

Supplementary Material Online

Prediction of insulin therapy in women with gestational diabetes: A systematic review and meta-analysis of observational studies”

This supplementary material has been provided by the authors to give readers additional information about their work.

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eMethods 1. Pubmed search strategy

("gestational diabetes"[MeSH Terms] OR "pregnancy diabetes"[Tiab] OR "pregnancy hyperglycemia"[Tiab]) AND ("insulin need"[Tiab] OR "insulin during pregnancy"[Tiab] OR "prediction of insulin therapy"[Tiab])

eTables

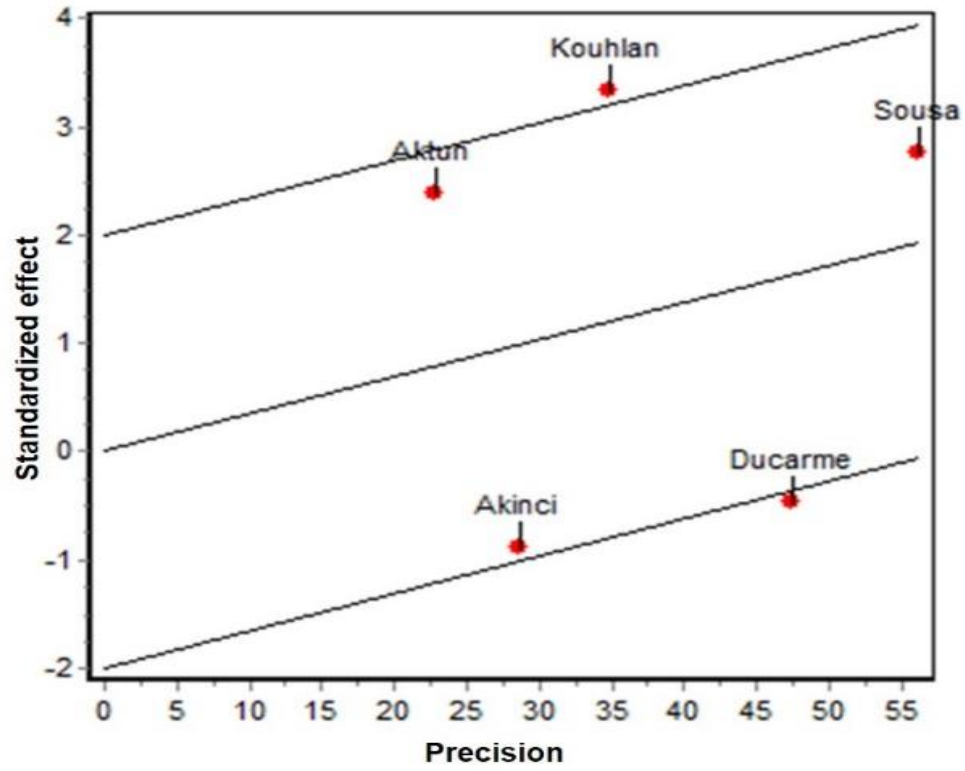
eTable 1. Risk of bias of included observational studies using the Newcastle-Ottawa Risk of Bias Scale.

| Newcastle-Ottawa Quality Assessment Form for Cohort Studies | | | | |
|--|------------------|----------------------|-----------------|-----------------------------|
| Author | Selection | Comparability | Outcome | Total quality Scores |
| Aktun et al ¹⁷ | **** | ** | *** | 9 |
| Ares et al ²⁹ | **** | * | ** | 7 |
| Bakiner et al ²⁸ | **** | ** | *** | 9 |
| Barnes et al ²⁰ | **** | * | *** | 8 |
| Ducarme et al ¹⁶ | *** | * | *** | 7 |
| Koning et al ²² | **** | * | *** | 8 |
| Kouhkan et al ¹⁹ | *** | * | ** | 6 |
| Matsumoto et al ²⁵ | **** | * | *** | 8 |
| Meshel et al ²¹ | **** | * | *** | 8 |
| Ouzounian et al ²⁶ | ** | * | ** | 5 |
| Pertot et al ³¹ | **** | * | ** | 7 |
| Souza et al ¹⁸ | **** | * | *** | 8 |
| Wong et al ²⁴ | **** | ** | *** | 9 |
| Zhang et al ³⁰ | **** | * | ** | 7 |
| Newcastle-Ottawa Quality Assessment Form for Case-Control Studies | | | | |
| Author | Selection | Comparability | Exposure | Total quality Scores |
| Álvarez-Ballano et al ²³ | **** | * | *** | 8 |
| Akinci et al ¹⁵ | **** | ** | *** | 9 |
| Sapienza et al ²⁷ | *** | ** | *** | 8 |
| Yanagisawa et al ³² | ** | ** | *** | 7 |

Selection: A maximum of 4 stars; Comparability: A maximum of 2 stars; Outcome/Exposure: A maximum of 3 stars, Total quality: a maximum of 9 stars

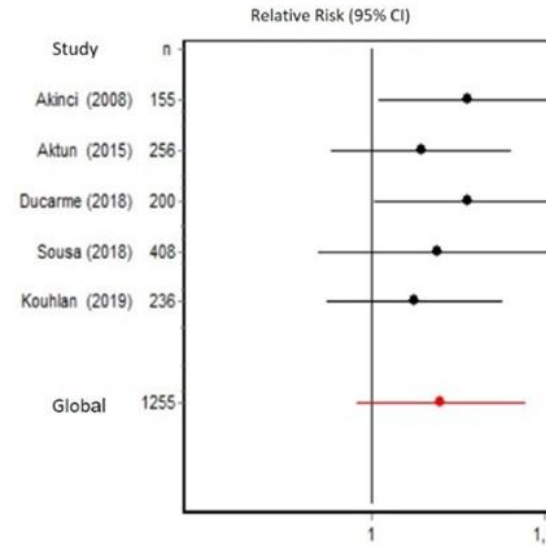
eSupplementary figures

eSupplementary figure 1. Maternal age at the onset of gestation index: Galbraith's plot.

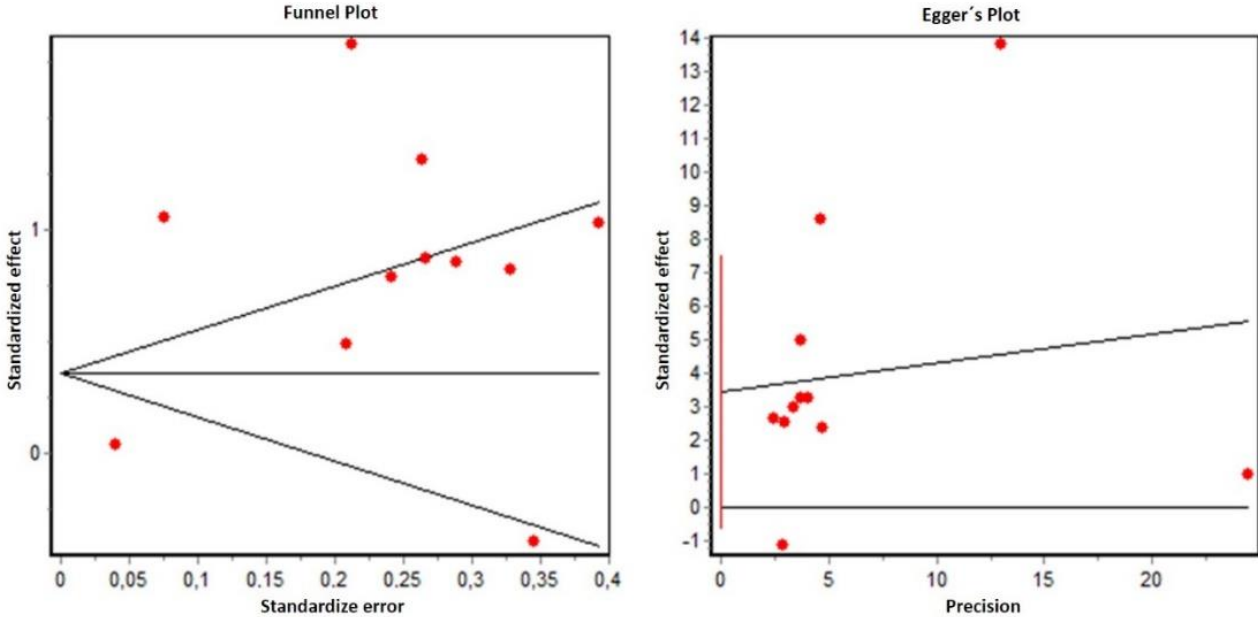


eSupplementary figure 2. Maternal age at the onset of gestation index: Sensitivity analysis

| | RR | 95%-CI | %W(fixed) | %W(random) |
|-------------------|------|--------------|-----------|------------|
| Akinci B. (2008) | 0.97 | [0.91; 1.04] | 13.64 | 18.55 |
| Aktun LH. (2015) | 1.11 | [1.02; 1.21] | 8.33 | 15.17 |
| Ducarme G. (2018) | 0.99 | [0.94; 1.04] | 24.27 | 21.91 |
| Kouhlan A. (2019) | 1.10 | [1.04; 1.16] | 20.39 | 20.98 |
| Sousa A. (2018) | 1.05 | [1.01; 1.10] | 33.37 | 23.39 |

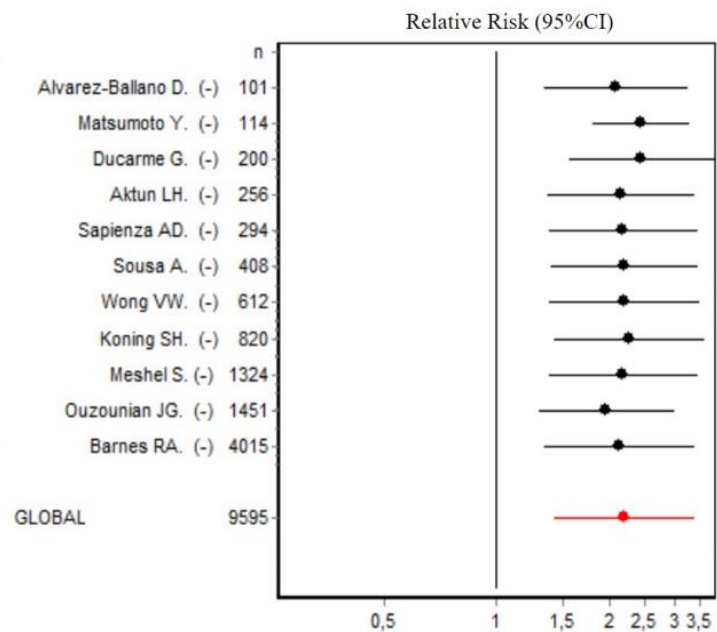


eSupplementary figure 3. Body mass index ≥ 30 : Funnel and Egger's Plot

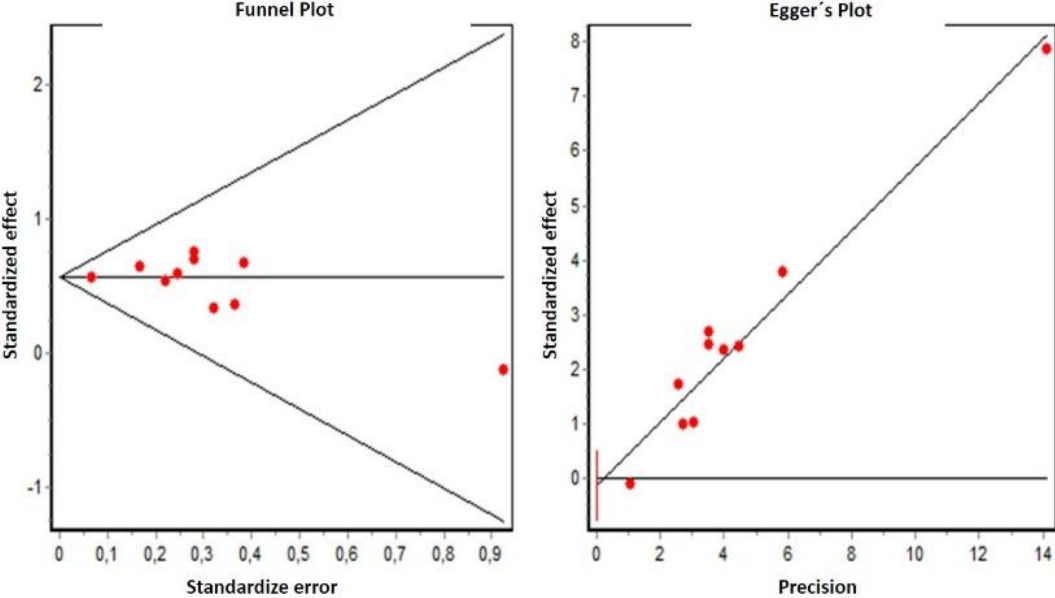


eSupplementary figure 4. Sensitivity analysis of Body mass index ≥ 30

| | RR | 95%-CI | %W(fixed) | %W(random) |
|---------------------------|------|--------------|-----------|------------|
| Alvarez-Ballano D. (2006) | 3.70 | [2.68; 5.11] | 3.77 | 9.69 |
| Aktun LH. (2015) | 2.79 | [1.29; 6.05] | 0.66 | 7.70 |
| Barnes RA. (2016) | 2.87 | [2.47; 3.33] | 17.68 | 10.12 |
| Ducarme G. (2018) | 0.67 | [0.34; 1.33] | 0.84 | 8.14 |
| Koning SH. (2016) | 1.63 | [1.08; 2.46] | 2.35 | 9.38 |
| Matsumoto Y. (2019) | 1.04 | [0.96; 1.12] | 66.41 | 10.21 |
| Meshel S. (2015) | 2.38 | [1.55; 3.66] | 2.12 | 9.29 |
| Ouzounian JG. (2011) | 6.23 | [4.10; 9.46] | 2.26 | 9.34 |
| Sapienza AD. (2010) | 2.35 | [1.33; 4.14] | 1.23 | 8.70 |
| Sousa A. (2018) | 2.27 | [1.19; 4.33] | 0.95 | 8.33 |
| Wong VW. (2011) | 2.19 | [1.36; 3.53] | 1.72 | 9.10 |

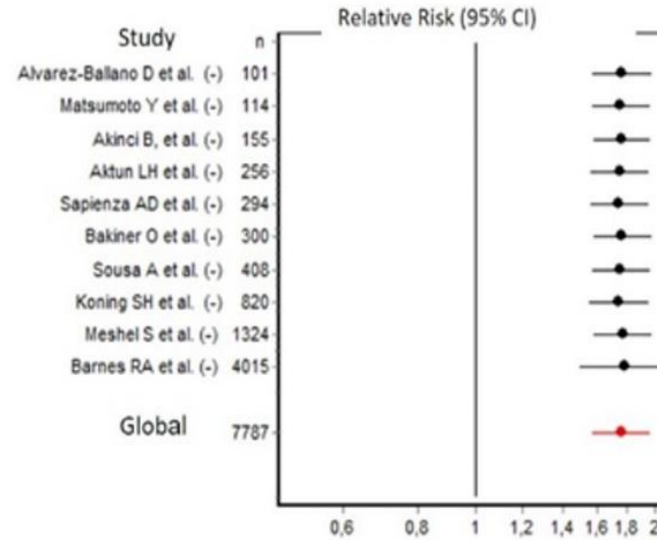


eSupplementary figure 5. Family history of T2DM: Funnel and Egger's Plot

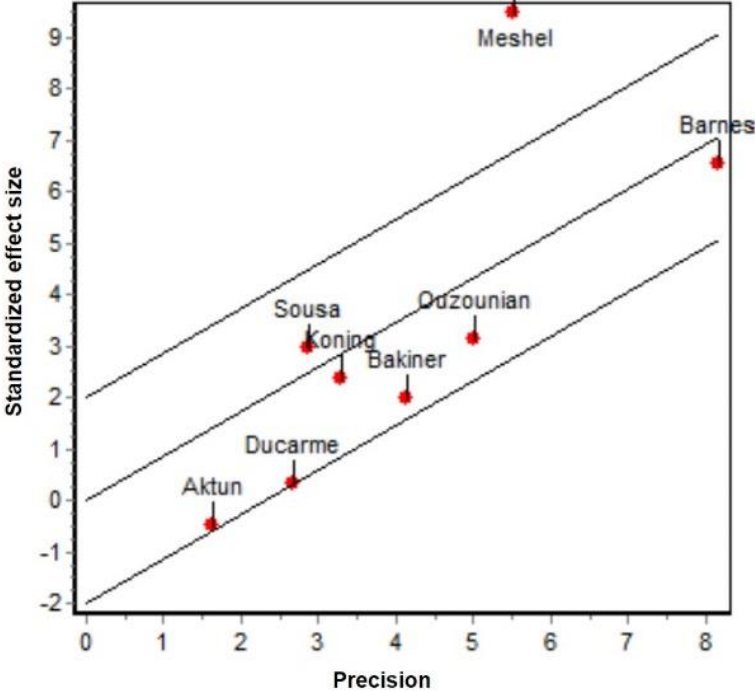


eSupplementary figure 6. Sensitivity analysis of Family history of T2DM

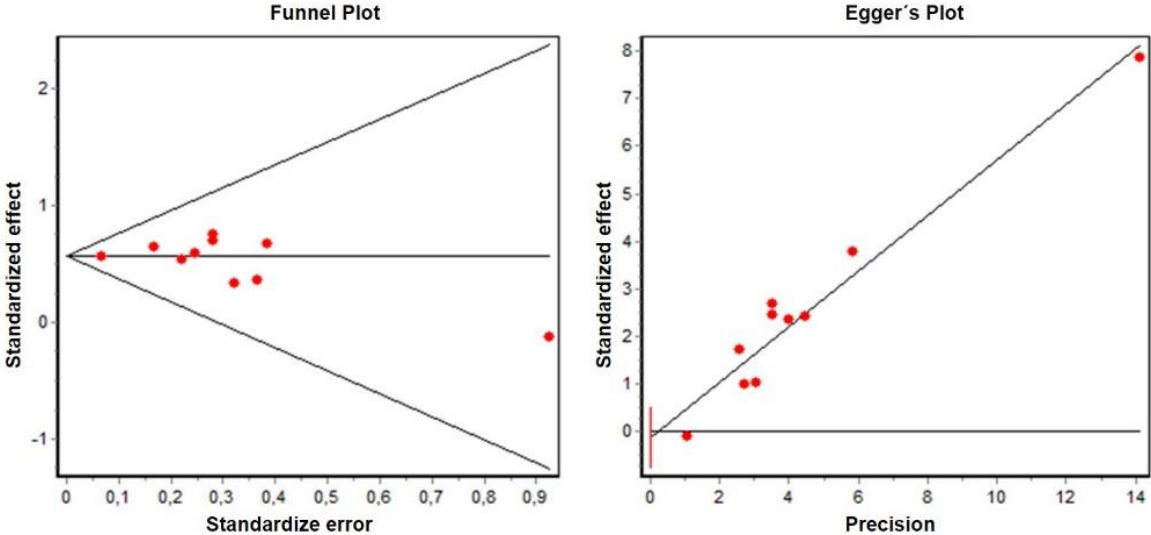
| | RR | 95%-CI | %w(fixed) | %w(random) |
|---------------------------|------|--------------|-----------|------------|
| Alvarez-Ballano D. (2006) | 1.70 | [1.07; 2.71] | 5.29 | 5.29 |
| Akinci B. (2008) | 0.88 | [0.35; 2.22] | 1.35 | 1.35 |
| Aktun LH. (2015) | 1.99 | [1.15; 3.45] | 3.81 | 3.81 |
| Bakiner O. (2013) | 1.42 | [0.69; 2.92] | 2.22 | 2.22 |
| Barnes RA. (2016) | 1.74 | [1.52; 2.00] | 61.32 | 61.32 |
| Koning SH. (2016) | 1.90 | [1.36; 2.66] | 10.26 | 10.26 |
| Matsumoto Y. (2019) | 1.94 | [0.91; 4.13] | 2.03 | 2.03 |
| Meshel S. (2015) | 1.38 | [0.86; 2.23] | 5.05 | 5.05 |
| Sapienza AD. (2010) | 2.12 | [1.22; 3.67] | 3.83 | 3.83 |
| Sousa A. (2018) | 1.79 | [1.10; 2.92] | 4.85 | 4.85 |



eSupplementary figure 7. History of GDM in previous gestations: Galbraith's plot.

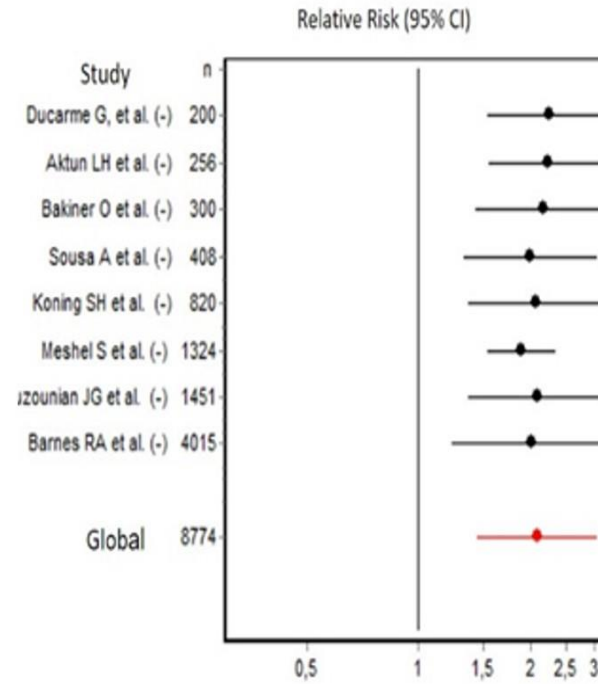


eSupplementary Figure 8. History of GDM in previous gestations: Funnel and Egger's Plot



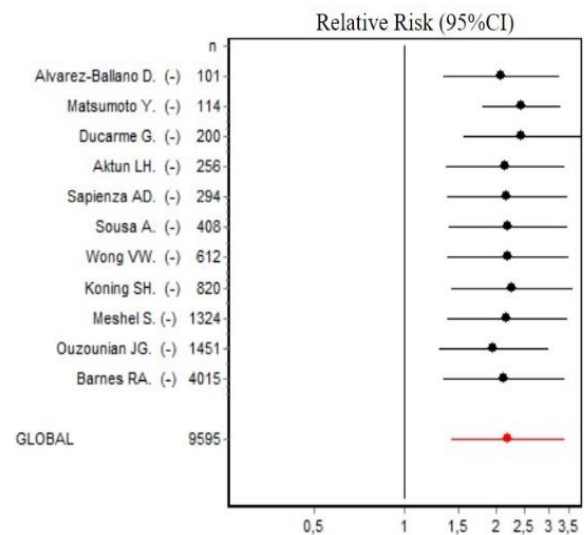
eSupplementary figure 9. Sensitivity analysis of History of GDM in previous gestations

| | RR | 95%-CI | %W(fixed) | %W(random) |
|----------------------|------|--------------|-----------|------------|
| Aktun LH. (2015) | 0.74 | [0.22; 2.46] | 1.04 | 4.74 |
| Bakiner O. (2013) | 1.61 | [1.00; 2.59] | 6.61 | 14.09 |
| Barnes RA. (2016) | 2.22 | [1.91; 2.58] | 67.98 | 21.05 |
| Ducarme G. (2018) | 1.12 | [0.54; 2.34] | 2.77 | 9.34 |
| Koning SH. (2016) | 2.05 | [1.13; 3.71] | 4.26 | 11.71 |
| Meshe1 S. (2015) | 5.53 | [3.25; 9.41] | 5.29 | 12.91 |
| Ouzounian JG. (2011) | 1.86 | [1.26; 2.75] | 9.83 | 16.01 |
| Sousa A. (2018) | 2.81 | [1.42; 5.56] | 3.22 | 10.15 |

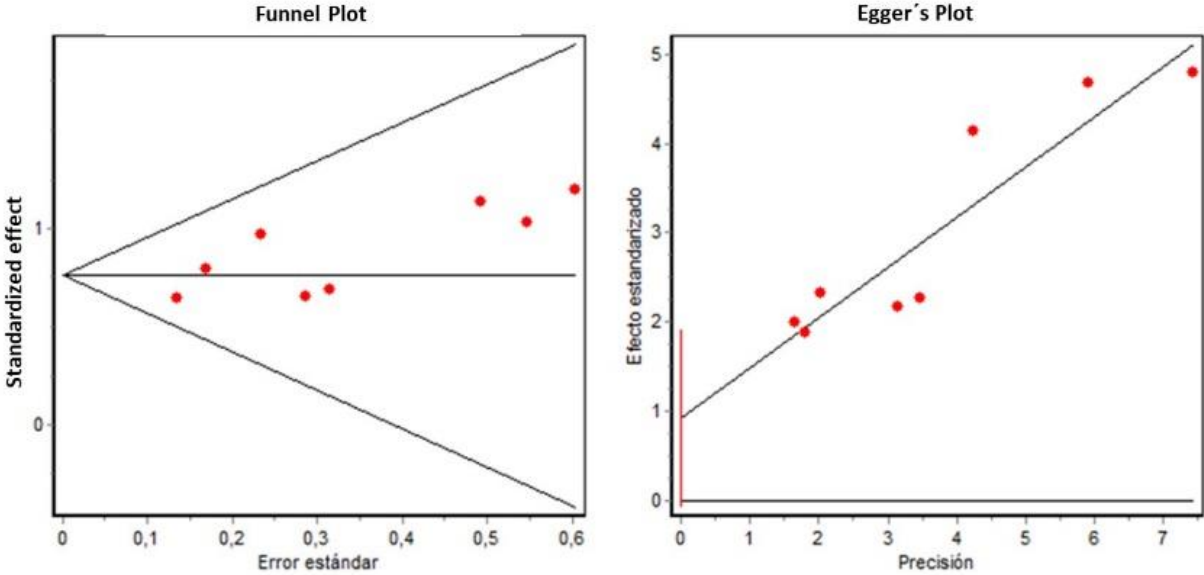


eSupplementary figure 10. Sensitivity analysis of Value of basal glycemia at OGTT

| | RR | 95%-CI | %W(fixed) | %W(random) |
|---------------------------|------|--------------|-----------|------------|
| Alvarez-Ballano D. (2016) | 2.90 | [1.98; 4.25] | 0.1 | 2.4 |
| Akinci B. (2008) | 1.03 | [1.01; 1.06] | 34.6 | 14.4 |
| Aktun LH. (2015) | 1.06 | [1.02; 1.10] | 14.2 | 14.0 |
| Ares J. (2014) | 1.10 | [1.05; 1.15] | 9.8 | 13.7 |
| Bakiner O. (2013) | 1.06 | [1.03; 1.09] | 18.7 | 14.2 |
| Ducarme G. (2018) | 1.32 | [0.96; 1.82] | 0.2 | 3.2 |
| Koning SH. (2016) | 2.54 | [1.57; 4.11] | 0.1 | 1.6 |
| Kouhlan A. (2019) | 1.10 | [1.04; 1.16] | 6.8 | 13.3 |
| Sousa A. (2018) | 1.09 | [1.05; 1.13] | 15.0 | 14.1 |
| Wong VW. (2011) | 2.75 | [1.95; 3.87] | 0.2 | 2.9 |
| Zhang Y. (2016) | 2.02 | [1.65; 2.47] | 0.5 | 6.1 |



eSupplementary figure 11. Glycosylated hemoglobin at GDM diagnosis: Funnel and Egger's Plot



eSupplementary figure 12. Sensitivity analysis of Glycosylated hemoglobin at GDM diagnosis

| | RR | 95%-CI | %W(fixed) | %W(random) |
|----------------------|------|---------------|-----------|------------|
| Aktun LH. (2015) | 3.11 | [1.19; 8.14] | 3.46 | 3.46 |
| Bakiner O. (2013) | 1.97 | [1.06; 3.67] | 8.31 | 8.31 |
| Ducarme G. (2018) | 2.78 | [0.95; 8.14] | 2.78 | 2.78 |
| Kouhlan A. (2019) | 1.91 | [1.09; 3.34] | 10.22 | 10.22 |
| Pertot T. (2011) | 2.20 | [1.30; 3.73] | 11.50 | 11.50 |
| Sapienza AD. (2010) | 2.63 | [1.66; 4.17] | 15.10 | 15.10 |
| Yanagisawa K. (2016) | 3.31 | [1.01; 10.83] | 2.28 | 2.28 |
| Zhang Y. (2016) | 1.90 | [1.46; 2.47] | 46.35 | 46.35 |

