

**Supplementary Table 1.** Search strings and limits used for each database.

| Database             | Search string and limits                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PubMed               | <p>((fatty acids, unsaturated[Mh] OR fats[Mh] OR oils[Mh] OR unsaturated fatty acid OR fat OR oil) AND ("cholesterol, ldl/blood"[Mh] OR "cholesterol, hdl/blood"[Mh] OR "cholesterol, vldl/blood"[Mh] OR remnants, chylomicron[Mh] OR "triglycerides/blood"[Mh] OR "lipids/blood"[mh:noexp] OR "cholesterol/blood"[mh:noexp] OR ldl OR hdl OR vldl OR chylomicron OR triglycerides) AND (postprandial period[Mh] OR postprandial)) AND Humans[Mesh] AND English[lang] AND adult[MeSH]</p>                                                                                       |
| CINAHL               | <p>((MH "Fatty Acids, Unsaturated+") OR (MH "Fats+") OR (MH "Oils+")) AND ((MH "Postprandial Period") OR postprandial) AND ((MH "Cholesterol/BL") OR (MH "Lipoproteins, LDL Cholesterol/BL") OR (MH "Lipoproteins, HDL Cholesterol/BL") OR (MH "Triglycerides/BL") OR (MH "Lipids/BL") OR VLDL OR Chylomicron)</p> <p><i>Limits - English Language; Human; Age Groups: All Adult</i></p>                                                                                                                                                                                        |
| MEDLINE (ProQuest)   | <p>((MESH.EXACT.EXPLODE("Oils") OR MESH.EXACT.EXPLODE("Fatty Acids, Unsaturated") OR MESH.EXACT.EXPLODE("Fats")) AND (MESH.EXACT("Postprandial Period") OR postprandial) AND (MESH.EXACT("Chylomicron Remnants blood") OR MESH.EXACT("Cholesterol, VLDL -- blood") OR MESH.EXACT("Cholesterol, HDL -- blood") OR MESH.EXACT("Triglycerides -- blood") OR MESH.EXACT("Cholesterol -- blood") OR MESH.EXACT("Cholesterol, LDL - - blood") OR MESH.EXACT("Lipids -- blood"))))</p> <p><i>Additional limits - Humans;Language: English; Age group: Adults, all (19 years +)</i></p> |
| The Cochrane Library | <p>([mh fats] OR [mh oils] OR [mh "unsaturated fatty acids"]) AND ([mh "postprandial period"] OR postprandial) AND ([mh triglycerides/BL] OR [mh ^cholesterol/BL] OR [mh "hdl cholesterol"/BL] OR [mh "ldl cholesterol"/BL] OR [mh "vldl cholesterol"/BL] OR [mh "chylomicron remnants"/BL] OR [mh ^lipids/BL])</p> <p><i>Filter – Trials</i></p>                                                                                                                                                                                                                               |

**Supplementary Table 2.** Risk of bias assessment of the 17 articles included in systematic review and meta-analysis.

| First Author (Year)     | Selection bias |                        | Performance bias                       | Detection bias      | Notes                                                                                  |
|-------------------------|----------------|------------------------|----------------------------------------|---------------------|----------------------------------------------------------------------------------------|
|                         | Randomisation  | Allocation concealment | Blinding of participants and personnel | Blinding of outcome |                                                                                        |
| Berry (2007)            | Unclear        | Unclear                | Unclear                                | Unclear             |                                                                                        |
| Berry (2008)            | Unclear        | Unclear                | Unclear                                | Unclear             |                                                                                        |
| Calabuig-Navarro (2014) | Low            | Unclear                | High                                   | Unclear             | Used a web-based random letter sequence generator. Single-blinded study.               |
| Jackson (2005)          | Unclear        | Unclear                | High                                   | Unclear             | Single-blinded study.                                                                  |
| Kasai (2003)            | Unclear        | Unclear                | Low                                    | Unclear             | Double-blinded study                                                                   |
| Koutsari (2004)         | Unclear        | Unclear                | High                                   | Unclear             | Single-blinded study                                                                   |
| Lopez (2008)            | Unclear        | Unclear                | High                                   | Unclear             | Single-blinded study.                                                                  |
| Lopez (2011)            | Unclear        | Unclear                | High                                   | Unclear             | Single-blinded study.                                                                  |
| Lozano (2012)           | Unclear        | Unclear                | Unclear                                | Unclear             |                                                                                        |
| Masson (2011)           | Unclear        | Unclear                | Low                                    | Unclear             | Double-blinded study.                                                                  |
| Mero (1998)             | Unclear        | Unclear                | Unclear                                | Unclear             |                                                                                        |
| Perälä (2013)           | Unclear        | Unclear                | Unclear                                | Unclear             |                                                                                        |
| Sanders (2000)          | Unclear        | Unclear                | High                                   | Unclear             | Single-blinded study.                                                                  |
| Sasahara (2012)         | Unclear        | Unclear                | High                                   | Unclear             | Single-blinded study.                                                                  |
| Sun (2018)              | Unclear        | Unclear                | High                                   | Unclear             | Single-blinded study.                                                                  |
| Svensson (2011)         | Unclear        | Unclear                | High                                   | Unclear             | Single-blinded study.                                                                  |
| Teng (2015)             | Low            | Unclear                | Low                                    | Unclear             | Allocated subjects to the treatments using a computer programme. Double-blinded study. |

**Supplementary Table 3.** Summary of blood triglyceride iAUC

| Parameter (units);<br>Number of datasets | SFAs-rich breakfast | UFAs-rich breakfast |
|------------------------------------------|---------------------|---------------------|
| iAUC 4h (mmol/L × h)                     |                     |                     |
| n = 4                                    |                     |                     |
| Median                                   | 1.48                | 1.68                |
| Range                                    | 0.47 – 2.20         | 1.39 – 2.57         |
| iAUC 6h (mmol/L × h)                     |                     |                     |
| n = 6                                    |                     |                     |
| Median                                   | 2.05                | 3.59                |
| Range                                    | 0.42 – 7.00         | 0.41 – 6.52         |
| iAUC 7h (mmol/L × h)                     |                     |                     |
| n = 2                                    |                     |                     |
| Median                                   | 2.00                | 2.10                |
| Range                                    | 1.70-4.10           | 2.10 – 5.80         |
| iAUC 8h (mmol/L × h)                     |                     |                     |
| n = 4                                    |                     |                     |
| Median                                   | 4.78                | 4.40                |
| Range                                    | 4.47 – 11.9         | 2.33 – 4.77         |
| iAUC 11h (mmol/L × h)                    |                     |                     |
| n = 2                                    |                     |                     |
| Median                                   | 5.83                | 4.41                |
| Range                                    | 3.55 – 8.10         | 3.13 – 5.78         |

Abbreviations: SFAs, saturated fatty acids; UFAs, unsaturated fatty acids; iAUC, incremental area under the curve.

**Supplementary Table 4.** Summary of the change of peak blood triglyceride concentration from baseline and blood triglyceride total AUC.

| Parameter (units);<br>Number of data sets                                                             | SFAs-rich breakfast | UFAs-rich breakfast |
|-------------------------------------------------------------------------------------------------------|---------------------|---------------------|
| Peak change from baseline (mmol/L)                                                                    |                     |                     |
| n = 3                                                                                                 |                     |                     |
| Median                                                                                                | 1.38                | 1.21                |
| Range                                                                                                 | 1.13 – 1.49         | 0.66 – 1.49         |
| AUC 6h (mmol/L × h)                                                                                   |                     |                     |
| n = 3                                                                                                 |                     |                     |
| Median                                                                                                | 5.91                | 5.62                |
| Range                                                                                                 | 5.66 – 8.46         | 5.34 – 8.31         |
| AUC 8h (mmol/L × h)                                                                                   |                     |                     |
| n = 5                                                                                                 |                     |                     |
| Median                                                                                                | 14.28               | 13.06               |
| Range                                                                                                 | 12.62 – 15.93       | 9.88 – 14.08        |
| Abbreviations: SFAs, saturated fatty acids; UFAs, unsaturated fatty acids; AUC, area under the curve. |                     |                     |

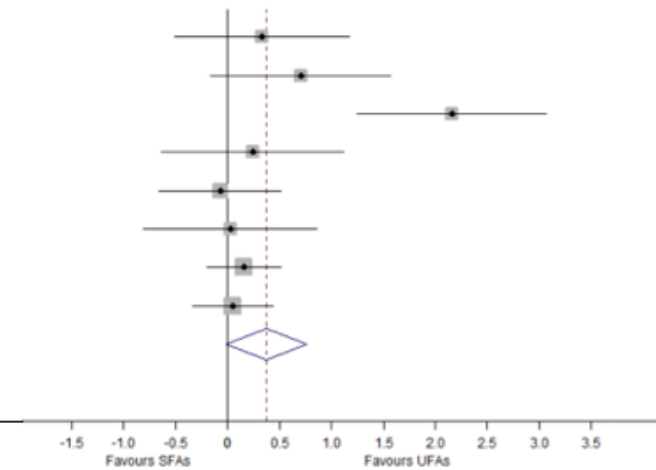
**Supplementary Table 5.** Summary of blood cholesterol iAUC.

| Parameter (units);<br>Number of data sets | SFAs-rich breakfast | UFAs-rich breakfast |
|-------------------------------------------|---------------------|---------------------|
| TC iAUC 6h (mmol/L × h)                   |                     |                     |
| n = 2                                     |                     |                     |
| Median                                    | 0.21                | 0.25                |
| Range                                     | 0.16 – 0.25         | 0.17 – 0.33         |
| TC iAUC 11h (mmol/L × h)                  |                     |                     |
| n = 2                                     |                     |                     |
| Median                                    | -9.74               | -7.80               |
| Range                                     | -11.77 – -7.72      | -12.53 – -5.72      |
| HDL-C iAUC 6h (mmol/L × h)                |                     |                     |
| n = 2                                     |                     |                     |
| Median                                    | 0.08                | 0.07                |
| Range                                     | 0.02 – 0.13         | 0.05 – 0.09         |
| LDL-C iAUC 6h (mmol/L × h)                |                     |                     |
| n = 2                                     |                     |                     |
| Median                                    | 0.22                | 0.13                |
| Range                                     | 0.18 – 0.25         | 0.10 – 0.15         |
| VLDL-C iAUC 6h (mmol/L × h)               |                     |                     |
| n = 2                                     |                     |                     |
| Median                                    | 0.30                | 0.37                |
| Range                                     | 0.27 – 0.33         | 0.19 – 0.54         |

Abbreviations: SFAs, saturated fatty acids; UFAs, unsaturated fatty acids; iAUC, incremental area under the curve; TC, total cholesterol; HDL-C, high-density lipoprotein cholesterol; LDL-C, low-density lipoprotein cholesterol; VLDL-C, very low-density lipoprotein cholesterol.

*Postprandial blood triglyceride total AUC*

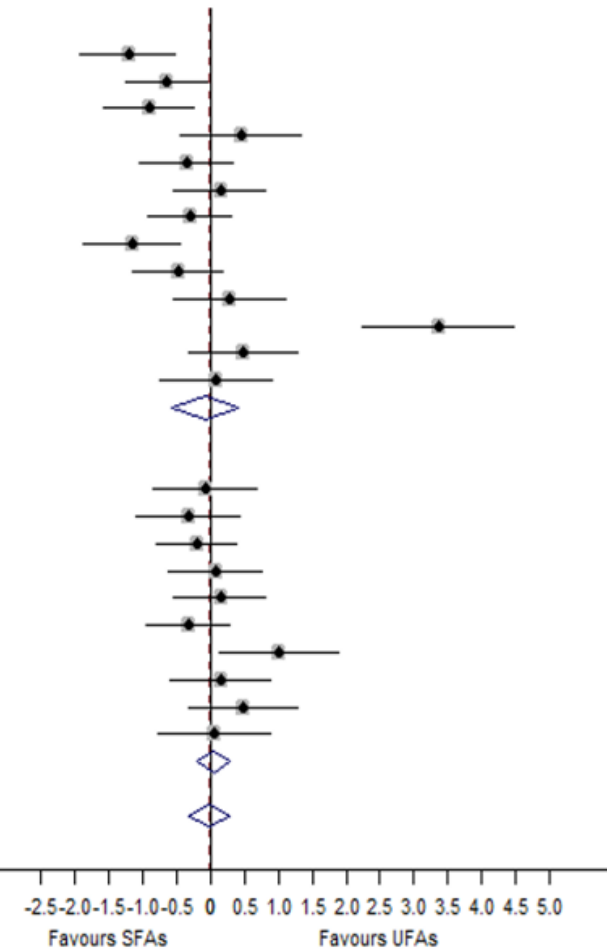
| First author {Group}                                               | Year | SFAs-rich breakfast |       |      | UFAs-rich breakfast |       |      | Weight (%)    | SMD [95% CI]              |
|--------------------------------------------------------------------|------|---------------------|-------|------|---------------------|-------|------|---------------|---------------------------|
|                                                                    |      | No. of subjects     | Mean  | SD   | No. of subjects     | Mean  | SD   |               |                           |
| Jackson {MUFAs}                                                    | 2005 | 10                  | 15.93 | 6.54 | 10                  | 14.08 | 3.74 | 18.33         | 0.33 [-0.51, 1.18]        |
| Jackson {PUFAs}                                                    | 2005 | 10                  | 15.93 | 6.54 | 10                  | 12.03 | 3.58 | 18.03         | 0.71 [-0.16, 1.58]        |
| Lopez                                                              | 2008 | 14                  | 12.62 | 1.30 | 14                  | 9.88  | 1.15 | 17.38         | 2.16 [1.25, 3.08]         |
| Sasahara                                                           | 2012 | 9                   | 5.91  | 1.01 | 9                   | 5.62  | 1.26 | 24.39         | 0.24 [-0.64, 1.13]        |
| Calabuig-Navarro                                                   | 2014 | 21                  | 16.08 | 6.57 | 21                  | 16.57 | 7.33 | 21.87         | -0.07 [-0.66, 0.53]       |
| Mero (PUFAs)                                                       | 1998 | 10                  | 10.93 | 3.13 | 10                  | 10.77 | 6.29 | 10.58         | 0.03 [-0.81, 0.87]        |
| Koutsari {F; MUFAs}                                                | 2004 | 10                  | 5.66  | 1.87 | 10                  | 5.34  | 1.87 | 17.72         | 0.16 [-0.20, 0.53]        |
| Koutsari {M; MUFAs}                                                | 2004 | 9                   | 8.46  | 2.43 | 9                   | 8.31  | 2.61 | 17.20         | 0.06 [-0.34, 0.45]        |
| <b>Total</b>                                                       |      | <b>93</b>           |       |      | <b>93</b>           |       |      | <b>100.00</b> | <b>0.37 [-0.02, 0.76]</b> |
| <i>(Chi<sup>2</sup> = 20.37; p = 0.005; I<sup>2</sup> = 65.6%)</i> |      |                     |       |      |                     |       |      |               |                           |



**Supplementary Figure 1.** Difference in effect on blood triglyceride area under the curve between consuming a SFAs-rich breakfast and consuming an UFAs-rich breakfast. A random-effects model was used as there was heterogeneity observed in the pooled data. Mean and standard deviation (SD) are expressed in mmol/L × h. Abbreviations: SFAs, saturated fatty acids; UFAs, unsaturated fatty acids; AUC, area under the curve; SMD, standardized mean difference; CI, confidence intervals; MUFAs, monounsaturated fatty acids; PUFAs, polyunsaturated fatty acids.

*Postprandial blood triglyceride iAUC*

| First author {Group}                                               | Year | SFAs-rich breakfast |       |      | UFAs-rich breakfast |      |      | Weight (%)    | SMD [95% CI]               |
|--------------------------------------------------------------------|------|---------------------|-------|------|---------------------|------|------|---------------|----------------------------|
|                                                                    |      | No. of subjects     | Mean  | SD   | No. of subjects     | Mean | SD   |               |                            |
| <b><i>MUFAs</i></b>                                                |      |                     |       |      |                     |      |      |               |                            |
| Berry                                                              | 2008 | 17                  | 0.47  | 0.60 | 17                  | 1.39 | 0.86 | 4.48          | -1.21 [-1.93, -0.50]       |
| Sun {MUFA}                                                         | 2018 | 20                  | 1.48  | 0.97 | 20                  | 2.25 | 1.34 | 4.80          | -0.64 [-1.27, -0.02]       |
| Berry                                                              | 2007 | 18                  | 2.00  | 0.28 | 18                  | 3.75 | 2.68 | 4.64          | -0.90 [-1.57, 0.23]        |
| Sasahara                                                           | 2012 | 9                   | 2.10  | 1.30 | 9                   | 1.55 | 0.98 | 3.90          | 0.46 [-0.44, 1.35]         |
| Teng {F; MUFAs}                                                    | 2015 | 15                  | 3.57  | 1.74 | 15                  | 4.25 | 2.05 | 4.53          | -0.35 [-1.05, -0.35]       |
| Teng {M; MUFAs}                                                    | 2015 | 15                  | 7.00  | 3.37 | 15                  | 6.52 | 3.18 | 4.55          | 0.14 [-0.56, 0.84]         |
| Svensson {MUFAs}                                                   | 2011 | 19                  | 1.70  | 0.93 | 19                  | 2.10 | 1.56 | 4.79          | -0.31 [-0.93, 0.32]        |
| Sanders {MUFAs}                                                    | 2000 | 16                  | 2.00  | 1.80 | 16                  | 5.80 | 4.20 | 4.43          | -1.15 [-1.88, -0.42]       |
| Sanders {MUFAs}                                                    | 2000 | 16                  | 4.10  | 2.56 | 16                  | 5.80 | 4.20 | 4.59          | -0.48 [-1.16, -0.21]       |
| Jackson {MUFA}                                                     | 2005 | 10                  | 4.78  | 2.69 | 10                  | 4.05 | 2.16 | 4.06          | 0.29 [-0.56, 1.13]         |
| Lopez                                                              | 2011 | 14                  | 11.93 | 2.43 | 14                  | 4.77 | 1.62 | 3.18          | 3.37 [2.23, 4.51]          |
| Lozano {HW; MUFA}                                                  | 2012 | 11                  | 8.10  | 5.75 | 11                  | 5.78 | 3.15 | 4.15          | 0.48 [-0.34, 1.30]         |
| Lozano {LW; MUFA}                                                  | 2012 | 10                  | 3.55  | 5.74 | 10                  | 3.13 | 3.16 | 4.07          | 0.09 [-0.75, 0.93]         |
| <b>Subtotal</b>                                                    |      | <b>190</b>          |       |      | <b>190</b>          |      |      | <b>56.19</b>  | <b>-0.08 [-0.57, 0.40]</b> |
| <i>(Chi<sup>2</sup> = 65.98; p = 0.000; I<sup>2</sup> = 81.8%)</i> |      |                     |       |      |                     |      |      |               |                            |
| <b><i>PUFAs</i></b>                                                |      |                     |       |      |                     |      |      |               |                            |
| Perälä {CON}                                                       | 2013 | 12                  | 1.47  | 0.69 | 12                  | 1.52 | 0.58 | 4.30          | -0.08 [-0.85, 0.70]        |
| Perälä {SGI}                                                       | 2013 | 12                  | 2.20  | 1.04 | 12                  | 2.57 | 1.21 | 4.28          | -0.31 [-1.09, 0.46]        |
| Sun {PUFAs}                                                        | 2018 | 20                  | 1.48  | 0.97 | 20                  | 1.68 | 1.04 | 4.85          | -0.19 [-0.80, 0.41]        |
| Teng {F; PUFAs}                                                    | 2015 | 15                  | 3.57  | 1.74 | 15                  | 3.43 | 1.63 | 4.55          | -0.81 [-0.62, 0.78]        |
| Teng {M; PUFAs}                                                    | 2015 | 15                  | 7.00  | 3.37 | 15                  | 6.52 | 3.18 | 4.55          | 0.14 [-0.56, 0.85]         |
| Svensson {PUFAs}                                                   | 2011 | 19                  | 1.70  | 0.93 | 19                  | 2.10 | 1.45 | 4.79          | -0.32 [-0.95, 0.31]        |
| Jackson {PUFAs}                                                    | 2005 | 10                  | 4.78  | 2.69 | 10                  | 2.33 | 1.84 | 3.89          | 1.02 [0.12, 1.91]          |
| Masson                                                             | 2011 | 13                  | 4.78  | 2.20 | 13                  | 4.40 | 2.58 | 4.39          | 0.15 [-0.59, 0.90]         |
| Lozano {HW; PUFAs}                                                 | 2012 | 11                  | 8.10  | 5.75 | 11                  | 5.62 | 3.76 | 4.15          | 0.49 [-0.33, 1.31]         |
| Lozano {LW; PUFAs}                                                 | 2012 | 10                  | 3.55  | 5.74 | 10                  | 3.20 | 5.53 | 4.07          | 0.06 [-0.78, 0.90]         |
| <b>Subtotal</b>                                                    |      | <b>137</b>          |       |      | <b>137</b>          |      |      | <b>43.81</b>  | <b>0.05 [-0.19, 0.28]</b>  |
| <i>(Chi<sup>2</sup> = 8.65; p = 0.470; I<sup>2</sup> = 0.0%)</i>   |      |                     |       |      |                     |      |      |               |                            |
| <b>Total</b>                                                       |      | <b>327</b>          |       |      | <b>327</b>          |      |      | <b>100.00</b> | <b>-0.03 [-0.32, 0.27]</b> |
| <i>(Chi<sup>2</sup> = 78.12; p = 0.000; I<sup>2</sup> = 71.8%)</i> |      |                     |       |      |                     |      |      |               |                            |



**Supplementary Figure 2.** Difference in effect on blood triglyceride incremental area under the curve between consuming a SFAs-rich breakfast and consuming a UFAs-rich breakfast, with subgroup analysis based on fatty acid composition of intervention meal. A random-effects model was used as there was heterogeneity observed in the pooled data. Mean and standard deviation (SD) are expressed in mmol/L × h. Abbreviations: SFAs, saturated fatty acids; UFAs, unsaturated fatty acids; iAUC, incremental area under the curve; SMD, standardized mean difference; CI, confidence intervals; CON, control; SGI, slow growth at infancy; MUFAs, monounsaturated fatty acids; PUFAs, polyunsaturated fatty acids; BMI, body mass index; HW, higher-weight (BMI ≥ 26.2); LW, lower-weight (BMI < 26.2).

**Supplementary Table 6.** Sensitivity analysis results for postprandial blood triglyceride iAUC.

| Study or group removed | Subgroup/<br>Overall | SMD [95 % CI]        | Chi <sup>2</sup> | <i>p</i> -value | <i>I</i> <sup>2</sup> (%) | Model  | Study or group removed | Subgroup/<br>Overall | SMD [95 % CI]        | Chi <sup>2</sup> | <i>p</i> -value | <i>I</i> <sup>2</sup> (%) | Model  |
|------------------------|----------------------|----------------------|------------------|-----------------|---------------------------|--------|------------------------|----------------------|----------------------|------------------|-----------------|---------------------------|--------|
| None                   | Overall              | 0.14 [-0.18, 0.46]   | 53.69            | 0.000           | 68.3                      | Random | Berry {2008}           | Overall              | -0.02 [-0.28, 0.24]  | 75.83            | 0.000           | 68.4                      | Random |
| Berry {2007}           | Overall              | -0.01 [-0.27, 0.25]  | 71.98            | 0.000           | 66.7                      | Random | Sanders {2008}         | Overall              | 0.01 [-0.26, 0.28]   | 72.1             | 0.000           | 68.1                      | Random |
| Perälä                 | Overall              | -0.04 [-0.32, 0.24]  | 80.84            | 0.000           | 71.5                      | Random | {MUFAs}                | Overall              | -0.01 [-0.27, 0.25]  | 73.38            | 0.000           | 67.3                      | Random |
| {CON}                  | Overall              | -0.05 [-0.32, 0.22]  | 81.85            | 0.000           | 70.4                      | Random | {MUFAs}                | Overall              | -0.04 [-0.31, 0.24]  | 80.05            | 0.000           | 70.0                      | Random |
| {SGI}                  | Overall              | -0.04 [-0.31, 0.23]  | 80.85            | 0.000           | 70.3                      | Random | Lopez                  | Overall              | -0.19 [-0.33, -0.04] | 44.18            | 0.007           | 45.7                      | Fixed  |
| Sun                    | Overall              | -0.02 [-0.30, 0.27]  | 78.25            | 0.000           | 70.6                      | Random |                        | >8 hours             | 0.28 [0.00, 0.55]    | 4.46             | 0.726           | 0.0                       | Fixed  |
| {MUFAs}                | Overall              | -0.03 [-0.30, 0.24]  | 78.35            | 0.000           | 69.4                      | Random |                        | MUFAs                | -0.33 [-0.66, -0.01] | 25.85            | 0.007           | 57.5                      | Random |
| {PUFAs}                | Overall              | -0.05 [-0.32, 0.23]  | 81.03            | 0.000           | 70.4                      | Random | Masson                 | Overall              | -0.06 [-0.33, 0.21]  | 80.49            | 0.000           | 70.2                      | Random |
| Teng                   | Overall              | -0.06[-0.37, 0.25]   | 79.05            | 0.000           | 73.4                      | Random | Jackson                | Overall              | -0.11[-0.37, 0.16]   | 73.48            | 0.000           | 68.7                      | Random |
| {F; MUFAs}             | Overall              | -0.04[-0.31, 0.23]   | 80.69            | 0.000           | 70.3                      | Random | {MUFAs}                | Overall              | -0.07[-0.34, 0.20]   | 80.10            | 0.000           | 70.0                      | Random |
| {M; MUFAs}             | Overall              | -0.06[-0.33, 0.21]   | 80.45            | 0.000           | 70.2                      | Random | {PUFAs}                | Overall              | -0.09[-0.35, 0.16]   | 74.6             | 0.000           | 67.8                      | Random |
| {F; PUFAs}             | Overall              | -0.06[-0.33, 0.21]   | 80.70            | 0.000           | 70.3                      | Random | Calabuig-Navarro       | Overall              | -0.06 [-0.33, 0.22]  | 80.84            | 0.000           | 70.3                      | Random |
| {M; PUFAs}             | Overall              | -0.06[-0.33, 0.21]   | 80.45            | 0.000           | 70.2                      | Random | Lozano                 | Overall              | -0.11 [-0.40, 0.19]  | 75.70            | 0.000           | 72.3                      | Random |
| Kasai                  | Overall              | -0.03 [-0.30,0.25]   | 78.30            | 0.000           | 70.6                      | Random | {HW; MUFAs}            | Overall              | -0.07 [-0.34, 0.19]  | 78.85            | 0.000           | 69.6                      | Random |
| {BMI < 23}             | Overall              | -0.06 [-0.33, 0.22]  | 80.93            | 0.000           | 70.3                      | Random | {HW; PUFAs}            | Overall              | -0.08 [-0.34, 0.19]  | 78.77            | 0.000           | 69.5                      | Random |
| {BMI ≥ 23}             | Overall              | -0.03 [-0.29, 0.24]  | 78.4             | 0.000           | 69.4                      | Random | {LW; MUFAs}            | Overall              | -0.06 [-0.33, 0.21]  | 80.81            | 0.000           | 70.3                      | Random |
| Sasahara               | Overall              | -0.07 [-0.34, 0.20]  | 79.37            | 0.000           | 69.8                      | Random | {LW; PUFAs}            | Overall              | -0.06 [-0.33, 0.21]  | 80.87            | 0.000           | 70.3                      | Random |
| Svensson               | Overall              | -0.031 [-0.31, 0.26] | 80.35            | 0.000           | 71.4                      | Random |                        |                      |                      |                  |                 |                           |        |
| {MUFAs}                | Overall              | -0.04 [-0.31, 0.23]  | 80.76            | 0.000           | 70.3                      | Random |                        |                      |                      |                  |                 |                           |        |
| {PUFAs}                | Overall              | -0.04 [-0.21, 0.23]  | 80.70            | 0.000           | 70.3                      | Random |                        |                      |                      |                  |                 |                           |        |

Abbreviations: iAUC, incremental area under the curve; SMD, standardized mean difference; CI, confidence intervals; PUFAs, polyunsaturated fatty acids; MUFAs, monounsaturated fatty acids; UFAs, unsaturated fatty acids; CON, control; SGI, slow growth at infancy; BMI, body mass index; HW, higher-weight (BMI ≥ 26.2); LW, lower-weight (BMI < 26.2); F, female; M, male.

**Supplementary Table 7.** Sensitivity analysis results for postprandial blood triglyceride total AUC.

| Study or group removed | SMD [95 % CI]      | Chi <sup>2</sup> | <i>p</i> -value | <i>I</i> <sup>2</sup> (%) | Model  |
|------------------------|--------------------|------------------|-----------------|---------------------------|--------|
| None                   | 0.37 [-0.02, 0.76] | 20.37            | 0.006           | 65.6                      | Random |
| Jackson                | 0.35 [-0.13, 0.82] | 19.14            | 0.002           | 73.9                      | Random |
| {MUFAs}                | 0.39 [-0.05, 1.68] | 20.33            | 0.001           | 70.5                      | Random |
| {PUFAs}                | 0.34 [-0.08, 0.76] | 19.21            | 0.004           | 68.8                      | Random |
| Lopez                  | 0.14 [-0.07, 0.35] | 2.62             | 0.85            | 0.0                       | Fixed  |
| Sasahara               | 0.40 [-0.03, 0.83] | 20.37            | 0.002           | 70.6                      | Random |
| Calabuig-Navarro       | 0.45 [0.01, 0.90]  | 19.16            | 0.004           | 68.7                      | Random |
| Mero                   | 0.42 [-0.01, 0.85] | 20.11            | 0.003           | 70.2                      | Random |
| Koutsari               | 0.54 [-0.09, 1.17] | 17.95            | 0.003           | 72.1                      | Random |
| {Female}               | 0.44 [-0.06, 0.94] | 20.09            | 0.003           | 70.1                      | Random |
| {Male}                 | 0.45 [-0.03, 0.93] | 19.18            | 0.004           | 68.7                      | Random |

Abbreviations: AUC, area under the curve; SMD, standardized mean difference; CI, confidence intervals; PUFAs, polyunsaturated fatty acids; MUFAs, monounsaturated fatty acids; UFAs, unsaturated fatty acids.

**Supplementary Table 8.** Sensitivity analysis results for postprandial blood total cholesterol iAUC.

| Study or group removed | SMD [95 % CI]       | Chi <sup>2</sup> | <i>p</i> -value | <i>I</i> <sup>2</sup> (%) | Model  |
|------------------------|---------------------|------------------|-----------------|---------------------------|--------|
| None                   | -0.08 [-0.41, 0.25] | 2.44             | 0.785           | 0.0                       | Random |
| Kasai                  | -0.02 [-0.43, 0.39] | 0.44             | 0.931           | 0.0                       | Fixed  |
| {BMI < 23}             | -0.14 [-0.50, 0.22] | 1.77             | 0.778           | 0.0                       | Fixed  |
| {BMI ≥ 23}             | 0.03 [-0.34, 0.40]  | 0.74             | 0.947           | 0.0                       | Fixed  |
| Lozano                 | -0.18 [-0.72, 0.36] | 1.79             | 0.181           | 0.0                       | Fixed  |
| {HW; MUFAs}            | -0.11 [-0.47, 0.25] | 2.33             | 0.676           | 0.0                       | Fixed  |
| {HW; PUFAs}            | -0.12 [-0.48, 0.24] | 2.21             | 0.696           | 0.0                       | Fixed  |
| {LW; MUFAs}            | -0.10 [-0.45, 0.26] | 2.39             | 0.665           | 0.0                       | Fixed  |
| {LW; PUFAs}            | -0.05 [-0.40, 0.31] | 2.22             | 0.695           | 0.0                       | Fixed  |

Abbreviations: TC, total cholesterol; iAUC, incremental area under the curve; SMD, standardized mean difference; CI, confidence intervals; PUFAs, polyunsaturated fatty acids; MUFAs, monounsaturated fatty acids; UFAs, unsaturated fatty acids; BMI, body mass index; HW, higher-weight (BMI ≥ 26.2); LW, lower-weight (BMI < 26.2).