 0.58] | 2.6% |
| Keats 2019 | Micronutrients | Preterm birth | | 1.15 | [0.94; 1.41] | 12.8% |
| Keats 2019 | Micronutrients | Low birth weight | | 0.97 | [0.53; 1.74] | 4.6% |
| Keats 2019 | Micronutrients | Small gestational age | | 0.96 | [0.67; 1.36] | 8.7% |
| Palacios 2019 | Vitamin D | Gestational diabetes | | 0.86 | [0.34; 2.21] | 2.2% |
| Palacios 2019 | Vitamin D | Preterm birth | | 0.98 | [0.37; 2.64] | 2.0% |
| Palacios 2019 | Vitamin D | Pre-eclampsia | | 2.15 | [0.60; 7.71] | 1.3% |
| Rees 2013b | Selenium | All-cause mortality | | 0.99 | [0.76; 1.28] | 11.2% |
| Rees 2013b | Selenium | Cardiovascular mortality | | 0.70 | [0.42; 1.17] | 5.6% |
| Rees 2013b | Selenium | Combined cardiovascular events | | 0.96 | [0.74; 1.25] | 11.0% |
| Random effects model | | | | 0.90 | [0.77; 1.05] | 70.8% |
| Prediction interval | | | | | [0.62; 1.29] | -- |
| Heterogeneity: $I^2 = 37\%$, $\tau^2 = 0.0217$, $p = 0.07$ | | | | | | |
| **Dietary approach** | | | | | | |
| Tieu 2017 | Healthy diet | Small gestational age | | 1.16 | [0.29; 4.70] | 1.1% |
| Tieu 2017 | Healthy diet | Gestational diabetes | | 0.76 | [0.27; 2.13] | 1.9% |
| Random effects model | | | | 0.88 | [0.39; 2.02] | 2.9% |
| Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0$, $p = 0.63$ | | | | | | |
| **Other** | | | | | | |
| Yao 2017 | Fibre | Colorectal adenoma | | 0.87 | [0.47; 1.63] | 4.3% |
| **Random effects model** | | | | 0.81 | [0.70; 0.94] | 100.0% |
| **Prediction interval** | | | | | [0.54; 1.23] | |
| Heterogeneity: $I^2 = 26\%$, $\tau^2 = 0.0342$, $p = 0.10$ | | | | | | |

0.01   0.1   1   10   100
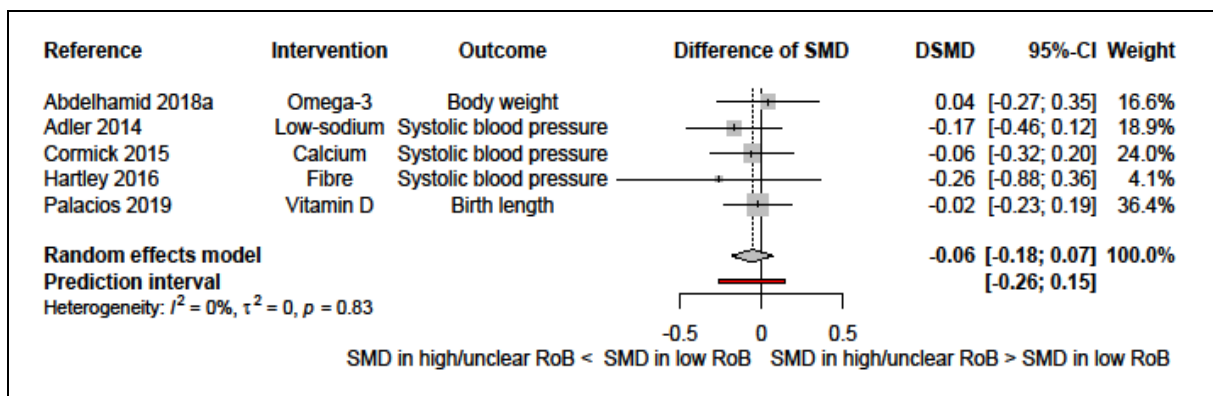RR in high/unclear RoB < RR in low RoB   RR in high/unclear RoB > RR in low RoB

**Figure S32:** Blinding of outcome assessment: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Subgroup analysis: Clusters of interventions

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

| Reference | Intervention | Outcome | Ratio of Risk Ratios | RRR | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| **Cardiovascular disease** | | | | | | |
| Abdelhamid 2018a | Omega-3 | Cardiovascular mortality | | 0.39 | [0.07; 2.07] | 0.8% |
| Abdelhamid 2018a | Omega-3 | Cardiovascular disease | | 0.77 | [0.39; 1.50] | 3.8% |
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular disease | | 0.74 | [0.16; 3.35] | 0.9% |
| Abdelhamid 2018a | α-Linolenic acid | Coronary heart disease | | 2.87 | [0.12; 70.08] | 0.2% |
| Abdelhamid 2018b | Polyunsaturated fat | Coronary heart disease | | 0.34 | [0.15; 0.79] | 2.7% |
| Hooper 2018 | Omega-6 | Combined cardiovascular events | | 0.36 | [0.01; 10.54] | 0.2% |
| Hooper 2018 | Omega-6 | Cardiovascular mortality | | 0.08 | [0.01; 1.04] | 0.3% |
| Rees 2013b | Selenium | Cardiovascular mortality | | 0.70 | [0.42; 1.17] | 5.6% |
| Rees 2013b | Selenium | Combined cardiovascular events | | 0.96 | [0.74; 1.25] | 11.0% |
| Random effects model | | | | 0.70 | [0.49; 0.98] | 25.6% |
| Prediction interval | | | | | [0.33; 1.46] | -- |
| Heterogeneity: $I^2 = 25\%$, $\tau^2 = 0.0666$, $p = 0.22$ | | | | | | |
| **All-cause mortality** | | | | | | |
| Abdelhamid 2018a | Omega-3 | All-cause mortality | | 0.63 | [0.30; 1.31] | 3.3% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | | 0.68 | [0.40; 1.15] | 5.4% |
| Adler 2014 | Low-sodium | All-cause mortality | | 1.04 | [0.06; 17.00] | 0.3% |
| Hooper 2018 | Omega-6 | All-cause mortality | | 0.71 | [0.38; 1.32] | 4.3% |
| Rees 2013b | Selenium | All-cause mortality | | 0.99 | [0.76; 1.28] | 11.2% |
| Random effects model | | | | 0.83 | [0.64; 1.08] | 24.5% |
| Prediction interval | | | | | [0.46; 1.51] | -- |
| Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0.0174$, $p = 0.56$ | | | | | | |
| **Cancer** | | | | | | |
| Bjelakovic 2014b | Vitamin D | Cancer | | 0.71 | [0.41; 1.24] | 5.0% |
| Bjelakovic 2014b | Vitamin D3 | Breast cancer | | 0.60 | [0.22; 1.68] | 1.9% |
| Bjelakovic 2014b | Vitamin D3 | Lung cancer | | 0.31 | [0.04; 2.73] | 0.5% |
| Yao 2017 | Fibre | Colorectal adenoma | | 0.87 | [0.47; 1.63] | 4.3% |
| Random effects model | | | | 0.73 | [0.50; 1.07] | 11.6% |
| Prediction interval | | | | | [0.32; 1.68] | -- |
| Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0$, $p = 0.79$ | | | | | | |
| **Pregnancy outcomes** | | | | | | |
| Hofmeyr 2018 | Calcium | Pre-eclampsia | | 0.28 | [0.08; 1.04] | 1.2% |
| Hofmeyr 2018 | Calcium | High blood pressure | | 0.25 | [0.11; 0.58] | 2.6% |
| Keats 2019 | Micronutrients | Preterm birth | | 1.15 | [0.94; 1.41] | 12.8% |
| Keats 2019 | Micronutrients | Low birth weight | | 0.97 | [0.53; 1.74] | 4.6% |
| Keats 2019 | Micronutrients | Small gestational age | | 0.96 | [0.67; 1.36] | 8.7% |
| Palacios 2019 | Vitamin D | Gestational diabetes | | 0.86 | [0.34; 2.21] | 2.2% |
| Palacios 2019 | Vitamin D | Preterm birth | | 0.98 | [0.37; 2.64] | 2.0% |
| Palacios 2019 | Vitamin D | Pre-eclampsia | | 2.15 | [0.60; 7.71] | 1.3% |
| Tieu 2017 | Healthy diet | Small gestational age | | 1.16 | [0.29; 4.70] | 1.1% |
| Tieu 2017 | Healthy diet | Gestational diabetes | | 0.76 | [0.27; 2.13] | 1.9% |
| Random effects model | | | | 0.86 | [0.62; 1.18] | 38.3% |
| Prediction interval | | | | | [0.37; 1.98] | -- |
| Heterogeneity: $I^2 = 49\%$, $\tau^2 = 0.1056$, $p = 0.04$ | | | | | | |
| **Random effects model** | | | | 0.81 | [0.70; 0.94] | 100.0% |
| **Prediction interval** | | | | | [0.54; 1.23] | |
| Heterogeneity: $I^2 = 26\%$, $\tau^2 = 0.0342$, $p = 0.10$ | | | | | | |

0.01  0.1  1  10  100

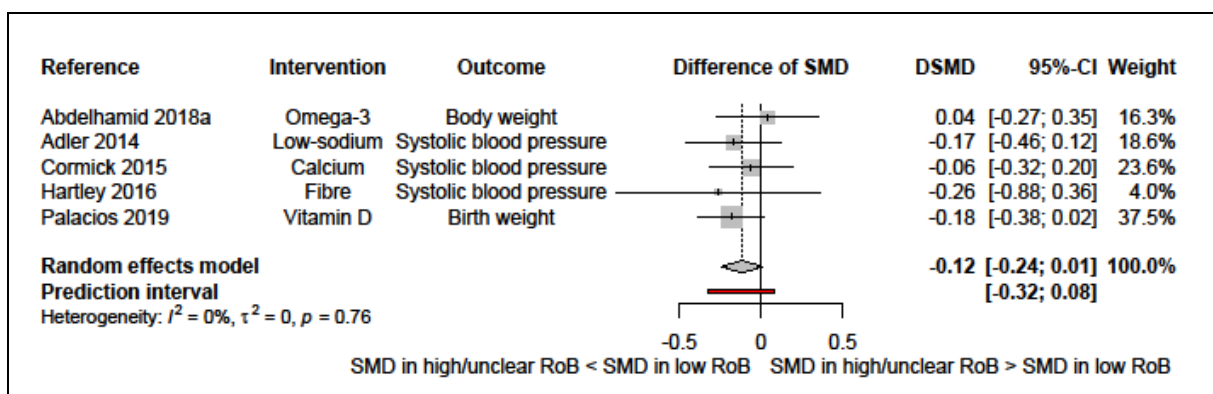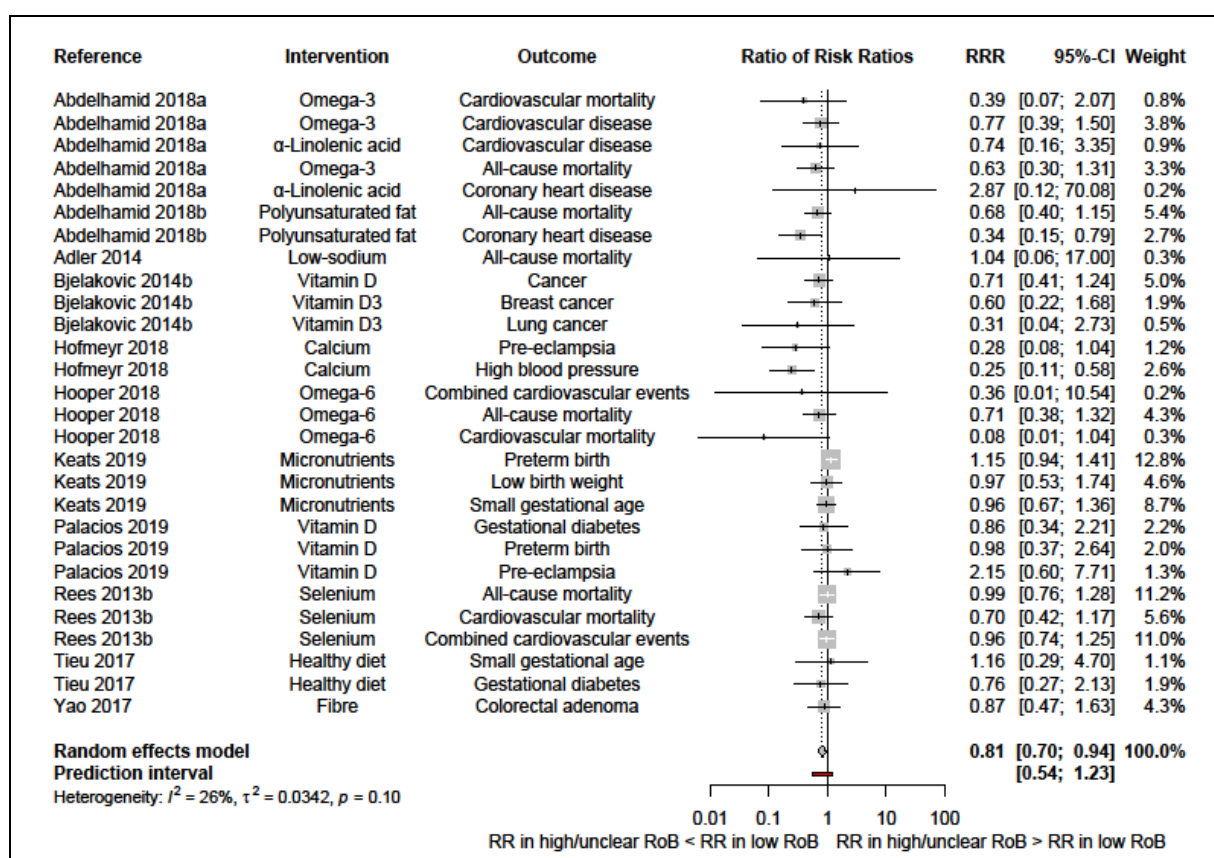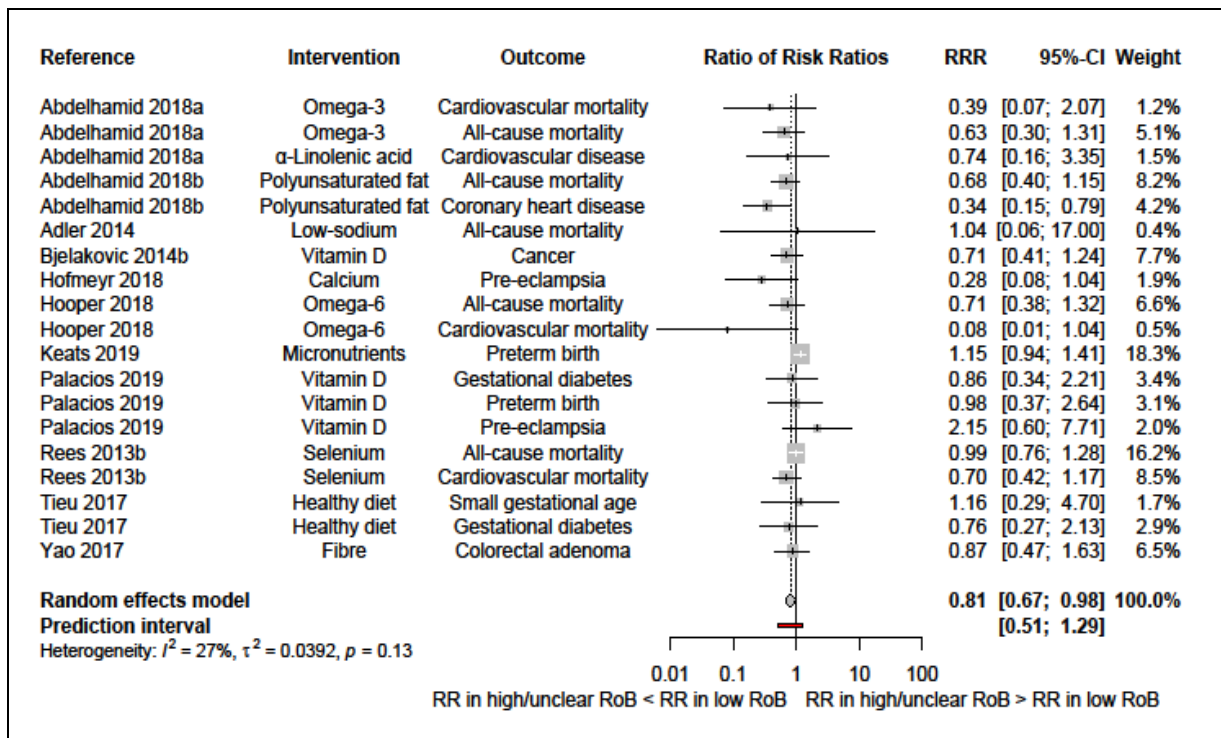RR in high/unclear RoB < RR in low RoB    RR in high/unclear RoB > RR in low RoB

**Figure S33:** Blinding of outcome assessment: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Subgroup analysis: Clusters of outcomes

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

| Reference | Intervention | Outcome | Ratio of Risk Ratios | RRR | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| **all-cause mortality** | | | | | | |
| Abdelhamid 2018a | Omega-3 | All-cause mortality | | 0.63 | [0.30; 1.31] | 3.3% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | | 0.68 | [0.40; 1.15] | 5.4% |
| Adler 2014 | Low-sodium | All-cause mortality | | 1.04 | [0.06; 17.00] | 0.3% |
| Hooper 2018 | Omega-6 | All-cause mortality | | 0.71 | [0.38; 1.32] | 4.3% |
| Rees 2013b | Selenium | All-cause mortality | | 0.99 | [0.76; 1.28] | 11.2% |
| Random effects model | | | | 0.83 | [0.64; 1.08] | 24.5% |
| Prediction interval | | | | | [0.46; 1.51] | -- |
| Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0.0174$, $p = 0.56$ | | | | | | |
| **mostly subjectively assessed** | | | | | | |
| Abdelhamid 2018a | Omega-3 | Cardiovascular mortality | | 0.39 | [0.07; 2.07] | 0.8% |
| Abdelhamid 2018a | Omega-3 | Cardiovascular disease | | 0.77 | [0.39; 1.50] | 3.8% |
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular disease | | 0.74 | [0.16; 3.35] | 0.9% |
| Abdelhamid 2018a | α-Linolenic acid | Coronary heart disease | | 2.87 | [0.12; 70.08] | 0.2% |
| Abdelhamid 2018b | Polyunsaturated fat | Coronary heart disease | | 0.34 | [0.15; 0.79] | 2.7% |
| Bjelakovic 2014b | Vitamin D | Cancer | | 0.71 | [0.41; 1.24] | 5.0% |
| Bjelakovic 2014b | Vitamin D3 | Breast cancer | | 0.60 | [0.22; 1.68] | 1.9% |
| Bjelakovic 2014b | Vitamin D3 | Lung cancer | | 0.31 | [0.04; 2.73] | 0.5% |
| Hooper 2018 | Omega-6 | Combined cardiovascular events | | 0.36 | [0.01; 10.54] | 0.2% |
| Hooper 2018 | Omega-6 | Cardiovascular mortality | | 0.08 | [0.01; 1.04] | 0.3% |
| Rees 2013b | Selenium | Cardiovascular mortality | | 0.70 | [0.42; 1.17] | 5.6% |
| Rees 2013b | Selenium | Combined cardiovascular events | | 0.96 | [0.74; 1.25] | 11.0% |
| Yao 2017 | Fibre | Colorectal adenoma | | 0.87 | [0.47; 1.63] | 4.3% |
| Random effects model | | | | 0.74 | [0.59; 0.93] | 37.2% |
| Prediction interval | | | | | [0.48; 1.13] | -- |
| Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0.0235$, $p = 0.45$ | | | | | | |
| **pregnancy outcomes** | | | | | | |
| Hofmeyr 2018 | Calcium | Pre-eclampsia | | 0.28 | [0.08; 1.04] | 1.2% |
| Hofmeyr 2018 | Calcium | High blood pressure | | 0.25 | [0.11; 0.58] | 2.6% |
| Keats 2019 | Micronutrients | Preterm birth | | 1.15 | [0.94; 1.41] | 12.8% |
| Keats 2019 | Micronutrients | Low birth weight | | 0.97 | [0.53; 1.74] | 4.6% |
| Keats 2019 | Micronutrients | Small gestational age | | 0.96 | [0.67; 1.36] | 8.7% |
| Palacios 2019 | Vitamin D | Gestational diabetes | | 0.86 | [0.34; 2.21] | 2.2% |
| Palacios 2019 | Vitamin D | Preterm birth | | 0.98 | [0.37; 2.64] | 2.0% |
| Palacios 2019 | Vitamin D | Pre-eclampsia | | 2.15 | [0.60; 7.71] | 1.3% |
| Tieu 2017 | Healthy diet | Small gestational age | | 1.16 | [0.29; 4.70] | 1.1% |
| Tieu 2017 | Healthy diet | Gestational diabetes | | 0.76 | [0.27; 2.13] | 1.9% |
| Random effects model | | | | 0.86 | [0.62; 1.18] | 38.3% |
| Prediction interval | | | | | [0.37; 1.98] | -- |
| Heterogeneity: $I^2 = 49\%$, $\tau^2 = 0.1056$, $p = 0.04$ | | | | | | |
| **Random effects model** | | | | 0.81 | [0.70; 0.94] | 100.0% |
| **Prediction interval** | | | | | [0.54; 1.23] | |
| Heterogeneity: $I^2 = 26\%$, $\tau^2 = 0.0342$, $p = 0.10$ | | | | | | |

0.01  0.1  1  10  100

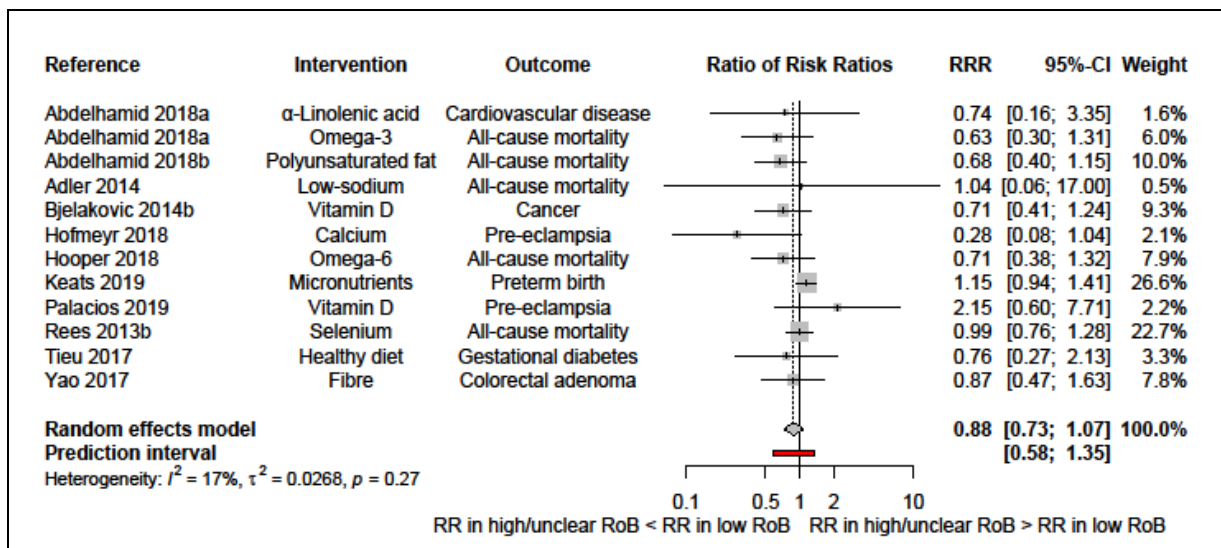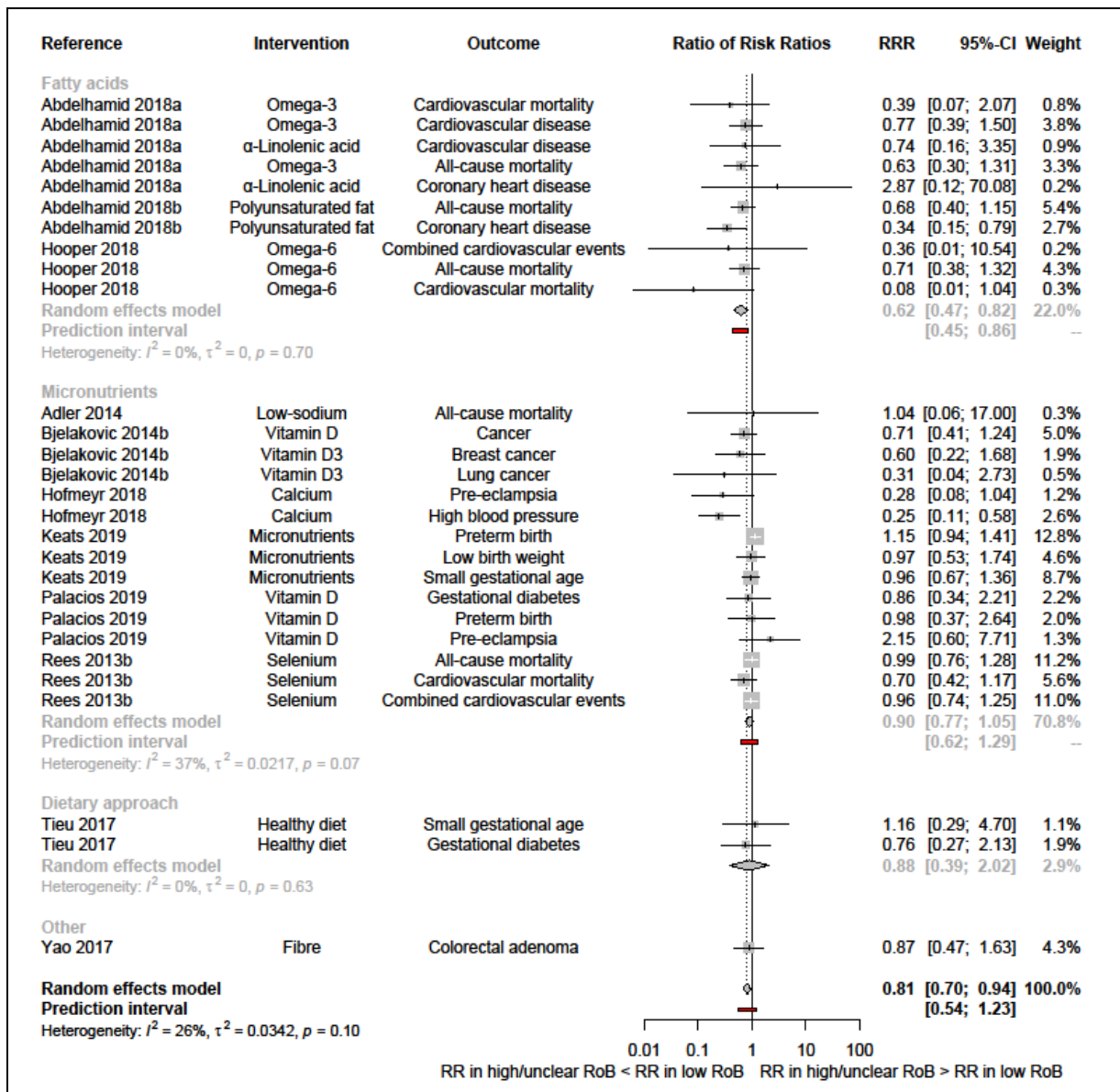RR in high/unclear RoB < RR in low RoB    RR in high/unclear RoB > RR in low RoB

**Figure S34:** Blinding of outcome assessment: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Subgroup analysis: Subjective versus objective outcomes

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

| Reference | Intervention | Outcome | Difference of SMD | DSMD | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| Abdelhamid 2018a | Omega-3 | Body weight | | -0.09 | [-0.85; 0.67] | 1.3% |
| Adler 2014 | Low-sodium | Systolic blood pressure | | 0.26 | [0.02; 0.50] | 7.2% |
| Adler 2014 | Low-sodium | Diastolic blood pressure | | 0.22 | [-0.02; 0.46] | 7.1% |
| Cormick 2015 | Calcium | Systolic blood pressure | | -0.15 | [-0.44; 0.14] | 5.7% |
| Cormick 2015 | Calcium | Diastolic blood pressure | | -0.11 | [-0.58; 0.36] | 2.9% |
| Hartley 2013 | Fruit & Vegetables | Systolic blood pressure | | 0.18 | [-0.14; 0.50] | 5.2% |
| Hartley 2013 | Fruit & Vegetables | Diastolic blood pressure | | 0.20 | [-0.11; 0.51] | 5.3% |
| Hartley 2016 | Fibre | Systolic blood pressure | | 0.11 | [-0.42; 0.64] | 2.4% |
| Hartley 2016 | Fibre | Diastolic blood pressure | | -0.17 | [-0.58; 0.24] | 3.7% |
| Kelly 2017 | Whole grains | Body weight | | 0.24 | [-0.35; 0.83] | 2.0% |
| Kelly 2017 | Whole grains | Systolic blood pressure | | 0.32 | [0.00; 0.64] | 5.2% |
| Kelly 2017 | Whole grains | Diastolic blood pressure | | 0.09 | [-0.24; 0.42] | 5.0% |
| Palacios 2019 | Vitamin D | Birth length | | 0.01 | [-0.23; 0.25] | 7.2% |
| Palacios 2019 | Vitamin D | Birth weight | | -0.16 | [-0.37; 0.05] | 8.4% |
| Palacios 2019 | Vitamin D | Head circumference at birth | | -0.03 | [-0.26; 0.20] | 7.6% |
| Rees 2013 | Healthy diet | Systolic blood pressure | | 0.53 | [0.09; 0.97] | 3.3% |
| Rees 2013 | Healthy diet | Diastolic blood pressure | | 0.53 | [0.10; 0.96] | 3.4% |
| Rees 2019 | Mediterranean diet | Systolic blood pressure | | -0.19 | [-0.66; 0.28] | 2.9% |
| Rees 2019 | Mediterranean diet | High Density Lipoprotein | | 0.08 | [-0.21; 0.37] | 5.9% |
| Rees 2019 | Mediterranean diet | Triglycerides | | -0.11 | [-0.47; 0.25] | 4.3% |
| Tieu 2017 | Healthy diet | Birth weight | | -0.15 | [-0.52; 0.22] | 4.2% |
| **Random effects model** | | | | **0.07** | **[-0.02; 0.16]** | **100.0%** |
| **Prediction interval** | | | | | [-0.19; 0.33] | |

Heterogeneity: $I^2 = 33\%$, $\tau^2 = 0.0135$, $p = 0.07$

-0.5   0   0.5

SMD in high/unclear RoB < SMD in low RoB   SMD in high/unclear RoB > SMD in low RoB
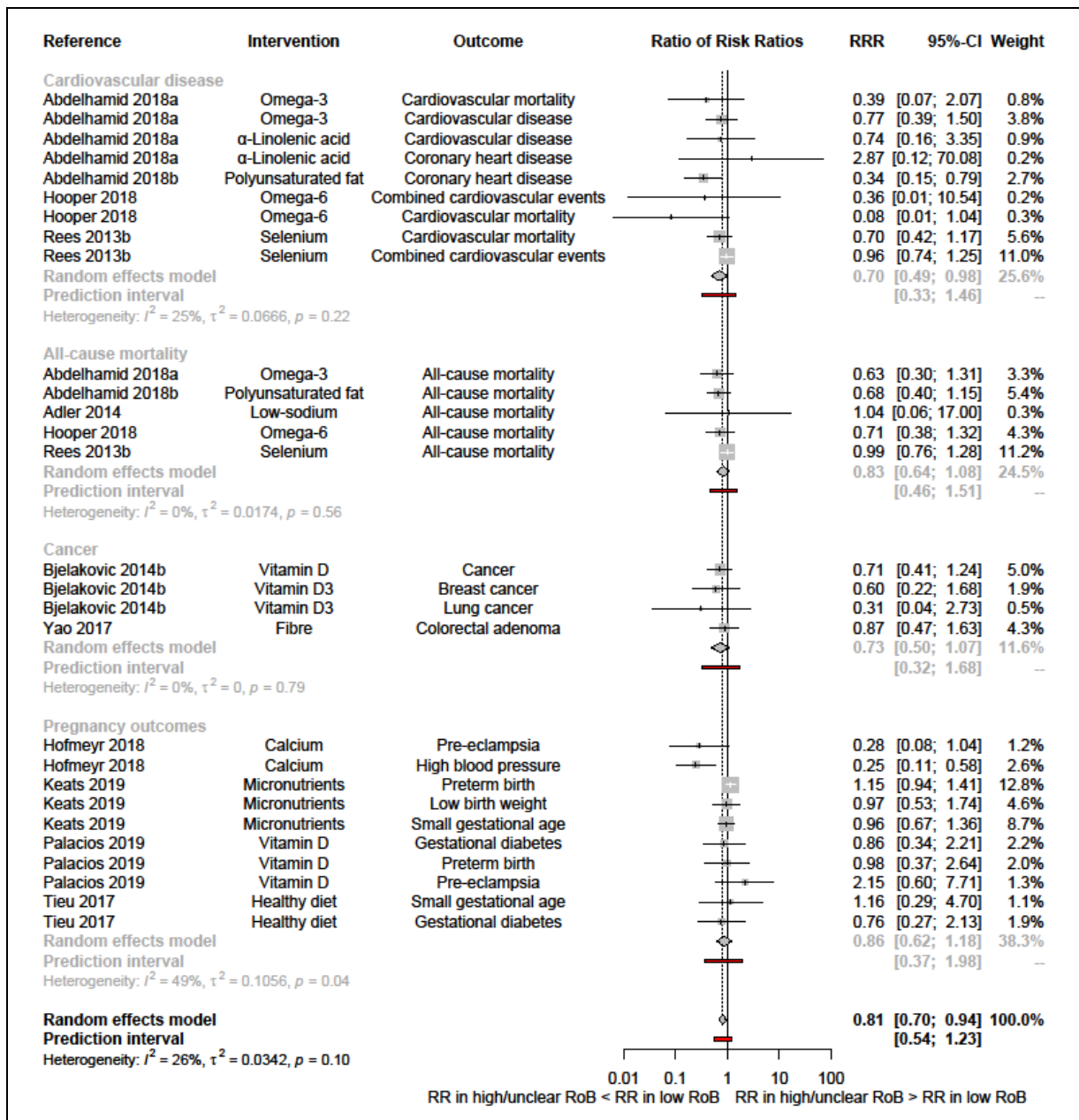
**Figure S35:** Blinding of outcome assessment: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for continuous outcomes as pooled difference of standardised mean differences

CI: confidence interval; DSMD: difference of standardised mean differences; $I^2$: heterogeneity measure; RoB: risk of bias; SMD: standardised mean difference; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method
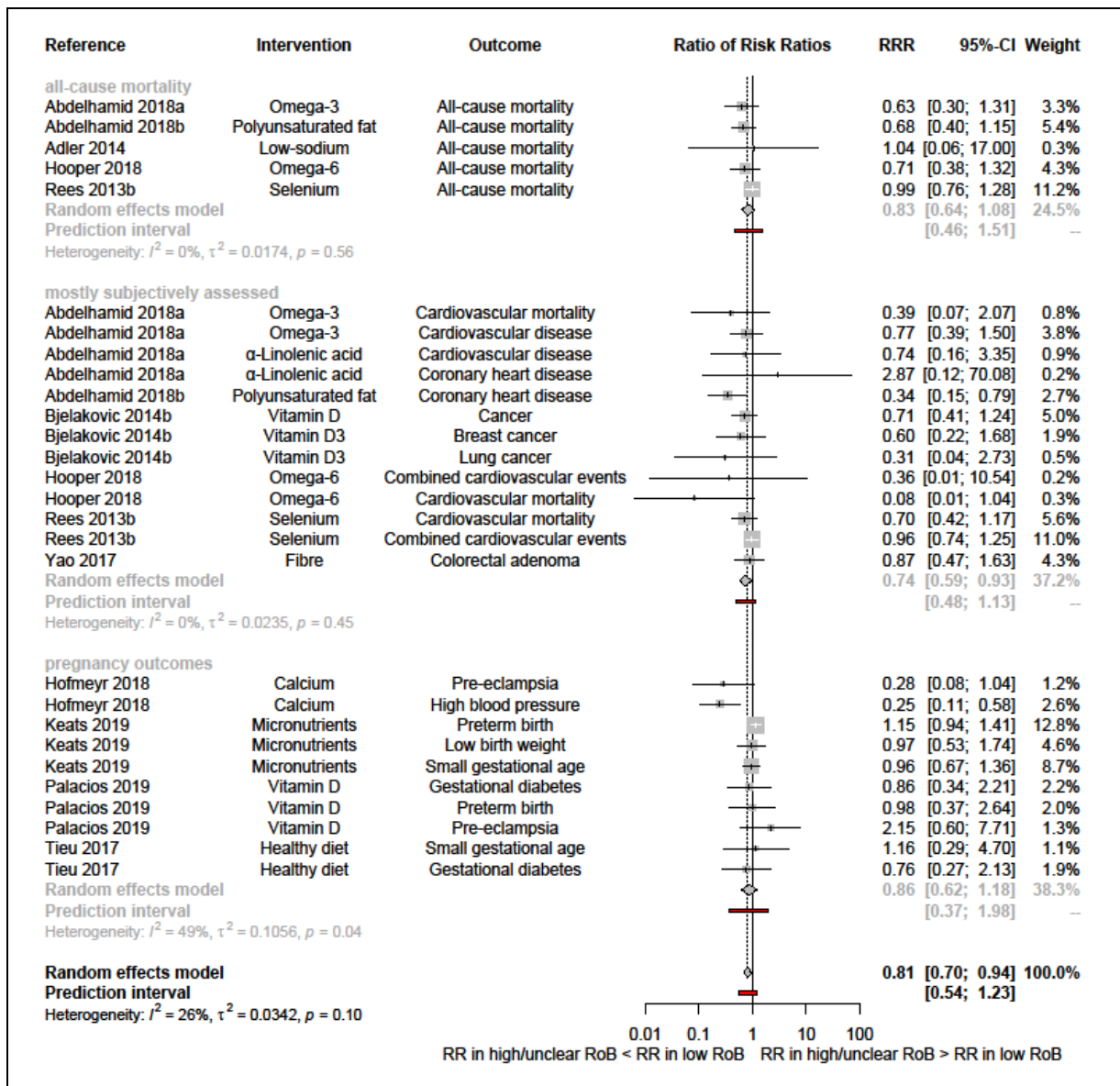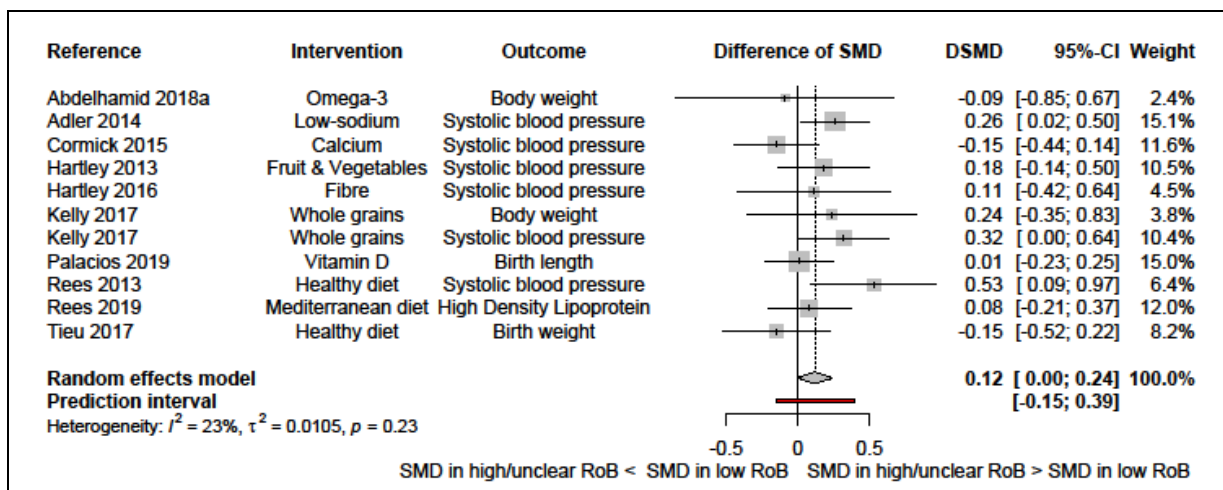
**Figure S36:** Blinding of outcome assessment: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for continuous outcomes as pooled difference of standardised mean differences. Sensitivity analysis: Excluding highly correlated outcomes

CI: confidence interval; DSMD: difference of standardised mean differences; I²: heterogeneity measure; RoB: risk of bias; SMD: standardised mean difference; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method
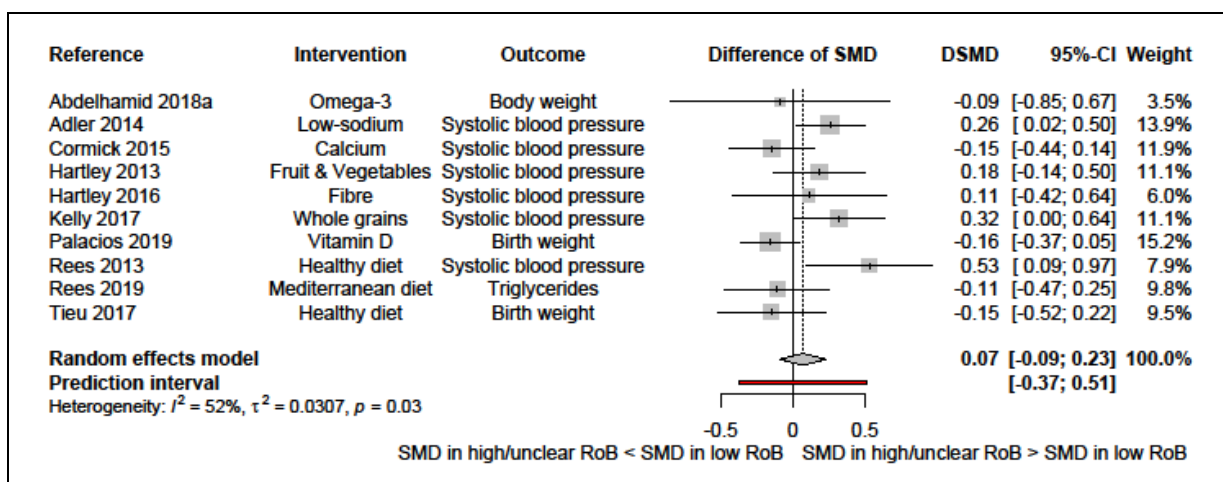


**Figure S37:** Blinding of outcome assessment: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for continuous outcomes as pooled difference of standardised mean differences. Sensitivity analysis: Including only one outcome per comparison from each included systematic review

CI: confidence interval; DSMD: difference of standardised mean differences; I²: heterogeneity measure; RoB: risk of bias; SMD: standardised mean difference; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

**Methodological trial characteristic: Incomplete outcome data**

| Reference | Intervention | Outcome | Ratio of Risk Ratios | RRR | 95%-CI | Weight |
|-----------|-------------|---------|---------------------|-----|--------|--------|
| Abdelhamid 2018a | Omega-3 | Cardiovascular mortality | | 0.84 | [0.46; 1.53] | 0.7% |
| Abdelhamid 2018a | Omega-3 | Cardiovascular disease | | 0.80 | [0.58; 1.10] | 2.2% |
| Abdelhamid 2018a | Omega-3 | All-cause mortality | | 0.81 | [0.53; 1.23] | 1.3% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | | 0.89 | [0.63; 1.25] | 2.0% |
| Abdelhamid 2018b | Polyunsaturated fat | Coronary heart disease | | 0.56 | [0.26; 1.21] | 0.4% |
| Adler 2014 | Low-sodium | All-cause mortality | | 1.46 | [0.85; 2.49] | 0.8% |
| Adler 2014 | Low-sodium | Cardiovascular mortality | | 0.97 | [0.16; 5.78] | 0.1% |
| Adler 2014 | Low-sodium | Cardiovascular disease | | 0.79 | [0.17; 3.79] | 0.1% |
| Bjelakovic 2012 | β-carotene | All-cause mortality | | 0.75 | [0.52; 1.09] | 1.6% |
| Bjelakovic 2012 | Vitamin E | All-cause mortality | | 0.88 | [0.78; 1.00] | 12.2% |
| Bjelakovic 2012 | Vitamin C | All-cause mortality | | 0.83 | [0.60; 1.16] | 2.1% |
| Bjelakovic 2012 | Vitamin A | All-cause mortality | | 0.90 | [0.77; 1.04] | 8.9% |
| Bjelakovic 2014 | Vitamin D | All-cause mortality | | 0.70 | [0.30; 1.66] | 0.3% |
| Bjelakovic 2014b | Vitamin D | Cancer | | 0.58 | [0.31; 1.08] | 0.6% |
| Bjelakovic 2014b | Vitamin D3 | Breast cancer | | 0.60 | [0.22; 1.68] | 0.2% |
| Bjelakovic 2014b | Vitamin D3 | Lung cancer | | 0.31 | [0.04; 2.73] | 0.0% |
| Hofmeyr 2018 | Calcium | Pre-eclampsia | | 0.32 | [0.14; 0.76] | 0.3% |
| Hofmeyr 2018 | Calcium | High blood pressure | | 0.25 | [0.11; 0.58] | 0.3% |
| Hooper 2012 | Low-fat/modified fat | Cardiovascular mortality | | 1.15 | [0.90; 1.46] | 3.9% |
| Hooper 2012 | Low-fat/modified fat | All-cause mortality | | 1.02 | [0.88; 1.19] | 8.8% |
| Hooper 2012 | Low-fat/modified fat | Combined cardiovascular events | | 0.88 | [0.69; 1.11] | 3.9% |
| Hooper 2015b | Low saturated fat | All-cause mortality | | 0.86 | [0.55; 1.33] | 1.2% |
| Hooper 2015b | Low saturated fat | Cardiovascular mortality | | 1.06 | [0.65; 1.75] | 0.9% |
| Hooper 2015b | Low saturated fat | Combined cardiovascular events | | 0.76 | [0.50; 1.16] | 1.3% |
| Hooper 2018 | Omega-6 | Combined cardiovascular events | | 0.79 | [0.56; 1.11] | 1.9% |
| Hooper 2018 | Omega-6 | All-cause mortality | | 0.83 | [0.56; 1.24] | 1.4% |
| Hooper 2018 | Omega-6 | Cardiovascular mortality | | 0.41 | [0.04; 4.02] | 0.0% |
| Keats 2019 | Micronutrients | Preterm birth | | 1.01 | [0.89; 1.14] | 12.2% |
| Keats 2019 | Micronutrients | Low birth weight | | 0.98 | [0.89; 1.08] | 17.6% |
| Keats 2019 | Micronutrients | Small gestational age | | 0.89 | [0.77; 1.04] | 8.9% |
| Mathew 2012 | Vitamin E | Cataract | | 1.03 | [0.78; 1.37] | 2.8% |
| Palacios 2019 | Vitamin D | Gestational diabetes | | 0.86 | [0.34; 2.21] | 0.3% |
| Palacios 2019 | Vitamin D | Preterm birth | | 0.98 | [0.37; 2.64] | 0.2% |
| Palacios 2019 | Vitamin D | Pre-eclampsia | | 2.15 | [0.60; 7.71] | 0.1% |
| Tieu 2017 | Healthy diet | Preterm birth | | 1.28 | [0.20; 8.03] | 0.1% |
| Tieu 2017 | Healthy diet | Small gestational age | | 1.16 | [0.29; 4.70] | 0.1% |
| Tieu 2017 | Healthy diet | Gestational diabetes | | 0.27 | [0.09; 0.77] | 0.2% |
| **Random effects model** | | | | 0.92 | [0.88; 0.97] | 100.0% |
| **Prediction interval** | | | | | [0.85; 1.00] | |

Heterogeneity: $I^2 = 22\%$, $\tau^2 = 0.0010$, $p = 0.12$

0.1  0.5 1 2  10

RR in high/unclear RoB < RR in low RoB    RR in high/unclear RoB > RR in low RoB

**Figure S38:** Incomplete outcome data: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method
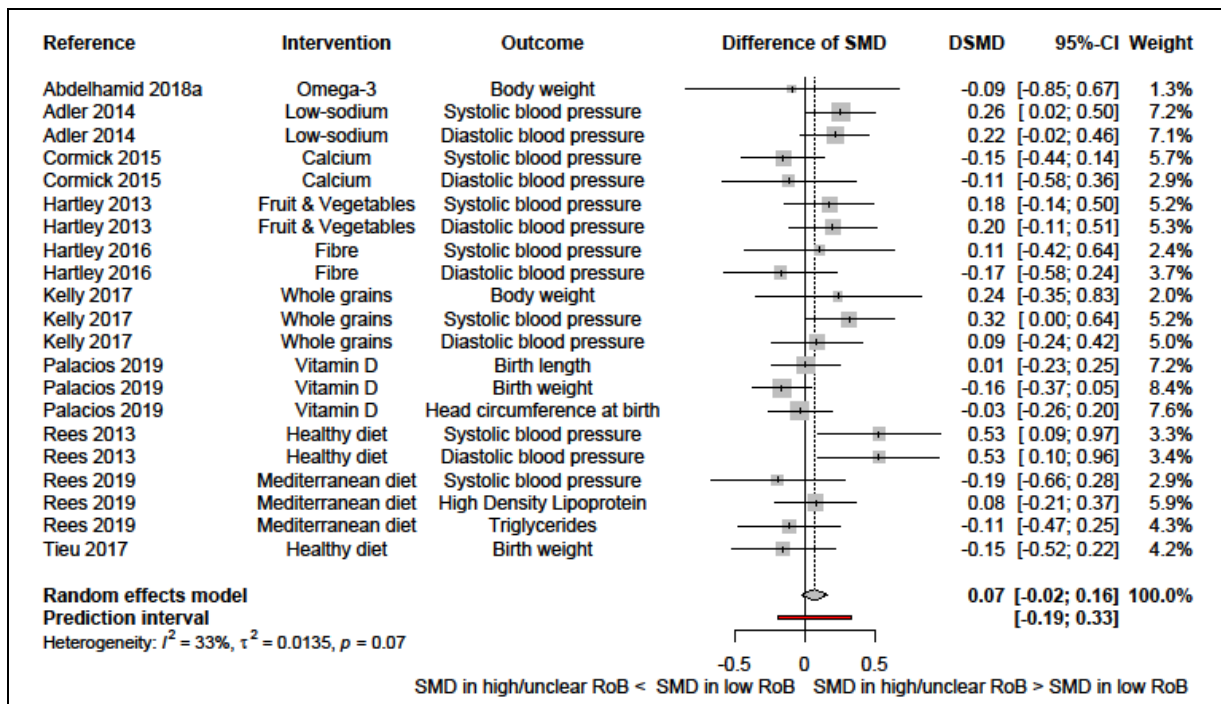
| Reference | Intervention | Outcome | Ratio of Risk Ratios | RRR | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| Abdelhamid 2018a | Omega-3 | Cardiovascular mortality | | 0.84 | [0.46; 1.53] | 1.1% |
| Abdelhamid 2018a | Omega-3 | All-cause mortality | | 0.81 | [0.53; 1.23] | 2.1% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | | 0.89 | [0.63; 1.25] | 3.2% |
| Abdelhamid 2018b | Polyunsaturated fat | Coronary heart disease | | 0.56 | [0.26; 1.21] | 0.7% |
| Adler 2014 | Low-sodium | All-cause mortality | | 1.46 | [0.85; 2.49] | 1.3% |
| Adler 2014 | Low-sodium | Cardiovascular mortality | | 0.97 | [0.16; 5.78] | 0.1% |
| Bjelakovic 2012 | β-carotene | All-cause mortality | | 0.75 | [0.52; 1.09] | 2.7% |
| Bjelakovic 2012 | Vitamin E | All-cause mortality | | 0.88 | [0.78; 1.00] | 18.6% |
| Bjelakovic 2012 | Vitamin C | All-cause mortality | | 0.83 | [0.60; 1.16] | 3.5% |
| Bjelakovic 2012 | Vitamin A | All-cause mortality | | 0.90 | [0.77; 1.04] | 13.8% |
| Bjelakovic 2014 | Vitamin D | All-cause mortality | | 0.70 | [0.30; 1.66] | 0.5% |
| Bjelakovic 2014b | Vitamin D | Cancer | | 0.58 | [0.31; 1.08] | 1.0% |
| Hofmeyr 2018 | Calcium | Pre-eclampsia | | 0.32 | [0.14; 0.76] | 0.5% |
| Hooper 2012 | Low-fat/modified fat | Cardiovascular mortality | | 1.15 | [0.90; 1.46] | 6.3% |
| Hooper 2012 | Low-fat/modified fat | All-cause mortality | | 1.02 | [0.88; 1.19] | 13.7% |
| Hooper 2015b | Low saturated fat | All-cause mortality | | 0.86 | [0.55; 1.33] | 2.0% |
| Hooper 2015b | Low saturated fat | Cardiovascular mortality | | 1.06 | [0.65; 1.75] | 1.6% |
| Hooper 2018 | Omega-6 | All-cause mortality | | 0.83 | [0.56; 1.24] | 2.4% |
| Hooper 2018 | Omega-6 | Cardiovascular mortality | | 0.41 | [0.04; 4.02] | 0.1% |
| Keats 2019 | Micronutrients | Preterm birth | | 1.01 | [0.89; 1.14] | 18.6% |
| Mathew 2012 | Vitamin E | Cataract | | 1.03 | [0.78; 1.37] | 4.5% |
| Palacios 2019 | Vitamin D | Gestational diabetes | | 0.86 | [0.34; 2.21] | 0.4% |
| Palacios 2019 | Vitamin D | Preterm birth | | 0.98 | [0.37; 2.64] | 0.4% |
| Palacios 2019 | Vitamin D | Pre-eclampsia | | 2.15 | [0.60; 7.71] | 0.2% |
| Tieu 2017 | Healthy diet | Small gestational age | | 1.16 | [0.29; 4.70] | 0.2% |
| Tieu 2017 | Healthy diet | Gestational diabetes | | 0.27 | [0.09; 0.77] | 0.3% |
| **Random effects model** | | | | 0.93 | [0.88; 0.99] | 100.0% |
| **Prediction interval** | | | | | [0.84; 1.03] | |

Heterogeneity: $I^2 = 19\%$, $\tau^2 = 0.0014$, $p = 0.19$

0.1  0.5  1  2  10

RR in high/unclear RoB < RR in low RoB    RR in high/unclear RoB > RR in low RoB
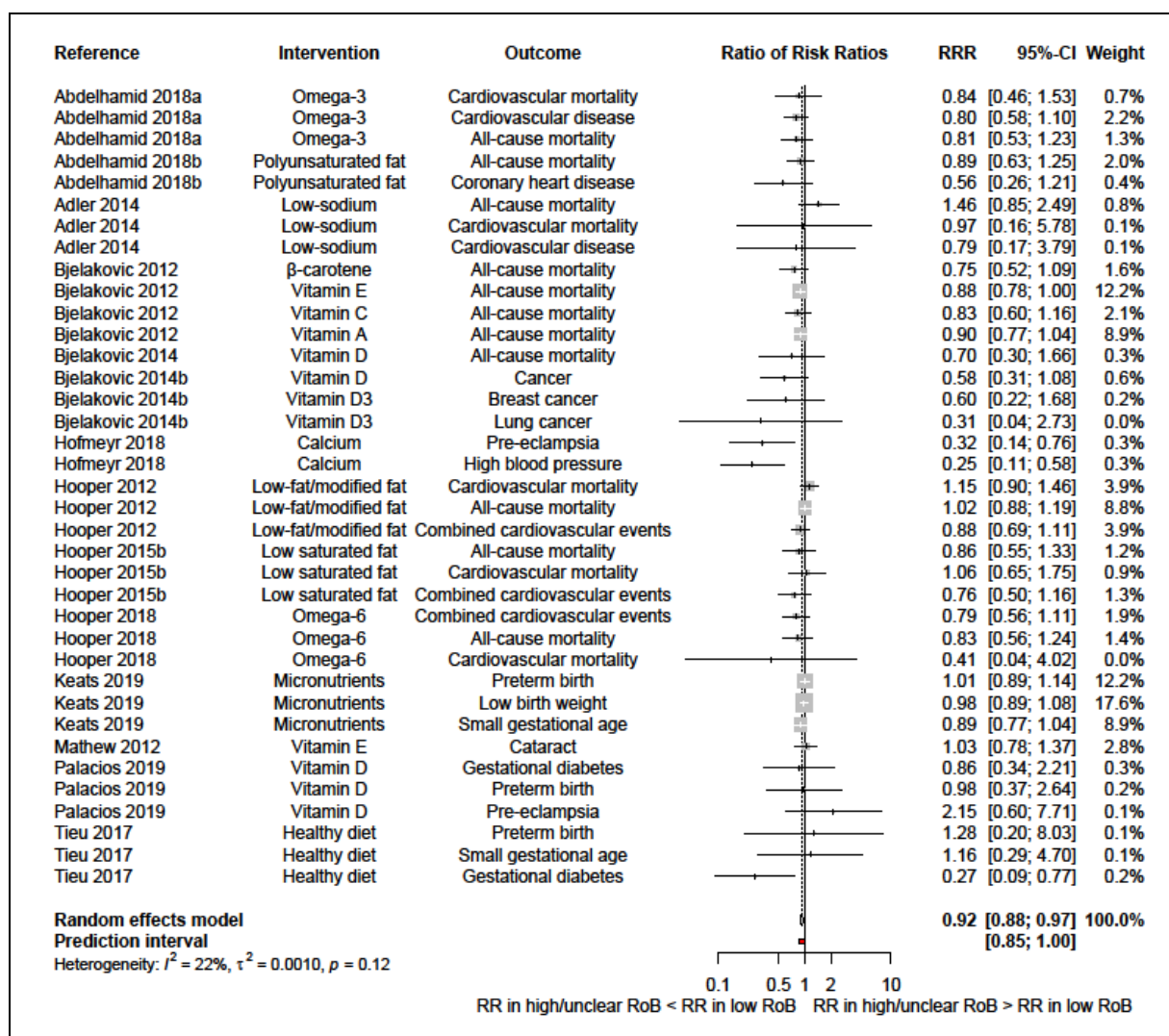
**Figure S39:** Incomplete outcome data: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Sensitivity analysis: Excluding highly correlated outcomes

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

| Reference | Intervention | Outcome | Ratio of Risk Ratios | RRR | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| Abdelhamid 2018a | Omega-3 | All-cause mortality | | 0.81 | [0.53; 1.23] | 2.4% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | | 0.89 | [0.63; 1.25] | 3.7% |
| Adler 2014 | Low-sodium | All-cause mortality | | 1.46 | [0.85; 2.49] | 1.5% |
| Bjelakovic 2012 | β-carotene | All-cause mortality | | 0.75 | [0.52; 1.09] | 3.1% |
| Bjelakovic 2012 | Vitamin E | All-cause mortality | | 0.88 | [0.78; 1.00] | 20.5% |
| Bjelakovic 2012 | Vitamin C | All-cause mortality | | 0.83 | [0.60; 1.16] | 3.9% |
| Bjelakovic 2012 | Vitamin A | All-cause mortality | | 0.90 | [0.77; 1.04] | 15.5% |
| Bjelakovic 2014a | Vitamin D | All-cause mortality | | 0.70 | [0.30; 1.66] | 0.6% |
| Bjelakovic 2014b | Vitamin D | Cancer | | 0.58 | [0.31; 1.08] | 1.2% |
| Hofmeyr 2018 | Calcium | Pre-eclampsia | | 0.32 | [0.14; 0.76] | 0.6% |
| Hooper 2012 | Low-fat/modified fat | All-cause mortality | | 1.02 | [0.88; 1.19] | 15.3% |
| Hooper 2015b | Low saturated fat | Combined cardiovascular events | | 0.76 | [0.50; 1.16] | 2.4% |
| Hooper 2018 | Omega-6 | All-cause mortality | | 0.83 | [0.56; 1.24] | 2.7% |
| Keats 2019 | Micronutrients | Preterm birth | | 1.01 | [0.89; 1.14] | 20.6% |
| Mathew 2012 | Vitamin E | Cataract | | 1.03 | [0.78; 1.37] | 5.2% |
| Palacios 2019 | Vitamin D | Pre-eclampsia | | 2.15 | [0.60; 7.71] | 0.3% |
| Tieu 2017 | Healthy diet | Gestational diabetes | | 0.27 | [0.09; 0.77] | 0.4% |
| **Random effects model** | | | | 0.92 | [0.86; 0.98] | 100.0% |
| **Prediction interval** | | | | | [0.82; 1.03] | |

Heterogeneity: $I^2 = 38\%$, $\tau^2 = 0.0017$, $p = 0.05$

0.1  0.5  1  2  10

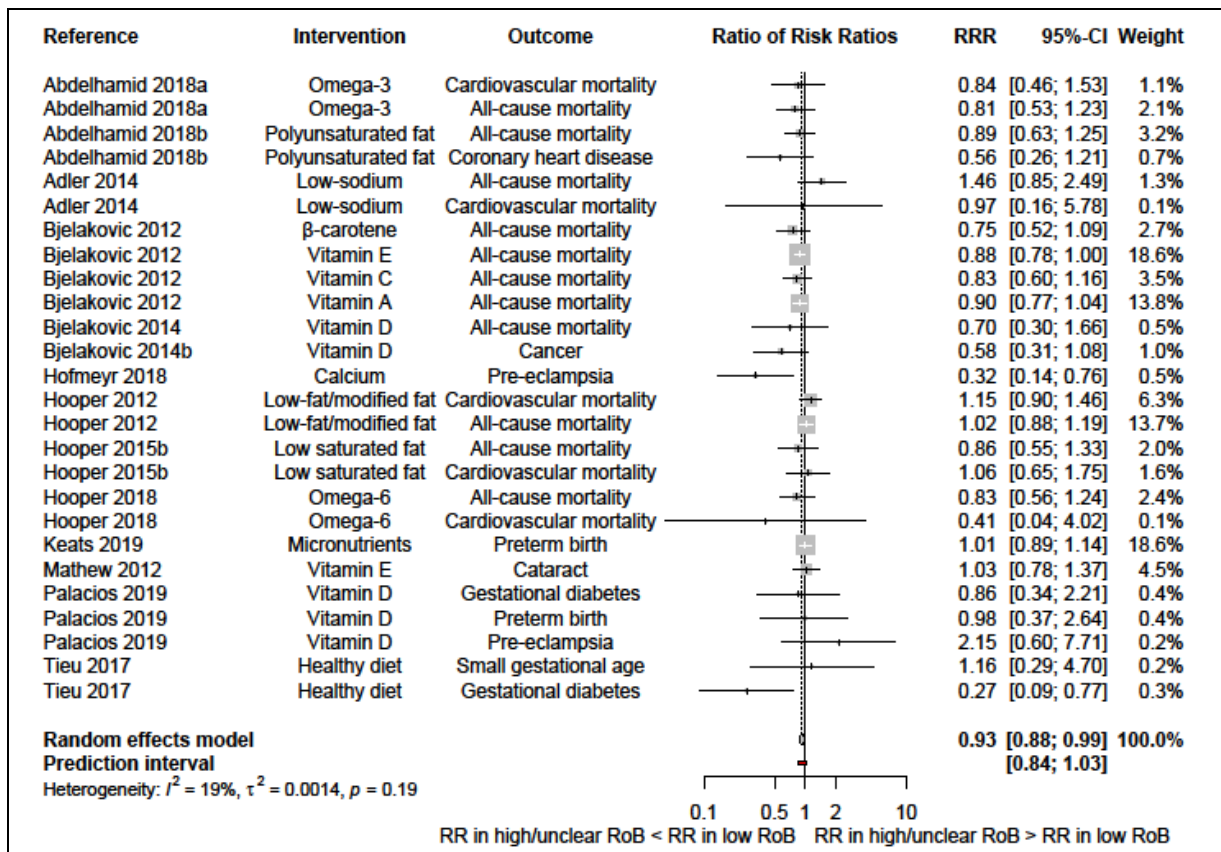RR in high/unclear RoB < RR in low RoB    RR in high/unclear RoB > RR in low RoB

**Figure S40:** Incomplete outcome data: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Sensitivity analysis: Including only one outcome per comparison from each included systematic review

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

| Reference | Intervention | Outcome | Ratio of Risk Ratios | RRR | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| **Fatty acids** | | | | | | |
| Abdelhamid 2018a | Omega-3 | Cardiovascular mortality | | 0.84 | [0.46; 1.53] | 0.7% |
| Abdelhamid 2018a | Omega-3 | Cardiovascular disease | | 0.80 | [0.58; 1.10] | 2.2% |
| Abdelhamid 2018a | Omega-3 | All-cause mortality | | 0.81 | [0.53; 1.23] | 1.3% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | | 0.89 | [0.63; 1.25] | 2.0% |
| Abdelhamid 2018b | Polyunsaturated fat | Coronary heart disease | | 0.56 | [0.26; 1.21] | 0.4% |
| Hooper 2015b | Low saturated fat | All-cause mortality | | 0.86 | [0.55; 1.33] | 1.2% |
| Hooper 2015b | Low saturated fat | Cardiovascular mortality | | 1.06 | [0.65; 1.75] | 0.9% |
| Hooper 2015b | Low saturated fat | Combined cardiovascular events | | 0.76 | [0.50; 1.16] | 1.3% |
| Hooper 2018 | Omega-6 | Combined cardiovascular events | | 0.79 | [0.56; 1.11] | 1.9% |
| Hooper 2018 | Omega-6 | All-cause mortality | | 0.83 | [0.56; 1.24] | 1.4% |
| Hooper 2018 | Omega-6 | Cardiovascular mortality | | 0.41 | [0.04; 4.02] | 0.0% |
| Random effects model | | | | 0.82 | [0.72; 0.94] | 13.4% |
| Prediction interval | | | | | [0.71; 0.96] | — |
| Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0$, $p = 0.99$ | | | | | | |
| **Micronutrients** | | | | | | |
| Adler 2014 | Low-sodium | All-cause mortality | | 1.46 | [0.85; 2.49] | 0.8% |
| Adler 2014 | Low-sodium | Cardiovascular mortality | | 0.97 | [0.16; 5.78] | 0.1% |
| Adler 2014 | Low-sodium | Cardiovascular disease | | 0.79 | [0.17; 3.79] | 0.1% |
| Bjelakovic 2012 | β-carotene | All-cause mortality | | 0.75 | [0.52; 1.09] | 1.6% |
| Bjelakovic 2012 | Vitamin E | All-cause mortality | | 0.88 | [0.78; 1.00] | 12.2% |
| Bjelakovic 2012 | Vitamin C | All-cause mortality | | 0.83 | [0.60; 1.16] | 2.1% |
| Bjelakovic 2012 | Vitamin A | All-cause mortality | | 0.90 | [0.77; 1.04] | 8.9% |
| Bjelakovic 2014 | Vitamin D | All-cause mortality | | 0.70 | [0.30; 1.66] | 0.3% |
| Bjelakovic 2014b | Vitamin D | Cancer | | 0.58 | [0.31; 1.08] | 0.6% |
| Bjelakovic 2014b | Vitamin D3 | Breast cancer | | 0.60 | [0.22; 1.68] | 0.2% |
| Bjelakovic 2014b | Vitamin D3 | Lung cancer | | 0.31 | [0.04; 2.73] | 0.0% |
| Hofmeyr 2018 | Calcium | Pre-eclampsia | | 0.32 | [0.14; 0.76] | 0.3% |
| Hofmeyr 2018 | Calcium | High blood pressure | | 0.25 | [0.11; 0.58] | 0.3% |
| Keats 2019 | Micronutrients | Preterm birth | | 1.01 | [0.89; 1.14] | 12.2% |
| Keats 2019 | Micronutrients | Low birth weight | | 0.98 | [0.89; 1.08] | 17.6% |
| Keats 2019 | Micronutrients | Small gestational age | | 0.89 | [0.77; 1.04] | 8.9% |
| Mathew 2012 | Vitamin E | Cataract | | 1.03 | [0.78; 1.37] | 2.8% |
| Palacios 2019 | Vitamin D | Gestational diabetes | | 0.86 | [0.34; 2.21] | 0.3% |
| Palacios 2019 | Vitamin D | Preterm birth | | 0.98 | [0.37; 2.64] | 0.2% |
| Palacios 2019 | Vitamin D | Pre-eclampsia | | 2.15 | [0.60; 7.71] | 0.1% |
| Random effects model | | | | 0.92 | [0.87; 0.98] | 69.7% |
| Prediction interval | | | | | [0.85; 1.01] | — |
| Heterogeneity: $I^2 = 36\%$, $\tau^2 = 0.0008$, $p = 0.05$ | | | | | | |
| **Dietary approach** | | | | | | |
| Hooper 2012 | Low-fat/modified fat | Cardiovascular mortality | | 1.15 | [0.90; 1.46] | 3.9% |
| Hooper 2012 | Low-fat/modified fat | All-cause mortality | | 1.02 | [0.88; 1.19] | 8.8% |
| Hooper 2012 | Low-fat/modified fat | Combined cardiovascular events | | 0.88 | [0.69; 1.11] | 3.9% |
| Tieu 2017 | Healthy diet | Preterm birth | | 1.28 | [0.20; 8.03] | 0.1% |
| Tieu 2017 | Healthy diet | Small gestational age | | 1.16 | [0.29; 4.70] | 0.1% |
| Tieu 2017 | Healthy diet | Gestational diabetes | | 0.27 | [0.09; 0.77] | 0.2% |
| Random effects model | | | | 1.00 | [0.89; 1.12] | 16.9% |
| Prediction interval | | | | | [0.83; 1.20] | — |
| Heterogeneity: $I^2 = 42\%$, $\tau^2 = 0.0010$, $p = 0.13$ | | | | | | |
| **Random effects model** | | | | 0.92 | [0.88; 0.97] | 100.0% |
| **Prediction interval** | | | | | [0.85; 1.00] | |
| Heterogeneity: $I^2 = 22\%$, $\tau^2 = 0.0010$, $p = 0.12$ | | | | | | |

0.1  0.5  1  2  10
RR in high/unclear RoB < RR in low RoB   RR in high/unclear RoB > RR in low RoB
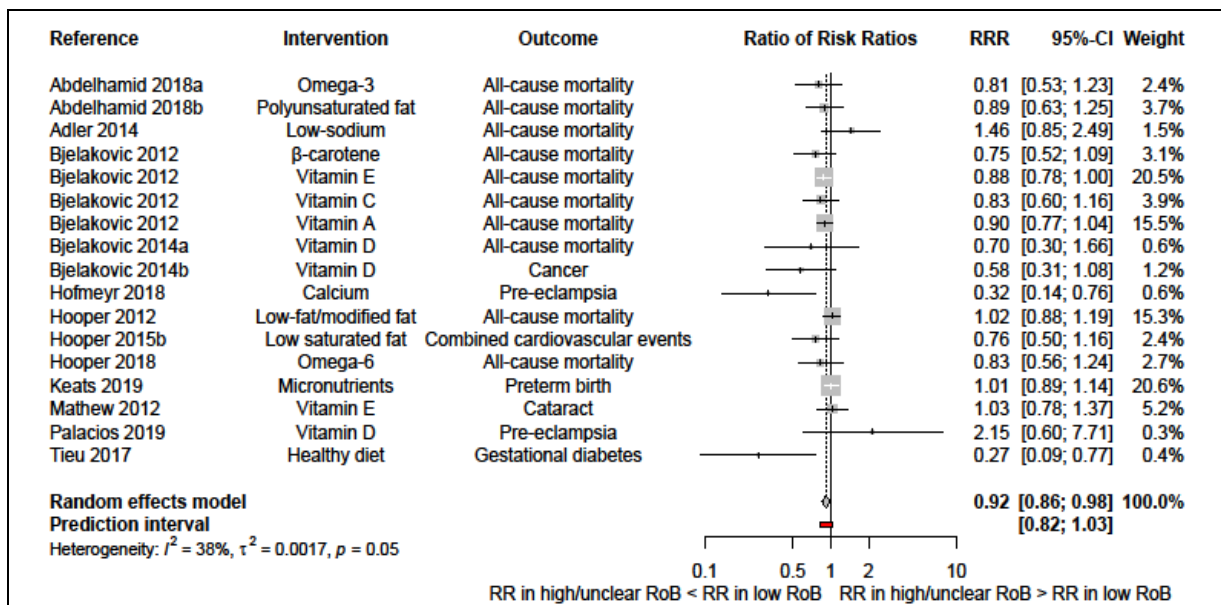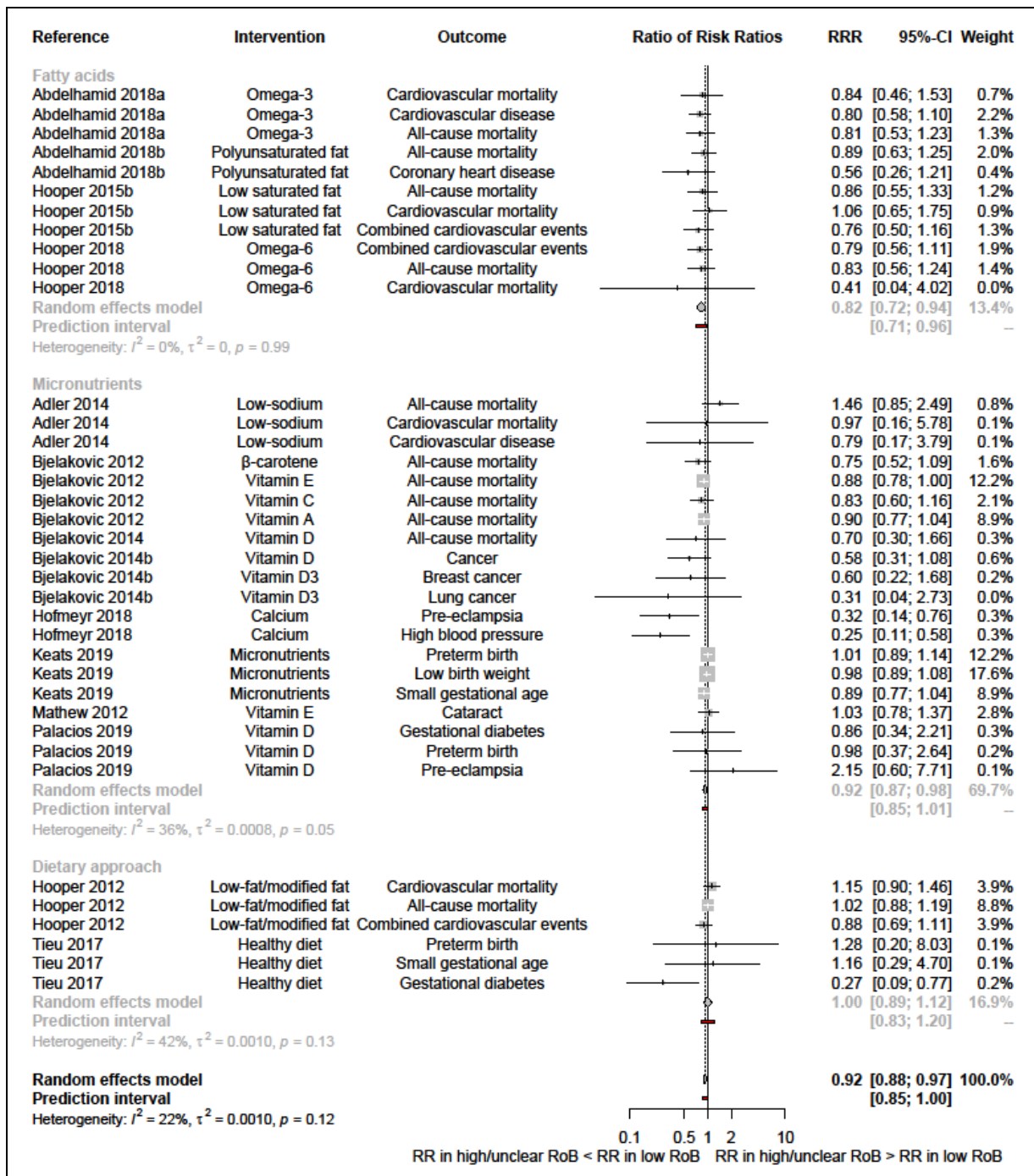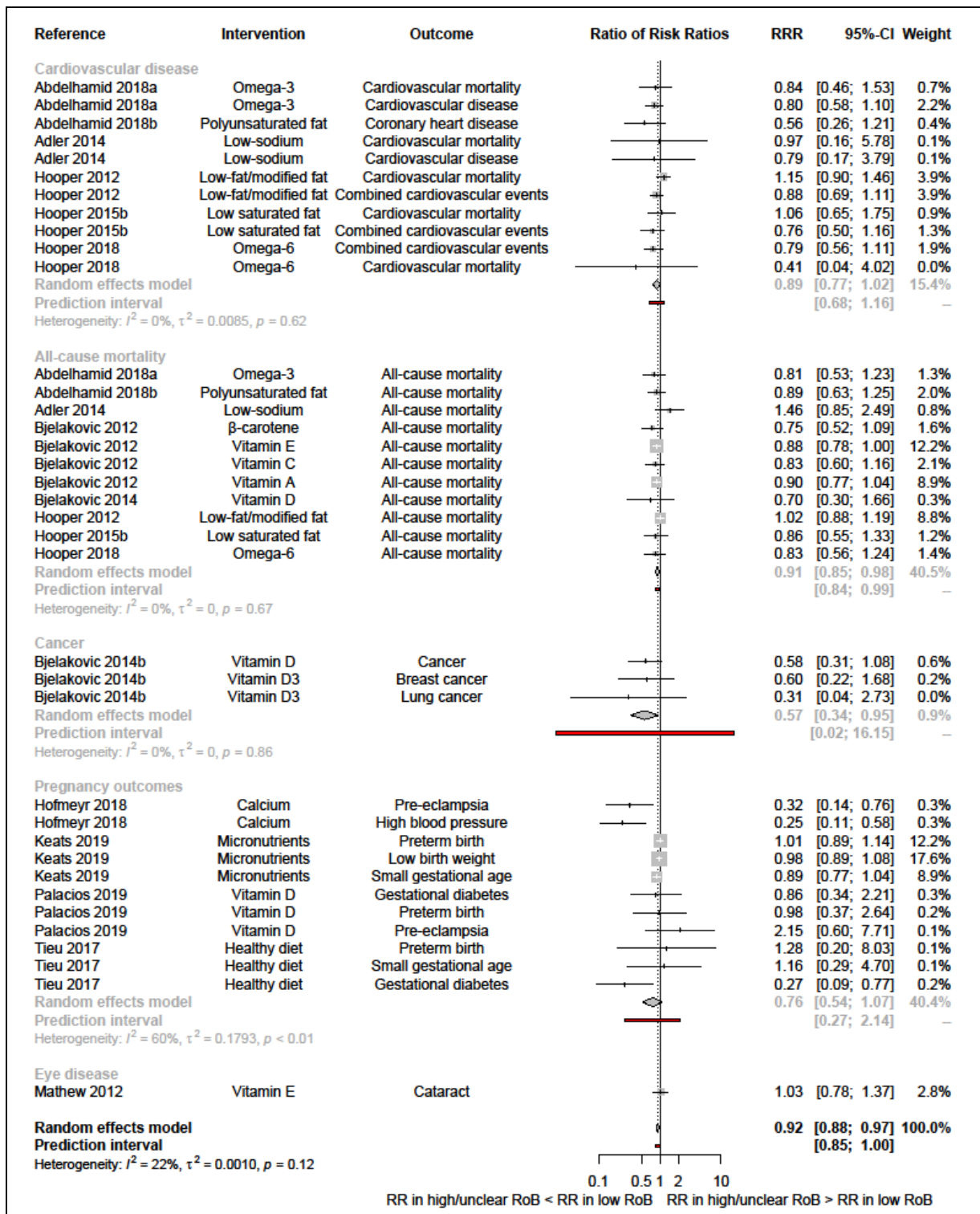
**Figure S41:** Incomplete outcome data: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Subgroup analysis: Clusters of interventions
CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

| Reference | Intervention | Outcome | Ratio of Risk Ratios | RRR | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| **Cardiovascular disease** | | | | | | |
| Abdelhamid 2018a | Omega-3 | Cardiovascular mortality | | 0.84 | [0.46; 1.53] | 0.7% |
| Abdelhamid 2018a | Omega-3 | Cardiovascular disease | | 0.80 | [0.58; 1.10] | 2.2% |
| Abdelhamid 2018b | Polyunsaturated fat | Coronary heart disease | | 0.56 | [0.26; 1.21] | 0.4% |
| Adler 2014 | Low-sodium | Cardiovascular mortality | | 0.97 | [0.16; 5.78] | 0.1% |
| Adler 2014 | Low-sodium | Cardiovascular disease | | 0.79 | [0.17; 3.79] | 0.1% |
| Hooper 2012 | Low-fat/modified fat | Cardiovascular mortality | | 1.15 | [0.90; 1.46] | 3.9% |
| Hooper 2012 | Low-fat/modified fat | Combined cardiovascular events | | 0.88 | [0.69; 1.11] | 3.9% |
| Hooper 2015b | Low saturated fat | Cardiovascular mortality | | 1.06 | [0.65; 1.75] | 0.9% |
| Hooper 2015b | Low saturated fat | Combined cardiovascular events | | 0.76 | [0.50; 1.16] | 1.3% |
| Hooper 2018 | Omega-6 | Combined cardiovascular events | | 0.79 | [0.56; 1.11] | 1.9% |
| Hooper 2018 | Omega-6 | Cardiovascular mortality | | 0.41 | [0.04; 4.02] | 0.0% |
| Random effects model | | | | 0.89 | [0.77; 1.02] | 15.4% |
| Prediction interval | | | | | [0.68; 1.16] | — |
| Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0.0085$, $p = 0.62$ | | | | | | |
| **All-cause mortality** | | | | | | |
| Abdelhamid 2018a | Omega-3 | All-cause mortality | | 0.81 | [0.53; 1.23] | 1.3% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | | 0.89 | [0.63; 1.25] | 2.0% |
| Adler 2014 | Low-sodium | All-cause mortality | | 1.46 | [0.85; 2.49] | 0.8% |
| Bjelakovic 2012 | β-carotene | All-cause mortality | | 0.75 | [0.52; 1.09] | 1.6% |
| Bjelakovic 2012 | Vitamin E | All-cause mortality | | 0.88 | [0.78; 1.00] | 12.2% |
| Bjelakovic 2012 | Vitamin C | All-cause mortality | | 0.83 | [0.60; 1.16] | 2.1% |
| Bjelakovic 2012 | Vitamin A | All-cause mortality | | 0.90 | [0.77; 1.04] | 8.9% |
| Bjelakovic 2014 | Vitamin D | All-cause mortality | | 0.70 | [0.30; 1.66] | 0.3% |
| Hooper 2012 | Low-fat/modified fat | All-cause mortality | | 1.02 | [0.88; 1.19] | 8.8% |
| Hooper 2015b | Low saturated fat | All-cause mortality | | 0.86 | [0.55; 1.33] | 1.2% |
| Hooper 2018 | Omega-6 | All-cause mortality | | 0.83 | [0.56; 1.24] | 1.4% |
| Random effects model | | | | 0.91 | [0.85; 0.98] | 40.5% |
| Prediction interval | | | | | [0.84; 0.99] | — |
| Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0$, $p = 0.67$ | | | | | | |
| **Cancer** | | | | | | |
| Bjelakovic 2014b | Vitamin D | Cancer | | 0.58 | [0.31; 1.08] | 0.6% |
| Bjelakovic 2014b | Vitamin D3 | Breast cancer | | 0.60 | [0.22; 1.68] | 0.2% |
| Bjelakovic 2014b | Vitamin D3 | Lung cancer | | 0.31 | [0.04; 2.73] | 0.0% |
| Random effects model | | | | 0.57 | [0.34; 0.95] | 0.9% |
| Prediction interval | | | | | [0.02; 16.15] | — |
| Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0$, $p = 0.86$ | | | | | | |
| **Pregnancy outcomes** | | | | | | |
| Hofmeyr 2018 | Calcium | Pre-eclampsia | | 0.32 | [0.14; 0.76] | 0.3% |
| Hofmeyr 2018 | Calcium | High blood pressure | | 0.25 | [0.11; 0.58] | 0.3% |
| Keats 2019 | Micronutrients | Preterm birth | | 1.01 | [0.89; 1.14] | 12.2% |
| Keats 2019 | Micronutrients | Low birth weight | | 0.98 | [0.89; 1.08] | 17.6% |
| Keats 2019 | Micronutrients | Small gestational age | | 0.89 | [0.77; 1.04] | 8.9% |
| Palacios 2019 | Vitamin D | Gestational diabetes | | 0.86 | [0.34; 2.21] | 0.3% |
| Palacios 2019 | Vitamin D | Preterm birth | | 0.98 | [0.37; 2.64] | 0.2% |
| Palacios 2019 | Vitamin D | Pre-eclampsia | | 2.15 | [0.60; 7.71] | 0.1% |
| Tieu 2017 | Healthy diet | Preterm birth | | 1.28 | [0.20; 8.03] | 0.1% |
| Tieu 2017 | Healthy diet | Small gestational age | | 1.16 | [0.29; 4.70] | 0.1% |
| Tieu 2017 | Healthy diet | Gestational diabetes | | 0.27 | [0.09; 0.77] | 0.2% |
| Random effects model | | | | 0.76 | [0.54; 1.07] | 40.4% |
| Prediction interval | | | | | [0.27; 2.14] | — |
| Heterogeneity: $I^2 = 60\%$, $\tau^2 = 0.1793$, $p < 0.01$ | | | | | | |
| **Eye disease** | | | | | | |
| Mathew 2012 | Vitamin E | Cataract | | 1.03 | [0.78; 1.37] | 2.8% |
| **Random effects model** | | | | 0.92 | [0.88; 0.97] | 100.0% |
| **Prediction interval** | | | | | [0.85; 1.00] | |
| Heterogeneity: $I^2 = 22\%$, $\tau^2 = 0.0010$, $p = 0.12$ | | | | | | |

0.1  0.5 1 2  10

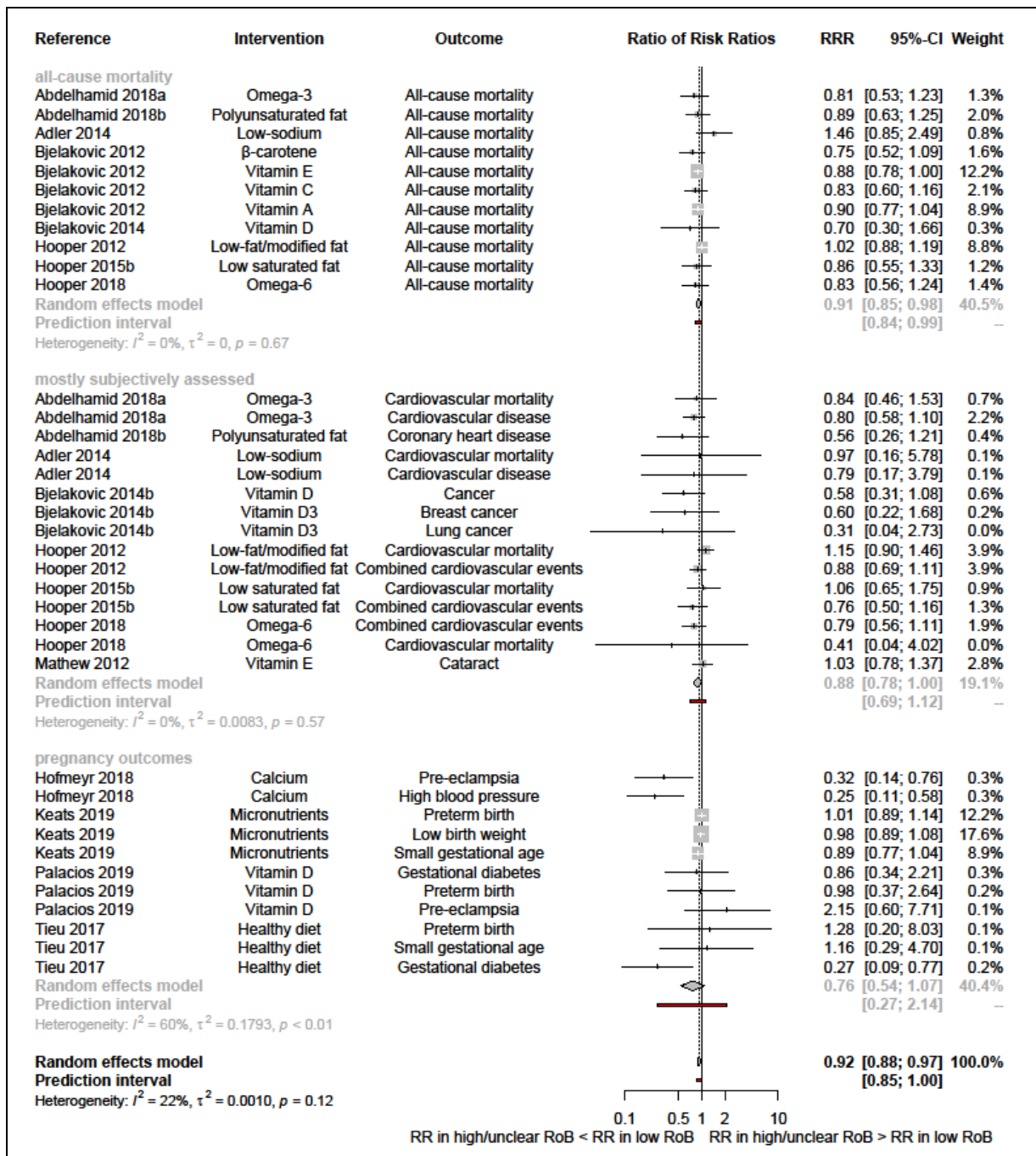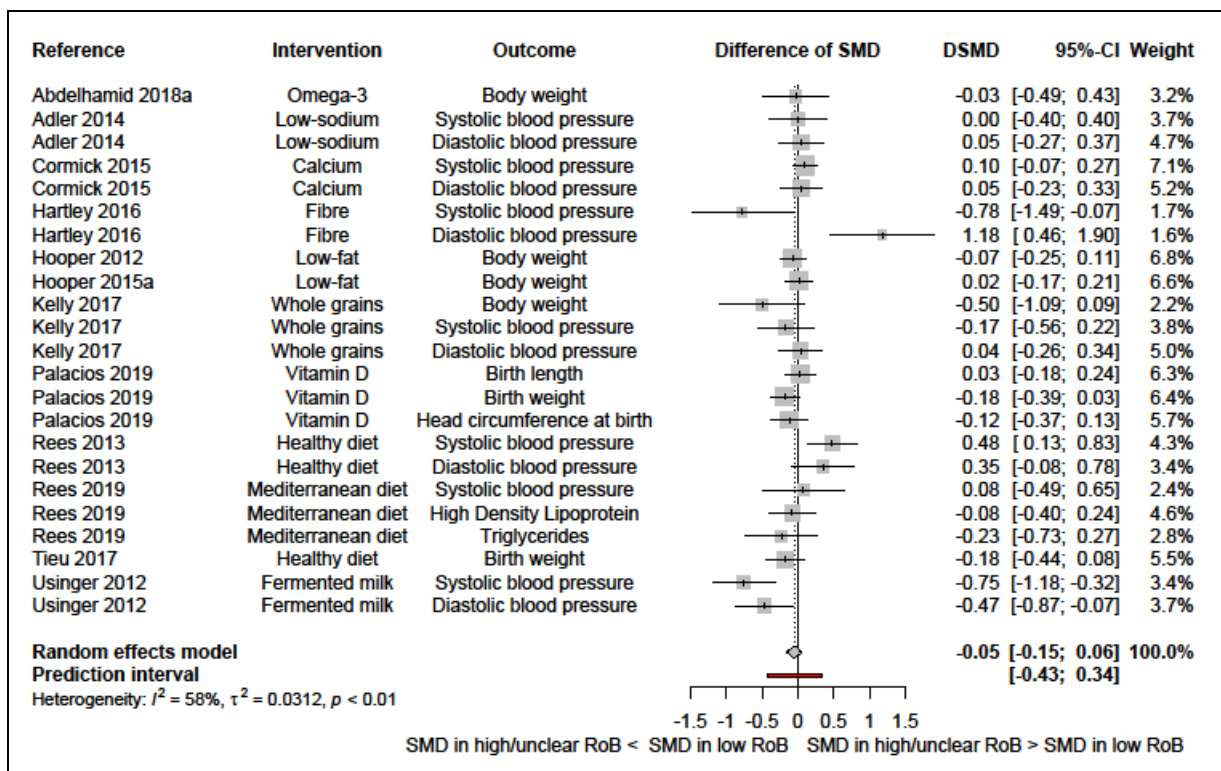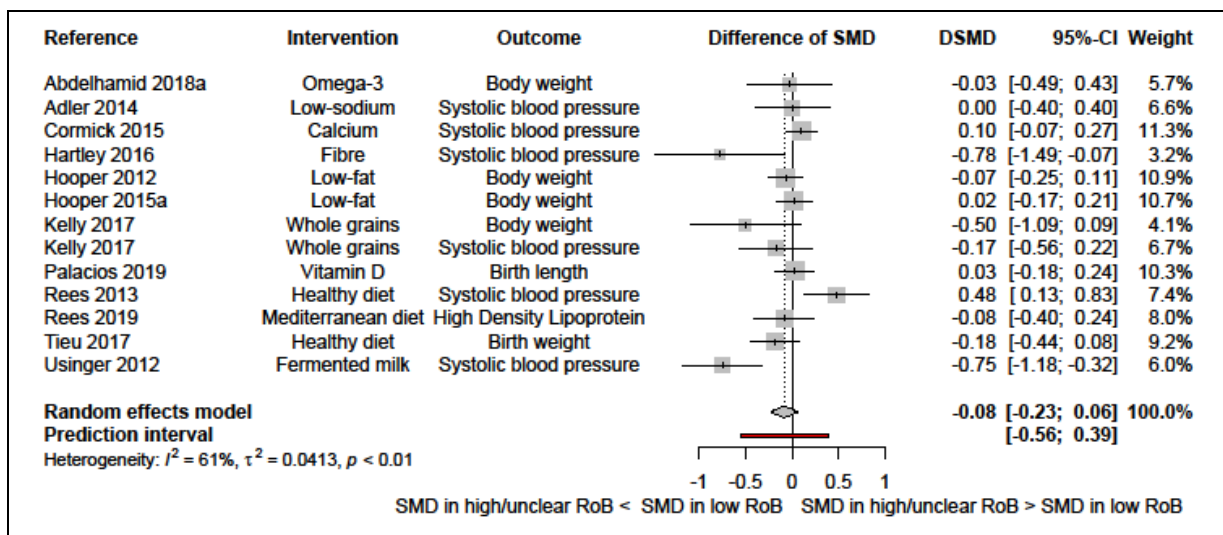RR in high/unclear RoB < RR in low RoB   RR in high/unclear RoB > RR in low RoB

**Figure S42:** Incomplete outcome data: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Subgroup analysis: Clusters of outcomes

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

**Figure S43:** Incomplete outcome data: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Subgroup analysis: Subjective versus objective outcomes

CI: confidence interval; I²: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; τ²: heterogeneity value with Restricted Maximum-likelihood estimation method

| Reference | Intervention | Outcome | Difference of SMD | DSMD | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| Abdelhamid 2018a | Omega-3 | Body weight | | -0.03 | [-0.49; 0.43] | 3.2% |
| Adler 2014 | Low-sodium | Systolic blood pressure | | 0.00 | [-0.40; 0.40] | 3.7% |
| Adler 2014 | Low-sodium | Diastolic blood pressure | | 0.05 | [-0.27; 0.37] | 4.7% |
| Cormick 2015 | Calcium | Systolic blood pressure | | 0.10 | [-0.07; 0.27] | 7.1% |
| Cormick 2015 | Calcium | Diastolic blood pressure | | 0.05 | [-0.23; 0.33] | 5.2% |
| Hartley 2016 | Fibre | Systolic blood pressure | | -0.78 | [-1.49; -0.07] | 1.7% |
| Hartley 2016 | Fibre | Diastolic blood pressure | | 1.18 | [0.46; 1.90] | 1.6% |
| Hooper 2012 | Low-fat | Body weight | | -0.07 | [-0.25; 0.11] | 6.8% |
| Hooper 2015a | Low-fat | Body weight | | 0.02 | [-0.17; 0.21] | 6.6% |
| Kelly 2017 | Whole grains | Body weight | | -0.50 | [-1.09; 0.09] | 2.2% |
| Kelly 2017 | Whole grains | Systolic blood pressure | | -0.17 | [-0.56; 0.22] | 3.8% |
| Kelly 2017 | Whole grains | Diastolic blood pressure | | 0.04 | [-0.26; 0.34] | 5.0% |
| Palacios 2019 | Vitamin D | Birth length | | 0.03 | [-0.18; 0.24] | 6.3% |
| Palacios 2019 | Vitamin D | Birth weight | | -0.18 | [-0.39; 0.03] | 6.4% |
| Palacios 2019 | Vitamin D | Head circumference at birth | | -0.12 | [-0.37; 0.13] | 5.7% |
| Rees 2013 | Healthy diet | Systolic blood pressure | | 0.48 | [0.13; 0.83] | 4.3% |
| Rees 2013 | Healthy diet | Diastolic blood pressure | | 0.35 | [-0.08; 0.78] | 3.4% |
| Rees 2019 | Mediterranean diet | Systolic blood pressure | | 0.08 | [-0.49; 0.65] | 2.4% |
| Rees 2019 | Mediterranean diet | High Density Lipoprotein | | -0.08 | [-0.40; 0.24] | 4.6% |
| Rees 2019 | Mediterranean diet | Triglycerides | | -0.23 | [-0.73; 0.27] | 2.8% |
| Tieu 2017 | Healthy diet | Birth weight | | -0.18 | [-0.44; 0.08] | 5.5% |
| Usinger 2012 | Fermented milk | Systolic blood pressure | | -0.75 | [-1.18; -0.32] | 3.4% |
| Usinger 2012 | Fermented milk | Diastolic blood pressure | | -0.47 | [-0.87; -0.07] | 3.7% |
| **Random effects model** | | | | -0.05 | [-0.15; 0.06] | 100.0% |
| **Prediction interval** | | | | | [-0.43; 0.34] | |

Heterogeneity: $I^2 = 58\%$, $\tau^2 = 0.0312$, $p < 0.01$

-1.5 -1 -0.5 0 0.5 1 1.5

SMD in high/unclear RoB < SMD in low RoB    SMD in high/unclear RoB > SMD in low RoB
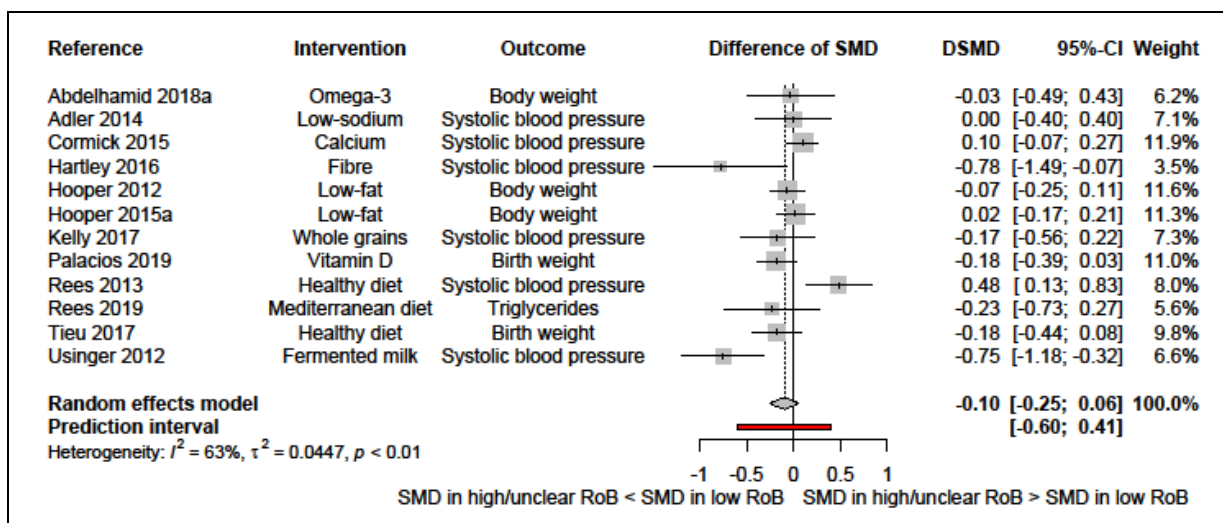
**Figure S44:** Incomplete outcome data: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for continuous outcomes as pooled difference of standardised mean differences

CI: confidence interval; DSMD: difference of standardised mean differences; $I^2$: heterogeneity measure; RoB: risk of bias; SMD: standardised mean difference; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

**Figure S45:**

| Reference | Intervention | Outcome | Difference of SMD | DSMD | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| Abdelhamid 2018a | Omega-3 | Body weight | | -0.03 | [-0.49; 0.43] | 5.7% |
| Adler 2014 | Low-sodium | Systolic blood pressure | | 0.00 | [-0.40; 0.40] | 6.6% |
| Cormick 2015 | Calcium | Systolic blood pressure | | 0.10 | [-0.07; 0.27] | 11.3% |
| Hartley 2016 | Fibre | Systolic blood pressure | | -0.78 | [-1.49; -0.07] | 3.2% |
| Hooper 2012 | Low-fat | Body weight | | -0.07 | [-0.25; 0.11] | 10.9% |
| Hooper 2015a | Low-fat | Body weight | | 0.02 | [-0.17; 0.21] | 10.7% |
| Kelly 2017 | Whole grains | Body weight | | -0.50 | [-1.09; 0.09] | 4.1% |
| Kelly 2017 | Whole grains | Systolic blood pressure | | -0.17 | [-0.56; 0.22] | 6.7% |
| Palacios 2019 | Vitamin D | Birth length | | 0.03 | [-0.18; 0.24] | 10.3% |
| Rees 2013 | Healthy diet | Systolic blood pressure | | 0.48 | [0.13; 0.83] | 7.4% |
| Rees 2019 | Mediterranean diet | High Density Lipoprotein | | -0.08 | [-0.40; 0.24] | 8.0% |
| Tieu 2017 | Healthy diet | Birth weight | | -0.18 | [-0.44; 0.08] | 9.2% |
| Usinger 2012 | Fermented milk | Systolic blood pressure | | -0.75 | [-1.18; -0.32] | 6.0% |
| **Random effects model** | | | | -0.08 | [-0.23; 0.06] | 100.0% |
| **Prediction interval** | | | | | [-0.56; 0.39] | |

Heterogeneity: $I^2 = 61\%$, $\tau^2 = 0.0413$, $p < 0.01$

-1  -0.5  0  0.5  1

SMD in high/unclear RoB < SMD in low RoB    SMD in high/unclear RoB > SMD in low RoB

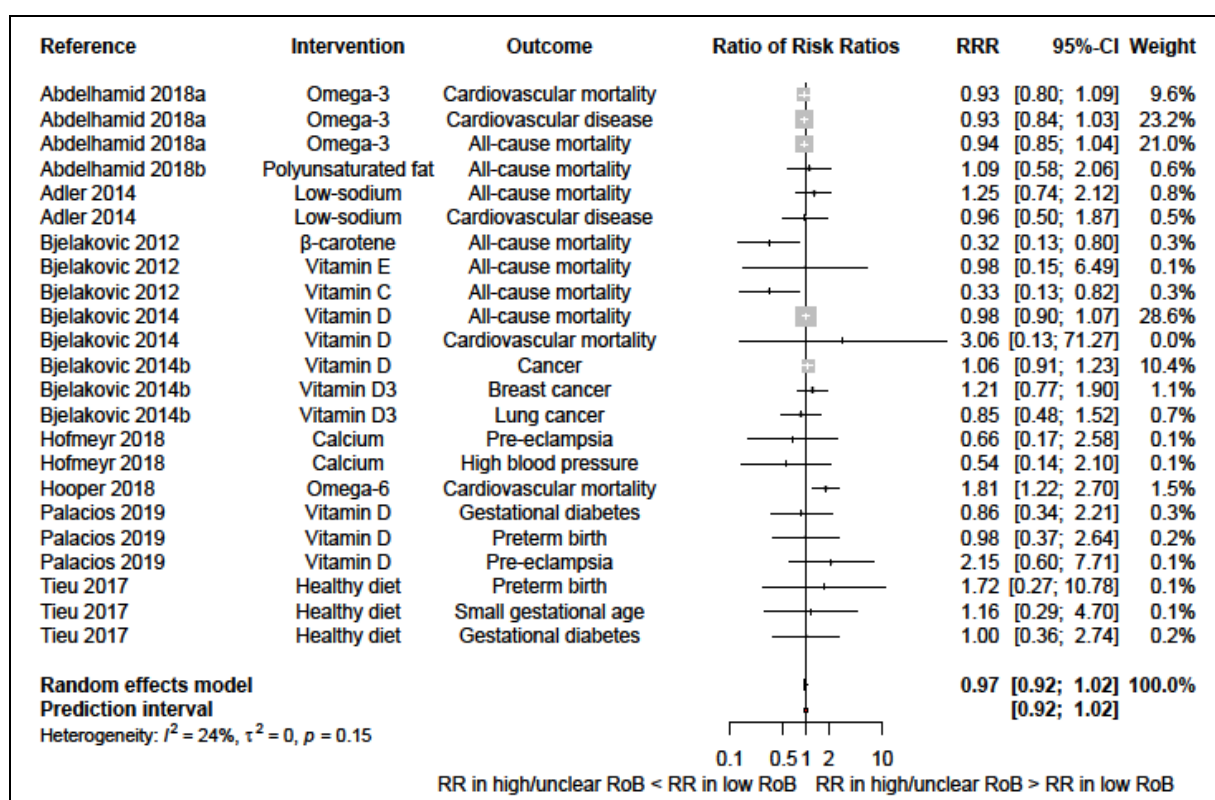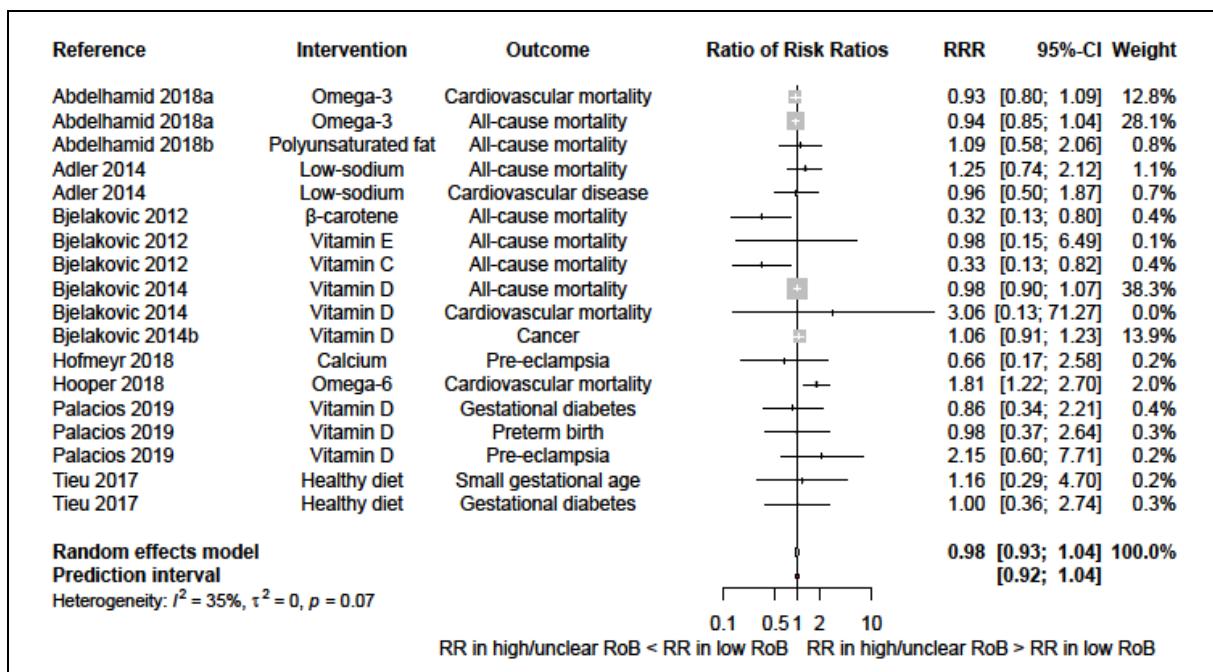**Figure S45:** Incomplete outcome data: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for continuous outcomes as pooled difference of standardised mean differences. Sensitivity analysis: Excluding highly correlated outcomes

CI: confidence interval; DSMD: difference of standardised mean differences; $I^2$: heterogeneity measure; RoB: risk of bias; SMD: standardised mean difference; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

| Reference | Intervention | Outcome | Difference of SMD | DSMD | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| Abdelhamid 2018a | Omega-3 | Body weight | | -0.03 | [-0.49; 0.43] | 6.2% |
| Adler 2014 | Low-sodium | Systolic blood pressure | | 0.00 | [-0.40; 0.40] | 7.1% |
| Cormick 2015 | Calcium | Systolic blood pressure | | 0.10 | [-0.07; 0.27] | 11.9% |
| Hartley 2016 | Fibre | Systolic blood pressure | | -0.78 | [-1.49; -0.07] | 3.5% |
| Hooper 2012 | Low-fat | Body weight | | -0.07 | [-0.25; 0.11] | 11.6% |
| Hooper 2015a | Low-fat | Body weight | | 0.02 | [-0.17; 0.21] | 11.3% |
| Kelly 2017 | Whole grains | Systolic blood pressure | | -0.17 | [-0.56; 0.22] | 7.3% |
| Palacios 2019 | Vitamin D | Birth weight | | -0.18 | [-0.39; 0.03] | 11.0% |
| Rees 2013 | Healthy diet | Systolic blood pressure | | 0.48 | [0.13; 0.83] | 8.0% |
| Rees 2019 | Mediterranean diet | Triglycerides | | -0.23 | [-0.73; 0.27] | 5.6% |
| Tieu 2017 | Healthy diet | Birth weight | | -0.18 | [-0.44; 0.08] | 9.8% |
| Usinger 2012 | Fermented milk | Systolic blood pressure | | -0.75 | [-1.18; -0.32] | 6.6% |
| **Random effects model** | | | | -0.10 | [-0.25; 0.06] | 100.0% |
| **Prediction interval** | | | | | [-0.60; 0.41] | |

Heterogeneity: $I^2 = 63\%$, $\tau^2 = 0.0447$, $p < 0.01$

-1  -0.5  0  0.5  1

SMD in high/unclear RoB < SMD in low RoB    SMD in high/unclear RoB > SMD in low RoB

**Figure S46:** Incomplete outcome data: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for continuous outcomes as pooled difference of standardised mean differences. Sensitivity analysis: Including only one outcome per comparison from each included systematic review

CI: confidence interval; DSMD: difference of standardised mean differences; $I^2$: heterogeneity measure; RoB: risk of bias; SMD: standardised mean difference; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

| Reference | Intervention | Outcome | Ratio of Risk Ratios | RRR | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| Abdelhamid 2018a | Omega-3 | Cardiovascular mortality | | 0.93 | [0.80; 1.09] | 9.6% |
| Abdelhamid 2018a | Omega-3 | Cardiovascular disease | | 0.93 | [0.84; 1.03] | 23.2% |
| Abdelhamid 2018a | Omega-3 | All-cause mortality | | 0.94 | [0.85; 1.04] | 21.0% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | | 1.09 | [0.58; 2.06] | 0.6% |
| Adler 2014 | Low-sodium | All-cause mortality | | 1.25 | [0.74; 2.12] | 0.8% |
| Adler 2014 | Low-sodium | Cardiovascular disease | | 0.96 | [0.50; 1.87] | 0.5% |
| Bjelakovic 2012 | β-carotene | All-cause mortality | | 0.32 | [0.13; 0.80] | 0.3% |
| Bjelakovic 2012 | Vitamin E | All-cause mortality | | 0.98 | [0.15; 6.49] | 0.1% |
| Bjelakovic 2012 | Vitamin C | All-cause mortality | | 0.33 | [0.13; 0.82] | 0.3% |
| Bjelakovic 2014 | Vitamin D | All-cause mortality | | 0.98 | [0.90; 1.07] | 28.6% |
| Bjelakovic 2014 | Vitamin D | Cardiovascular mortality | | 3.06 | [0.13; 71.27] | 0.0% |
| Bjelakovic 2014b | Vitamin D | Cancer | | 1.06 | [0.91; 1.23] | 10.4% |
| Bjelakovic 2014b | Vitamin D3 | Breast cancer | | 1.21 | [0.77; 1.90] | 1.1% |
| Bjelakovic 2014b | Vitamin D3 | Lung cancer | | 0.85 | [0.48; 1.52] | 0.7% |
| Hofmeyr 2018 | Calcium | Pre-eclampsia | | 0.66 | [0.17; 2.58] | 0.1% |
| Hofmeyr 2018 | Calcium | High blood pressure | | 0.54 | [0.14; 2.10] | 0.1% |
| Hooper 2018 | Omega-6 | Cardiovascular mortality | | 1.81 | [1.22; 2.70] | 1.5% |
| Palacios 2019 | Vitamin D | Gestational diabetes | | 0.86 | [0.34; 2.21] | 0.3% |
| Palacios 2019 | Vitamin D | Preterm birth | | 0.98 | [0.37; 2.64] | 0.2% |
| Palacios 2019 | Vitamin D | Pre-eclampsia | | 2.15 | [0.60; 7.71] | 0.1% |
| Tieu 2017 | Healthy diet | Preterm birth | | 1.72 | [0.27; 10.78] | 0.1% |
| Tieu 2017 | Healthy diet | Small gestational age | | 1.16 | [0.29; 4.70] | 0.1% |
| Tieu 2017 | Healthy diet | Gestational diabetes | | 1.00 | [0.36; 2.74] | 0.2% |
| **Random effects model** | | | | 0.97 | [0.92; 1.02] | 100.0% |
| **Prediction interval** | | | | | [0.92; 1.02] | |

Heterogeneity: $I^2 = 24\%$, $\tau^2 = 0$, $p = 0.15$

0.1  0.5 1 2  10

RR in high/unclear RoB < RR in low RoB   RR in high/unclear RoB > RR in low RoB
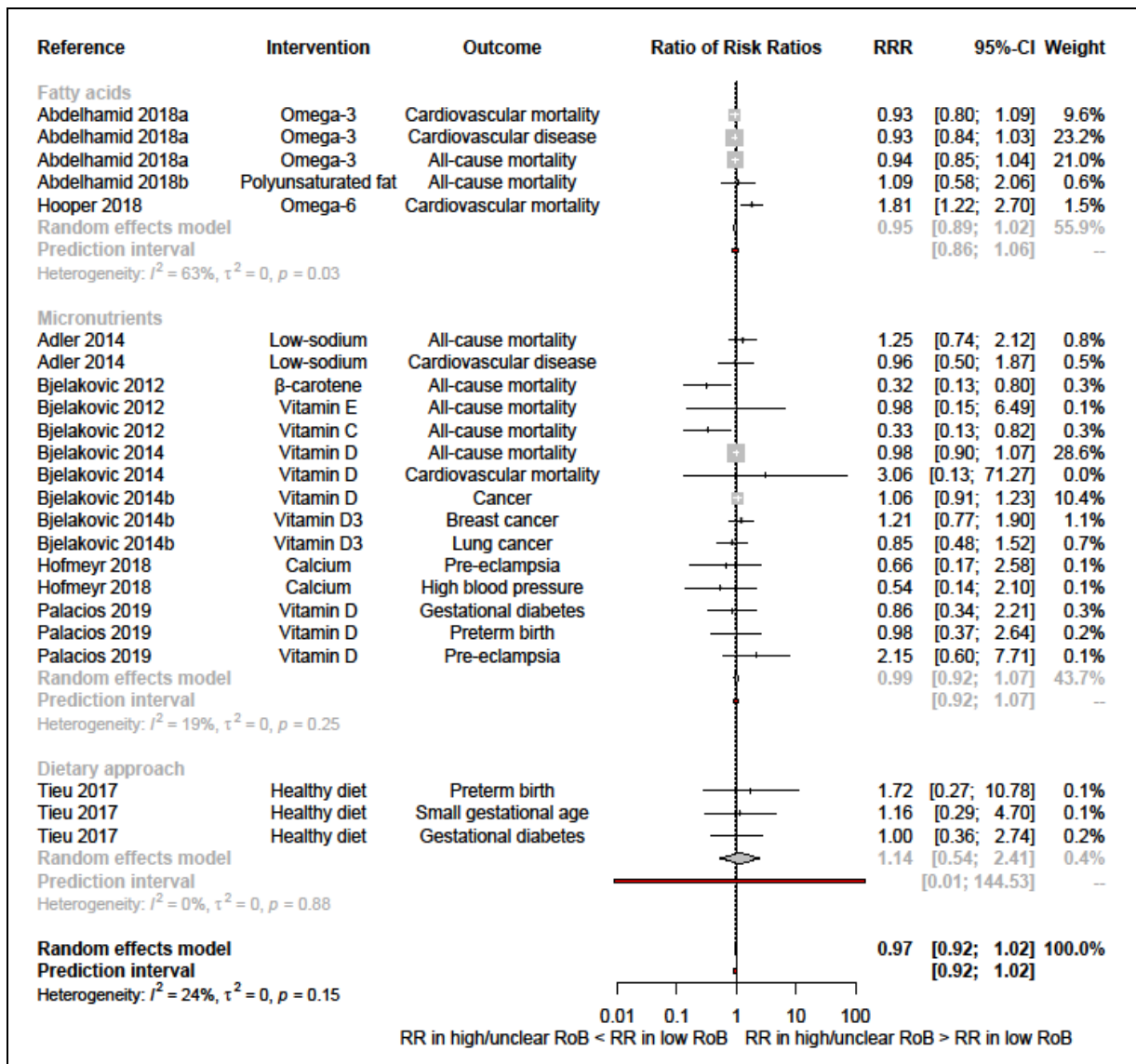
**Figure S47:** Selective Reporting: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method
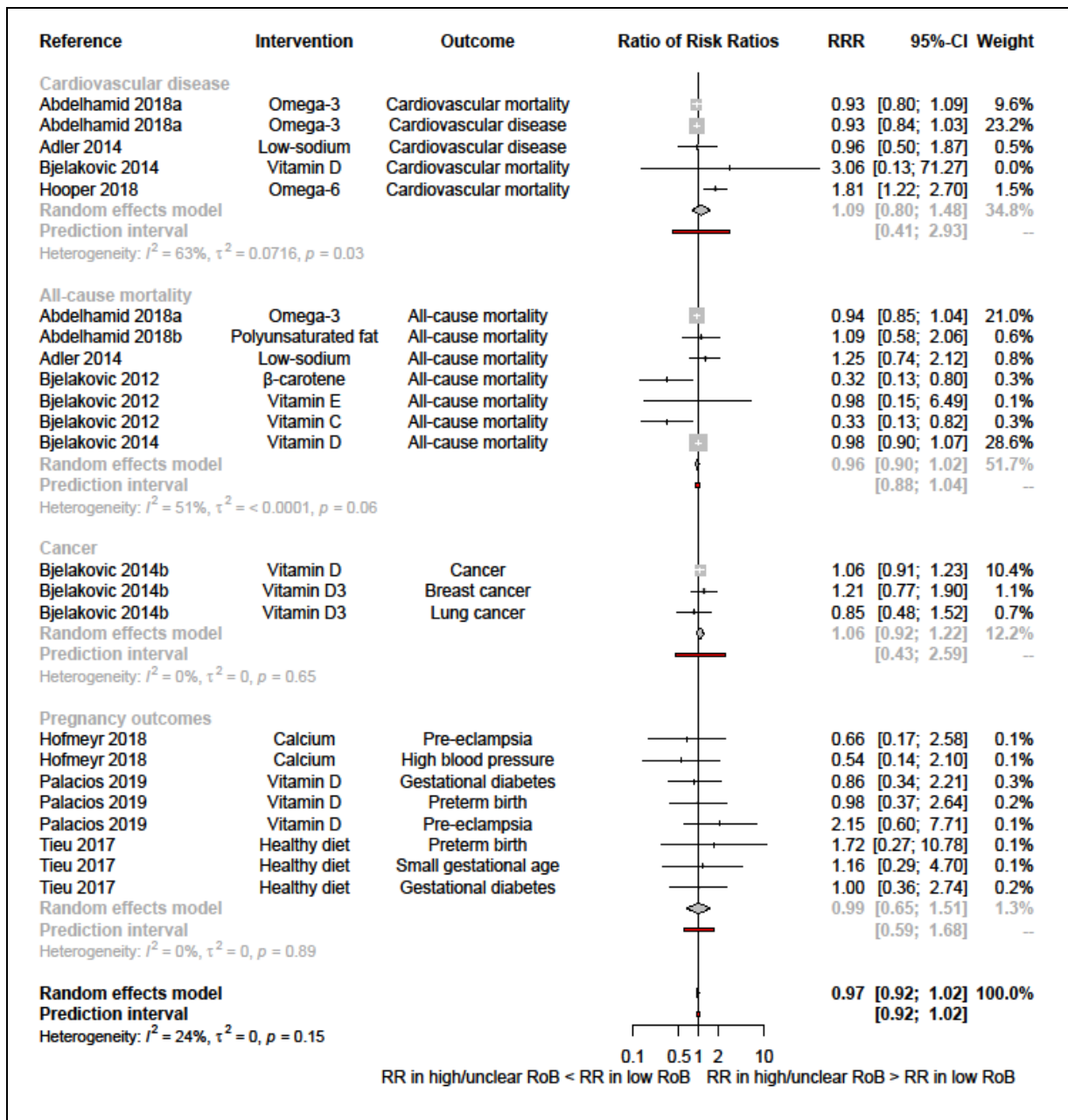
**Figure S48:** Selective Reporting: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Sensitivity analysis: Excluding highly correlated outcomes

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method
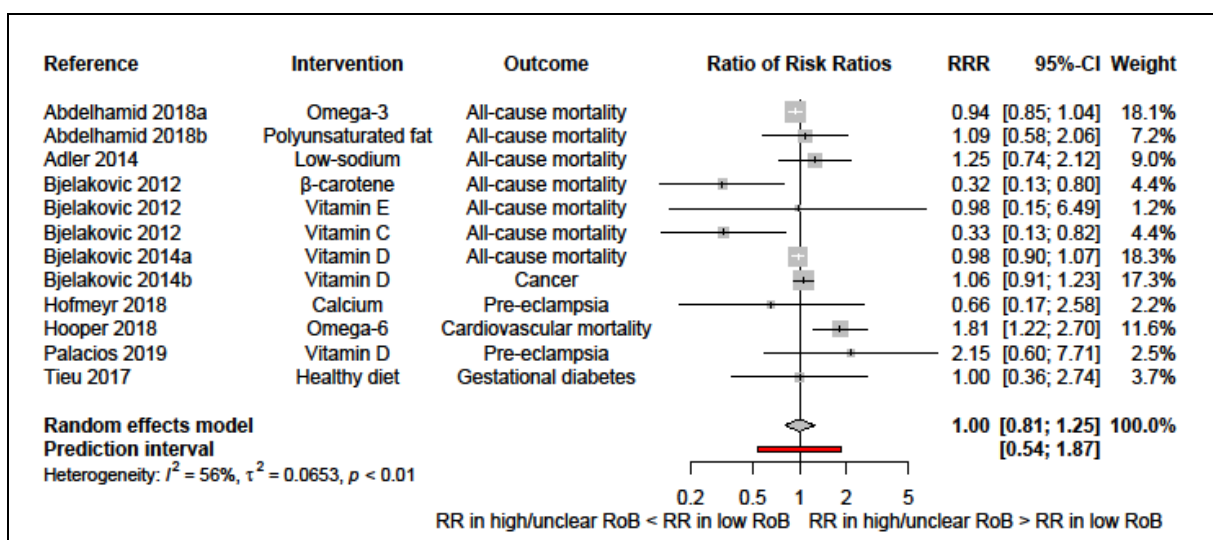


**Figure S49:** Selective Reporting: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Sensitivity analysis: Including only one outcome per comparison from each included systematic review

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

| Reference | Intervention | Outcome | Ratio of Risk Ratios | RRR | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| **Fatty acids** | | | | | | |
| Abdelhamid 2018a | Omega-3 | Cardiovascular mortality | | 0.93 | [0.80; 1.09] | 9.6% |
| Abdelhamid 2018a | Omega-3 | Cardiovascular disease | | 0.93 | [0.84; 1.03] | 23.2% |
| Abdelhamid 2018a | Omega-3 | All-cause mortality | | 0.94 | [0.85; 1.04] | 21.0% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | | 1.09 | [0.58; 2.06] | 0.6% |
| Hooper 2018 | Omega-6 | Cardiovascular mortality | | 1.81 | [1.22; 2.70] | 1.5% |
| Random effects model | | | | 0.95 | [0.89; 1.02] | 55.9% |
| Prediction interval | | | | | [0.86; 1.06] | -- |
| Heterogeneity: $I^2 = 63\%$, $\tau^2 = 0$, $p = 0.03$ | | | | | | |
| | | | | | | |
| **Micronutrients** | | | | | | |
| Adler 2014 | Low-sodium | All-cause mortality | | 1.25 | [0.74; 2.12] | 0.8% |
| Adler 2014 | Low-sodium | Cardiovascular disease | | 0.96 | [0.50; 1.87] | 0.5% |
| Bjelakovic 2012 | β-carotene | All-cause mortality | | 0.32 | [0.13; 0.80] | 0.3% |
| Bjelakovic 2012 | Vitamin E | All-cause mortality | | 0.98 | [0.15; 6.49] | 0.1% |
| Bjelakovic 2012 | Vitamin C | All-cause mortality | | 0.33 | [0.13; 0.82] | 0.3% |
| Bjelakovic 2014 | Vitamin D | All-cause mortality | | 0.98 | [0.90; 1.07] | 28.6% |
| Bjelakovic 2014 | Vitamin D | Cardiovascular mortality | | 3.06 | [0.13; 71.27] | 0.0% |
| Bjelakovic 2014b | Vitamin D | Cancer | | 1.06 | [0.91; 1.23] | 10.4% |
| Bjelakovic 2014b | Vitamin D3 | Breast cancer | | 1.21 | [0.77; 1.90] | 1.1% |
| Bjelakovic 2014b | Vitamin D3 | Lung cancer | | 0.85 | [0.48; 1.52] | 0.7% |
| Hofmeyr 2018 | Calcium | Pre-eclampsia | | 0.66 | [0.17; 2.58] | 0.1% |
| Hofmeyr 2018 | Calcium | High blood pressure | | 0.54 | [0.14; 2.10] | 0.1% |
| Palacios 2019 | Vitamin D | Gestational diabetes | | 0.86 | [0.34; 2.21] | 0.3% |
| Palacios 2019 | Vitamin D | Preterm birth | | 0.98 | [0.37; 2.64] | 0.2% |
| Palacios 2019 | Vitamin D | Pre-eclampsia | | 2.15 | [0.60; 7.71] | 0.1% |
| Random effects model | | | | 0.99 | [0.92; 1.07] | 43.7% |
| Prediction interval | | | | | [0.92; 1.07] | -- |
| Heterogeneity: $I^2 = 19\%$, $\tau^2 = 0$, $p = 0.25$ | | | | | | |
| | | | | | | |
| **Dietary approach** | | | | | | |
| Tieu 2017 | Healthy diet | Preterm birth | | 1.72 | [0.27; 10.78] | 0.1% |
| Tieu 2017 | Healthy diet | Small gestational age | | 1.16 | [0.29; 4.70] | 0.1% |
| Tieu 2017 | Healthy diet | Gestational diabetes | | 1.00 | [0.36; 2.74] | 0.2% |
| Random effects model | | | | 1.14 | [0.54; 2.41] | 0.4% |
| Prediction interval | | | | | [0.01; 144.53] | -- |
| Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0$, $p = 0.88$ | | | | | | |
| | | | | | | |
| **Random effects model** | | | | 0.97 | [0.92; 1.02] | 100.0% |
| **Prediction interval** | | | | | [0.92; 1.02] | |
| Heterogeneity: $I^2 = 24\%$, $\tau^2 = 0$, $p = 0.15$ | | | | | | |

0.01  0.1  1  10  100
RR in high/unclear RoB < RR in low RoB    RR in high/unclear RoB > RR in low RoB
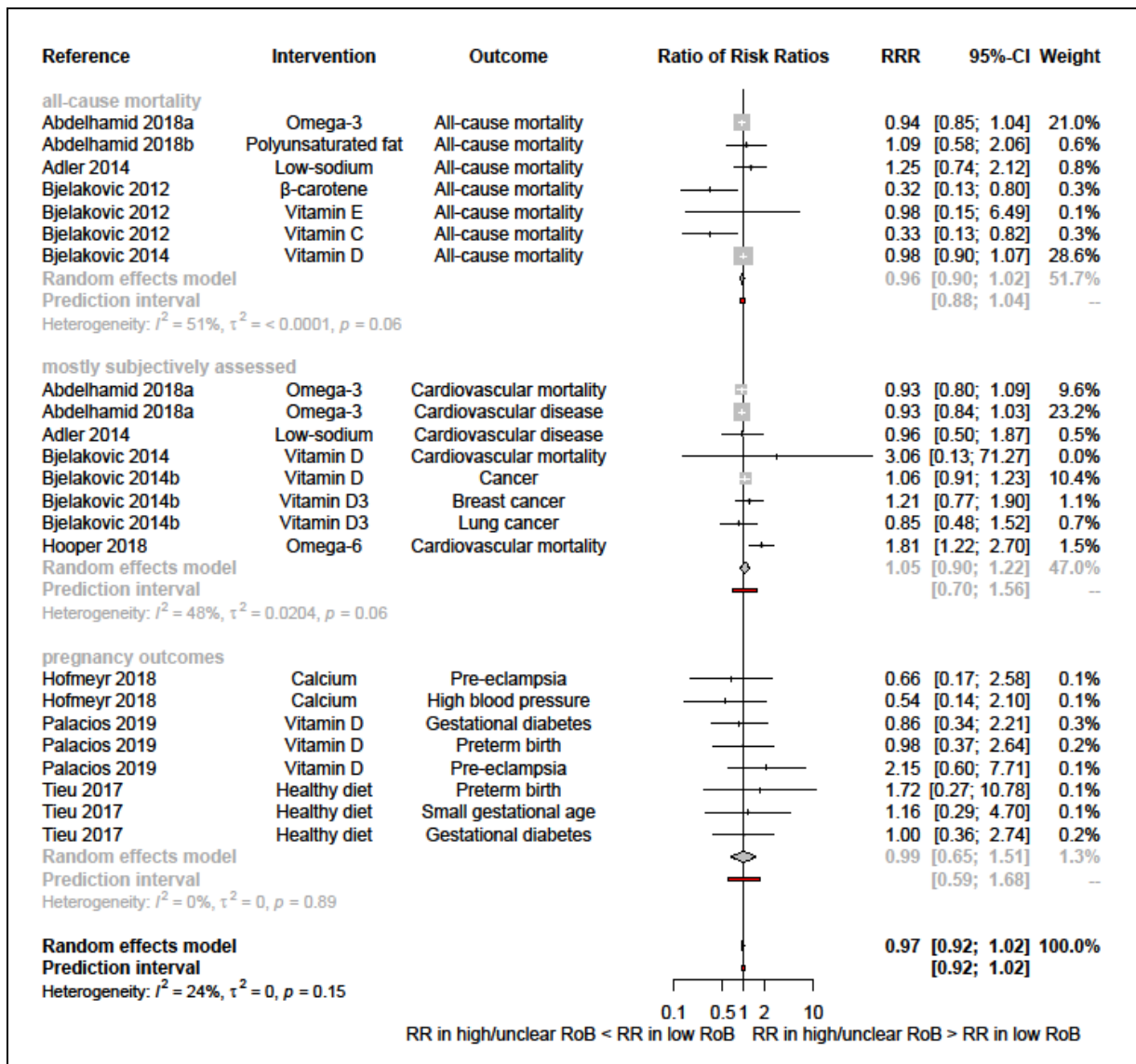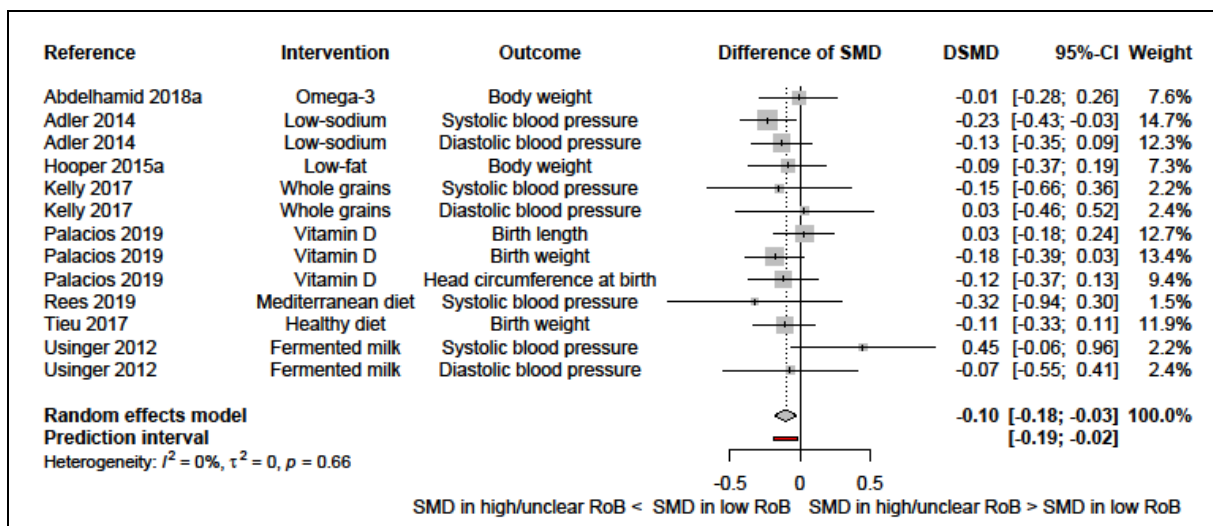
**Figure S50:** Selective Reporting: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Subgroup analysis: Clusters of interventions

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

**Forest Plot: Ratio of Risk Ratios**

| Reference | Intervention | Outcome | RRR | 95%-CI | Weight |
|---|---|---|---|---|---|
| **Cardiovascular disease** | | | | | |
| Abdelhamid 2018a | Omega-3 | Cardiovascular mortality | 0.93 | [0.80; 1.09] | 9.6% |
| Abdelhamid 2018a | Omega-3 | Cardiovascular disease | 0.93 | [0.84; 1.03] | 23.2% |
| Adler 2014 | Low-sodium | Cardiovascular disease | 0.96 | [0.50; 1.87] | 0.5% |
| Bjelakovic 2014 | Vitamin D | Cardiovascular mortality | 3.06 | [0.13; 71.27] | 0.0% |
| Hooper 2018 | Omega-6 | Cardiovascular mortality | 1.81 | [1.22; 2.70] | 1.5% |
| Random effects model | | | 1.09 | [0.80; 1.48] | 34.8% |
| Prediction interval | | | | [0.41; 2.93] | -- |
| Heterogeneity: $I^2 = 63\%$, $\tau^2 = 0.0716$, $p = 0.03$ | | | | | |
| **All-cause mortality** | | | | | |
| Abdelhamid 2018a | Omega-3 | All-cause mortality | 0.94 | [0.85; 1.04] | 21.0% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | 1.09 | [0.58; 2.06] | 0.6% |
| Adler 2014 | Low-sodium | All-cause mortality | 1.25 | [0.74; 2.12] | 0.8% |
| Bjelakovic 2012 | β-carotene | All-cause mortality | 0.32 | [0.13; 0.80] | 0.3% |
| Bjelakovic 2012 | Vitamin E | All-cause mortality | 0.98 | [0.15; 6.49] | 0.1% |
| Bjelakovic 2012 | Vitamin C | All-cause mortality | 0.33 | [0.13; 0.82] | 0.3% |
| Bjelakovic 2014 | Vitamin D | All-cause mortality | 0.98 | [0.90; 1.07] | 28.6% |
| Random effects model | | | 0.96 | [0.90; 1.02] | 51.7% |
| Prediction interval | | | | [0.88; 1.04] | -- |
| Heterogeneity: $I^2 = 51\%$, $\tau^2 = < 0.0001$, $p = 0.06$ | | | | | |
| **Cancer** | | | | | |
| Bjelakovic 2014b | Vitamin D | Cancer | 1.06 | [0.91; 1.23] | 10.4% |
| Bjelakovic 2014b | Vitamin D3 | Breast cancer | 1.21 | [0.77; 1.90] | 1.1% |
| Bjelakovic 2014b | Vitamin D3 | Lung cancer | 0.85 | [0.48; 1.52] | 0.7% |
| Random effects model | | | 1.06 | [0.92; 1.22] | 12.2% |
| Prediction interval | | | | [0.43; 2.59] | -- |
| Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0$, $p = 0.65$ | | | | | |
| **Pregnancy outcomes** | | | | | |
| Hofmeyr 2018 | Calcium | Pre-eclampsia | 0.66 | [0.17; 2.58] | 0.1% |
| Hofmeyr 2018 | Calcium | High blood pressure | 0.54 | [0.14; 2.10] | 0.1% |
| Palacios 2019 | Vitamin D | Gestational diabetes | 0.86 | [0.34; 2.21] | 0.3% |
| Palacios 2019 | Vitamin D | Preterm birth | 0.98 | [0.37; 2.64] | 0.2% |
| Palacios 2019 | Vitamin D | Pre-eclampsia | 2.15 | [0.60; 7.71] | 0.1% |
| Tieu 2017 | Healthy diet | Preterm birth | 1.72 | [0.27; 10.78] | 0.1% |
| Tieu 2017 | Healthy diet | Small gestational age | 1.16 | [0.29; 4.70] | 0.1% |
| Tieu 2017 | Healthy diet | Gestational diabetes | 1.00 | [0.36; 2.74] | 0.2% |
| Random effects model | | | 0.99 | [0.65; 1.51] | 1.3% |
| Prediction interval | | | | [0.59; 1.68] | -- |
| Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0$, $p = 0.89$ | | | | | |
| **Random effects model** | | | 0.97 | [0.92; 1.02] | 100.0% |
| **Prediction interval** | | | | [0.92; 1.02] | |
| Heterogeneity: $I^2 = 24\%$, $\tau^2 = 0$, $p = 0.15$ | | | | | |

Axis: 0.1  0.51 2  10

RR in high/unclear RoB < RR in low RoB    RR in high/unclear RoB > RR in low RoB
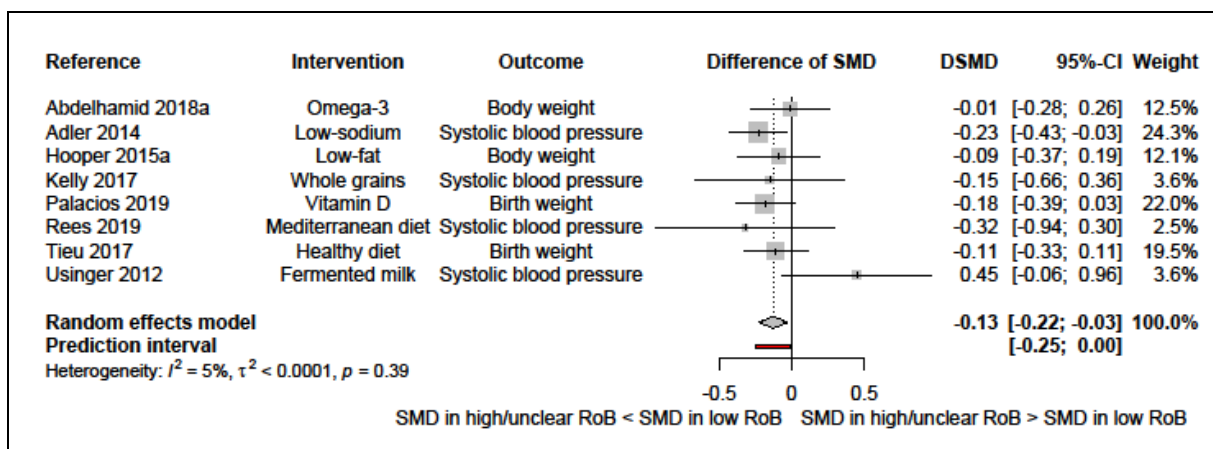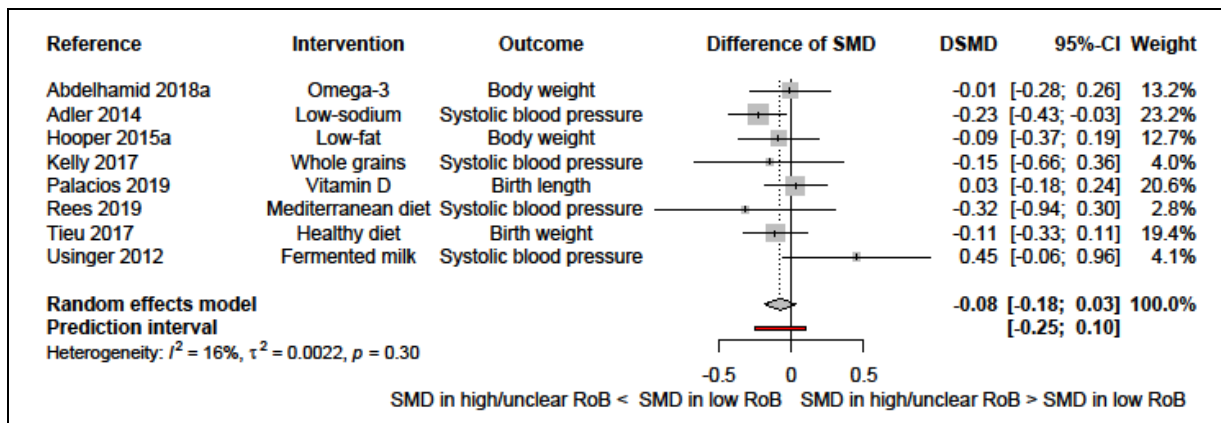
**Figure S51:** Selective Reporting: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Subgroup analysis: Clusters of outcomes

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method
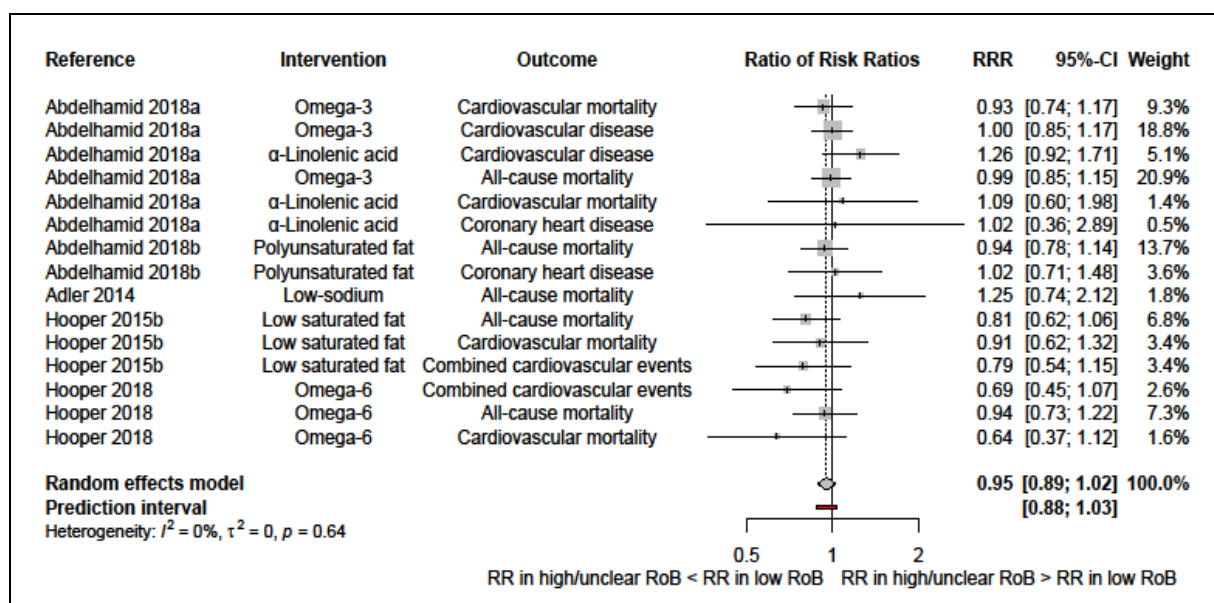
**Figure S52:** Selective Reporting: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Subgroup analysis: Subjective versus objective outcomes

| Reference | Intervention | Outcome | Ratio of Risk Ratios | RRR | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| **all-cause mortality** | | | | | | |
| Abdelhamid 2018a | Omega-3 | All-cause mortality | | 0.94 | [0.85; 1.04] | 21.0% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | | 1.09 | [0.58; 2.06] | 0.6% |
| Adler 2014 | Low-sodium | All-cause mortality | | 1.25 | [0.74; 2.12] | 0.8% |
| Bjelakovic 2012 | β-carotene | All-cause mortality | | 0.32 | [0.13; 0.80] | 0.3% |
| Bjelakovic 2012 | Vitamin E | All-cause mortality | | 0.98 | [0.15; 6.49] | 0.1% |
| Bjelakovic 2012 | Vitamin C | All-cause mortality | | 0.33 | [0.13; 0.82] | 0.3% |
| Bjelakovic 2014 | Vitamin D | All-cause mortality | | 0.98 | [0.90; 1.07] | 28.6% |
| Random effects model | | | | 0.96 | [0.90; 1.02] | 51.7% |
| Prediction interval | | | | | [0.88; 1.04] | -- |
| Heterogeneity: $I^2 = 51\%$, $\tau^2 = < 0.0001$, $p = 0.06$ | | | | | | |
| **mostly subjectively assessed** | | | | | | |
| Abdelhamid 2018a | Omega-3 | Cardiovascular mortality | | 0.93 | [0.80; 1.09] | 9.6% |
| Abdelhamid 2018a | Omega-3 | Cardiovascular disease | | 0.93 | [0.84; 1.03] | 23.2% |
| Adler 2014 | Low-sodium | Cardiovascular disease | | 0.96 | [0.50; 1.87] | 0.5% |
| Bjelakovic 2014 | Vitamin D | Cardiovascular mortality | | 3.06 | [0.13; 71.27] | 0.0% |
| Bjelakovic 2014b | Vitamin D | Cancer | | 1.06 | [0.91; 1.23] | 10.4% |
| Bjelakovic 2014b | Vitamin D3 | Breast cancer | | 1.21 | [0.77; 1.90] | 1.1% |
| Bjelakovic 2014b | Vitamin D3 | Lung cancer | | 0.85 | [0.48; 1.52] | 0.7% |
| Hooper 2018 | Omega-6 | Cardiovascular mortality | | 1.81 | [1.22; 2.70] | 1.5% |
| Random effects model | | | | 1.05 | [0.90; 1.22] | 47.0% |
| Prediction interval | | | | | [0.70; 1.56] | -- |
| Heterogeneity: $I^2 = 48\%$, $\tau^2 = 0.0204$, $p = 0.06$ | | | | | | |
| **pregnancy outcomes** | | | | | | |
| Hofmeyr 2018 | Calcium | Pre-eclampsia | | 0.66 | [0.17; 2.58] | 0.1% |
| Hofmeyr 2018 | Calcium | High blood pressure | | 0.54 | [0.14; 2.10] | 0.1% |
| Palacios 2019 | Vitamin D | Gestational diabetes | | 0.86 | [0.34; 2.21] | 0.3% |
| Palacios 2019 | Vitamin D | Preterm birth | | 0.98 | [0.37; 2.64] | 0.2% |
| Palacios 2019 | Vitamin D | Pre-eclampsia | | 2.15 | [0.60; 7.71] | 0.1% |
| Tieu 2017 | Healthy diet | Preterm birth | | 1.72 | [0.27; 10.78] | 0.1% |
| Tieu 2017 | Healthy diet | Small gestational age | | 1.16 | [0.29; 4.70] | 0.1% |
| Tieu 2017 | Healthy diet | Gestational diabetes | | 1.00 | [0.36; 2.74] | 0.2% |
| Random effects model | | | | 0.99 | [0.65; 1.51] | 1.3% |
| Prediction interval | | | | | [0.59; 1.68] | -- |
| Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0$, $p = 0.89$ | | | | | | |
| **Random effects model** | | | | 0.97 | [0.92; 1.02] | 100.0% |
| **Prediction interval** | | | | | [0.92; 1.02] | |
| Heterogeneity: $I^2 = 24\%$, $\tau^2 = 0$, $p = 0.15$ | | | | | | |

0.1   0.5 1 2   10

RR in high/unclear RoB < RR in low RoB   RR in high/unclear RoB > RR in low RoB

**Figure S52:** Selective Reporting: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Subgroup analysis: Subjective versus objective outcomes

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method
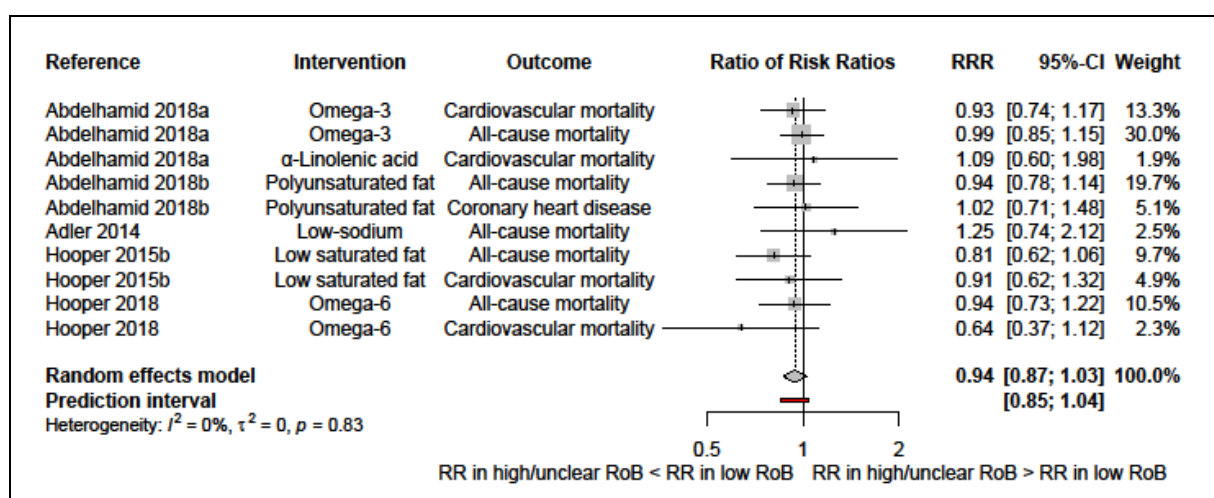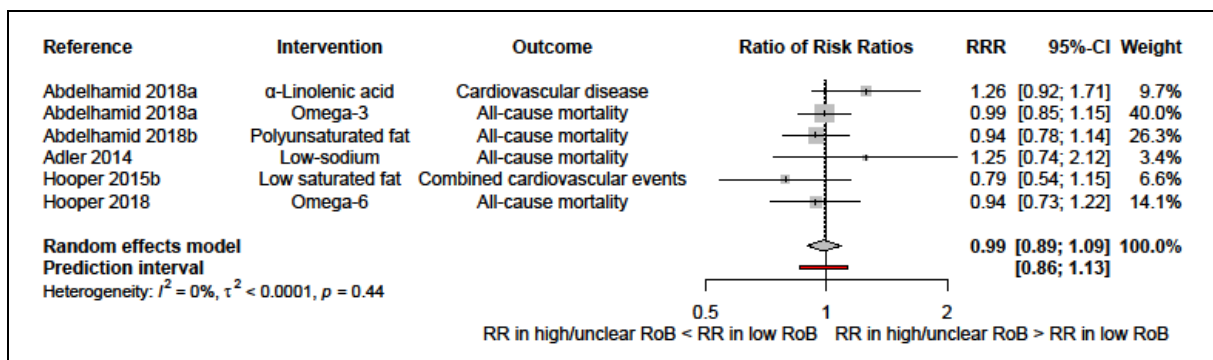
**Figure S53:** Selective Reporting: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for continuous outcomes as pooled difference of standardised mean differences

CI: confidence interval; DSMD: difference of standardised mean differences; $I^2$: heterogeneity measure; RoB: risk of bias; SMD: standardised mean difference; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method



**Figure S54:** Selective Reporting: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for continuous outcomes as pooled difference of standardised mean differences. Sensitivity analysis: Including only one outcome per comparison from each included systematic review

CI: confidence interval; DSMD: difference of standardised mean differences; $I^2$: heterogeneity measure; RoB: risk of bias; SMD: standardised mean difference; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

**Figure S55:** Selective Reporting: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for continuous outcomes as pooled difference of standardised mean differences. Sensitivity analysis: Excluding highly correlated outcomes

CI: confidence interval; DSMD: difference of standardised mean differences; $I^2$: heterogeneity measure; RoB: risk of bias; SMD: standardised mean difference; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

**Methodological trial characteristic: Dietary compliance**



| Reference | Intervention | Outcome | Ratio of Risk Ratios | RRR | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| Abdelhamid 2018a | Omega-3 | Cardiovascular mortality | | 0.93 | [0.74; 1.17] | 9.3% |
| Abdelhamid 2018a | Omega-3 | Cardiovascular disease | | 1.00 | [0.85; 1.17] | 18.8% |
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular disease | | 1.26 | [0.92; 1.71] | 5.1% |
| Abdelhamid 2018a | Omega-3 | All-cause mortality | | 0.99 | [0.85; 1.15] | 20.9% |
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular mortality | | 1.09 | [0.60; 1.98] | 1.4% |
| Abdelhamid 2018a | α-Linolenic acid | Coronary heart disease | | 1.02 | [0.36; 2.89] | 0.5% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | | 0.94 | [0.78; 1.14] | 13.7% |
| Abdelhamid 2018b | Polyunsaturated fat | Coronary heart disease | | 1.02 | [0.71; 1.48] | 3.6% |
| Adler 2014 | Low-sodium | All-cause mortality | | 1.25 | [0.74; 2.12] | 1.8% |
| Hooper 2015b | Low saturated fat | All-cause mortality | | 0.81 | [0.62; 1.06] | 6.8% |
| Hooper 2015b | Low saturated fat | Cardiovascular mortality | | 0.91 | [0.62; 1.32] | 3.4% |
| Hooper 2015b | Low saturated fat | Combined cardiovascular events | | 0.79 | [0.54; 1.15] | 3.4% |
| Hooper 2018 | Omega-6 | Combined cardiovascular events | | 0.69 | [0.45; 1.07] | 2.6% |
| Hooper 2018 | Omega-6 | All-cause mortality | | 0.94 | [0.73; 1.22] | 7.3% |
| Hooper 2018 | Omega-6 | Cardiovascular mortality | | 0.64 | [0.37; 1.12] | 1.6% |
| **Random effects model** | | | | 0.95 | [0.89; 1.02] | 100.0% |
| **Prediction interval** | | | | | [0.88; 1.03] | |

Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0$, $p = 0.64$

0.5  1  2

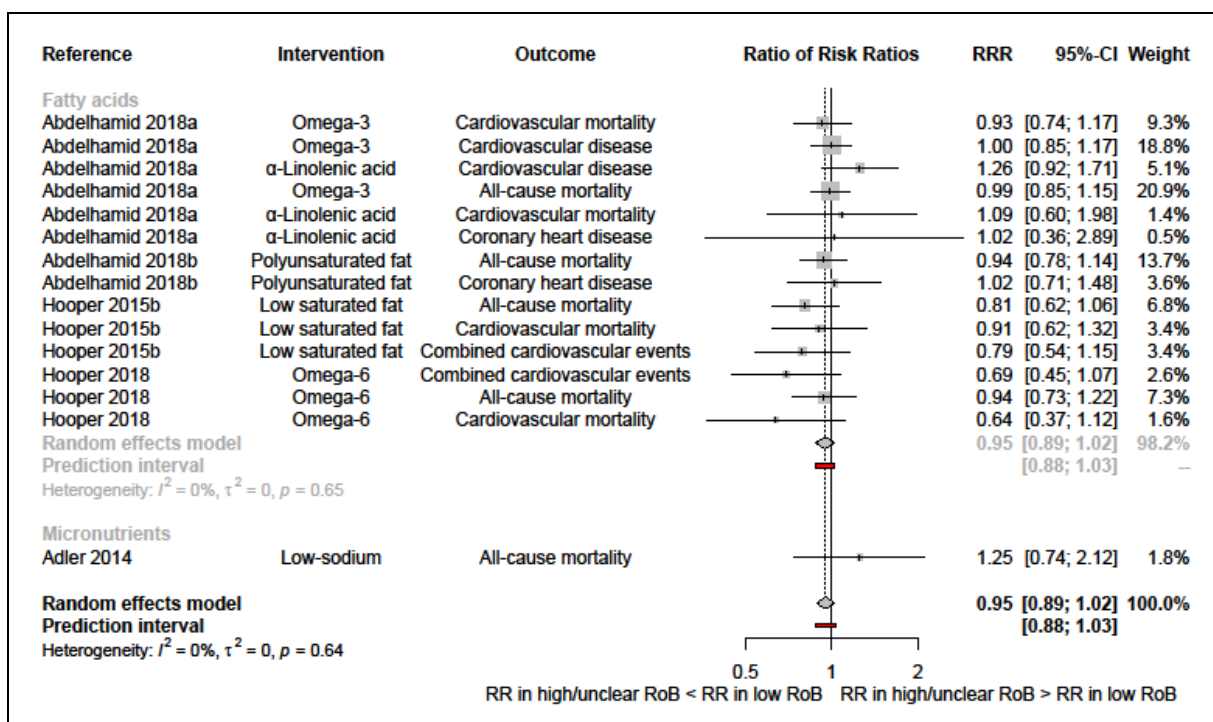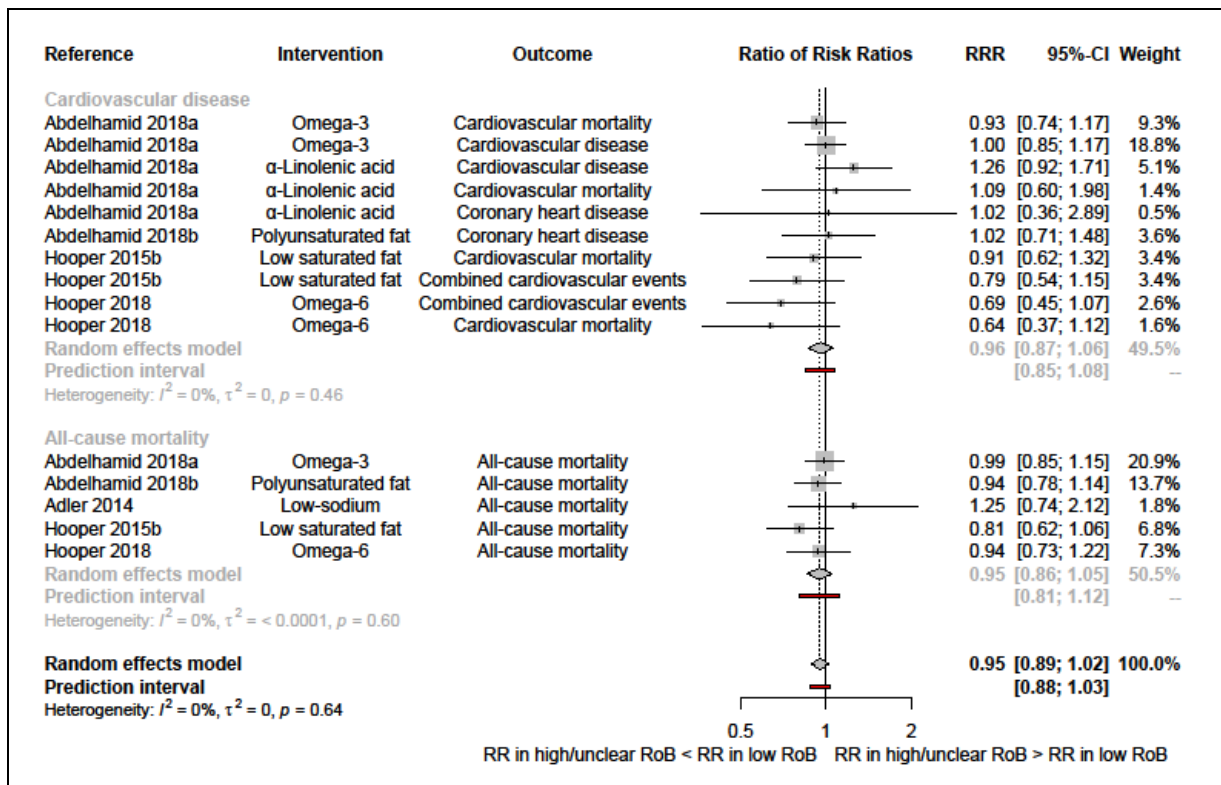RR in high/unclear RoB < RR in low RoB   RR in high/unclear RoB > RR in low RoB

**Figure S56:** Dietary Compliance: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method



| Reference | Intervention | Outcome | Ratio of Risk Ratios | RRR | 95%-CI | Weight |
|---|---|---|---|---|---|---|
| Abdelhamid 2018a | Omega-3 | Cardiovascular mortality | | 0.93 | [0.74; 1.17] | 13.3% |
| Abdelhamid 2018a | Omega-3 | All-cause mortality | | 0.99 | [0.85; 1.15] | 30.0% |
| Abdelhamid 2018a | α-Linolenic acid | Cardiovascular mortality | | 1.09 | [0.60; 1.98] | 1.9% |
| Abdelhamid 2018b | Polyunsaturated fat | All-cause mortality | | 0.94 | [0.78; 1.14] | 19.7% |
| Abdelhamid 2018b | Polyunsaturated fat | Coronary heart disease | | 1.02 | [0.71; 1.48] | 5.1% |
| Adler 2014 | Low-sodium | All-cause mortality | | 1.25 | [0.74; 2.12] | 2.5% |
| Hooper 2015b | Low saturated fat | All-cause mortality | | 0.81 | [0.62; 1.06] | 9.7% |
| Hooper 2015b | Low saturated fat | Cardiovascular mortality | | 0.91 | [0.62; 1.32] | 4.9% |
| Hooper 2018 | Omega-6 | All-cause mortality | | 0.94 | [0.73; 1.22] | 10.5% |
| Hooper 2018 | Omega-6 | Cardiovascular mortality | | 0.64 | [0.37; 1.12] | 2.3% |
| **Random effects model** | | | | 0.94 | [0.87; 1.03] | 100.0% |
| **Prediction interval** | | | | | [0.85; 1.04] | |

Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0$, $p = 0.83$

0.5  1  2

RR in high/unclear RoB < RR in low RoB   RR in high/unclear RoB > RR in low RoB

**Figure S57:** Dietary Compliance: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Sensitivity analysis: Excluding highly correlated outcomes

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

**Figure S58:** Dietary Compliance: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Sensitivity analysis: Including only one outcome per comparison from each included systematic review

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method
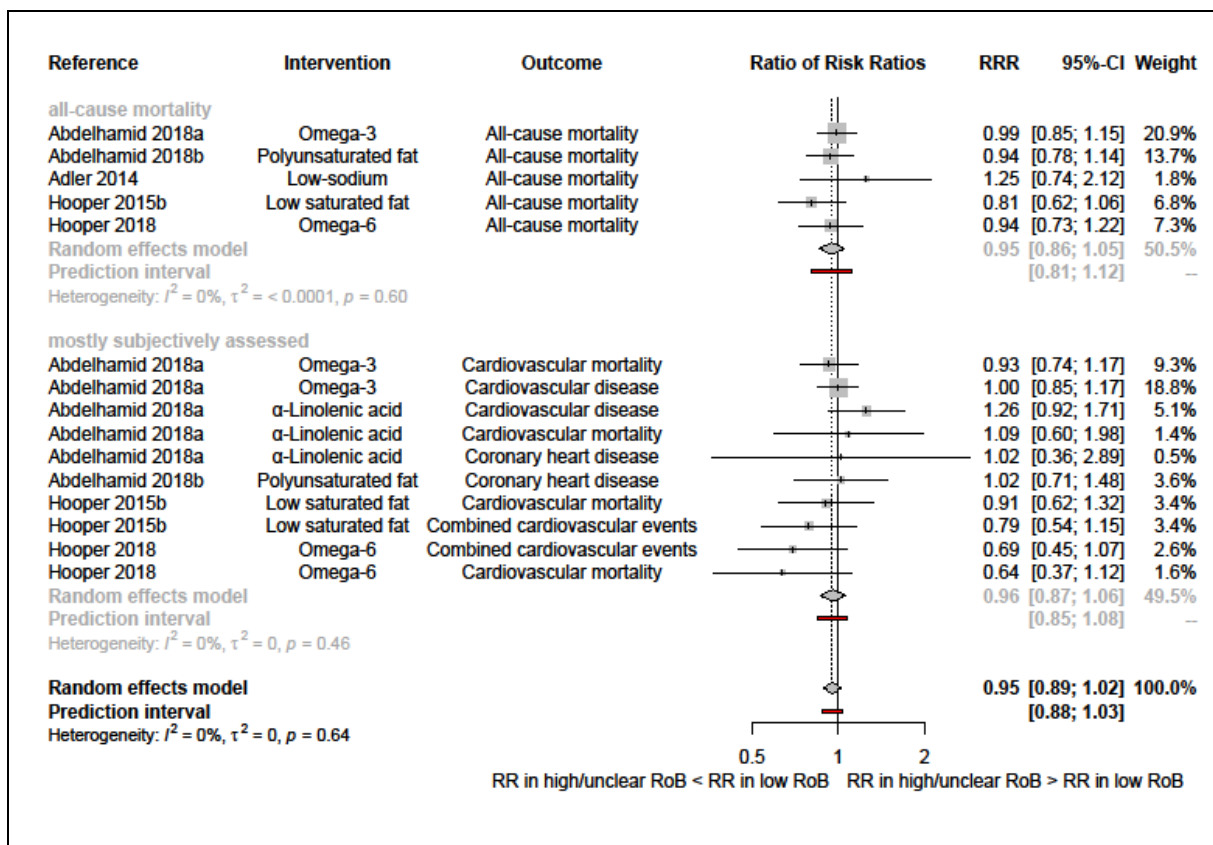


**Figure S59:** Dietary Compliance: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Subgroup analysis: Cluster of interventions

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method

**Figure S60:** Dietary Compliance: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Subgroup analysis: Clusters of outcomes

CI: confidence interval; I²: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; τ²: heterogeneity value with Restricted Maximum-likelihood estimation method

**Figure S61:** Dietary Compliance: Comparisons of randomised controlled trials with high/unclear risk of bias versus those with low risk of bias (reference category) for binary outcomes as pooled ratio of risk ratios. Subgroup analysis: Subjective versus objective outcomes

CI: confidence interval; $I^2$: heterogeneity measure; RoB: risk of bias; RR: risk ratio; RRR: ratio of risk ratios; $\tau^2$: heterogeneity value with Restricted Maximum-likelihood estimation method