

Prenatal and childhood exposure to per-/polyfluoroalkyl substances (PFASs) and its associations with childhood overweight and/or obesity: a systematic review with meta-analyses

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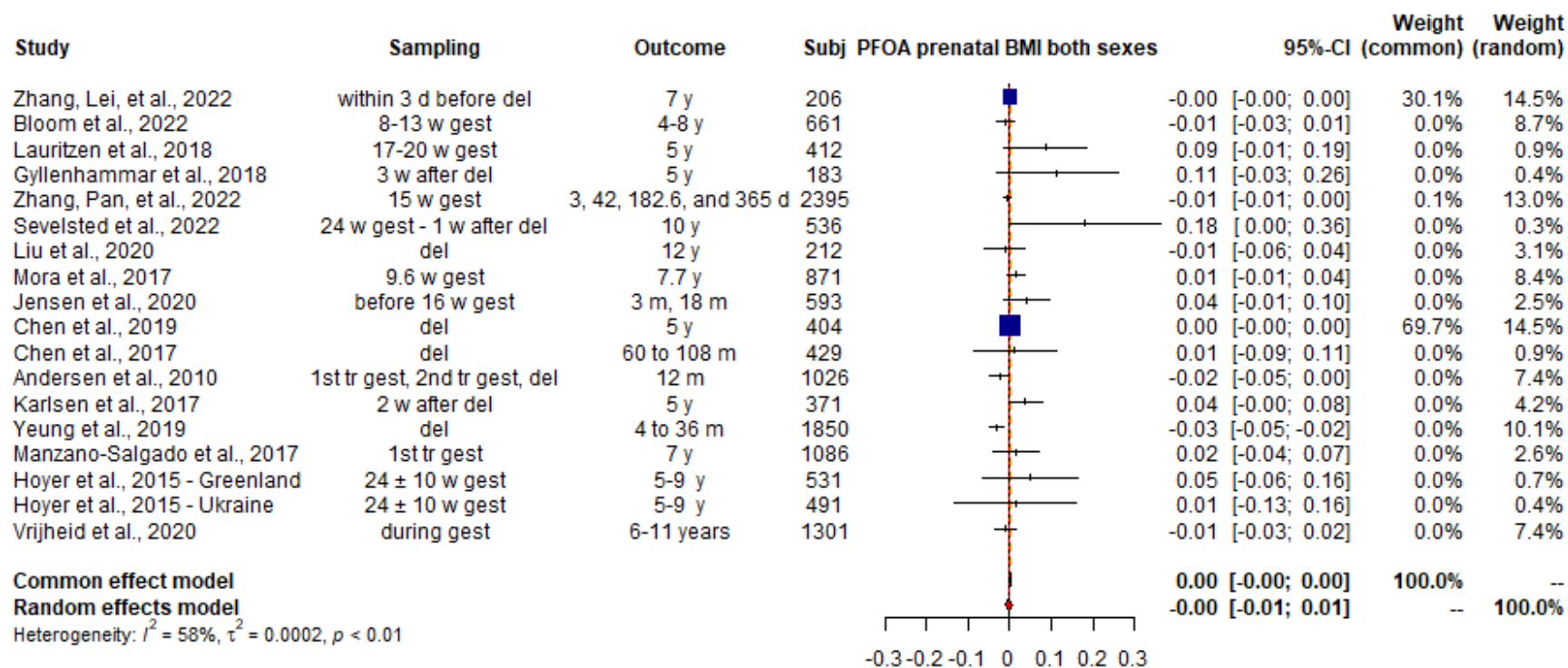
Supplementary figures

For each meta-analysis, three figures are reported:

- a forest plot pooling the estimates with the generic invariance method
- a forest plot pooling the estimates weighting by sample size
- a funnel plot evaluating the bias for included studies

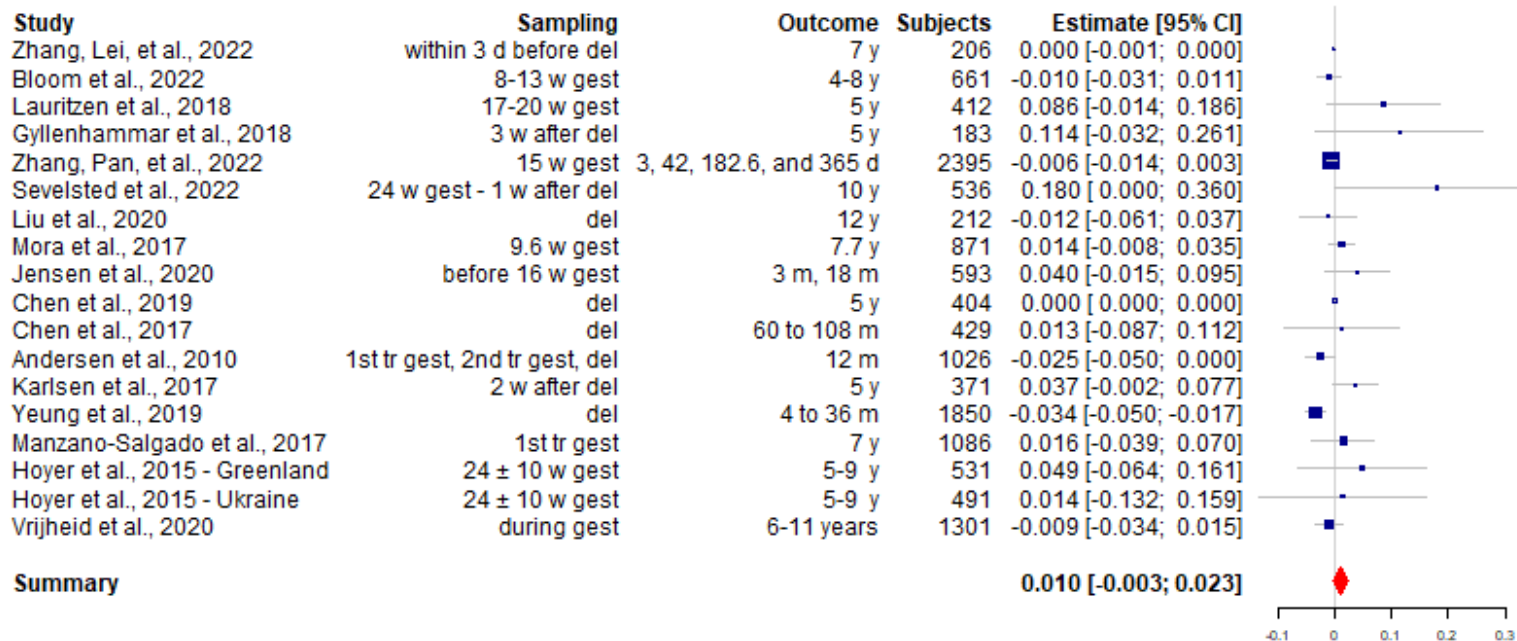
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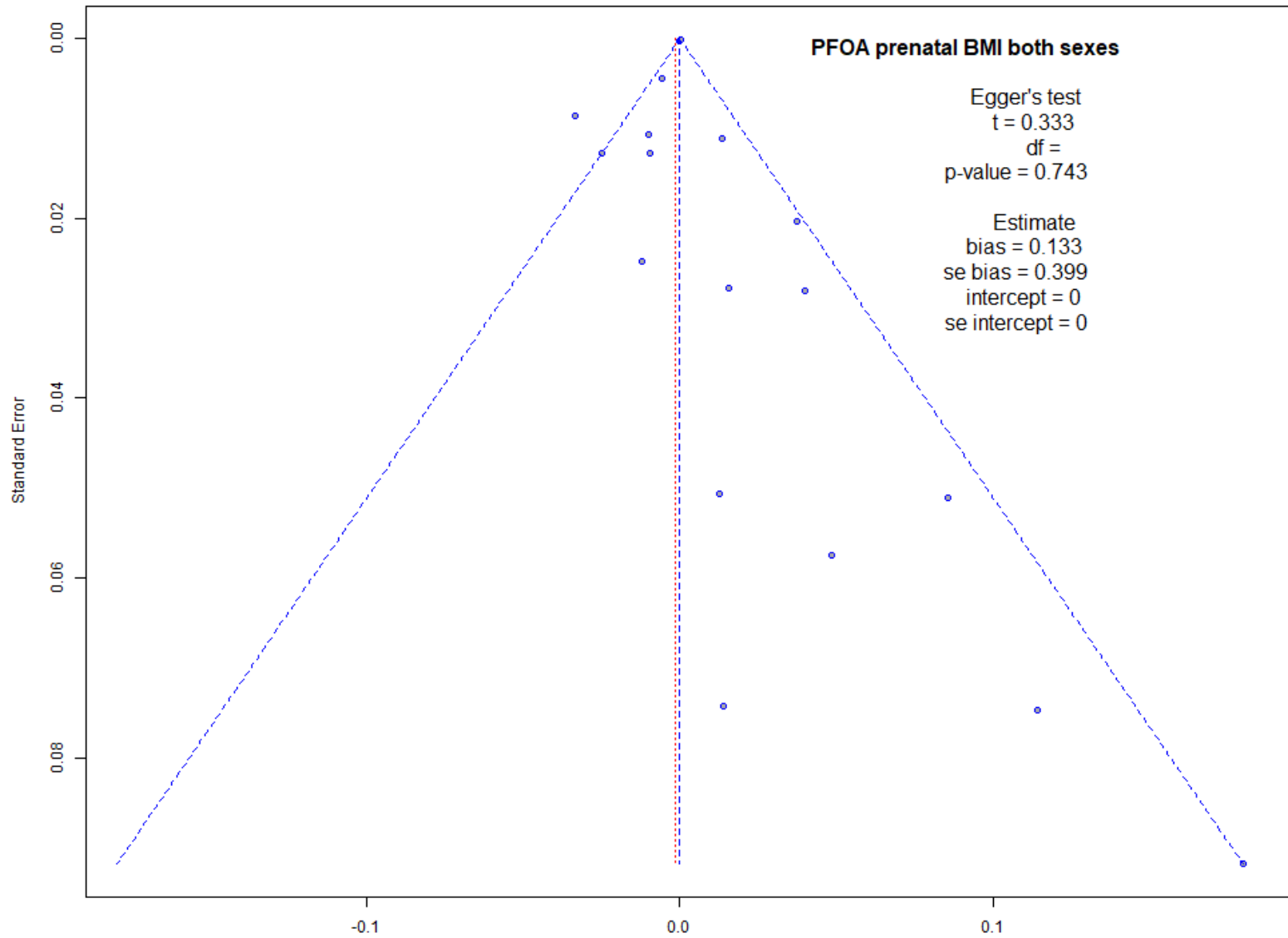
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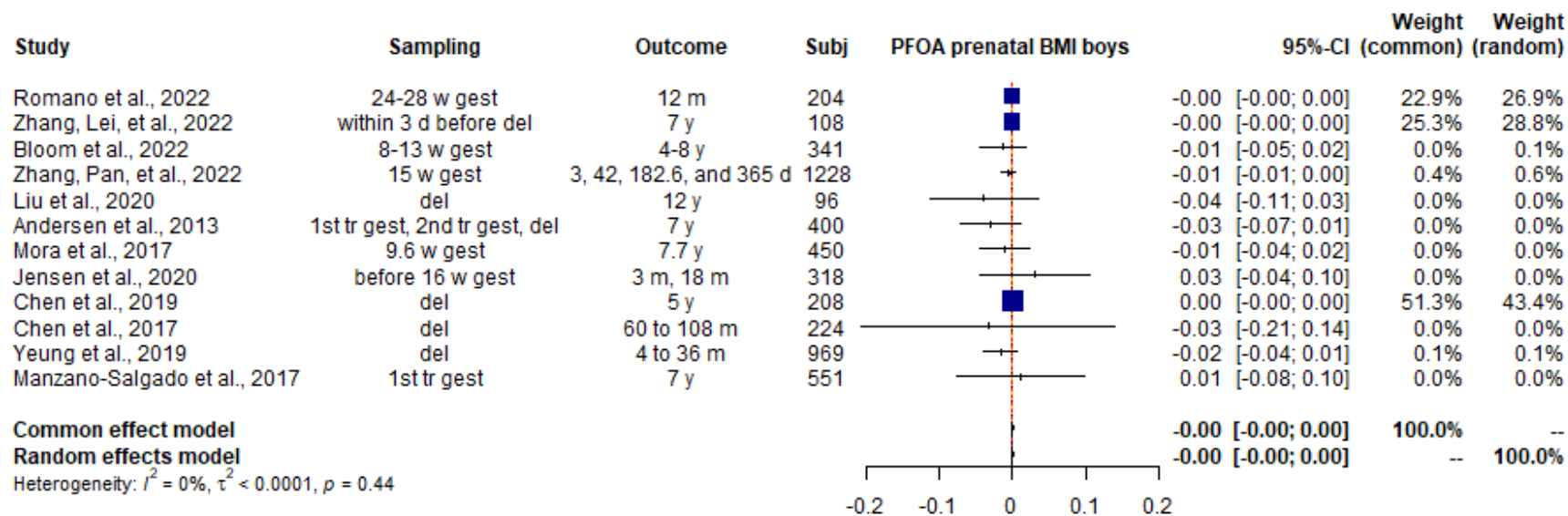
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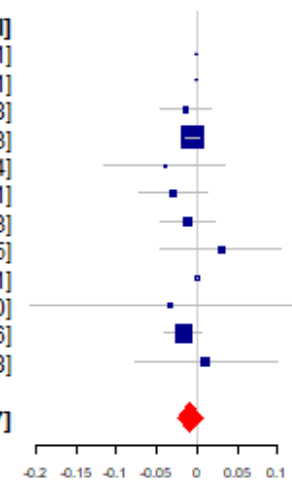
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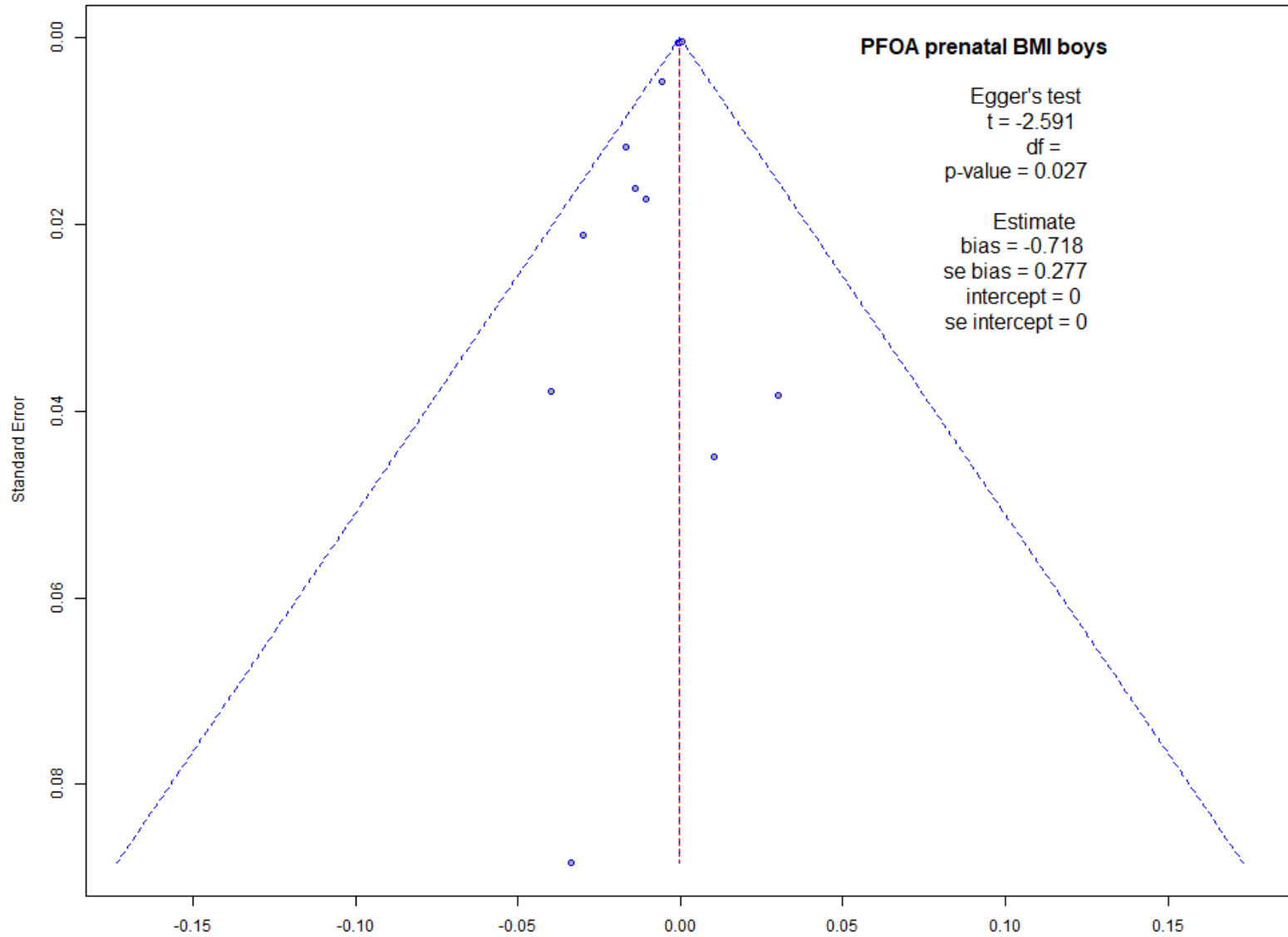
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Liu et al., 2020	del	12 y	96	-0.040 [-0.114; 0.034]
Andersen et al., 2013	1st tr gest, 2nd tr gest, del	7 y	400	-0.030 [-0.072; 0.011]
Mora et al., 2017	9.6 w gest	7.7 y	450	-0.011 [-0.045; 0.023]
Jensen et al., 2020	before 16 w gest	3 m, 18 m	318	0.030 [-0.045; 0.105]
Chen et al., 2019	del	5 y	208	0.000 [0.000; 0.001]
Chen et al., 2017	del	60 to 108 m	224	-0.034 [-0.207; 0.140]
Yeung et al., 2019	del	4 to 36 m	969	-0.017 [-0.040; 0.006]
Manzano-Salgado et al., 2017	1st tr gest	7 y	551	0.010 [-0.078; 0.098]
Summary				-0.008 [-0.023; 0.007]



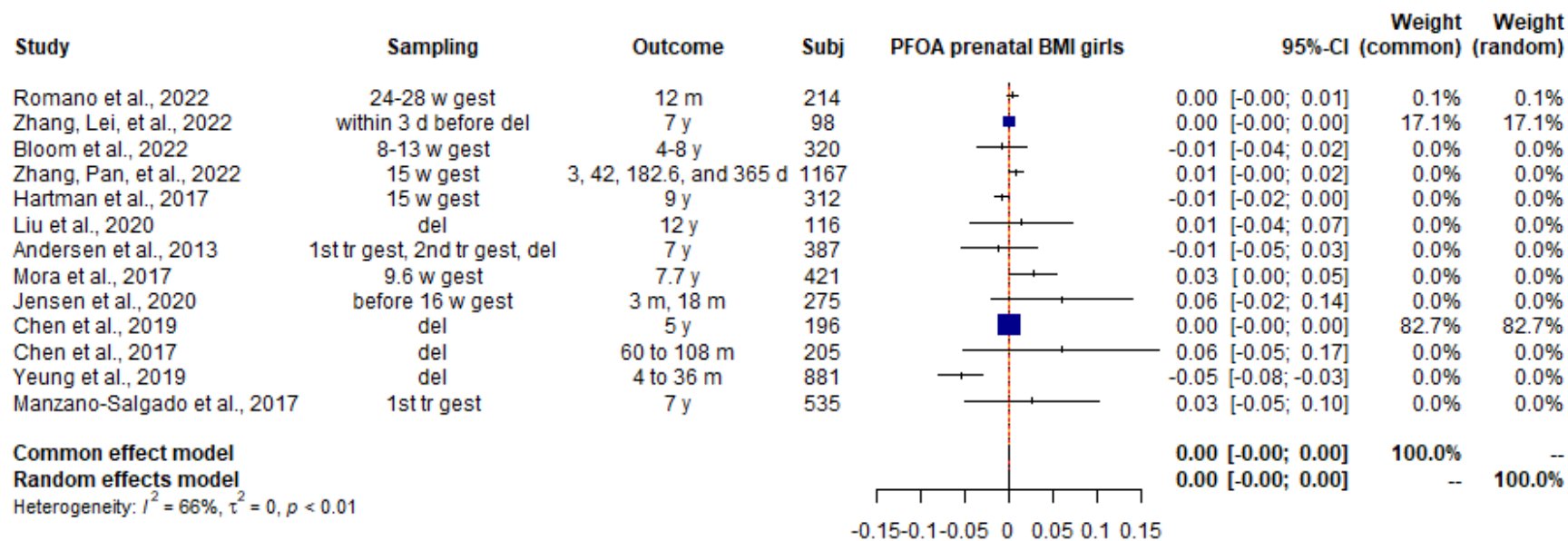
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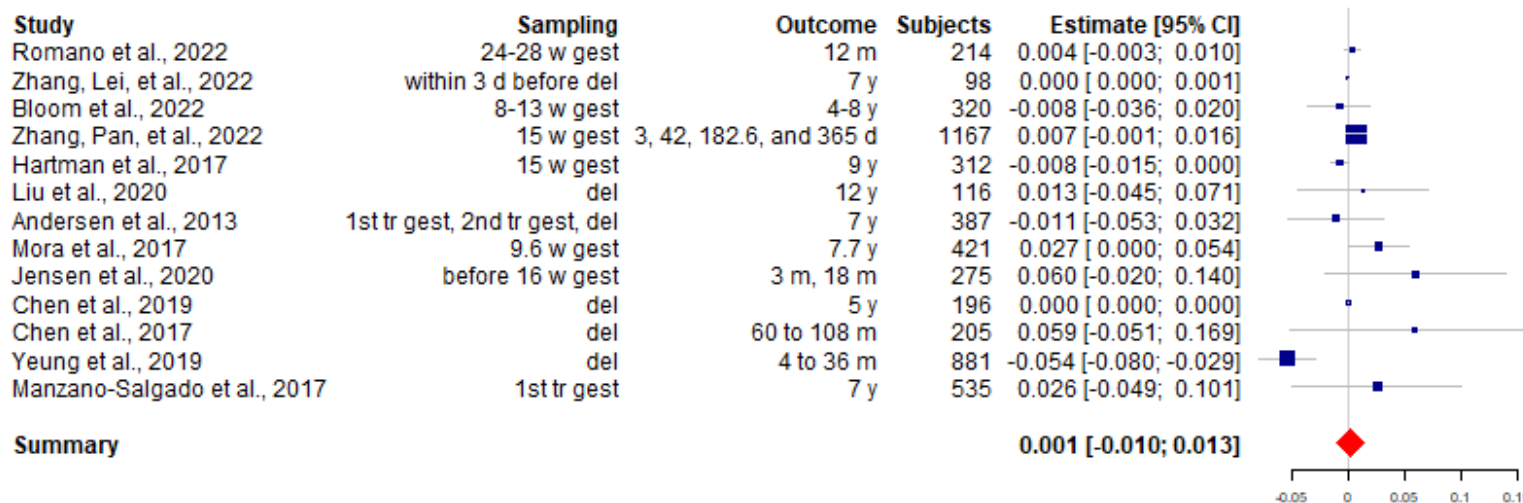
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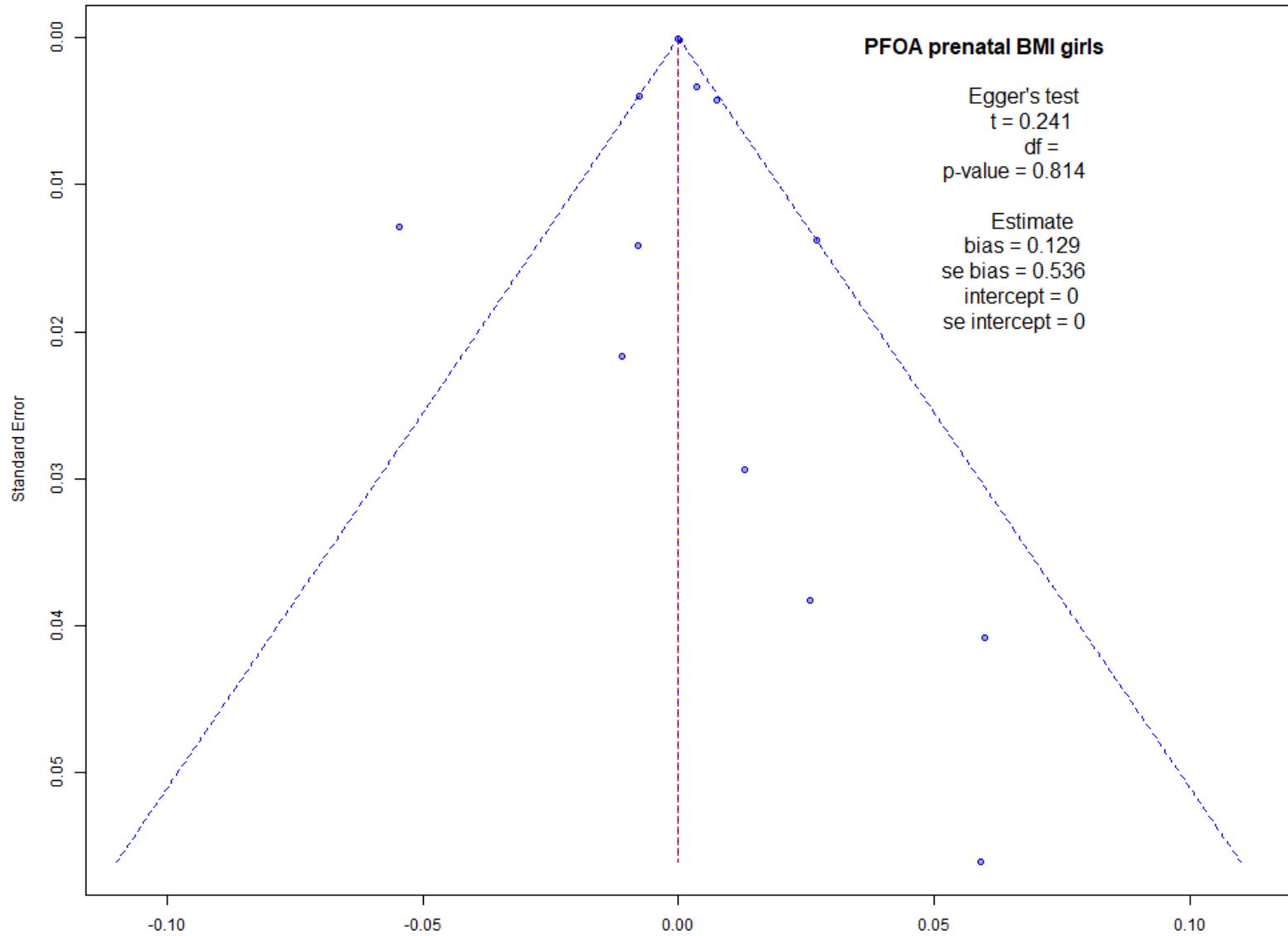
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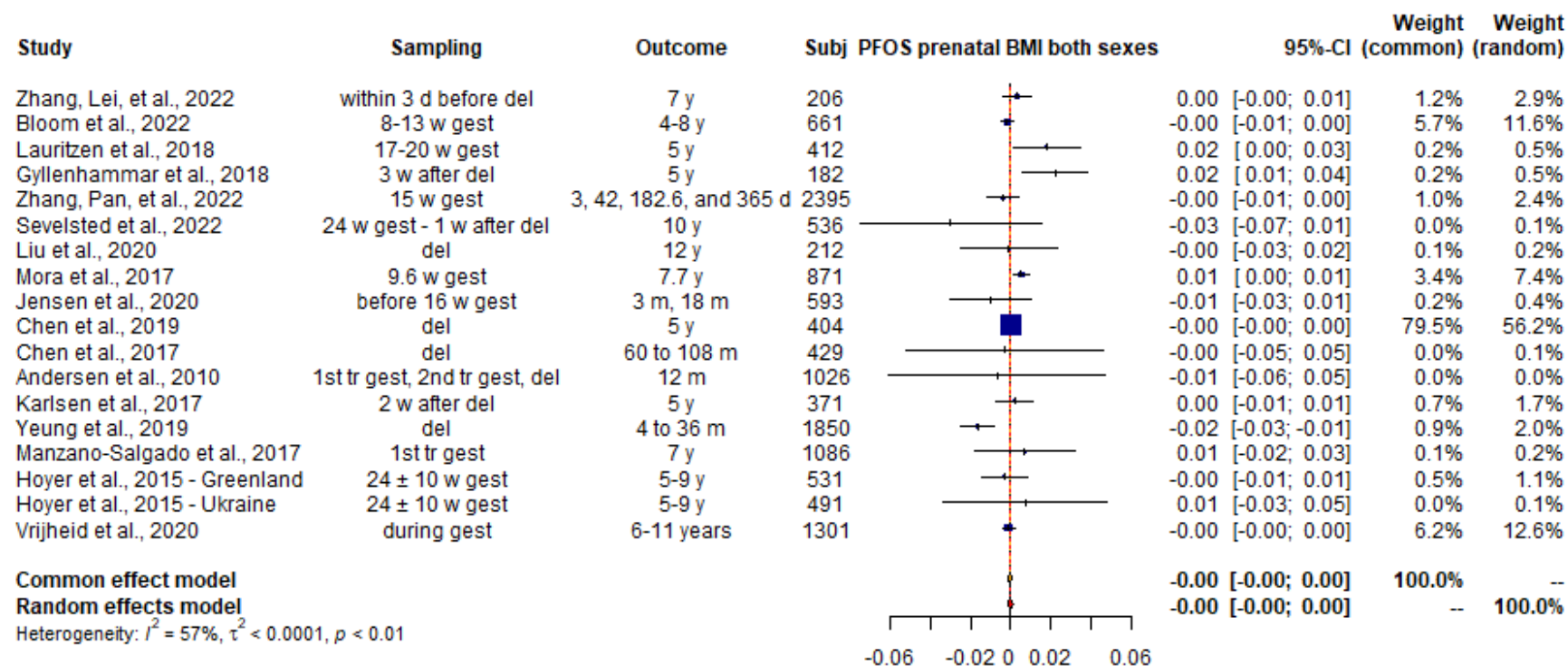
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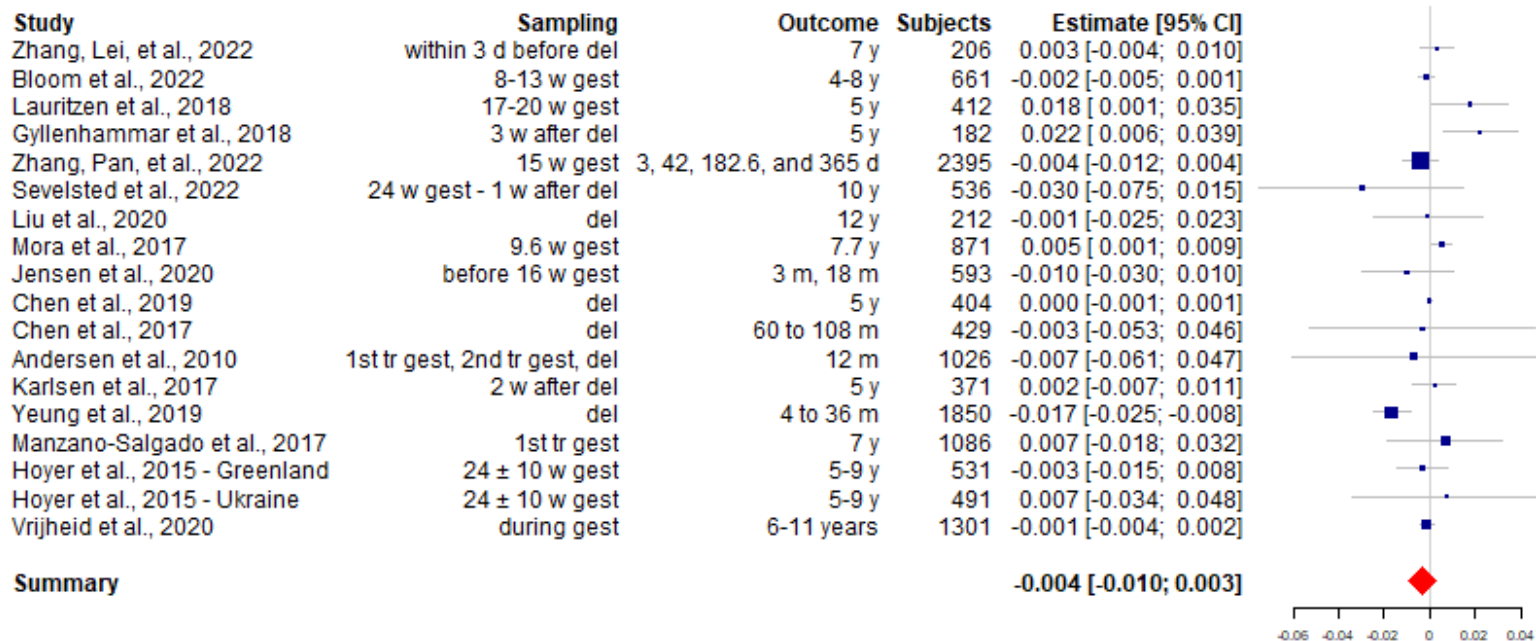
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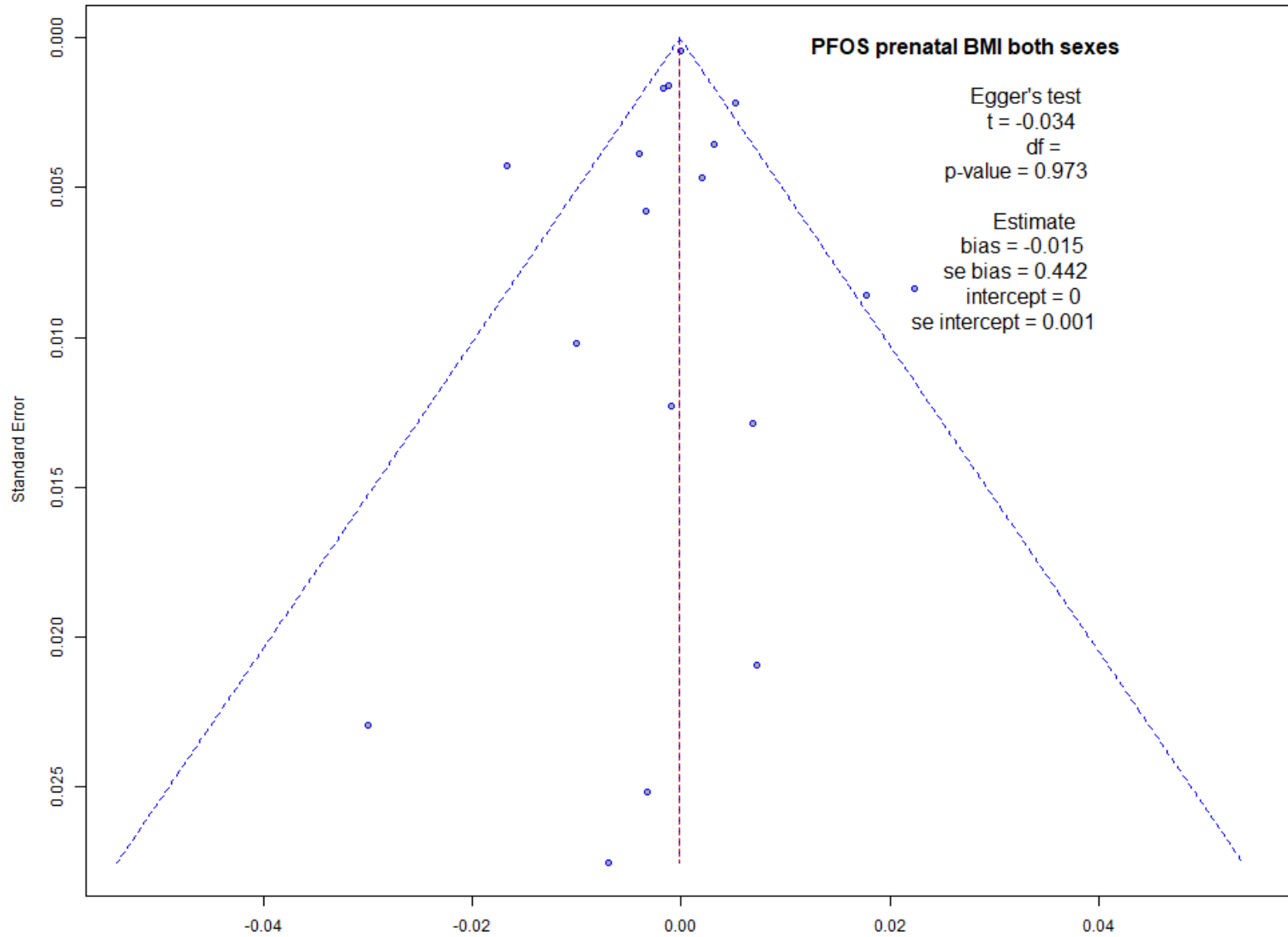
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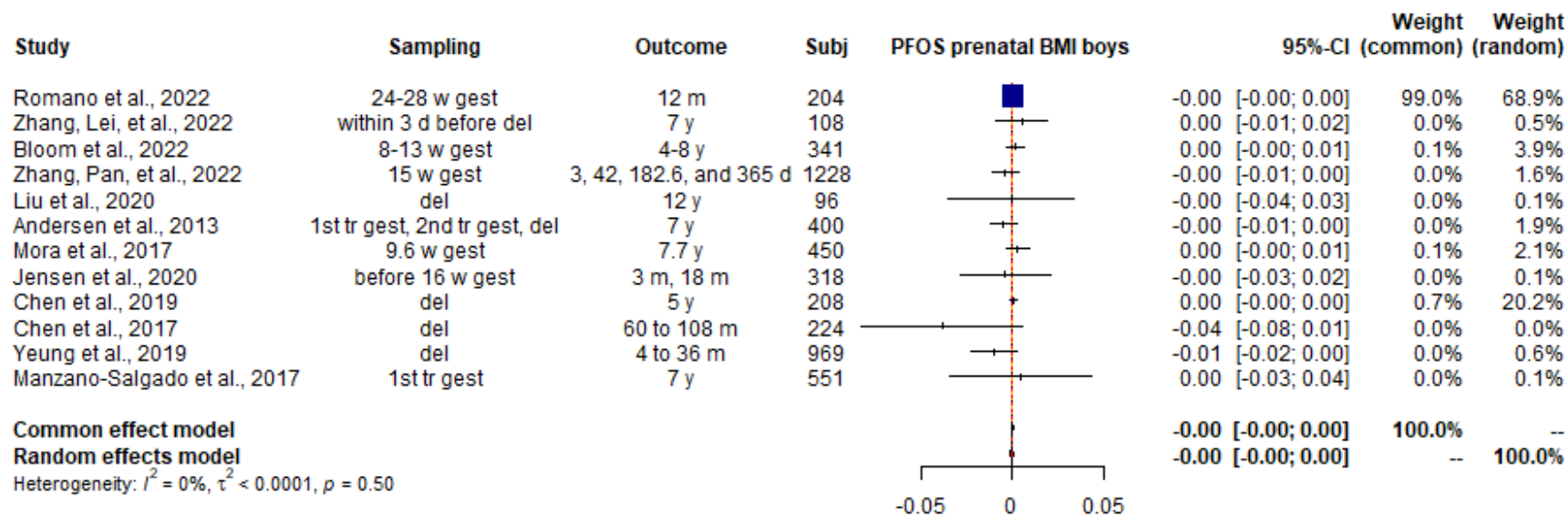
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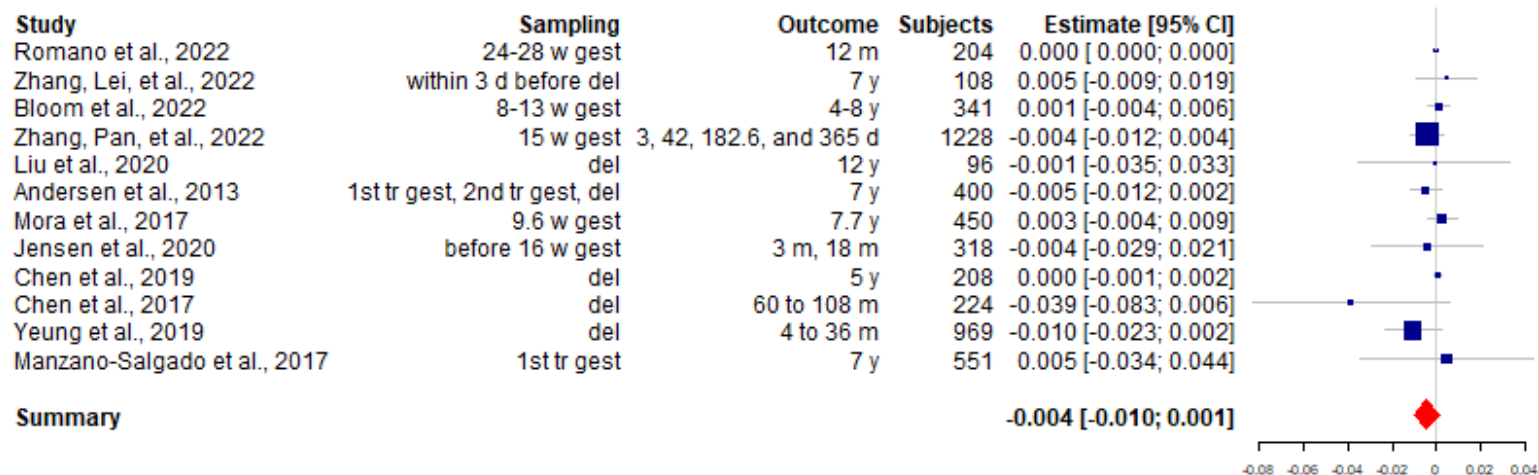
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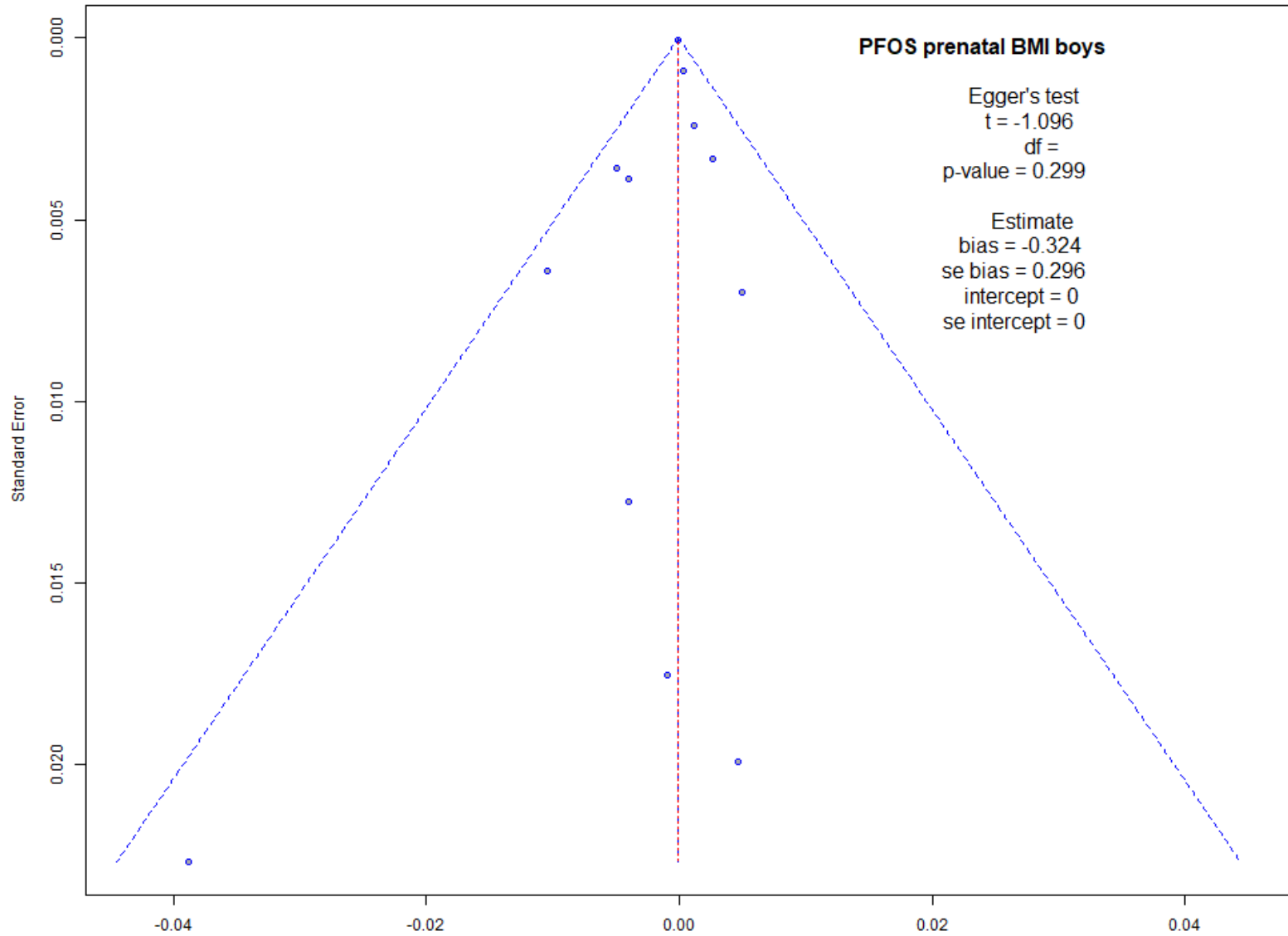
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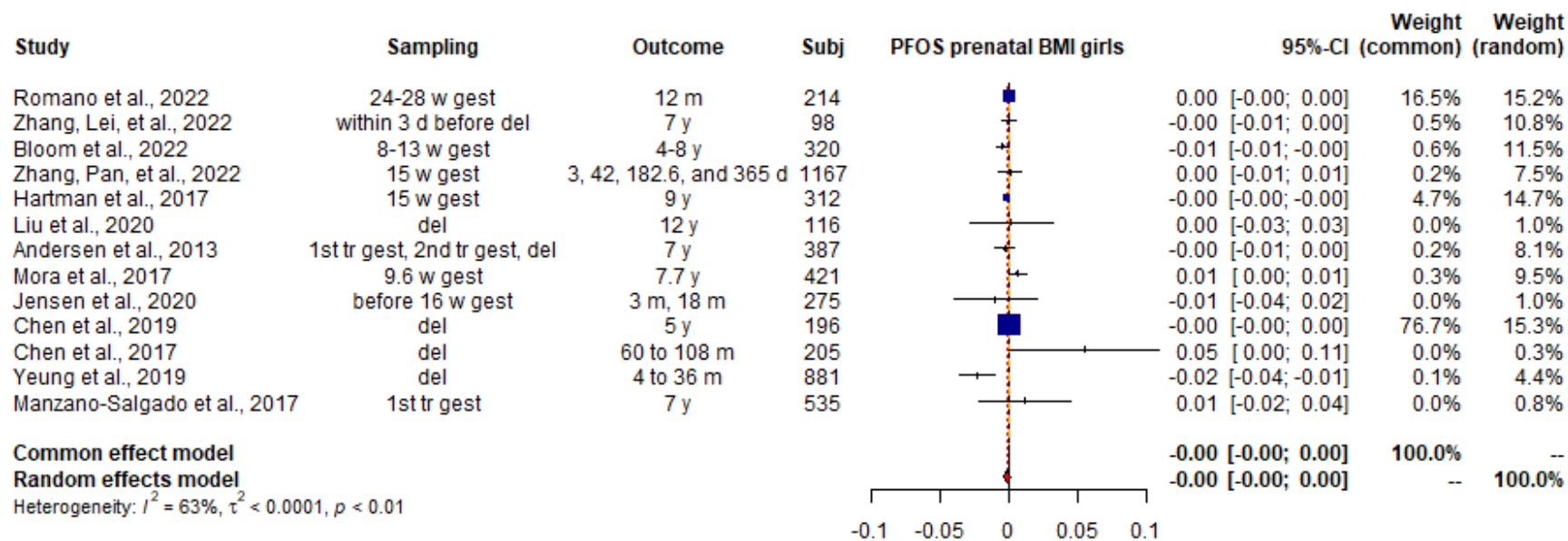
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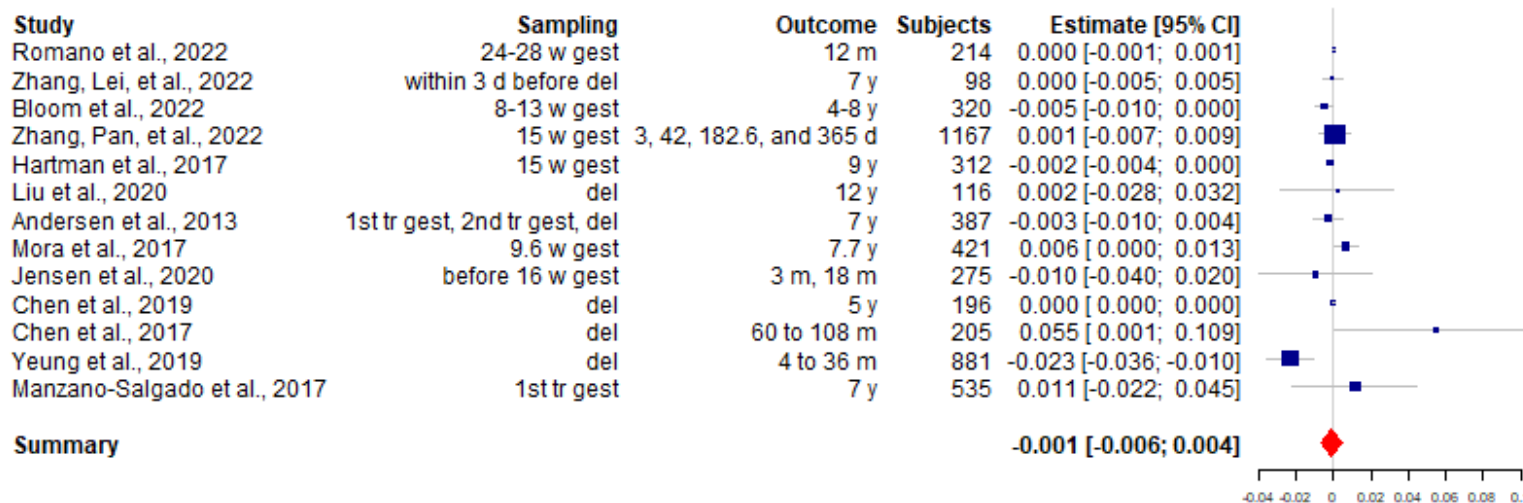
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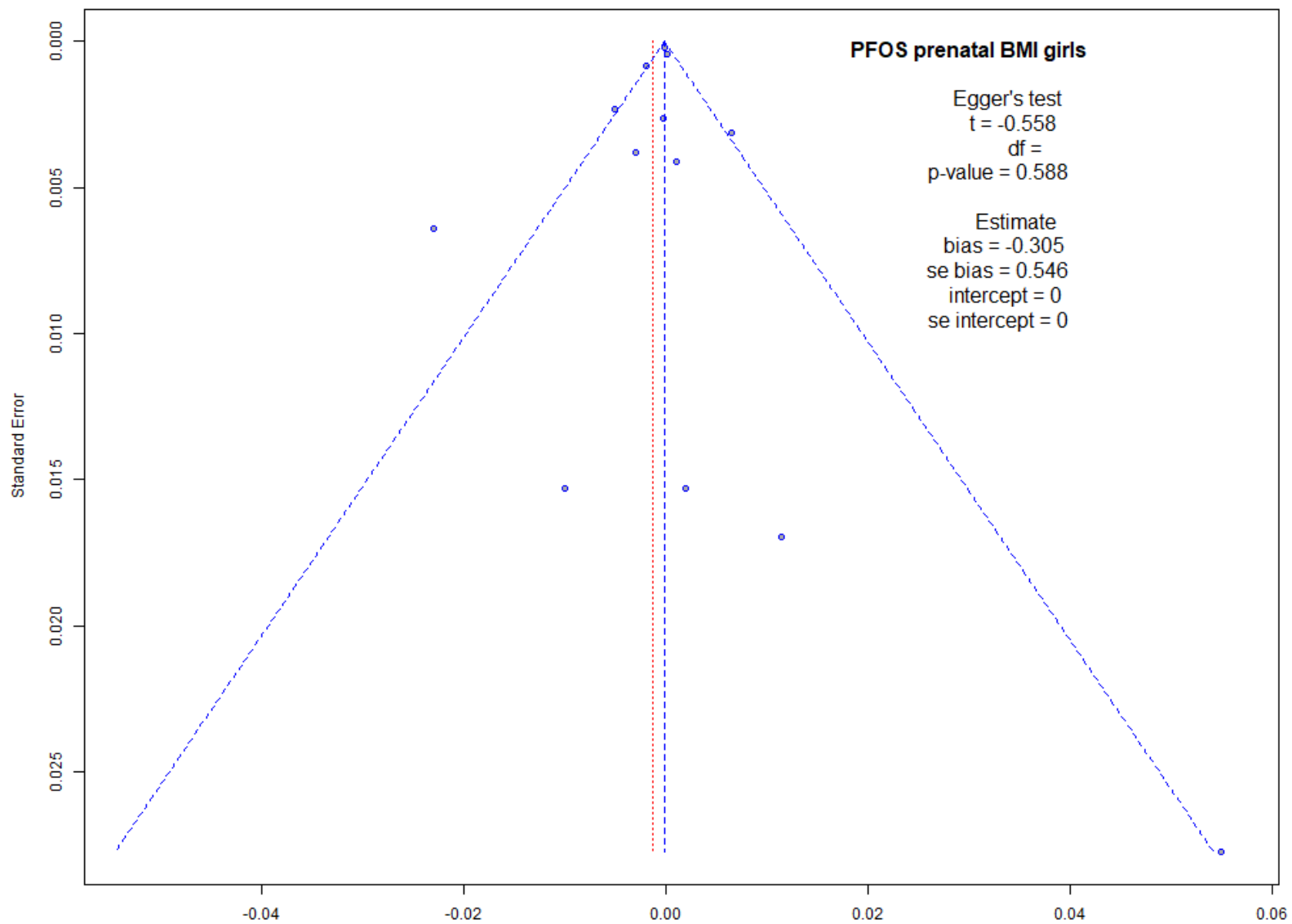
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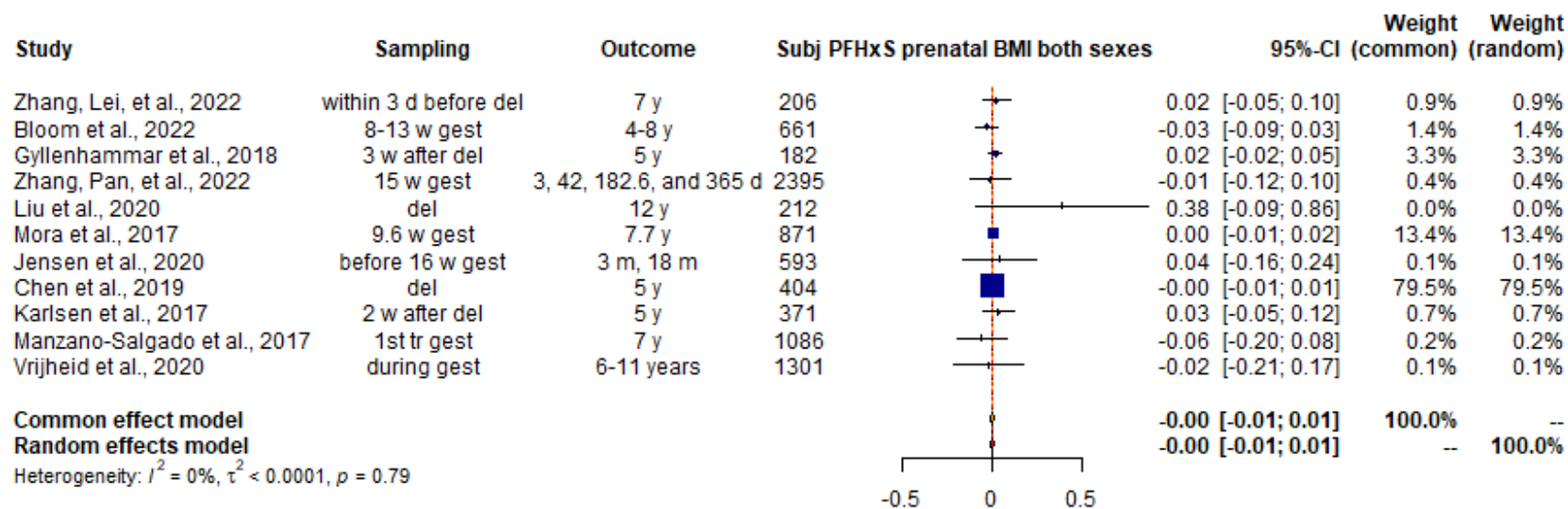
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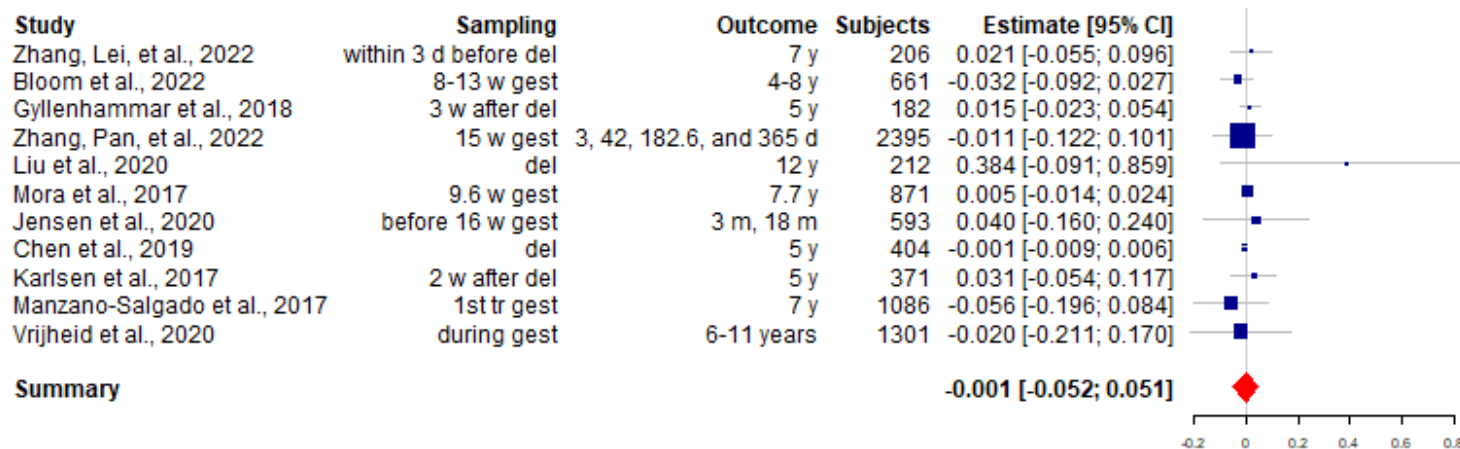
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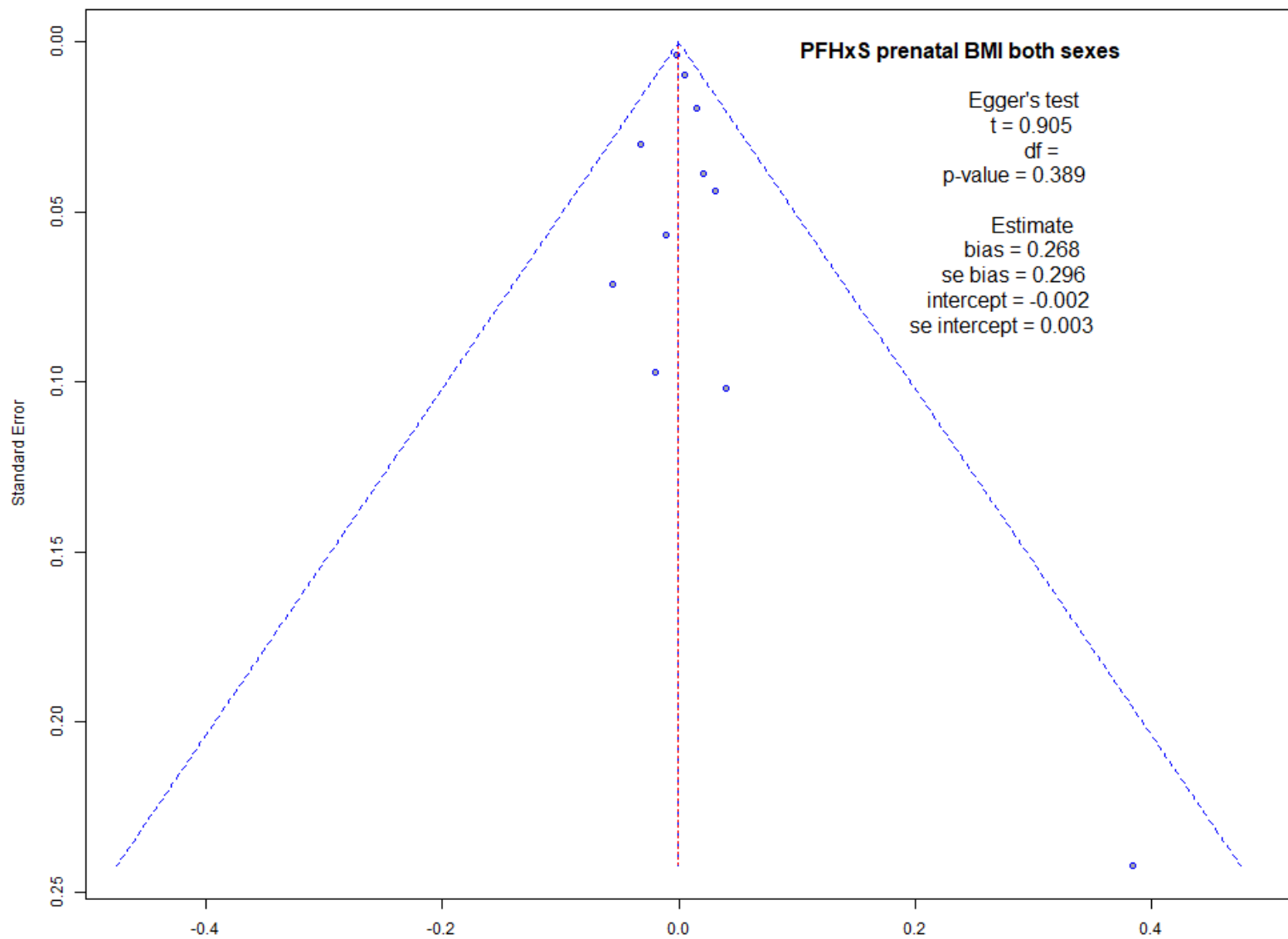
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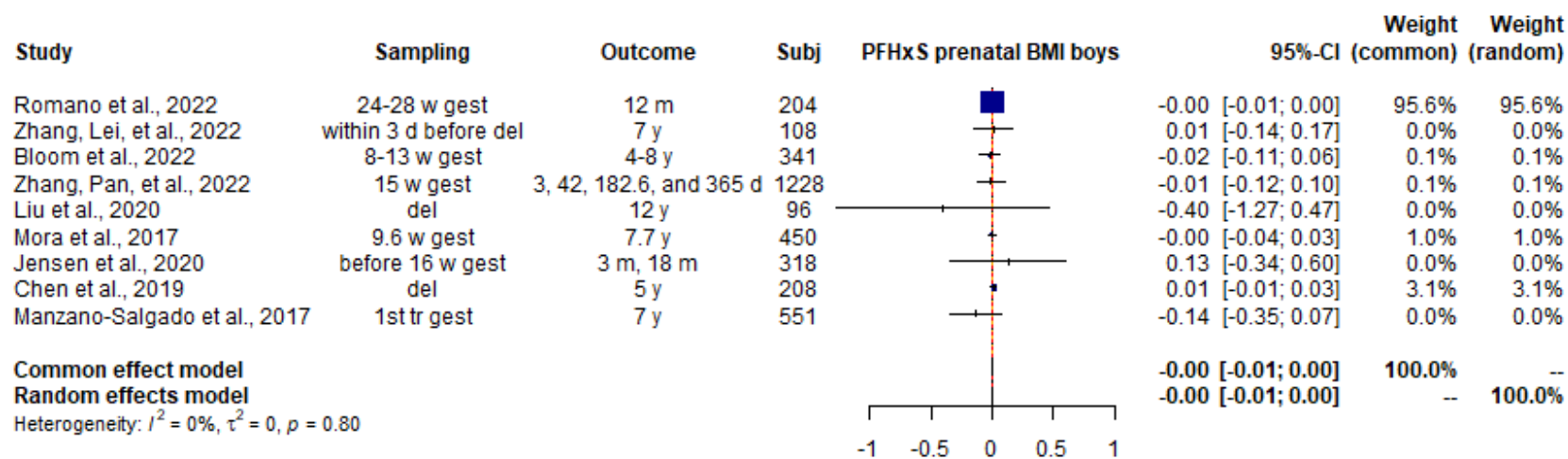
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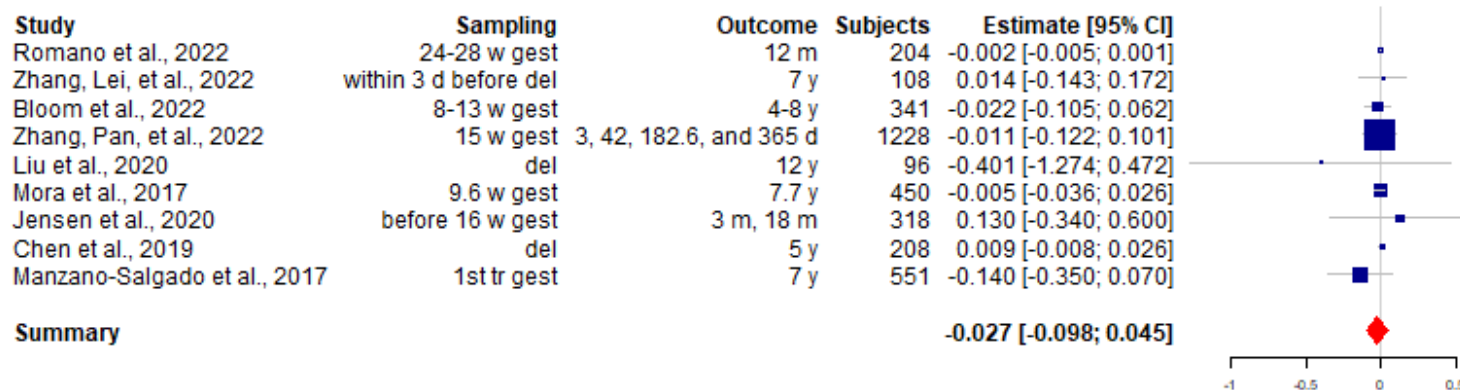
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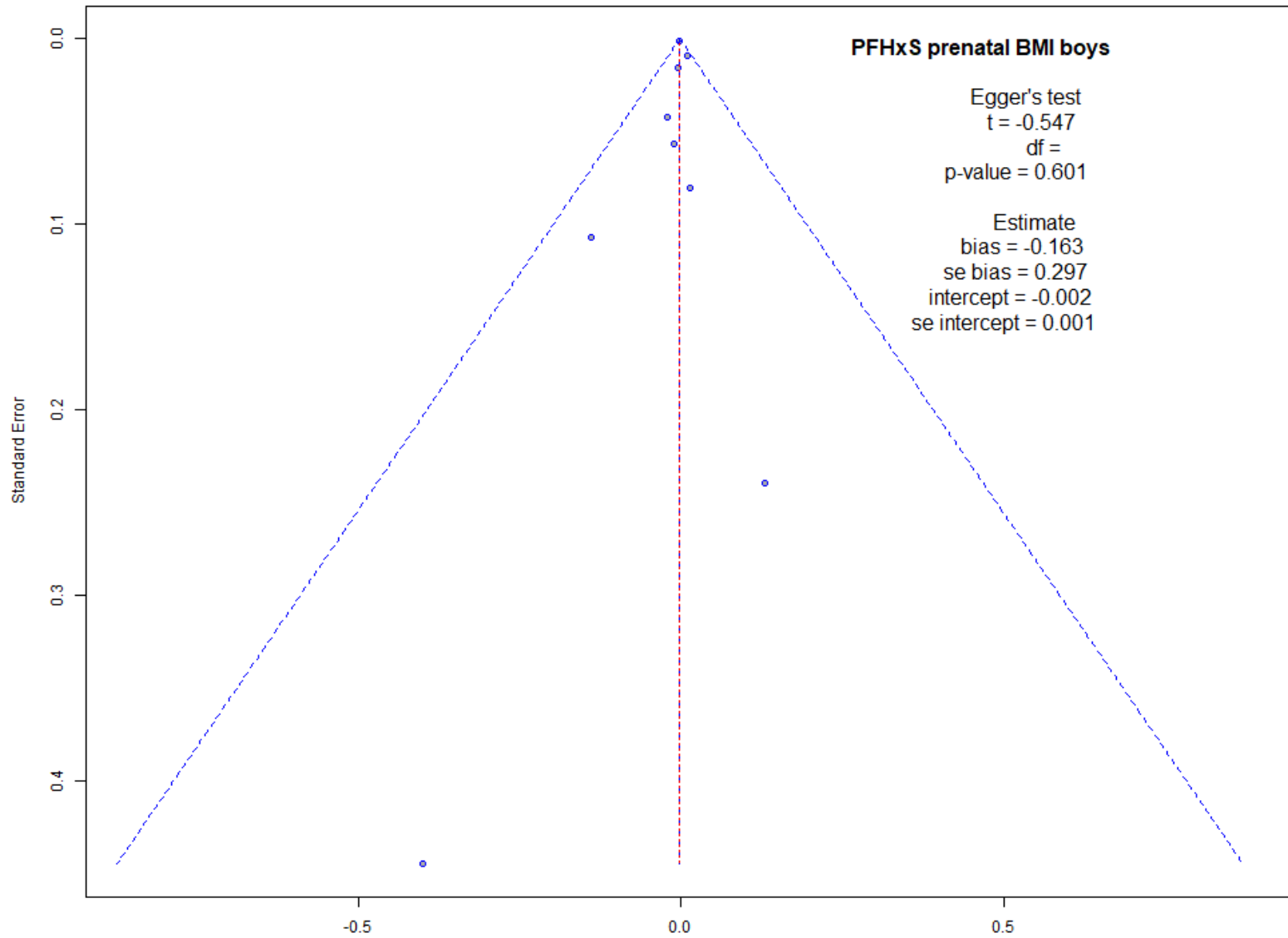
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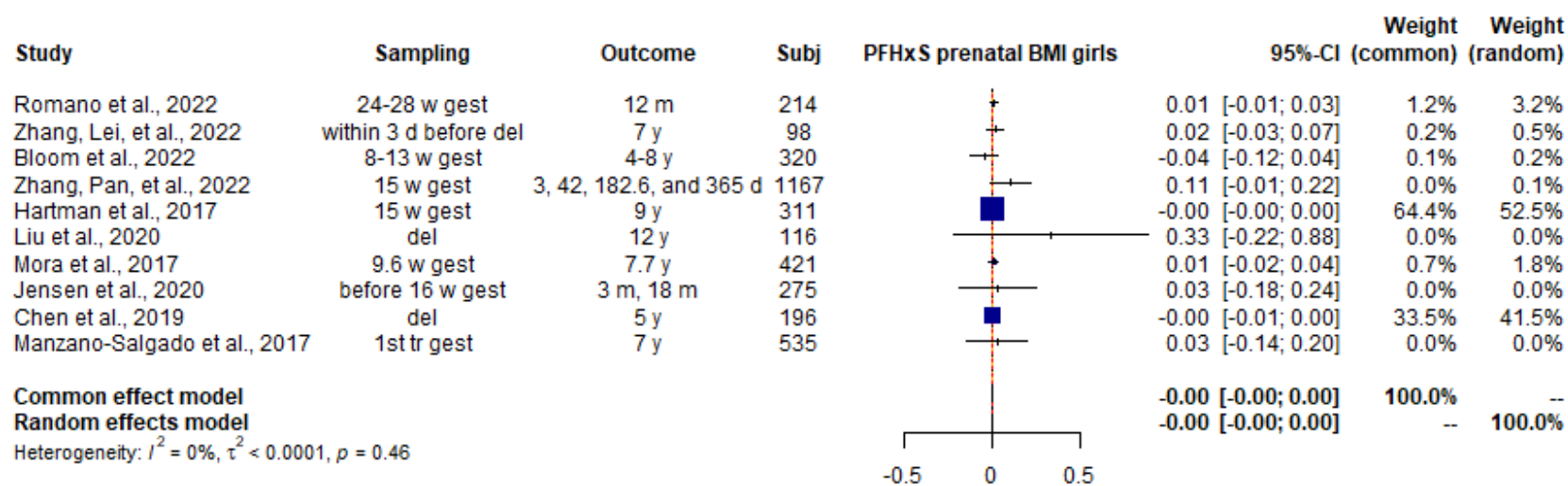
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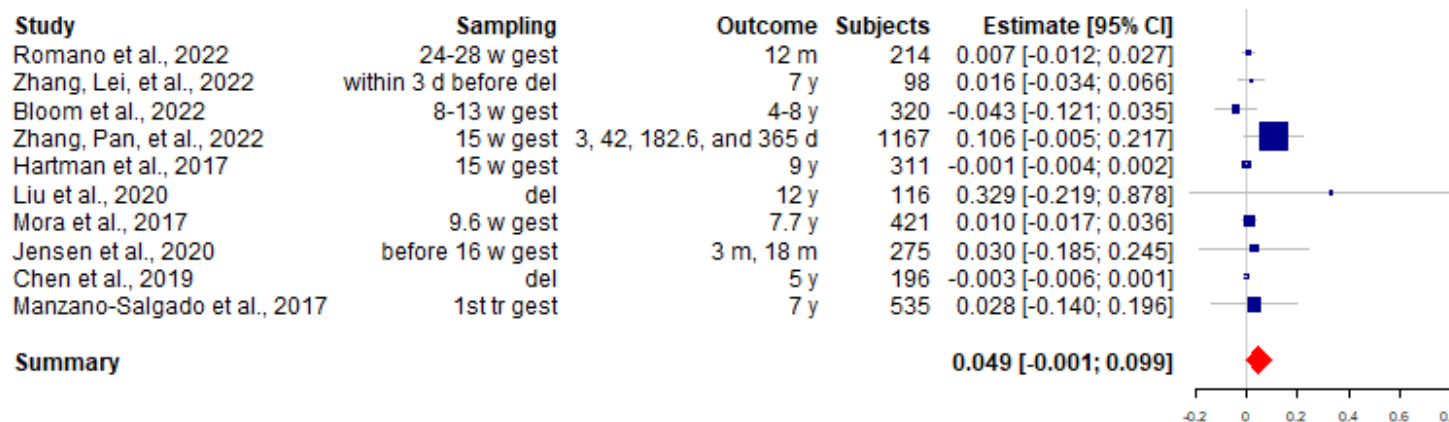
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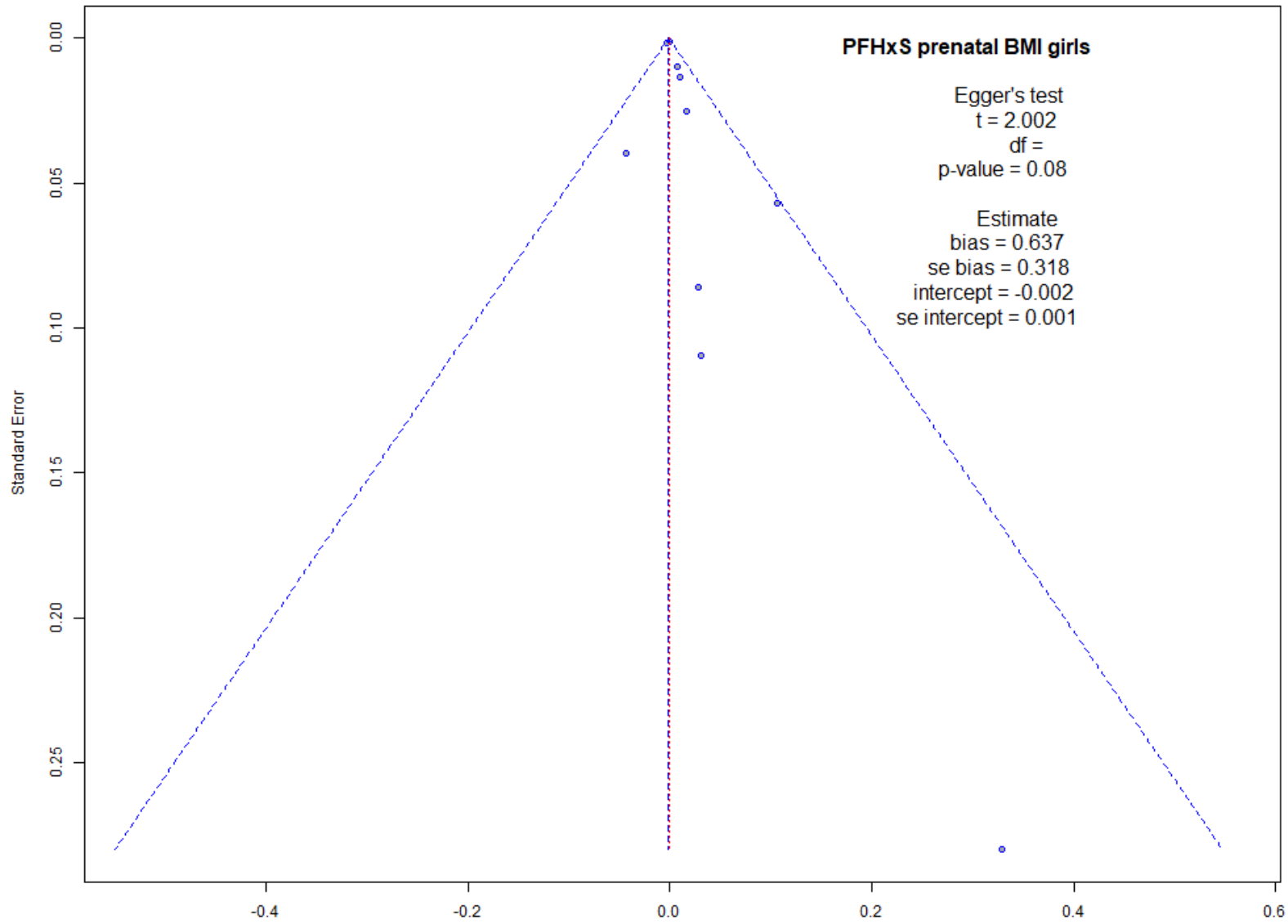
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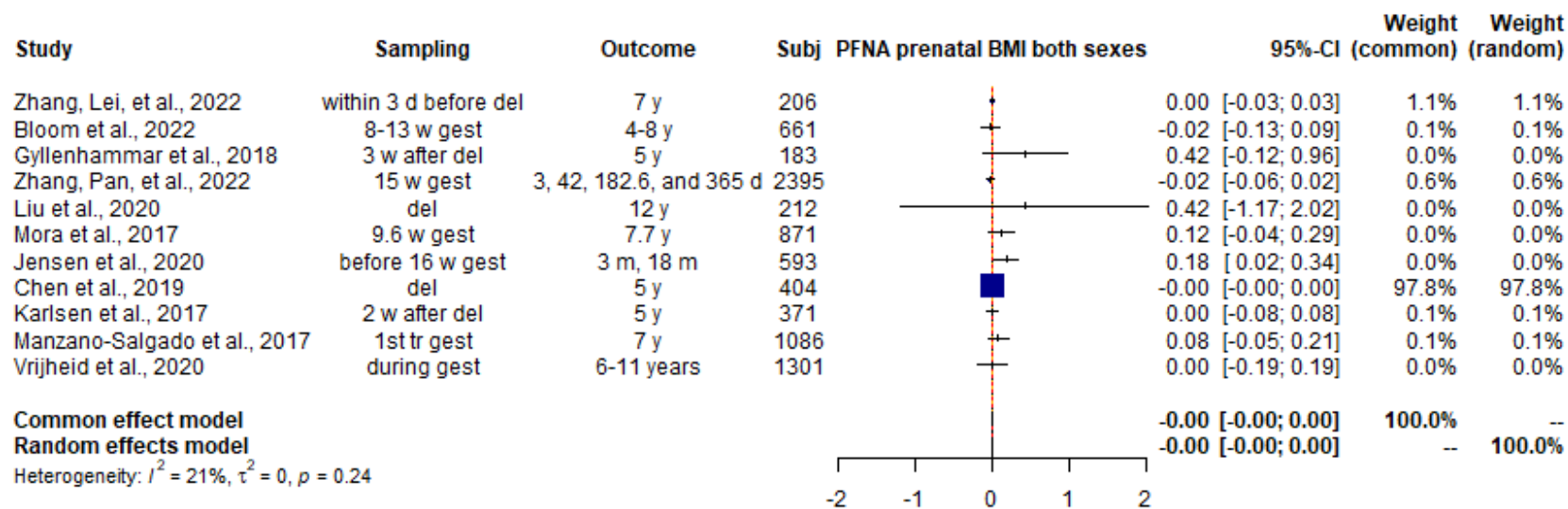
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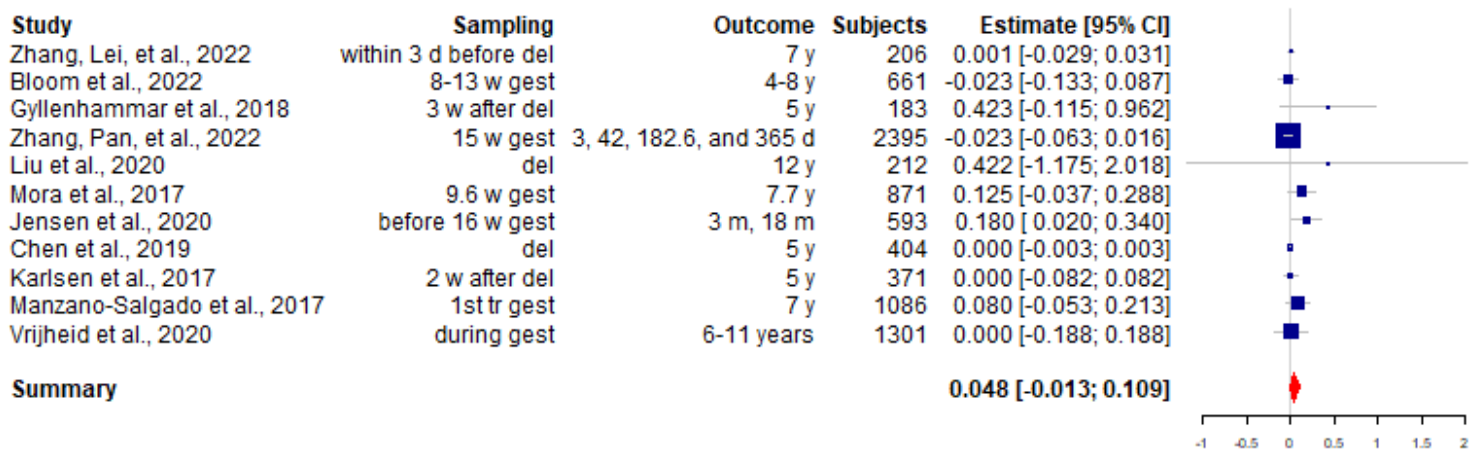
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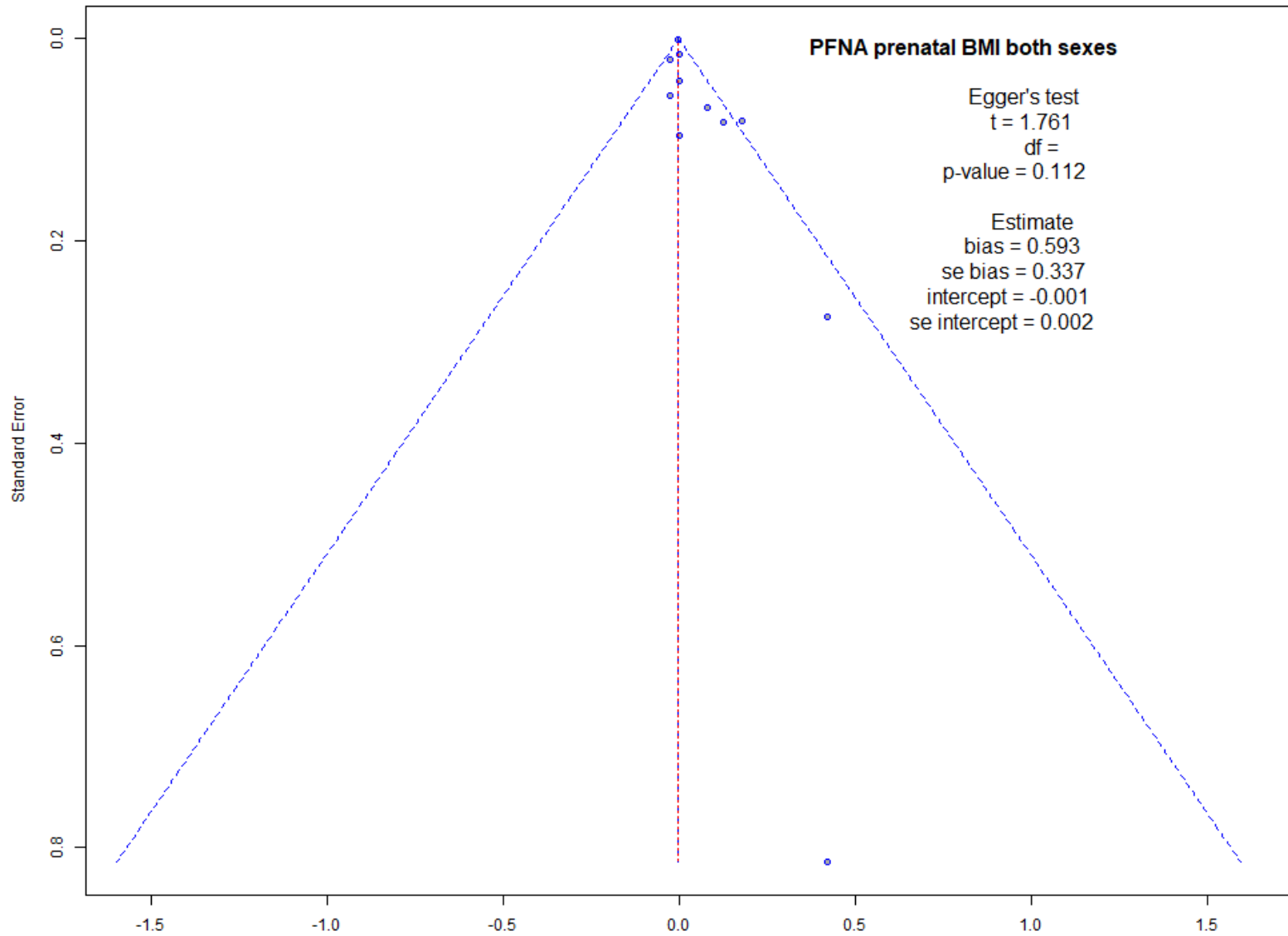
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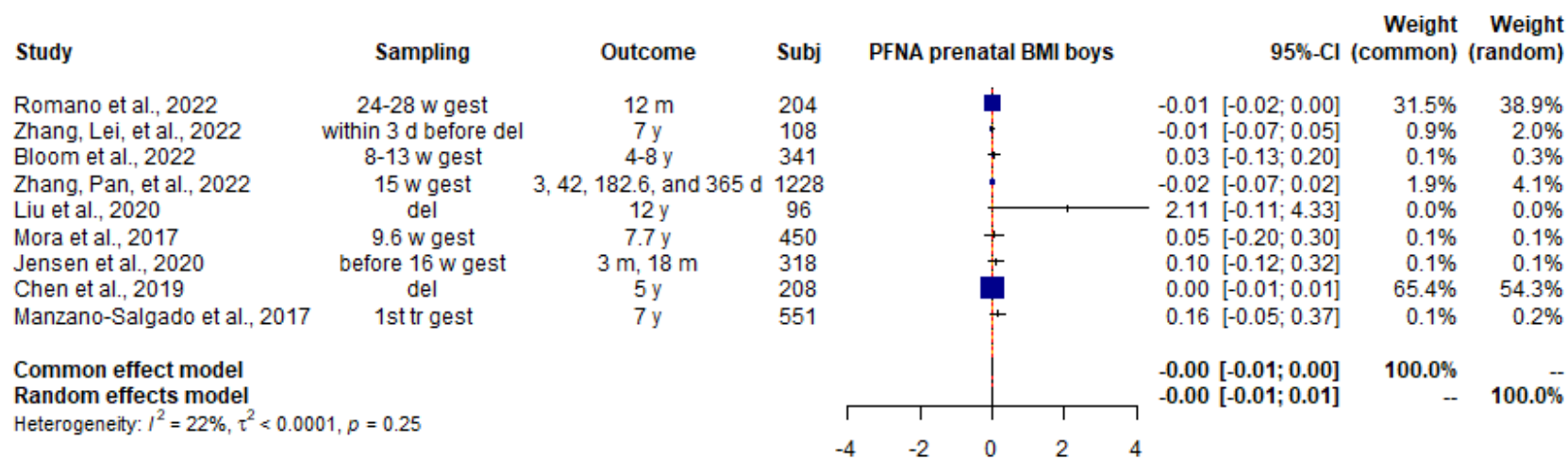
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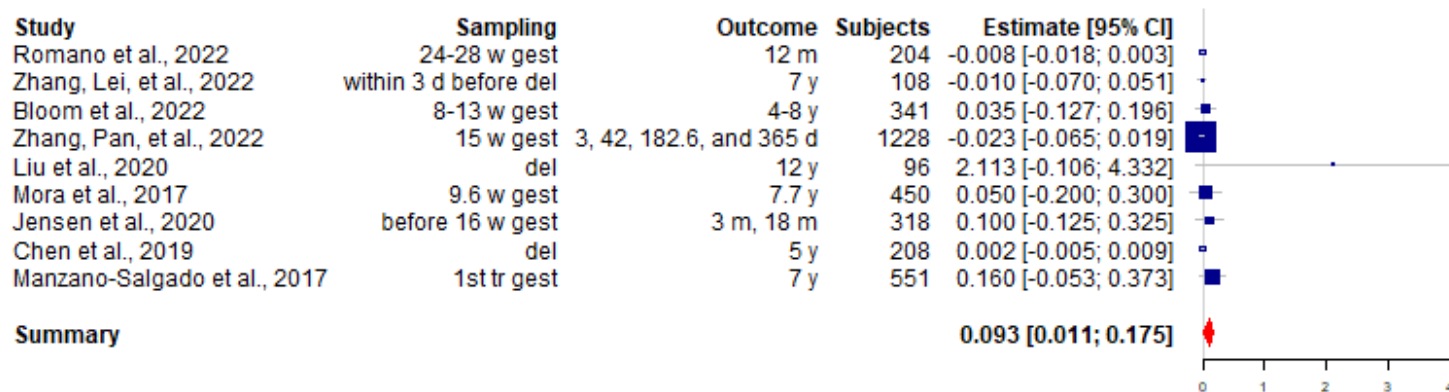
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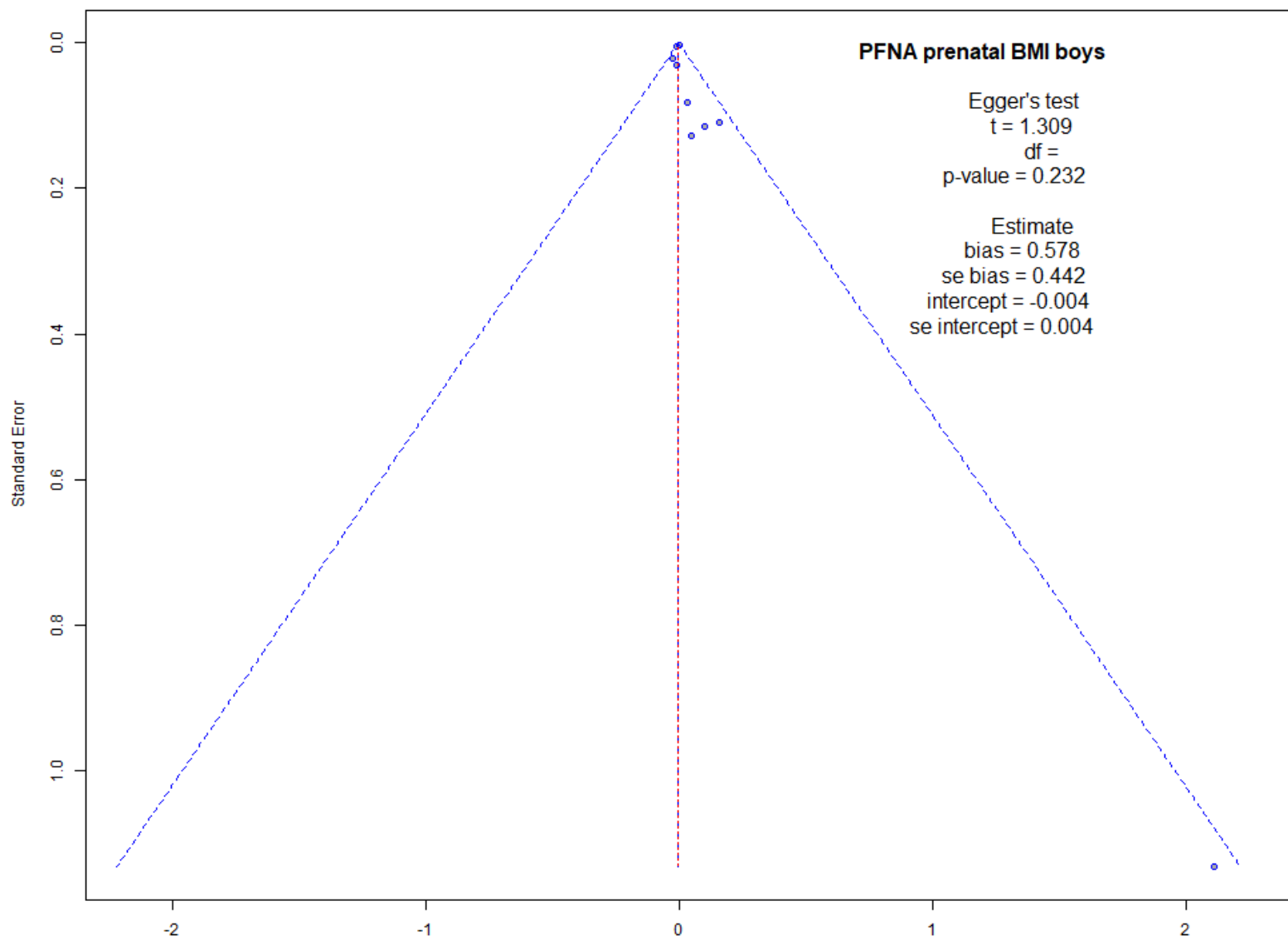
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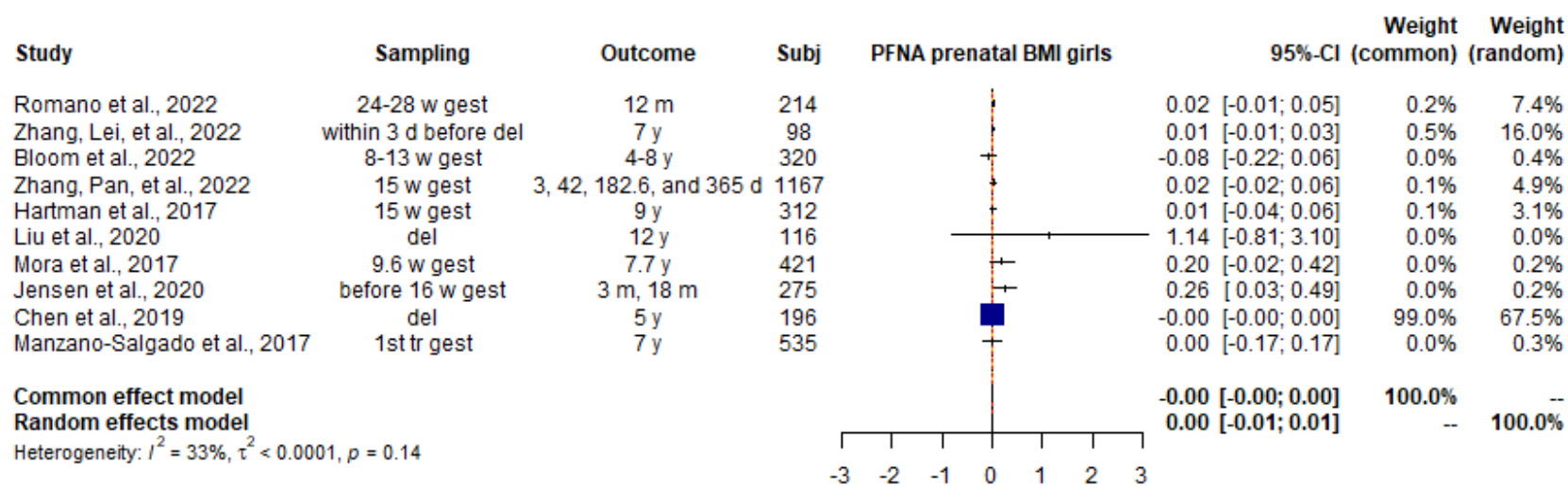
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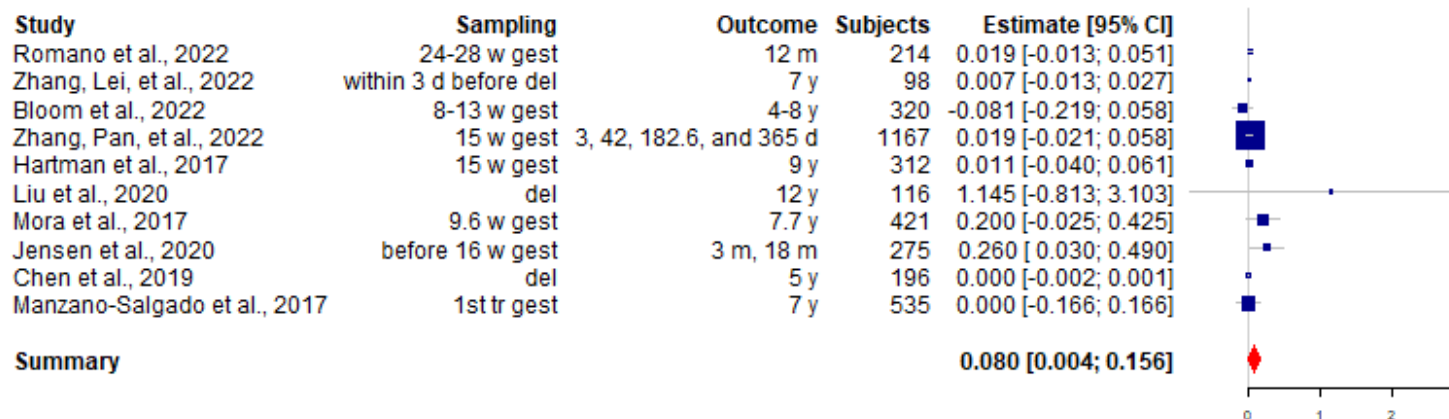
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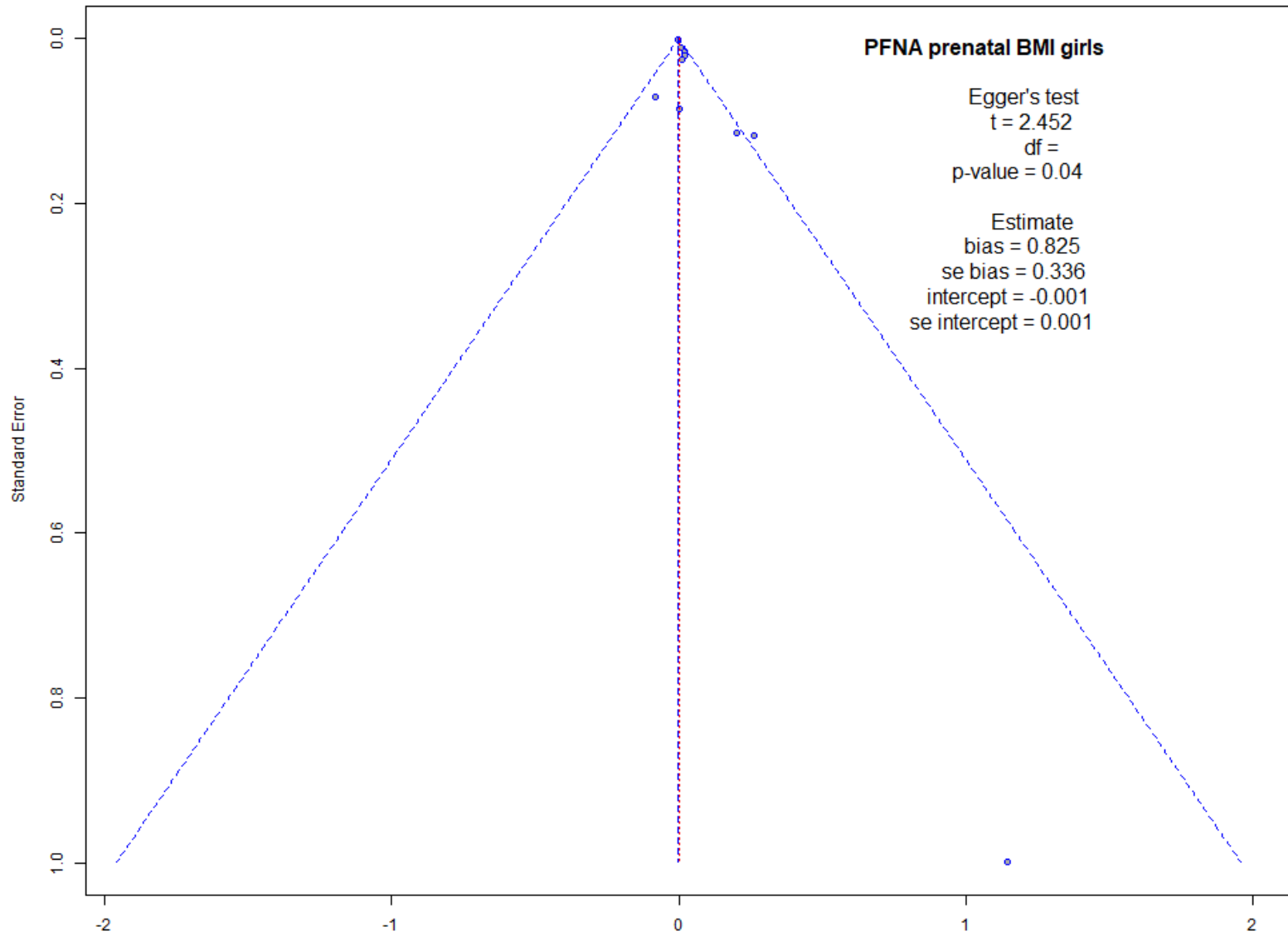
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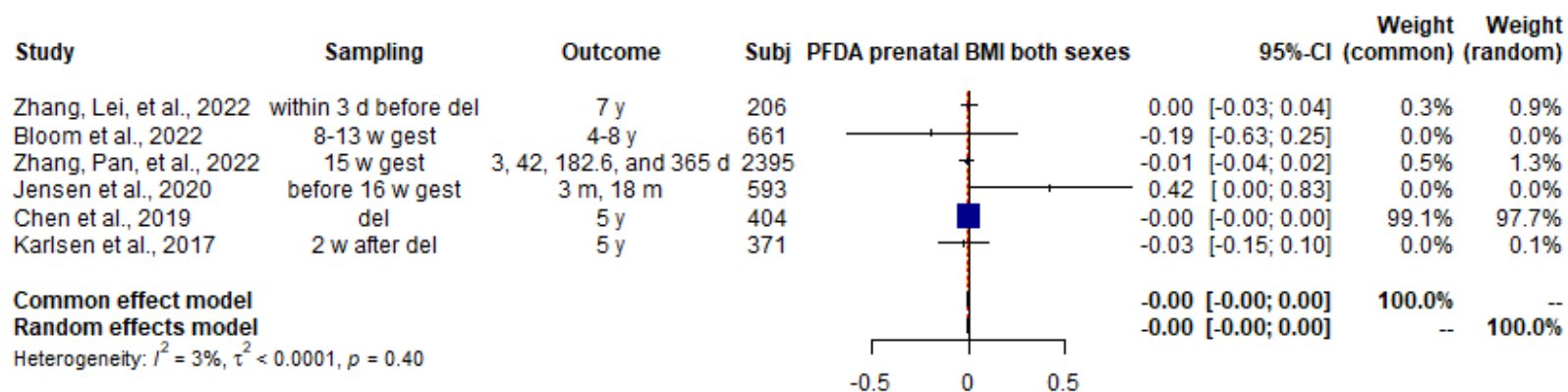
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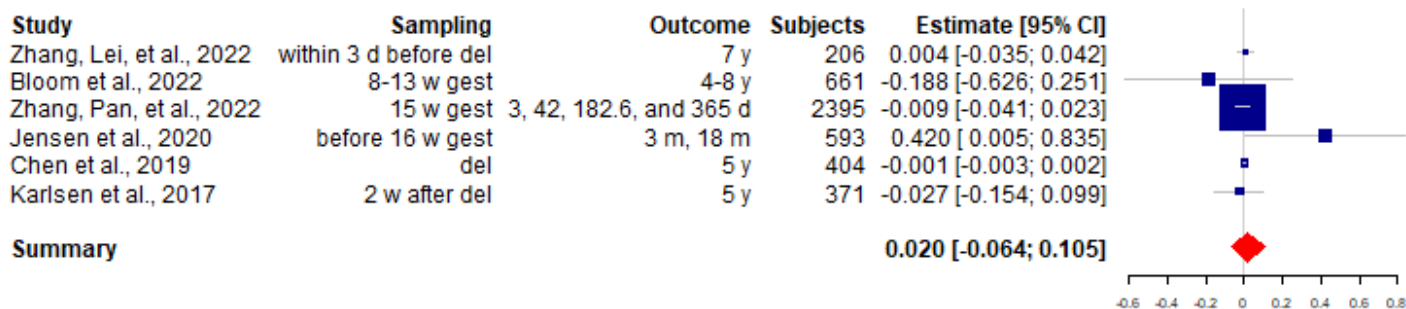
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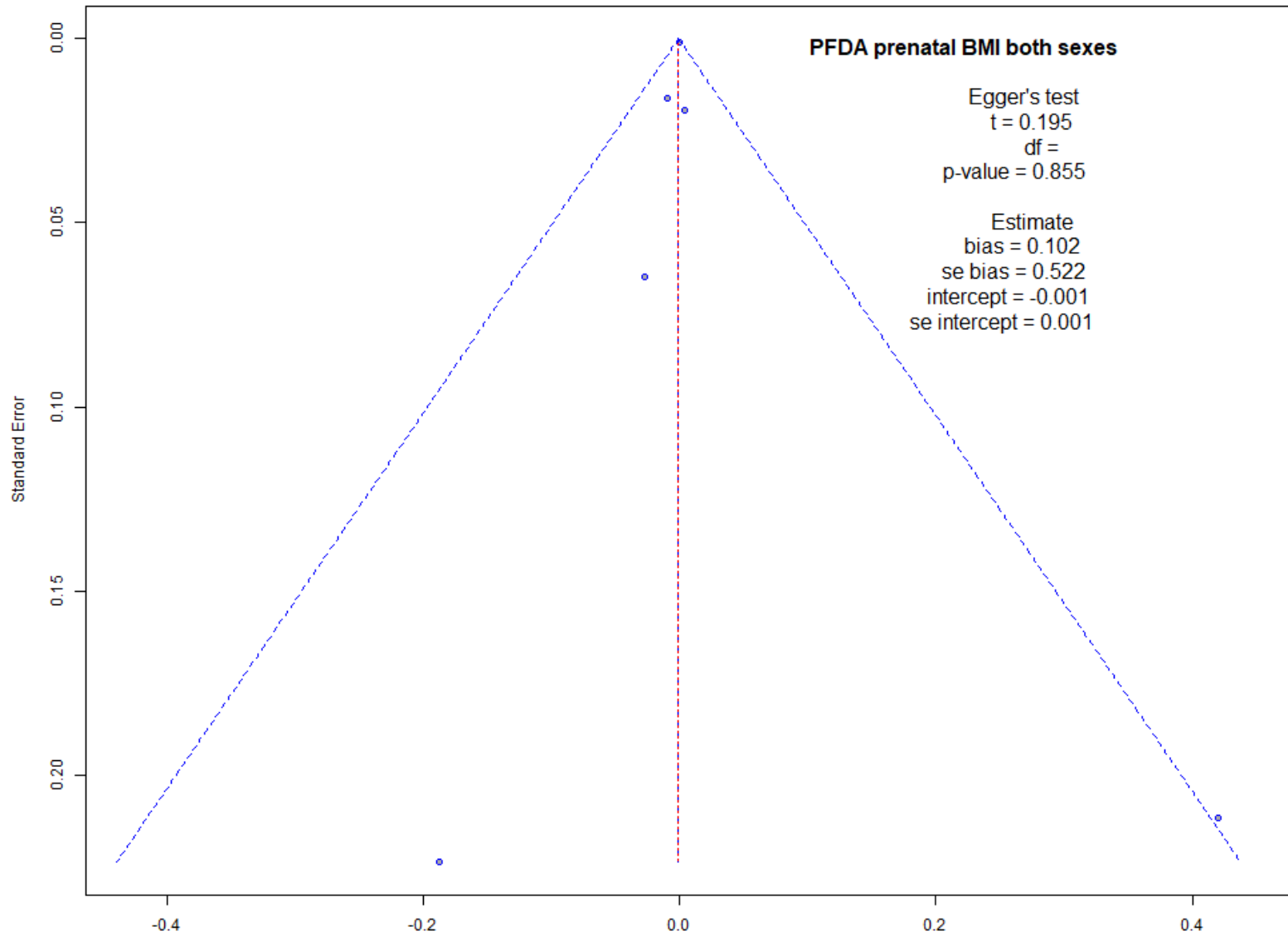
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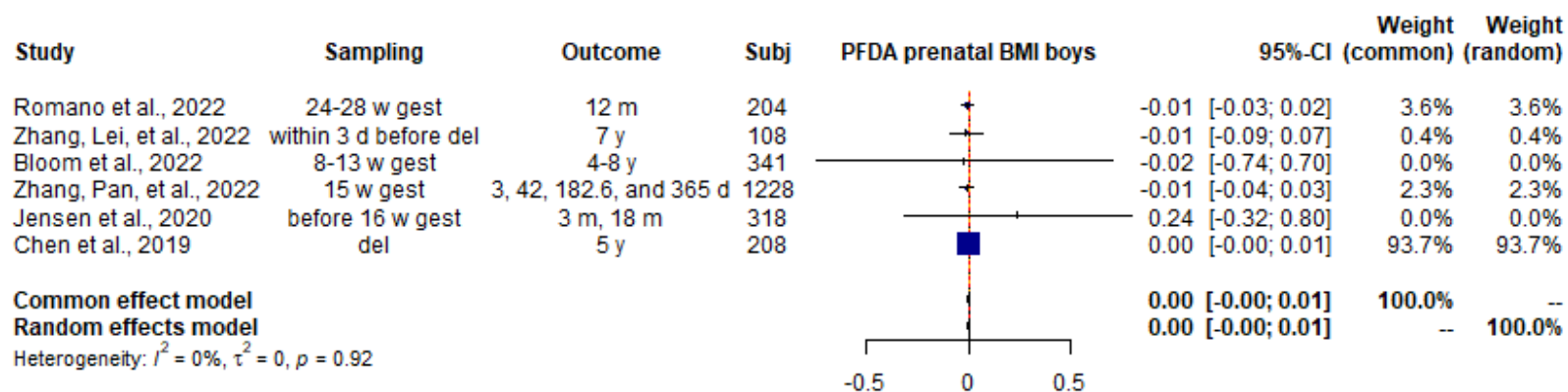
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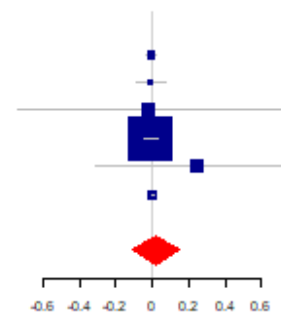
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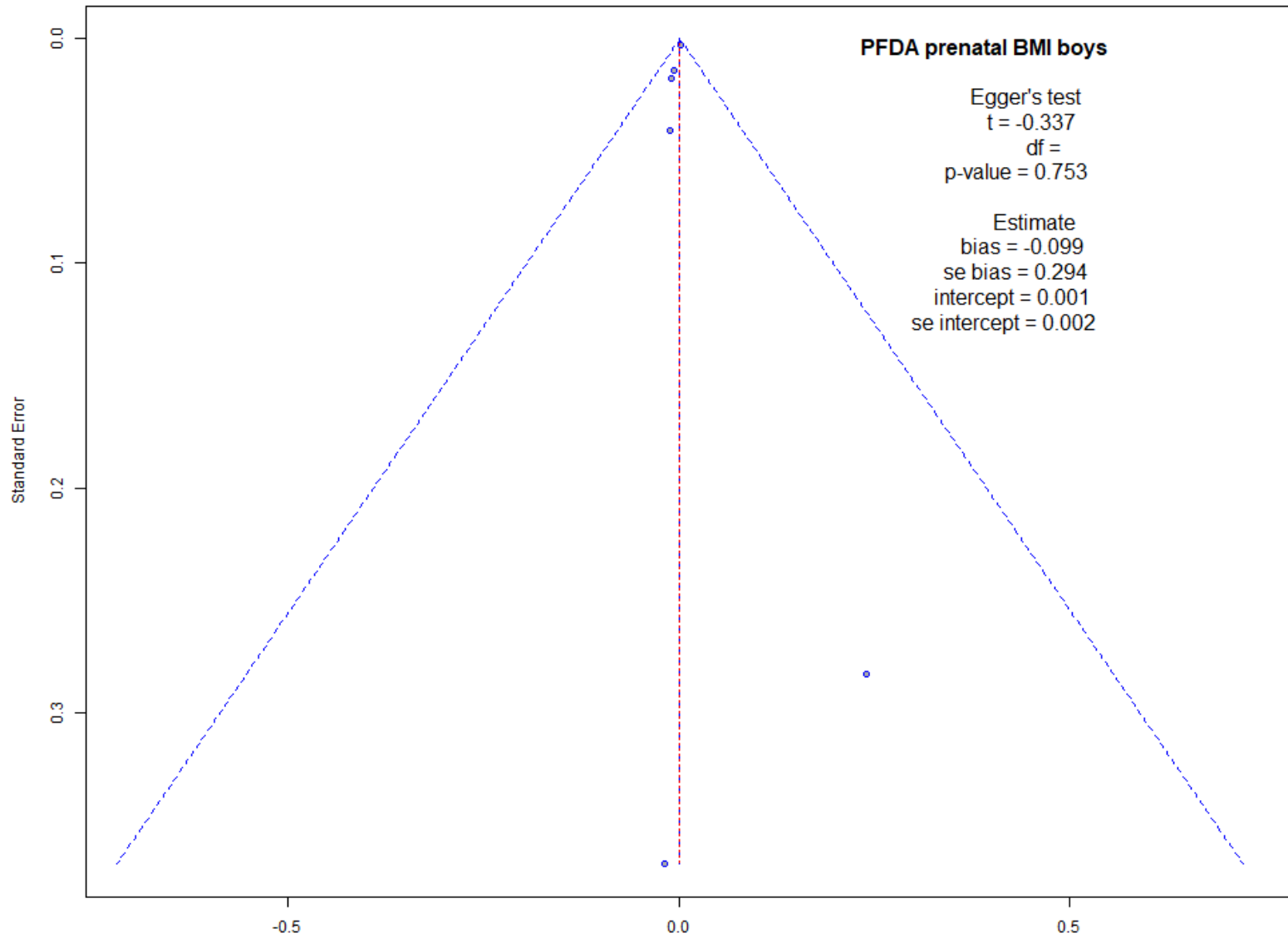
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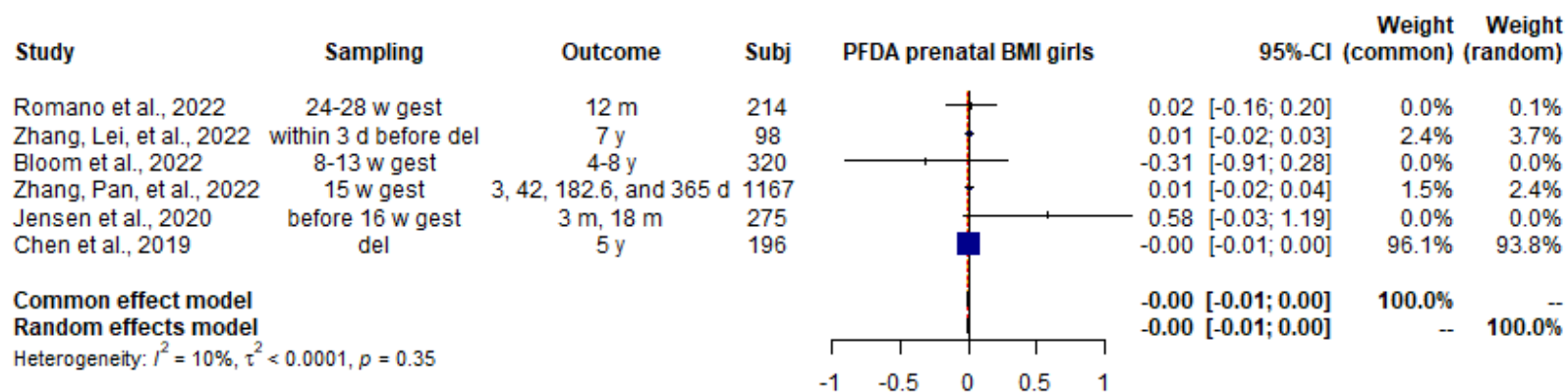
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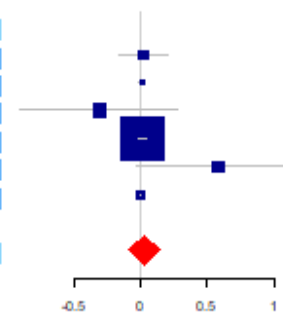
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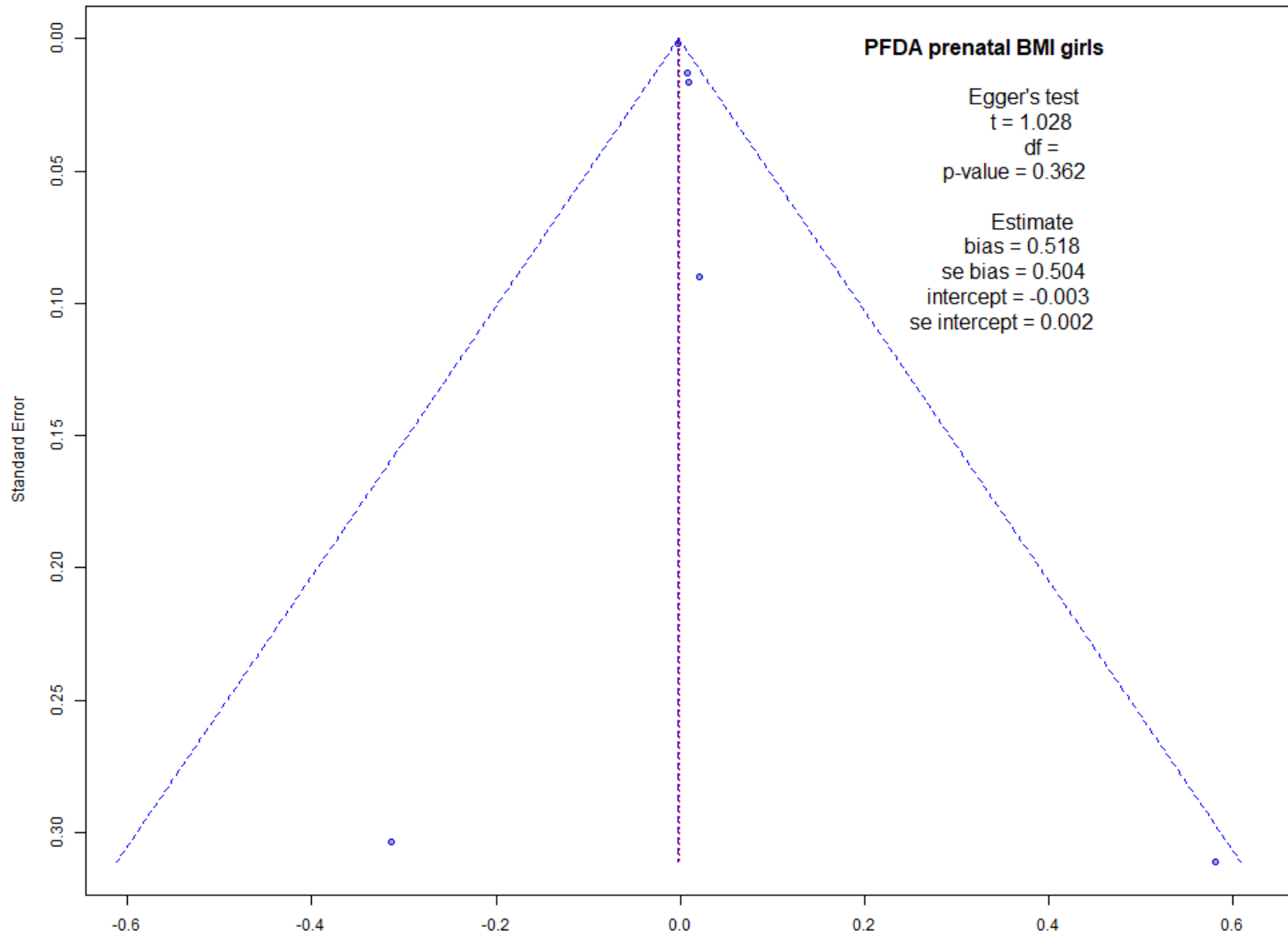
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Zhang, Pan, et al., 2022	15 w gest	3, 42, 182.6, and 365 d	1167	0.009 [-0.023; 0.041]
Jensen et al., 2020	before 16 w gest	3 m, 18 m	275	0.580 [-0.030; 1.190]
Chen et al., 2019	del	5 y	196	-0.002 [-0.006; 0.002]
Summary				0.033 [-0.081; 0.147]



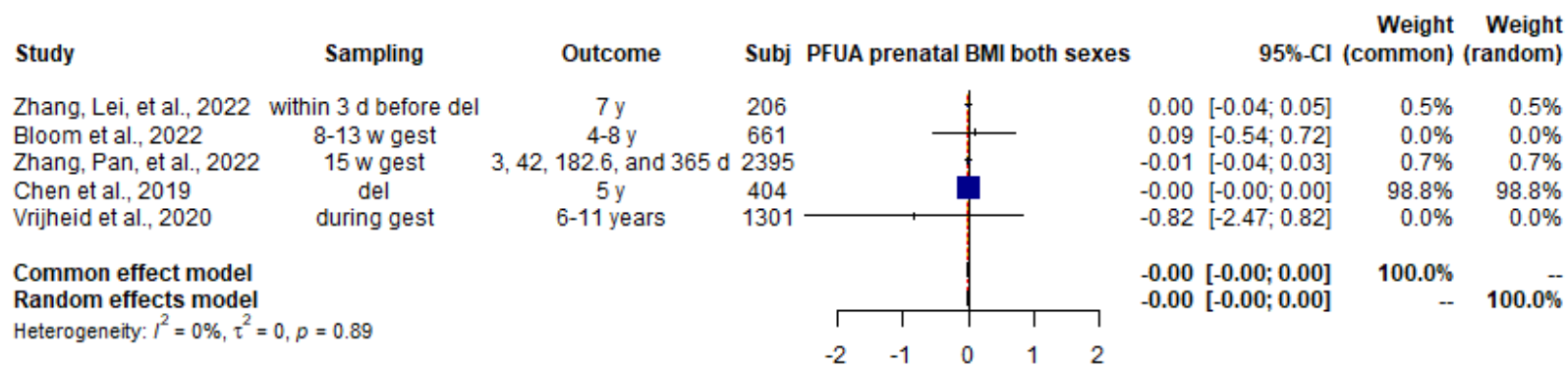
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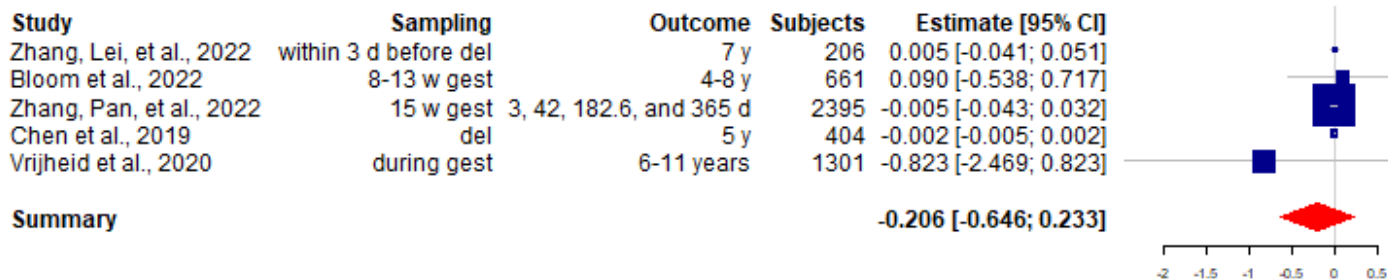
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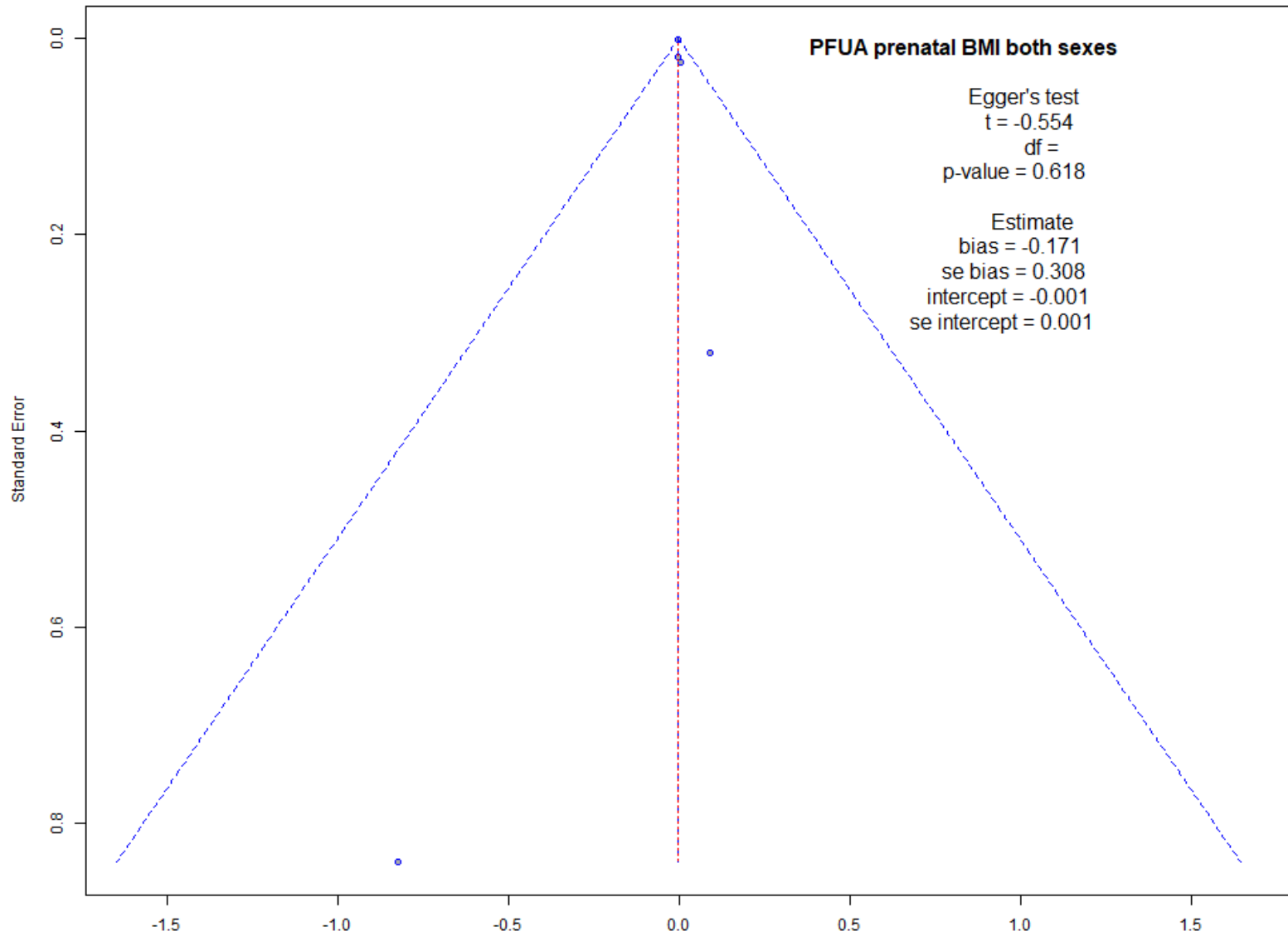
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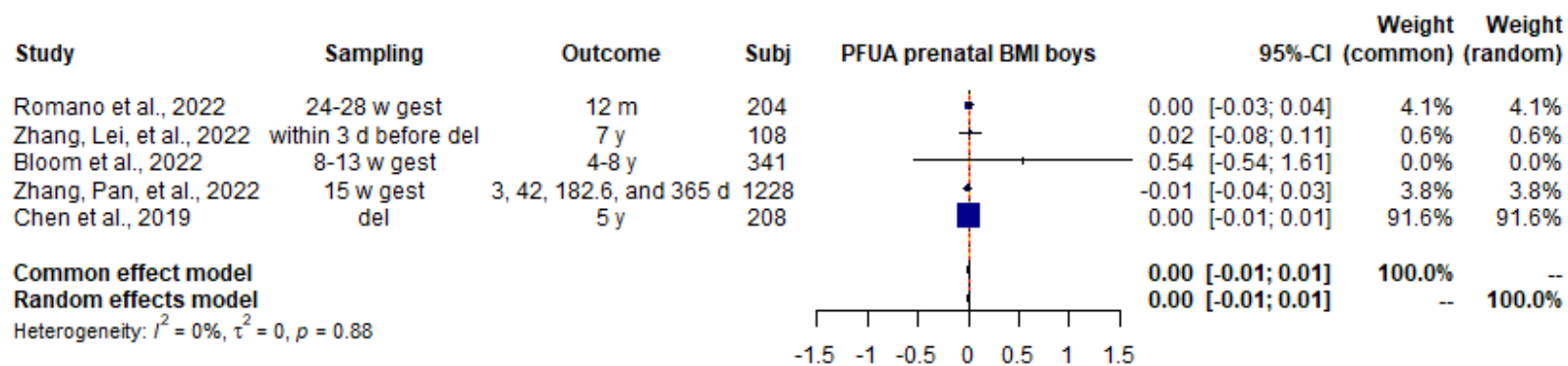
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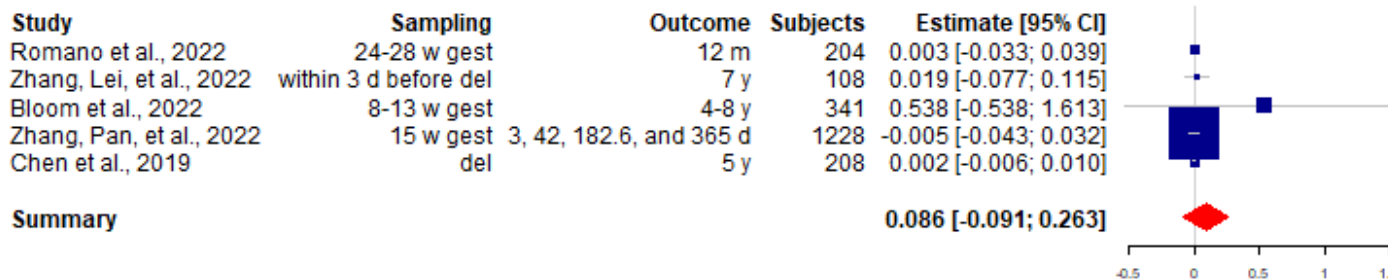
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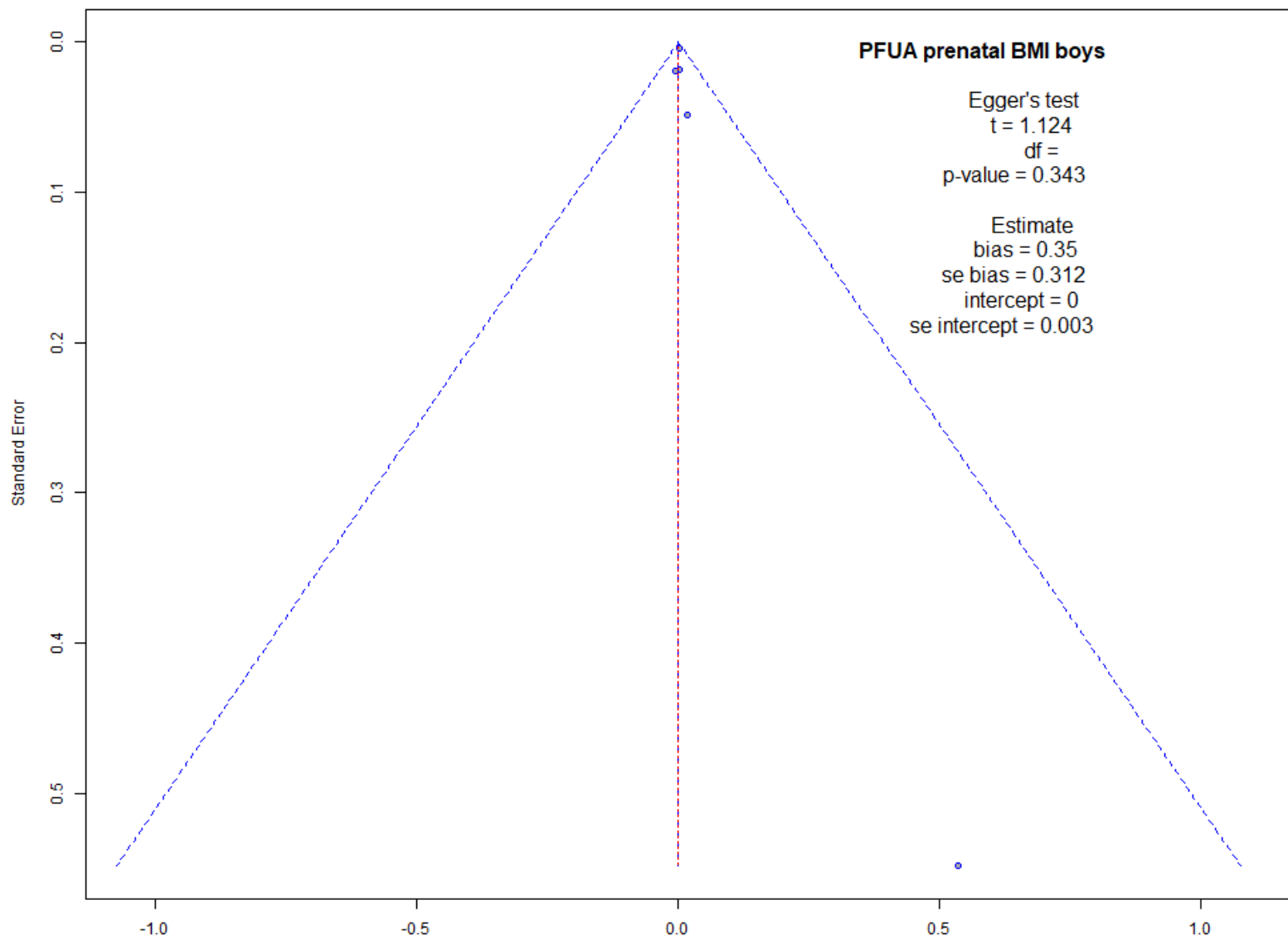
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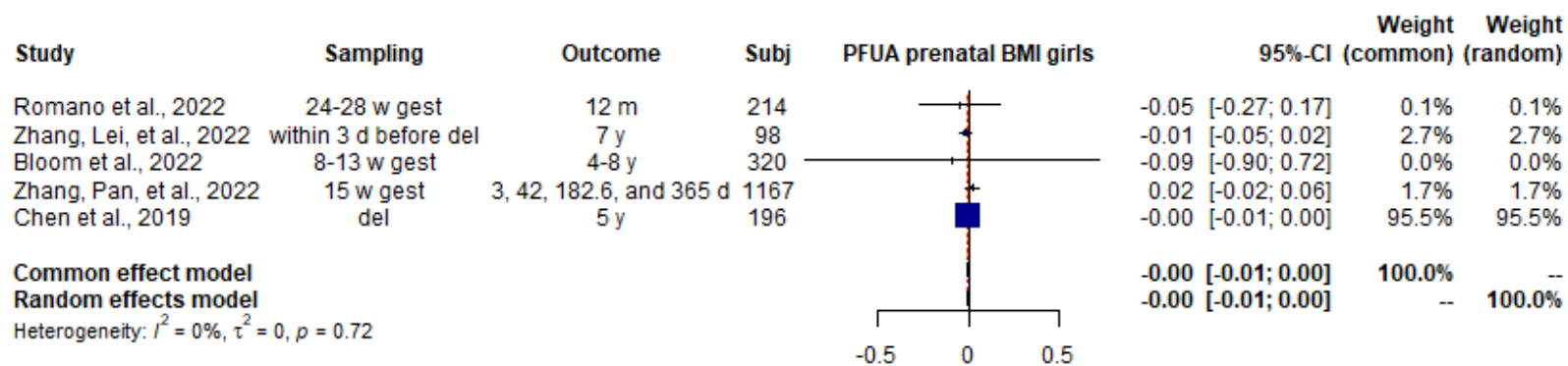
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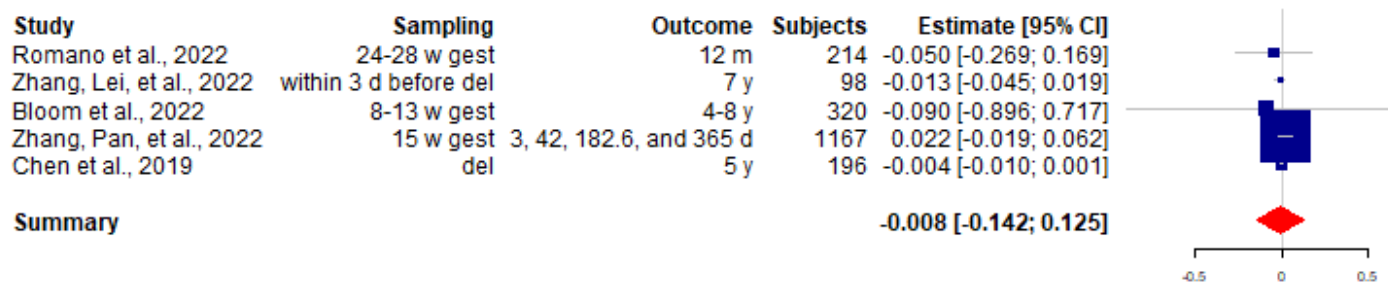
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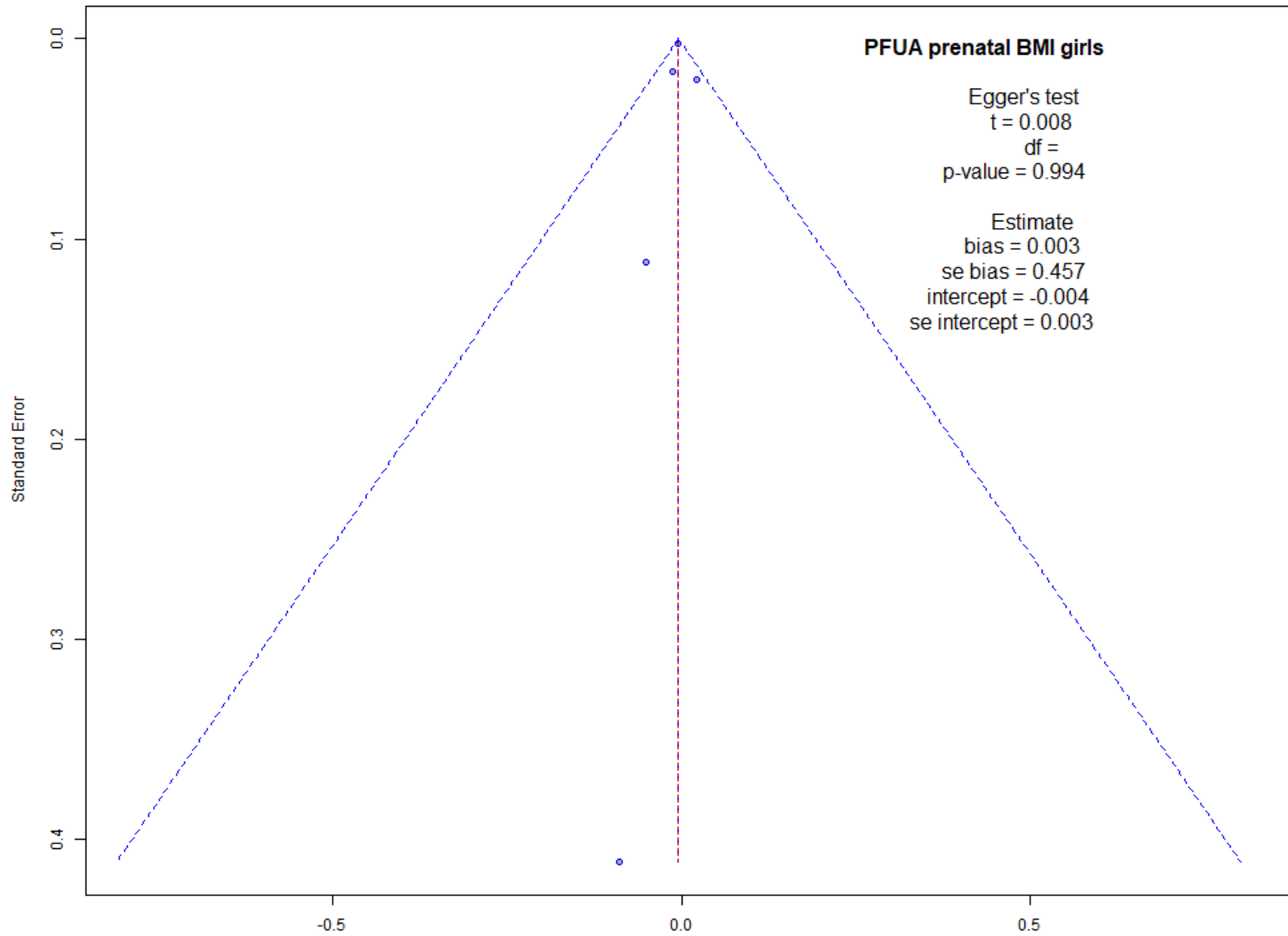
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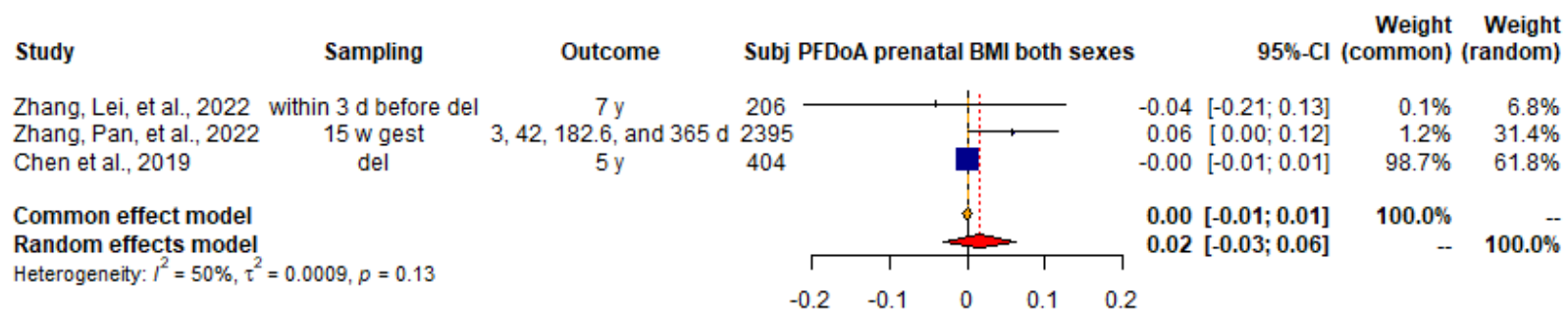
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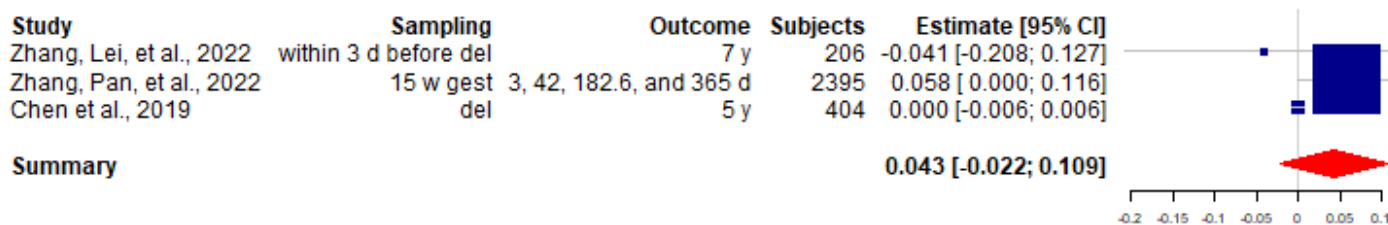
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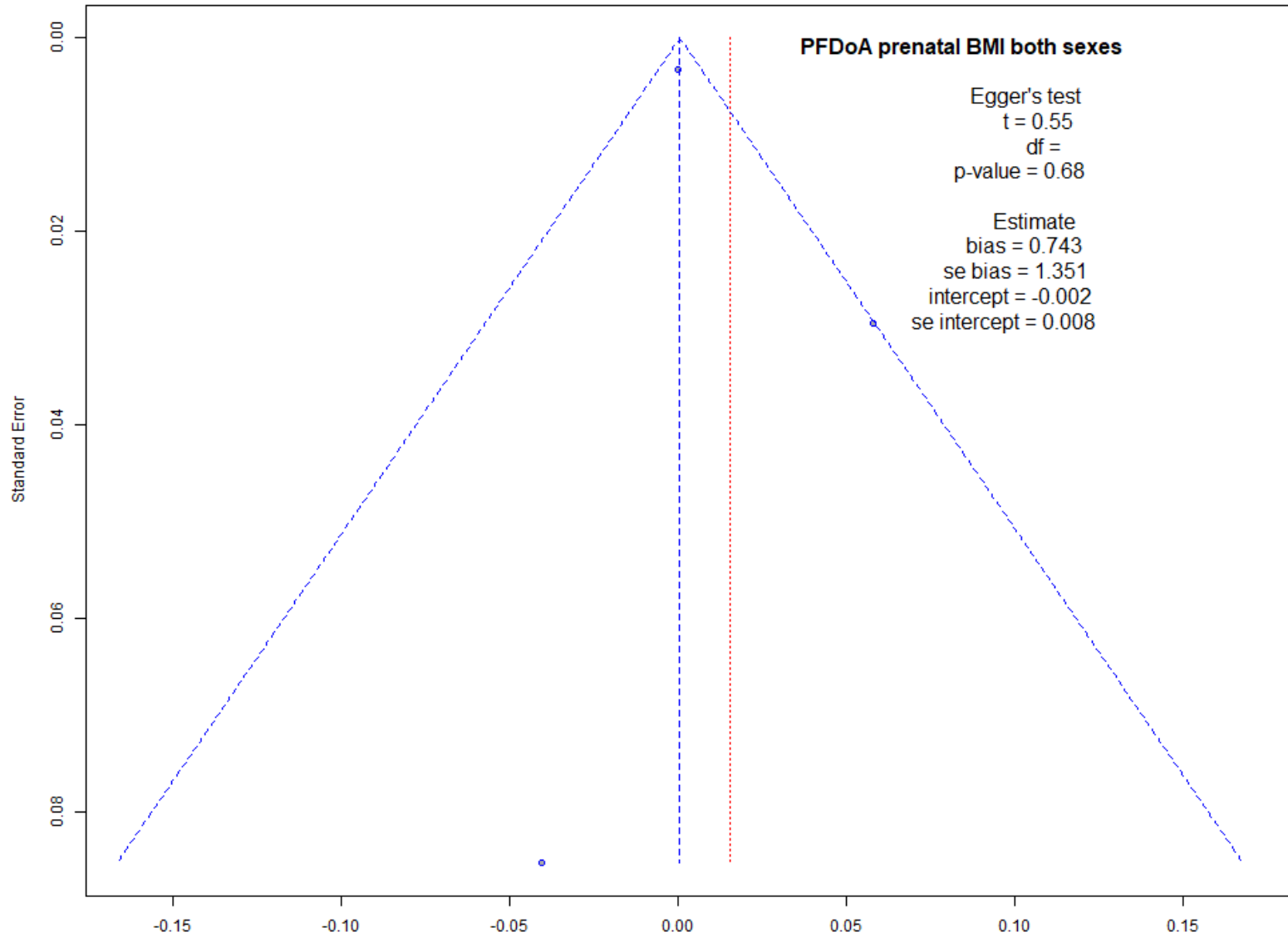
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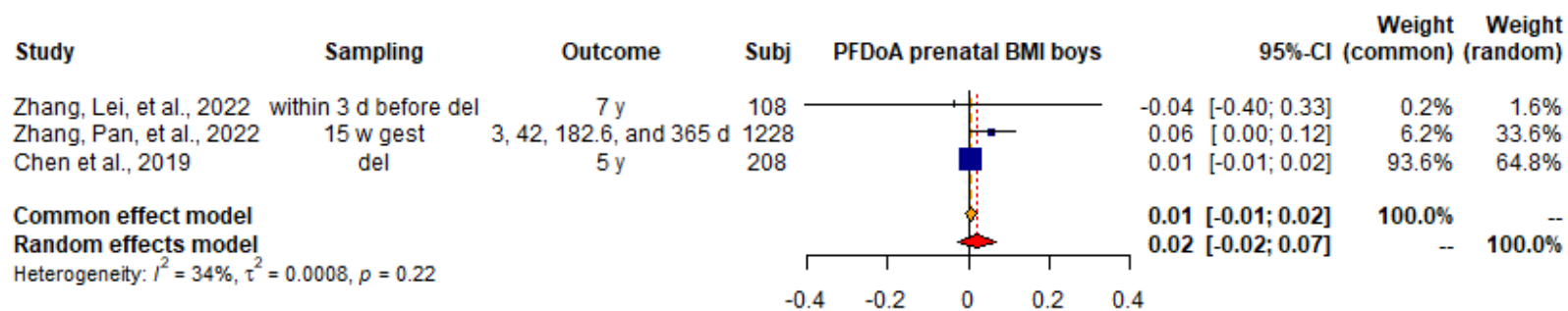
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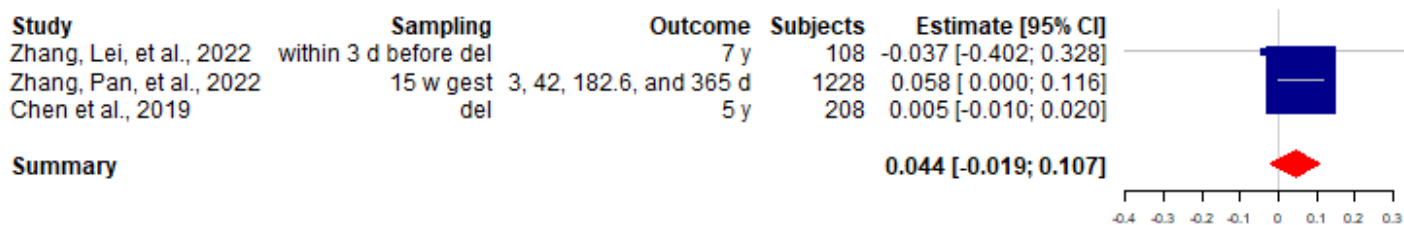
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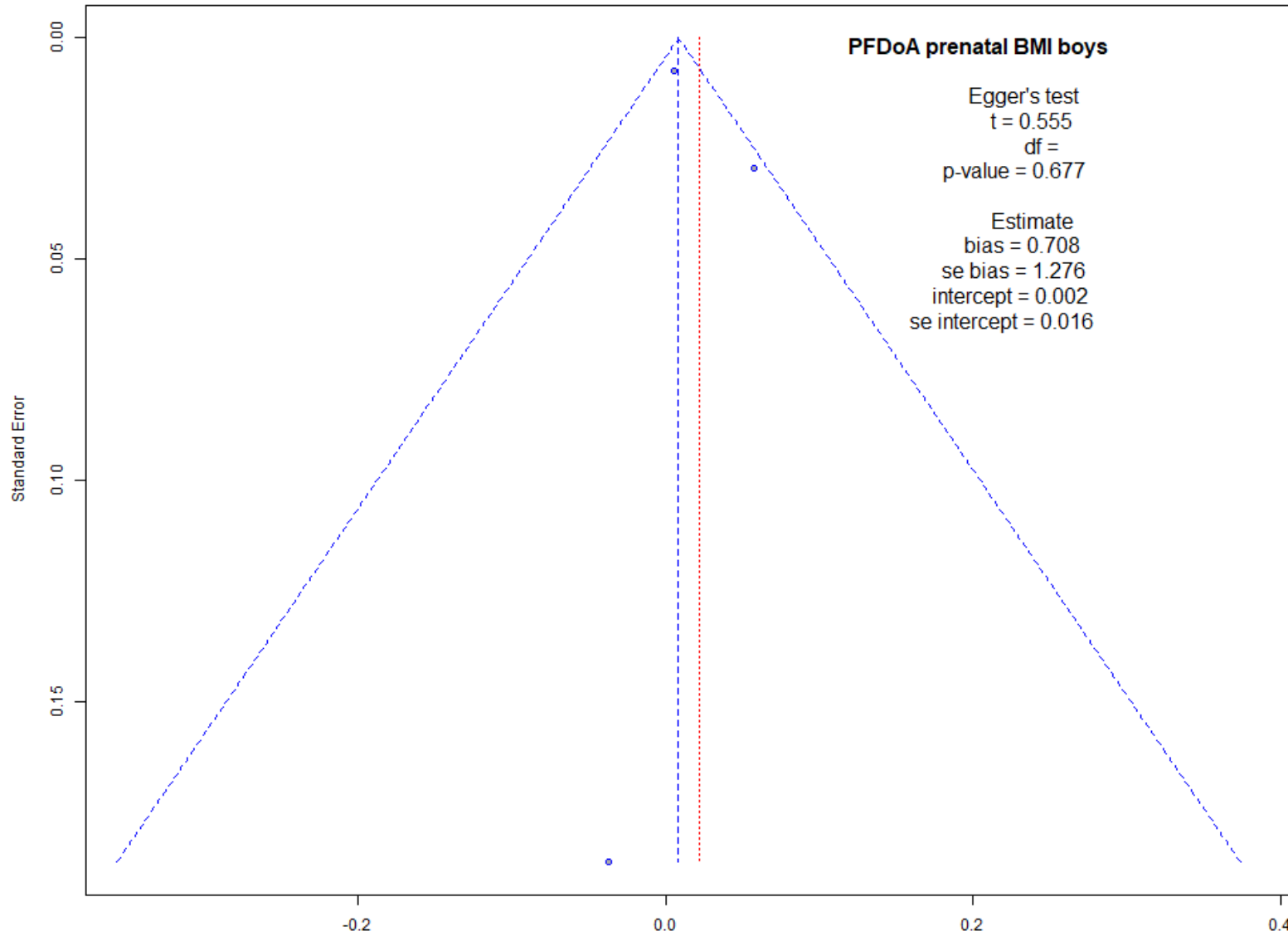
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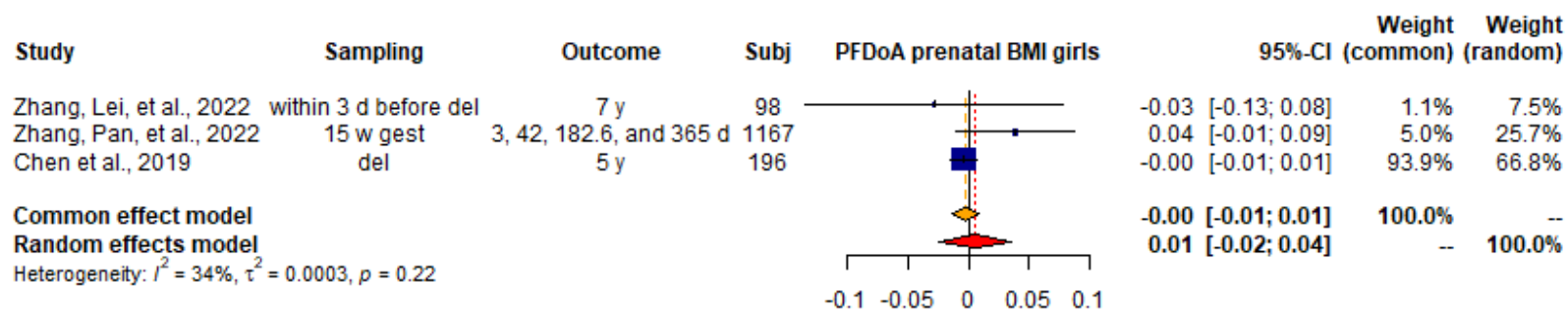
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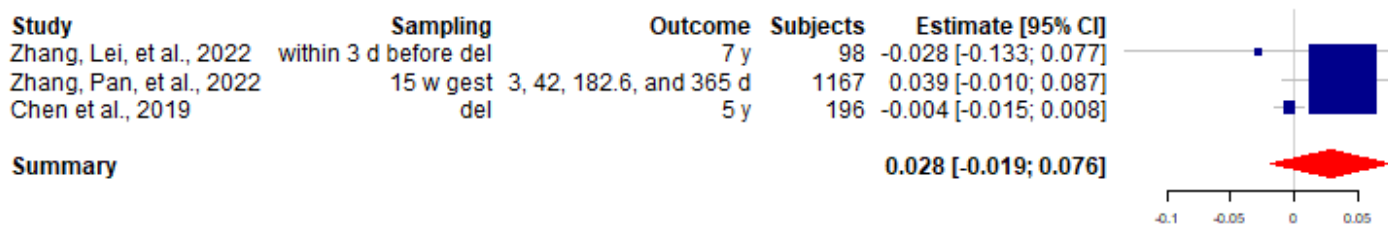
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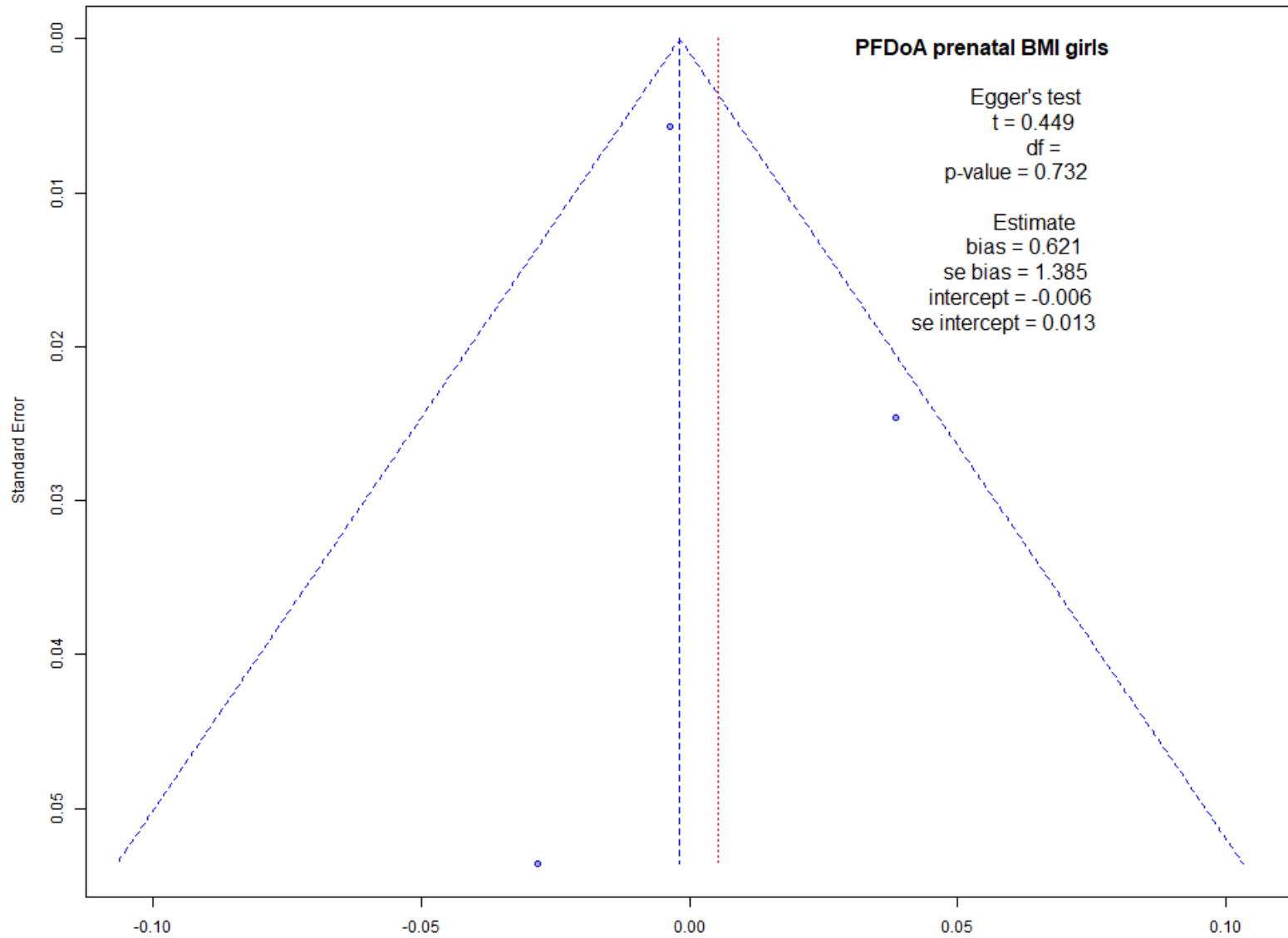
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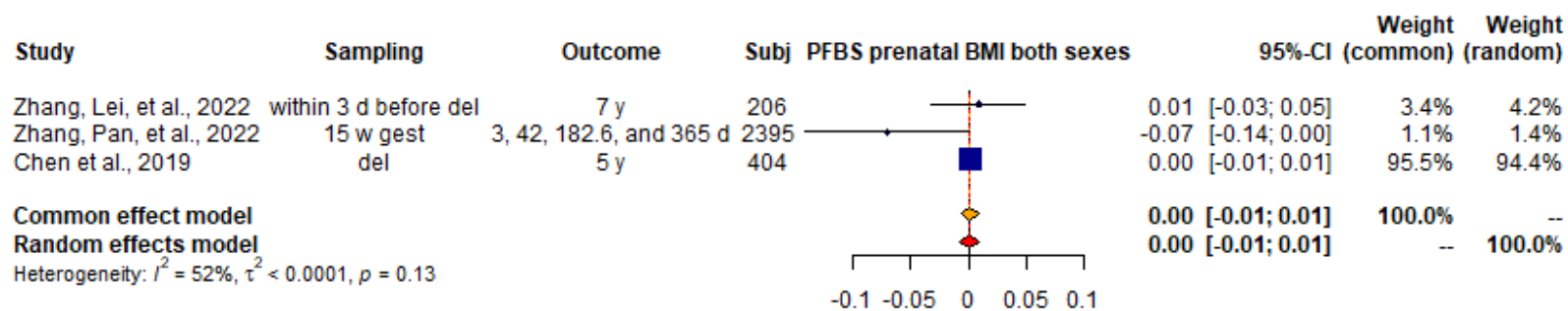
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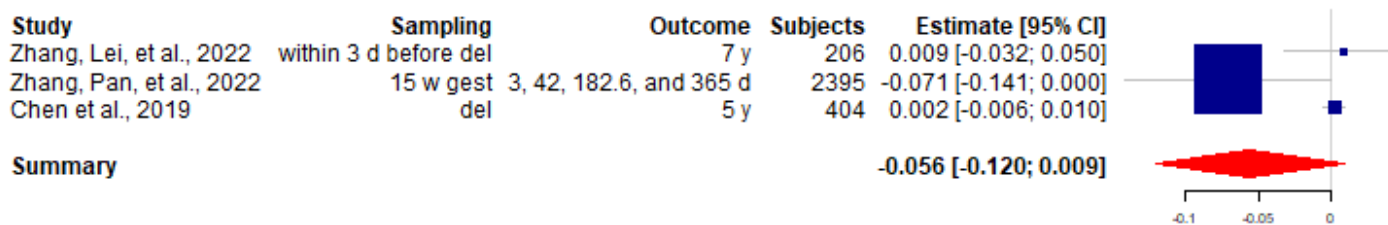
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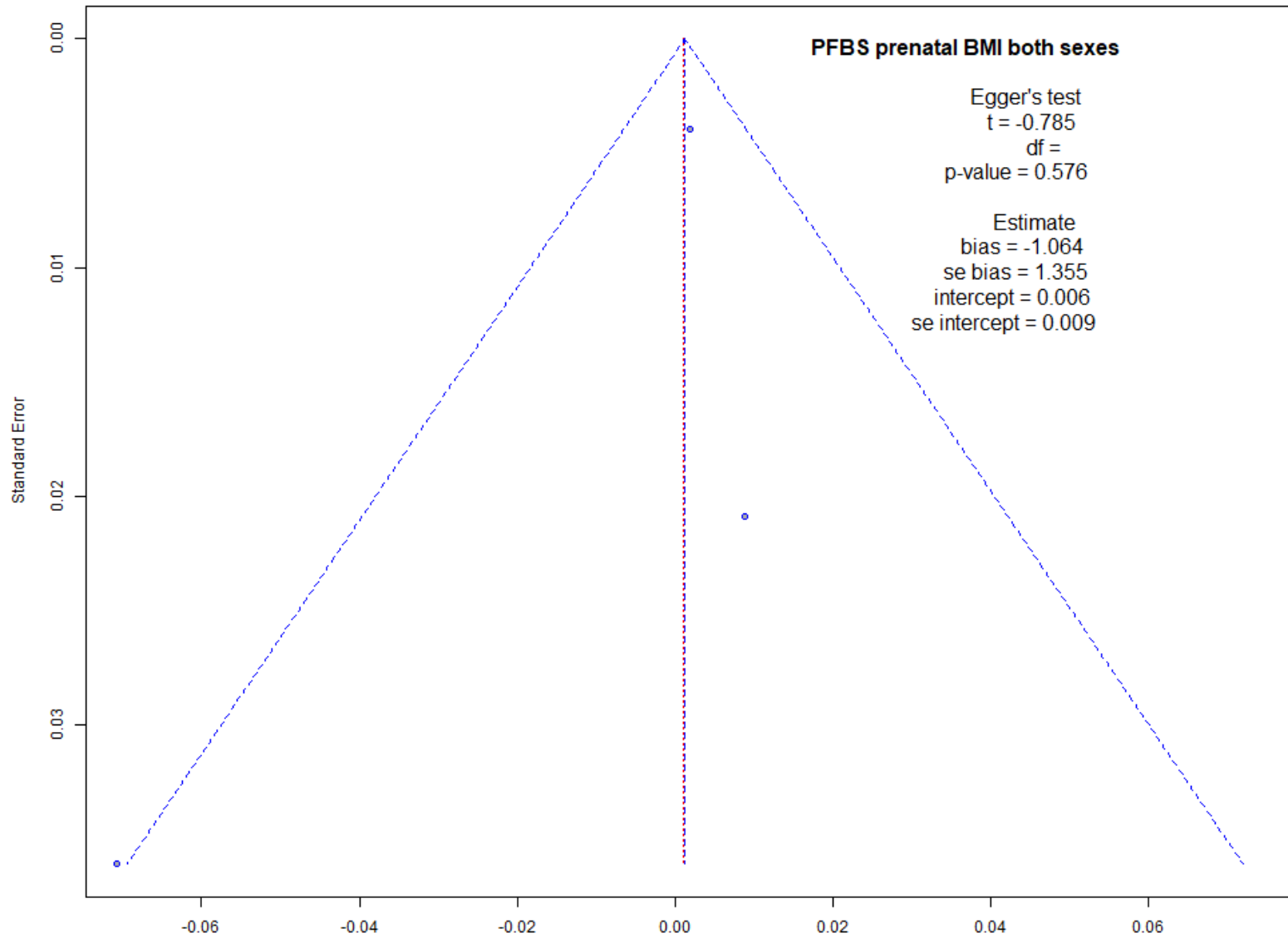
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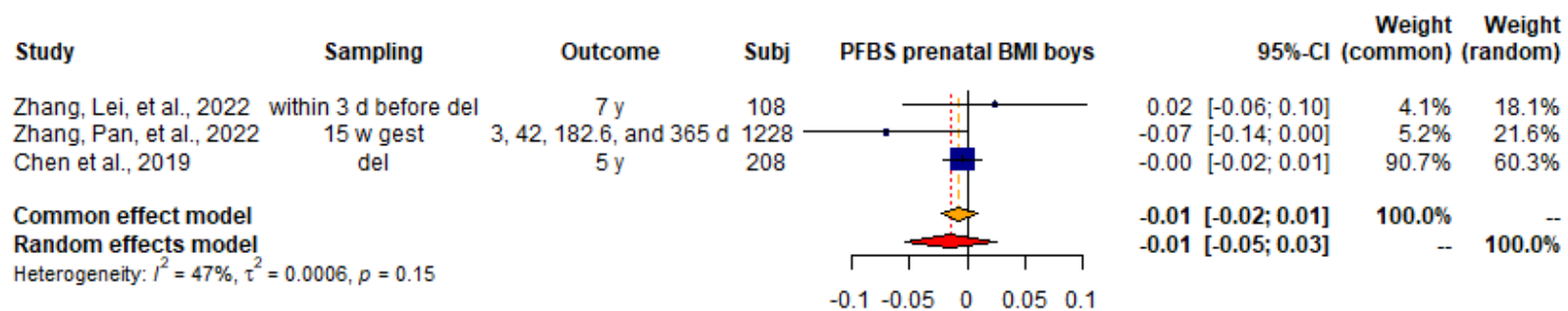
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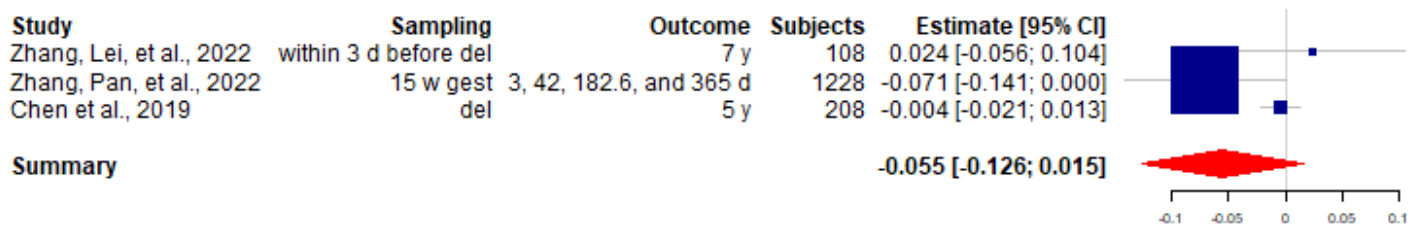
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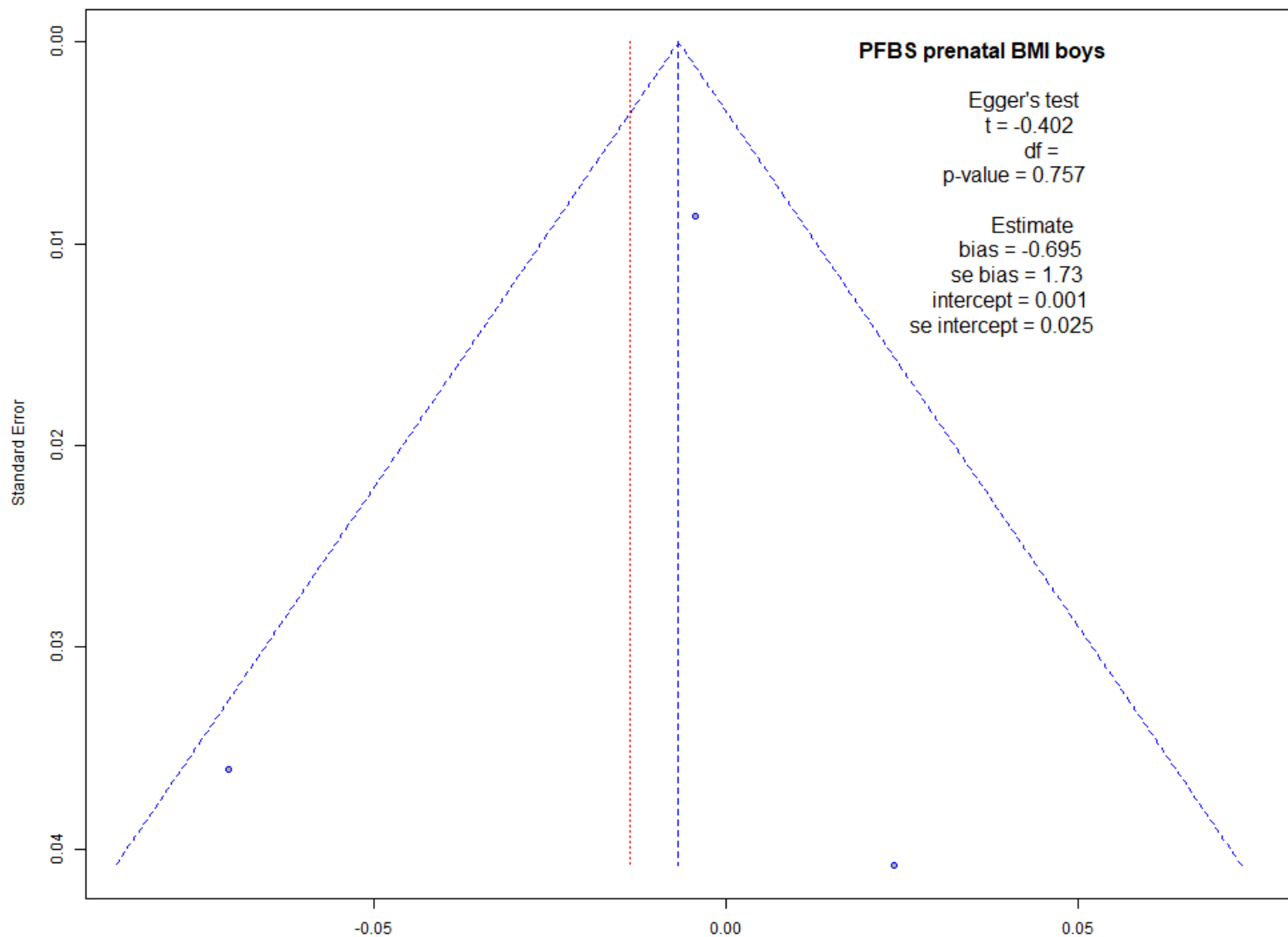
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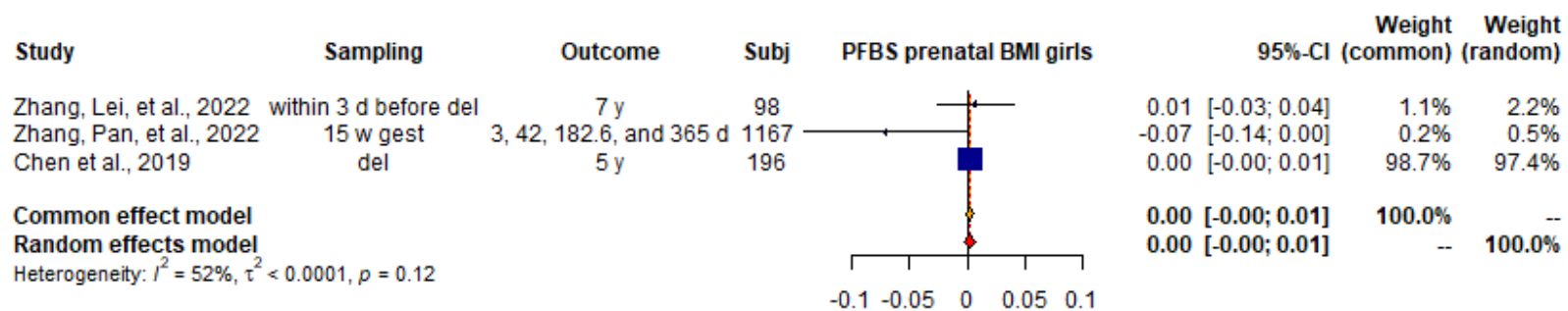
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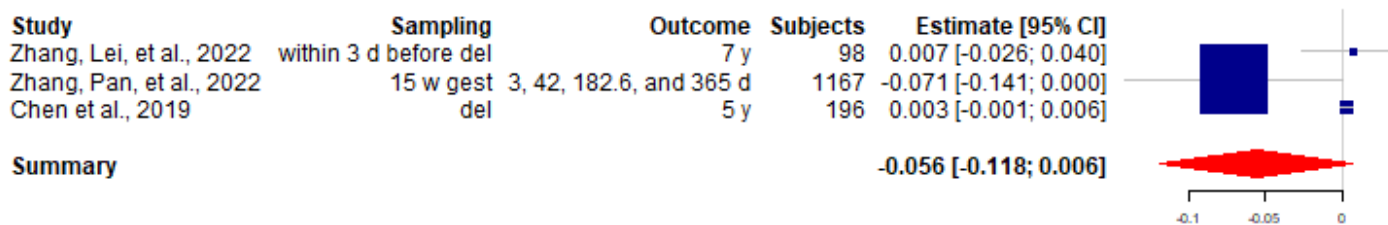
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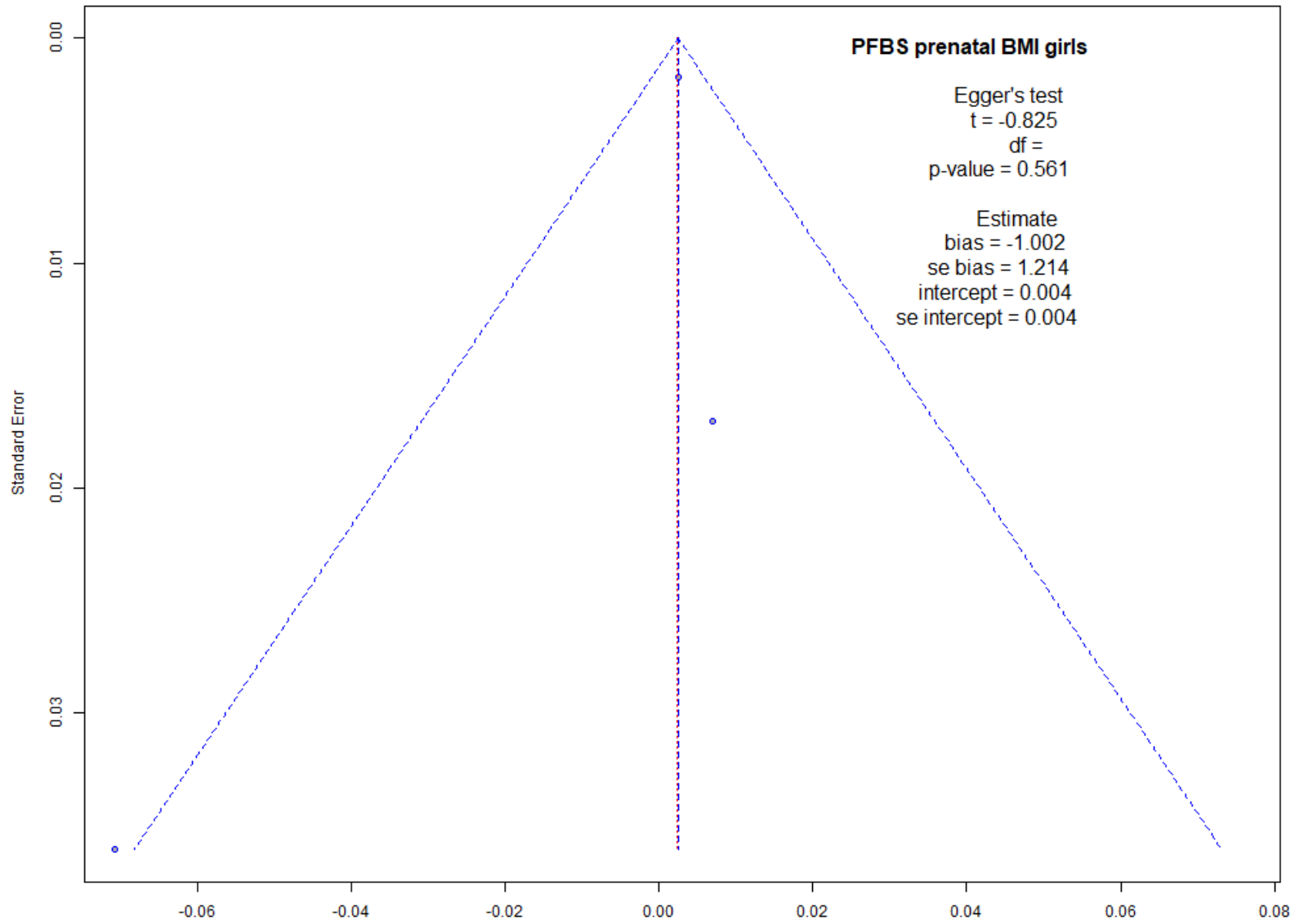
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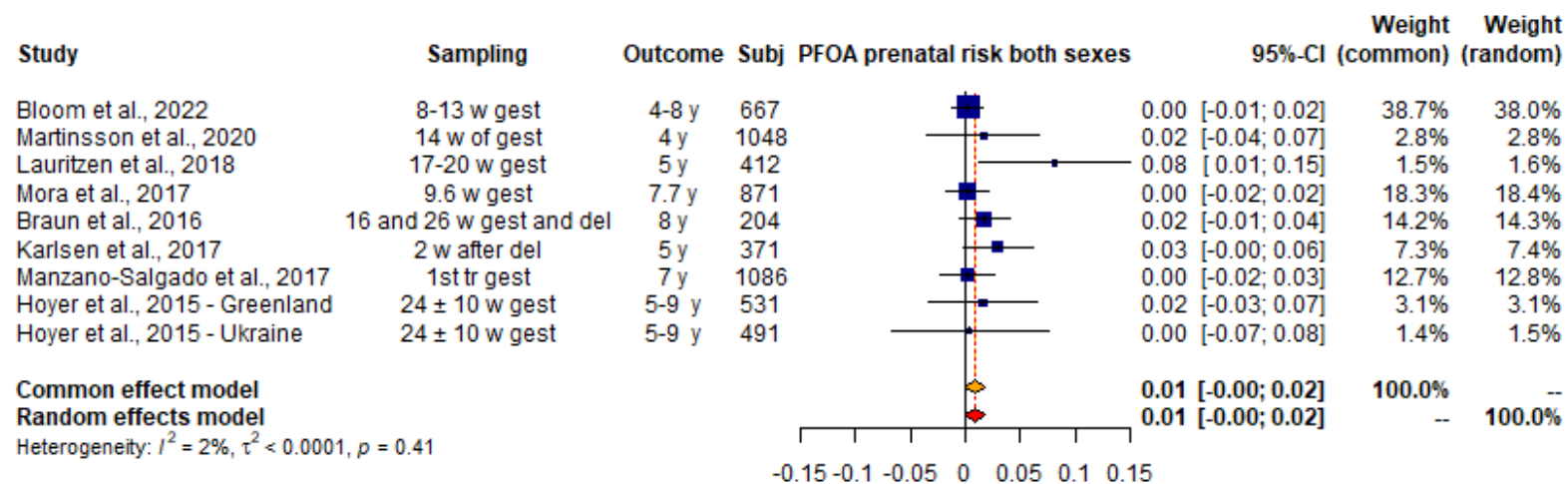
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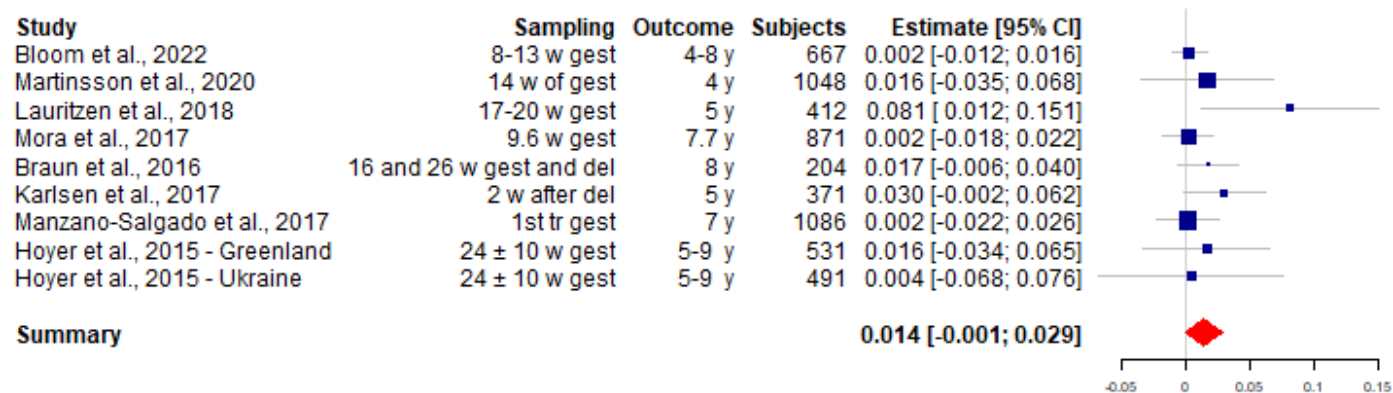
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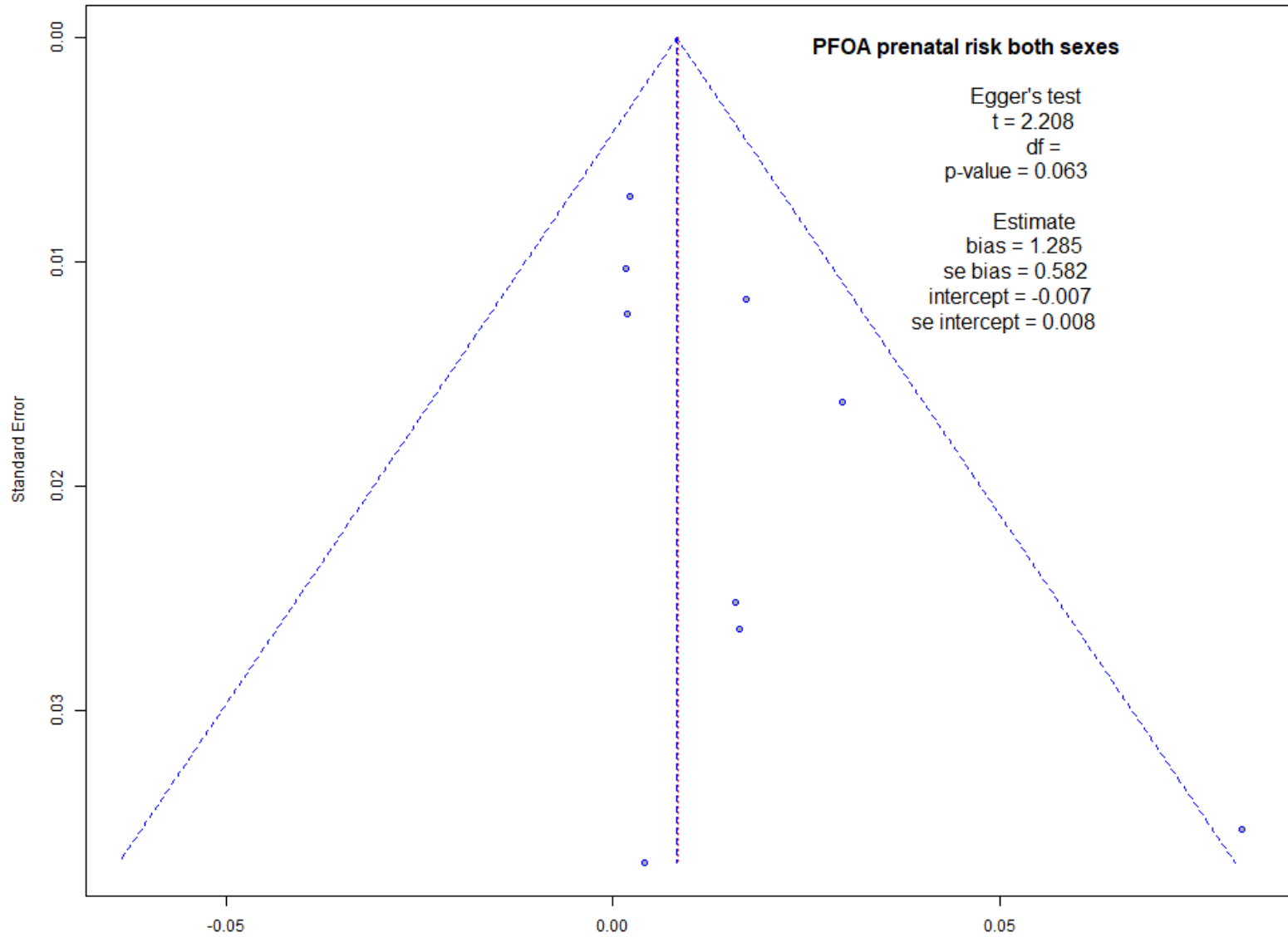
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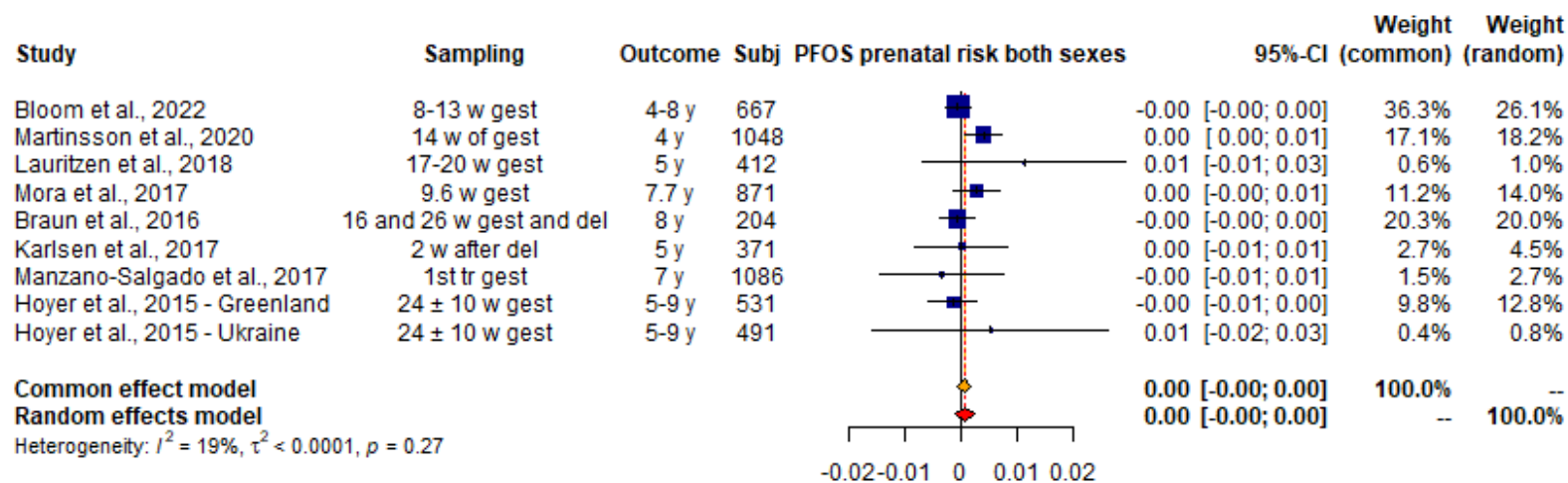
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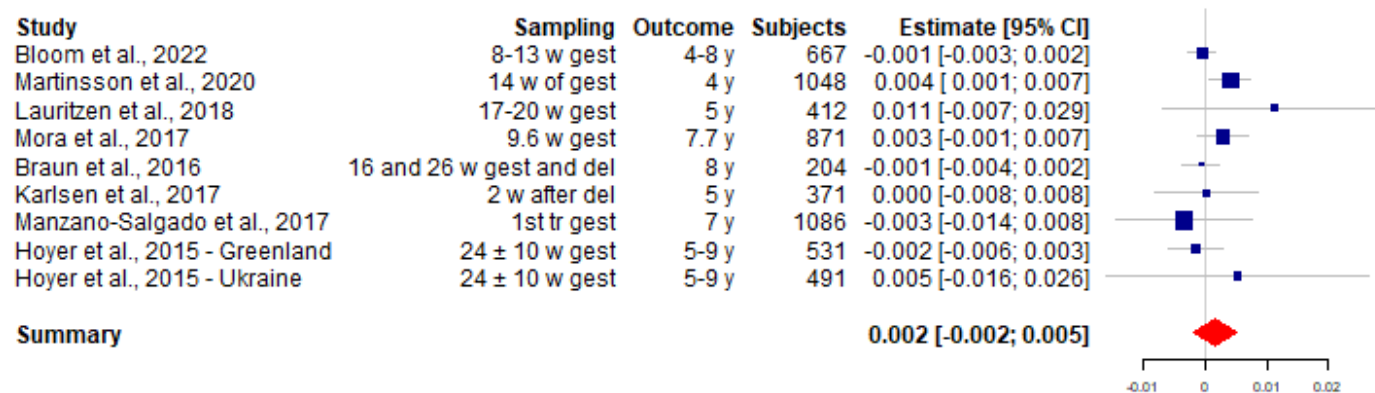
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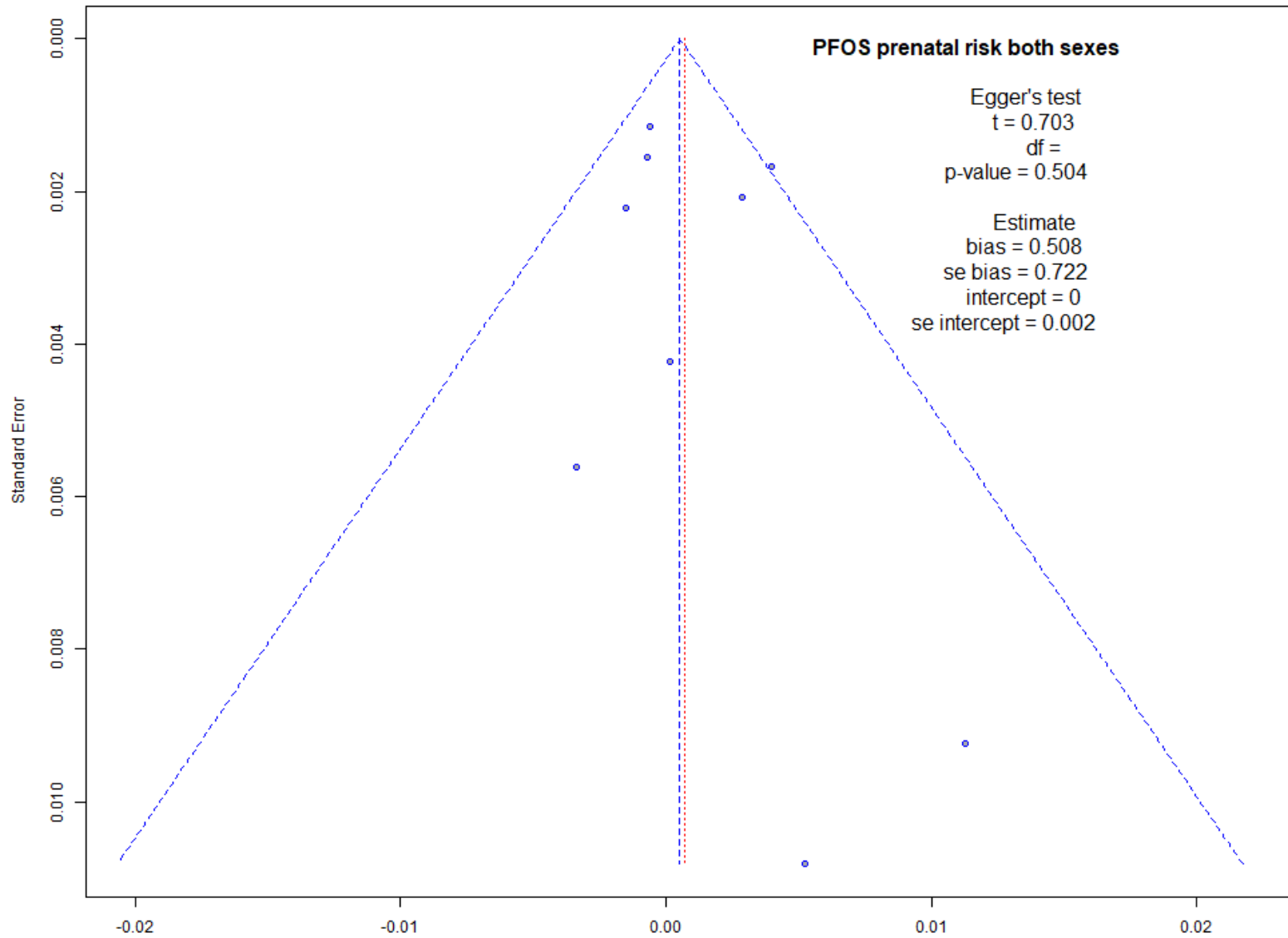
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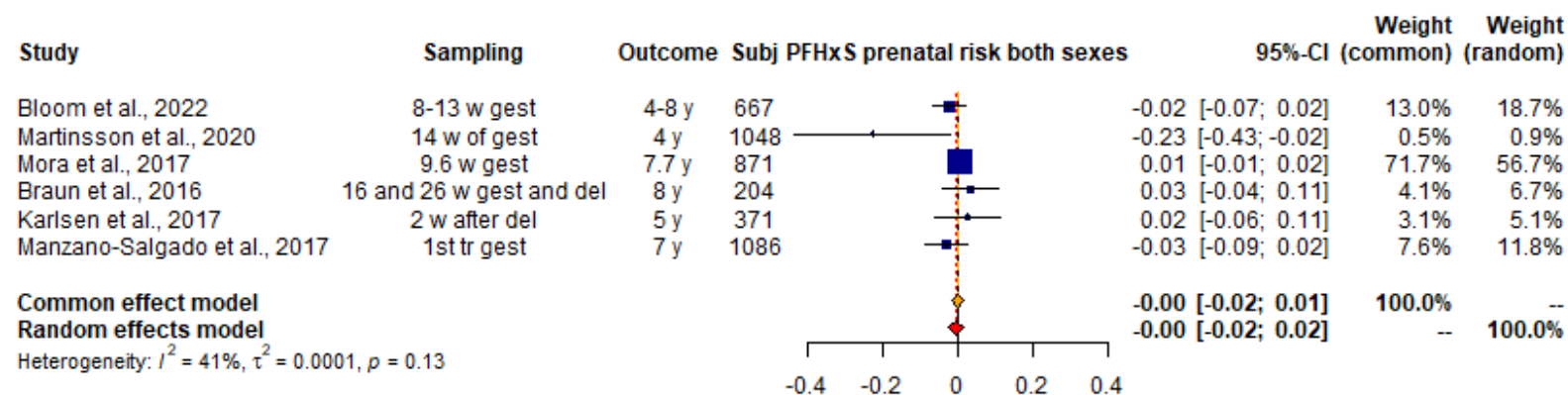
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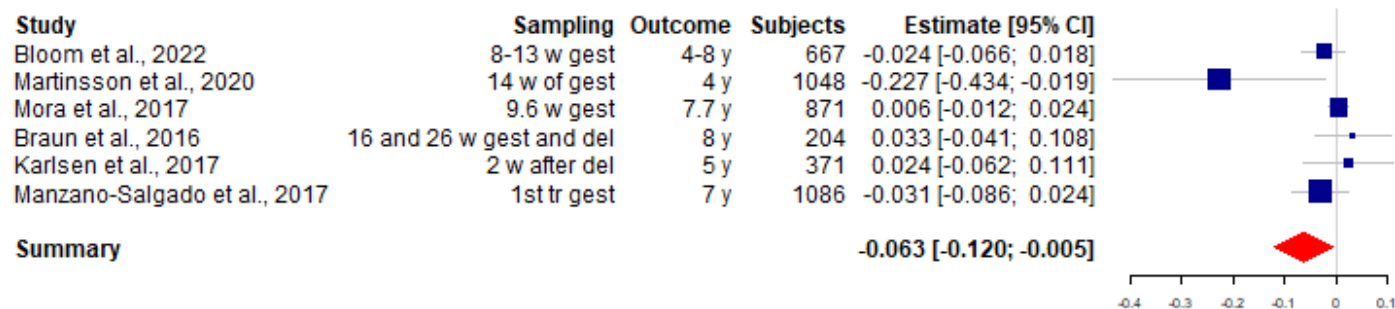
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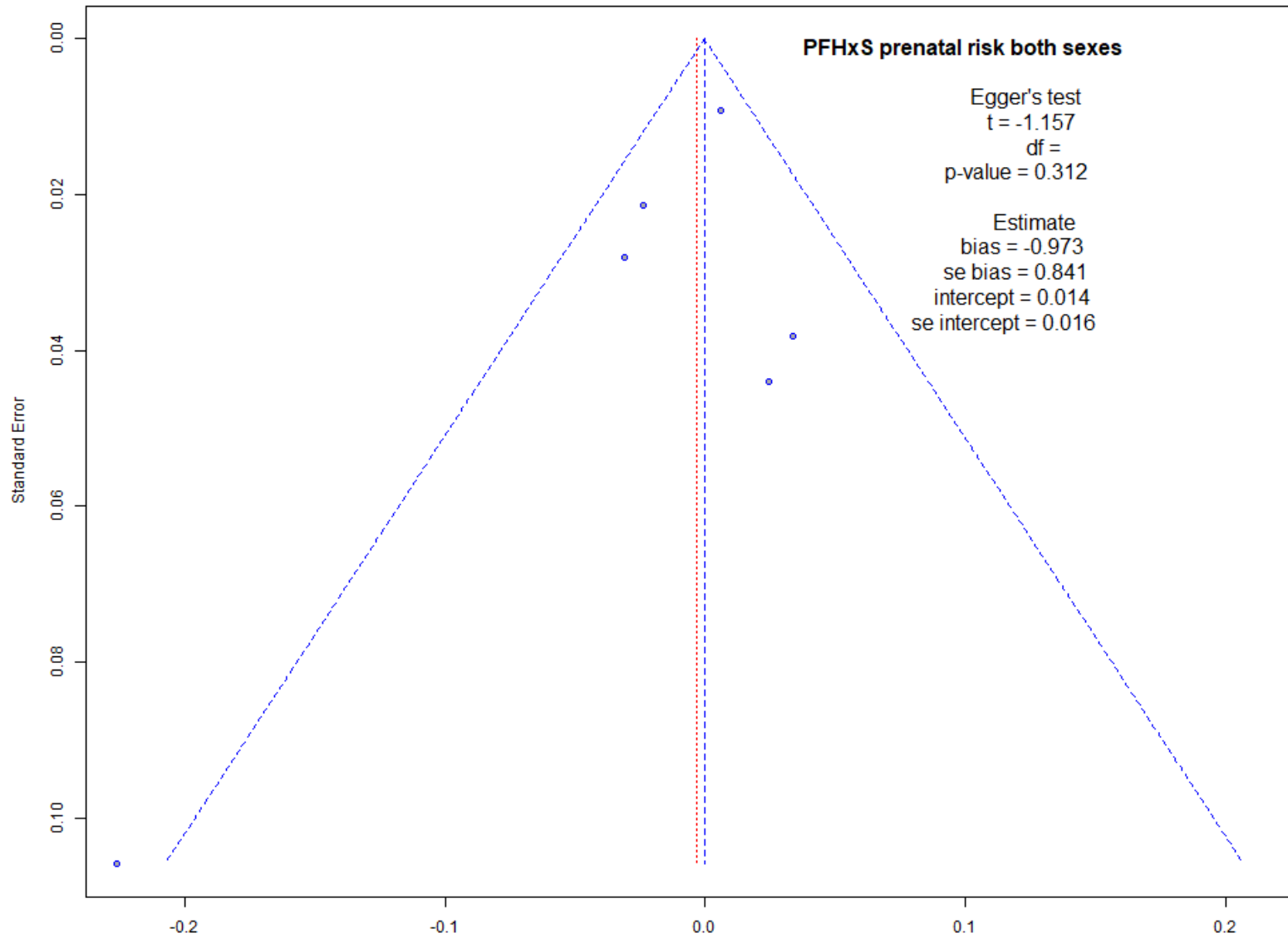
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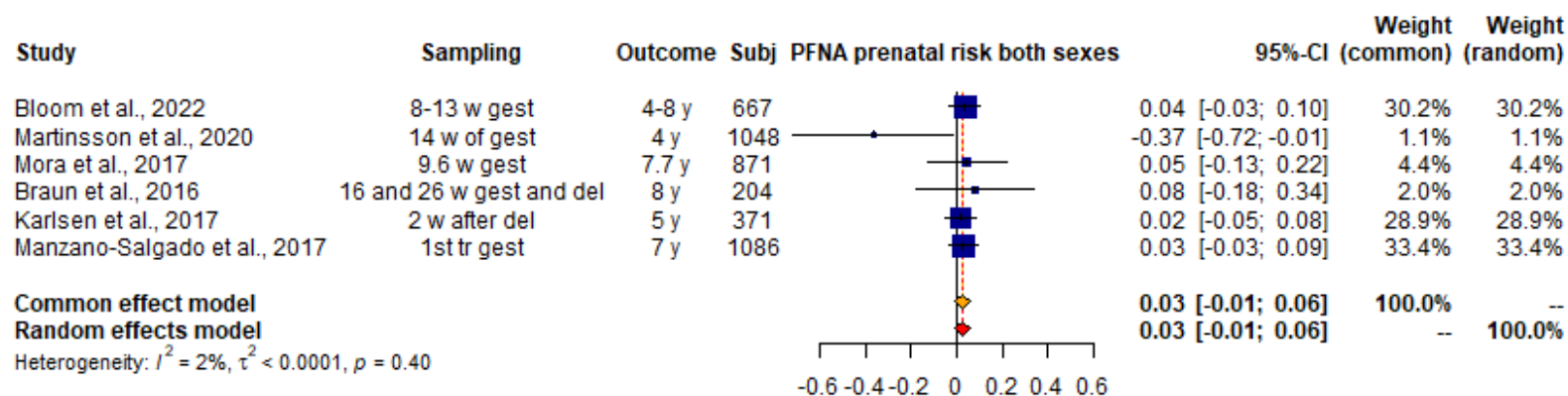
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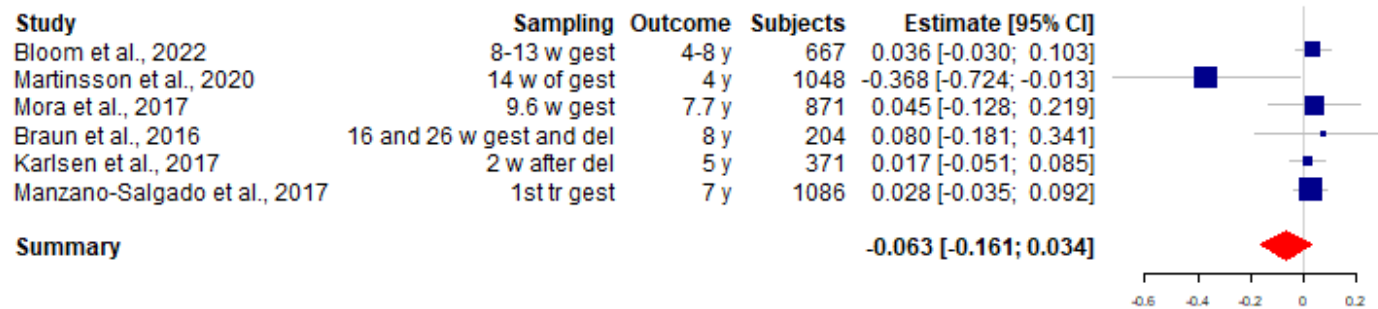
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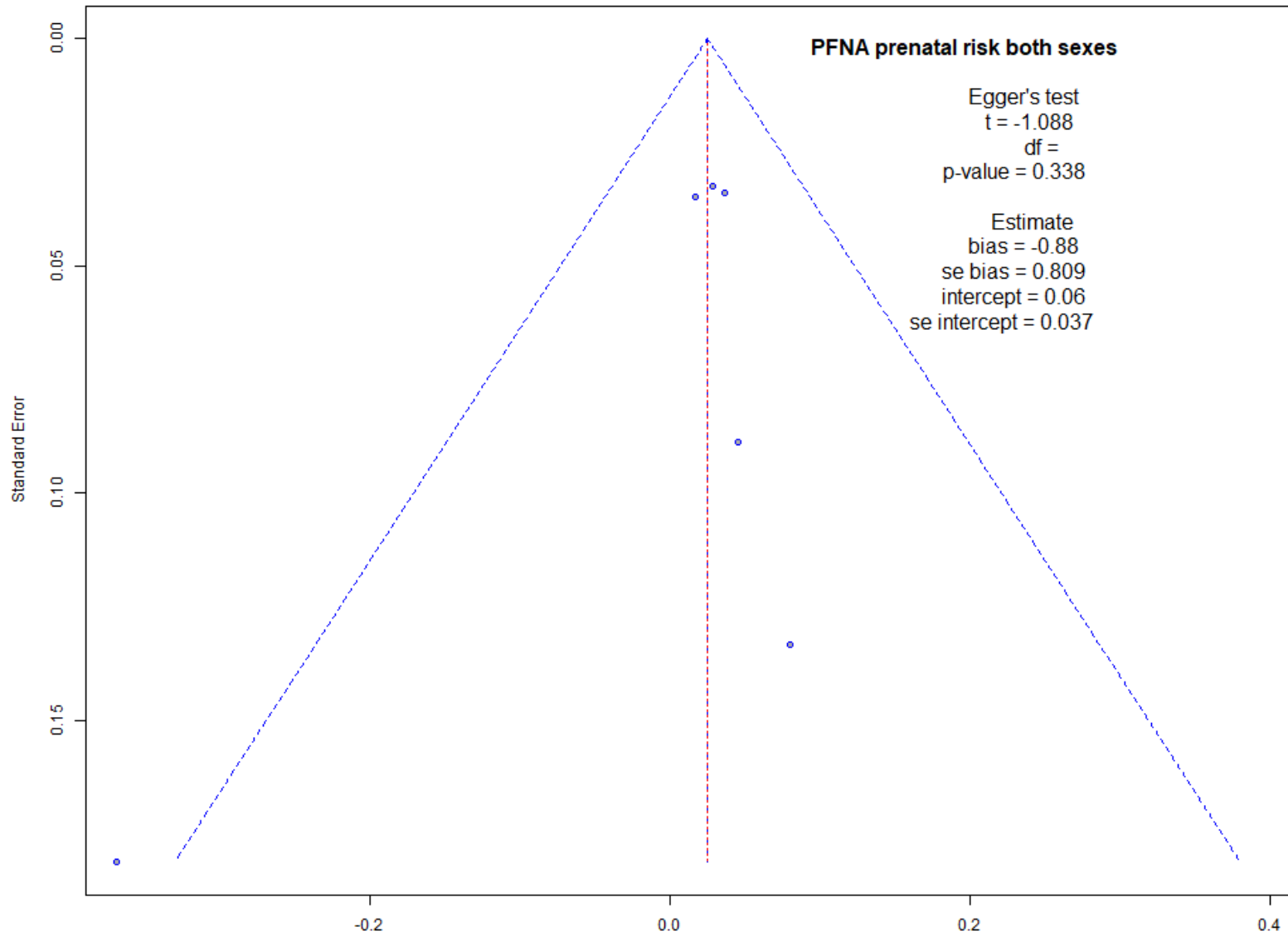
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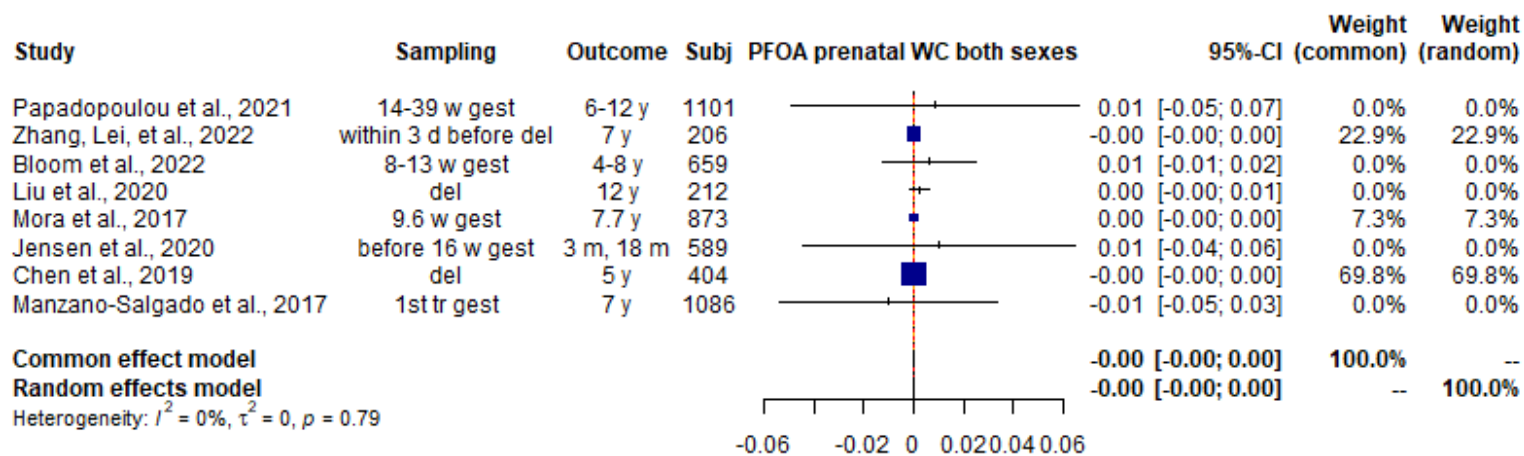
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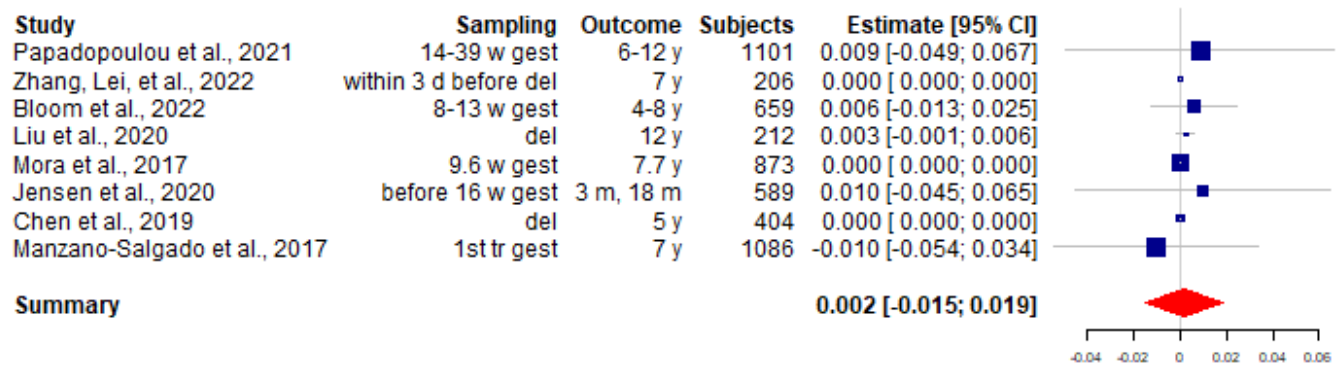
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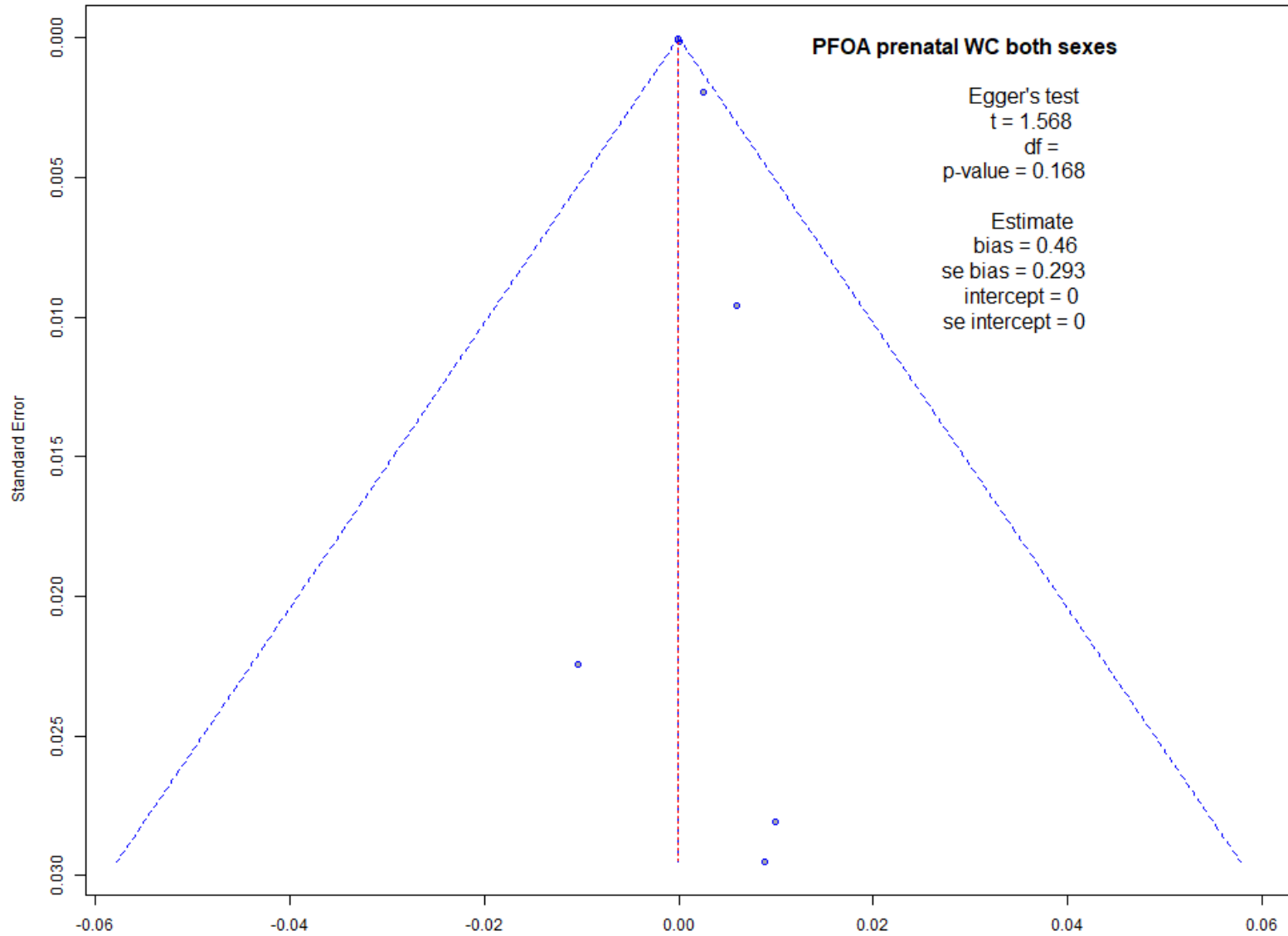
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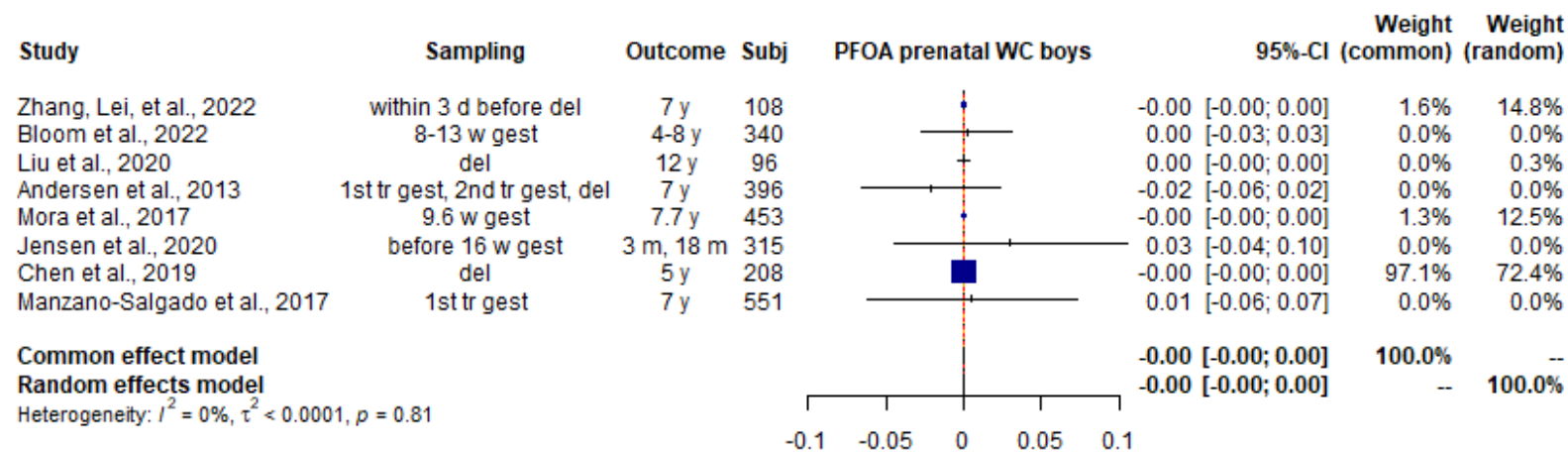
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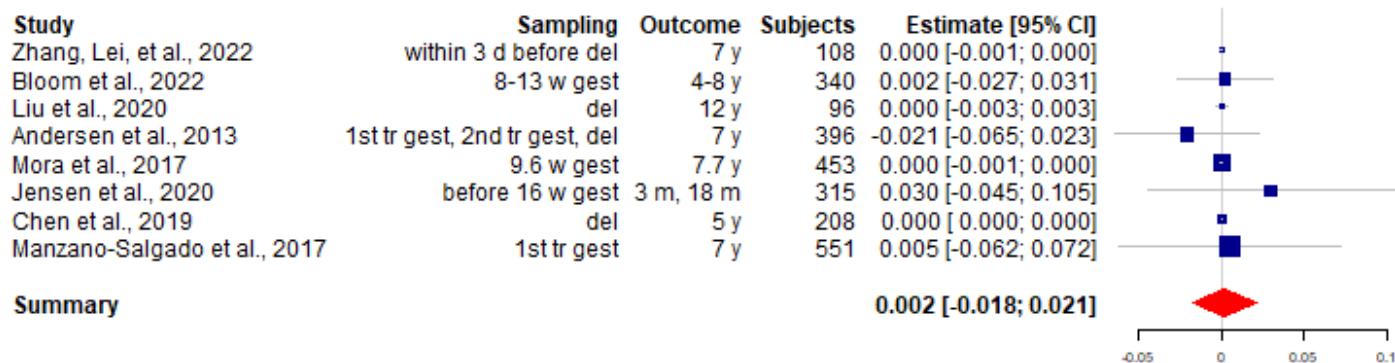
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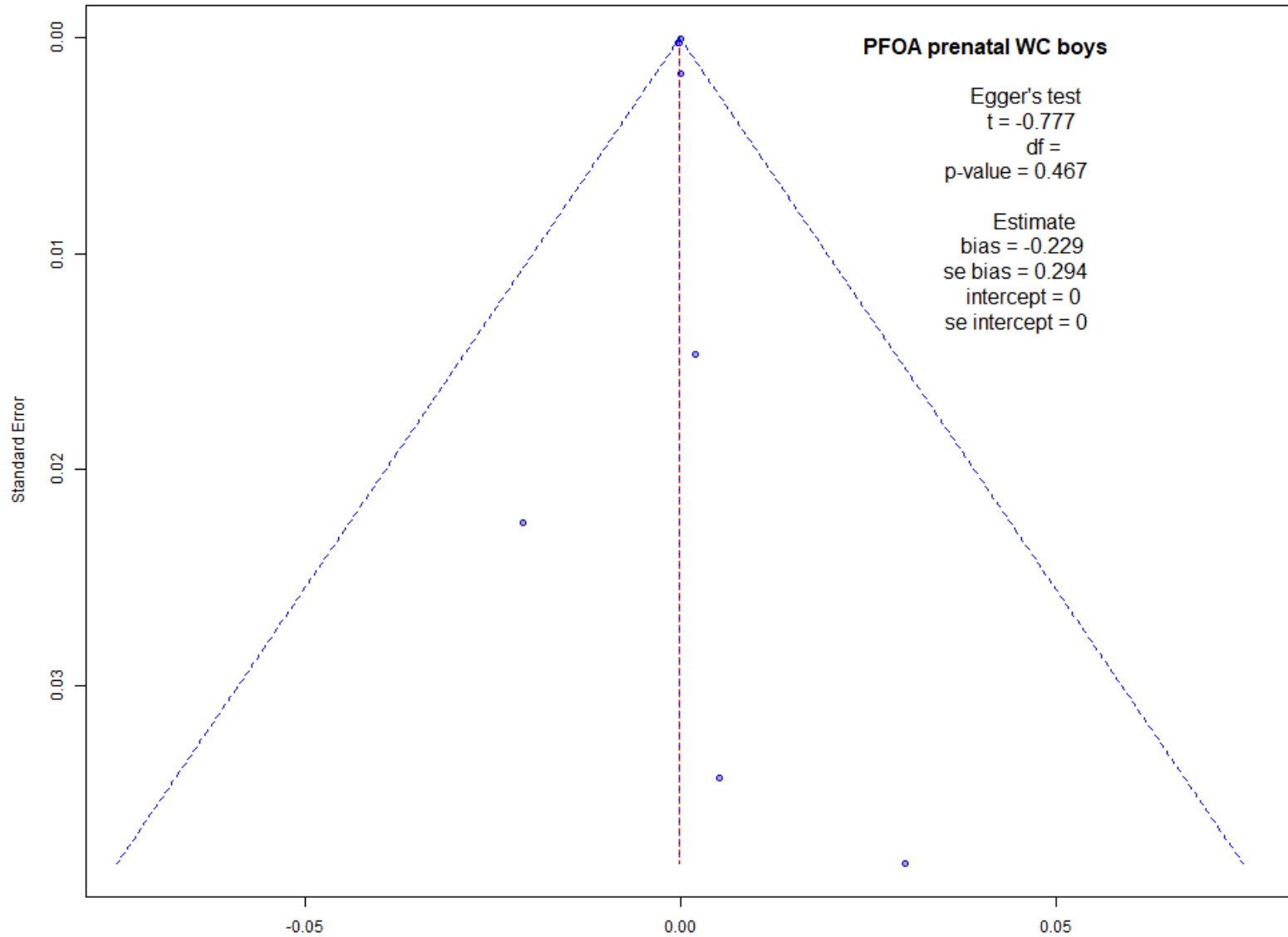
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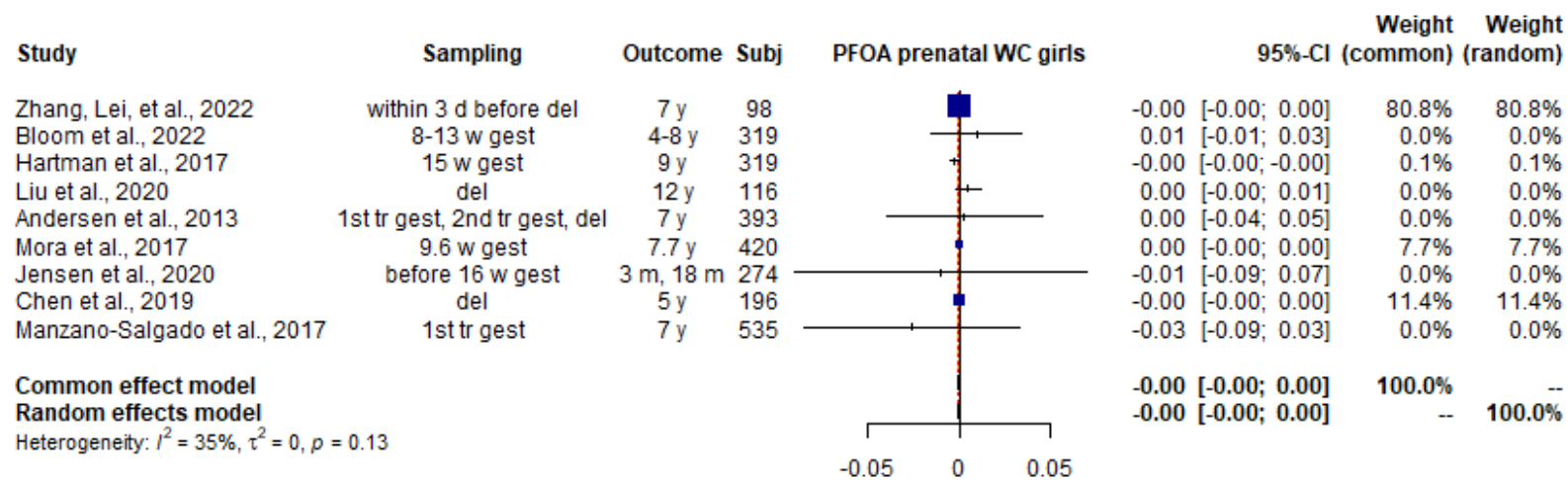
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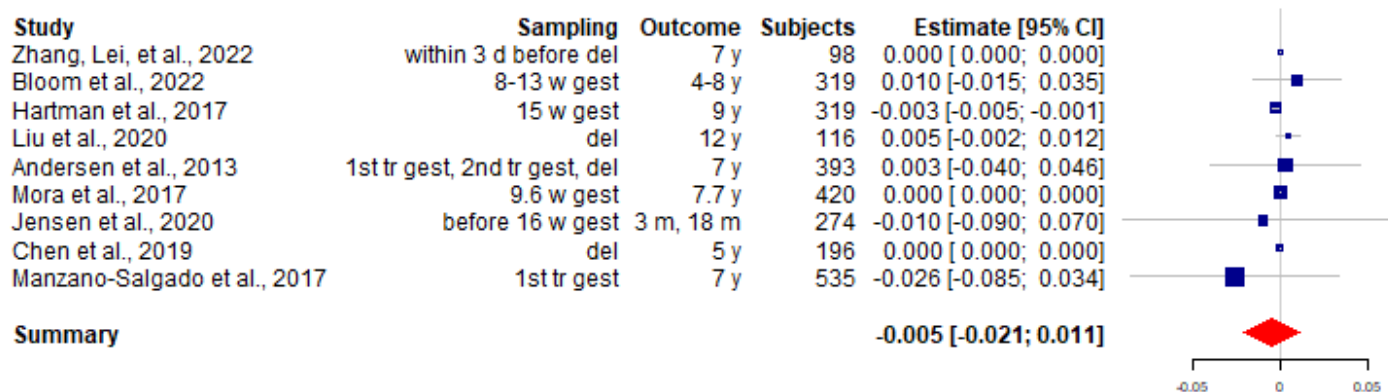
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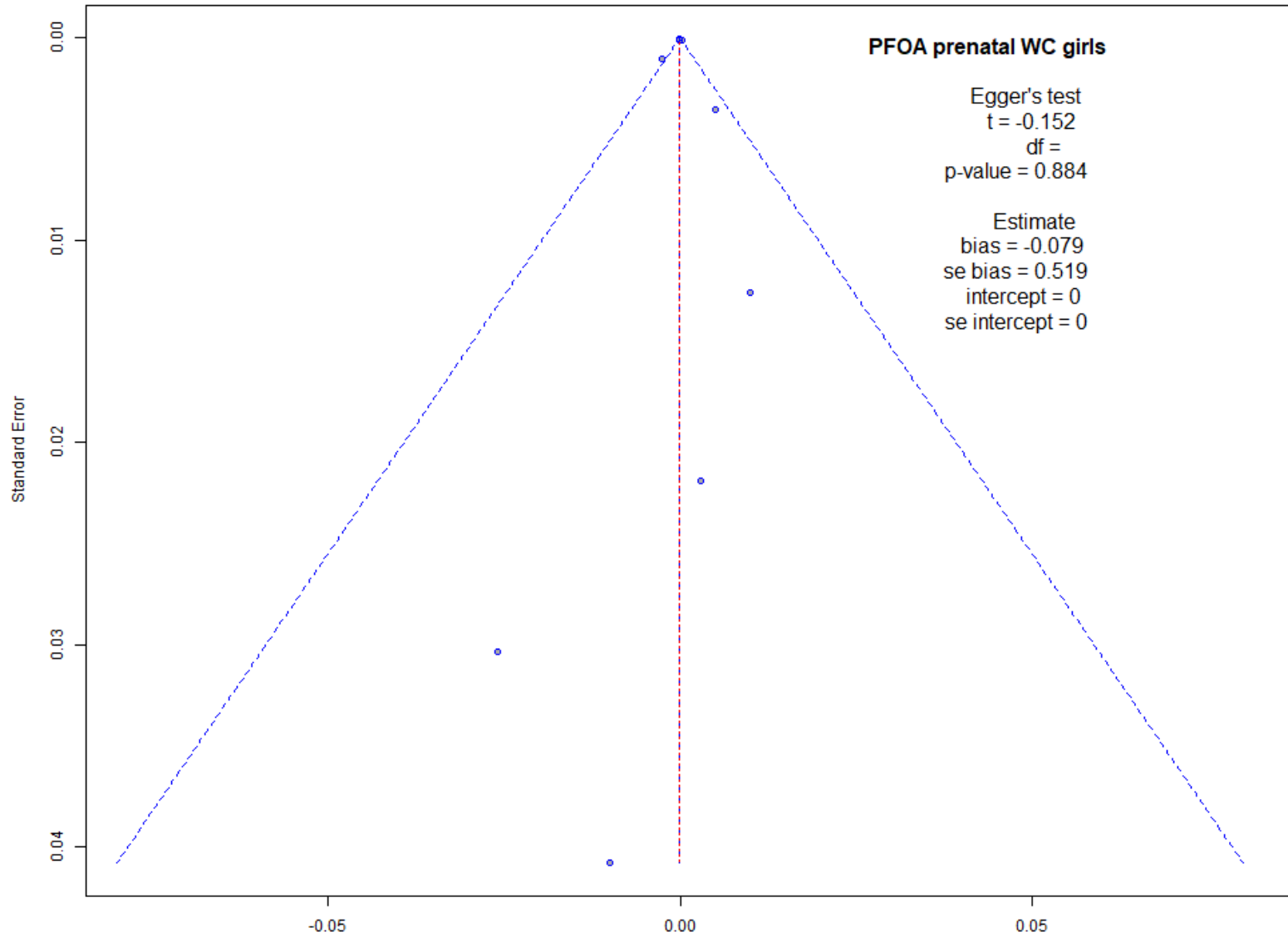
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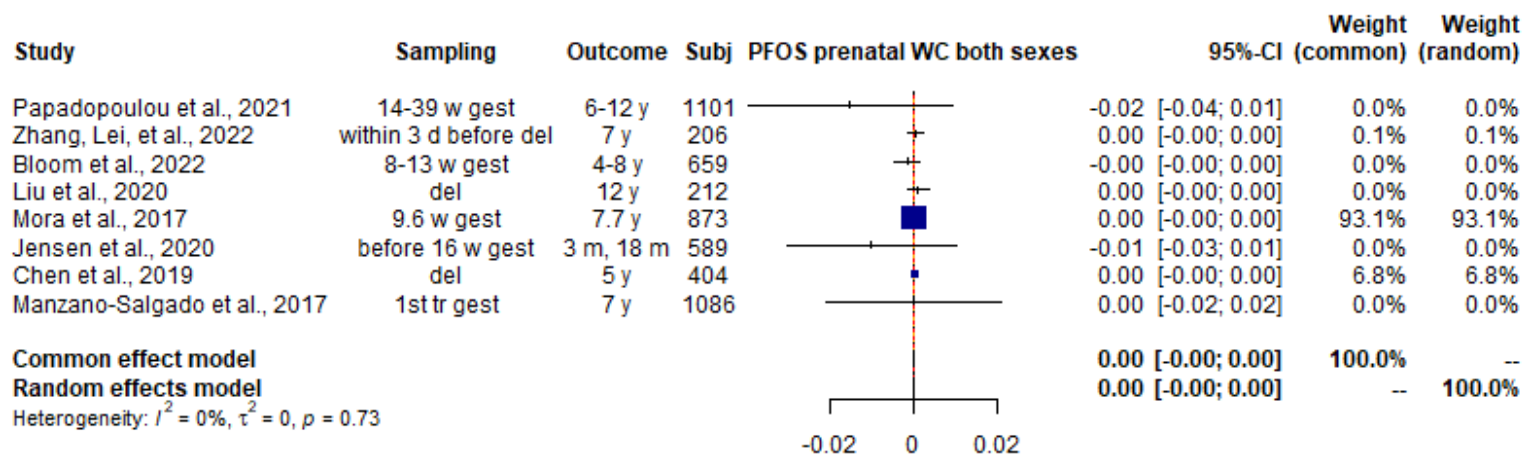
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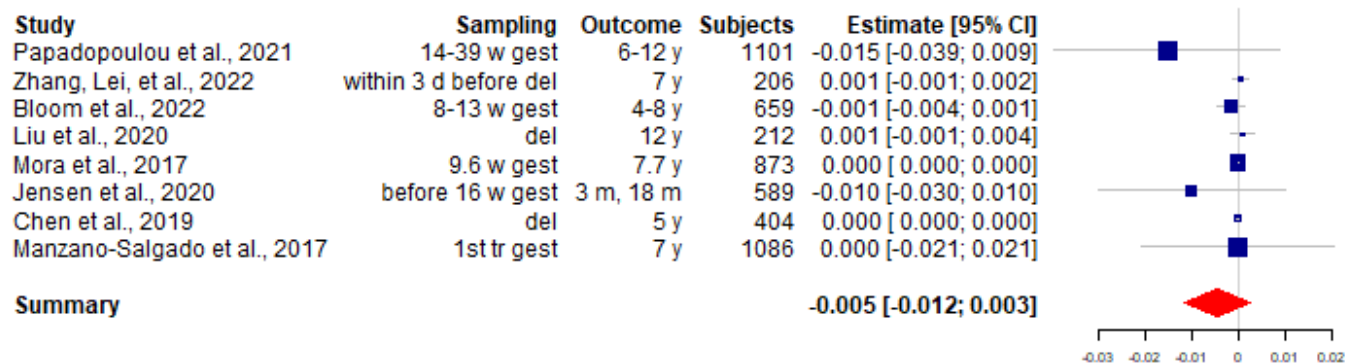
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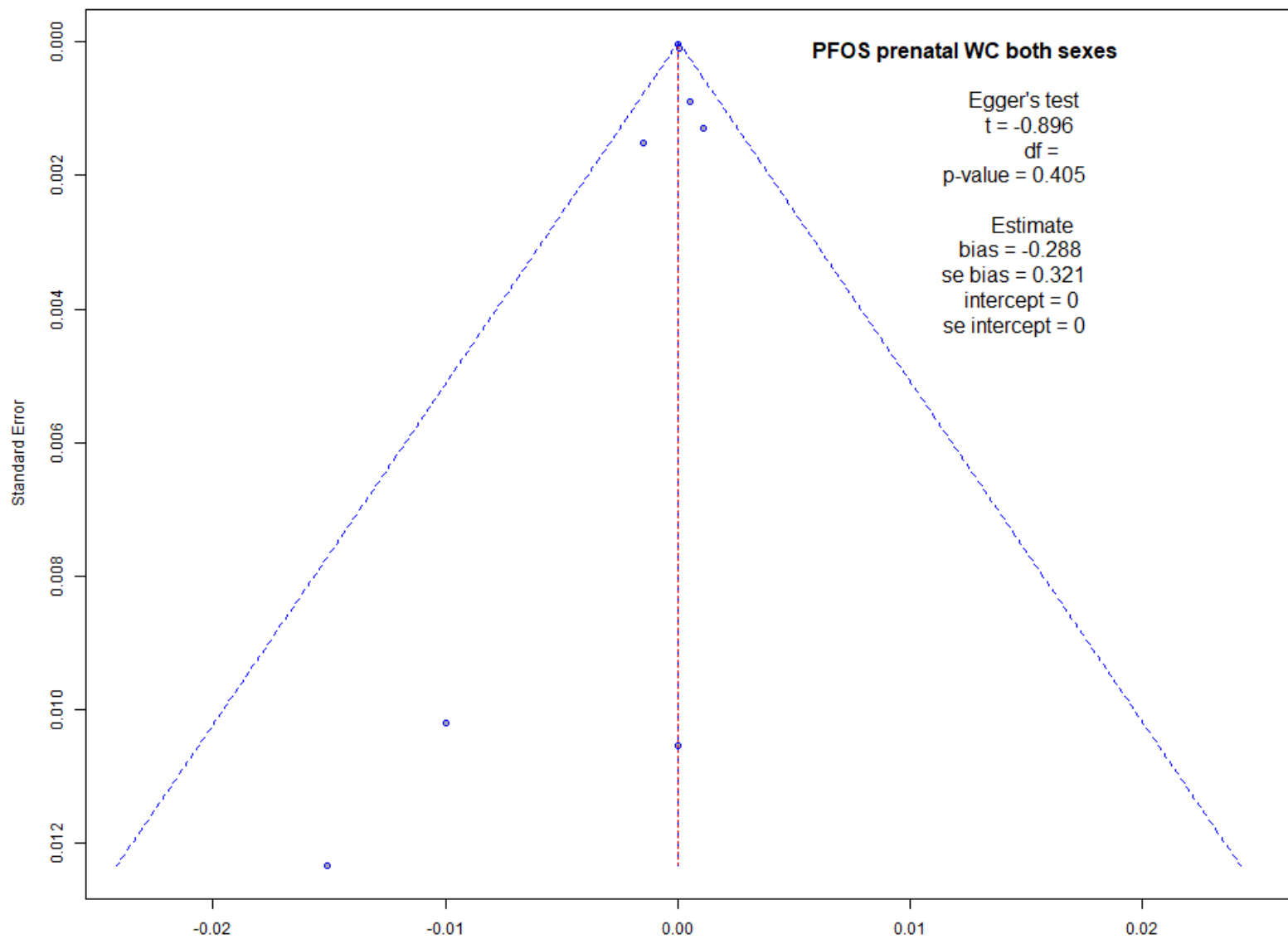
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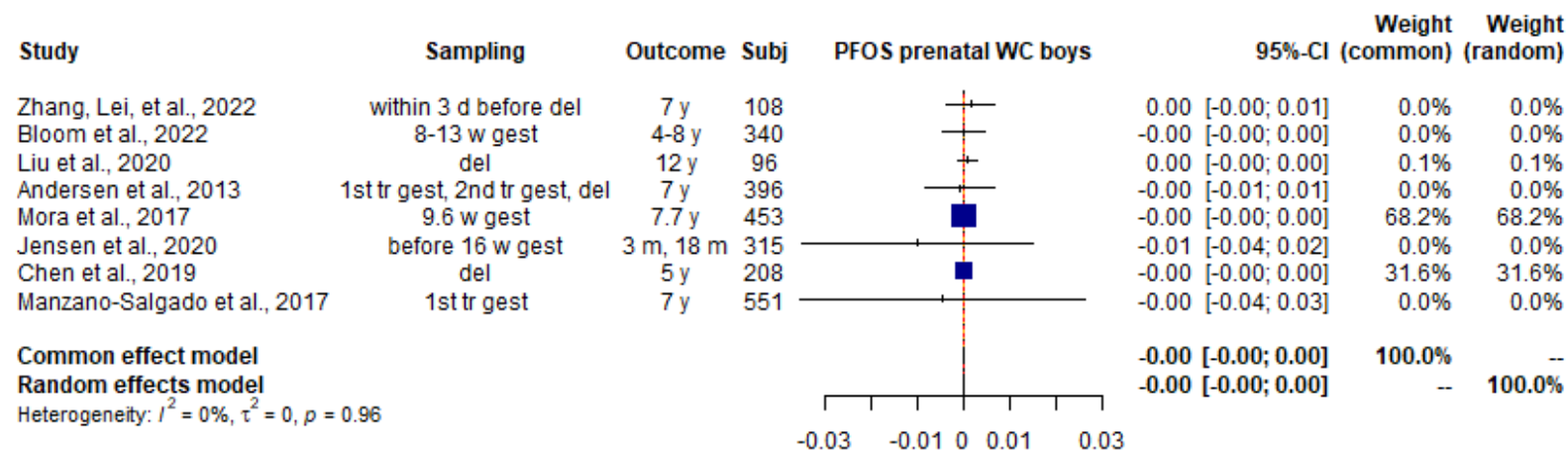
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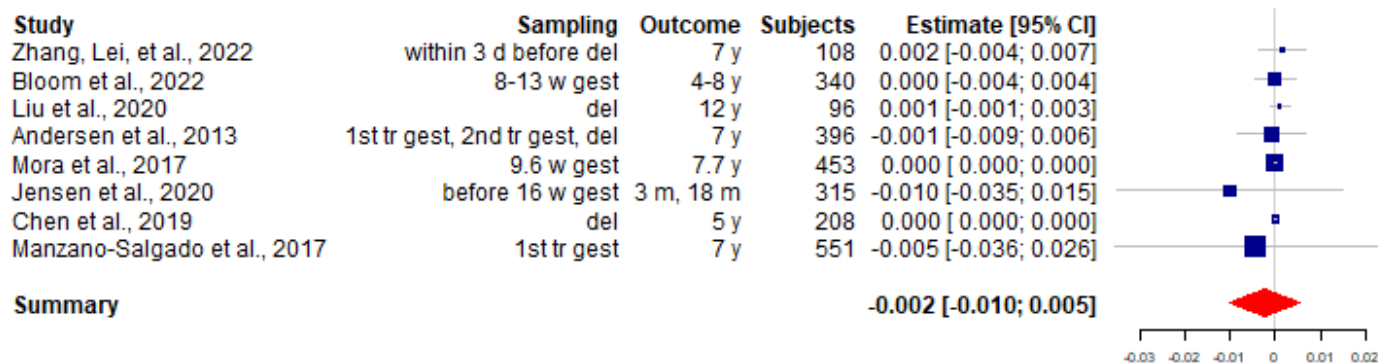
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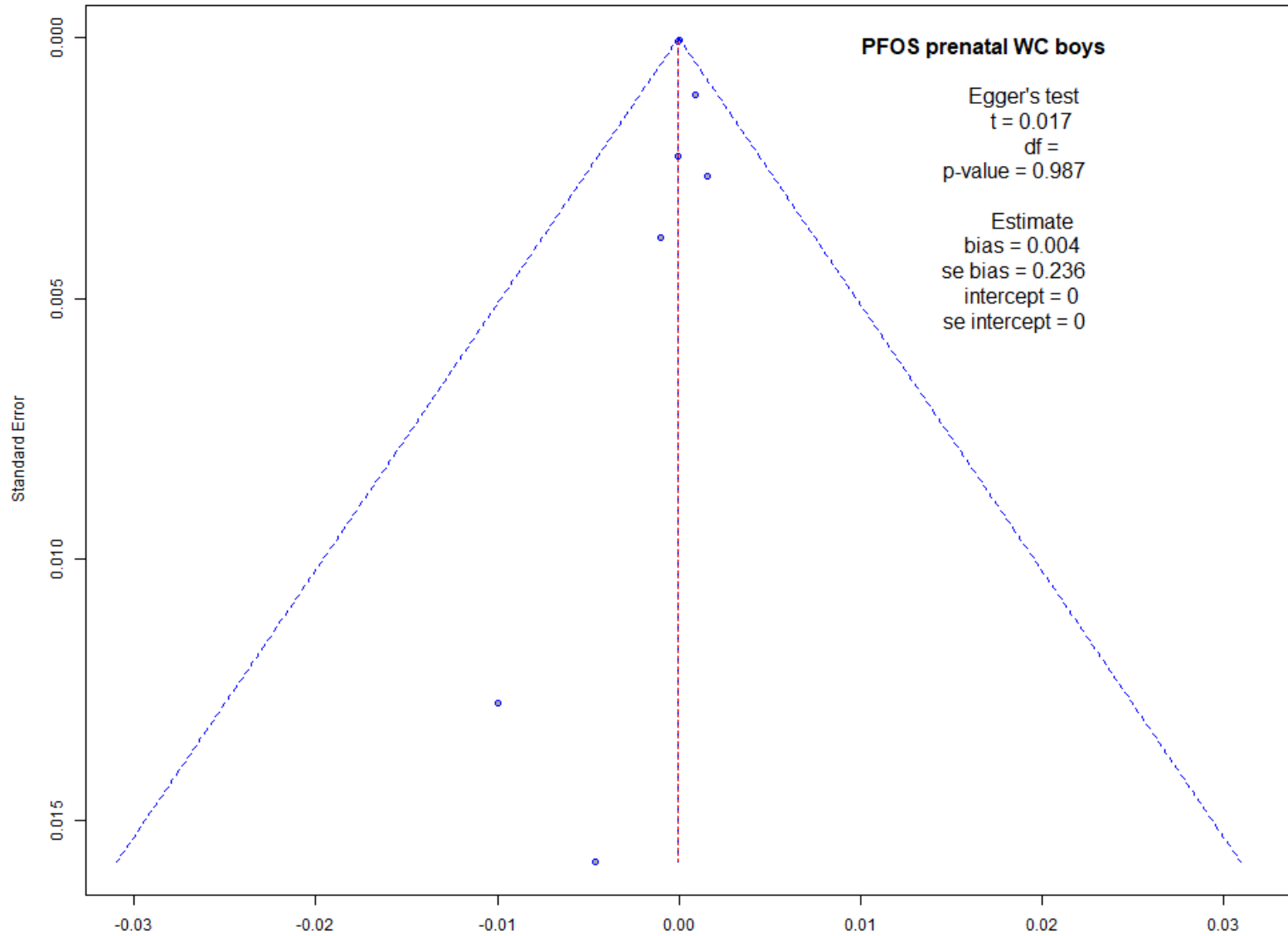
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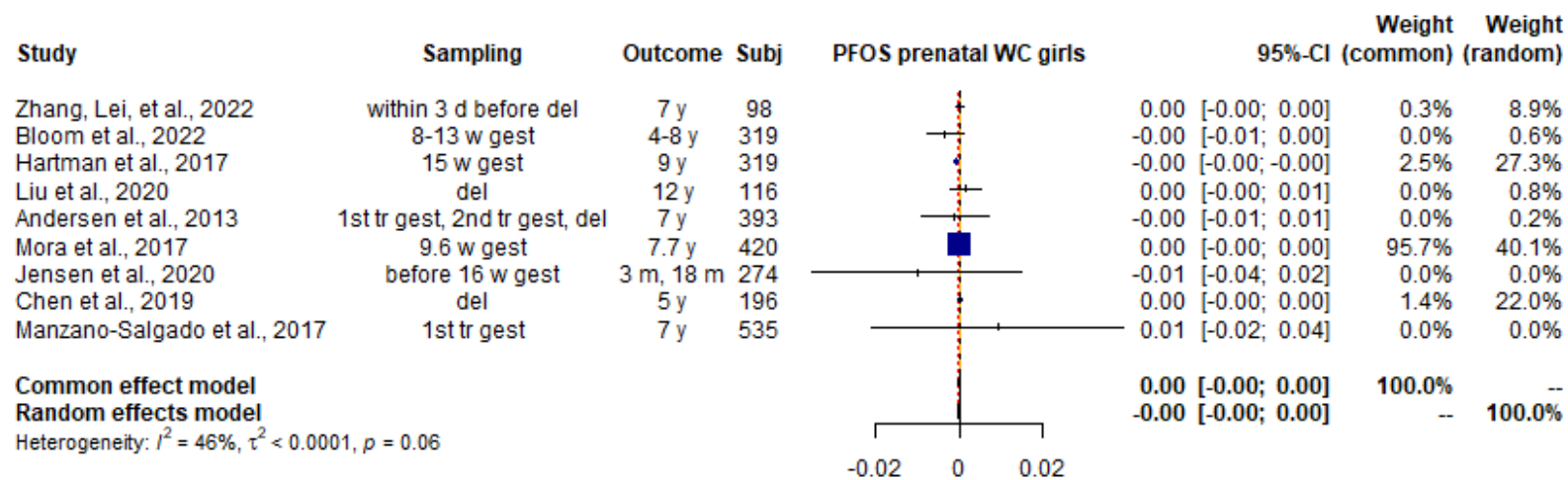
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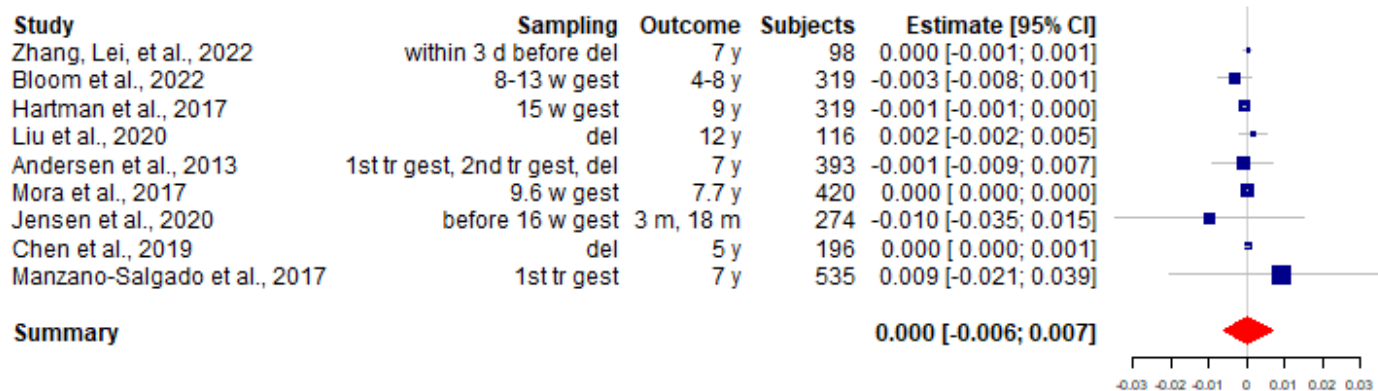
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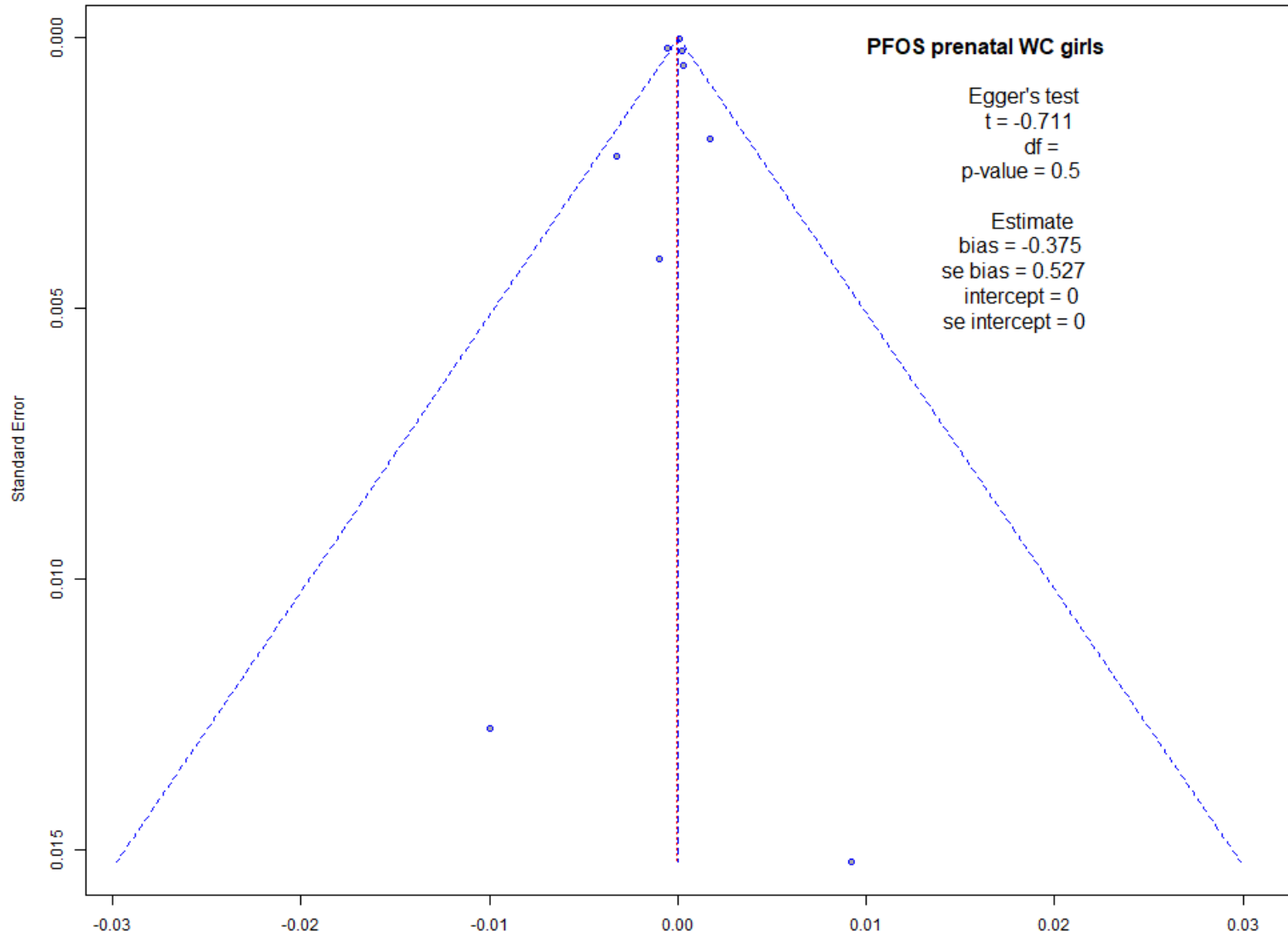
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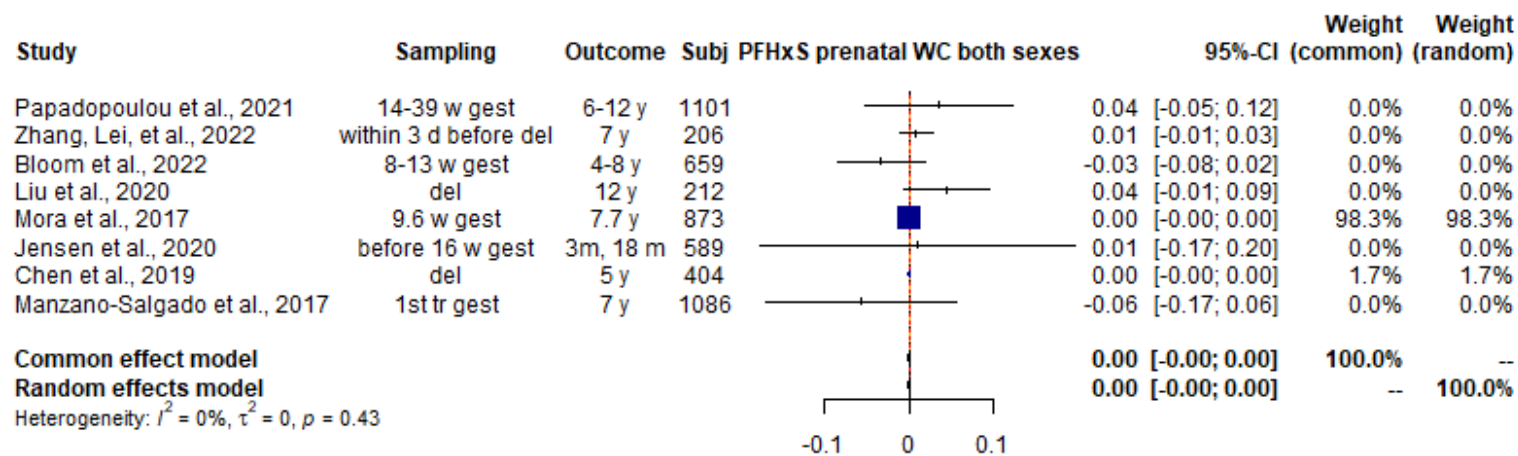
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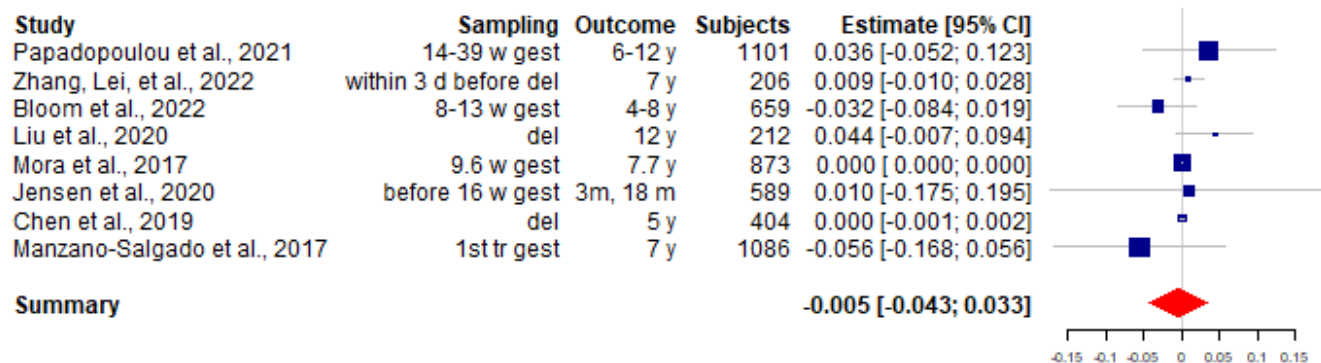
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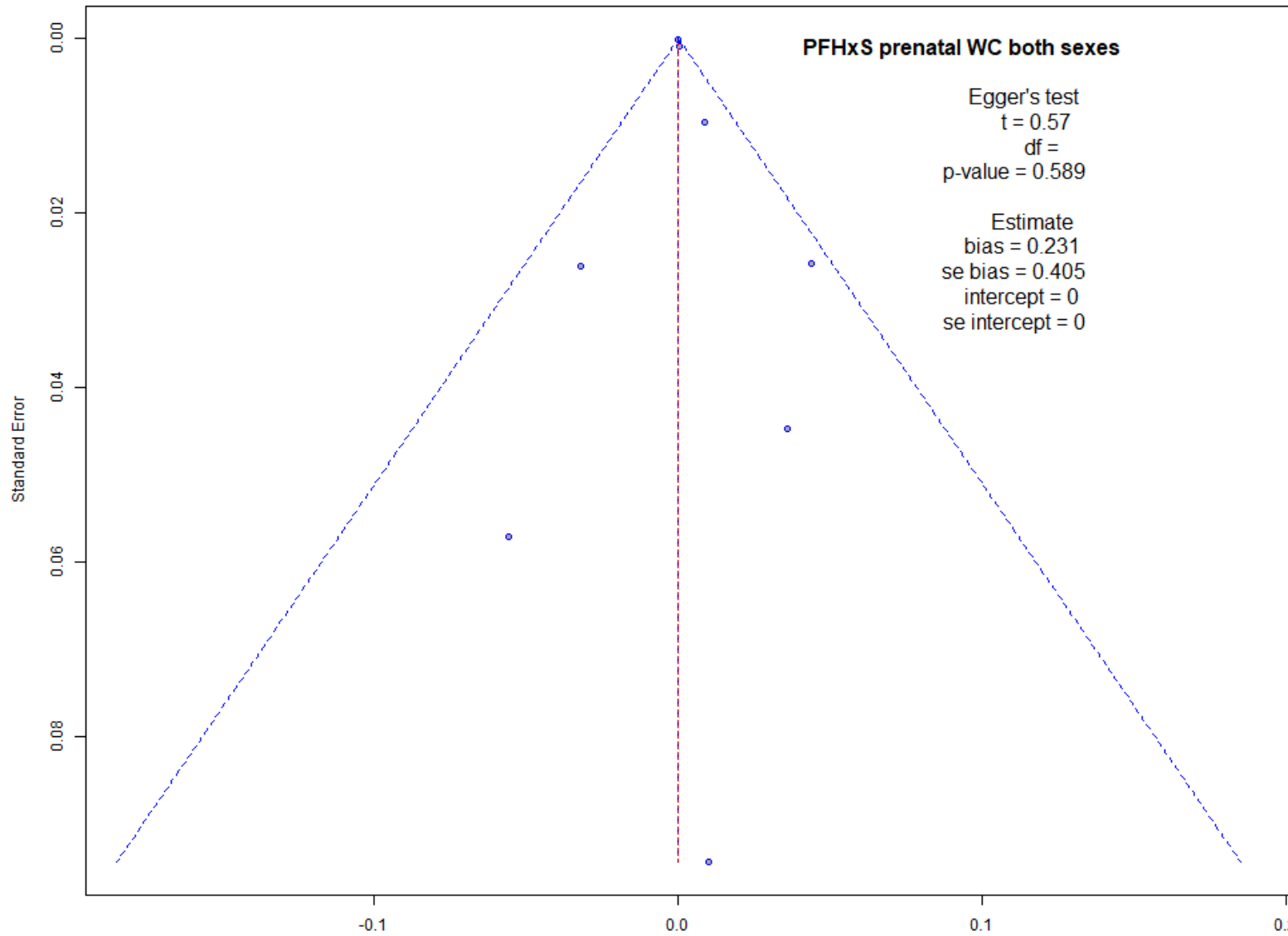
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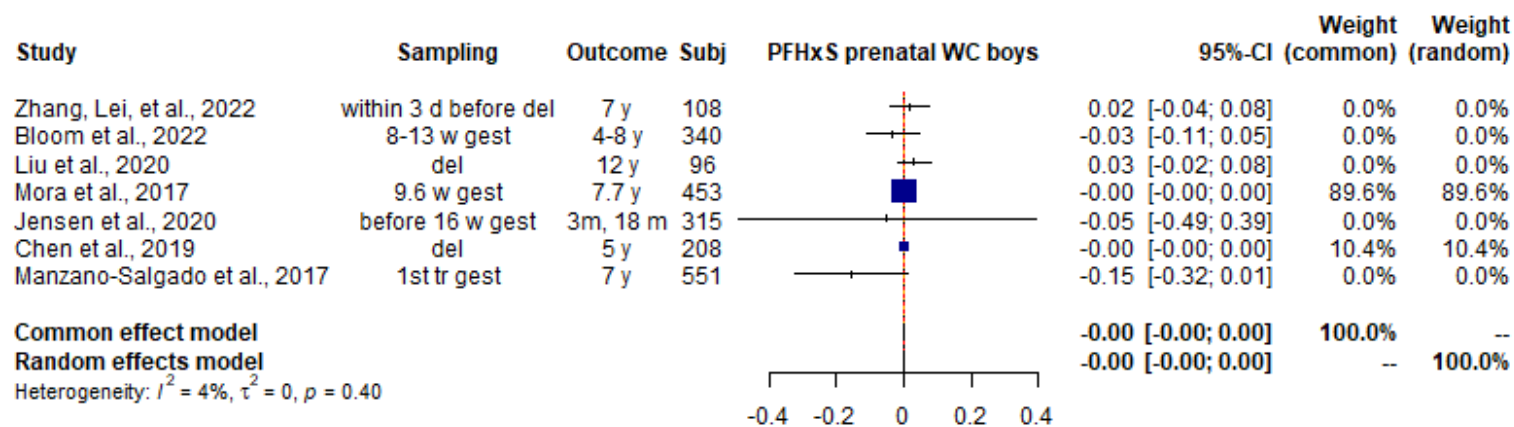
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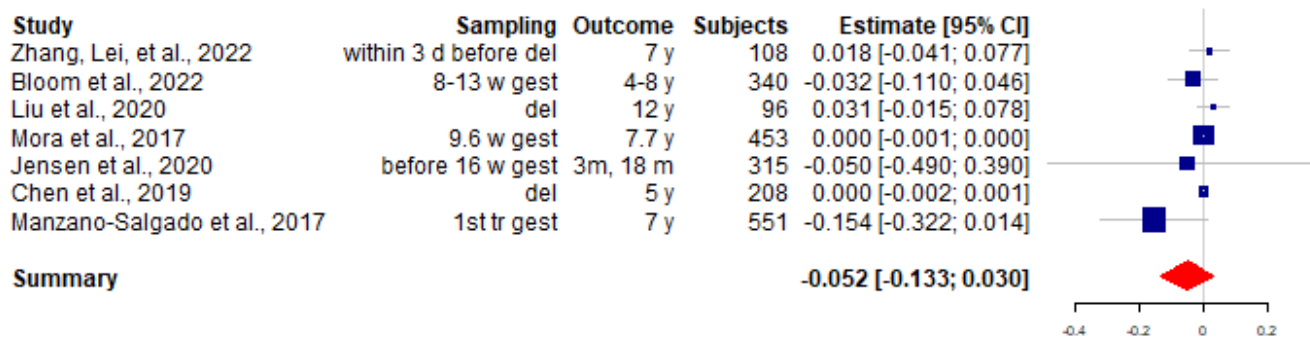
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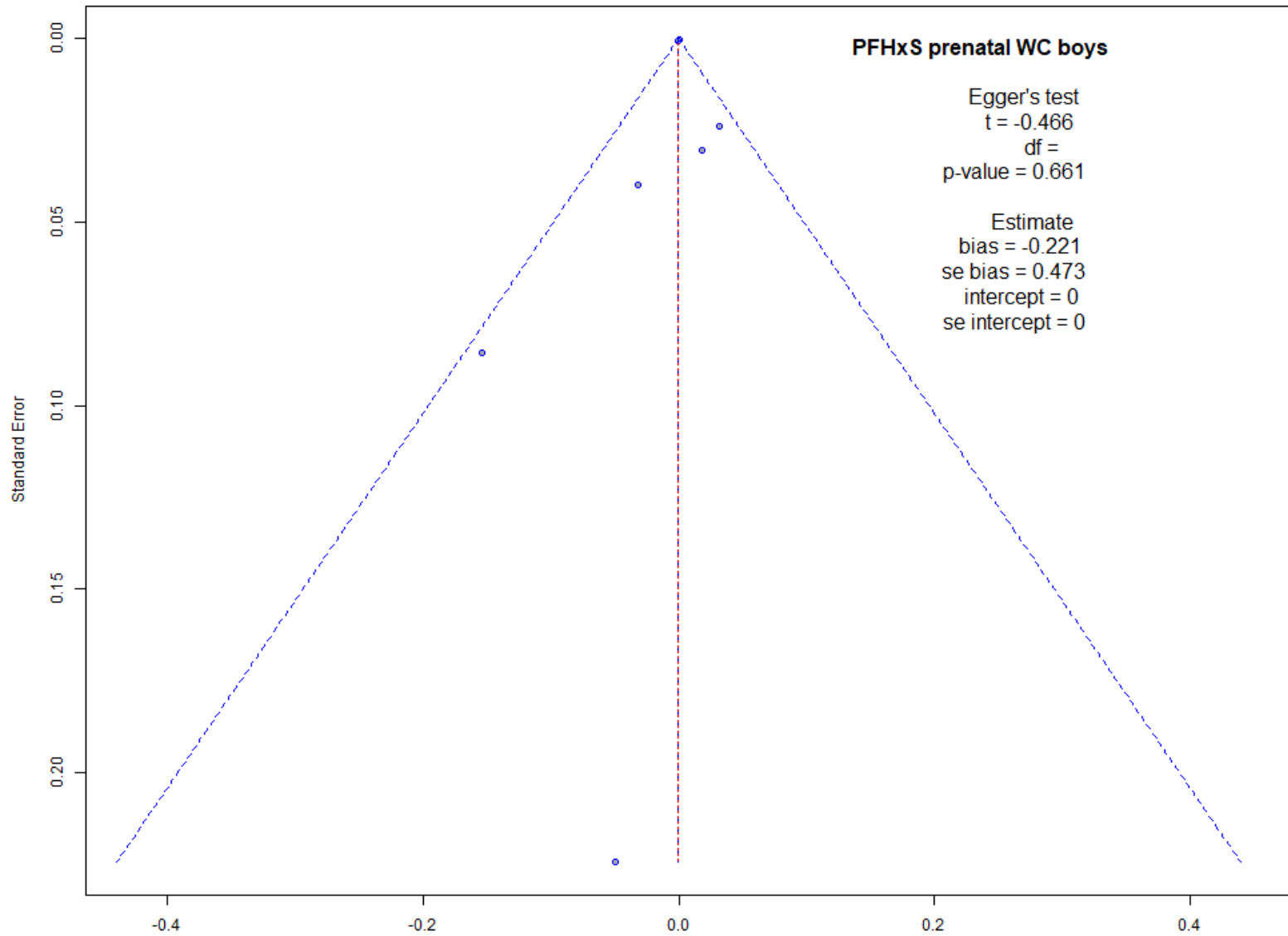
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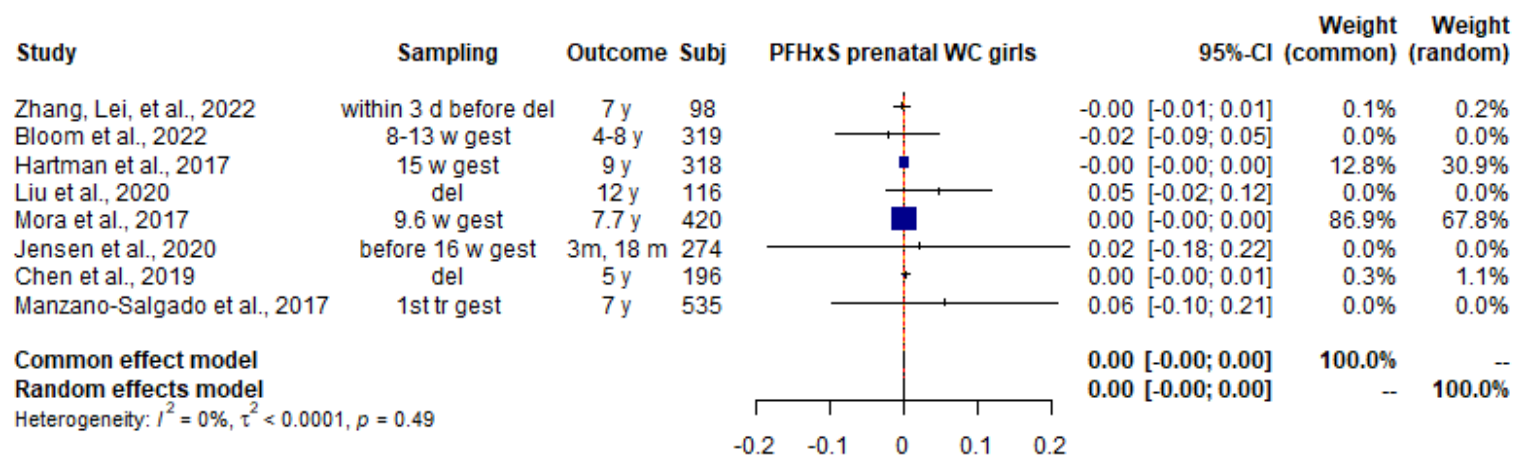
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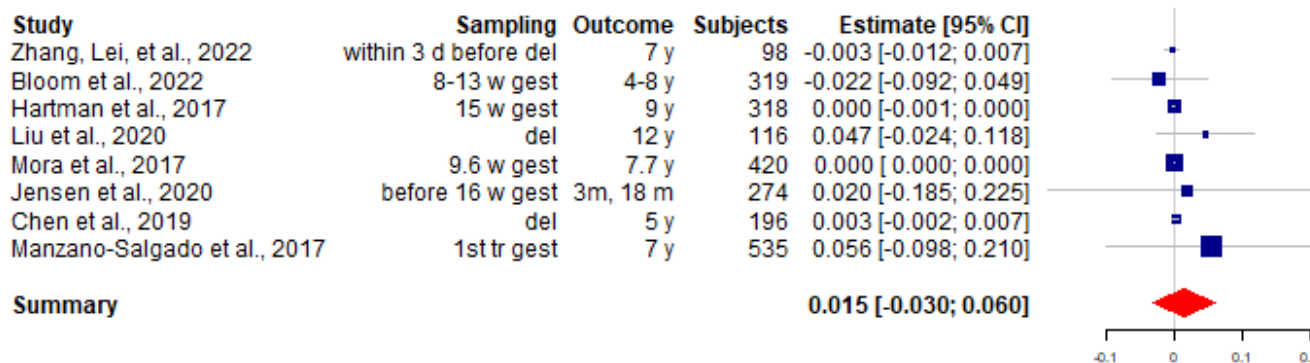
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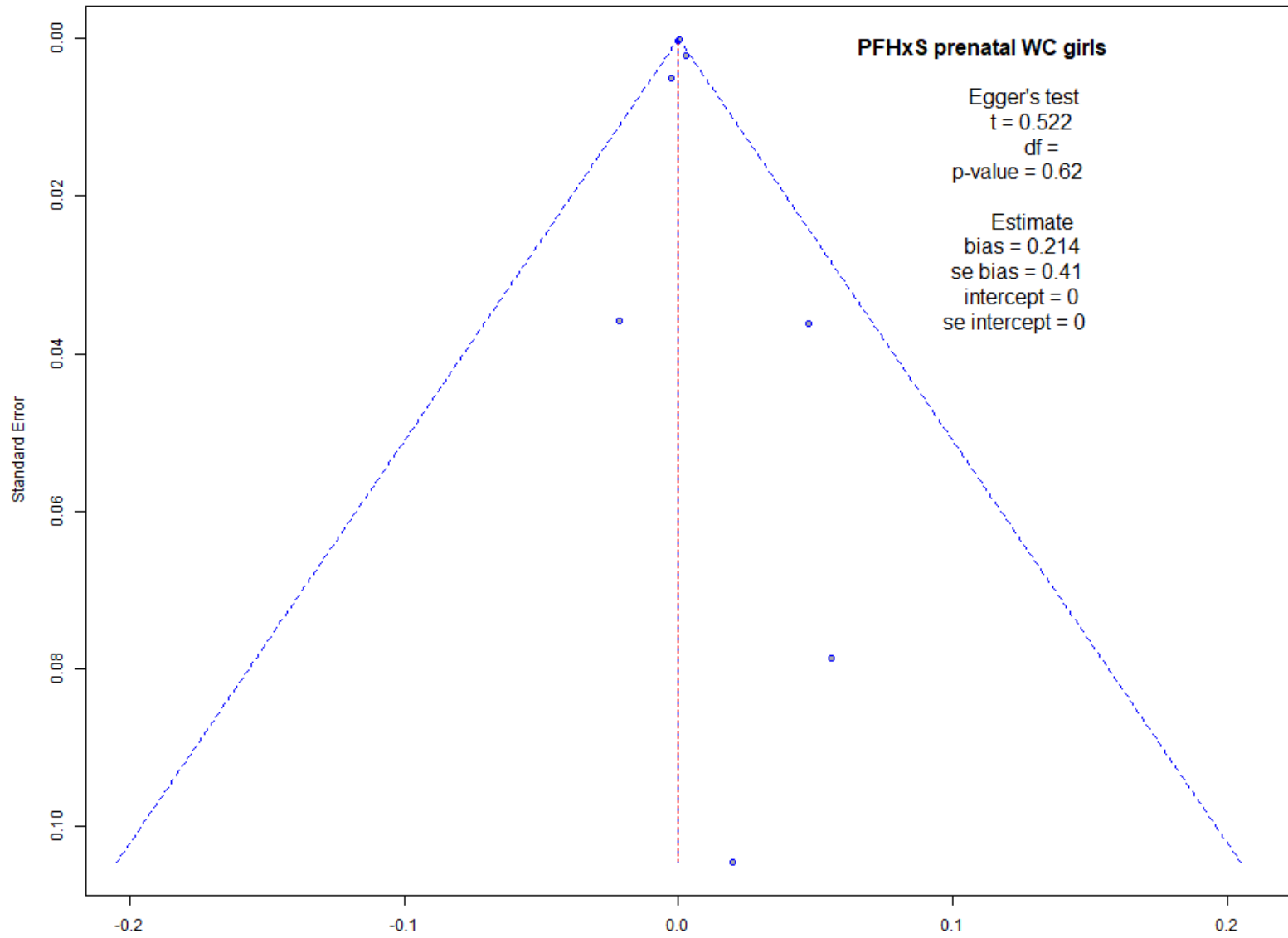
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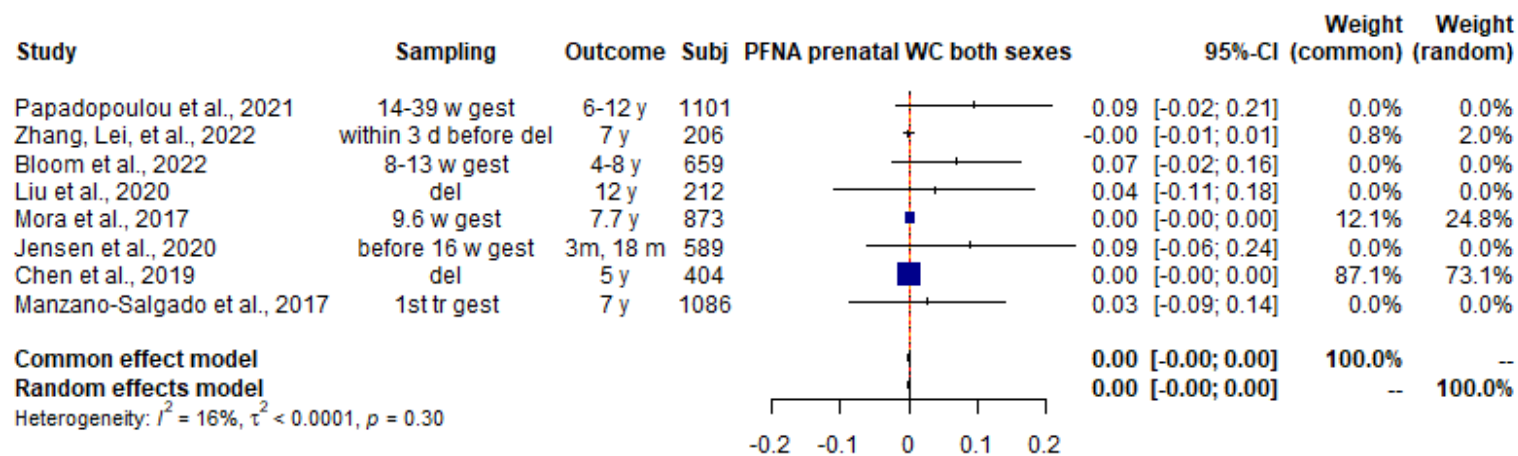
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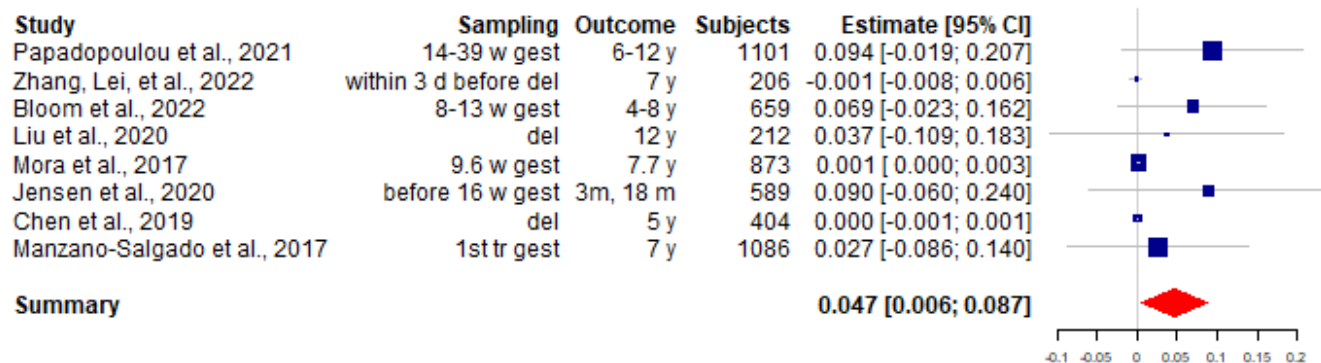
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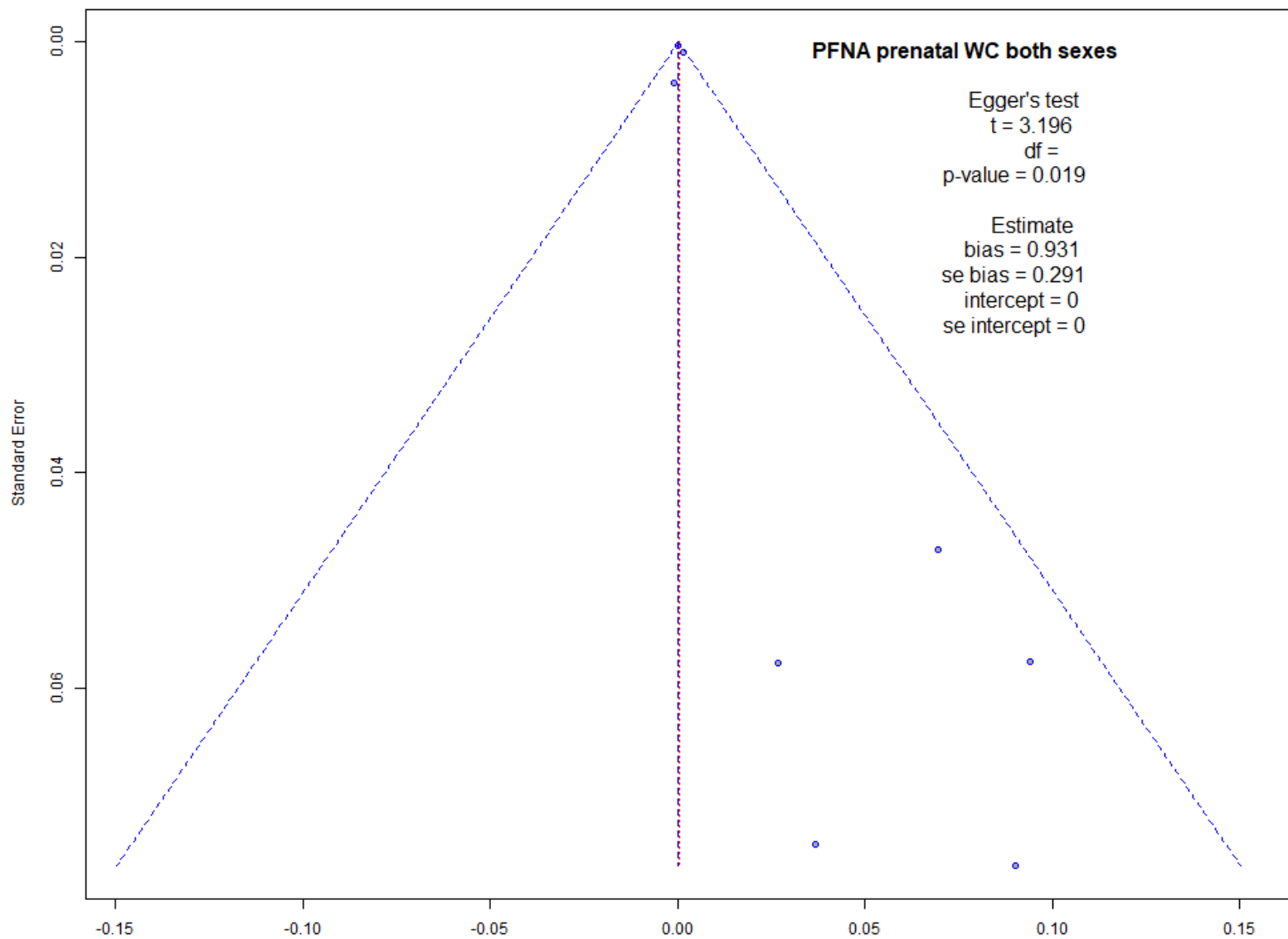
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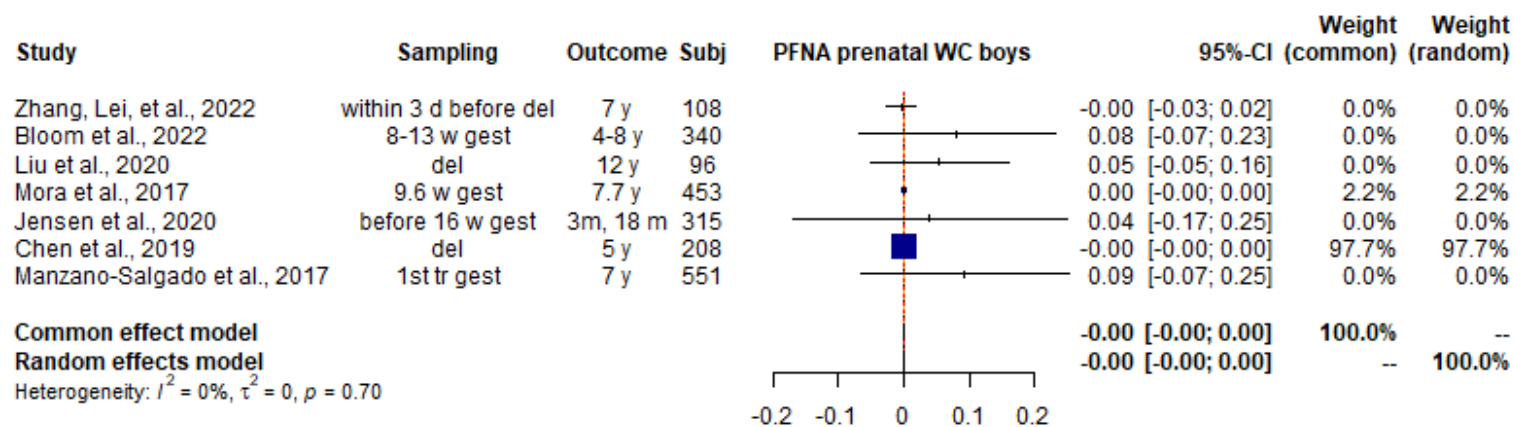
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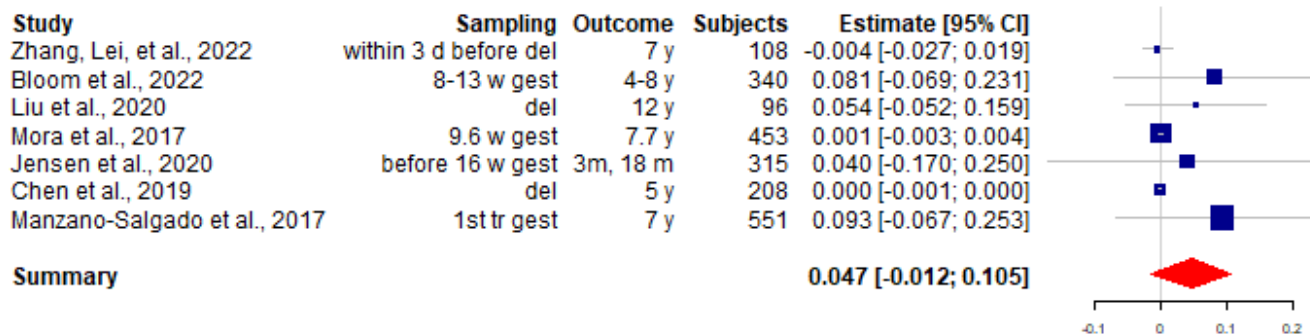
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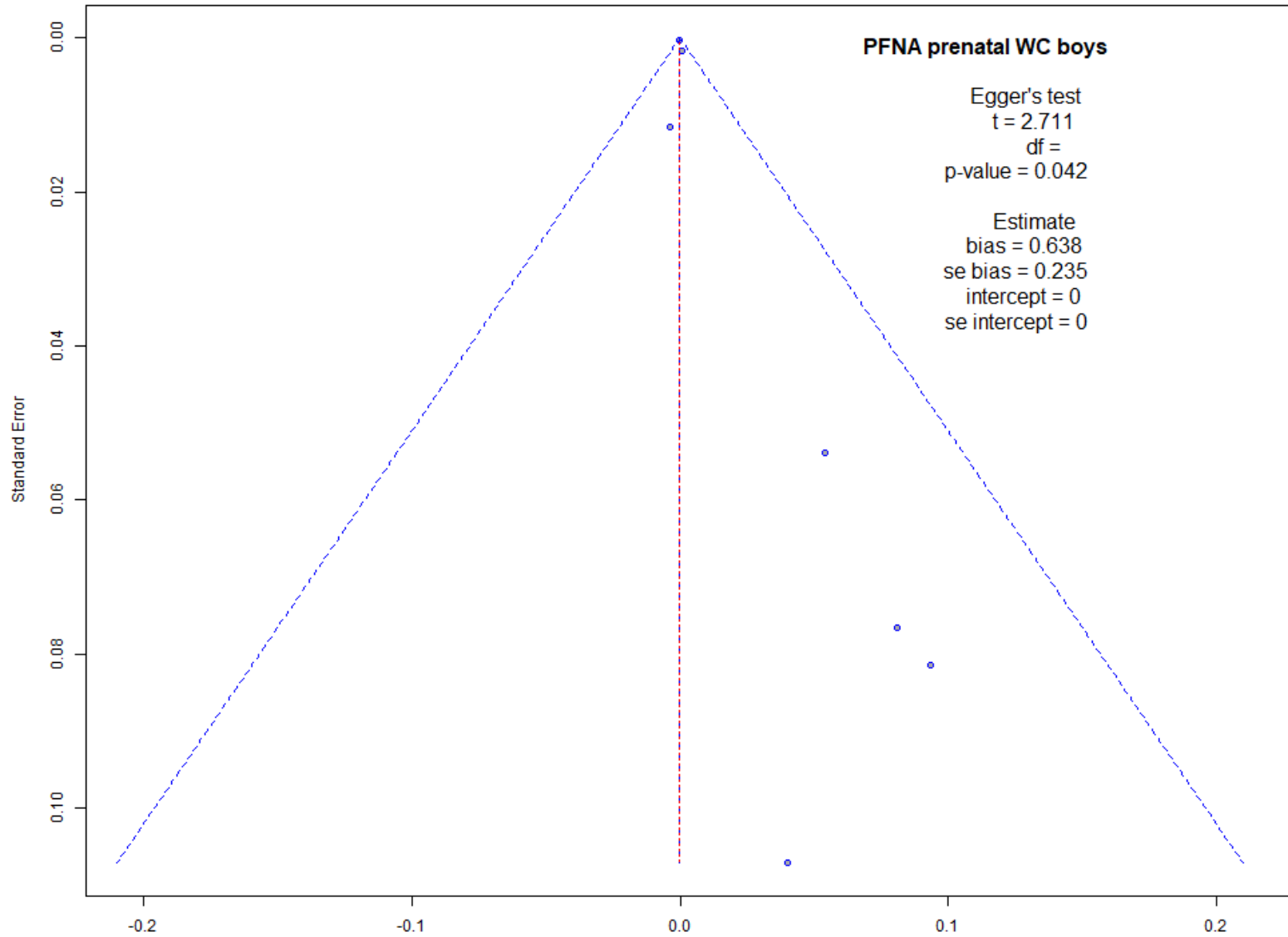
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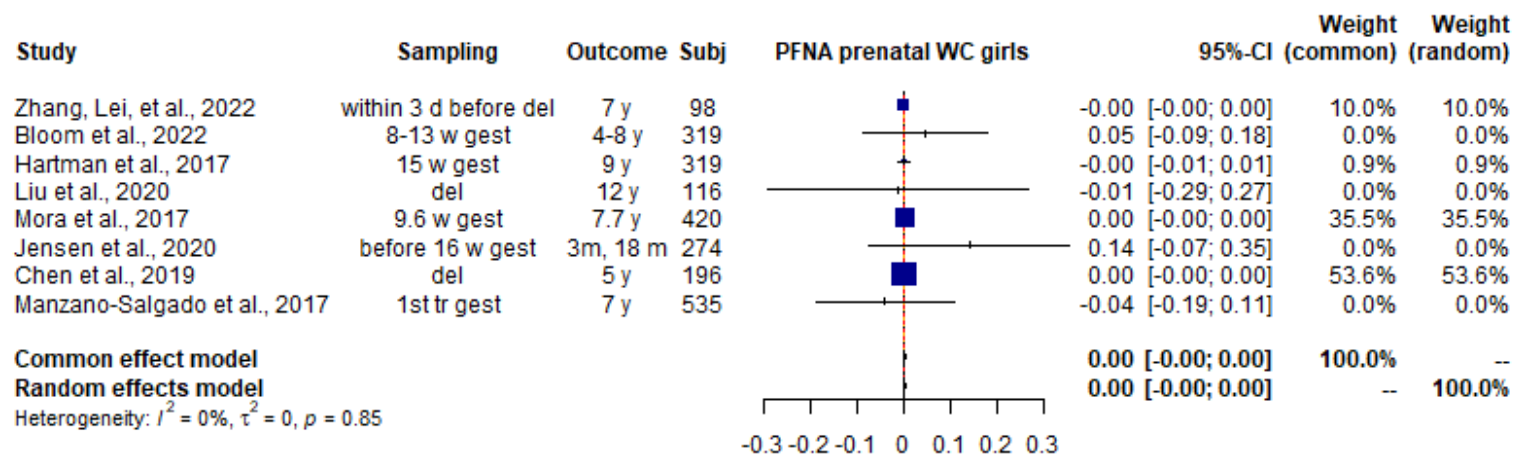
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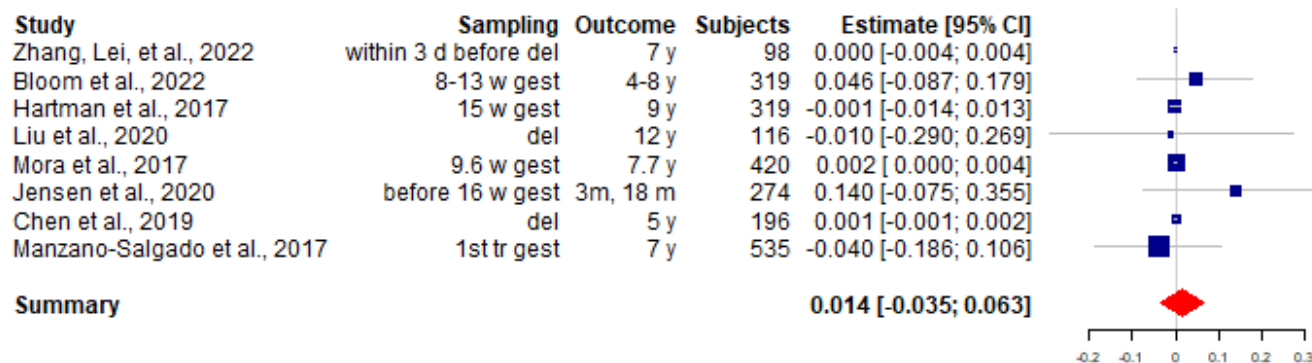
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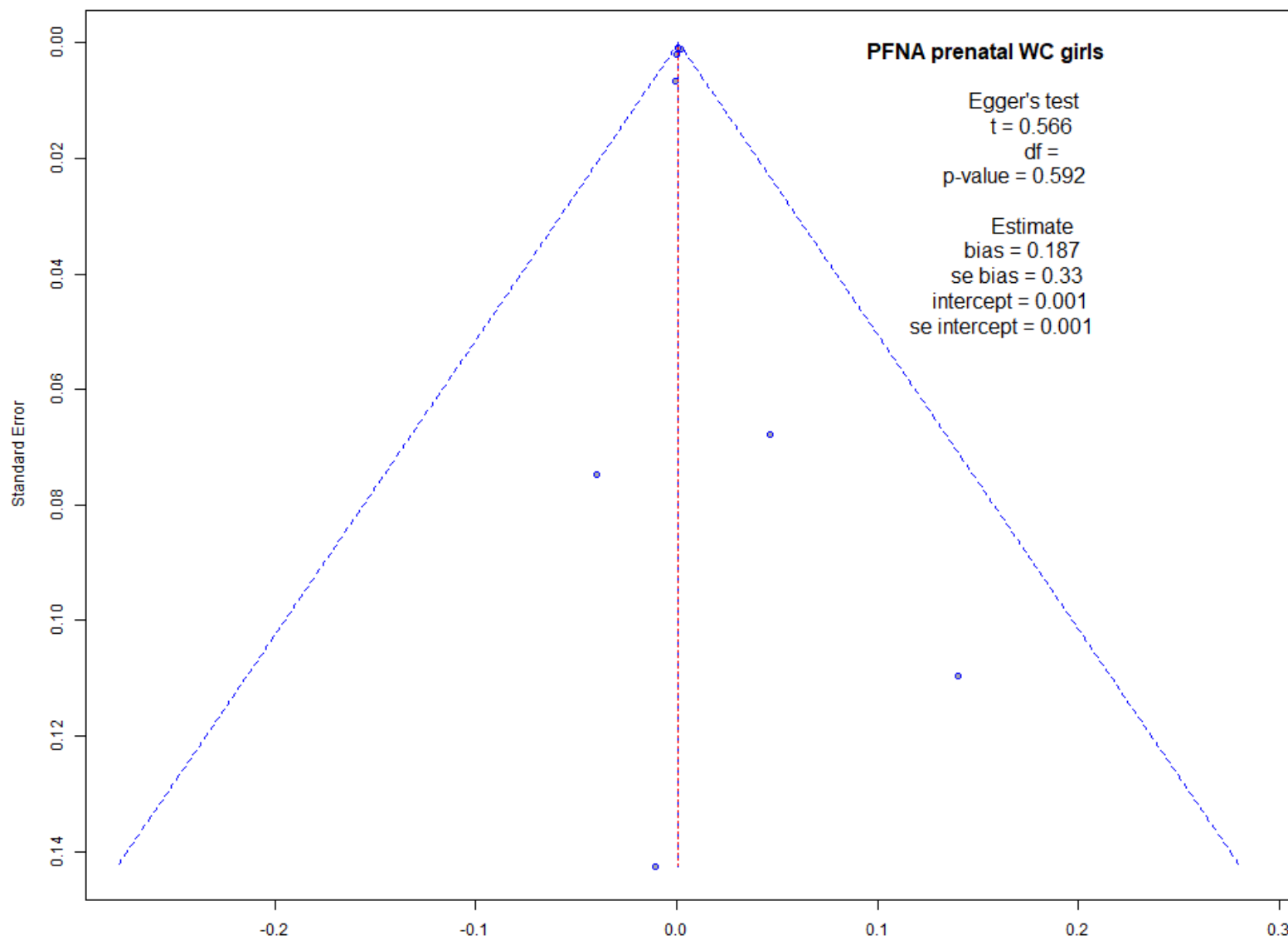
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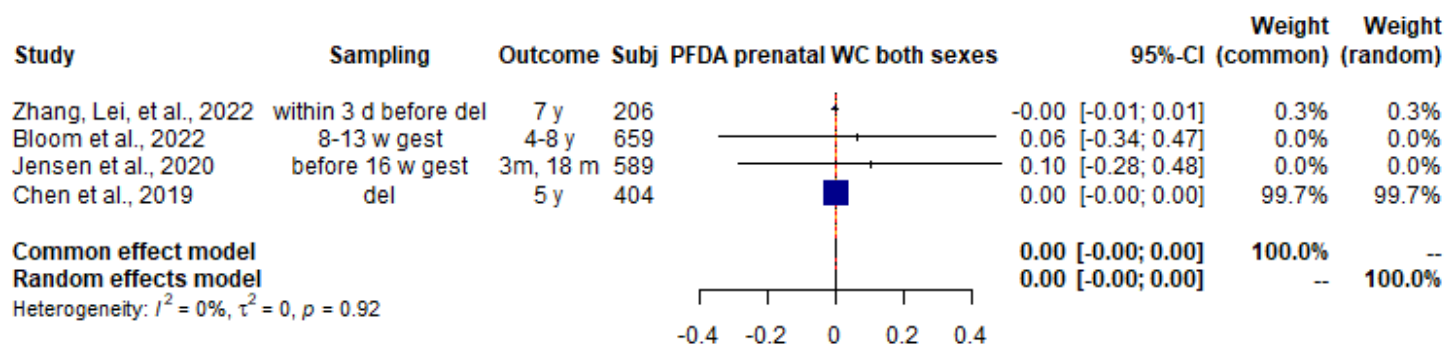
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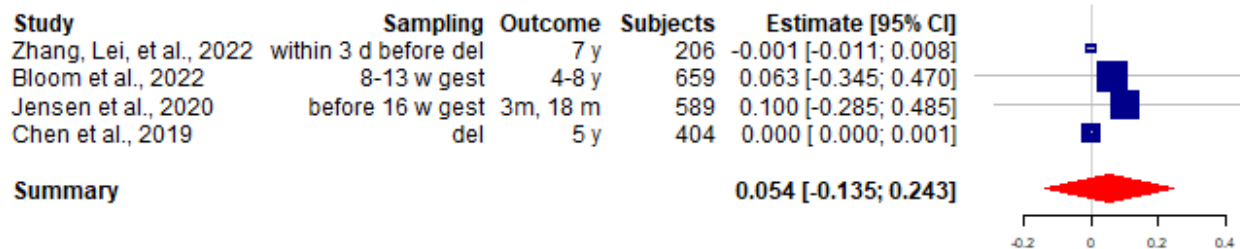
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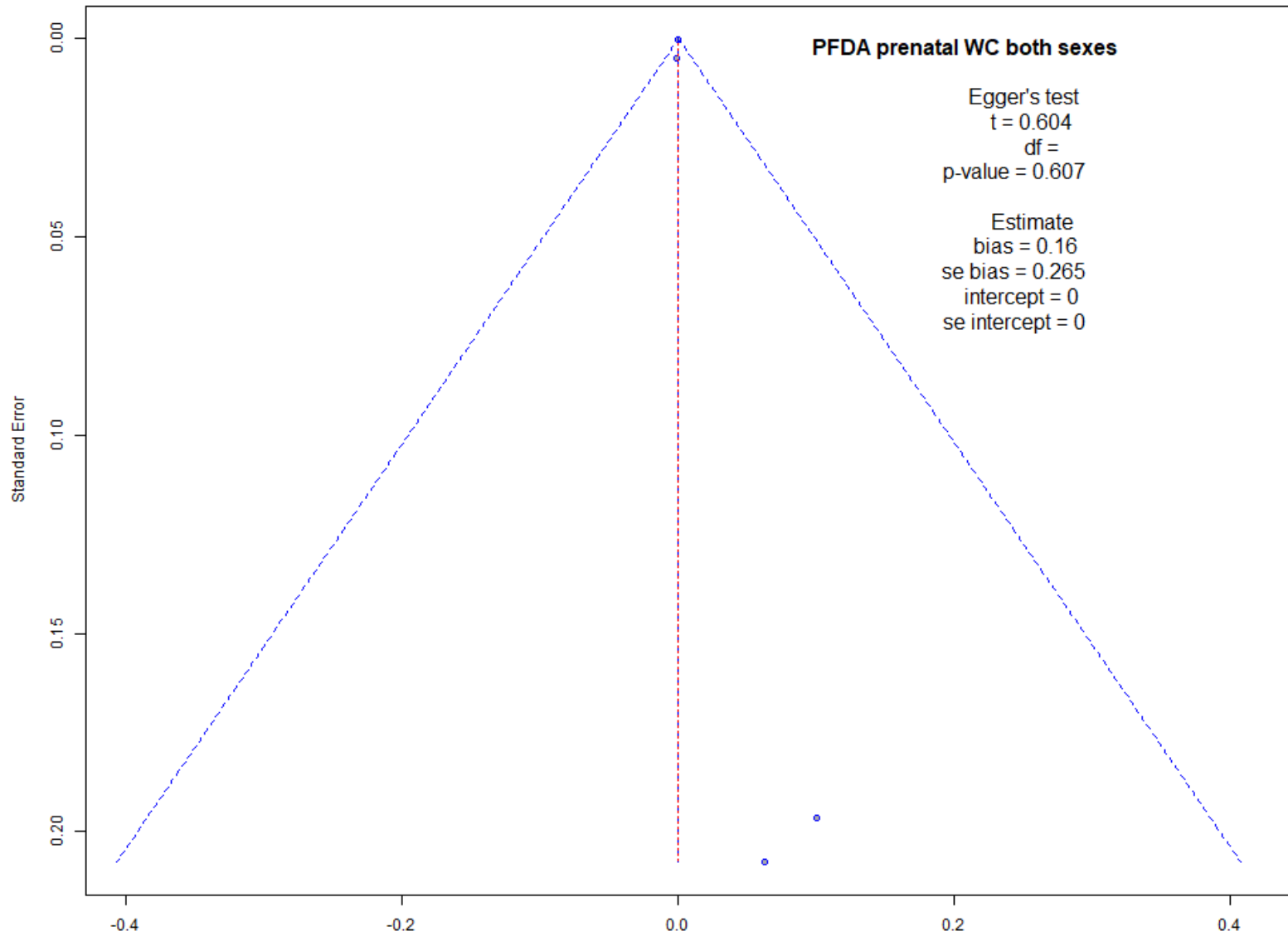
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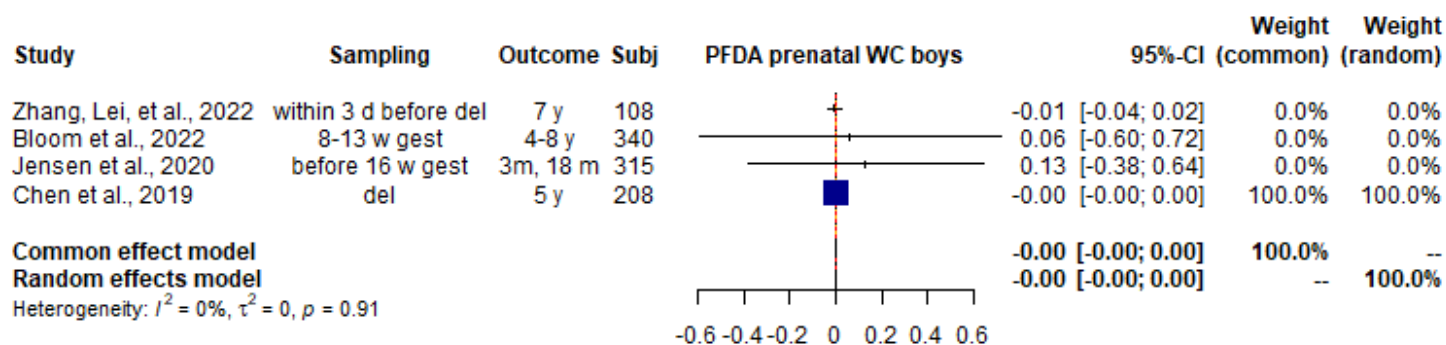
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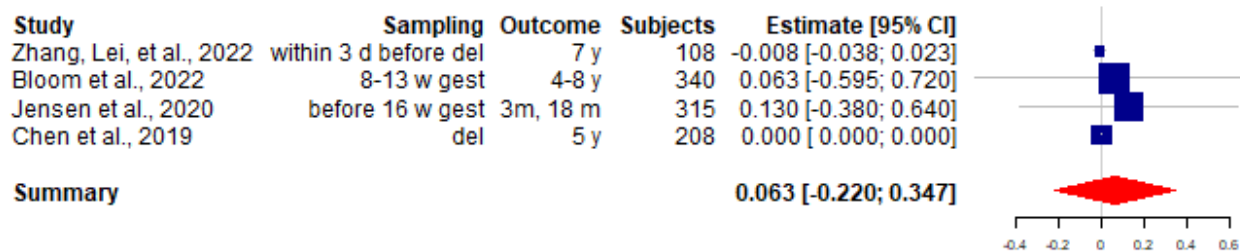
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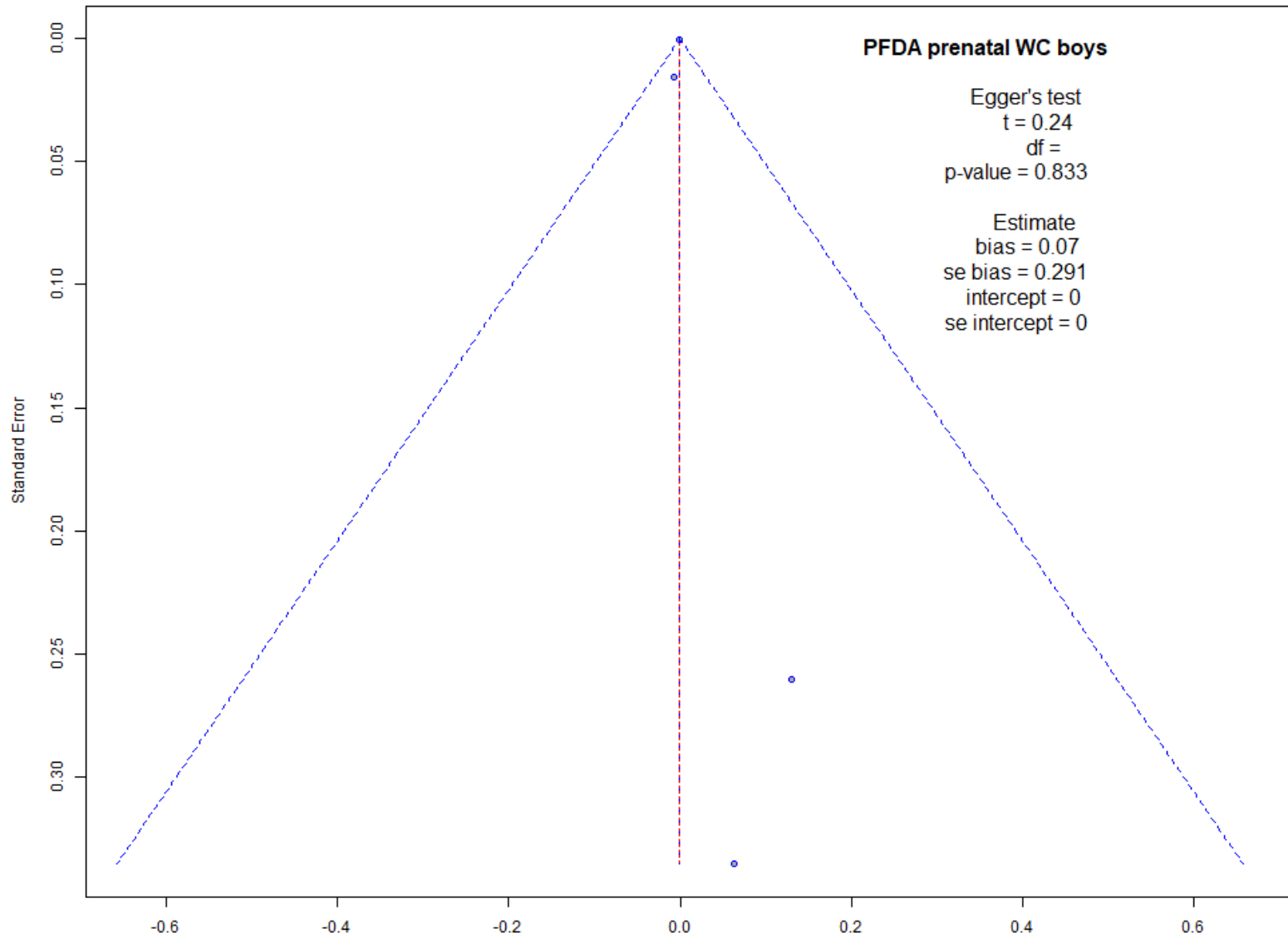
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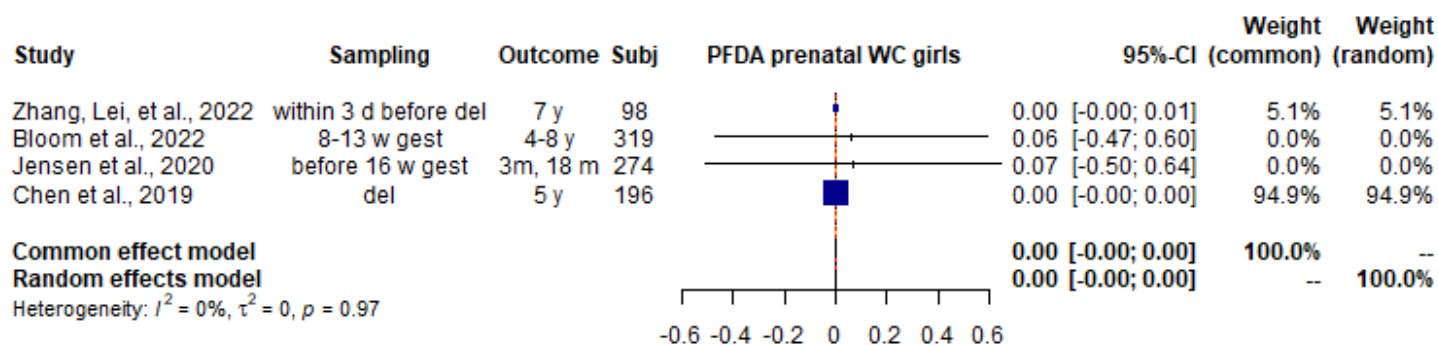
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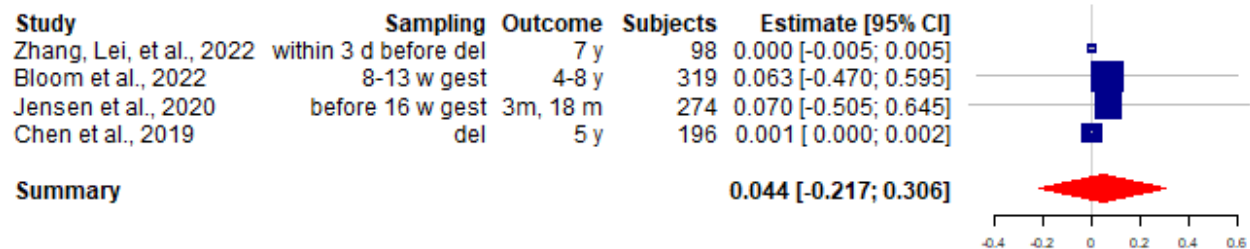
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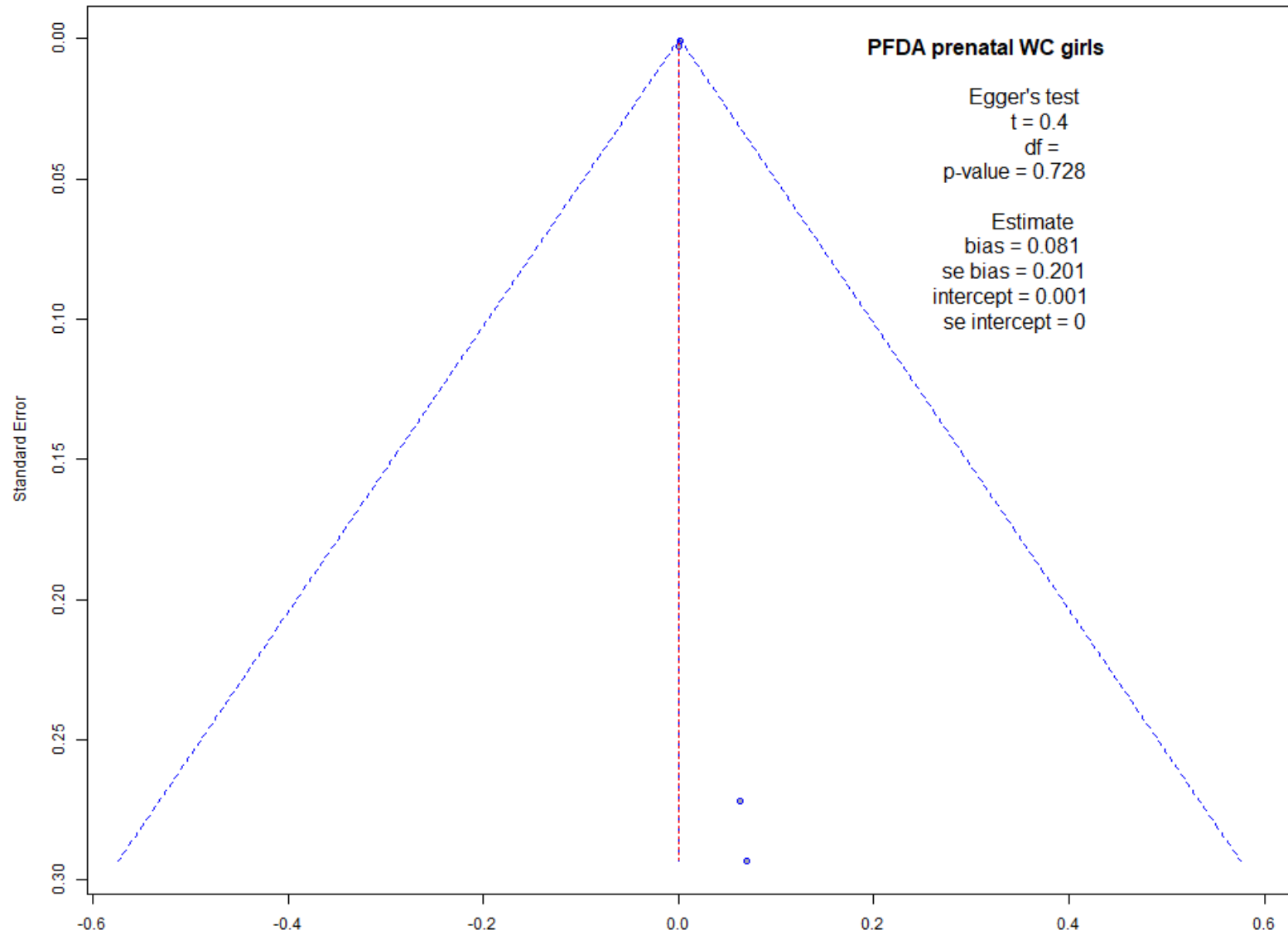
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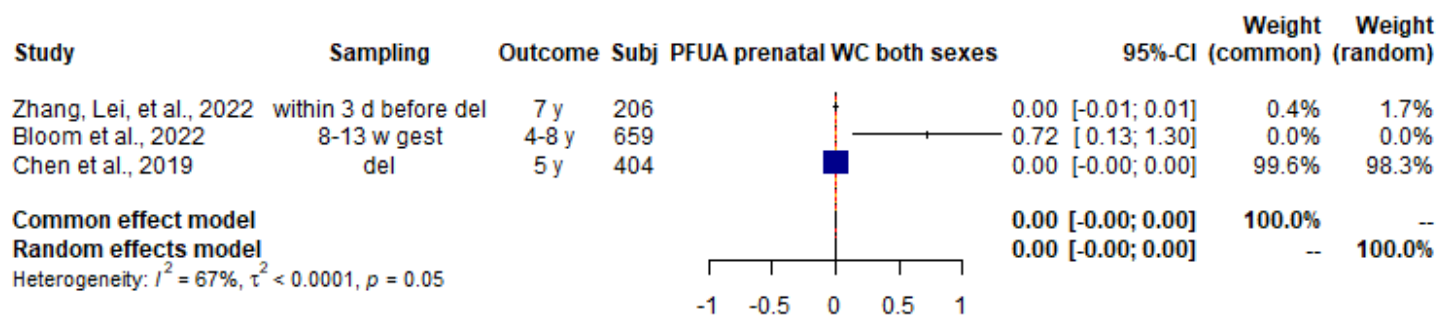
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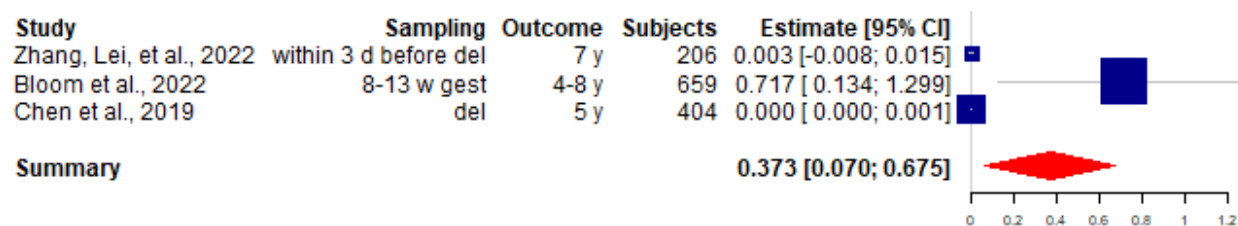
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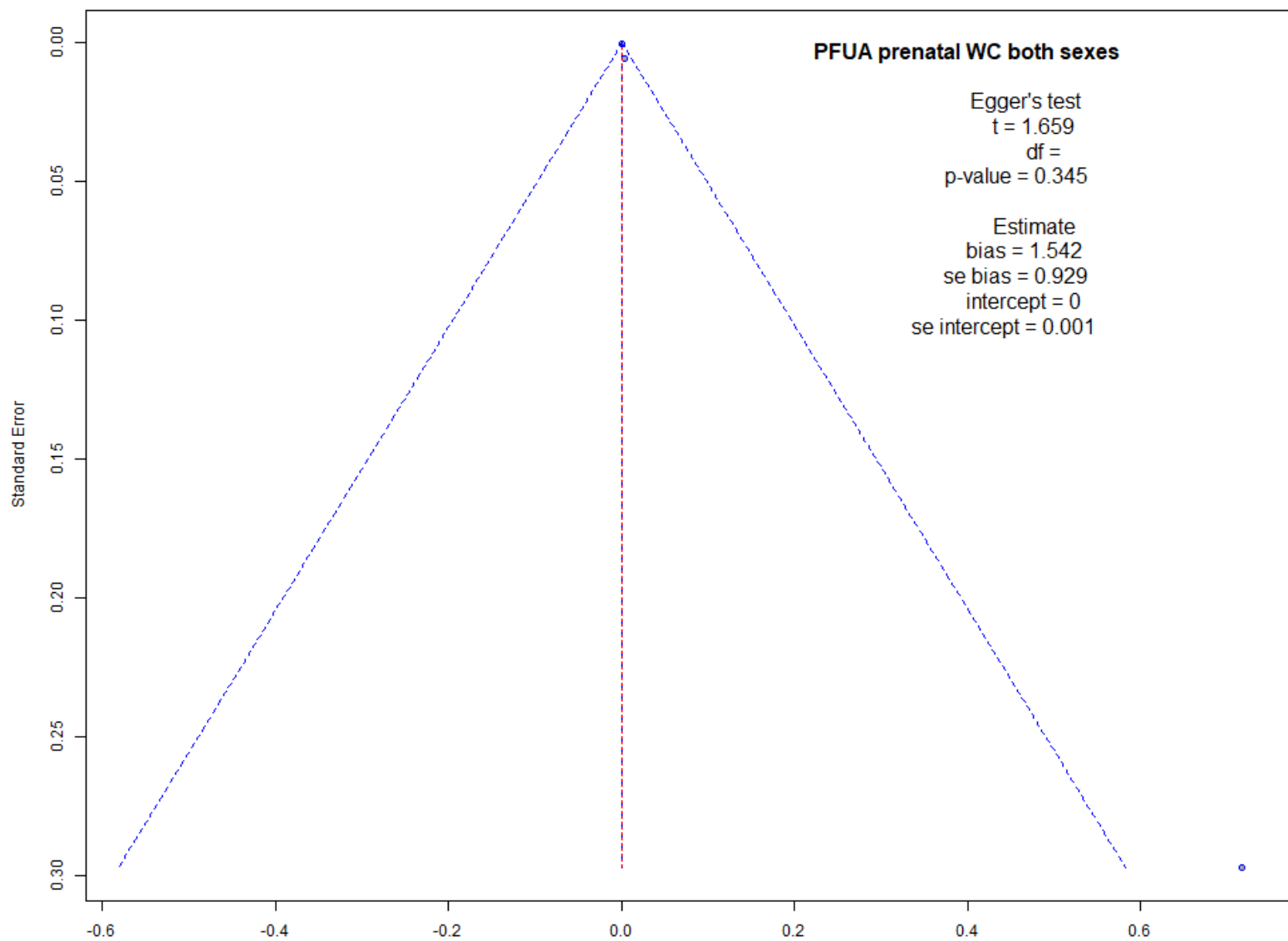
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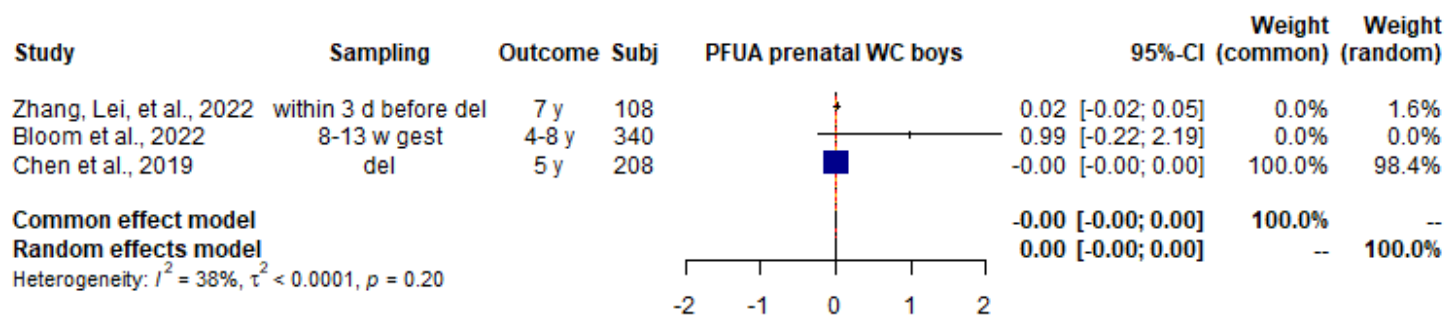
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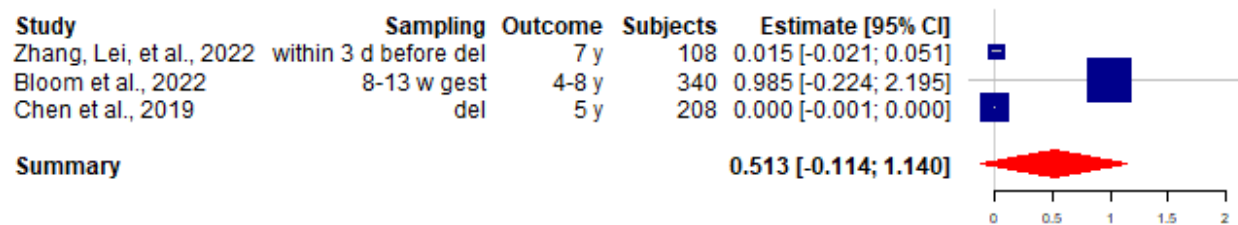
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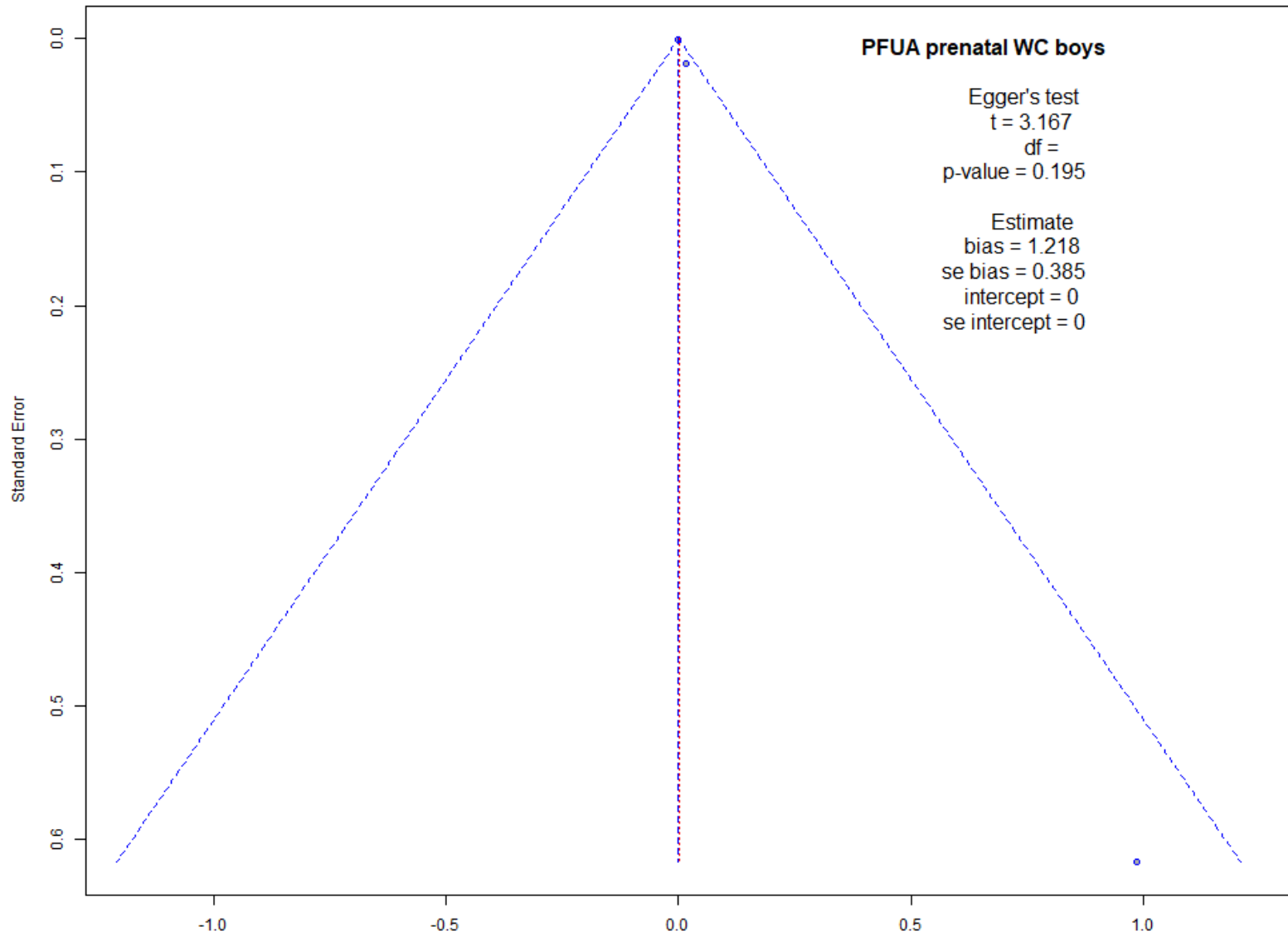
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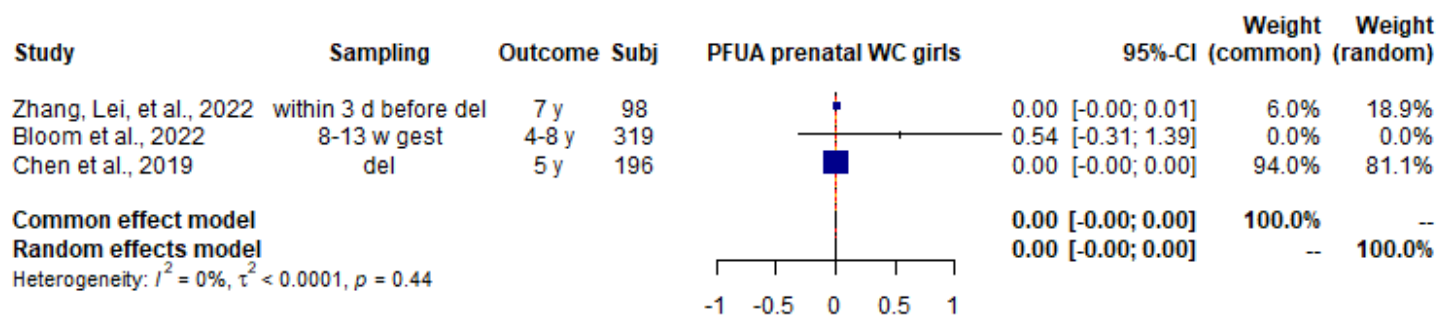
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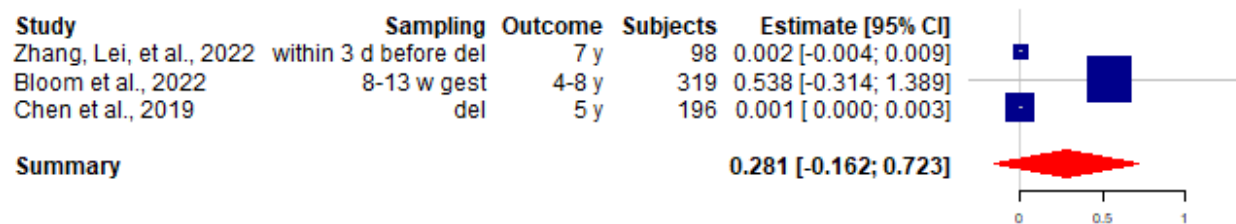
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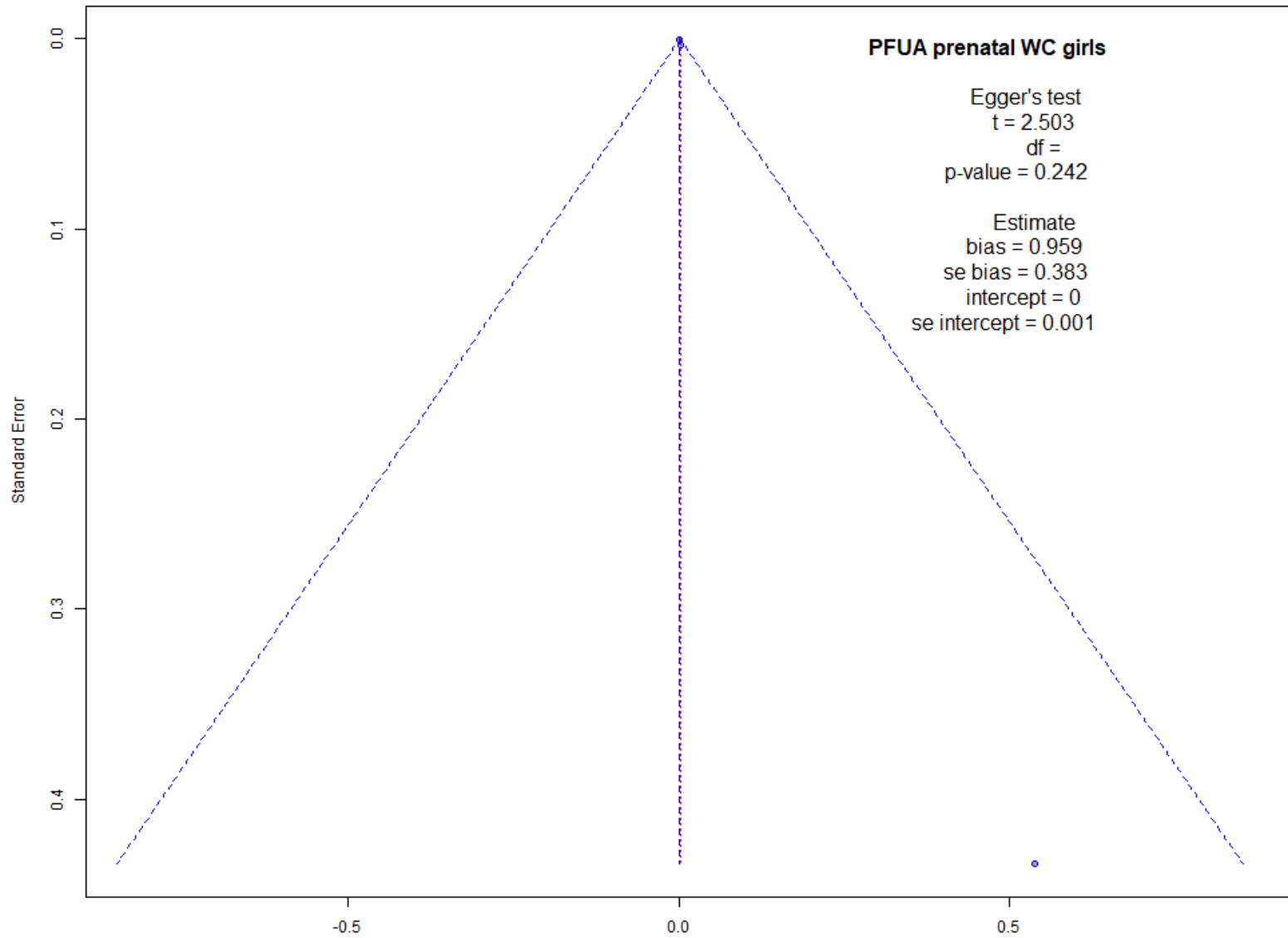
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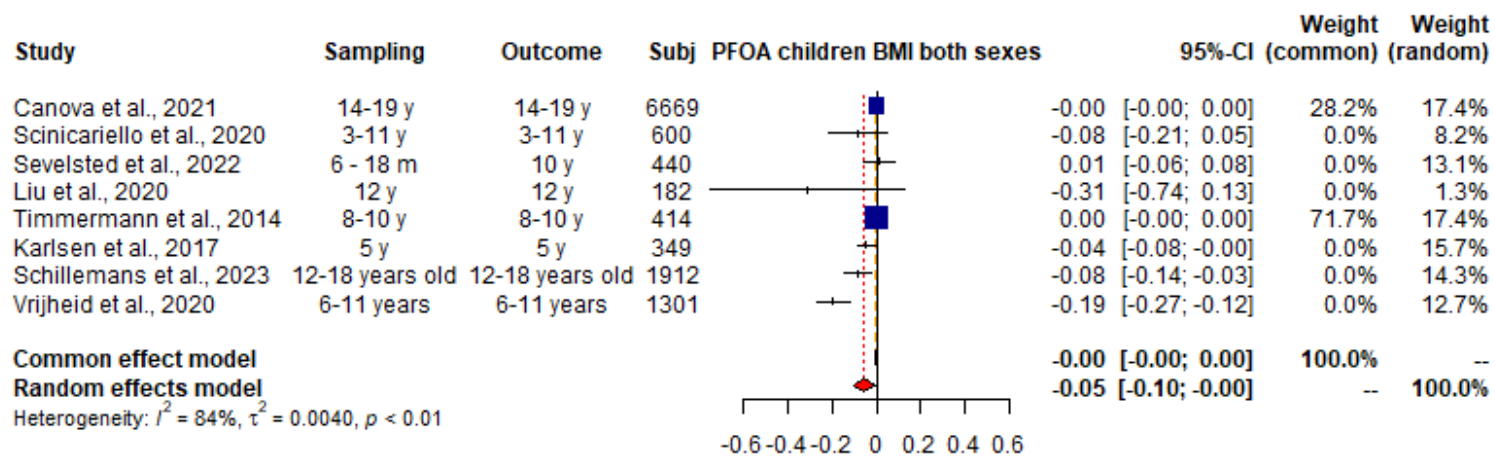
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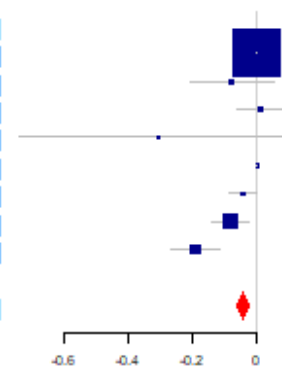
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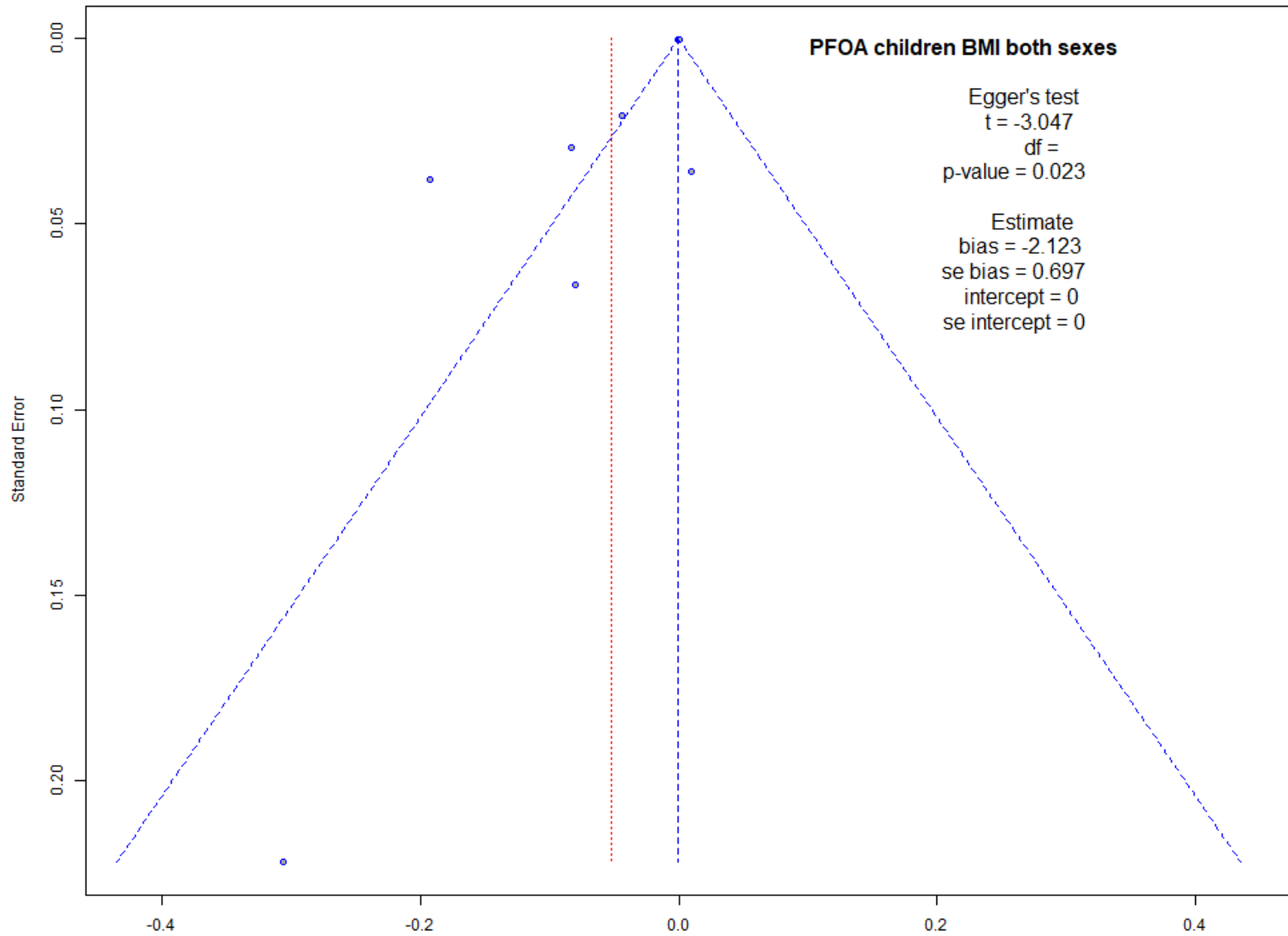
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Study	Sampling	Outcome	Subjects	Estimate [95% CI]
Canova et al., 2021	14-19 y	14-19 y	6669	-0.001 [-0.001; 0.000]
Scinicariello et al., 2020	3-11 y	3-11 y	600	-0.080 [-0.210; 0.050]
Sevelsted et al., 2022	6 - 18 m	10 y	440	0.010 [-0.060; 0.080]
Liu et al., 2020	12 y	12 y	182	-0.306 [-0.741; 0.129]
Timmermann et al., 2014	8-10 y	8-10 y	414	0.000 [0.000; 0.001]
Karlsen et al., 2017	5 y	5 y	349	-0.044 [-0.085; -0.003]
Schillemans et al., 2023	12-18 years old	12-18 years old	1912	-0.083 [-0.141; -0.026]
Vrijheid et al., 2020	6-11 years	6-11 years	1301	-0.193 [-0.267; -0.118]
Summary				-0.045 [-0.060; -0.029]



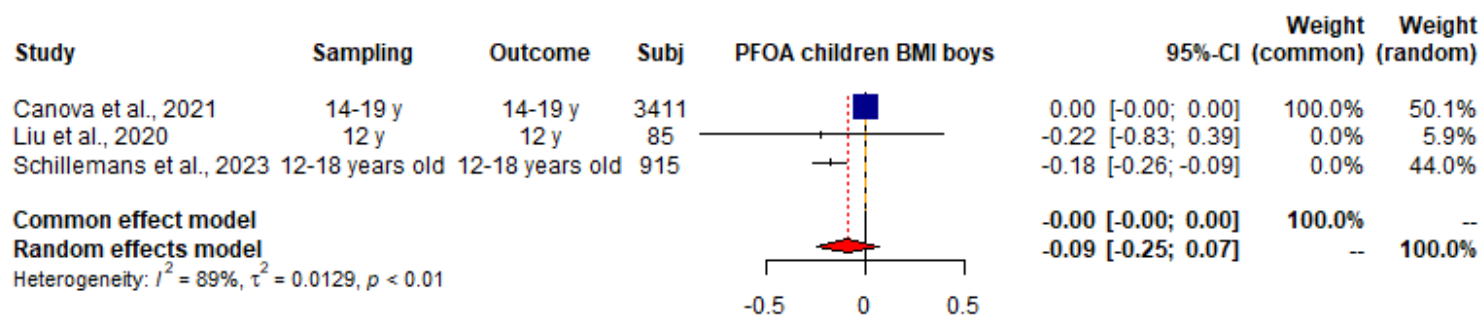
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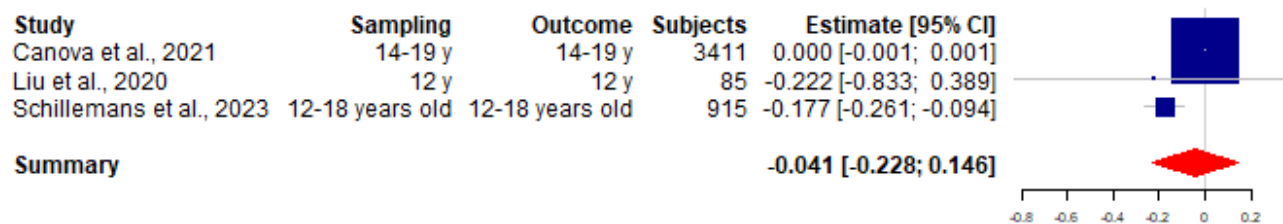
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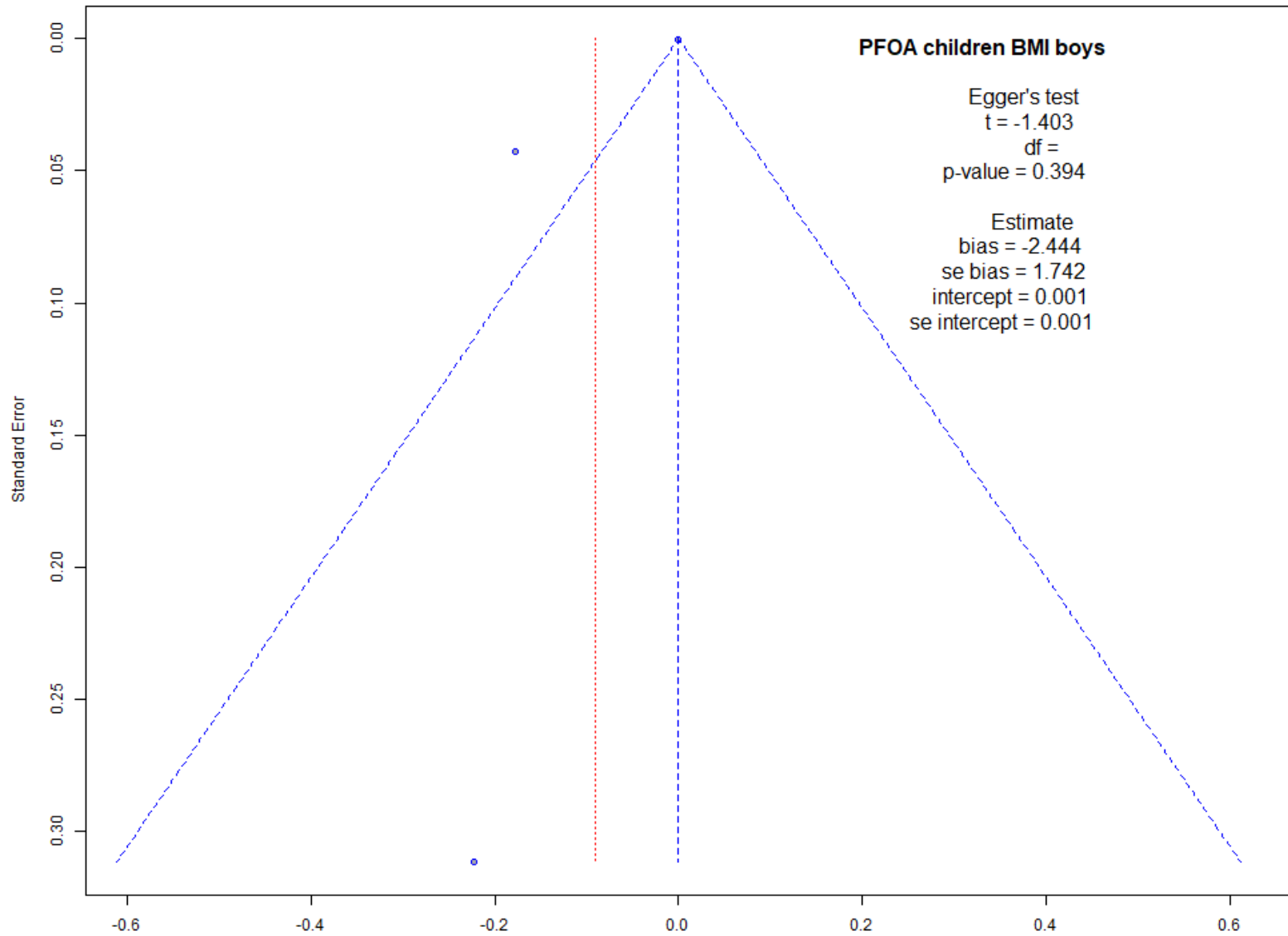
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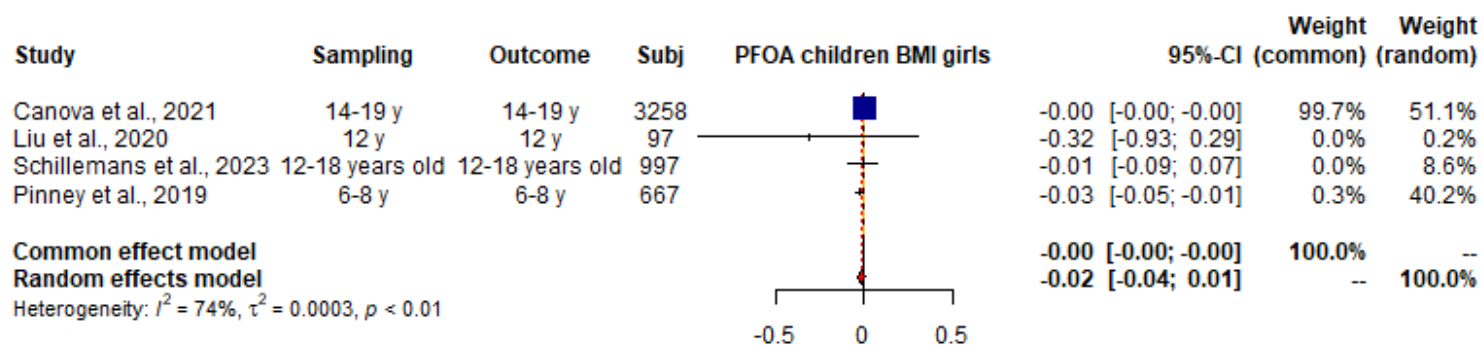
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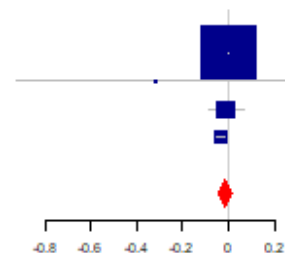
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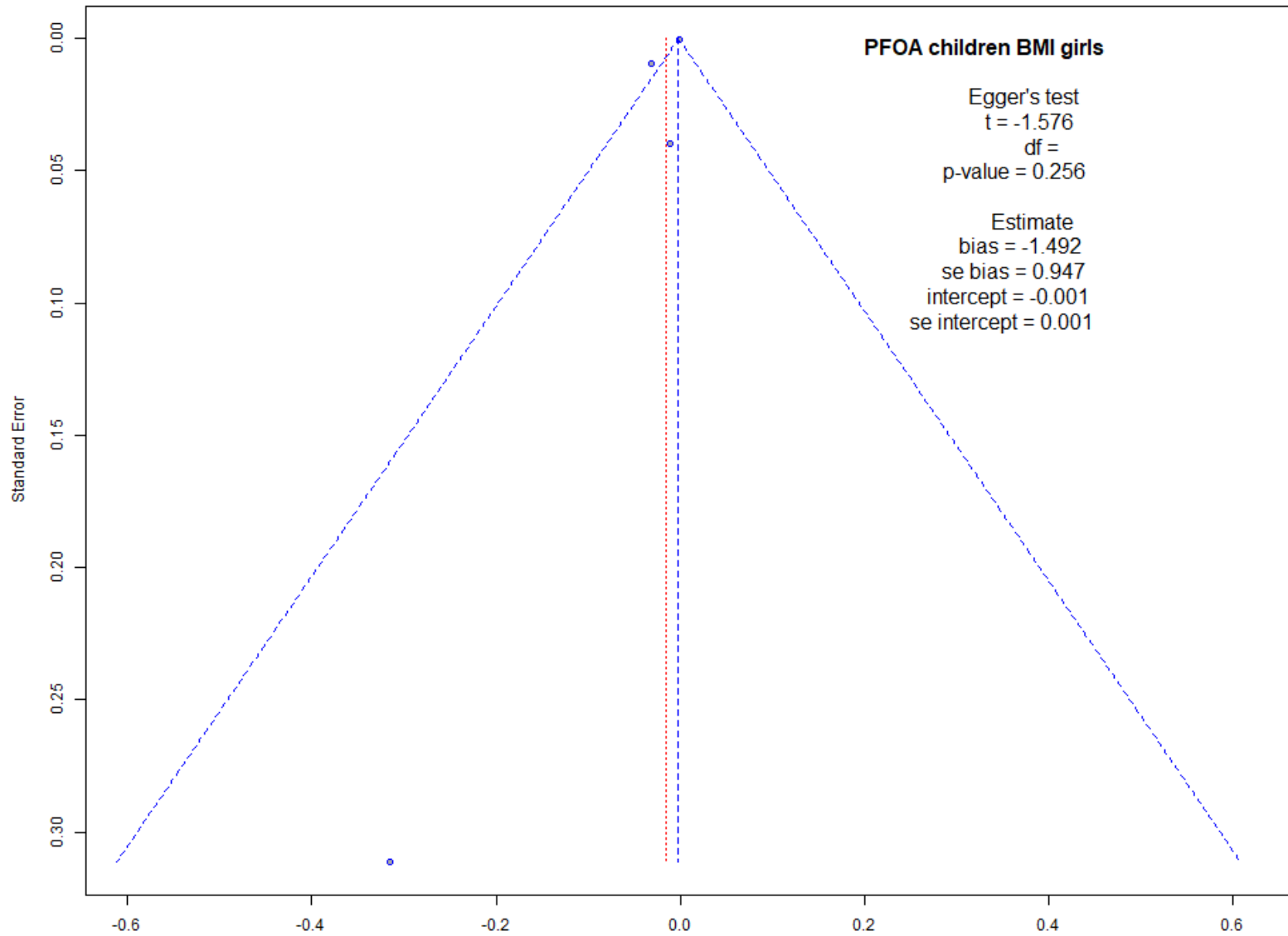
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Study	Sampling	Outcome	Subjects	Estimate [95% CI]
Canova et al., 2021	14-19 y	14-19 y	3258	-0.002 [-0.003; -0.001]
Liu et al., 2020	12 y	12 y	97	-0.316 [-0.926; 0.295]
Schillemans et al., 2023	12-18 years old	12-18 years old	997	-0.010 [-0.089; 0.068]
Pinney et al., 2019	6-8 y	6-8 y	667	-0.032 [-0.050; -0.013]
Summary				-0.013 [-0.046; 0.019]



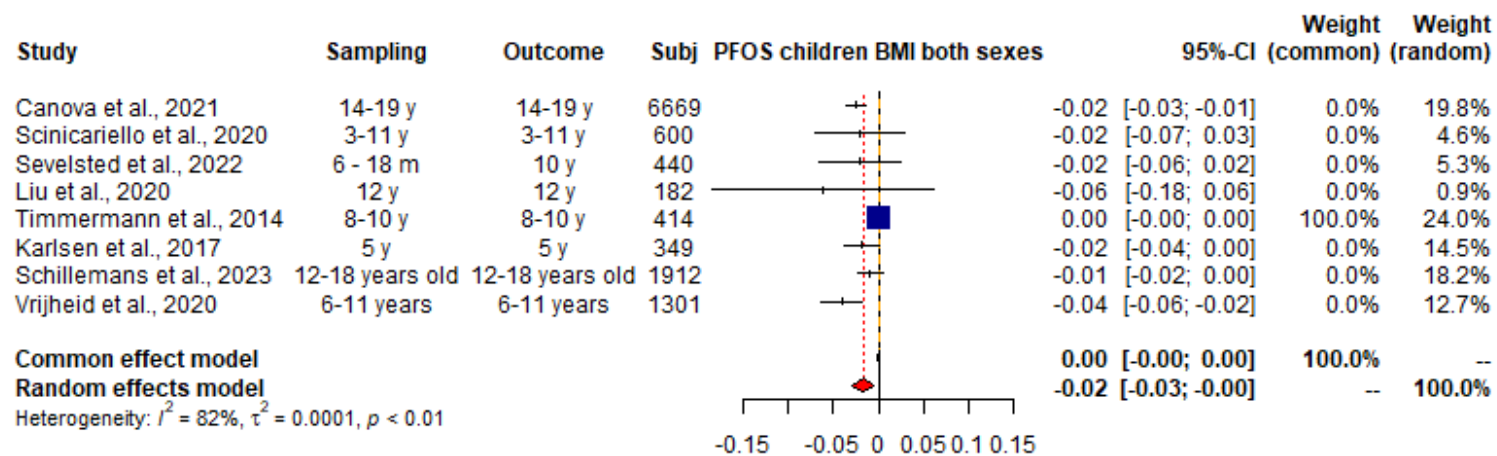
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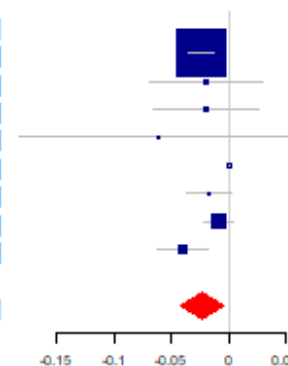
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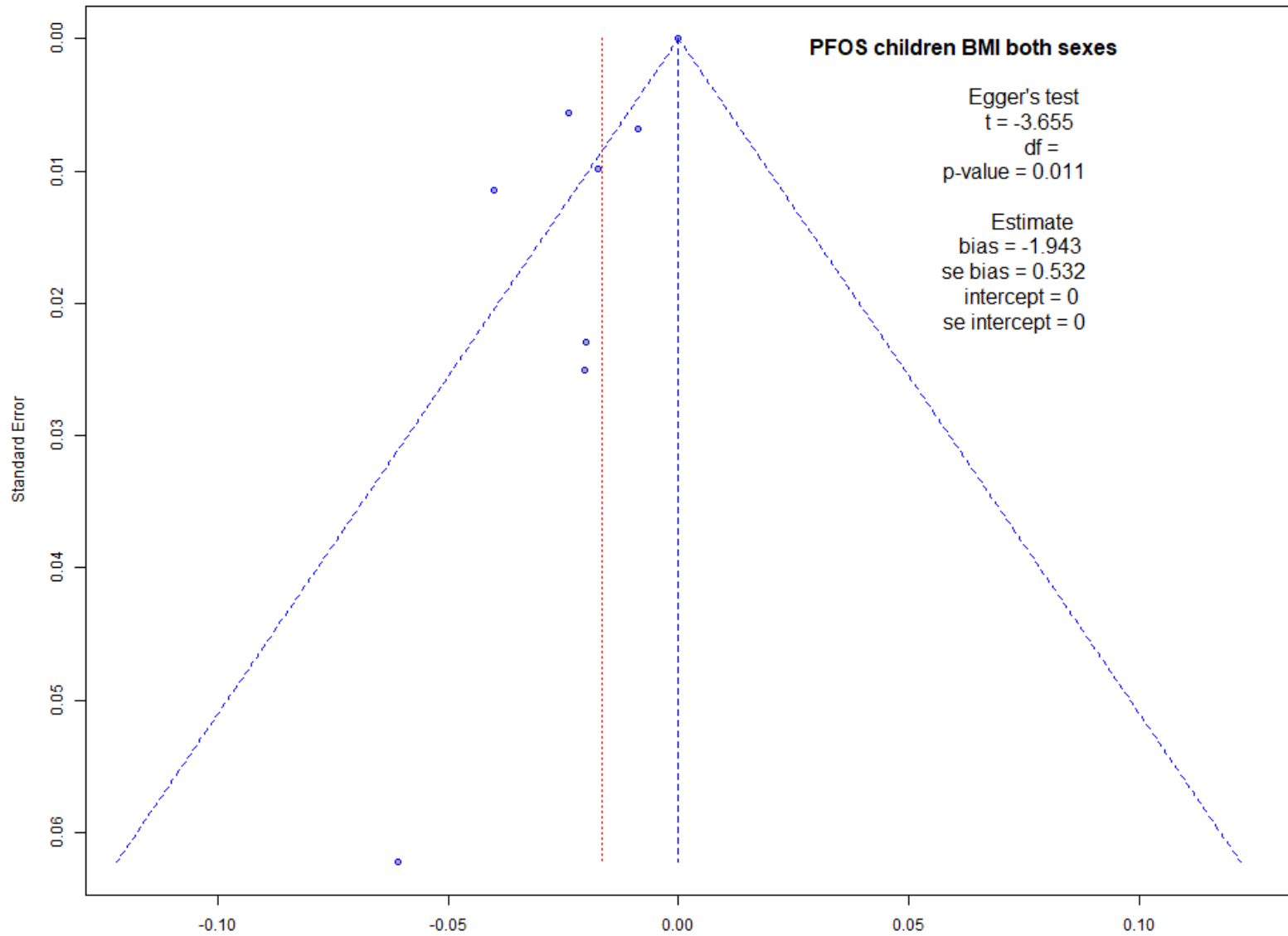
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Canova et al., 2021	14-19 y	14-19 y	6669	-0.024 [-0.035; -0.013]
Scinicariello et al., 2020	3-11 y	3-11 y	600	-0.021 [-0.070; 0.029]
Sevelsted et al., 2022	6 - 18 m	10 y	440	-0.020 [-0.065; 0.025]
Liu et al., 2020	12 y	12 y	182	-0.061 [-0.183; 0.061]
Timmermann et al., 2014	8-10 y	8-10 y	414	0.000 [0.000; 0.000]
Karlsen et al., 2017	5 y	5 y	349	-0.018 [-0.037; 0.002]
Schillemans et al., 2023	12-18 years old	12-18 years old	1912	-0.009 [-0.022; 0.004]
Vrijheid et al., 2020	6-11 years	6-11 years	1301	-0.040 [-0.063; -0.018]
Summary				-0.023 [-0.041; -0.004]



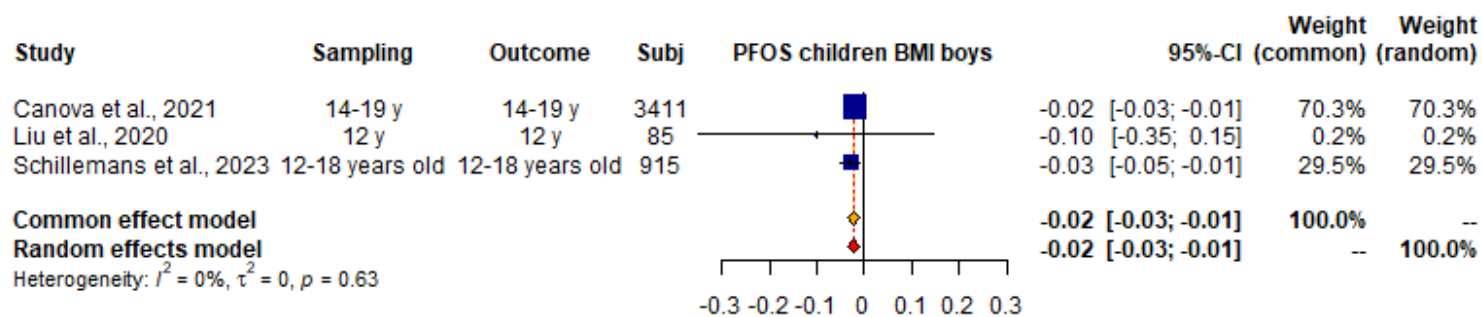
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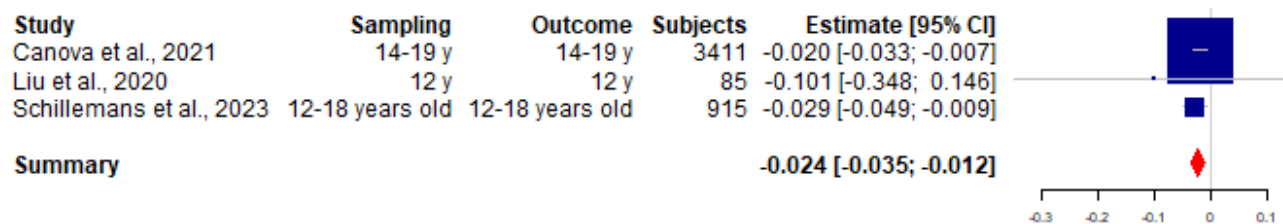
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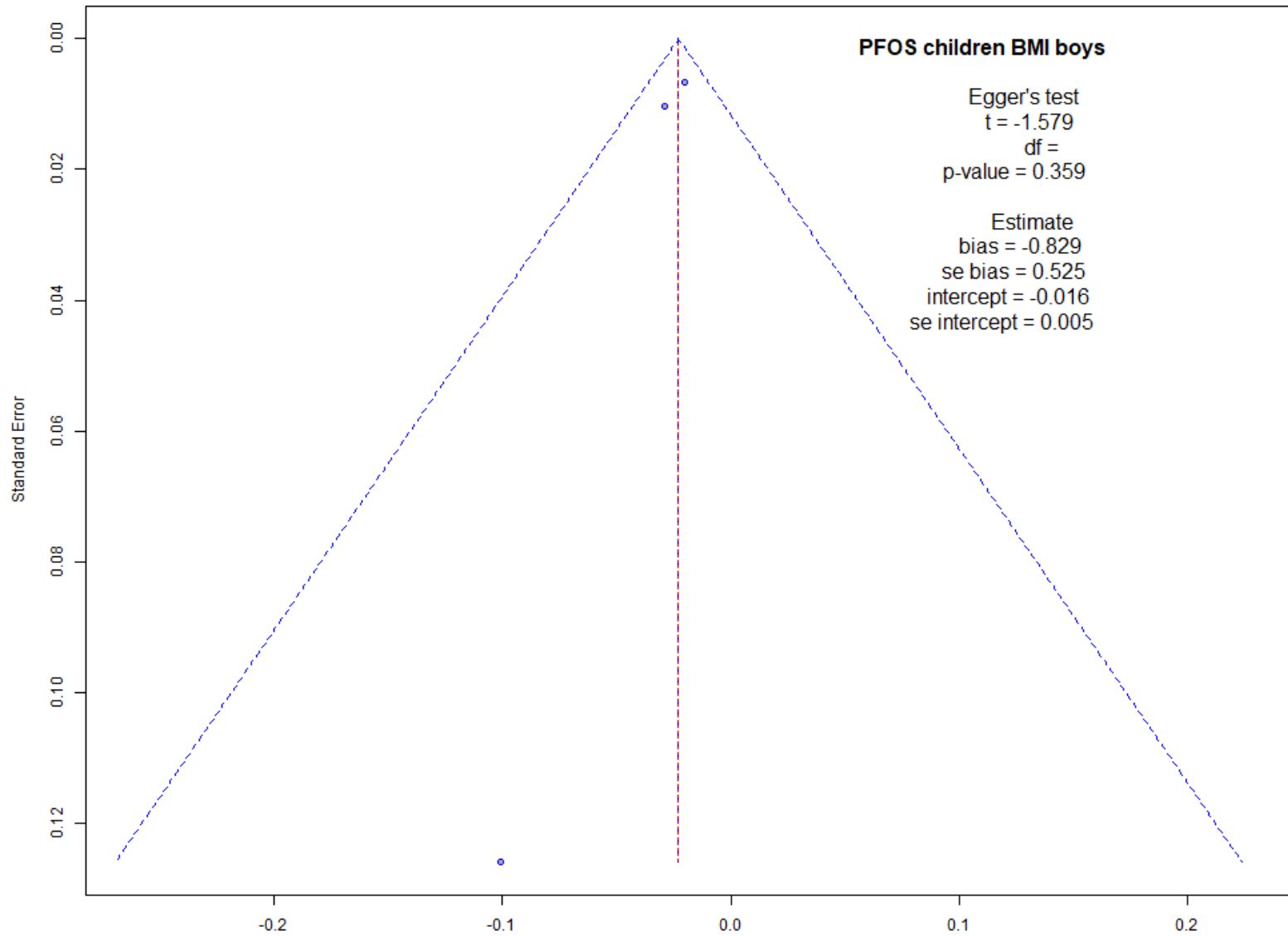
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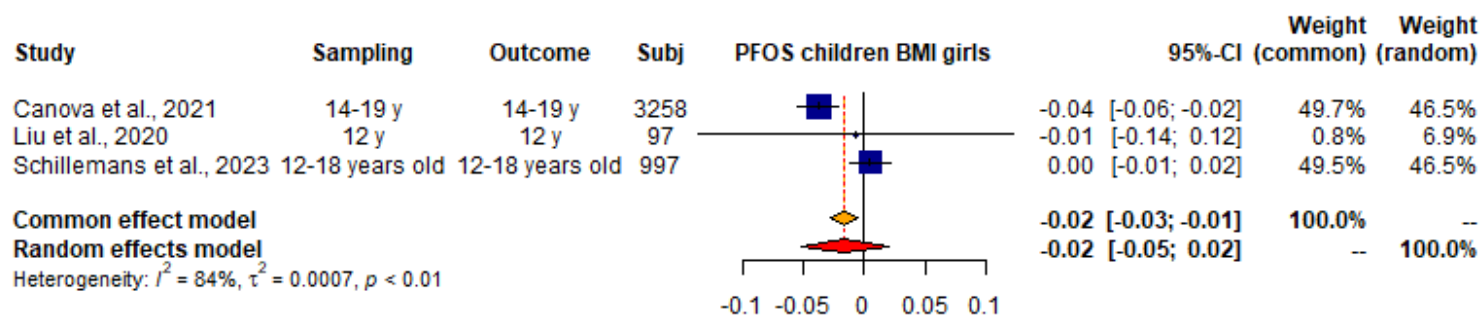
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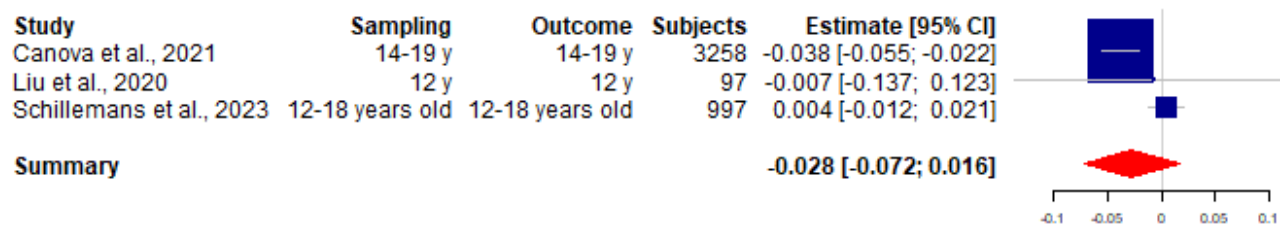
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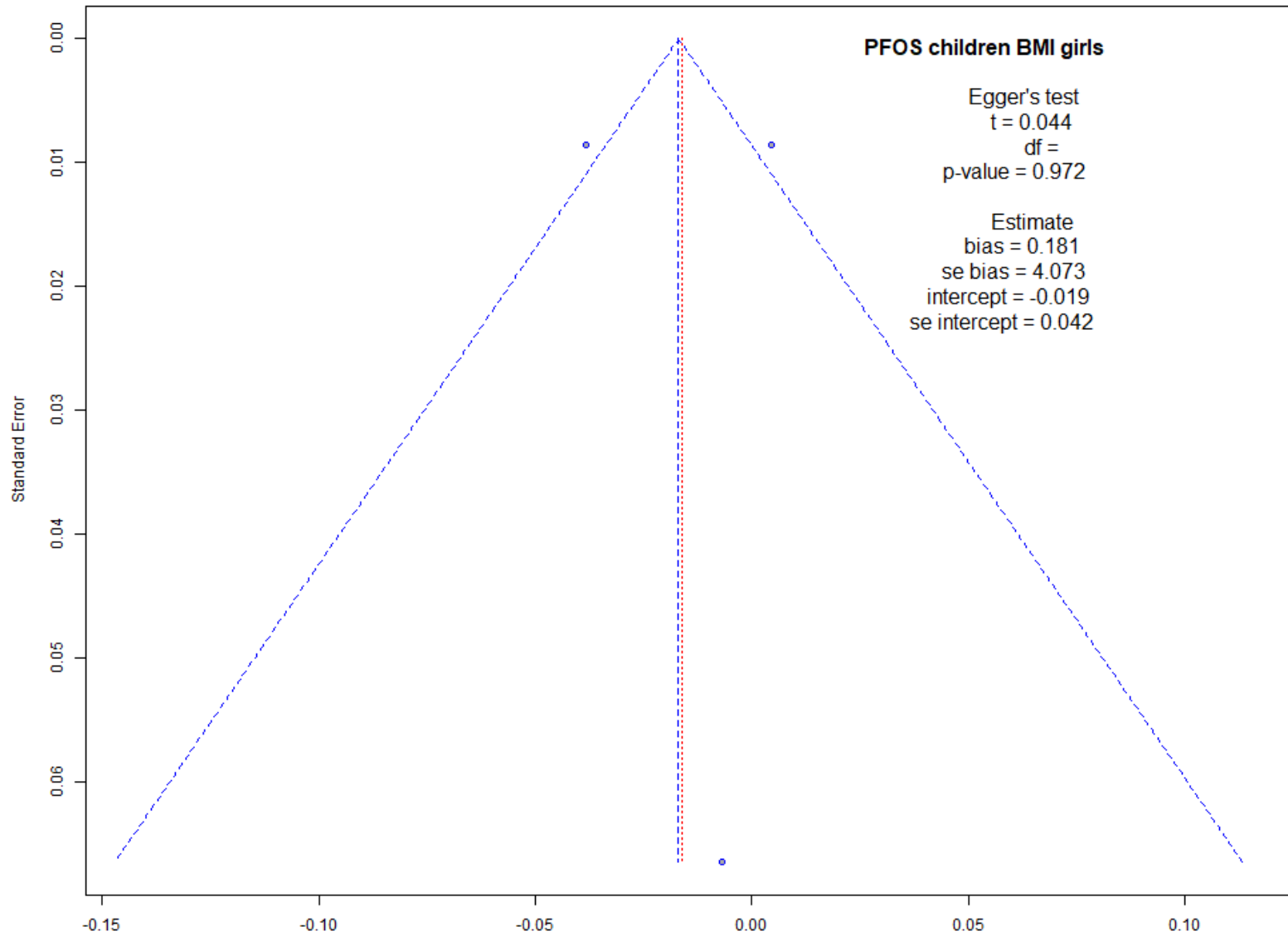
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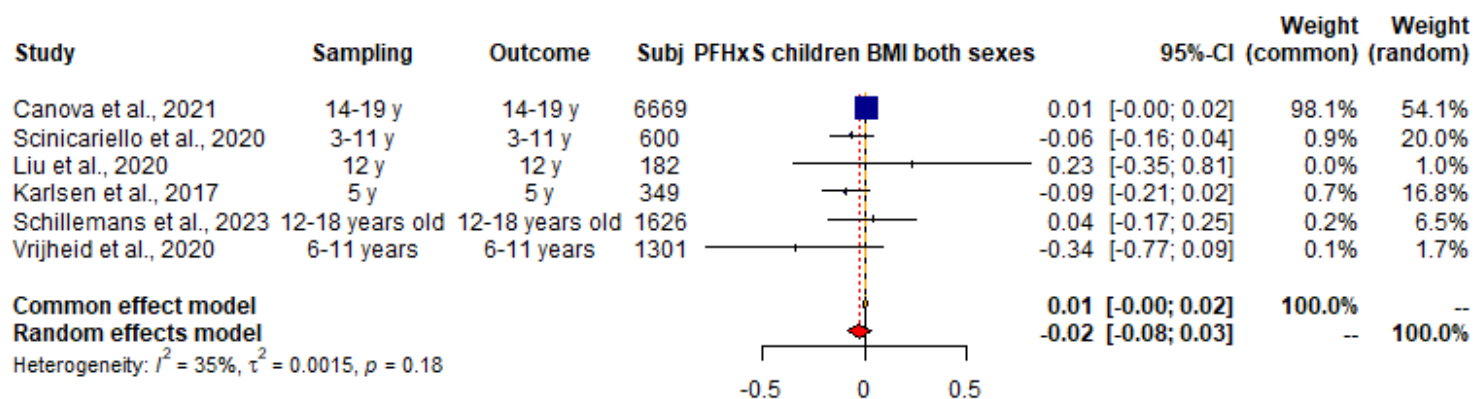
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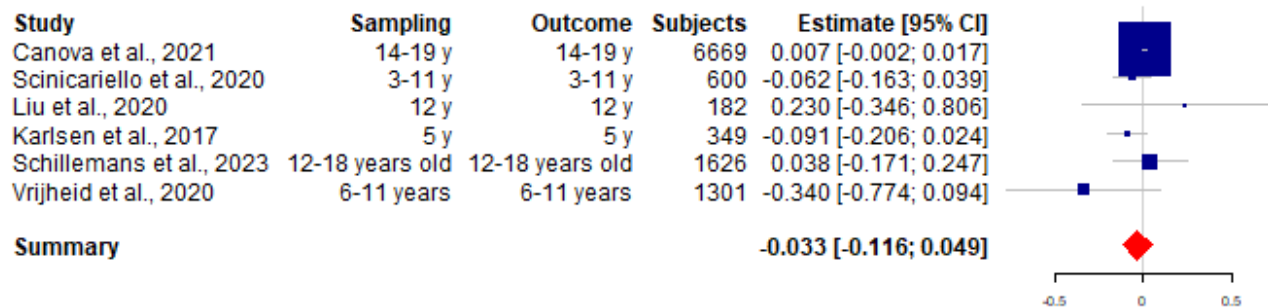
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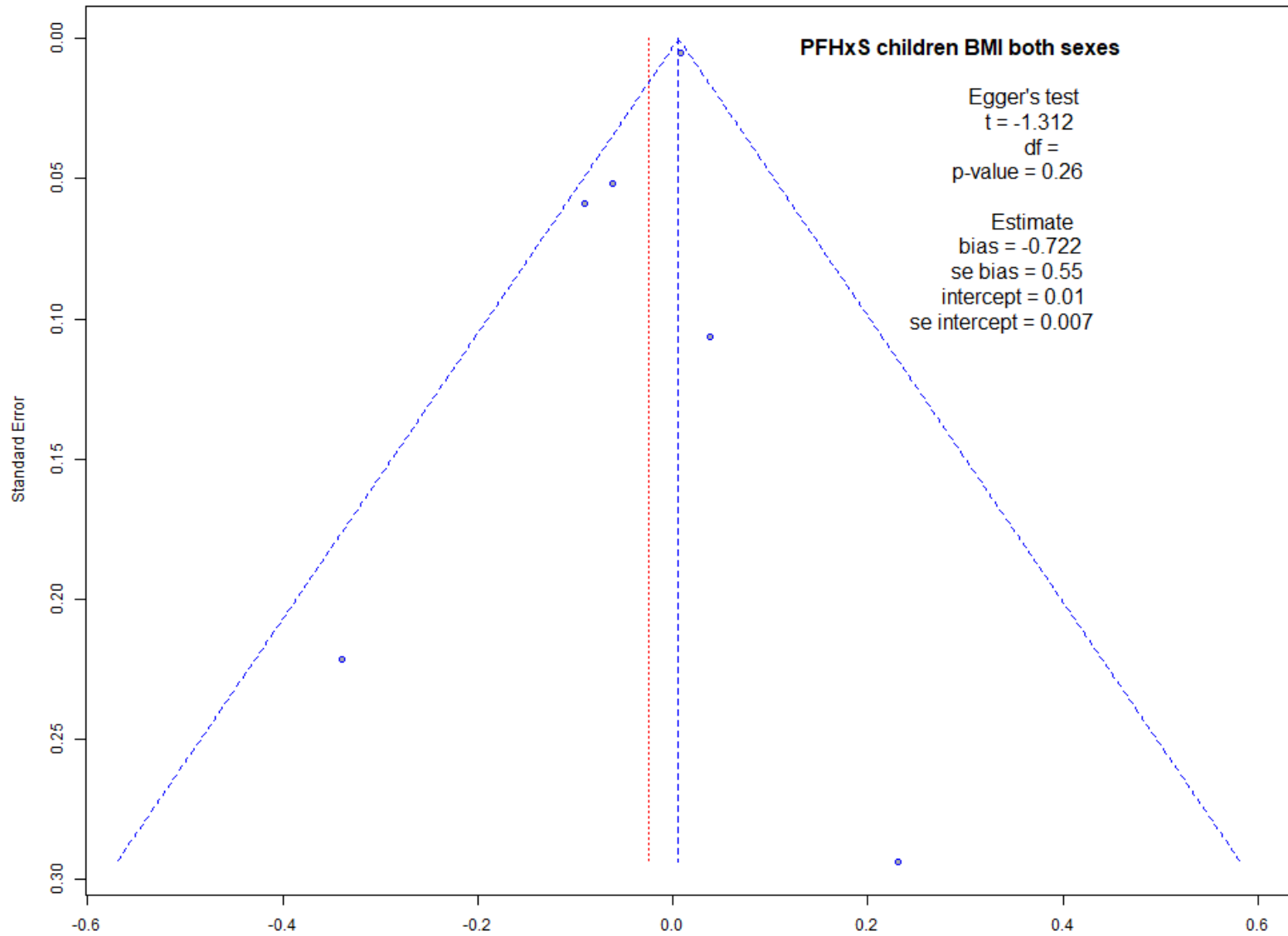
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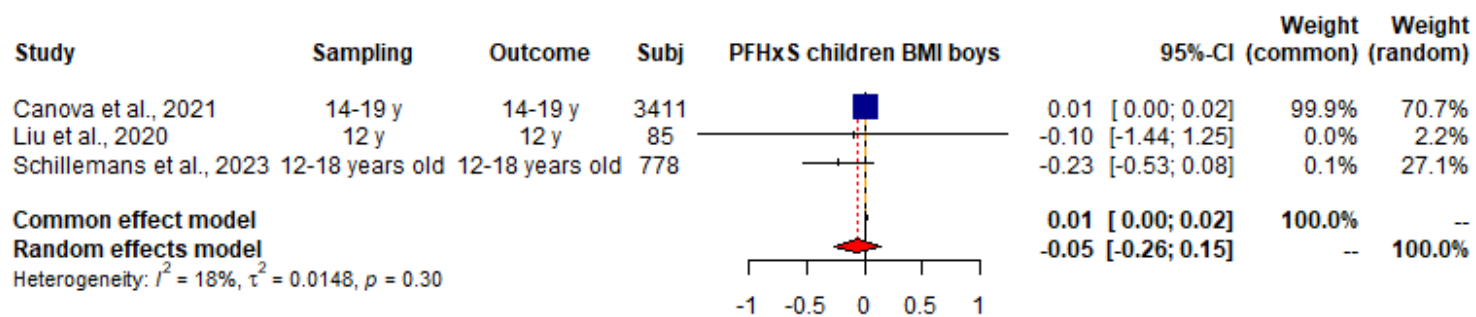
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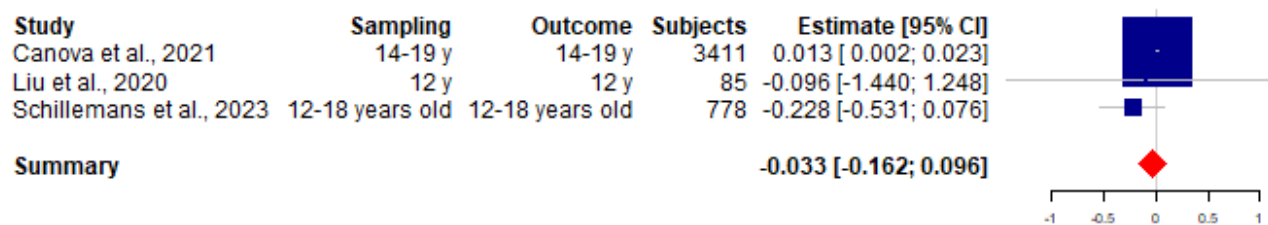
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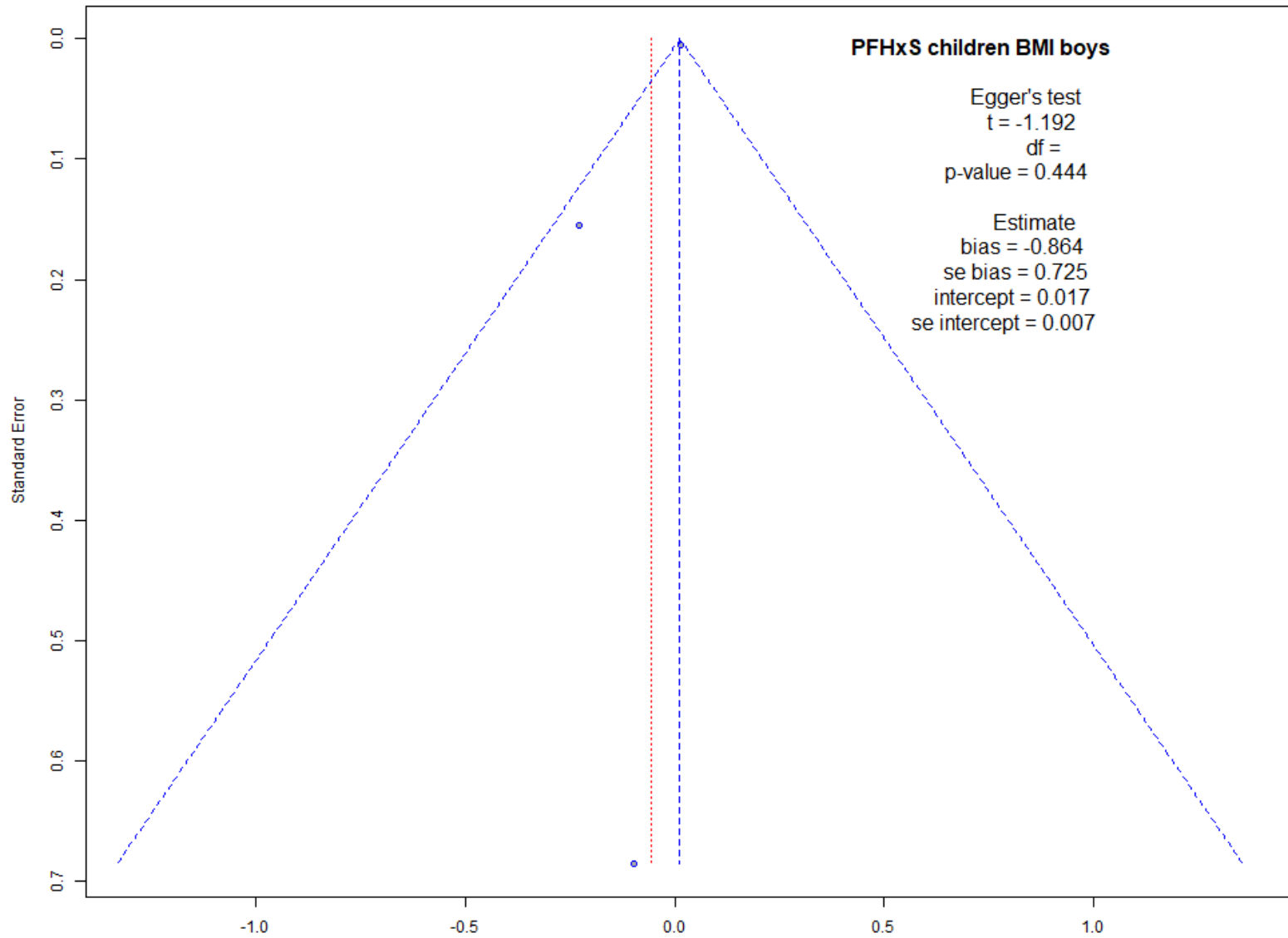
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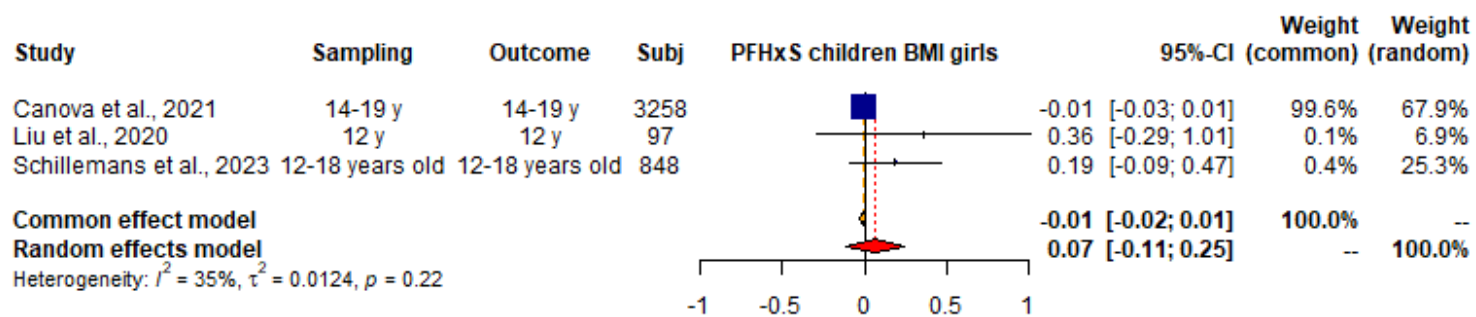
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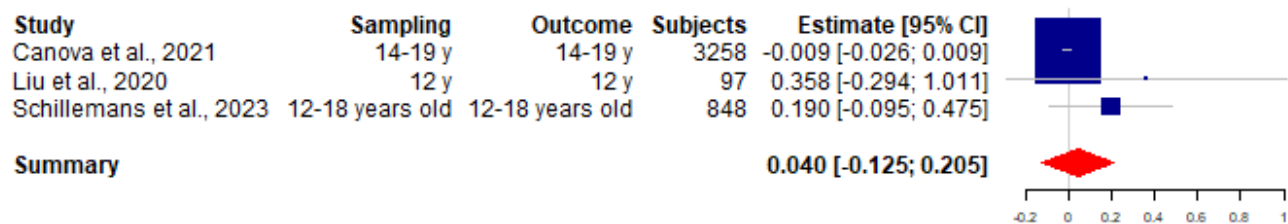
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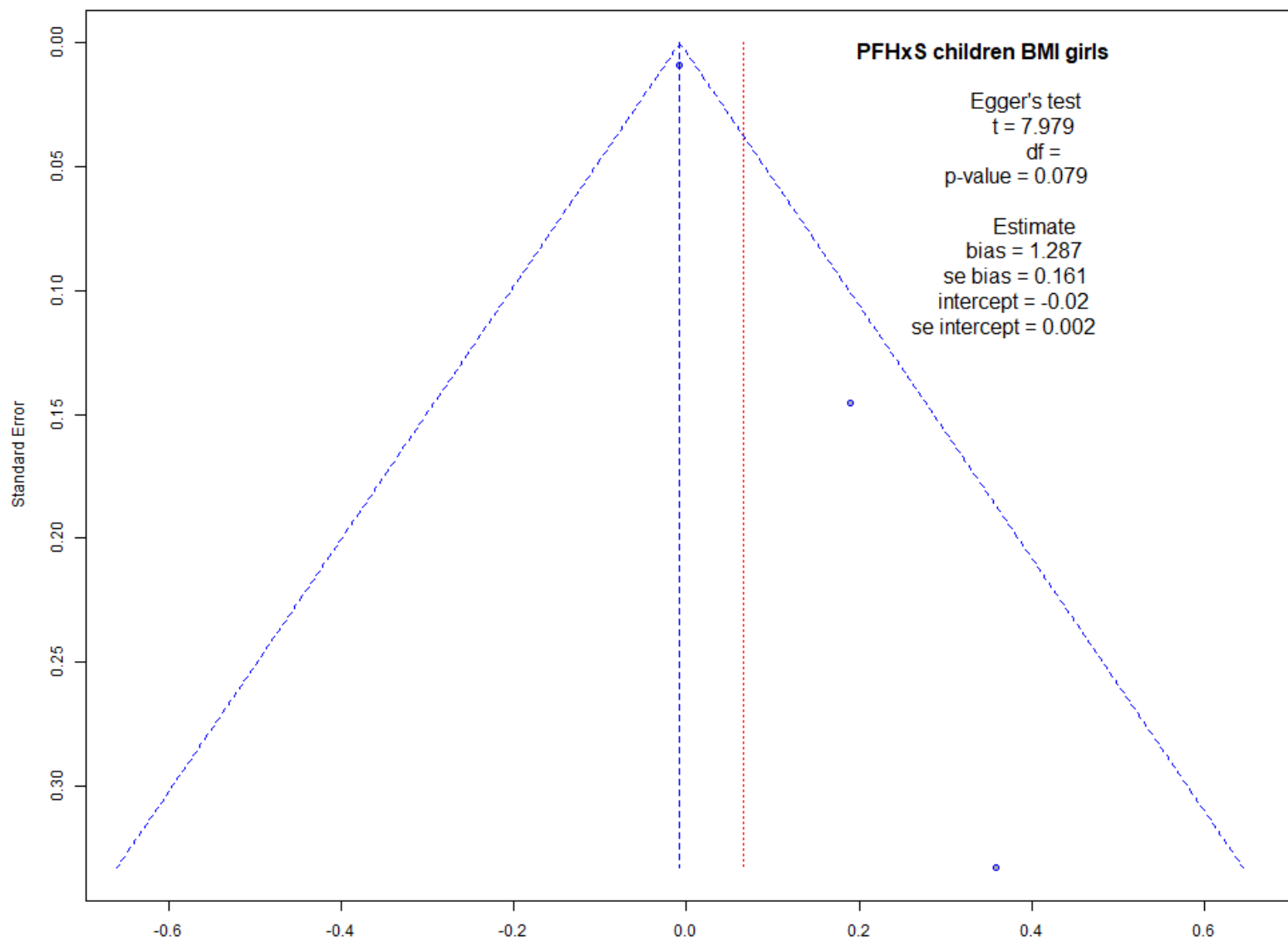
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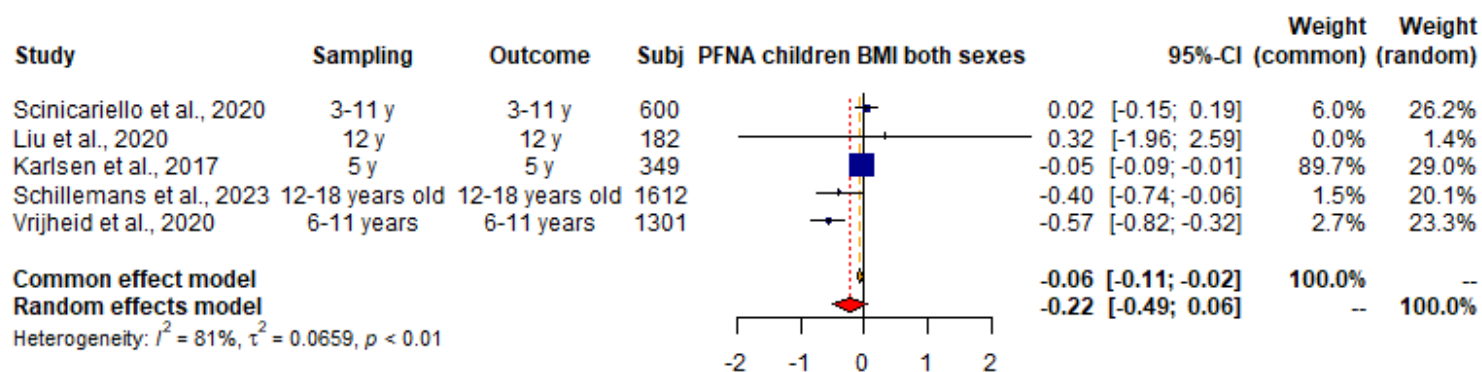
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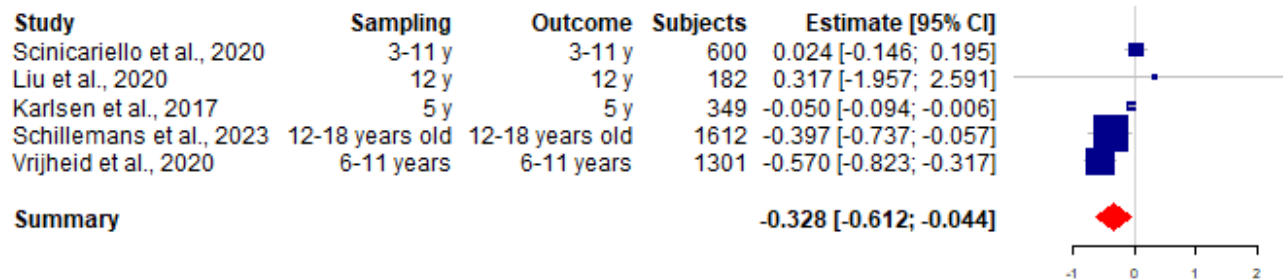
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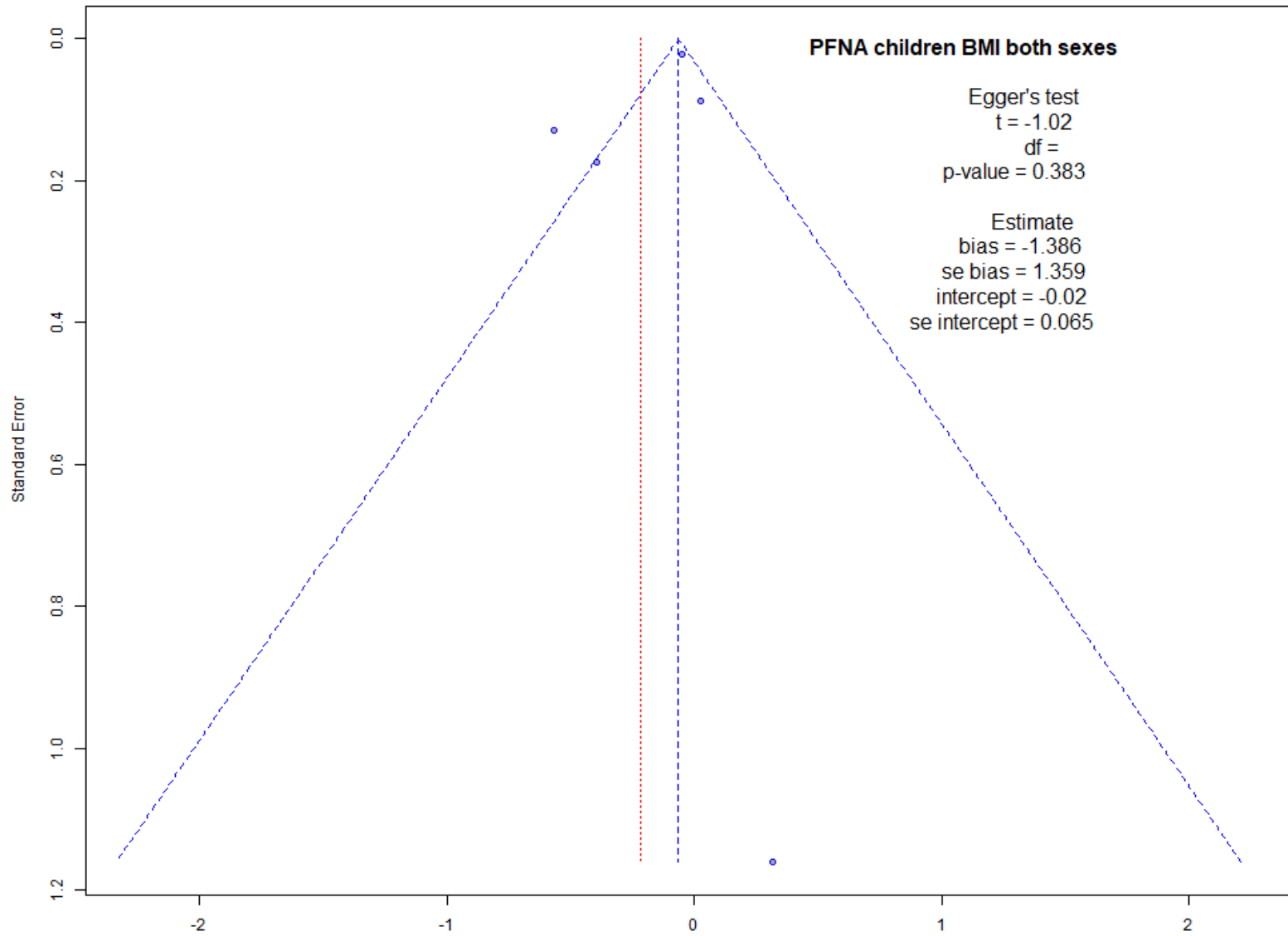
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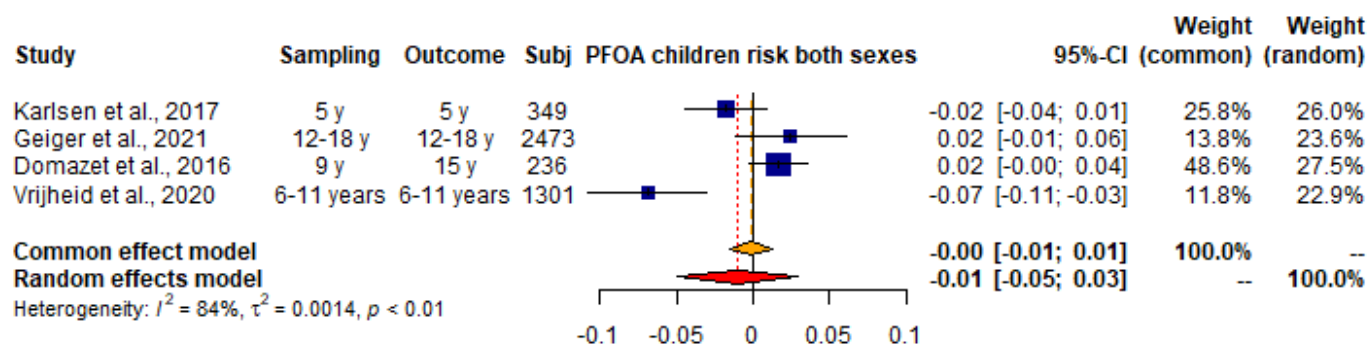
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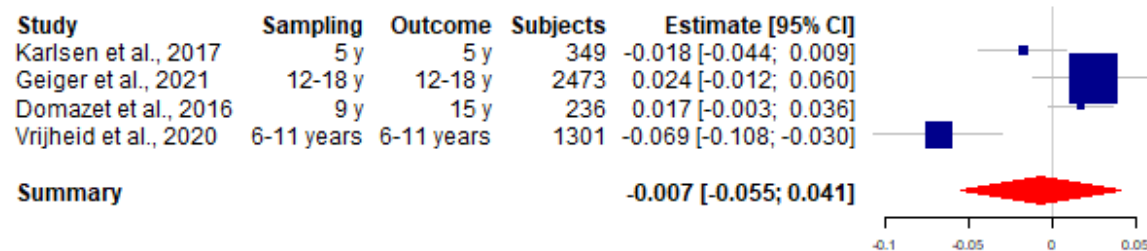
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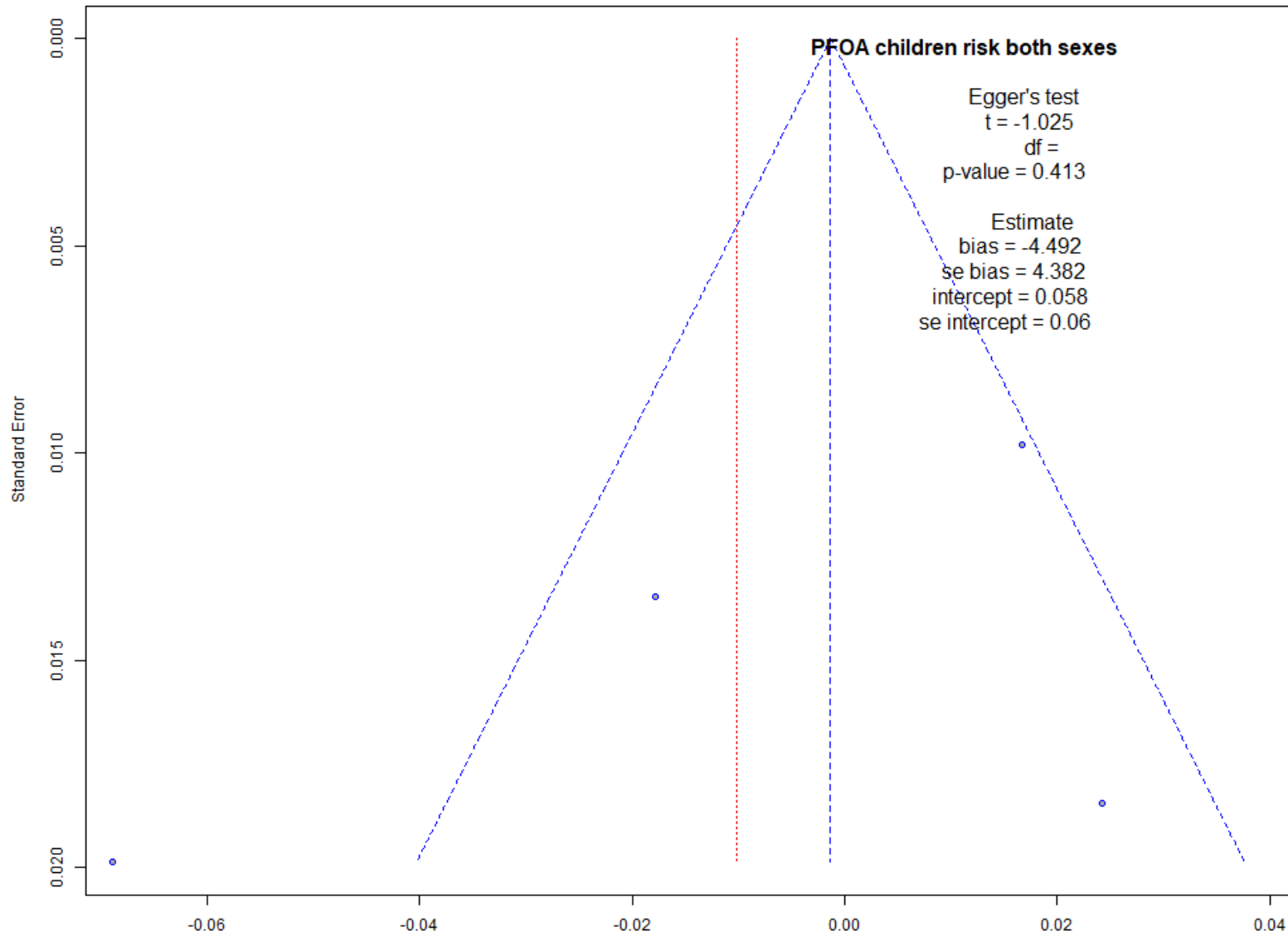
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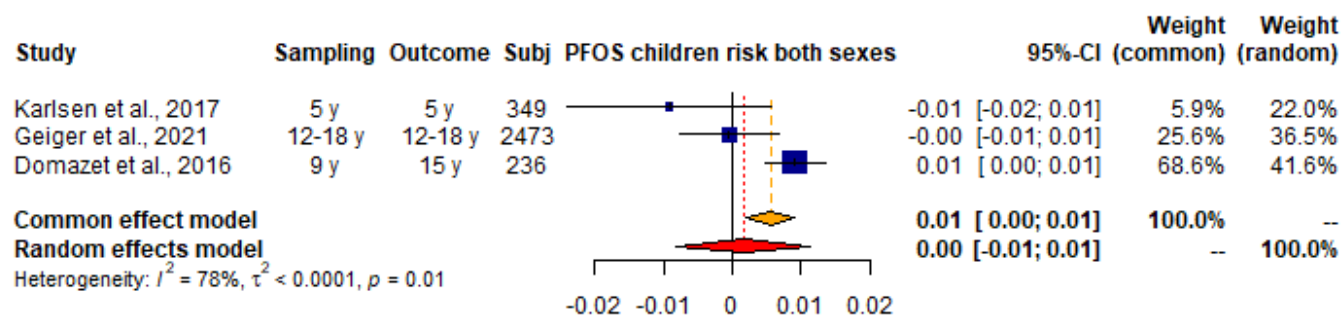
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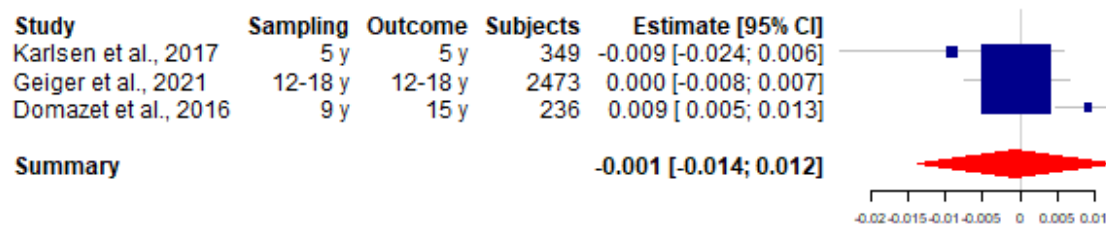
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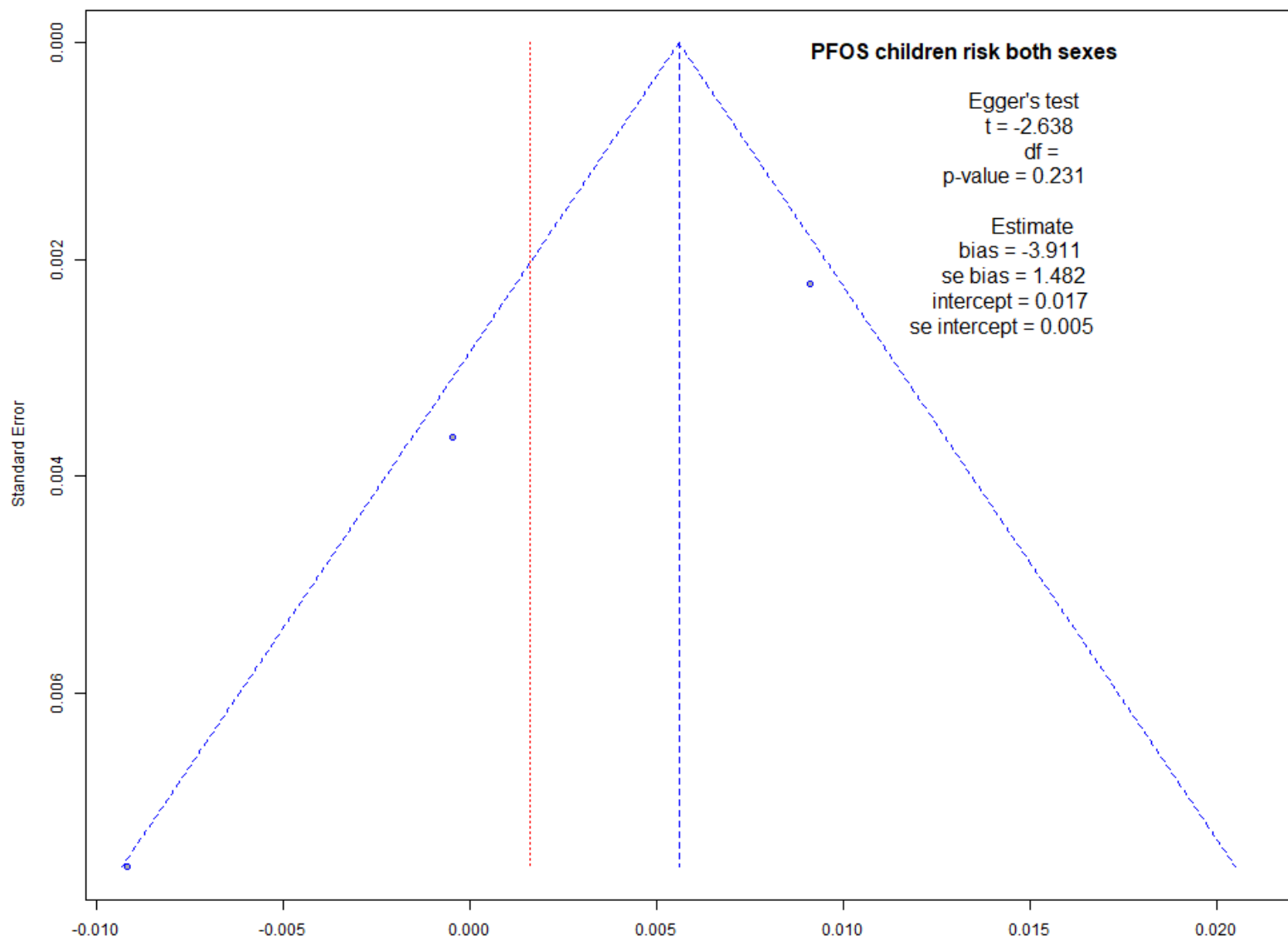
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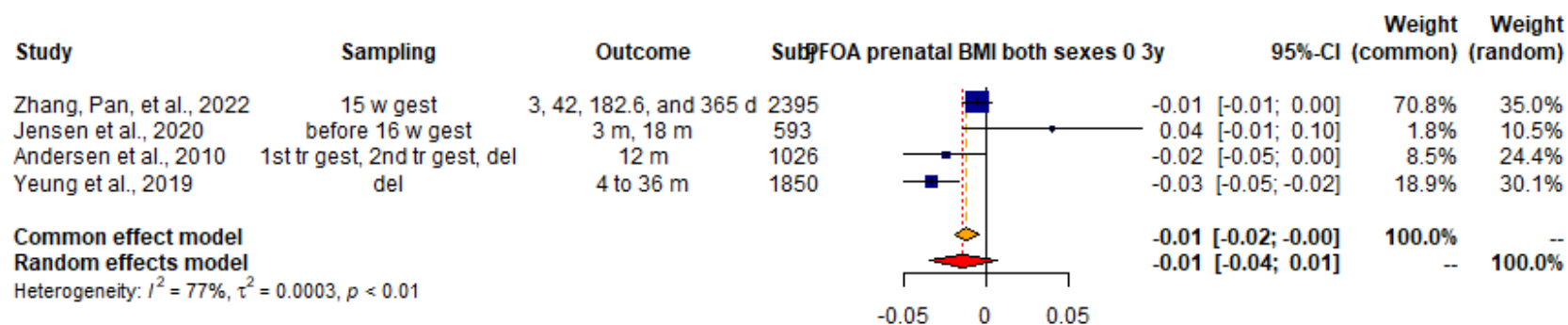
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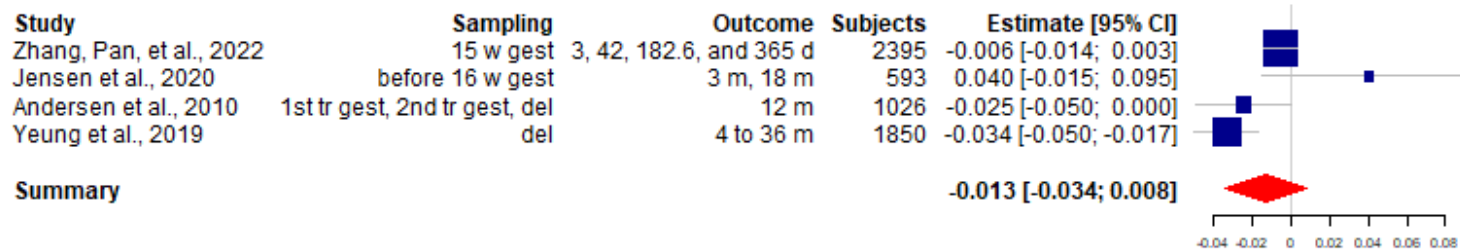
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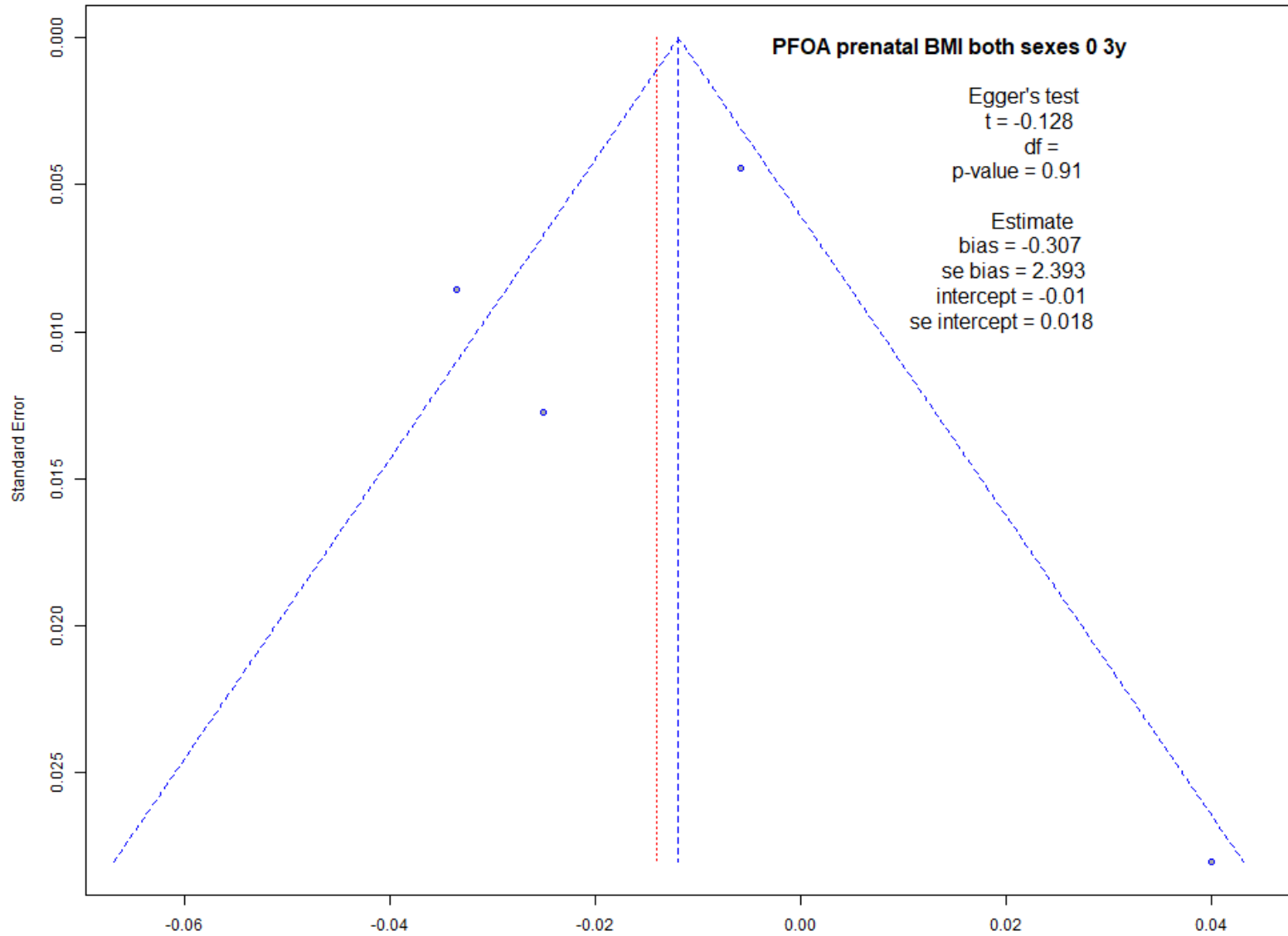
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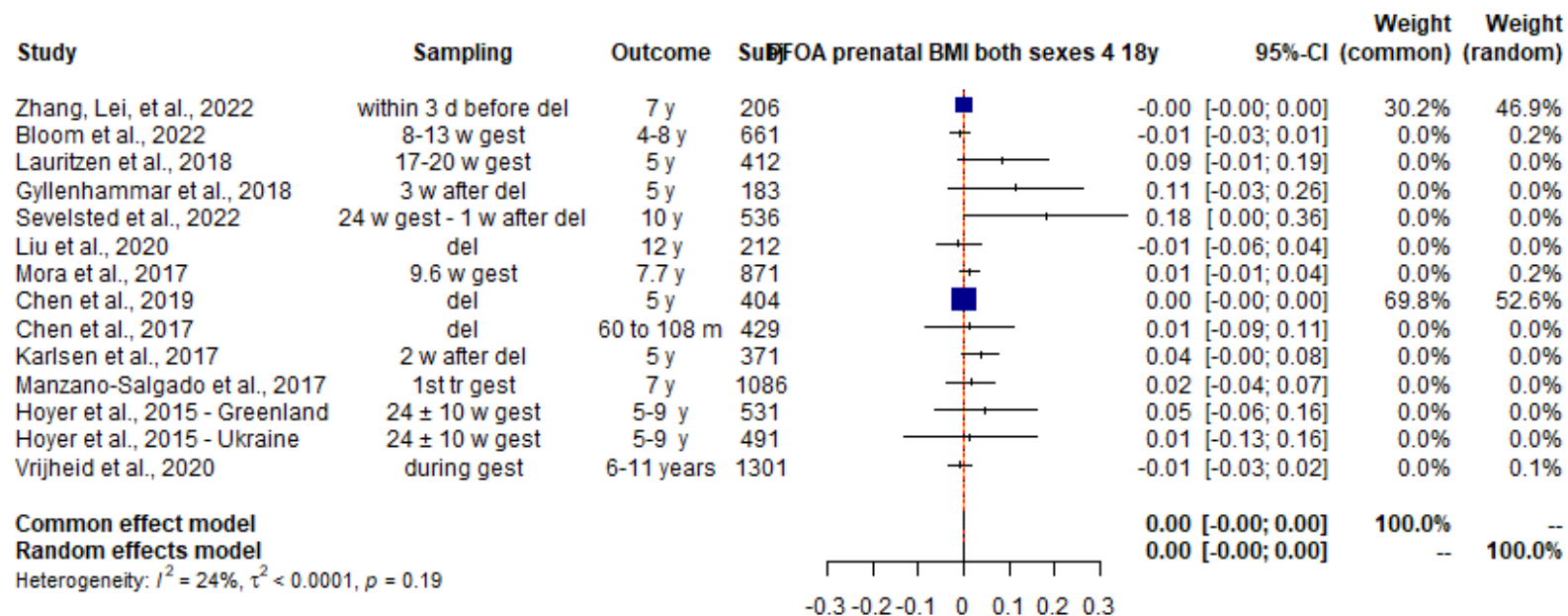
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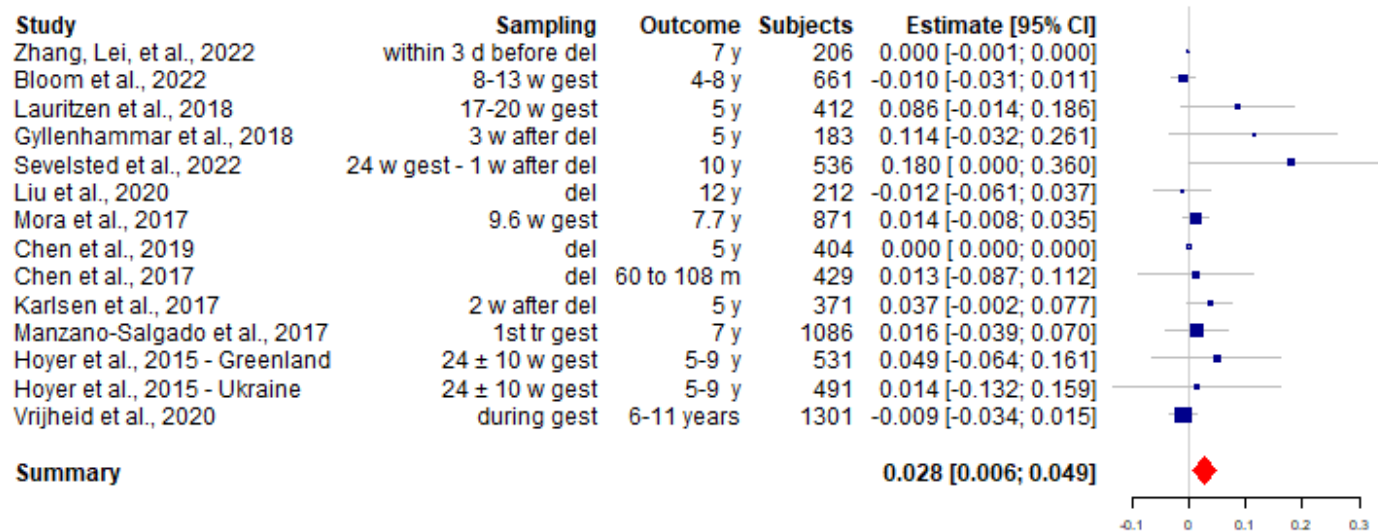
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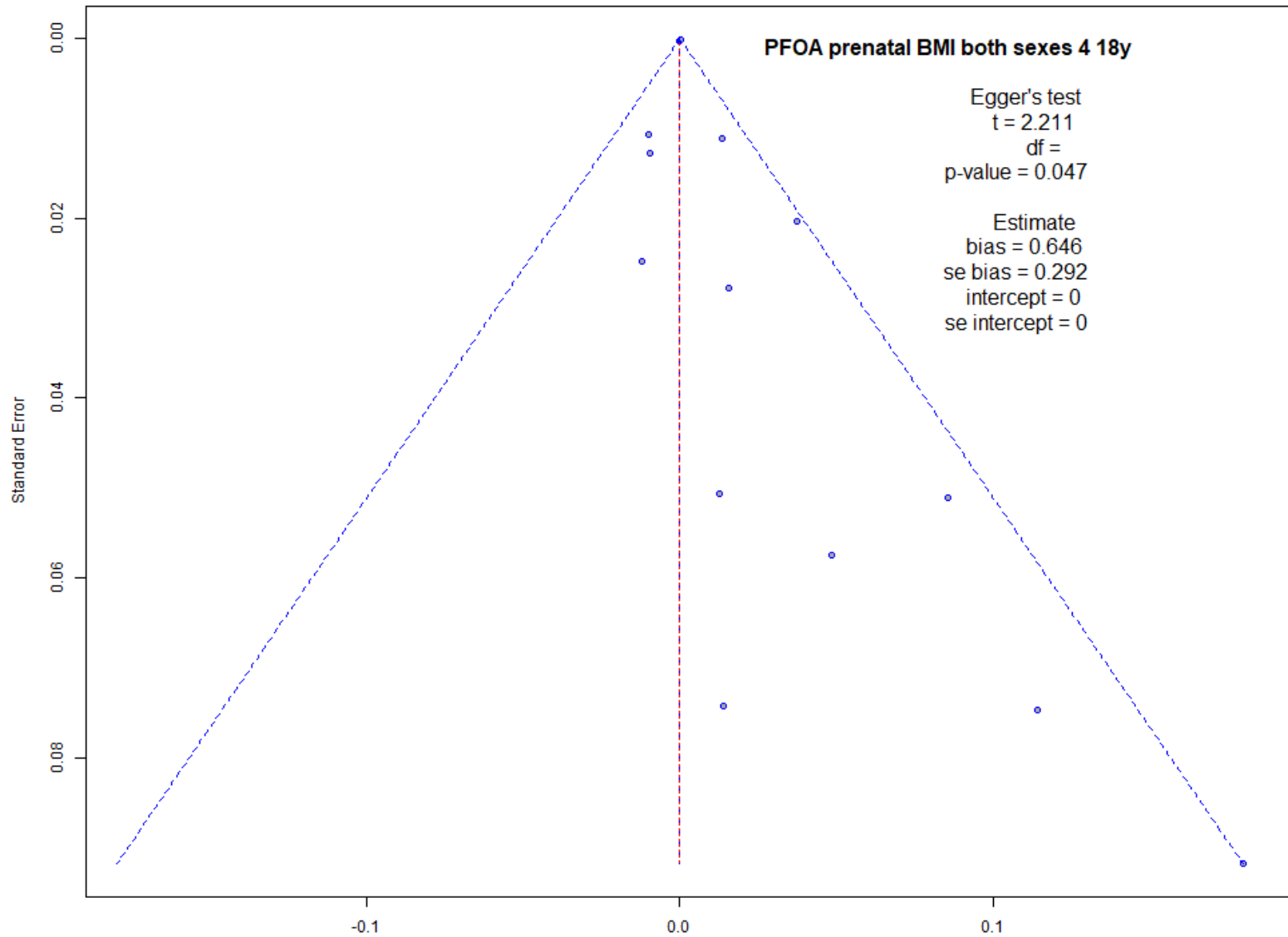
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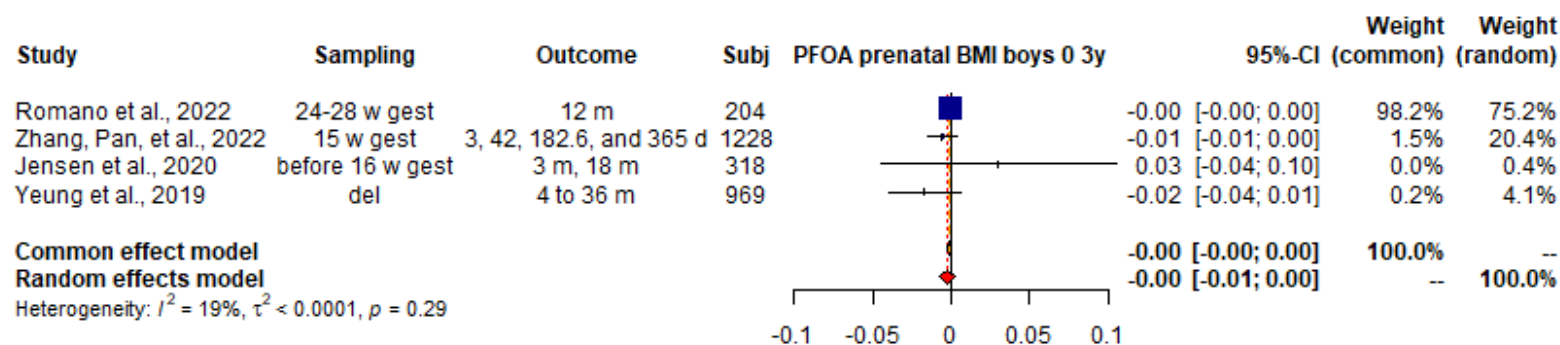
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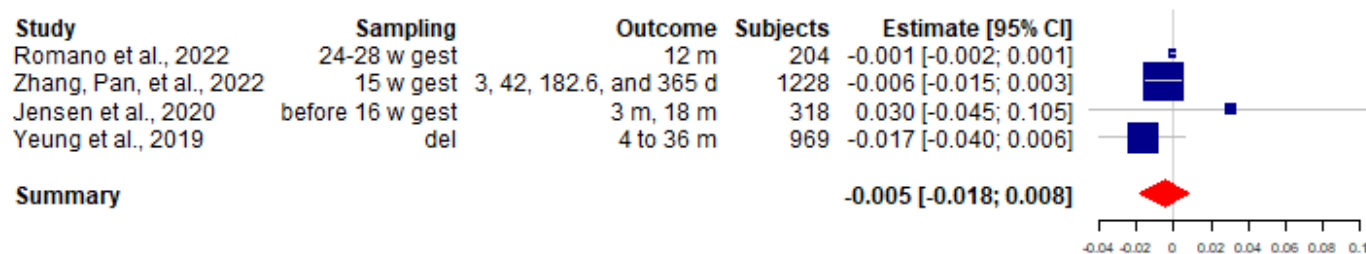
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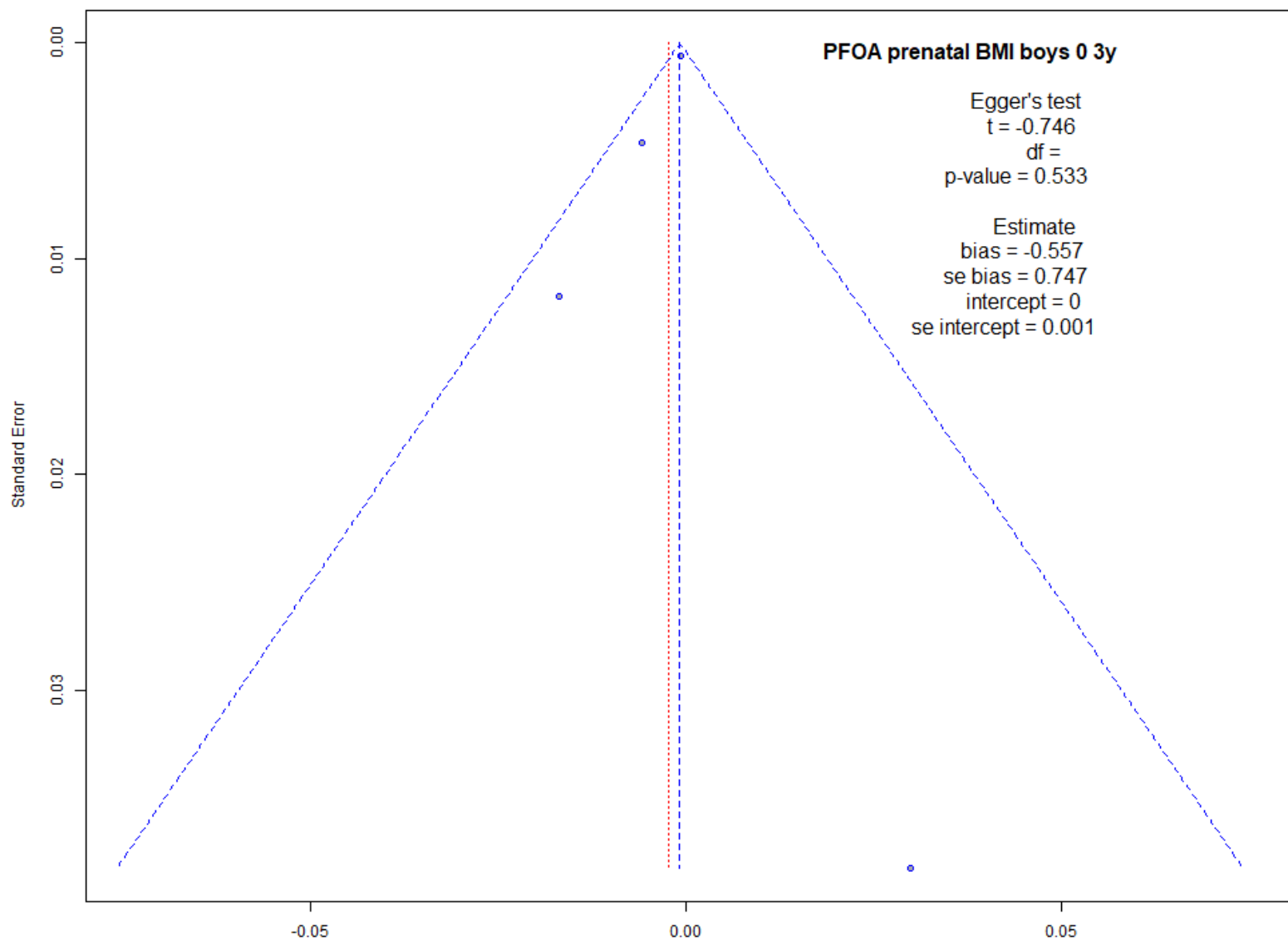
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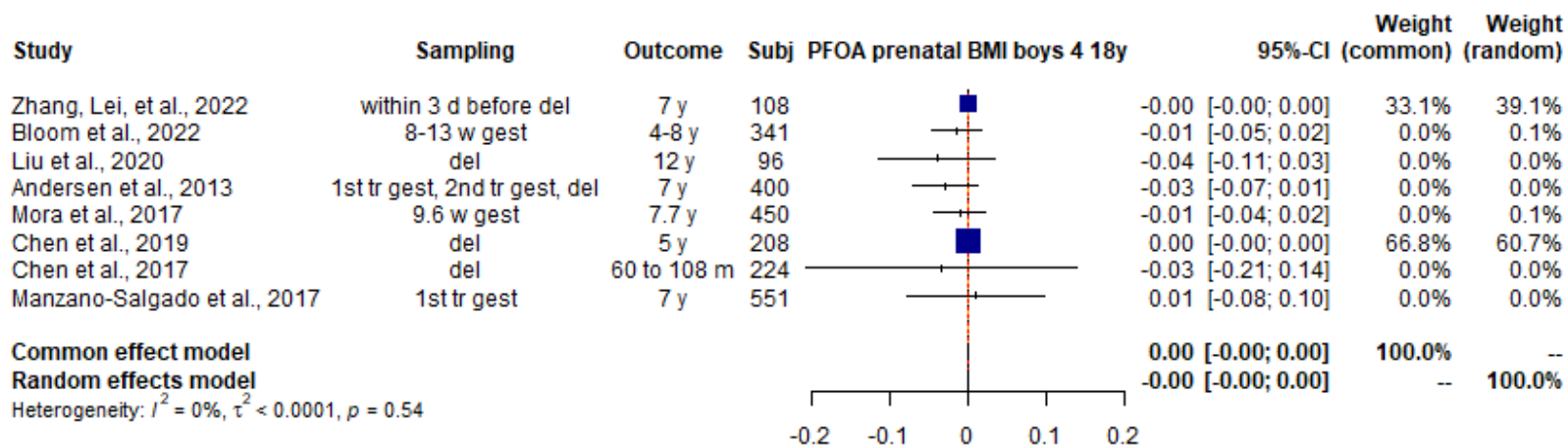
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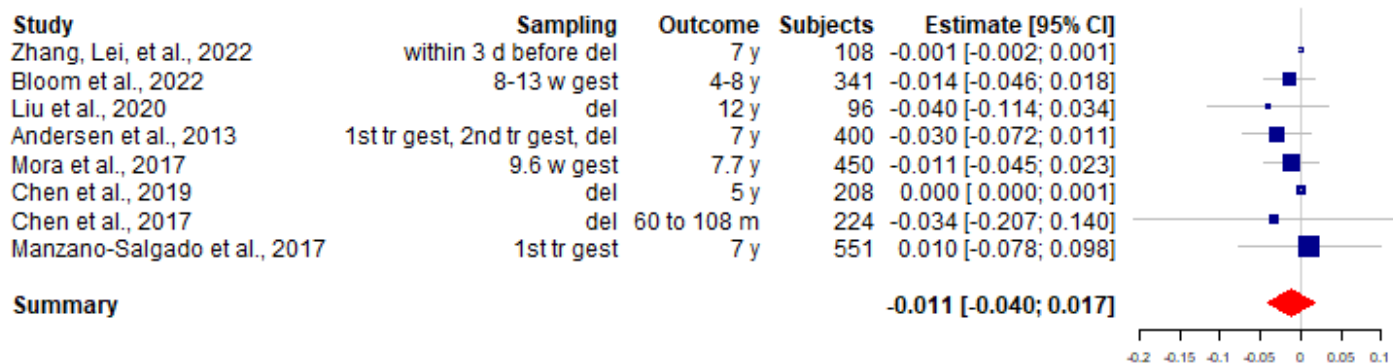
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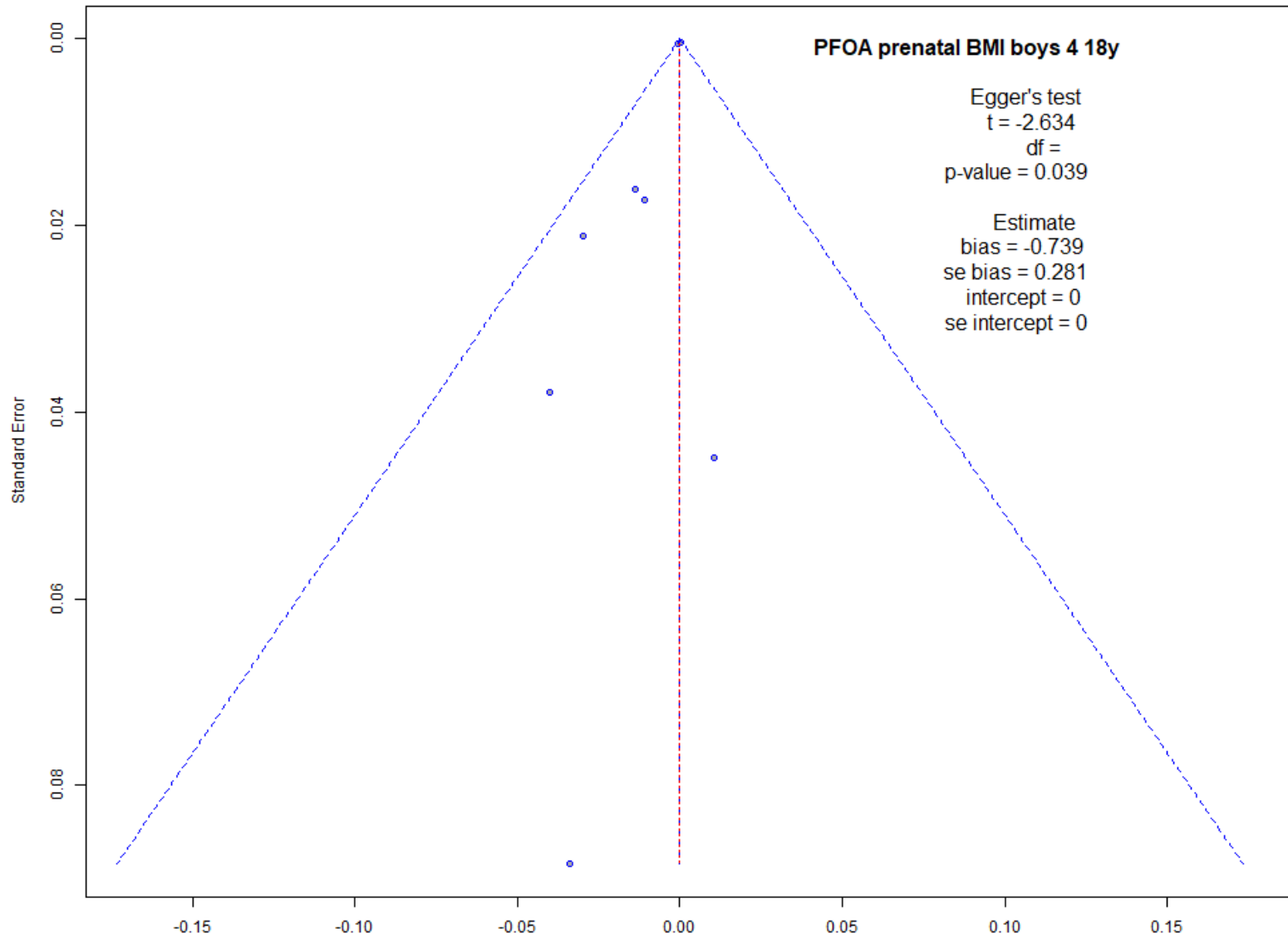
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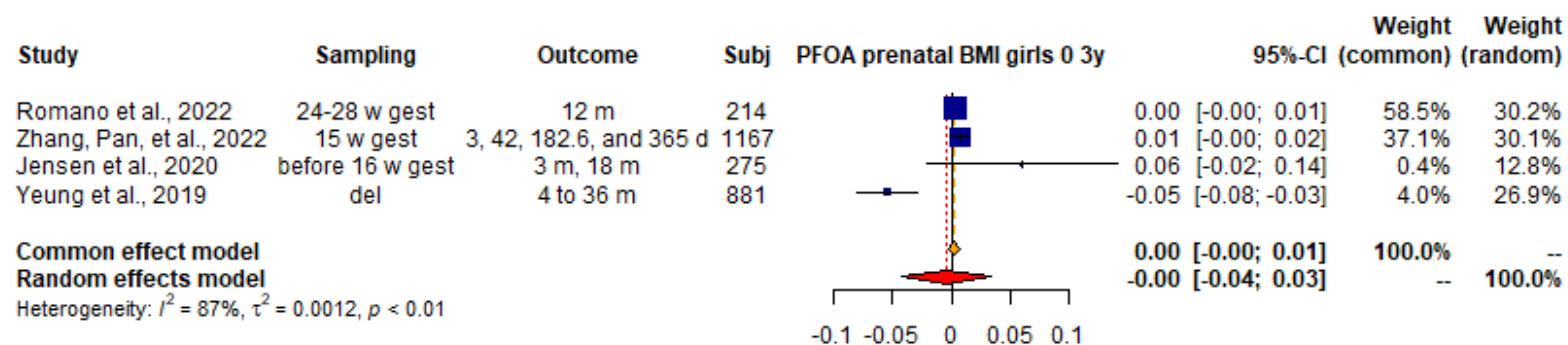
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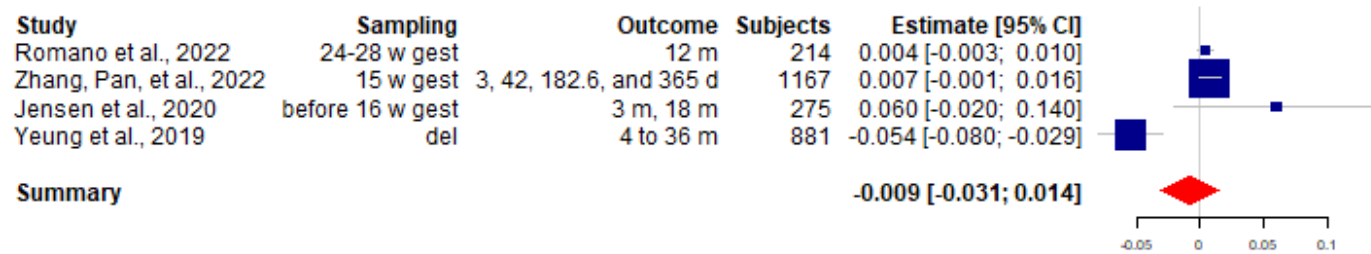
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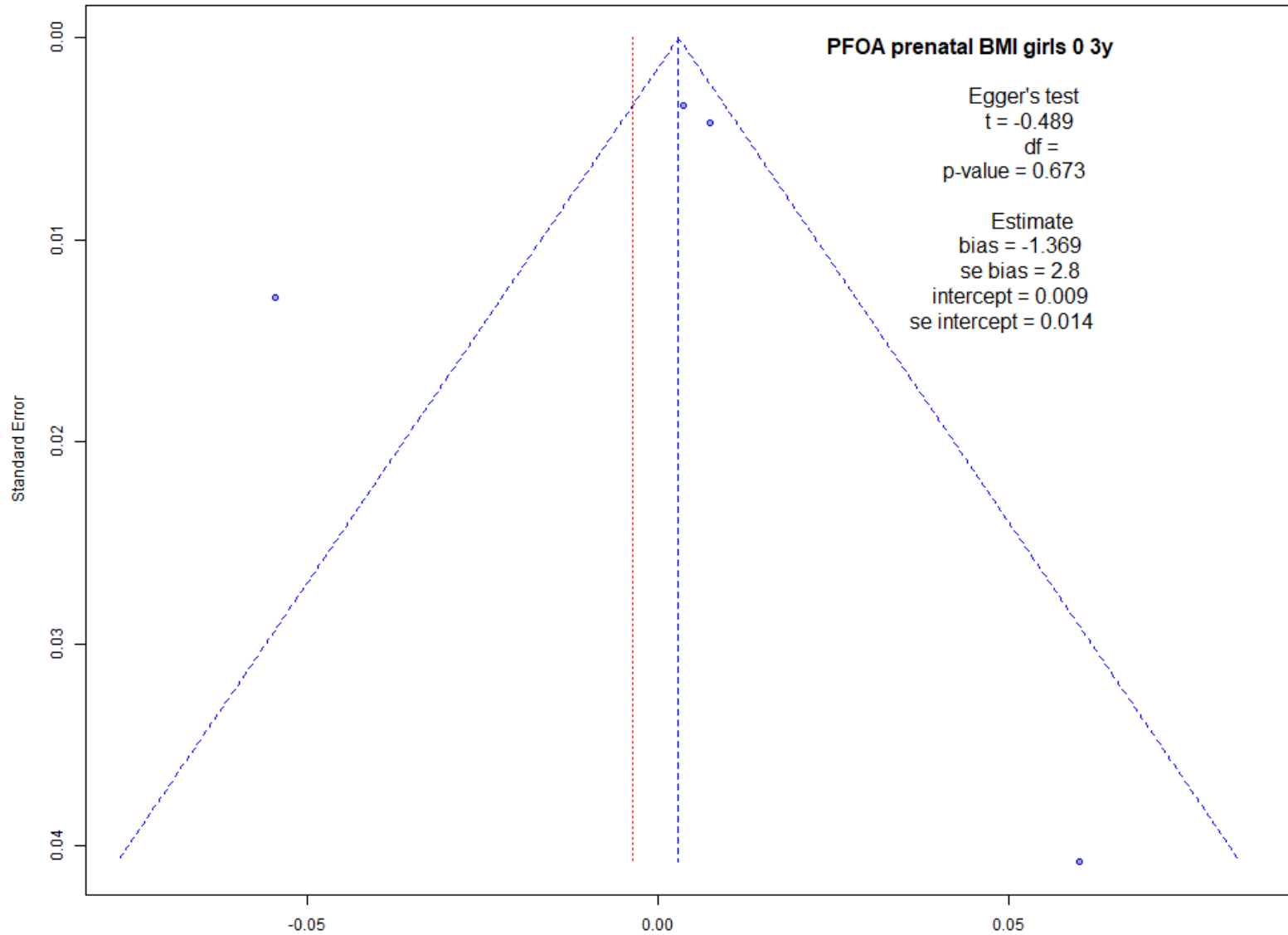
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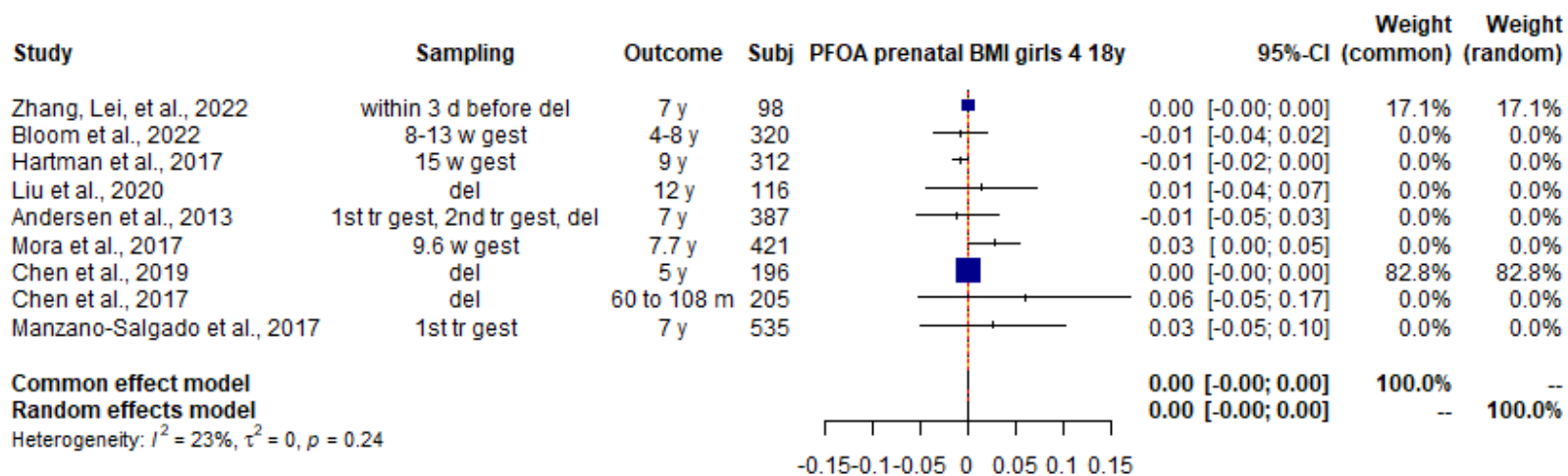
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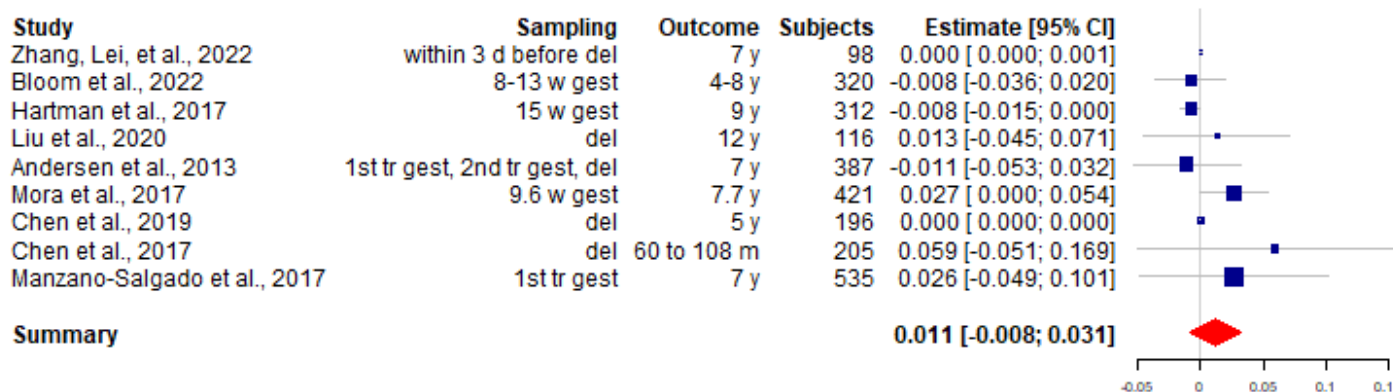
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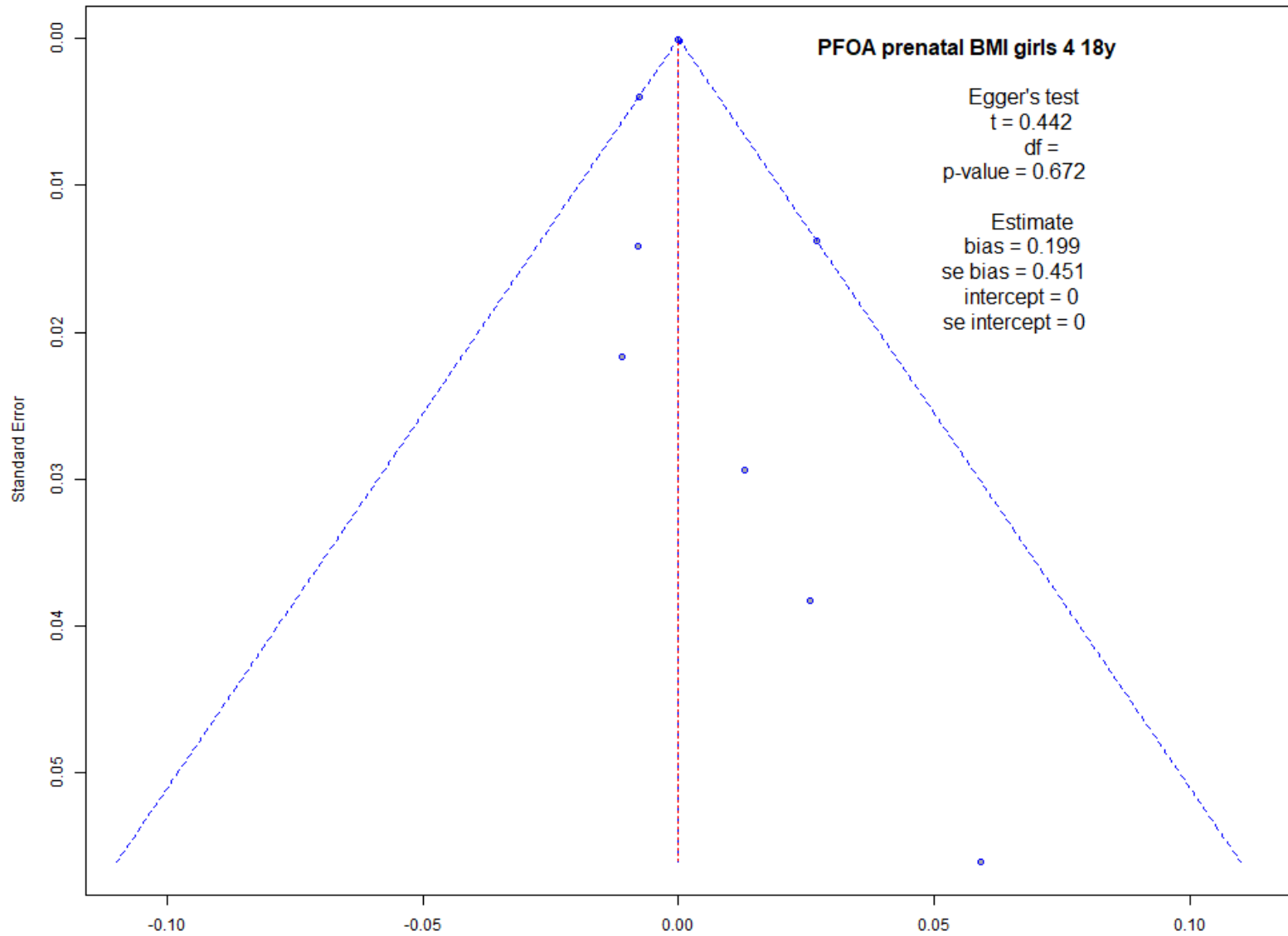
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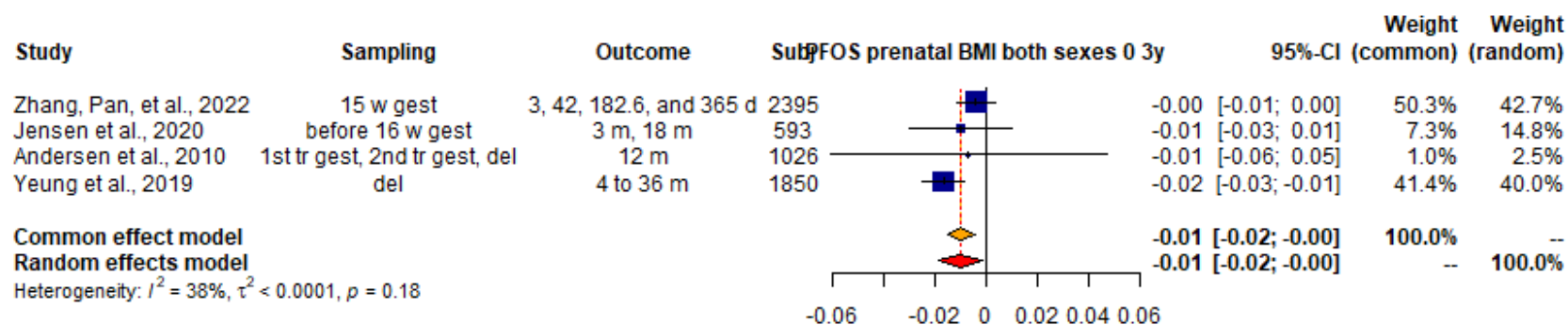
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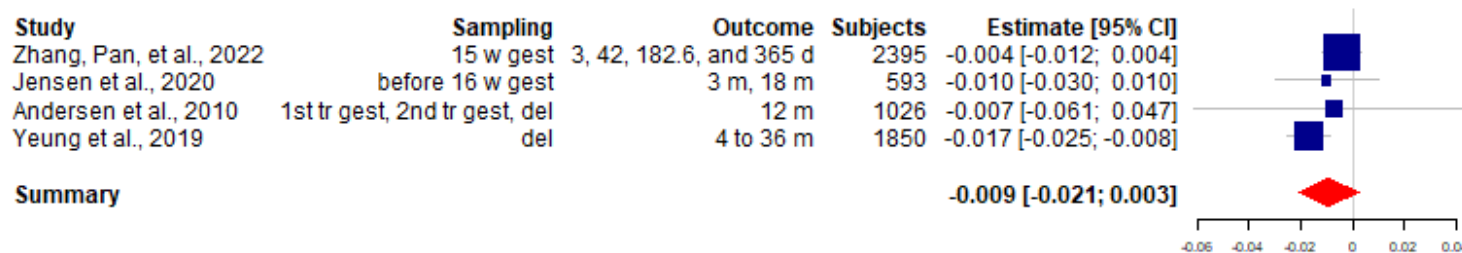
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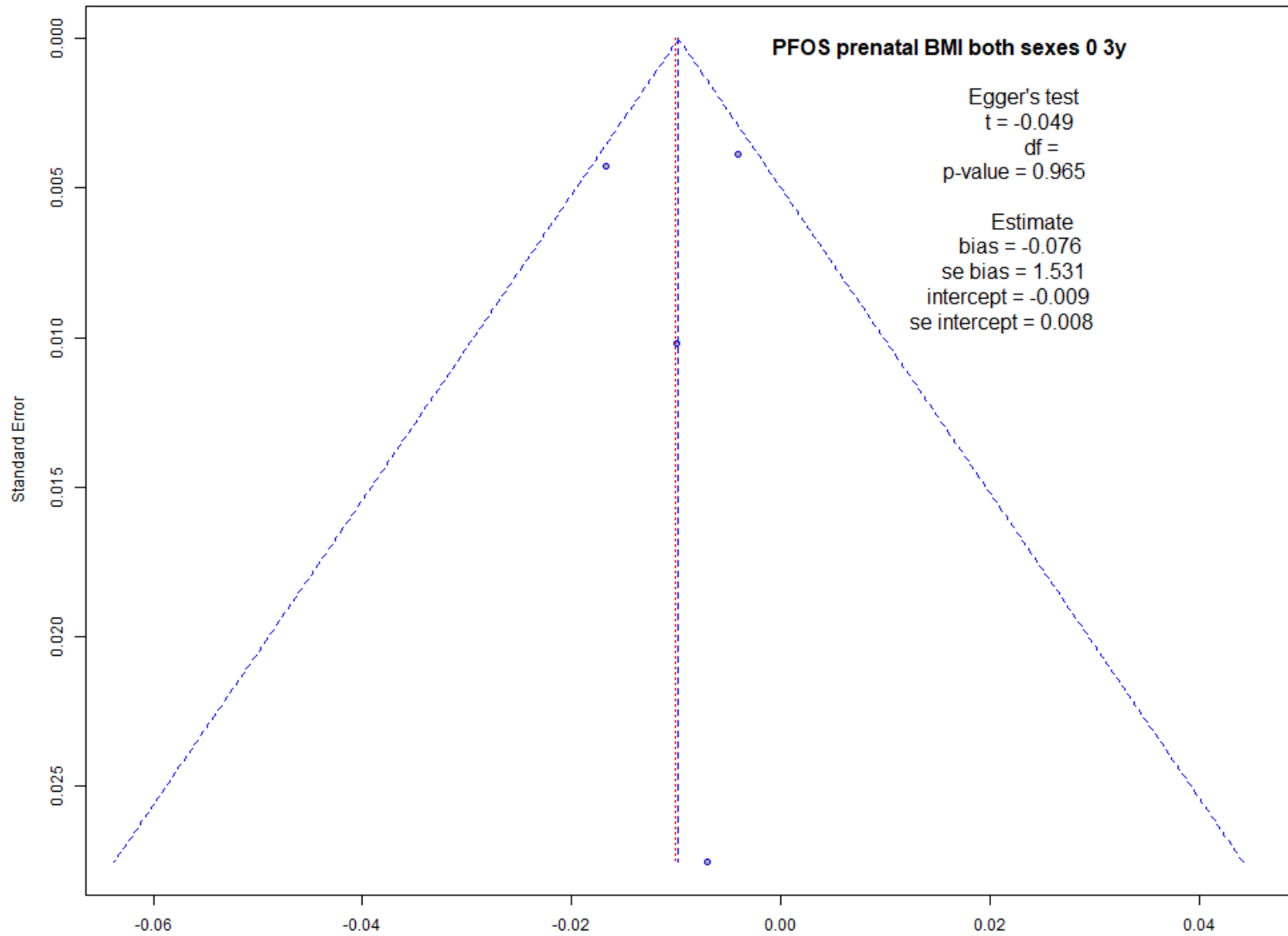
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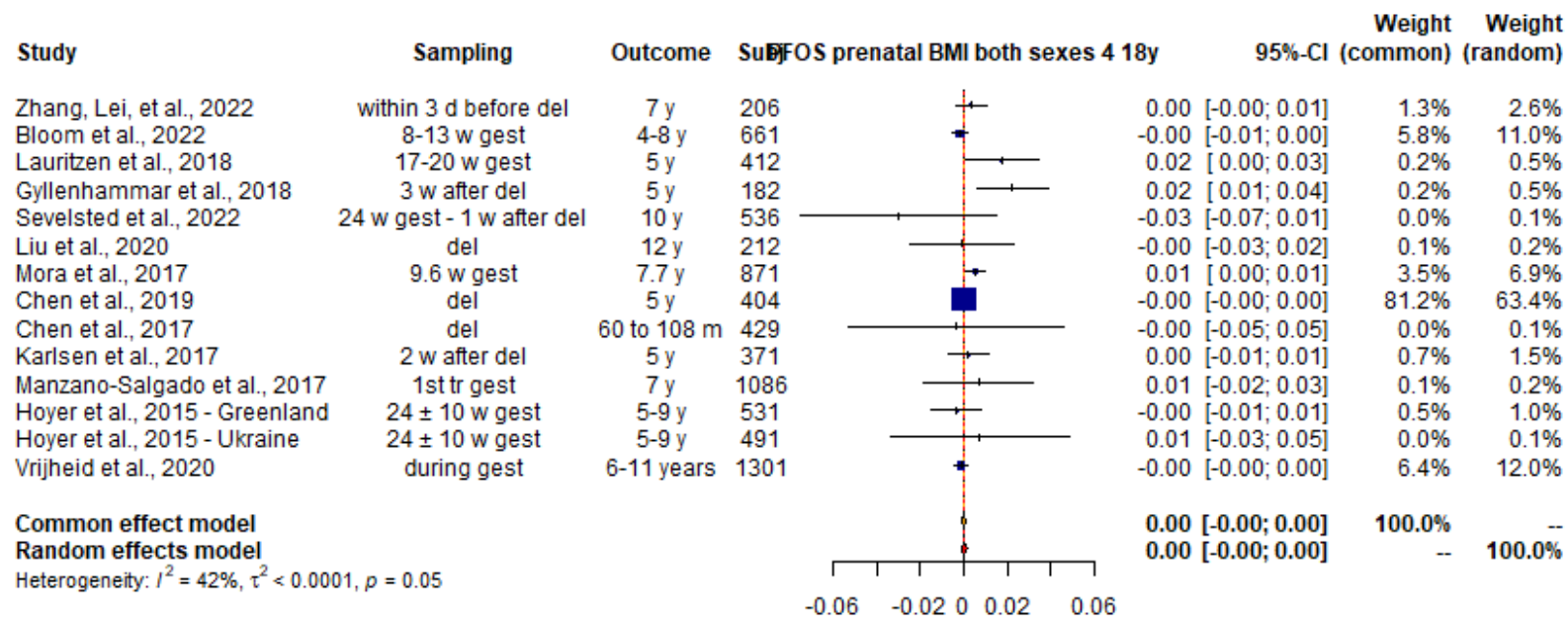
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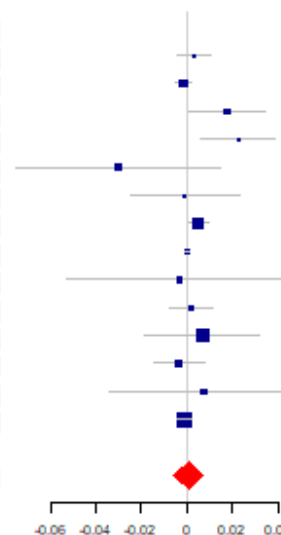
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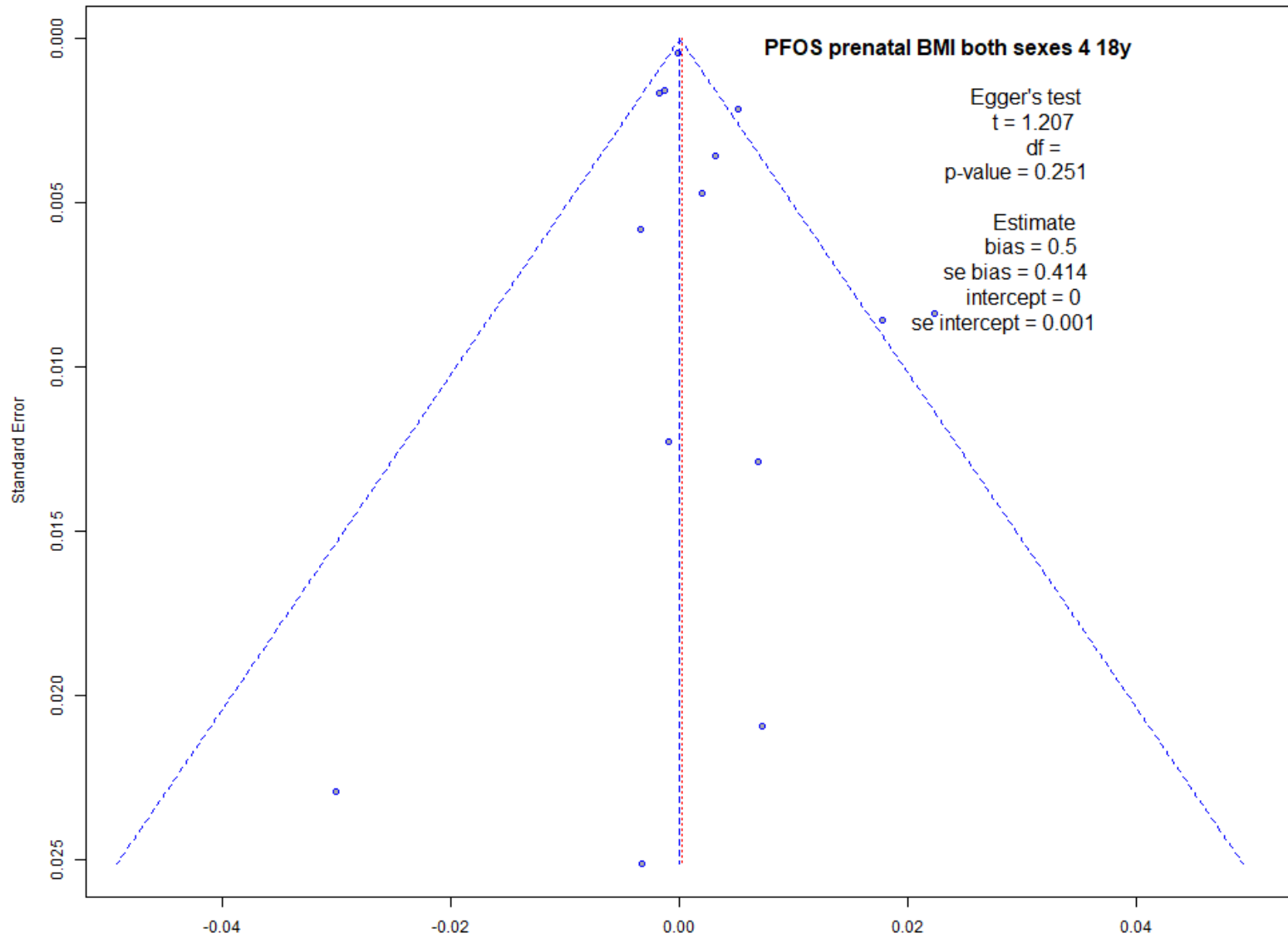
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Study	Sampling	Outcome	Subjects	Estimate [95% CI]
Zhang, Lei, et al., 2022	within 3 d before del	7 y	206	0.003 [-0.004; 0.010]
Bloom et al., 2022	8-13 w gest	4-8 y	661	-0.002 [-0.005; 0.001]
Lauritzen et al., 2018	17-20 w gest	5 y	412	0.018 [0.001; 0.035]
Gyllenhammar et al., 2018	3 w after del	5 y	182	0.022 [0.006; 0.039]
Sevelsted et al., 2022	24 w gest - 1 w after del	10 y	536	-0.030 [-0.075; 0.015]
Liu et al., 2020	del	12 y	212	-0.001 [-0.025; 0.023]
Mora et al., 2017	9.6 w gest	7.7 y	871	0.005 [0.001; 0.009]
Chen et al., 2019	del	5 y	404	0.000 [-0.001; 0.001]
Chen et al., 2017	del	60 to 108 m	429	-0.003 [-0.053; 0.046]
Karlsen et al., 2017	2 w after del	5 y	371	0.002 [-0.007; 0.011]
Manzano-Salgado et al., 2017	1st tr gest	7 y	1086	0.007 [-0.018; 0.032]
Hoyer et al., 2015 - Greenland	24 ± 10 w gest	5-9 y	531	-0.003 [-0.015; 0.008]
Hoyer et al., 2015 - Ukraine	24 ± 10 w gest	5-9 y	491	0.007 [-0.034; 0.048]
Vrijheid et al., 2020	during gest	6-11 years	1301	-0.001 [-0.004; 0.002]
Summary				0.001 [-0.006; 0.007]



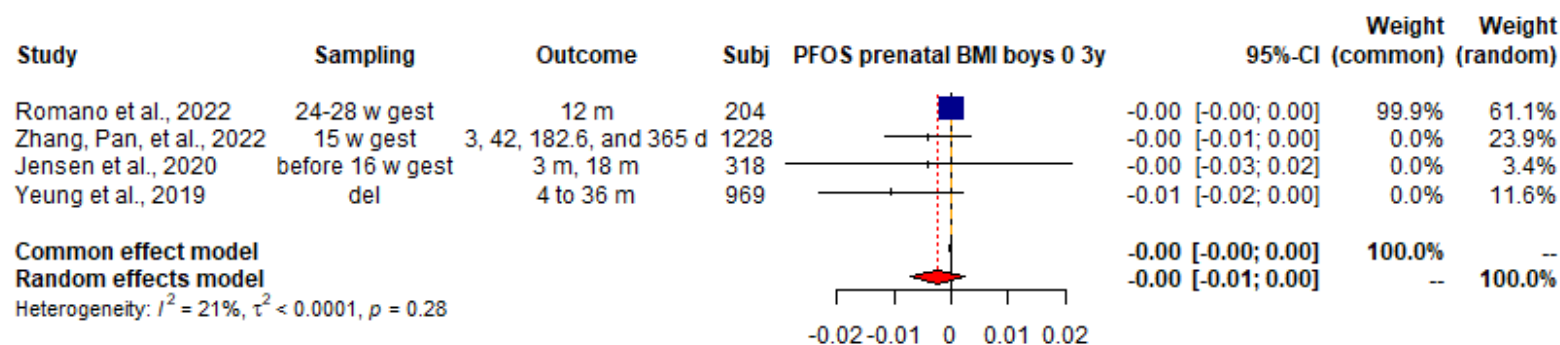
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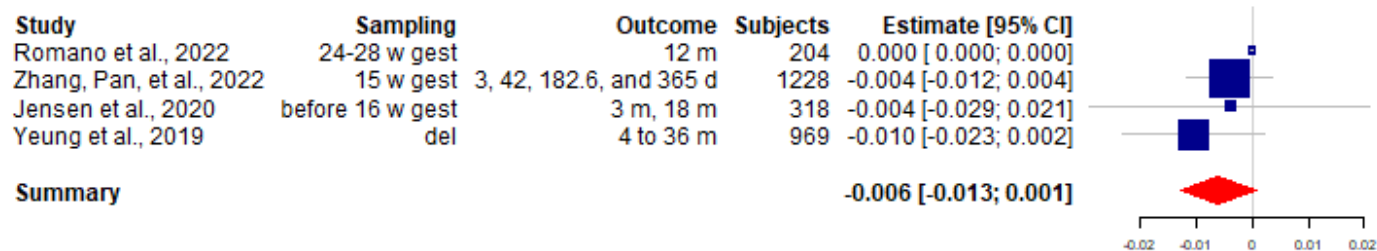
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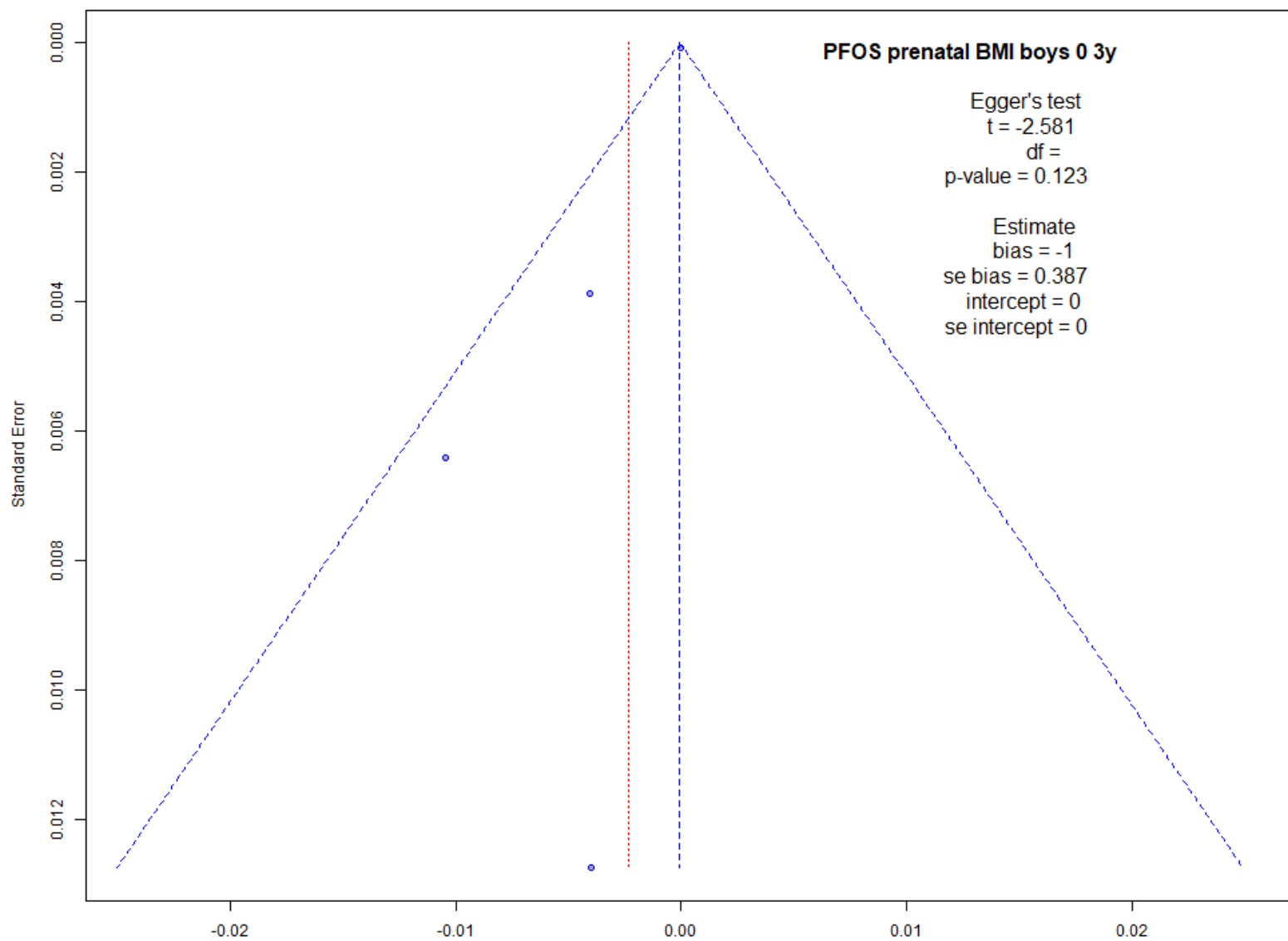
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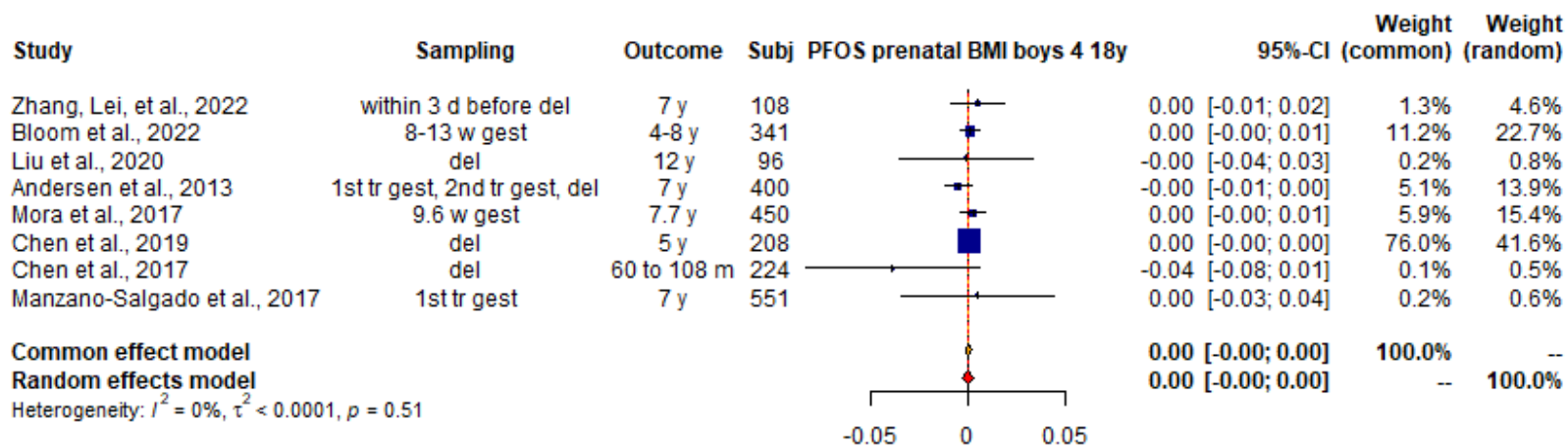
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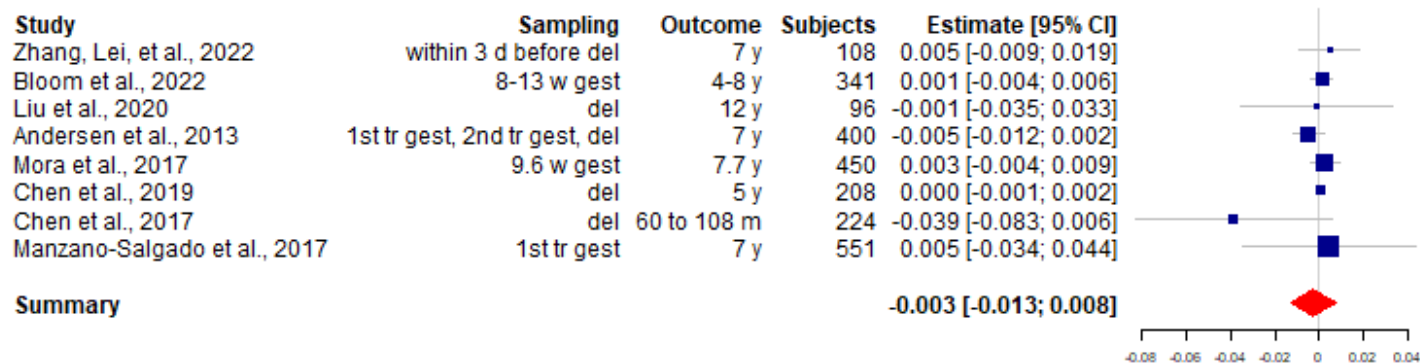
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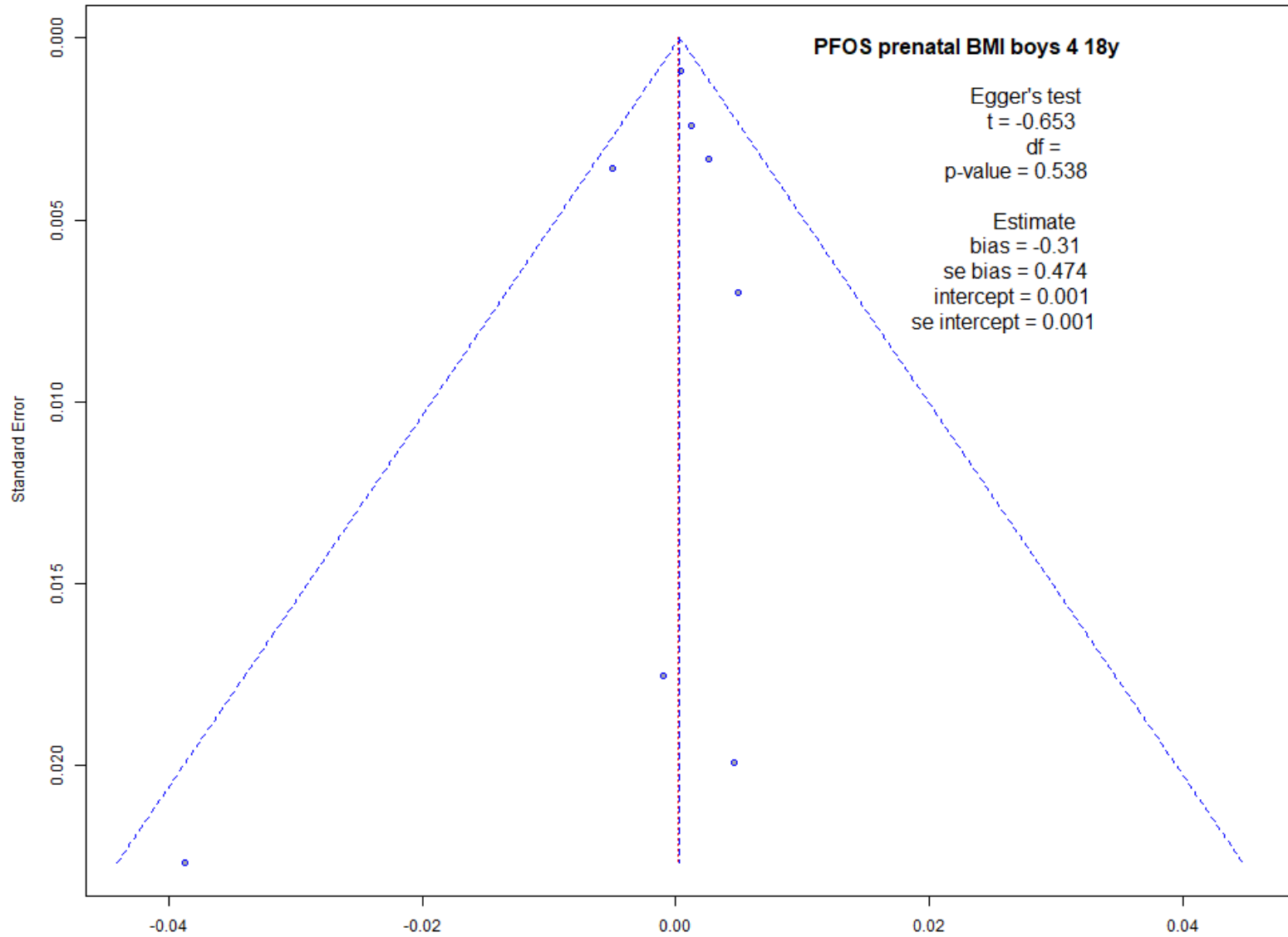
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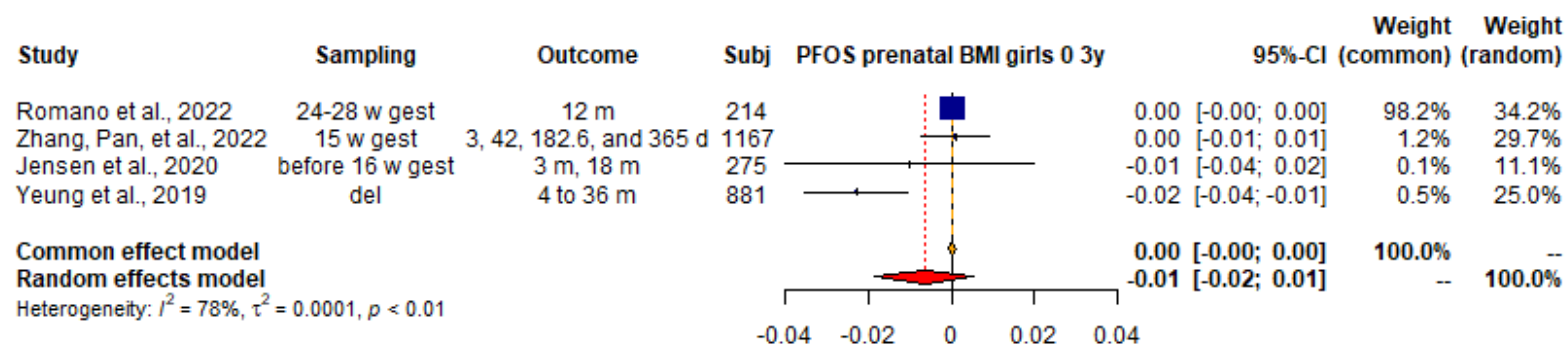
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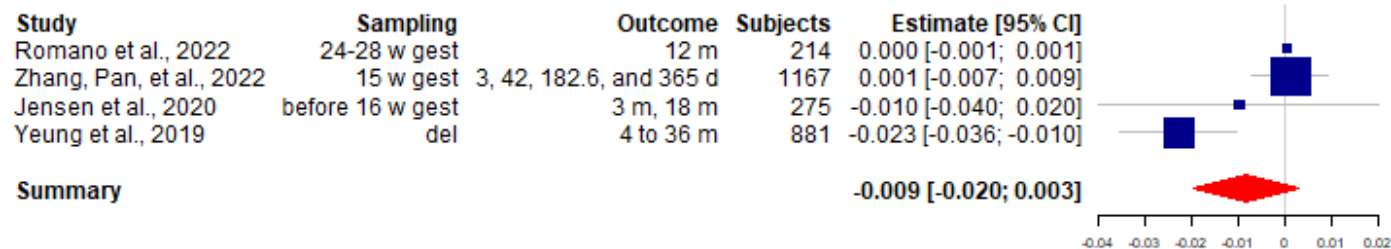
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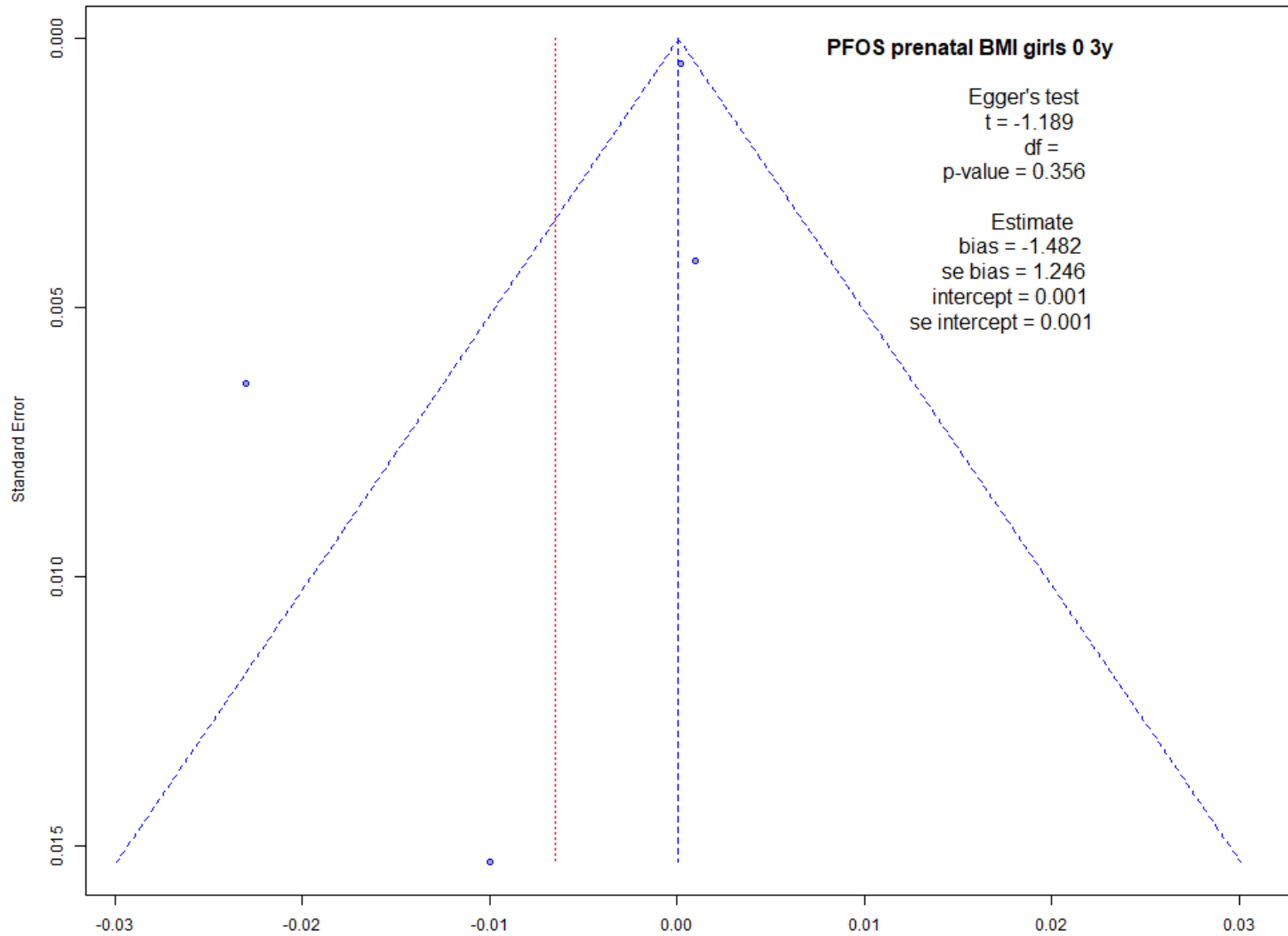
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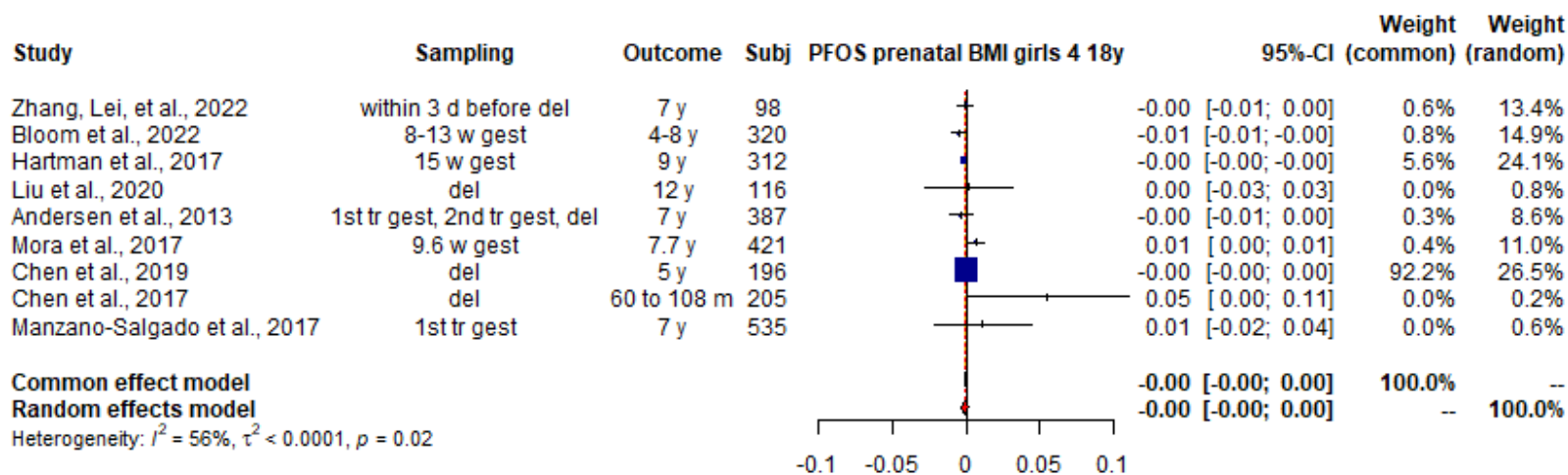
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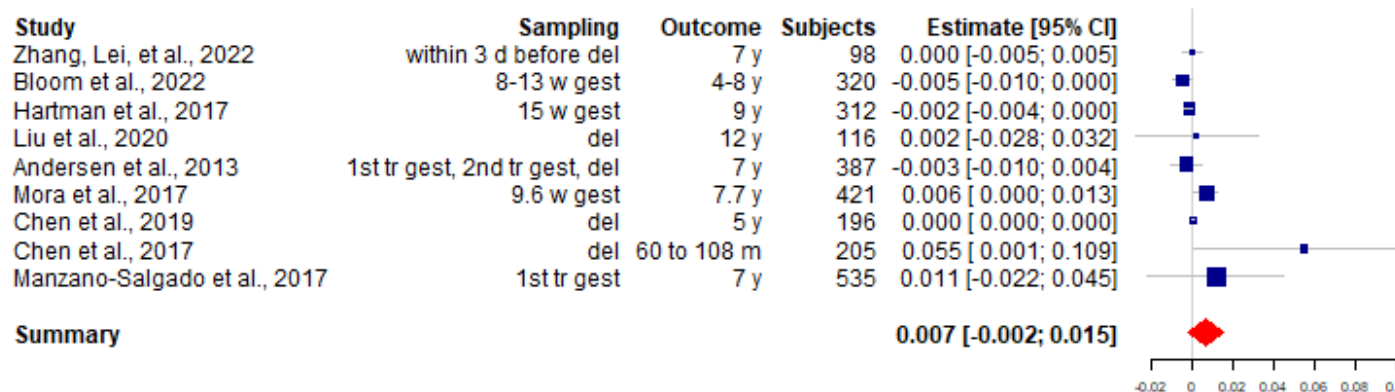
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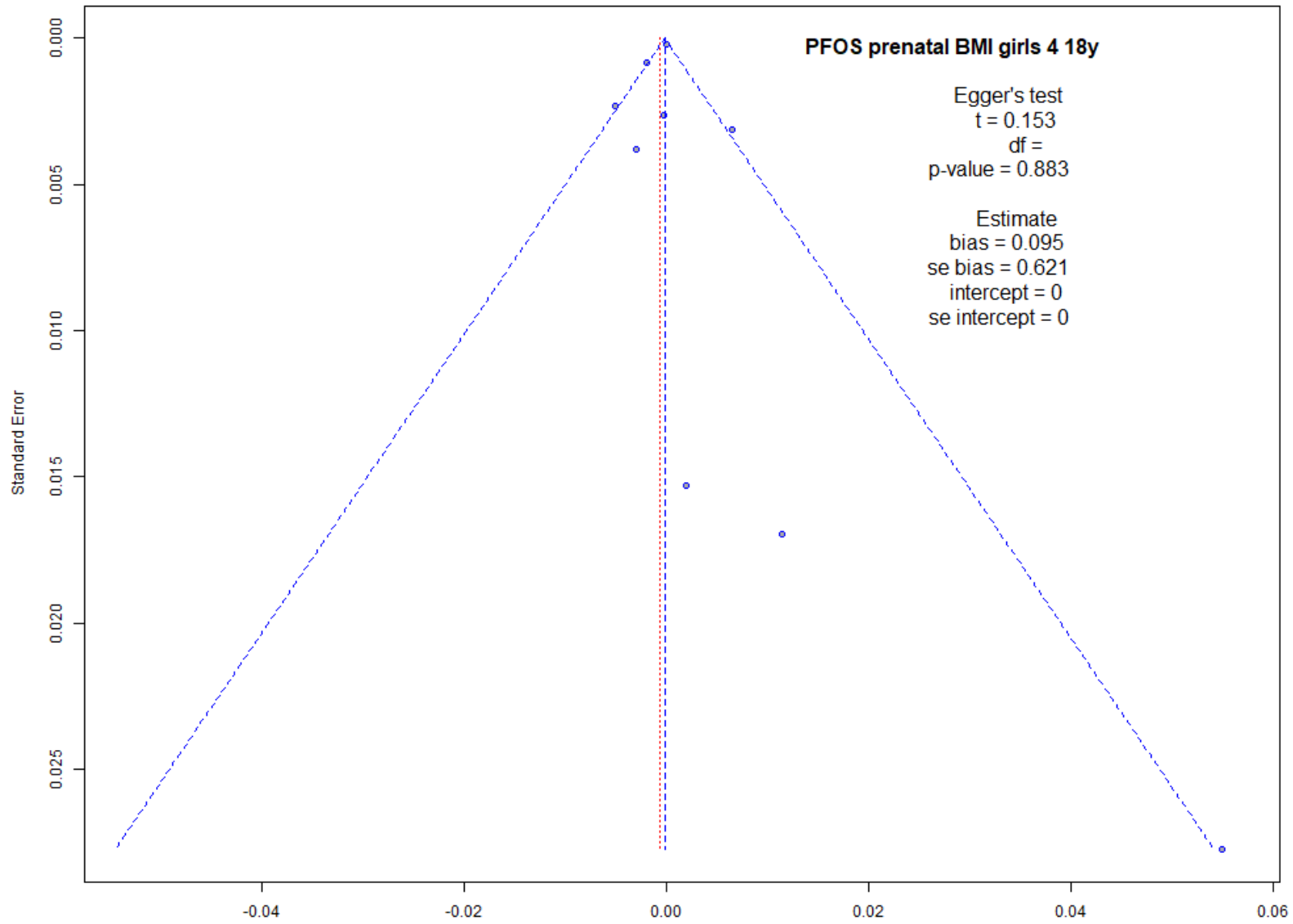
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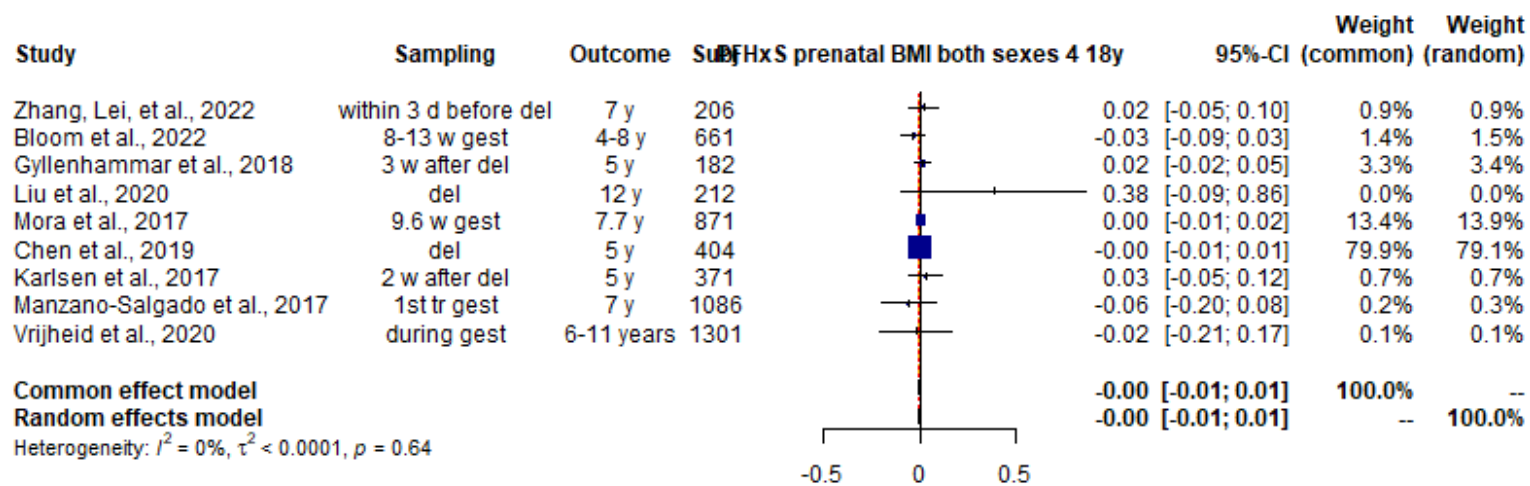
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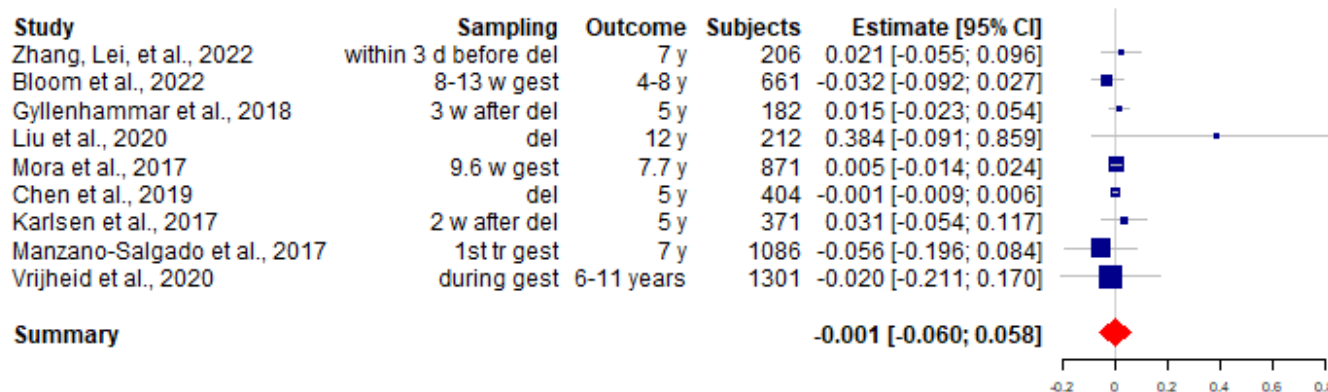
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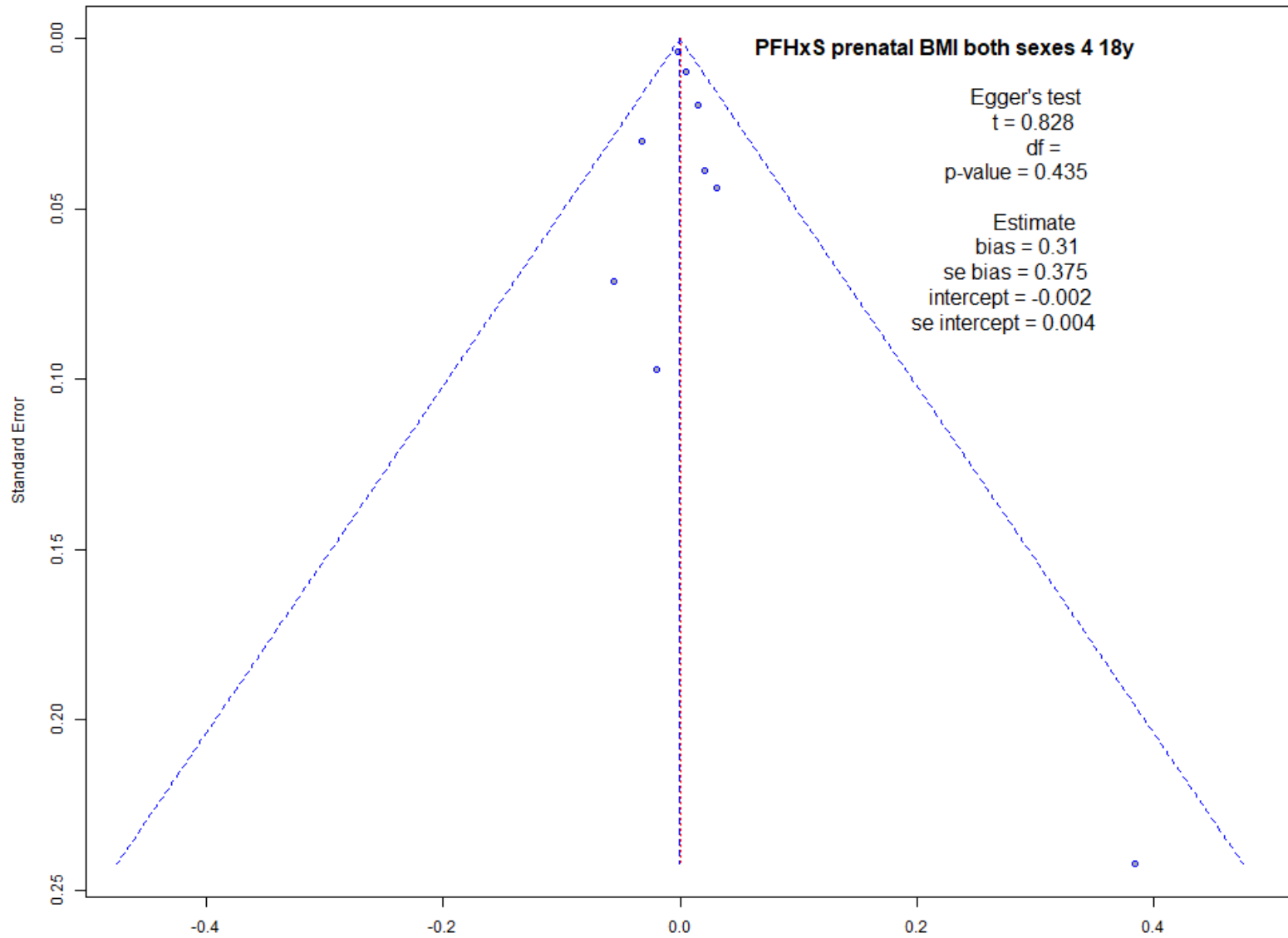
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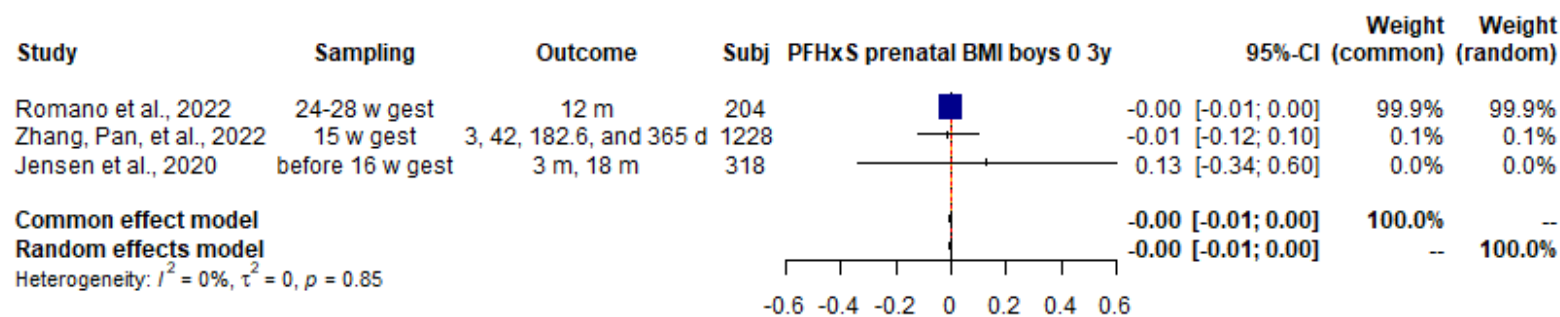
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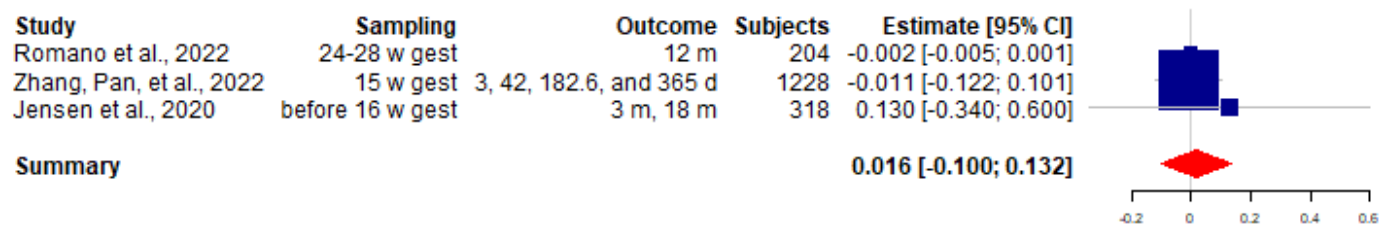
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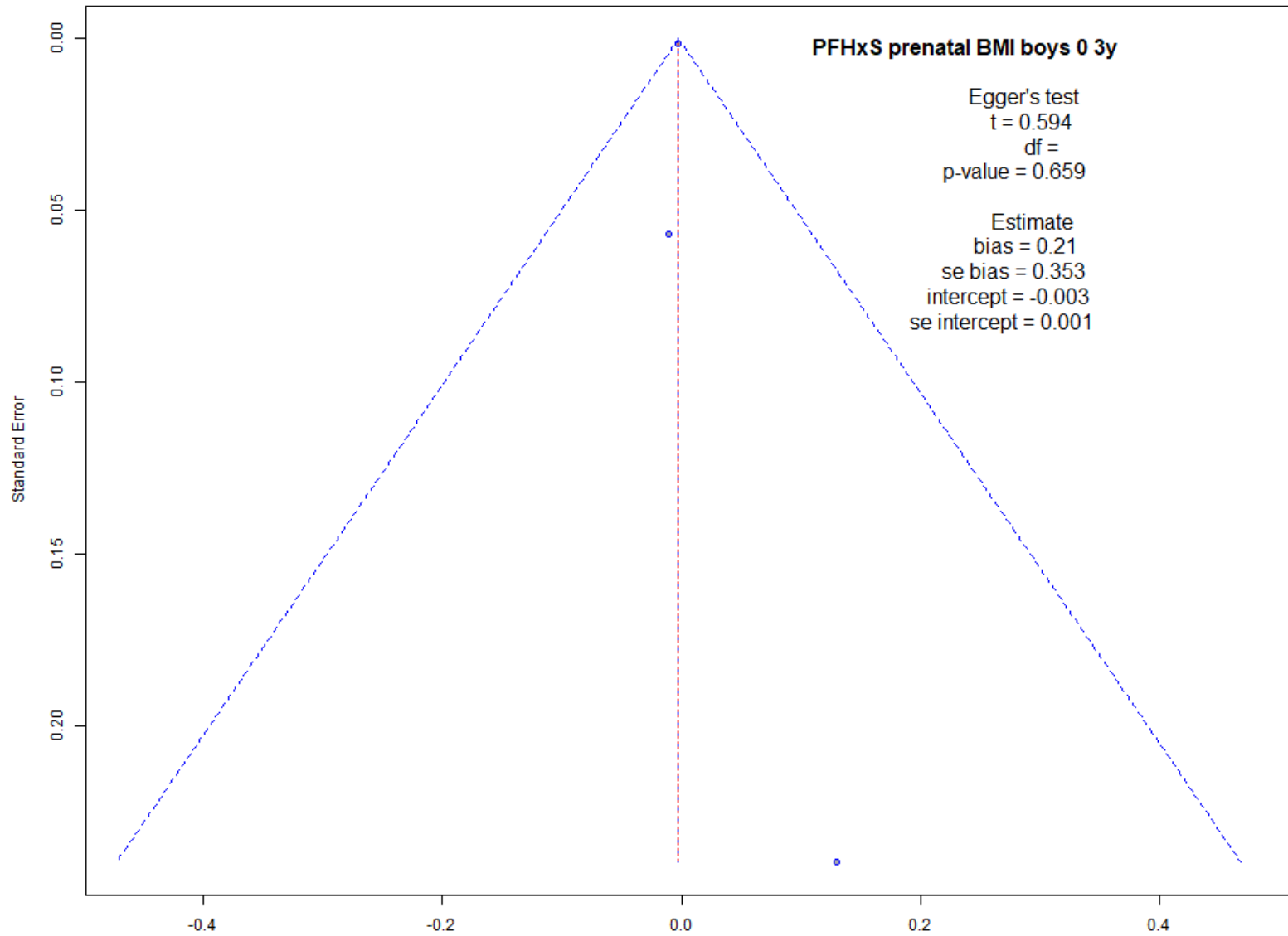
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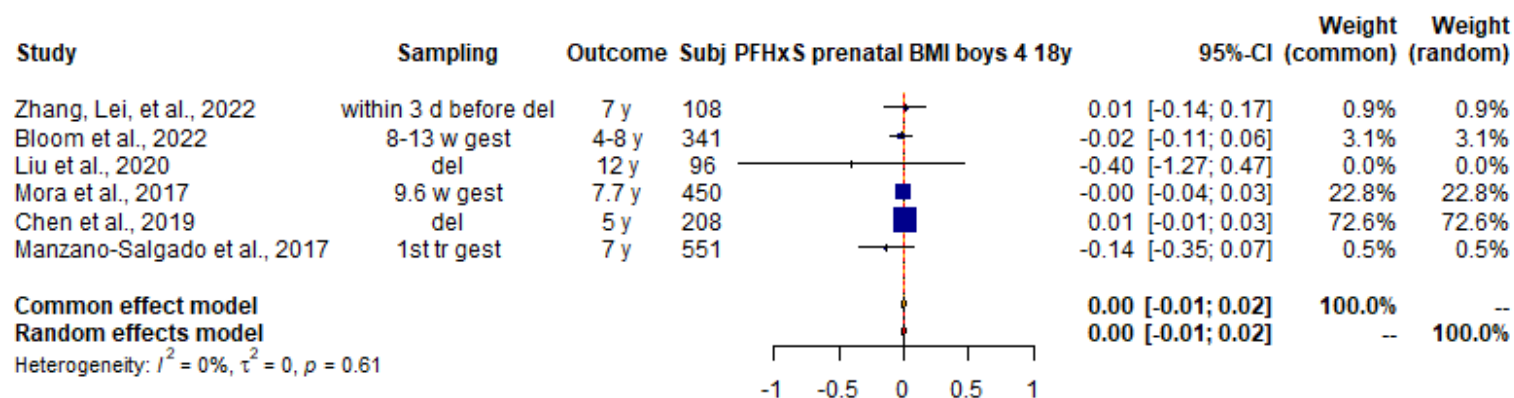
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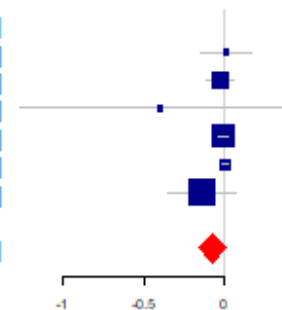
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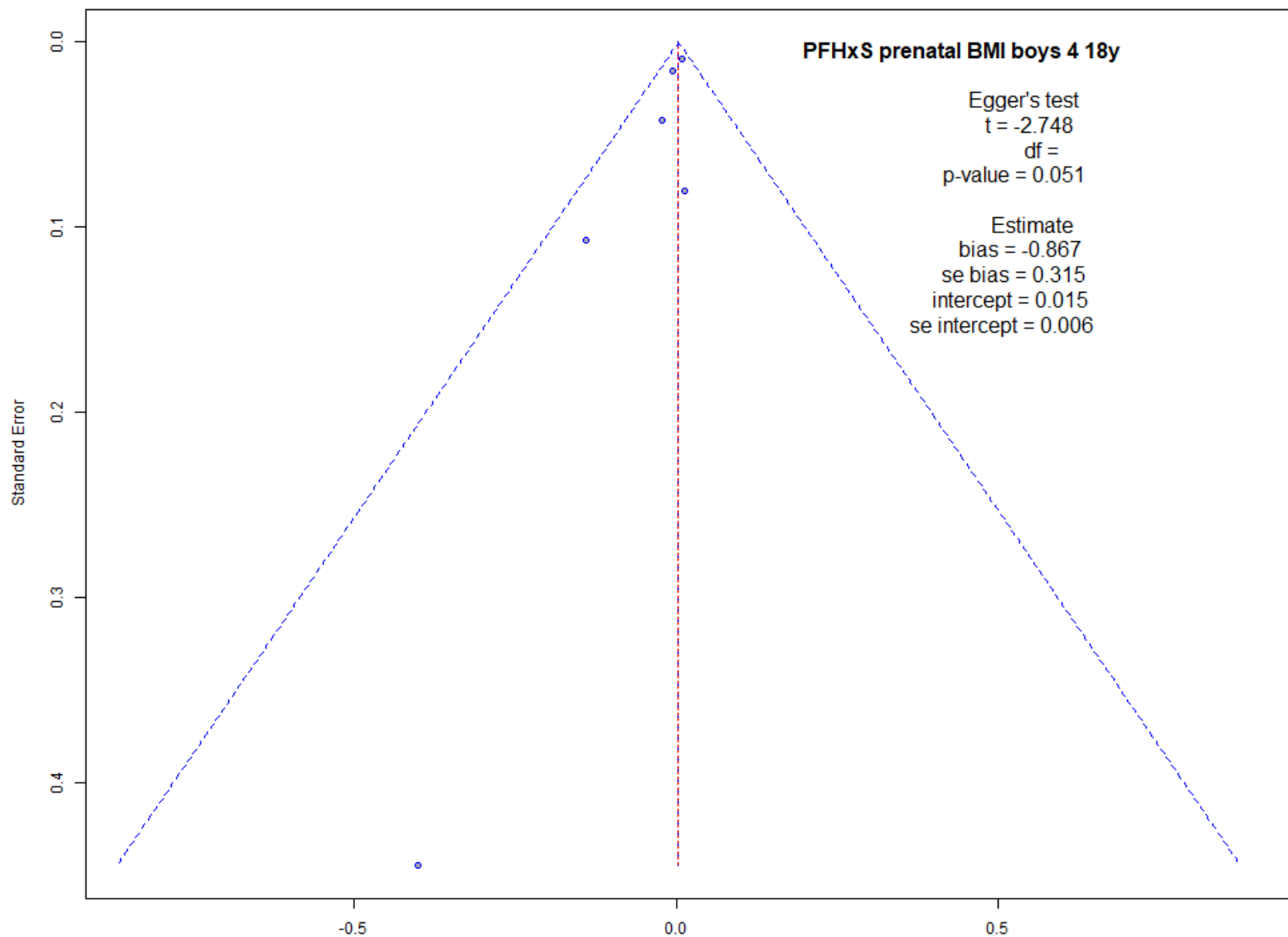
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Study	Sampling	Outcome	Subjects	Estimate [95% CI]
Zhang, Lei, et al., 2022	within 3 d before del	7 y	108	0.014 [-0.143; 0.172]
Bloom et al., 2022	8-13 w gest	4-8 y	341	-0.022 [-0.105; 0.062]
Liu et al., 2020	del	12 y	96	-0.401 [-1.274; 0.472]
Mora et al., 2017	9.6 w gest	7.7 y	450	-0.005 [-0.036; 0.026]
Chen et al., 2019	del	5 y	208	0.009 [-0.008; 0.026]
Manzano-Salgado et al., 2017	1st tr gest	7 y	551	-0.140 [-0.350; 0.070]
Summary				-0.069 [-0.153; 0.015]



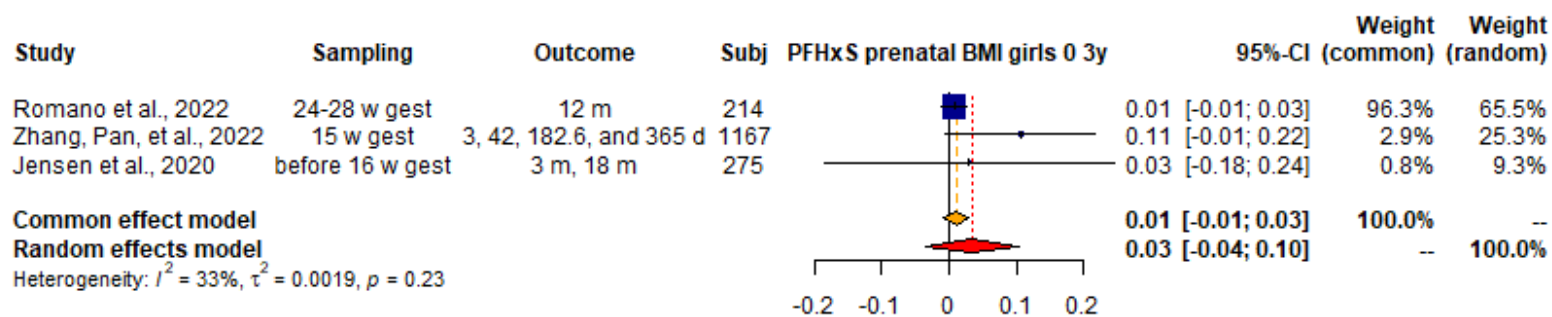
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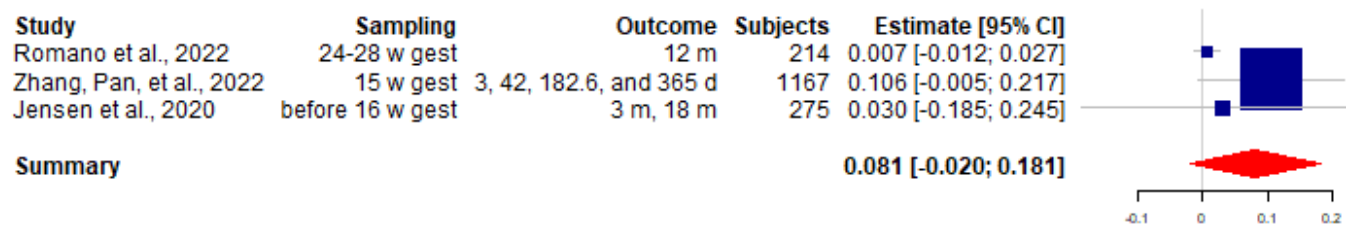
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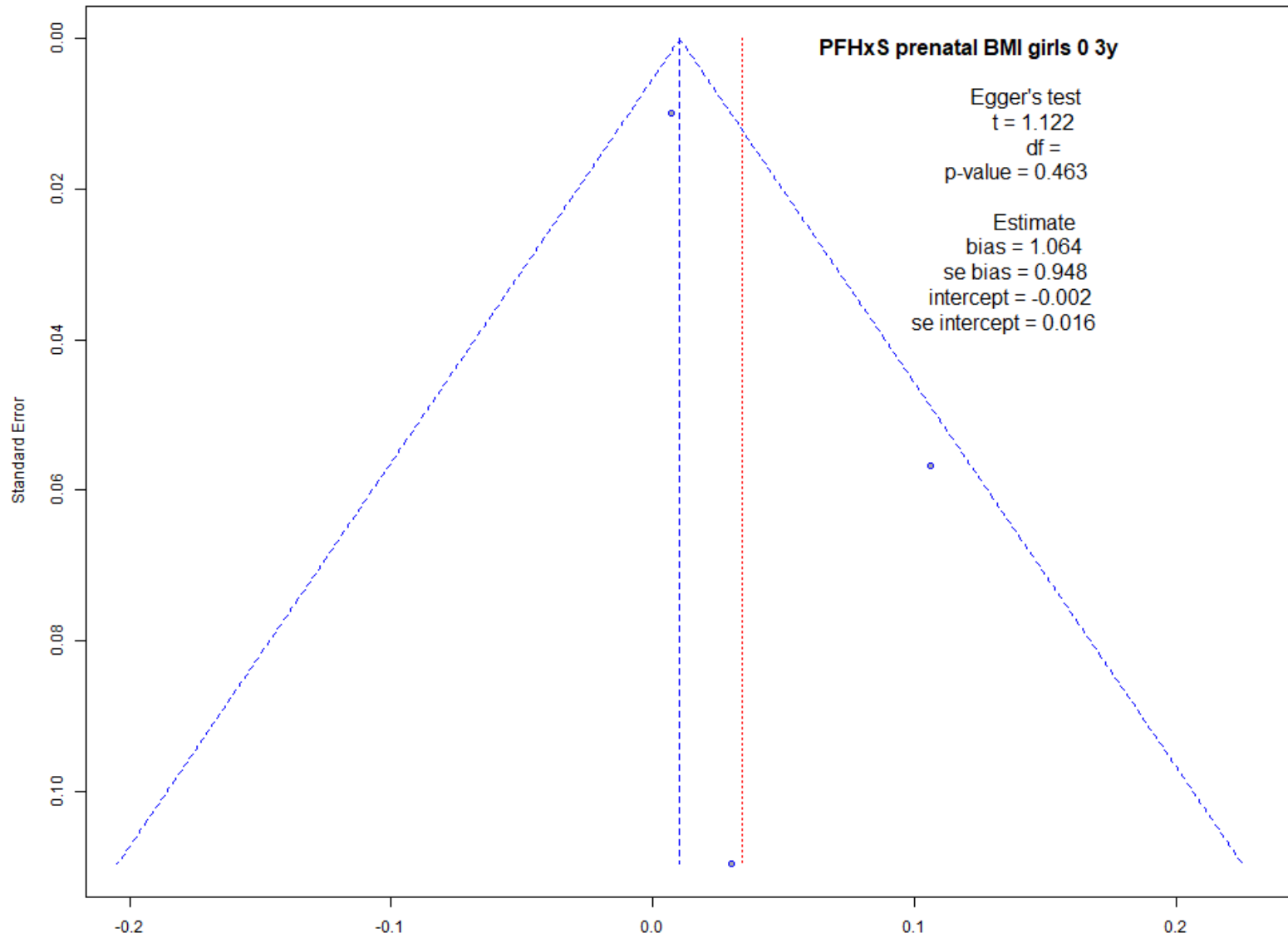
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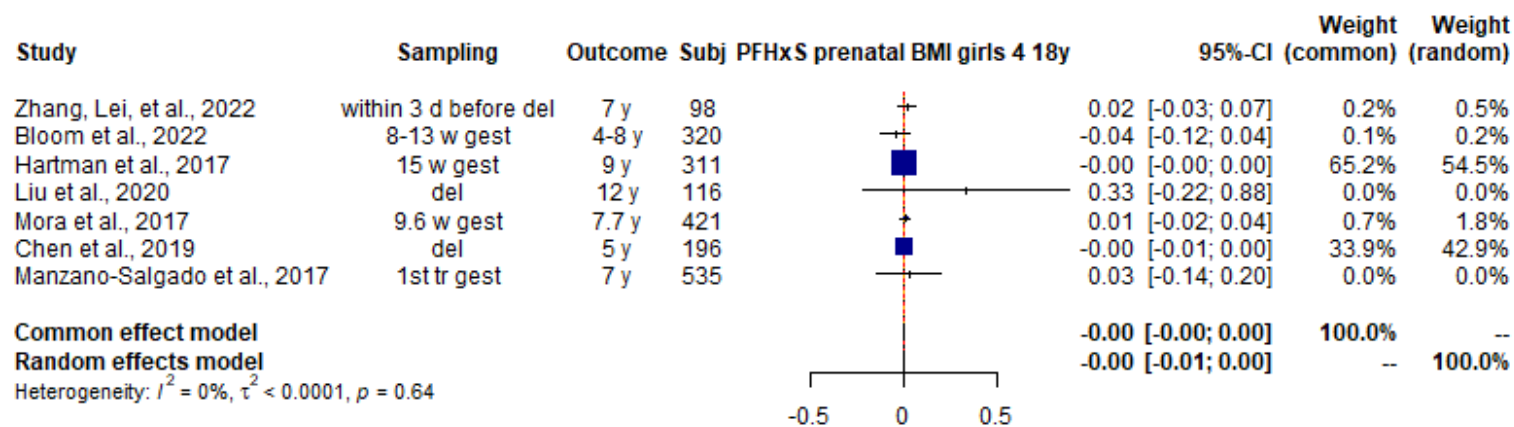
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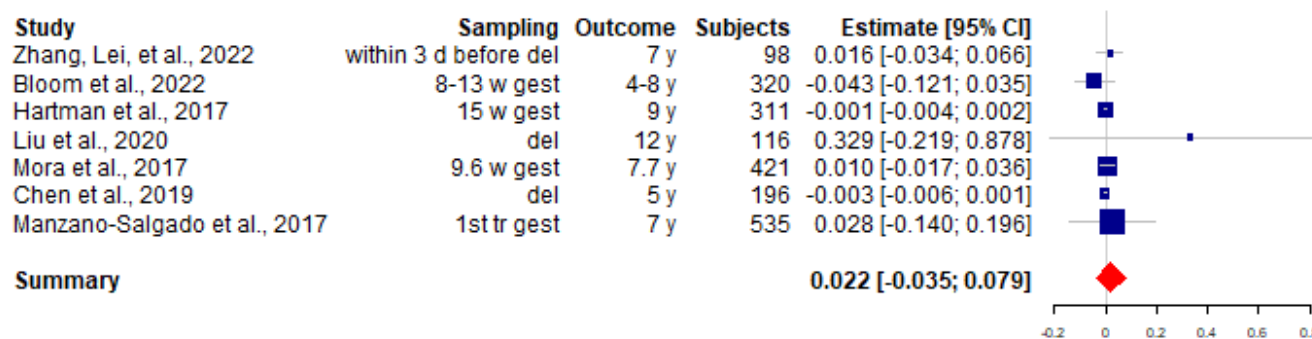
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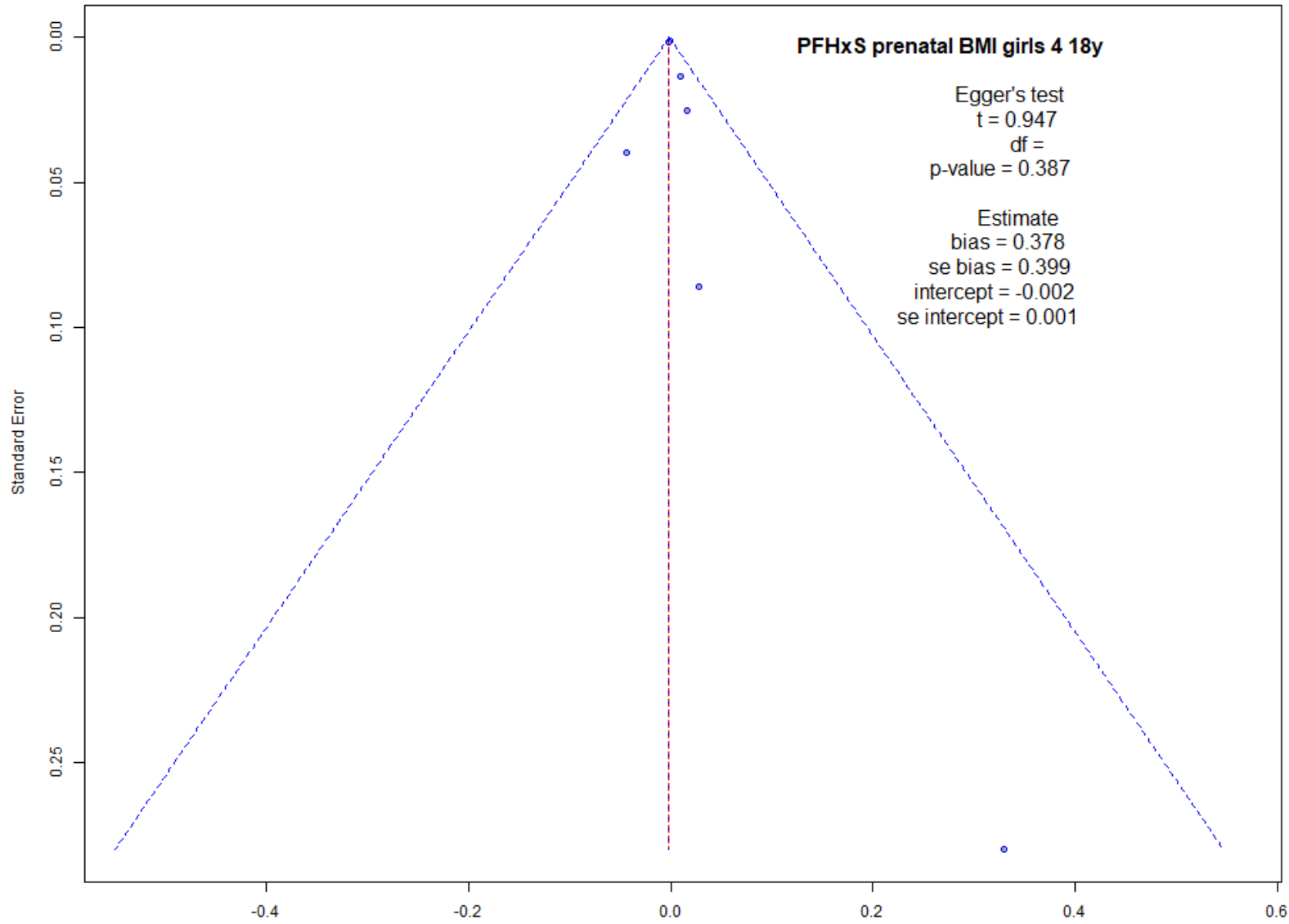
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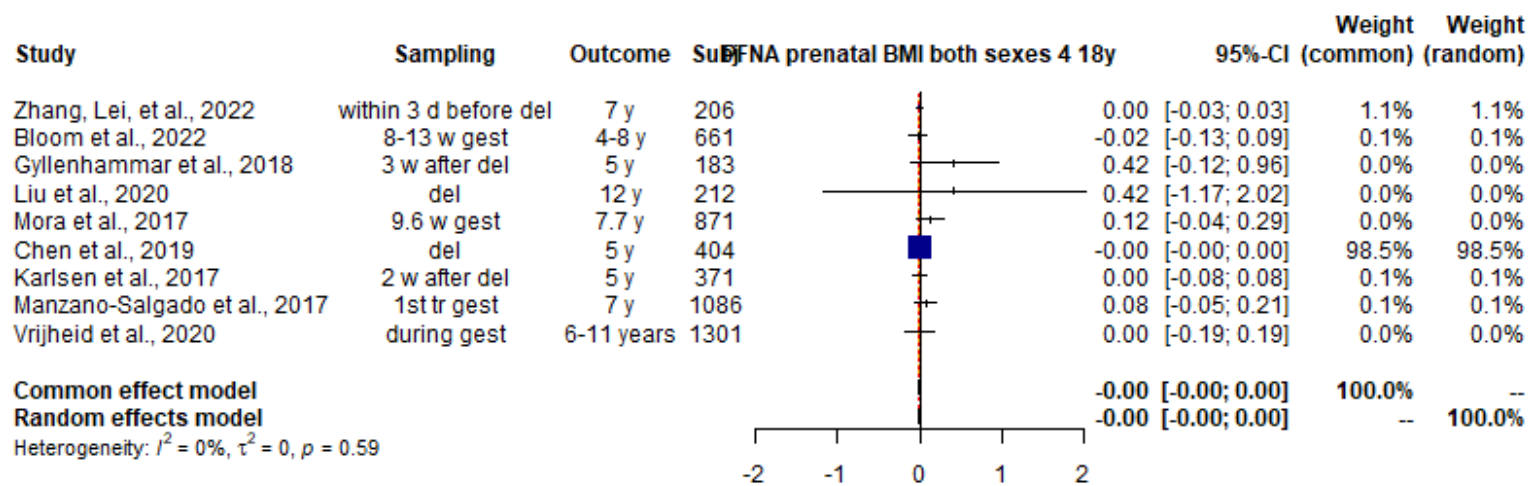
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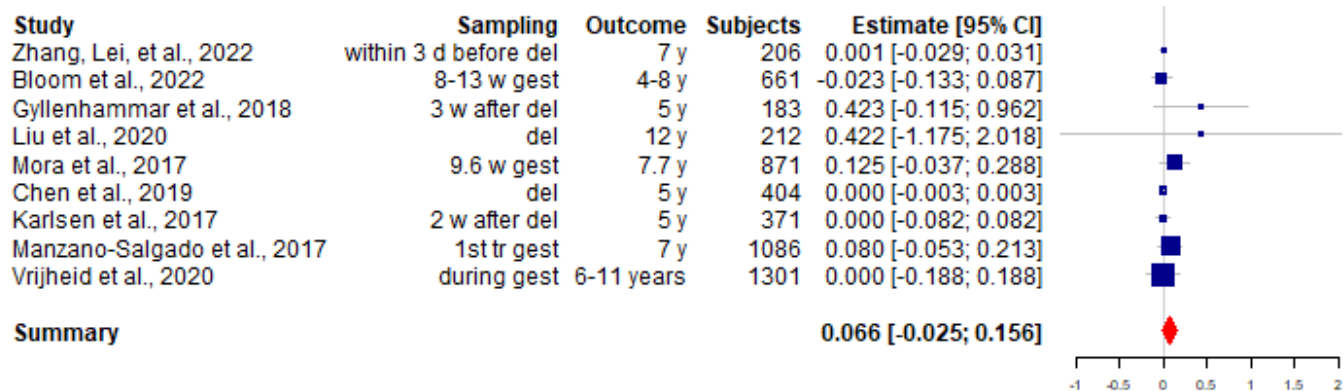
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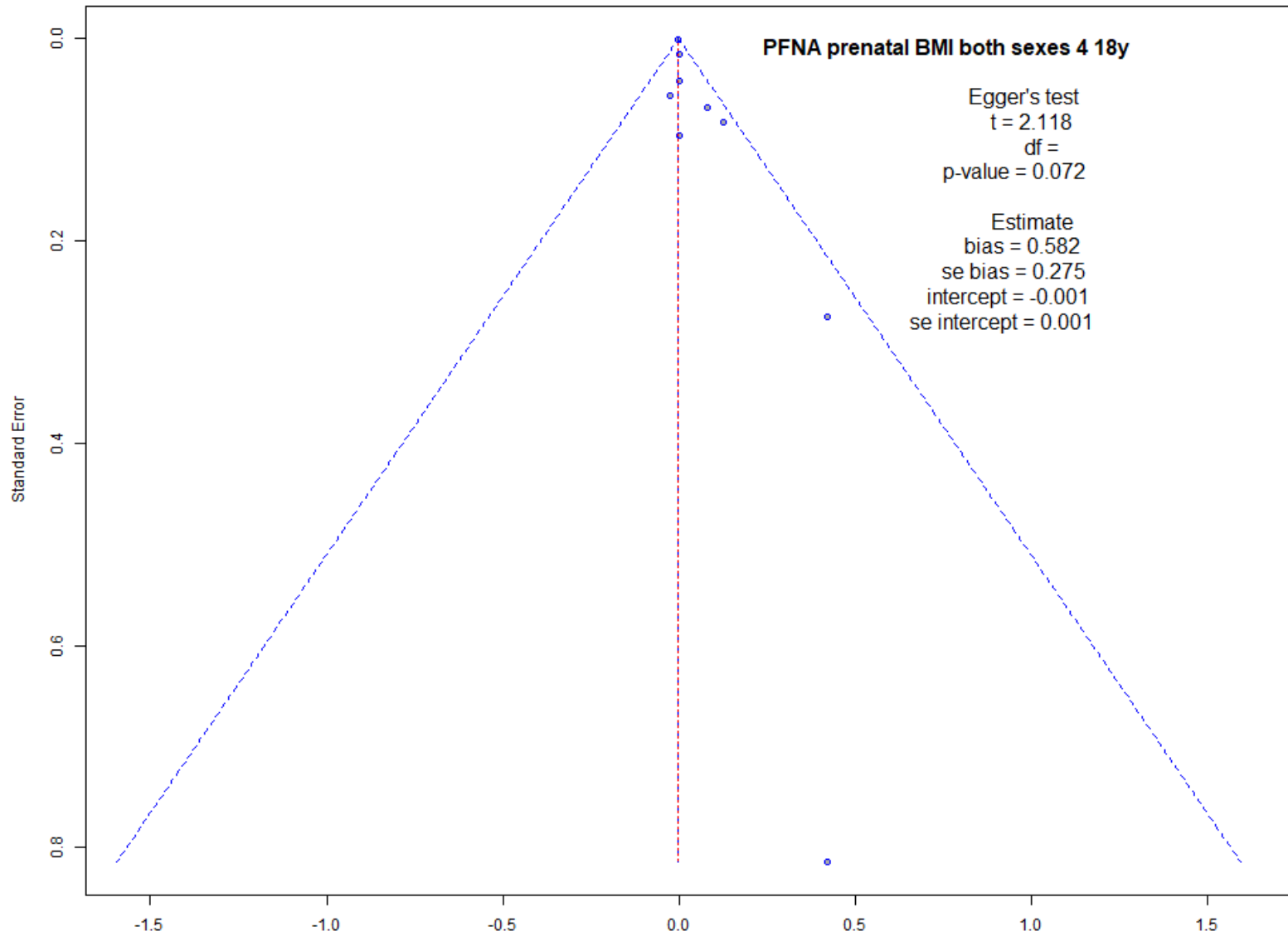
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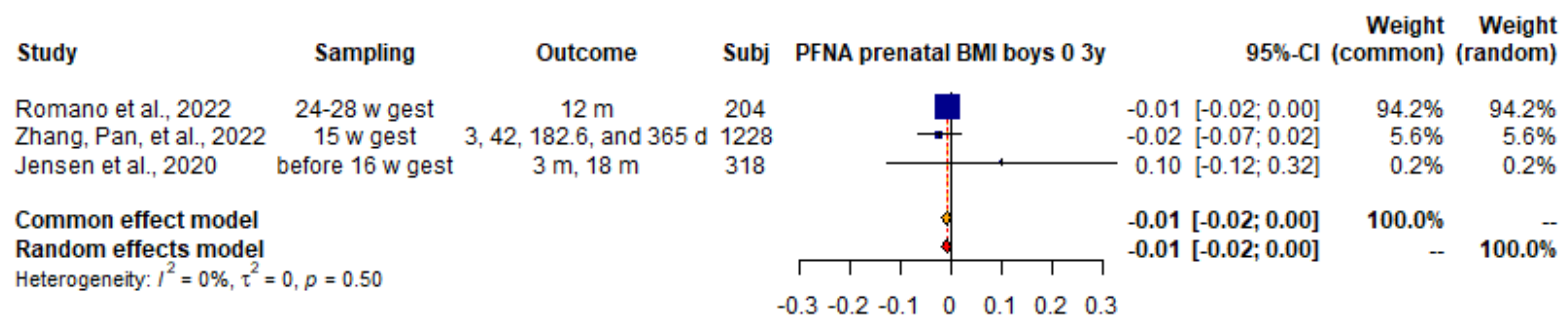
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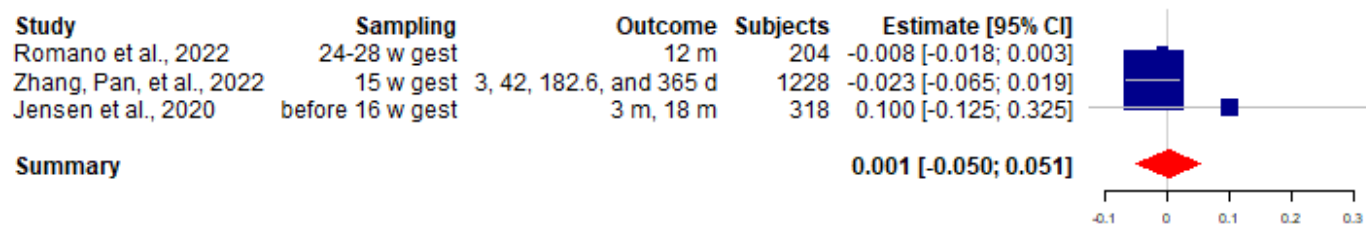
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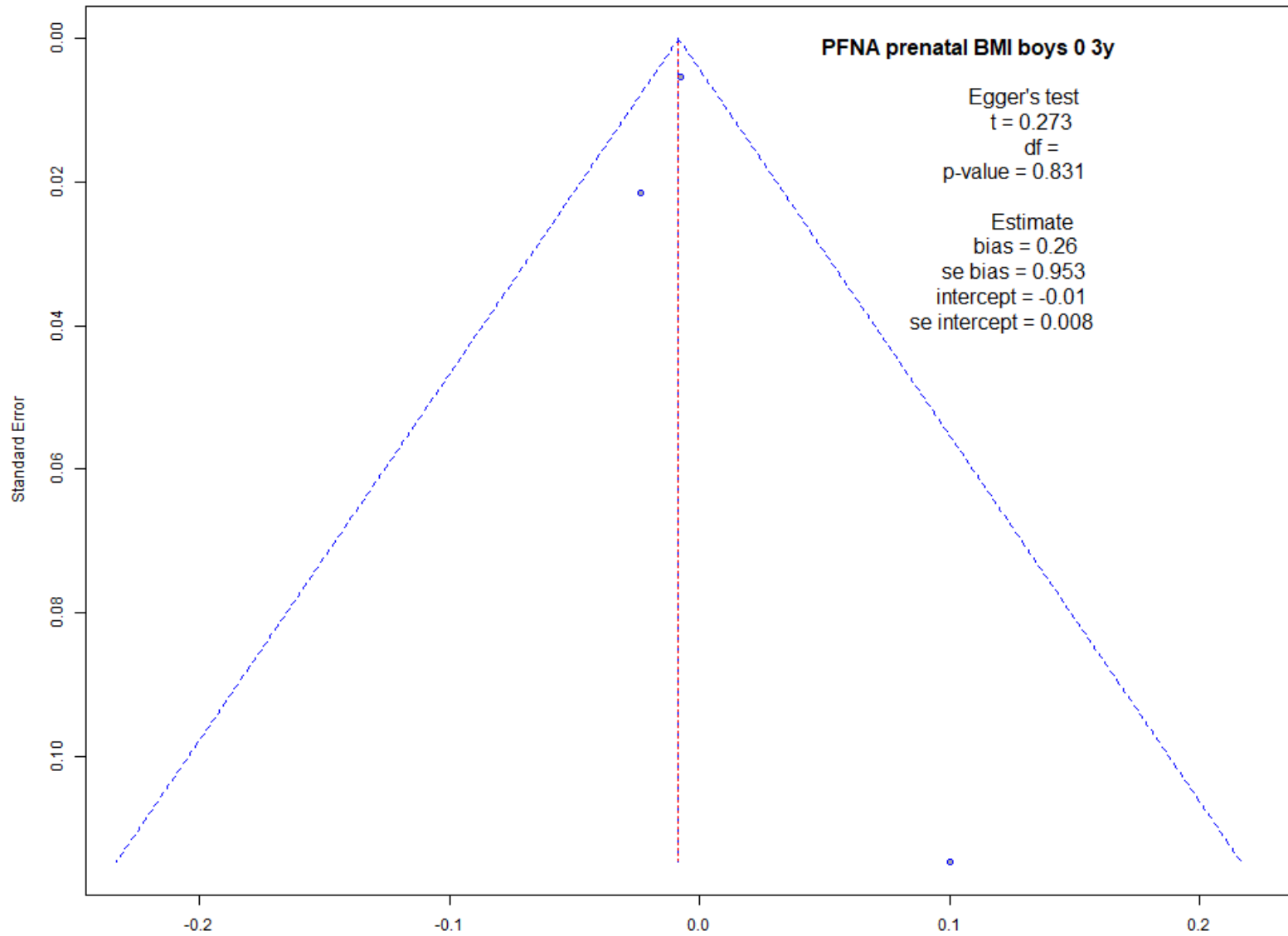
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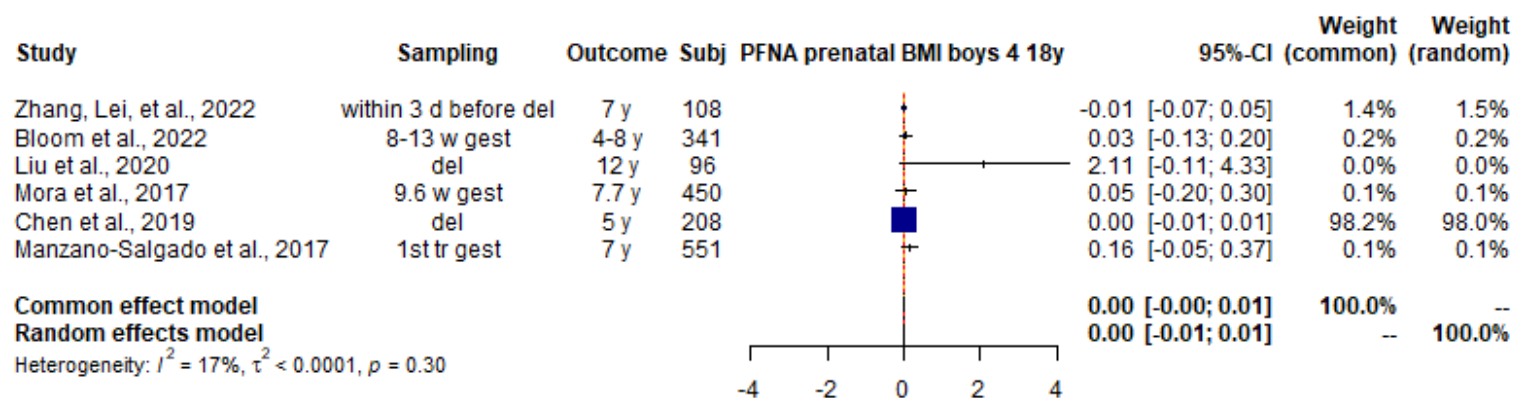
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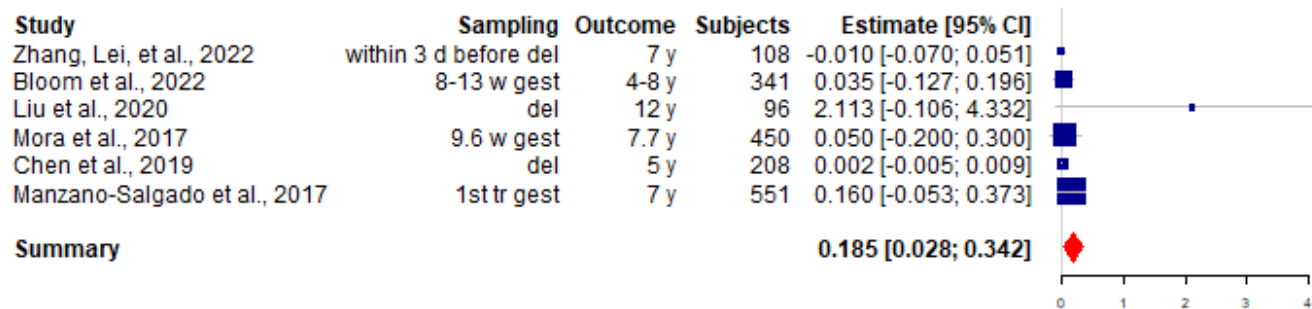
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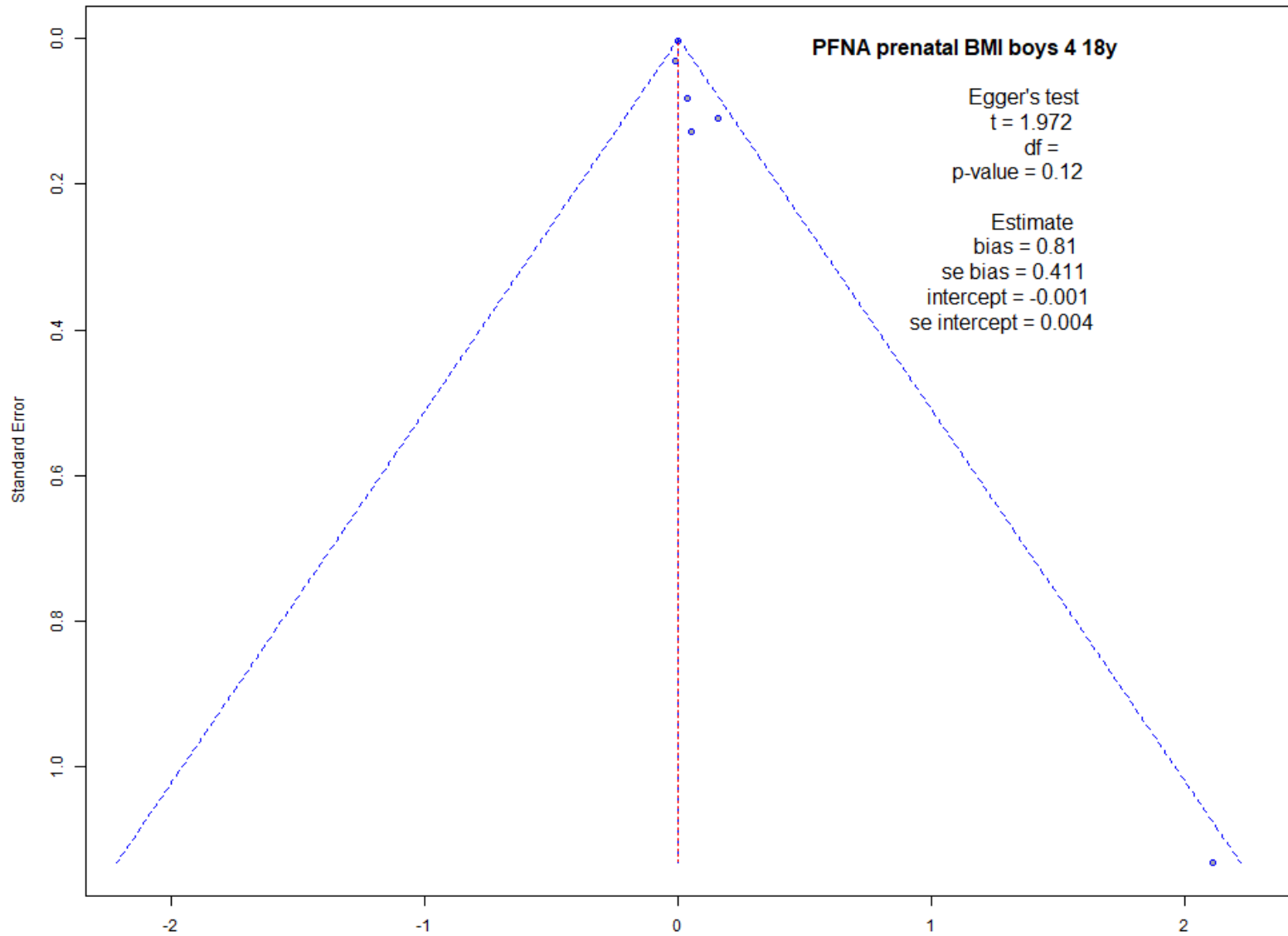
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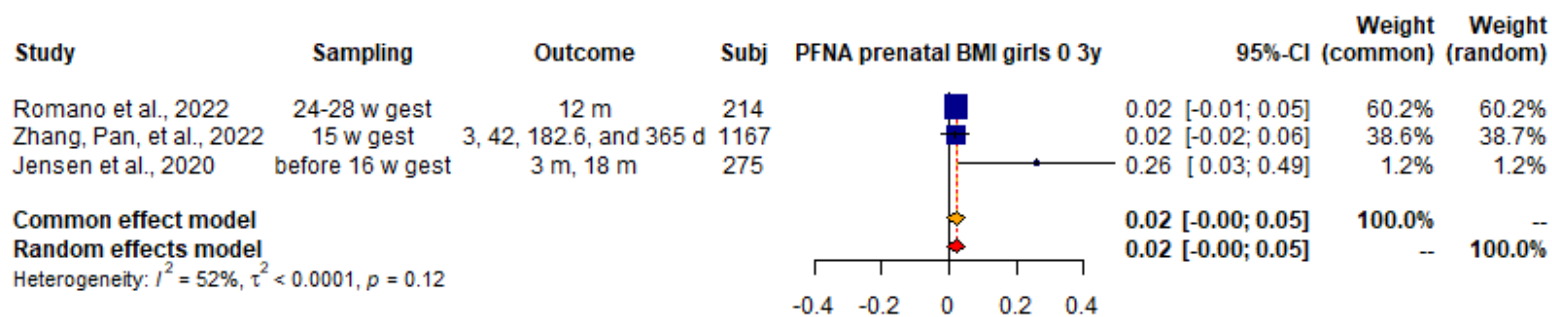
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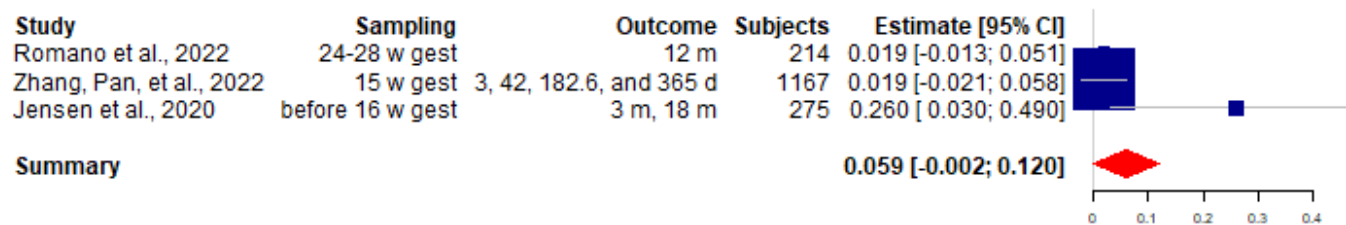
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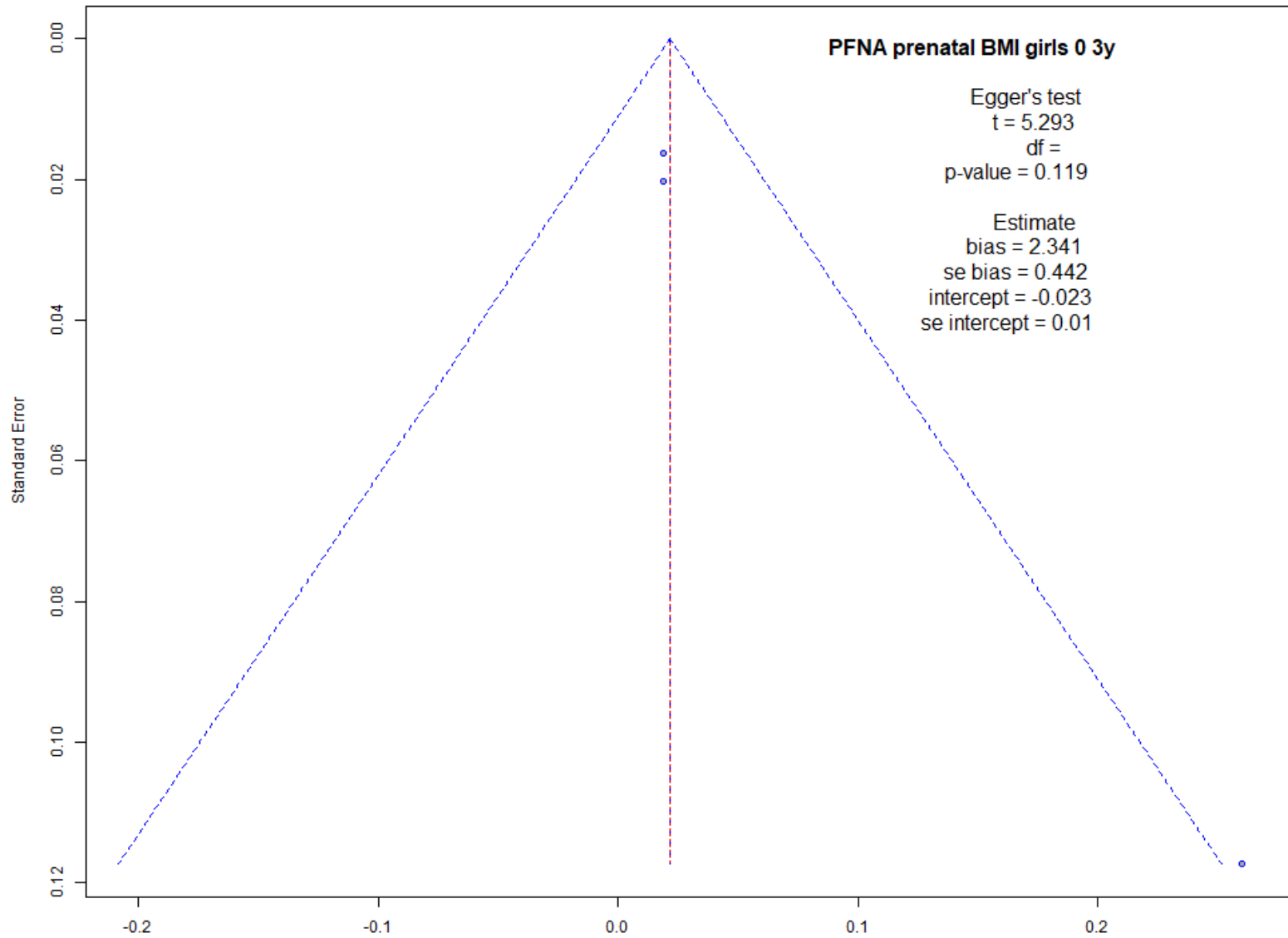
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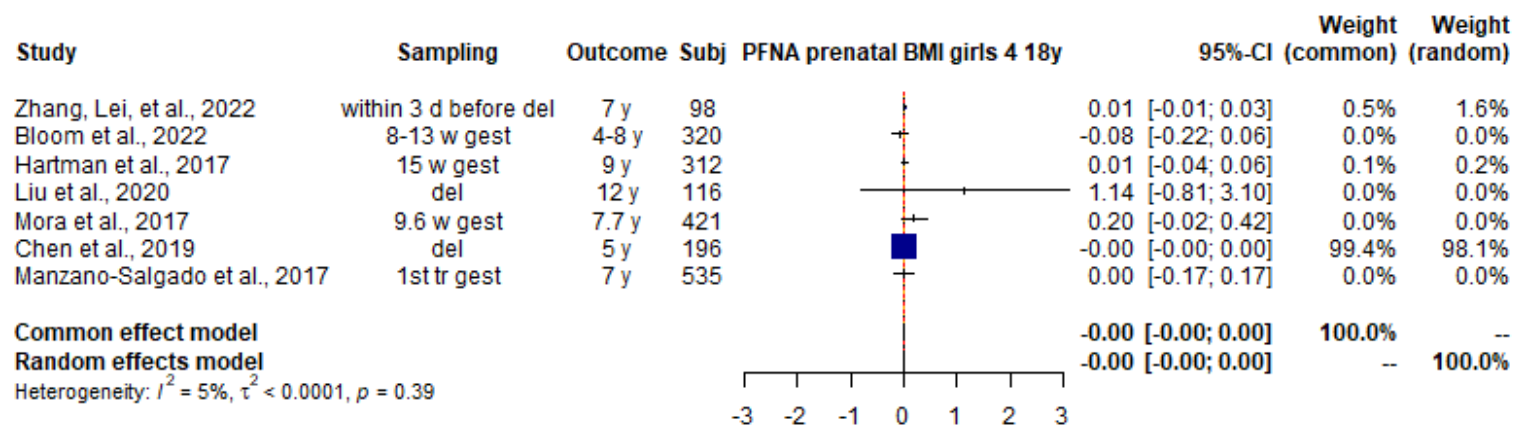
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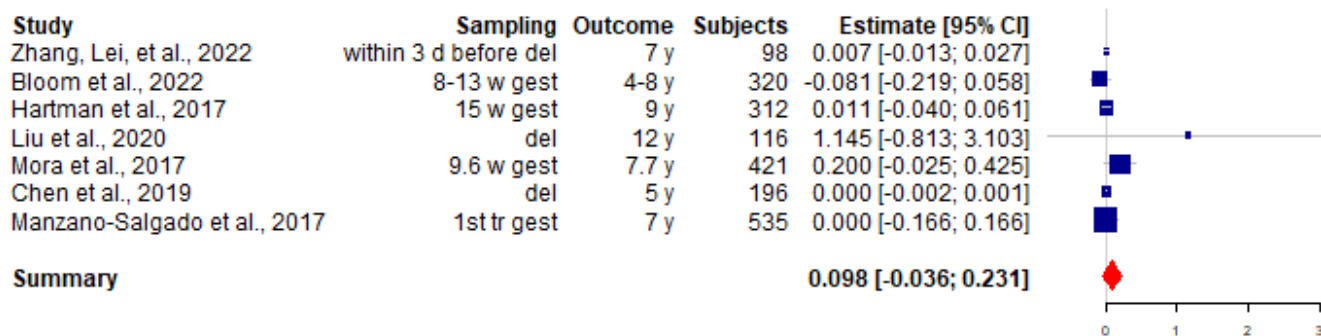
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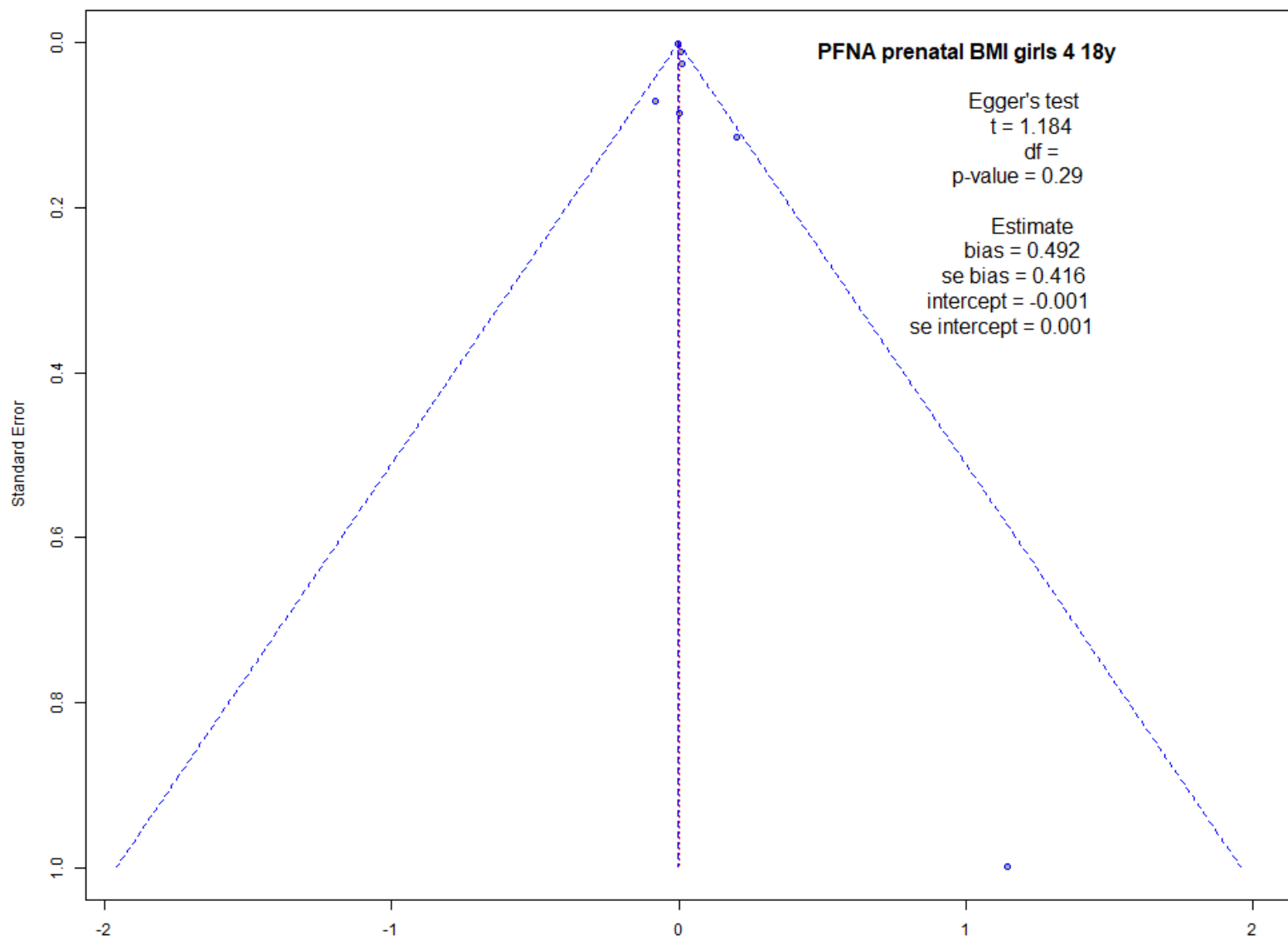
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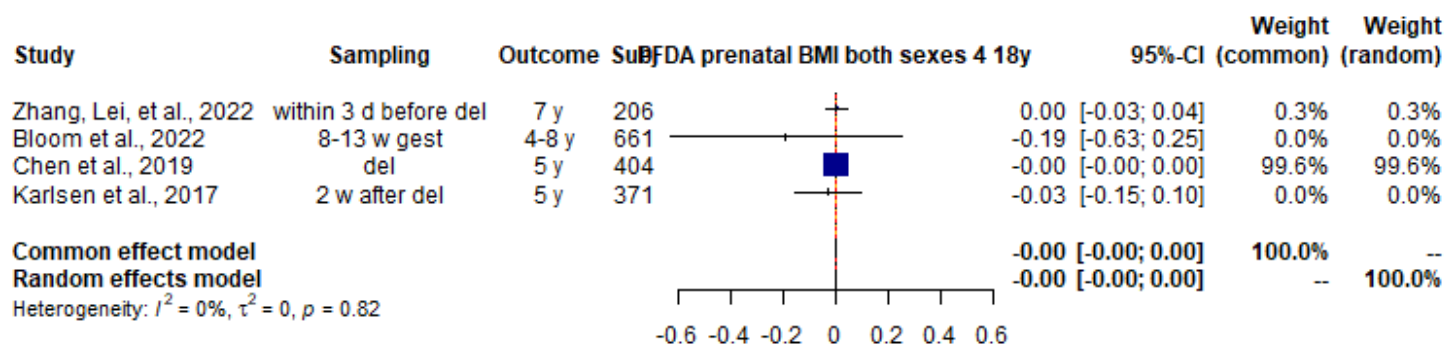
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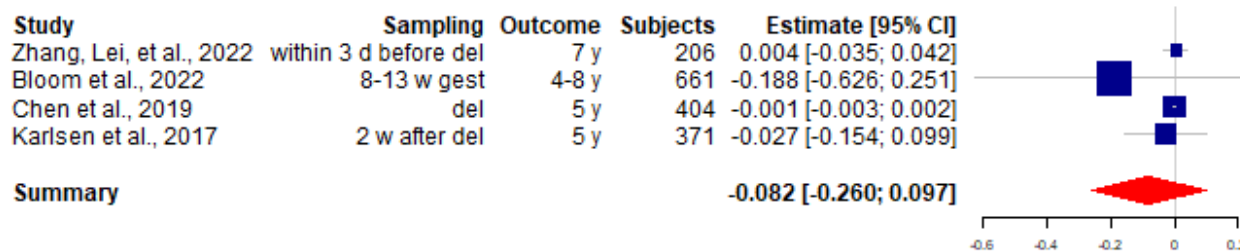
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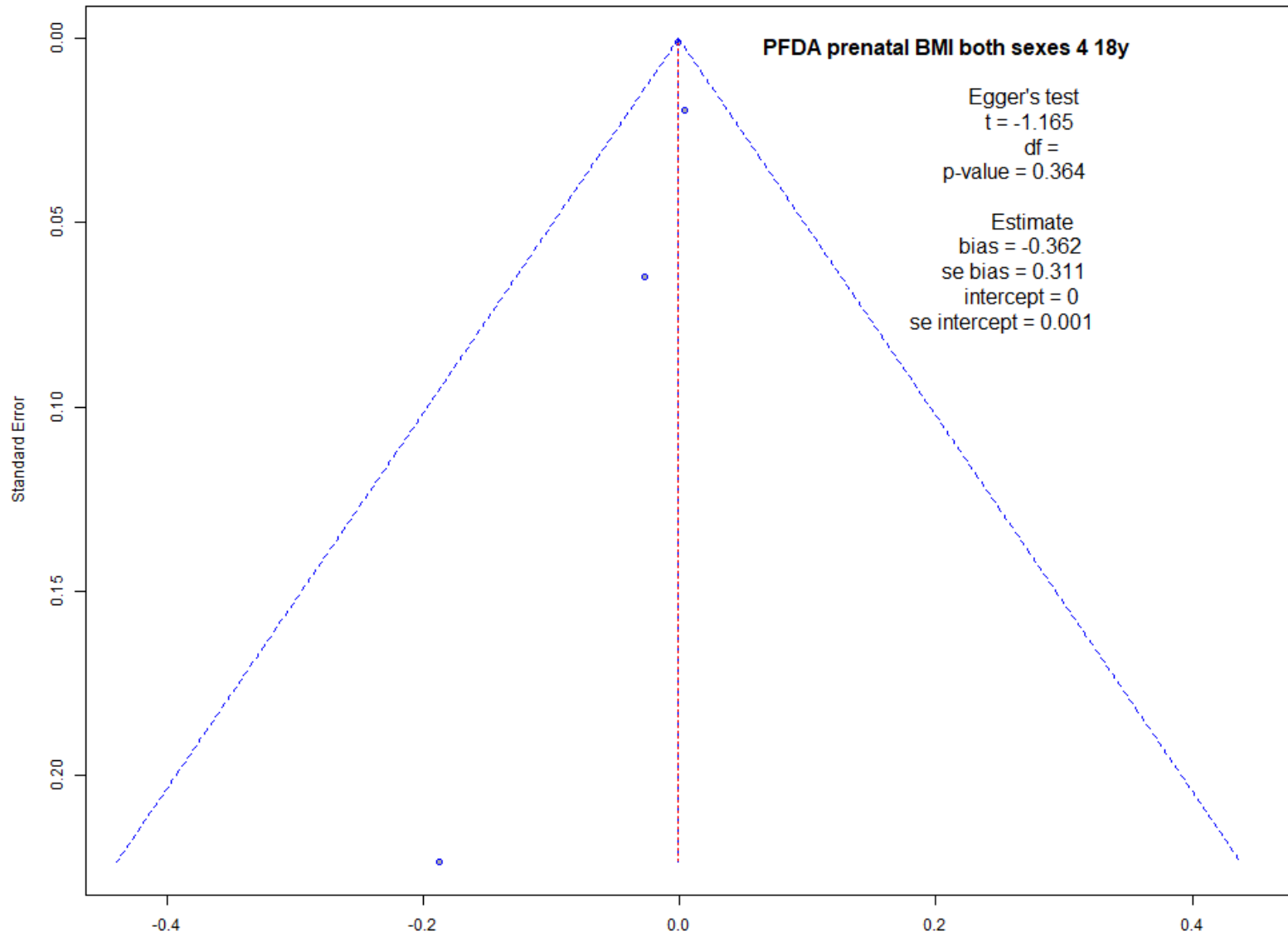
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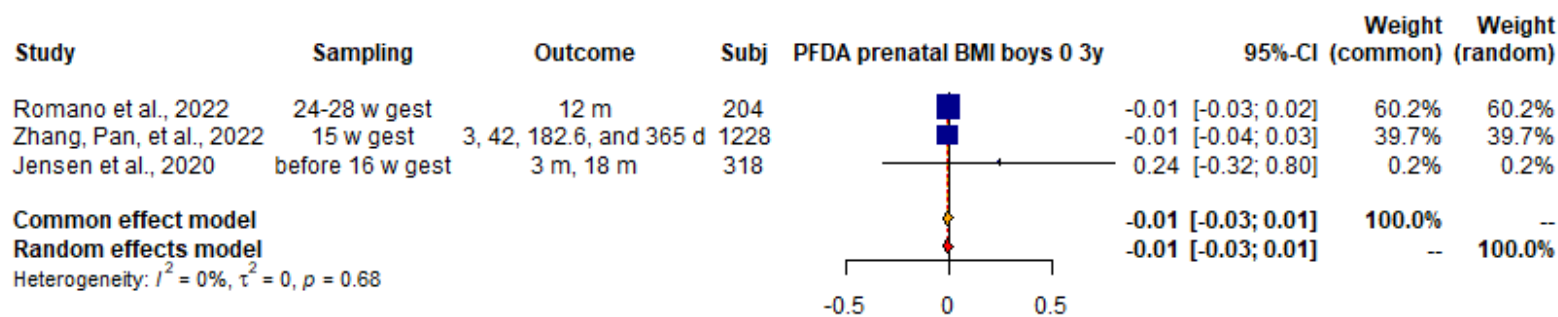
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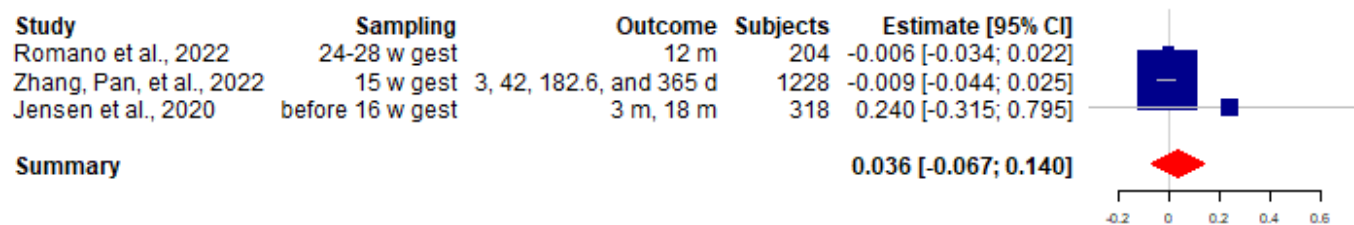
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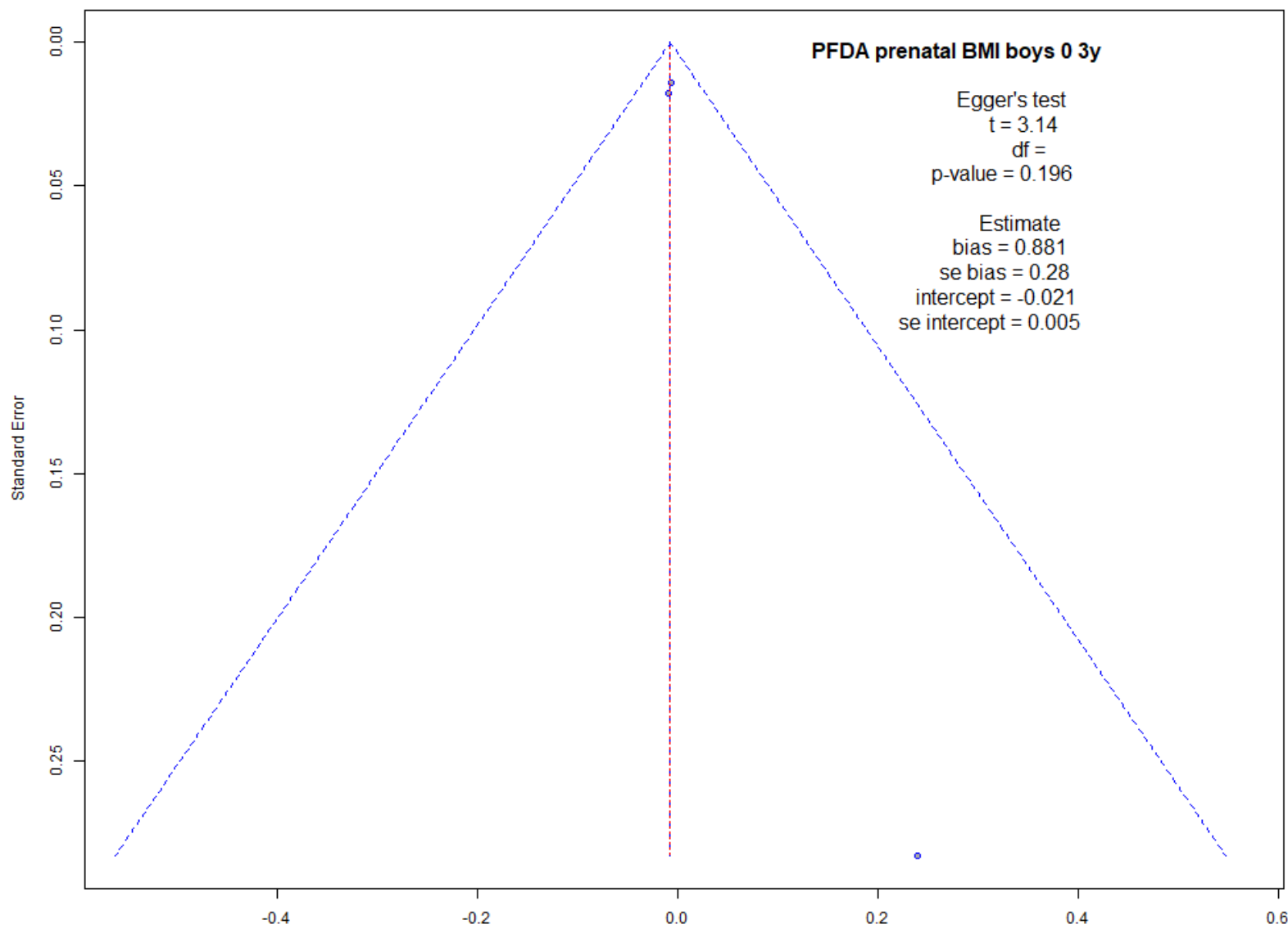
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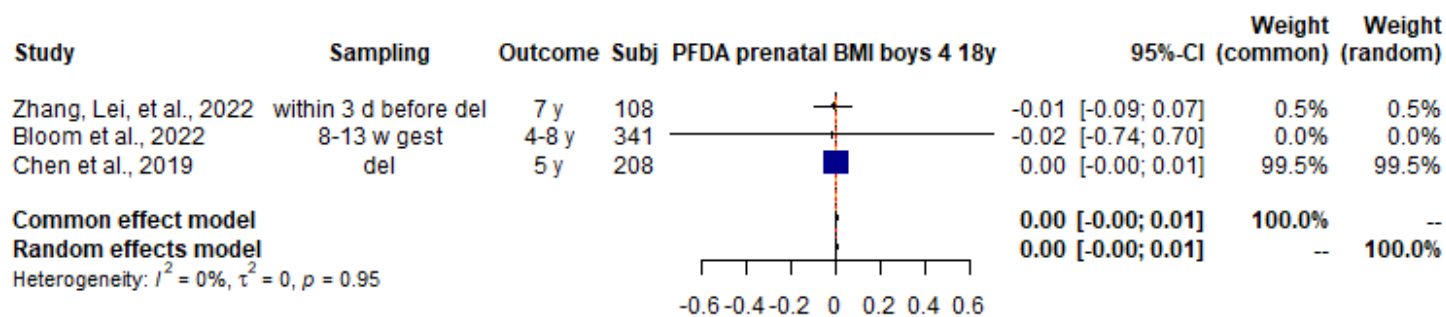
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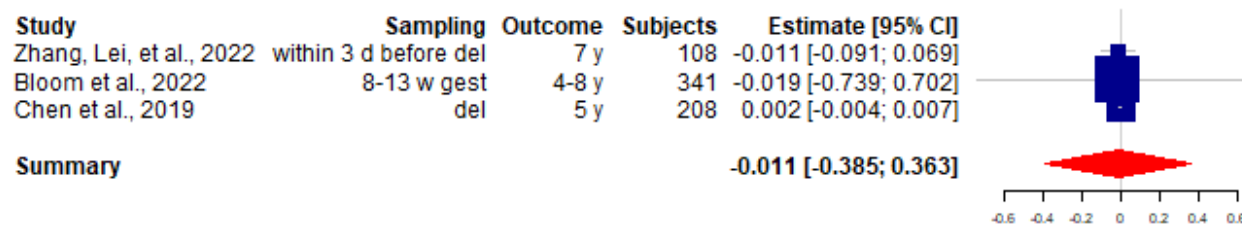
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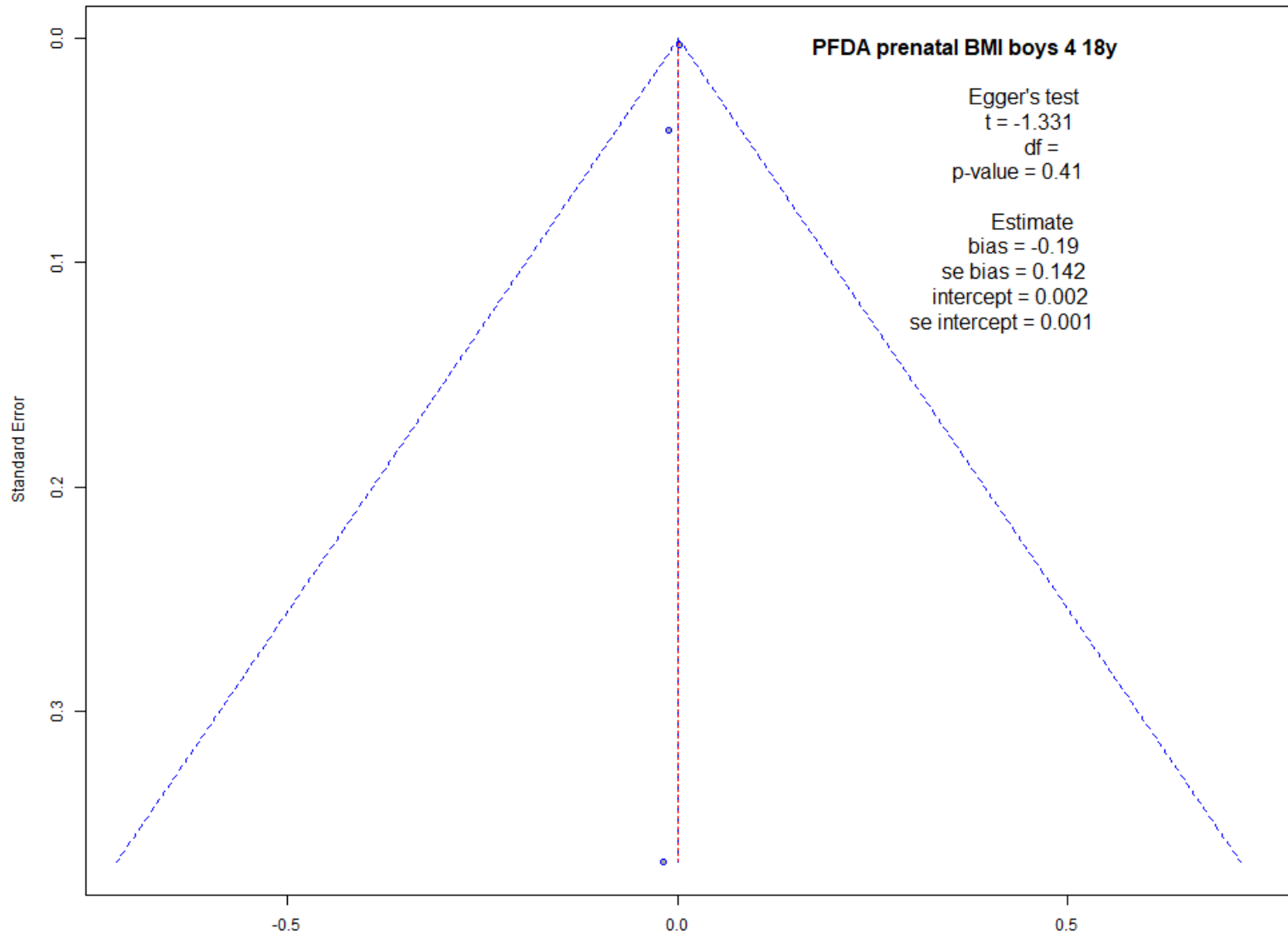
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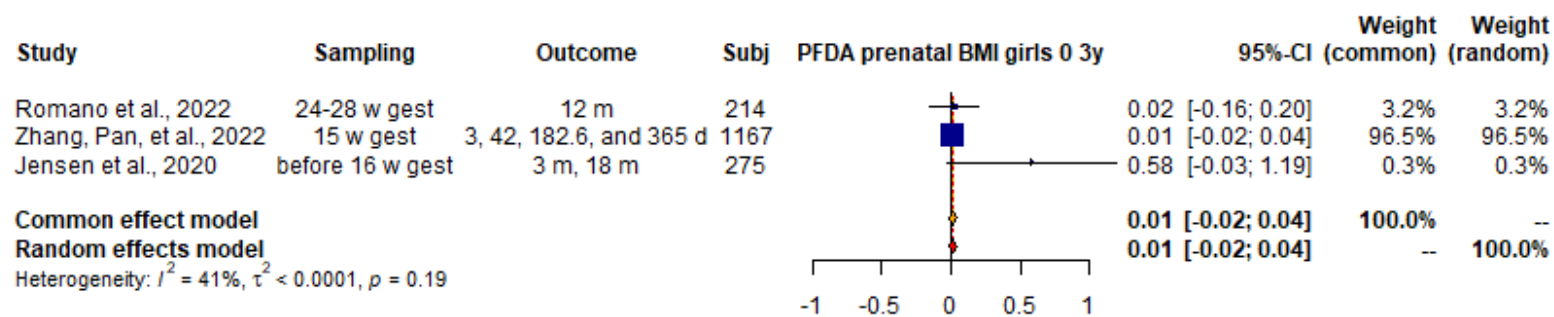
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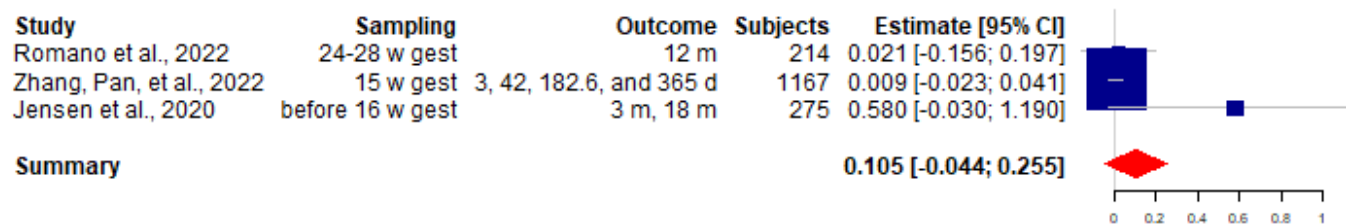
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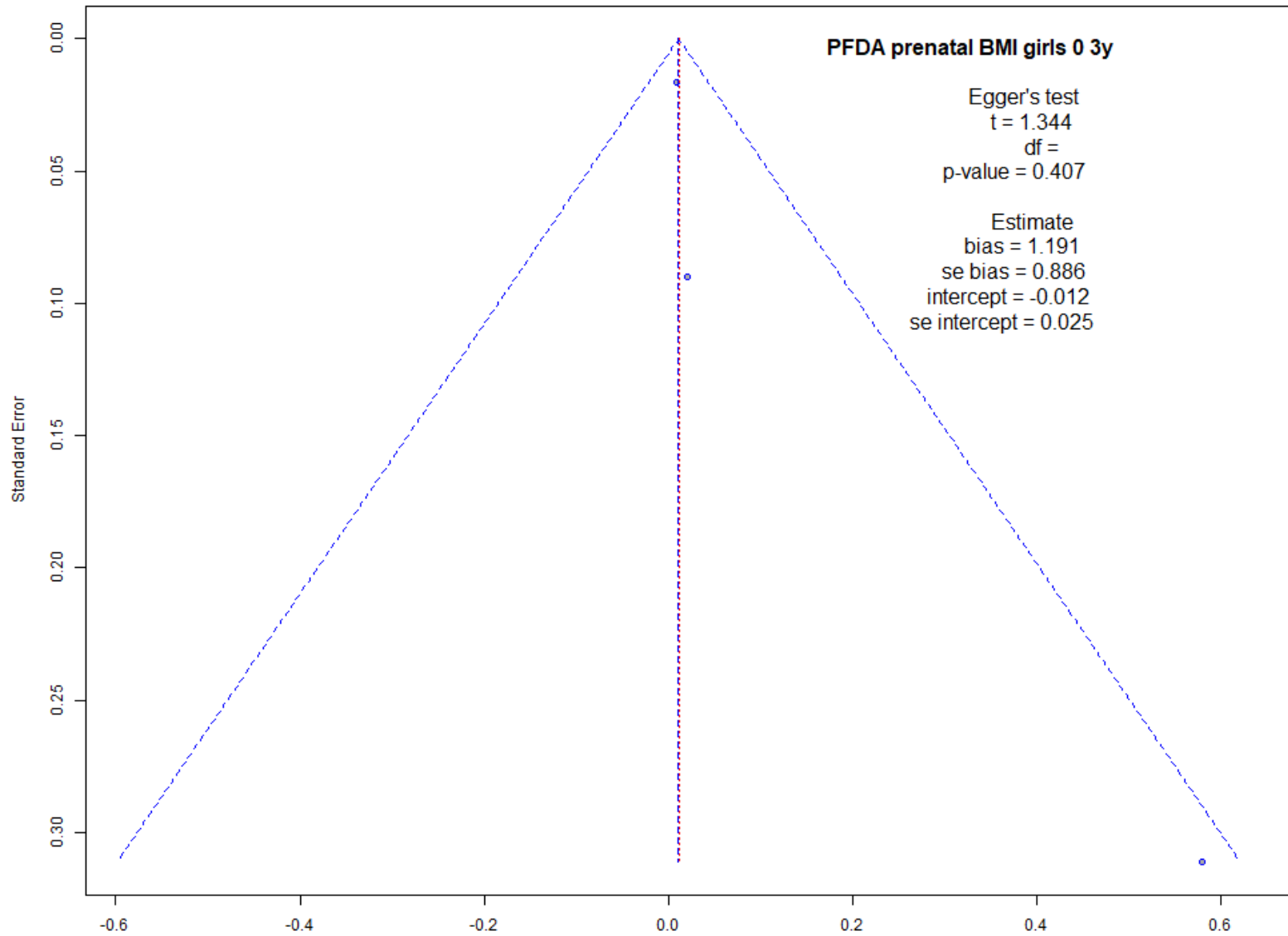
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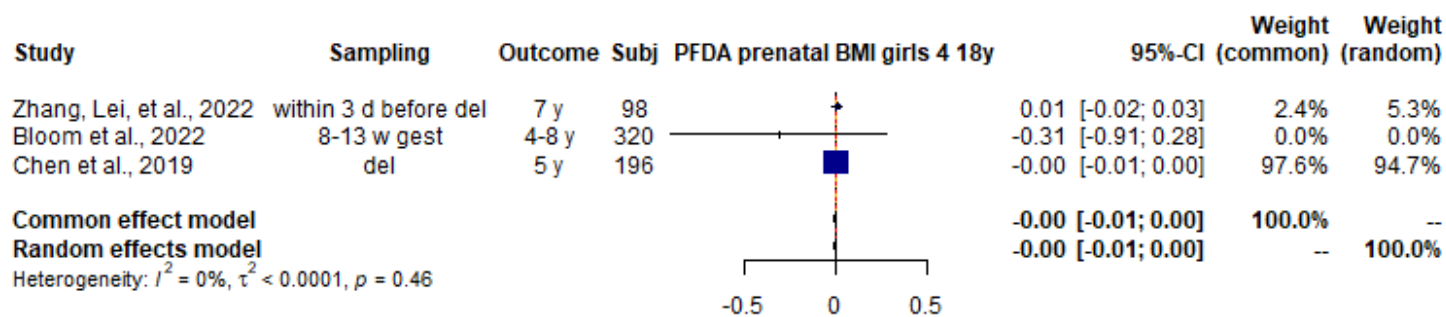
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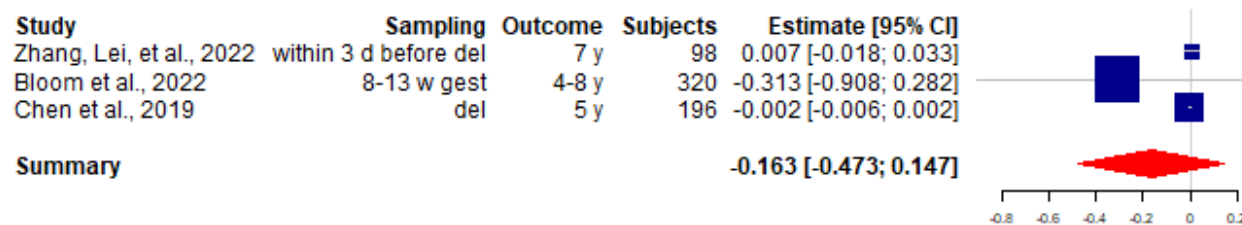
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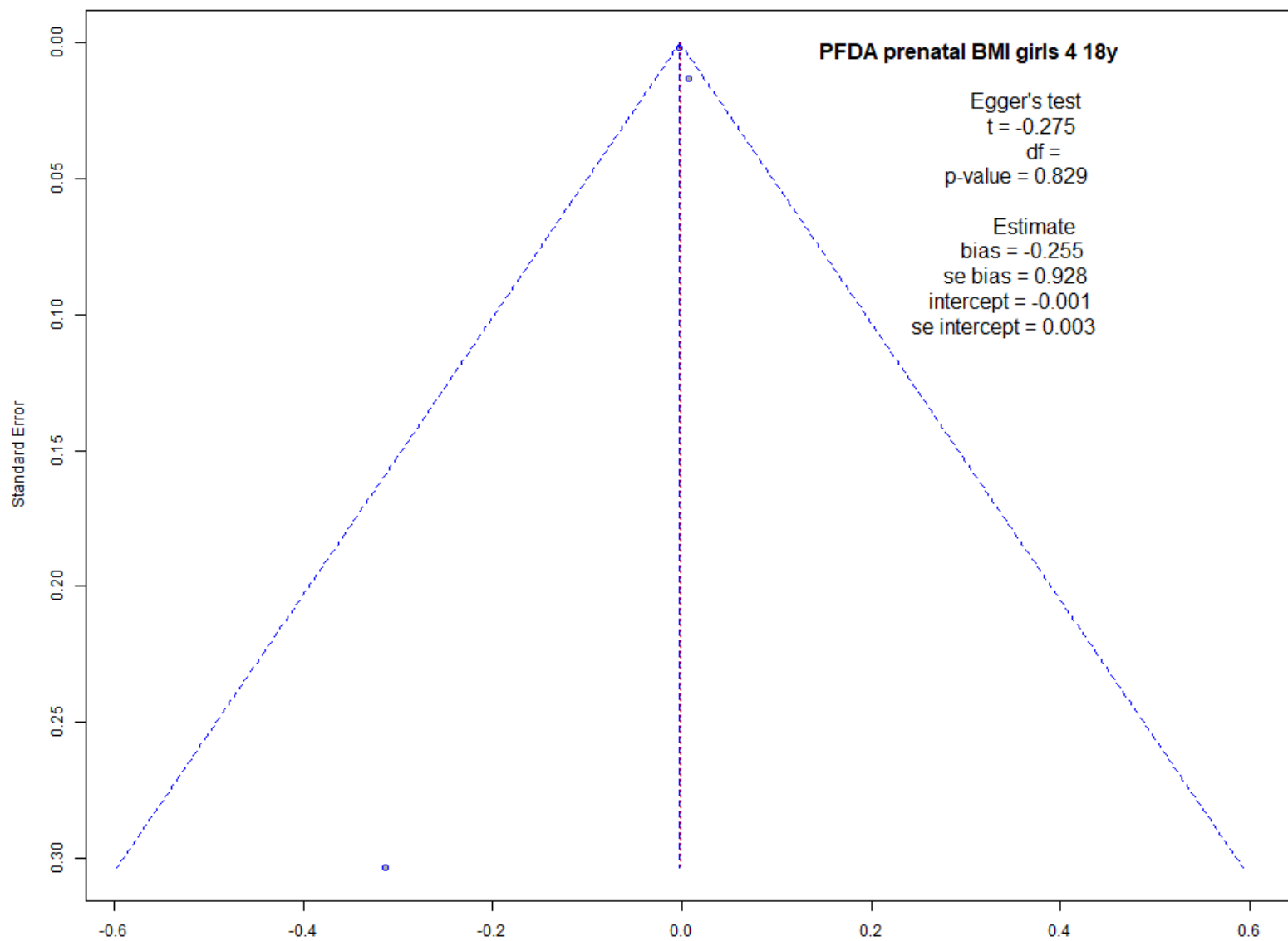
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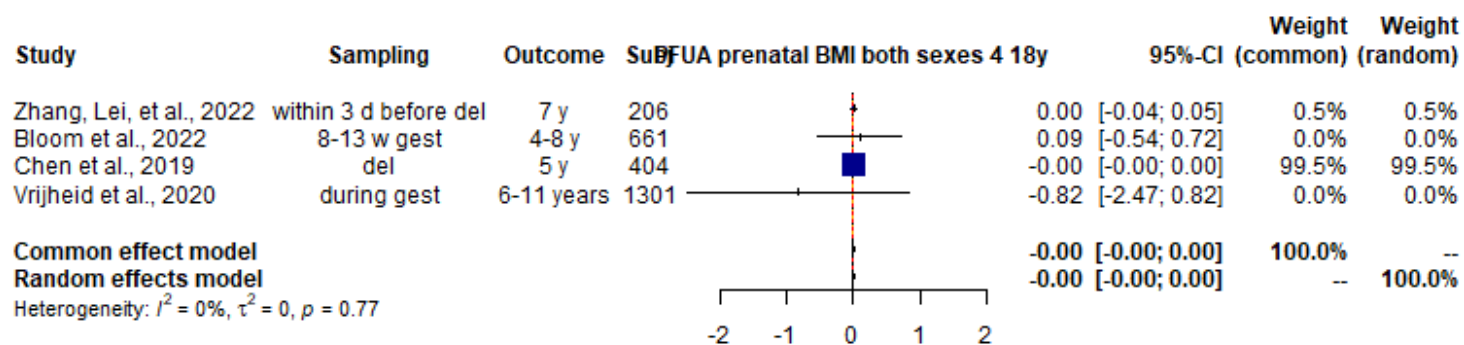
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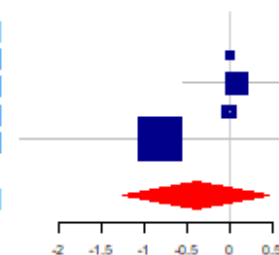
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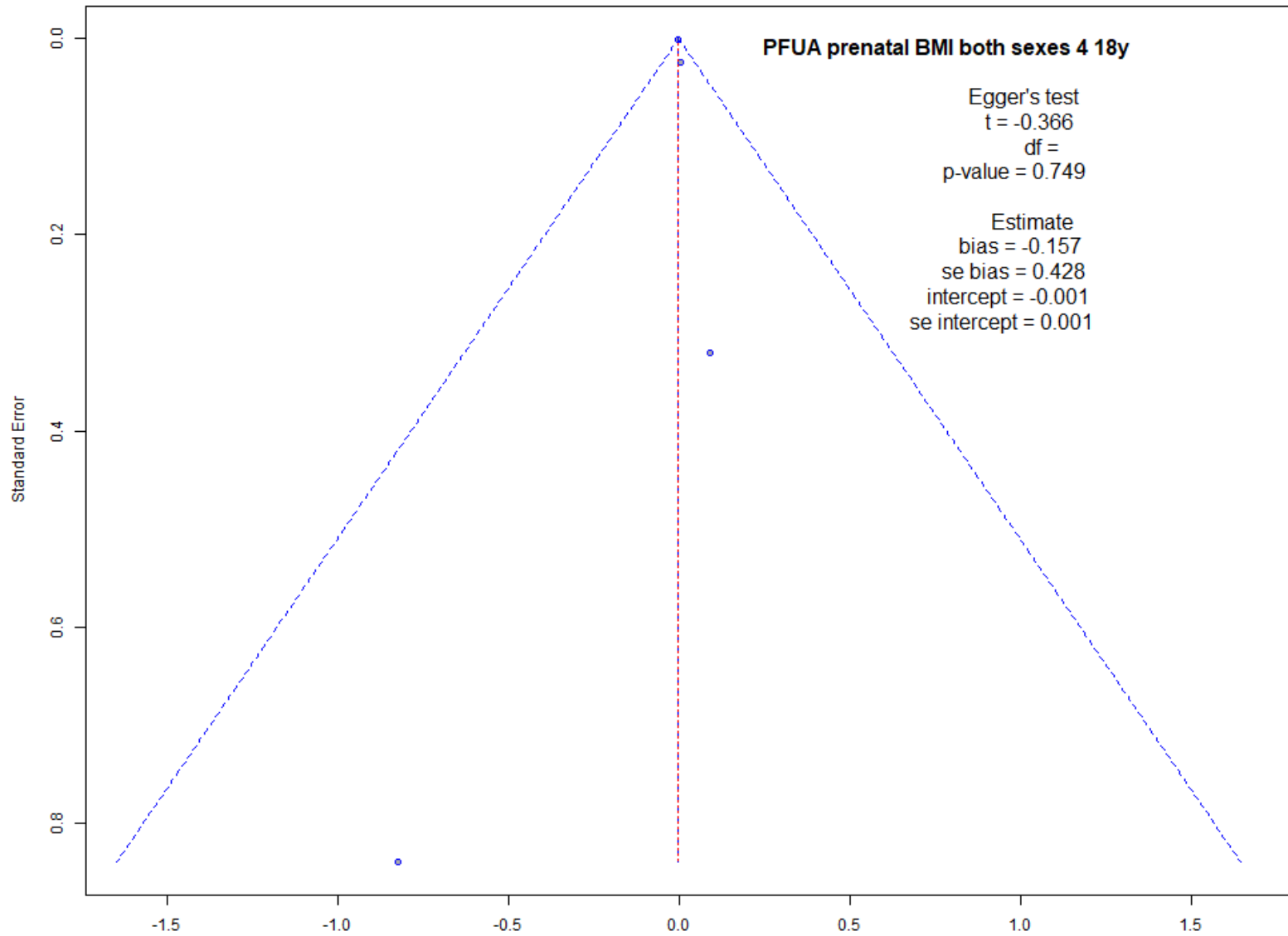
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Study	Sampling	Outcome	Subjects	Estimate [95% CI]
Zhang, Lei, et al., 2022	within 3 d before del	7 y	206	0.005 [-0.041; 0.051]
Bloom et al., 2022	8-13 w gest	4-8 y	661	0.090 [-0.538; 0.717]
Chen et al., 2019	del	5 y	404	-0.002 [-0.005; 0.002]
Vrijheid et al., 2020	during gest	6-11 years	1301	-0.823 [-2.469; 0.823]
Summary				-0.393 [-1.241; 0.455]



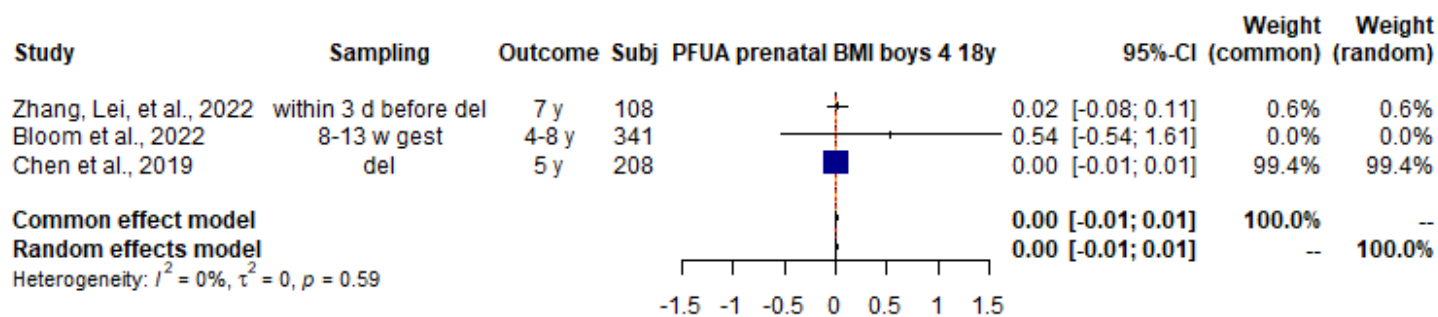
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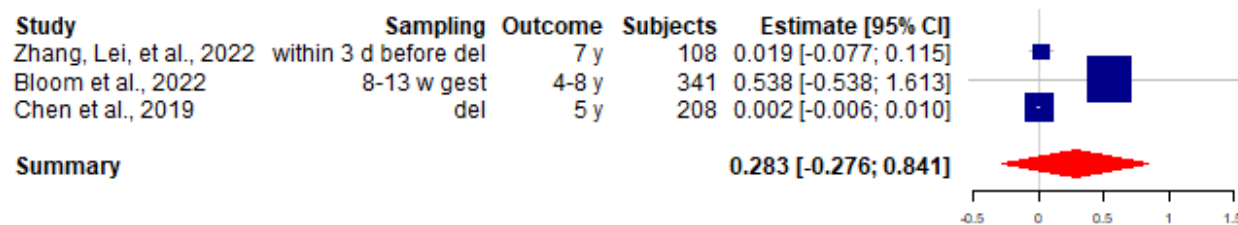
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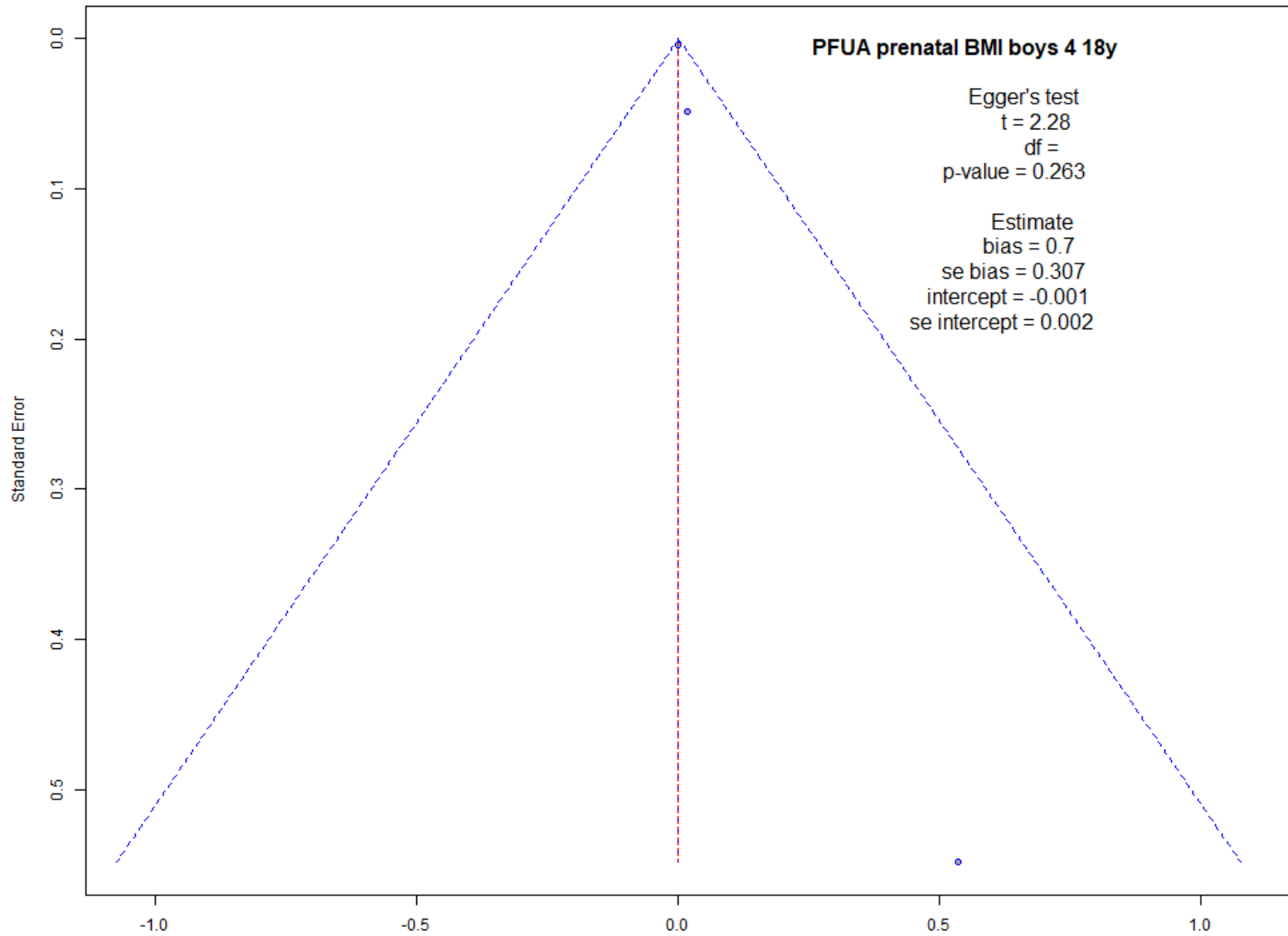
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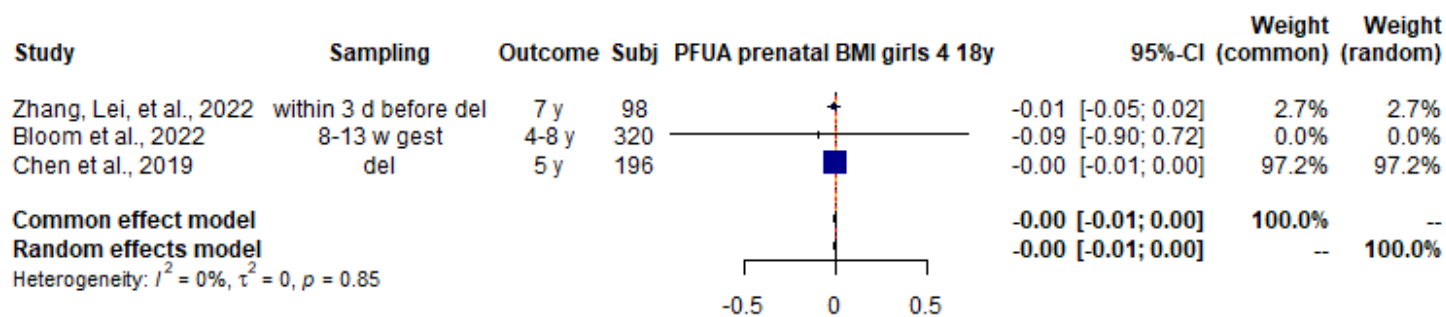
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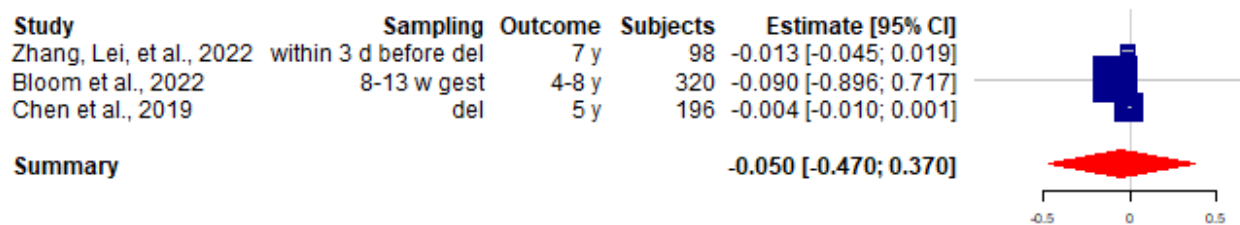
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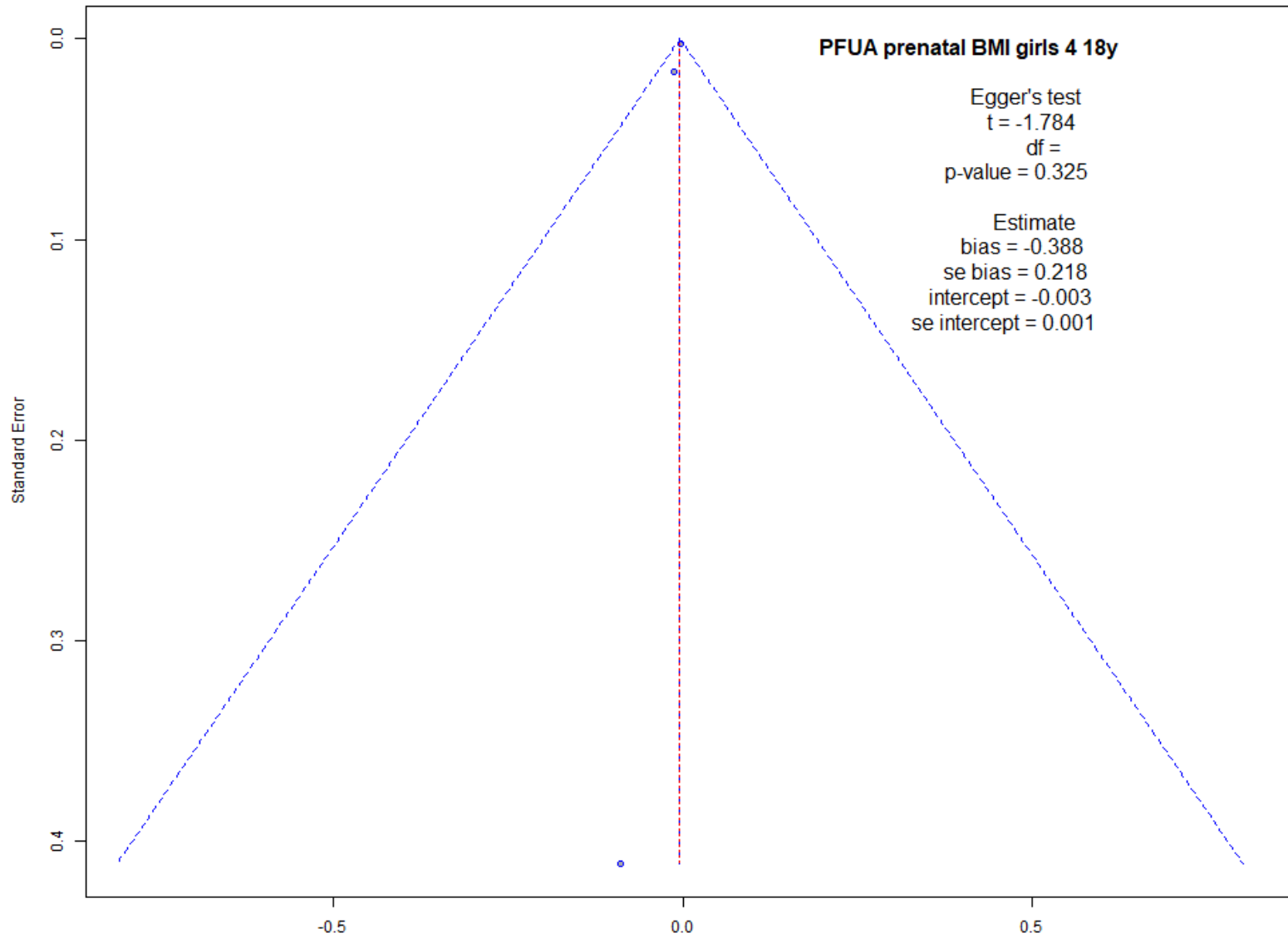
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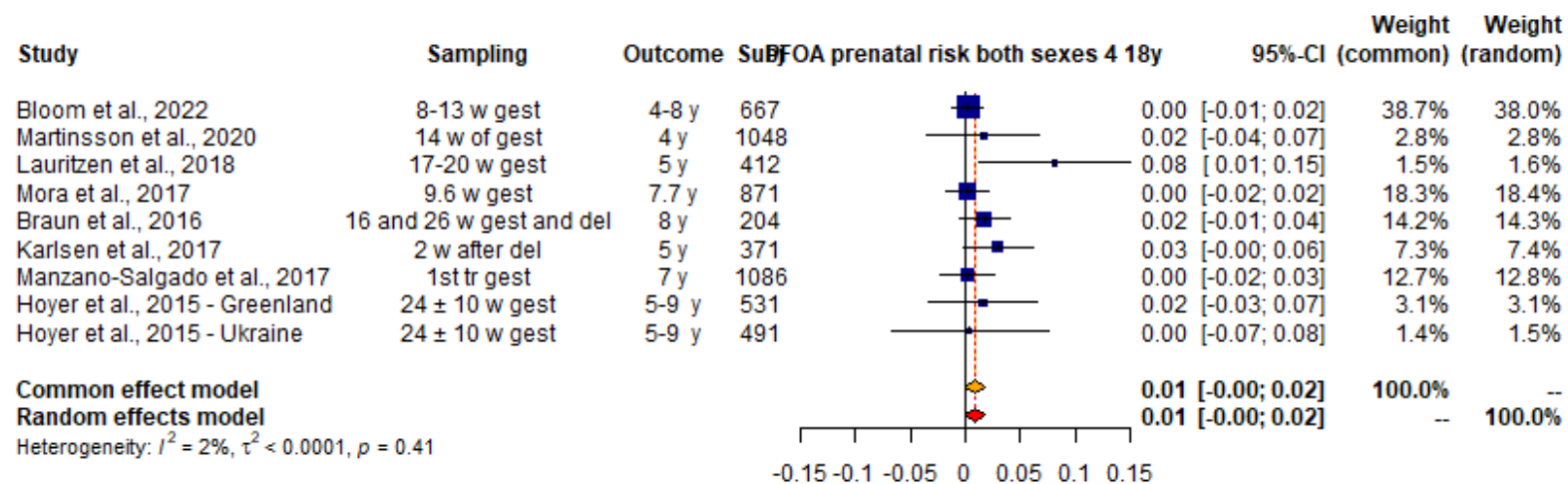
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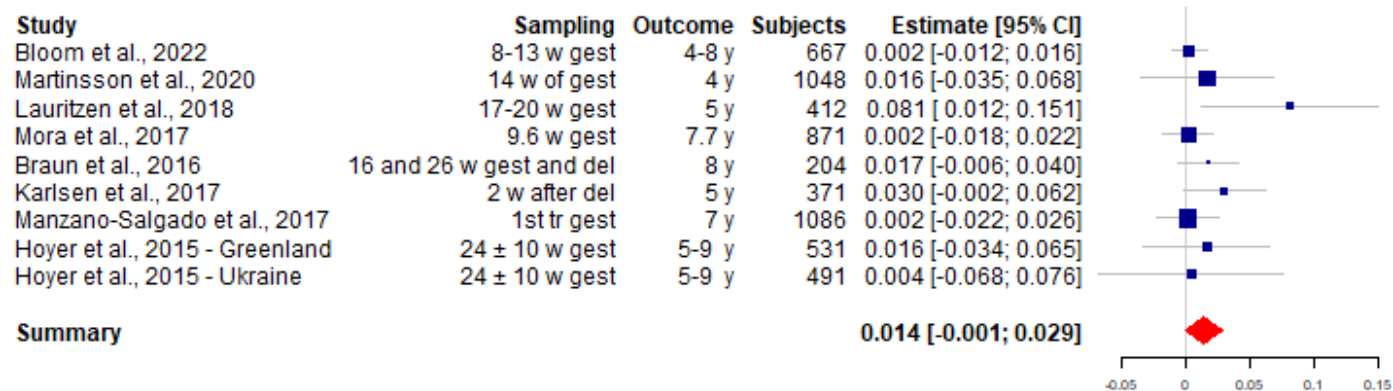
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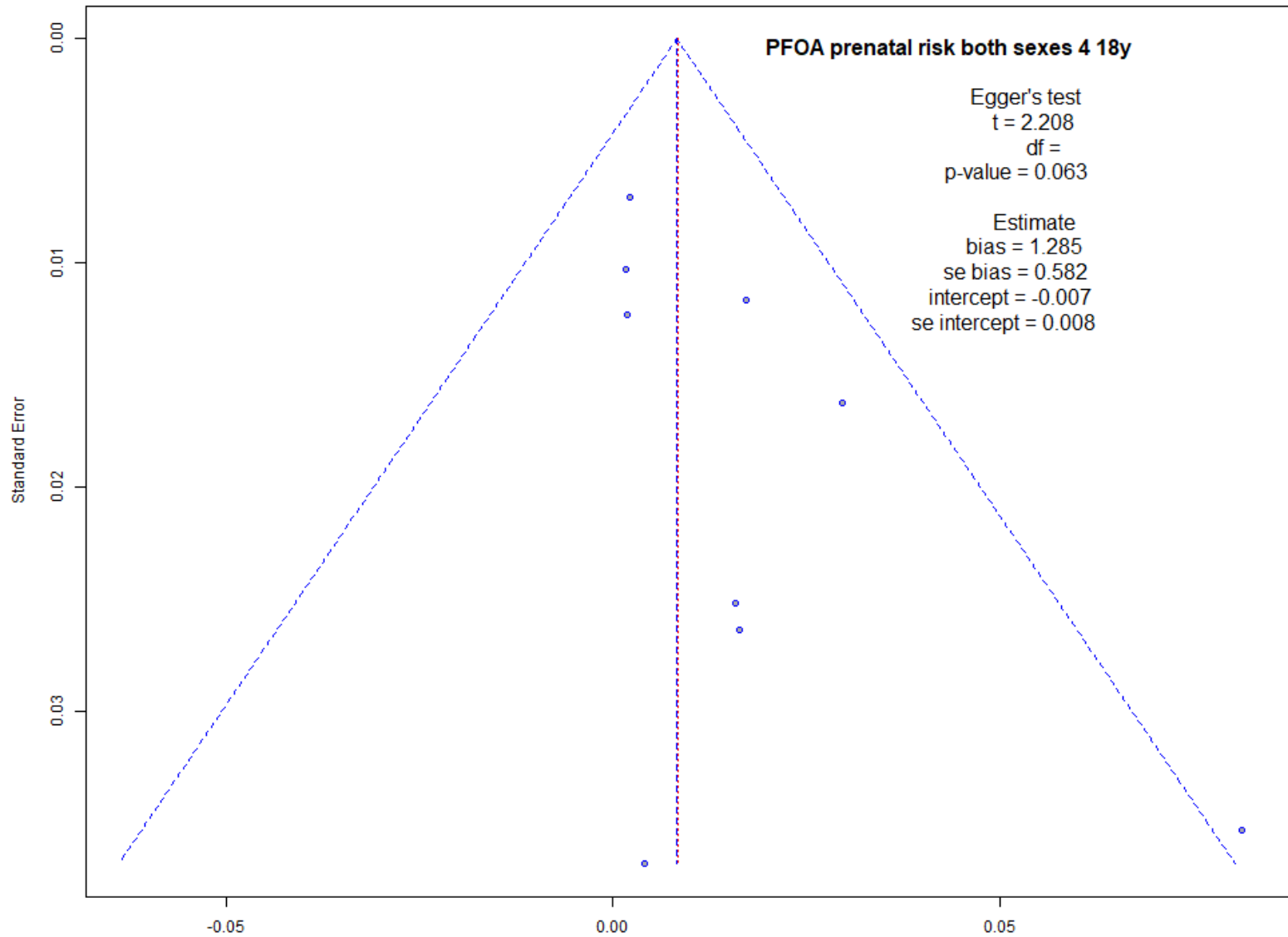
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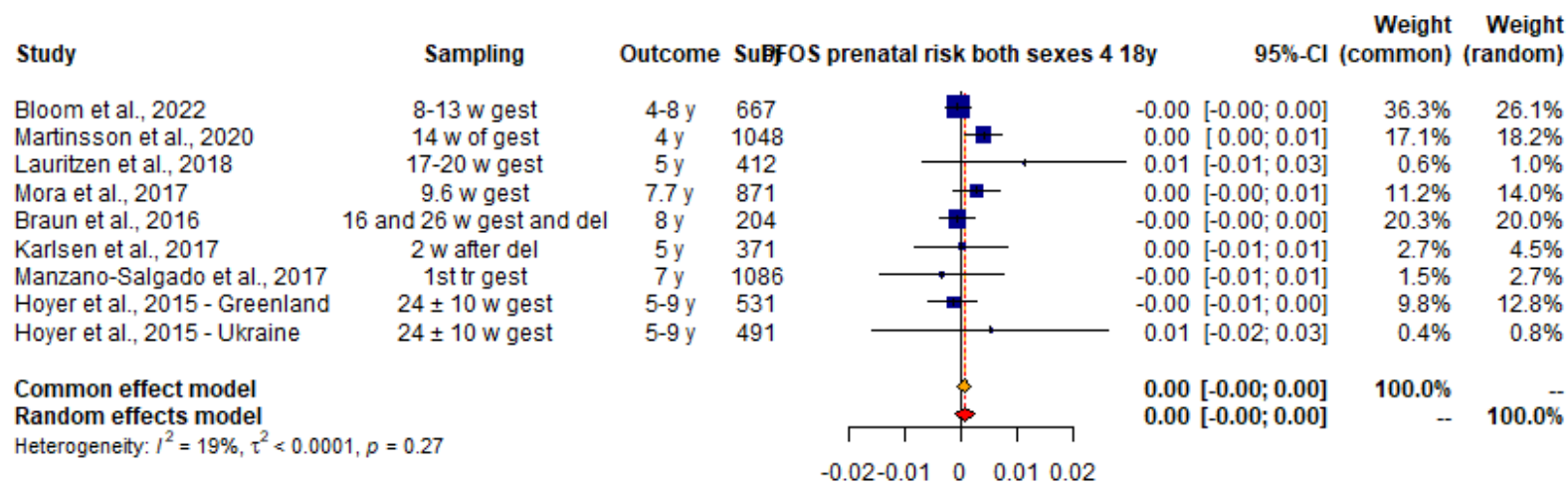
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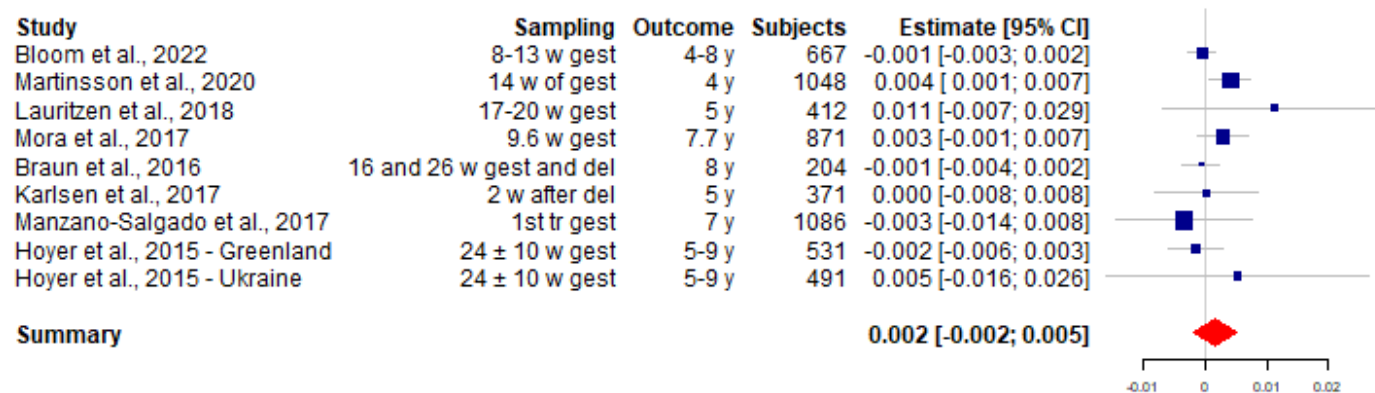
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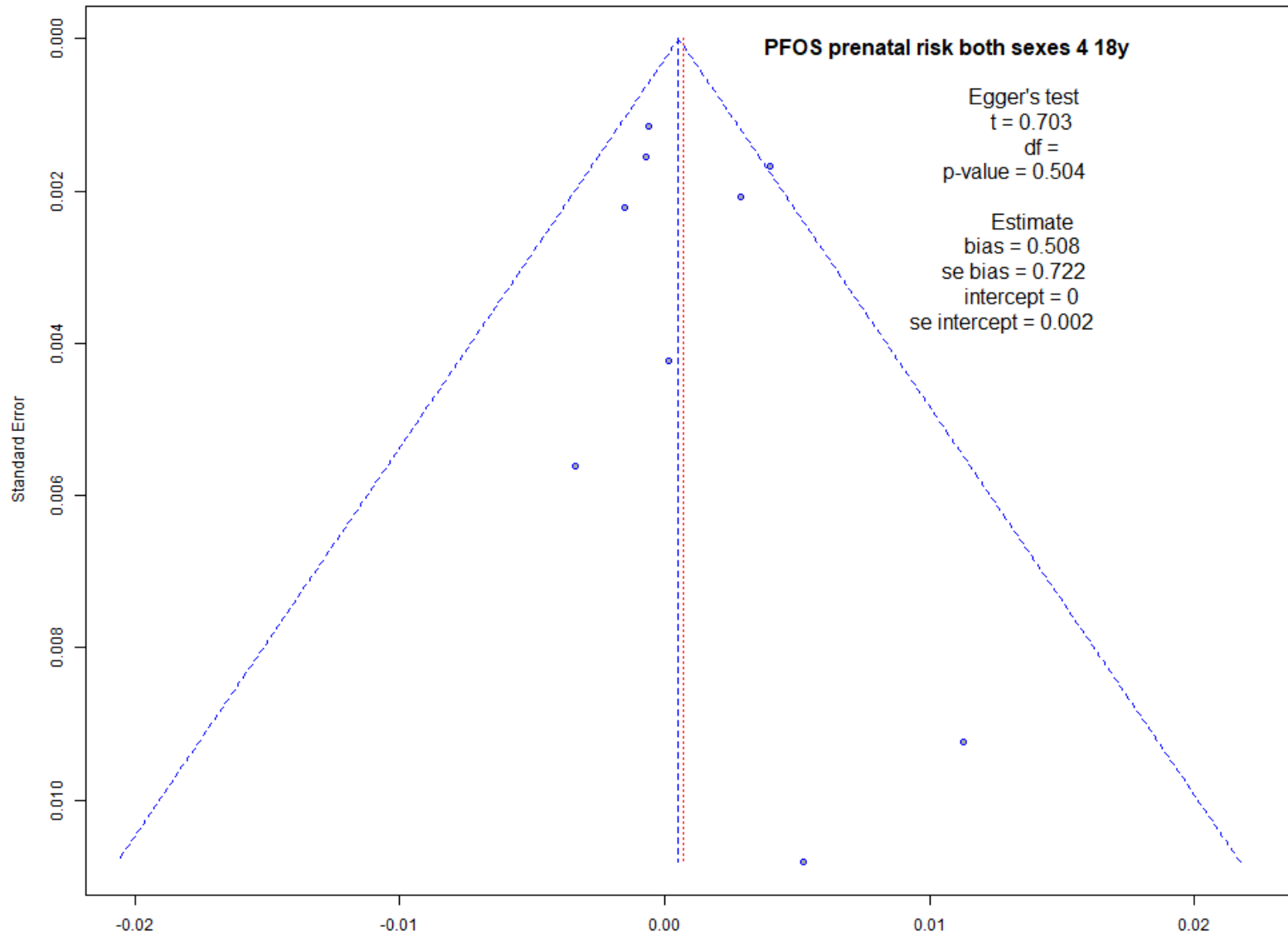
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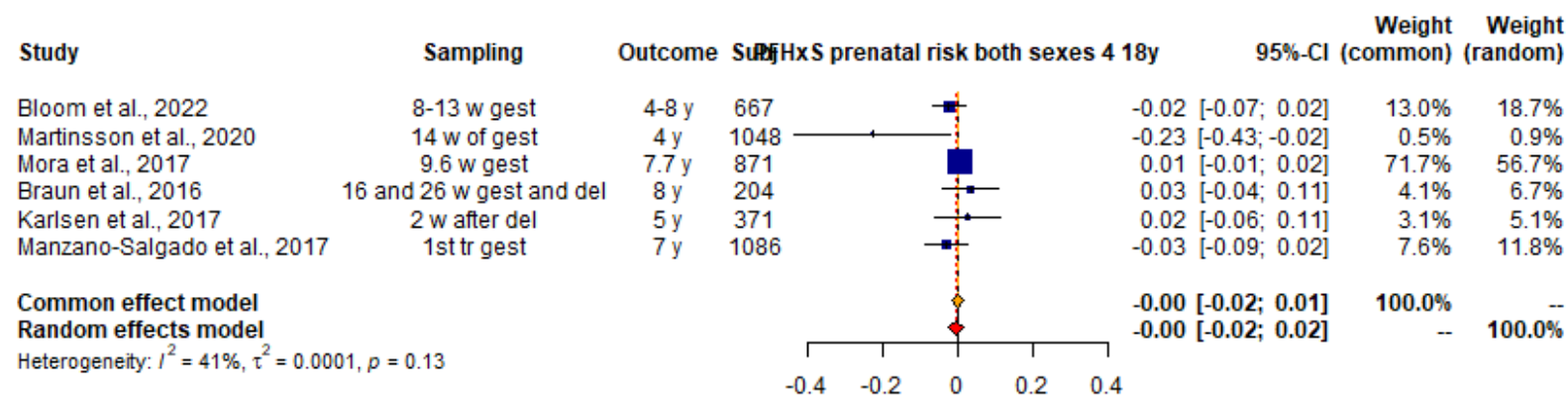
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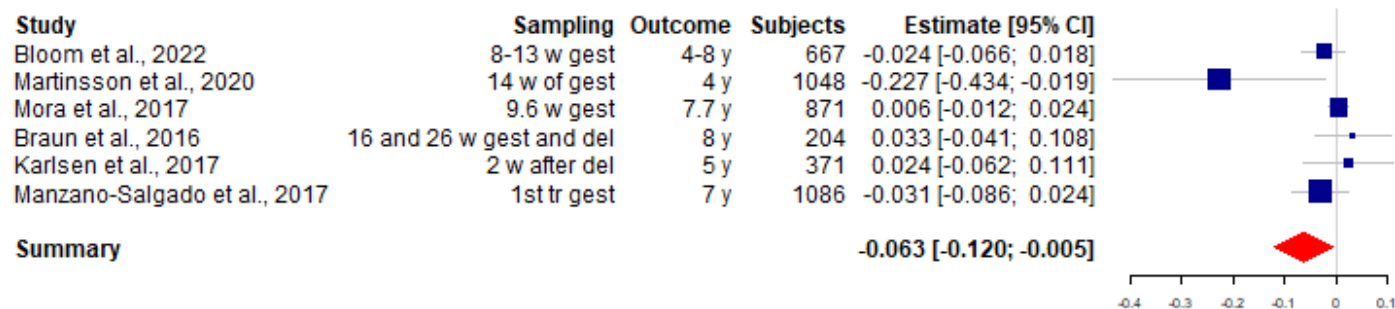
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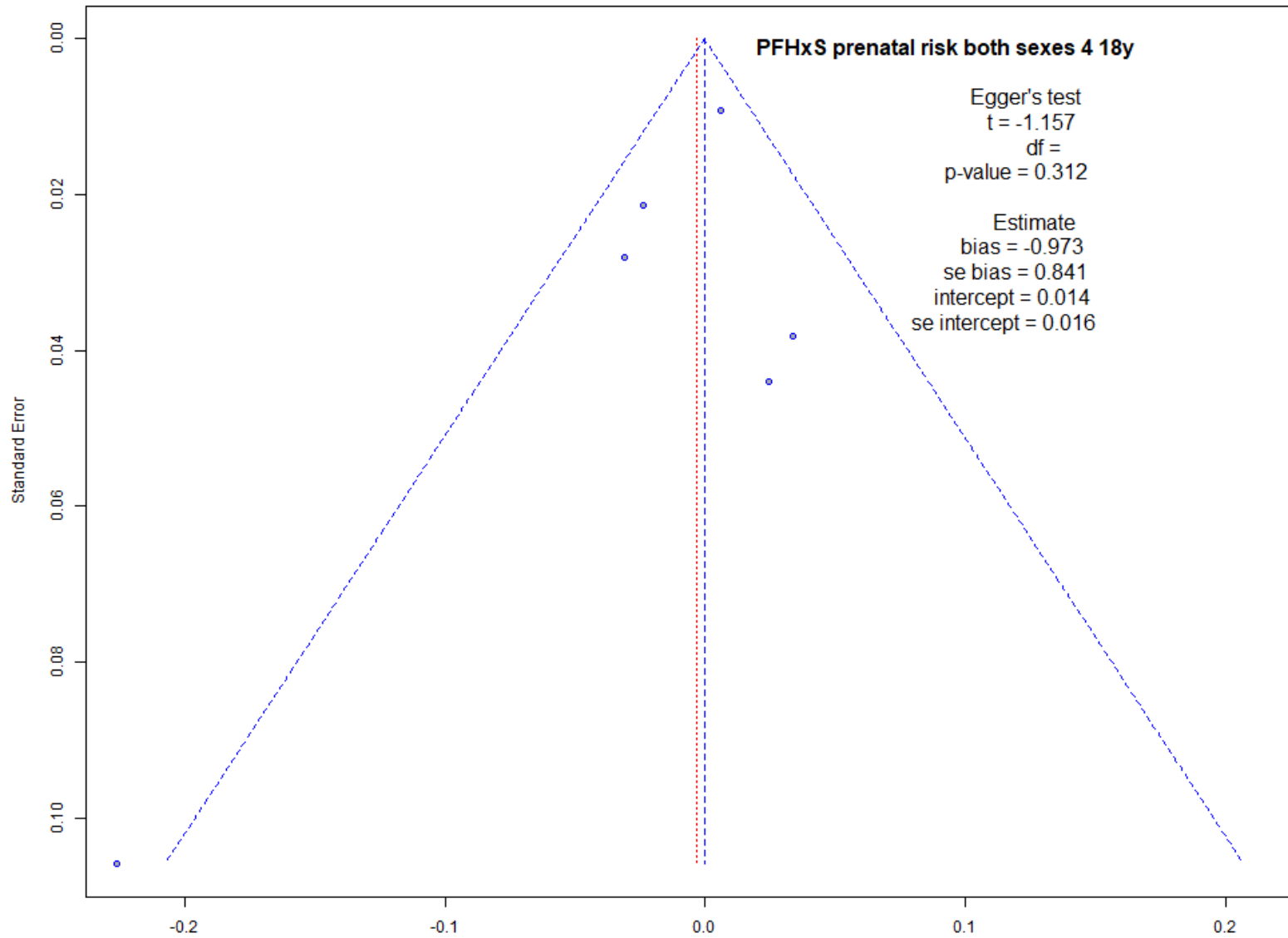
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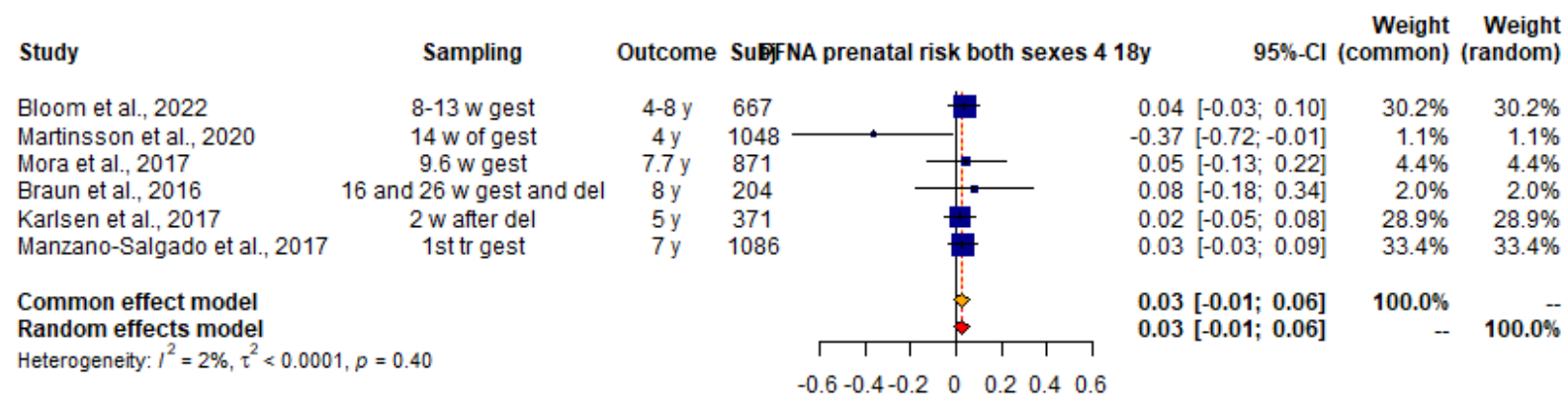
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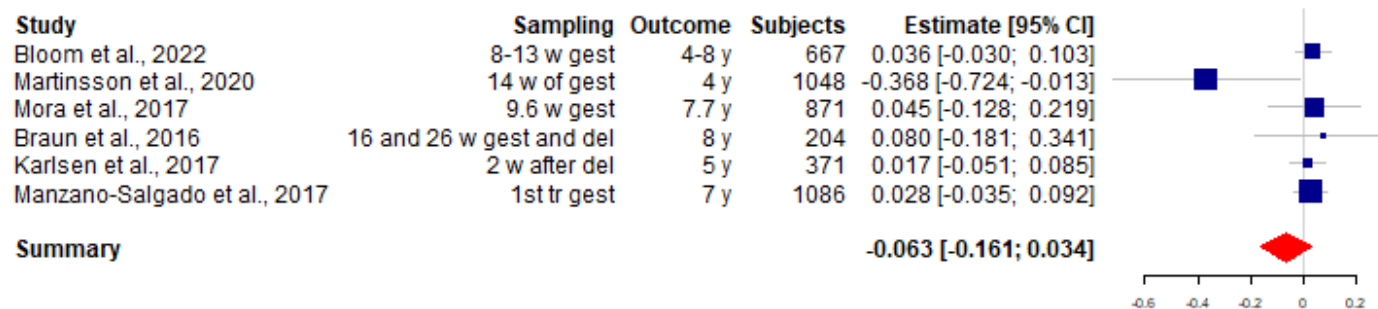
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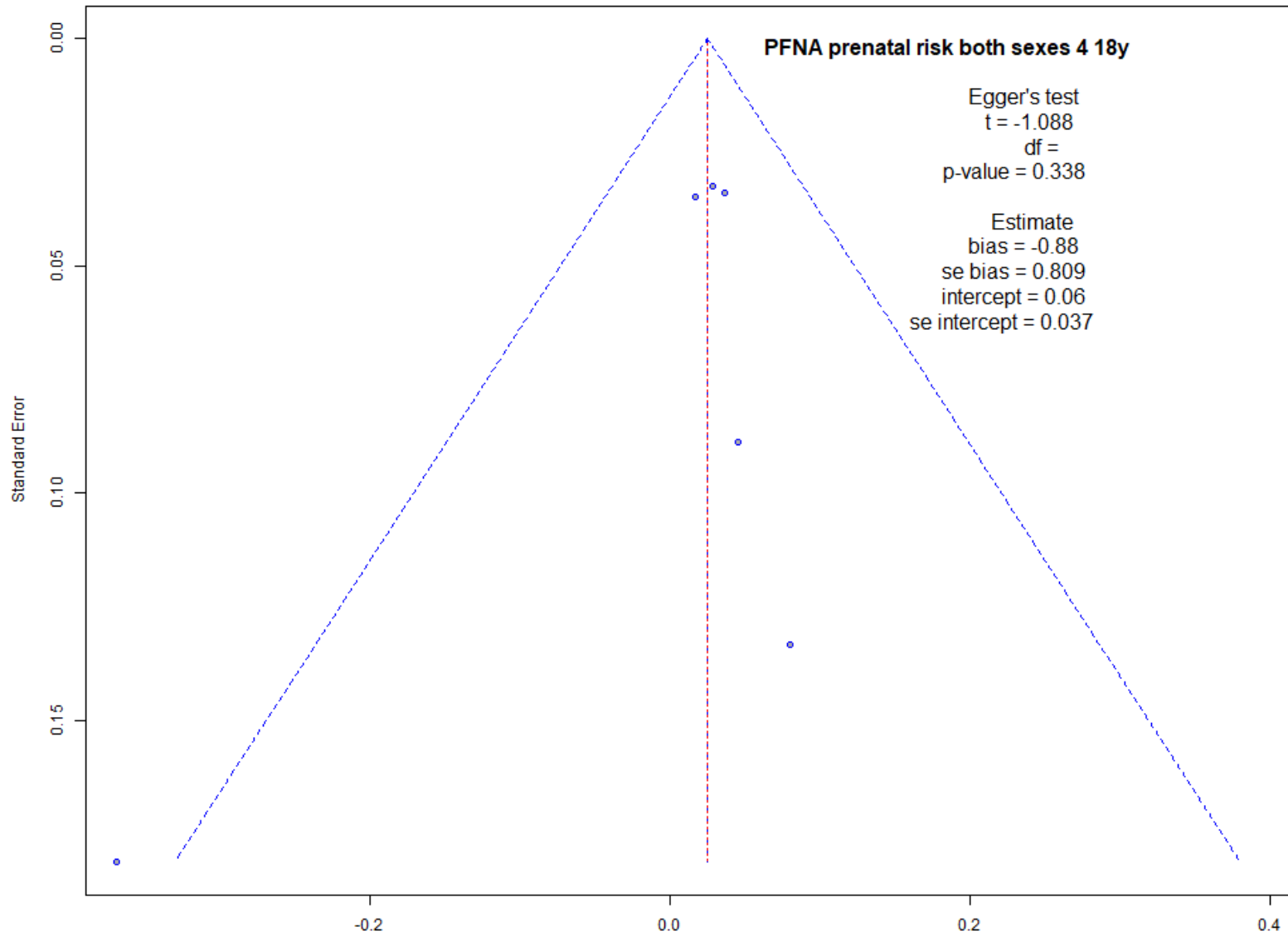
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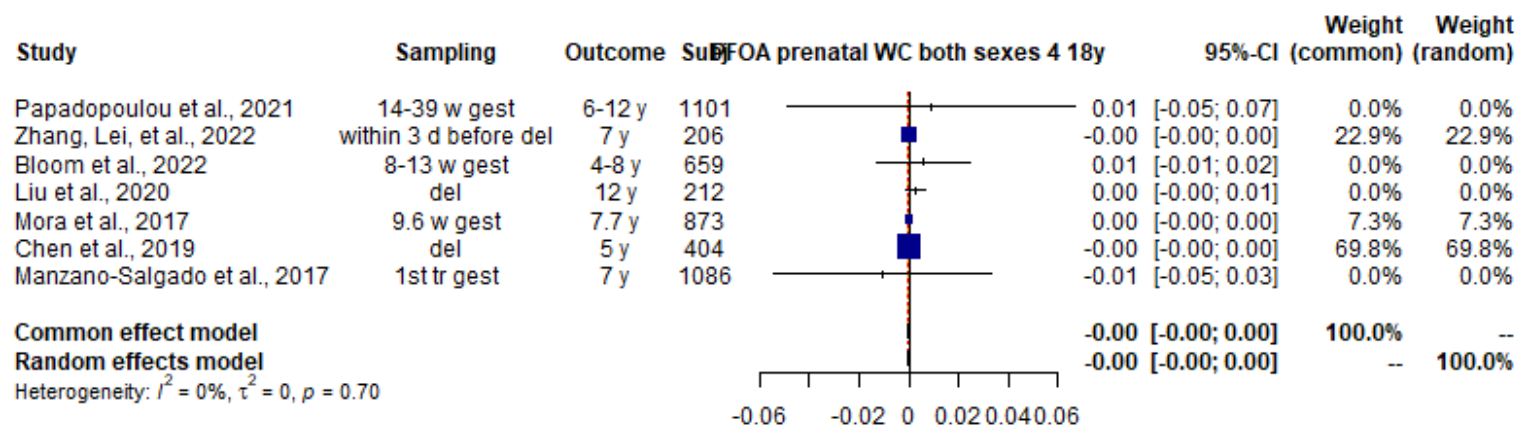
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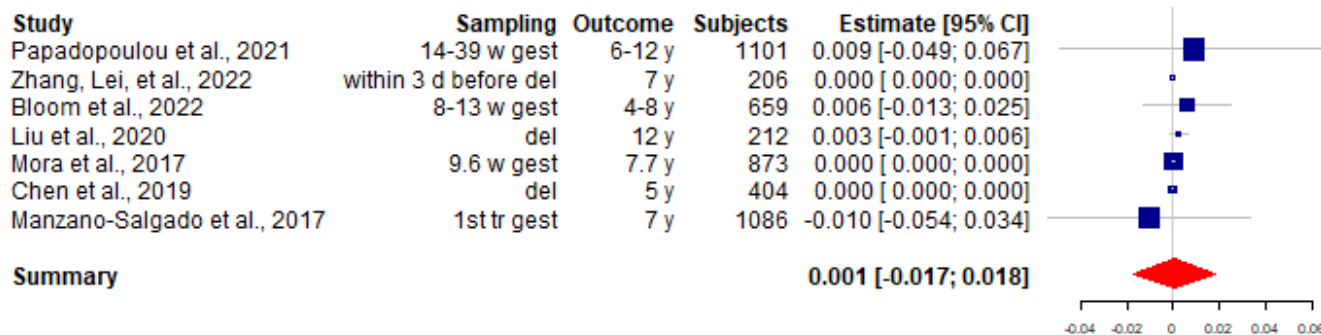
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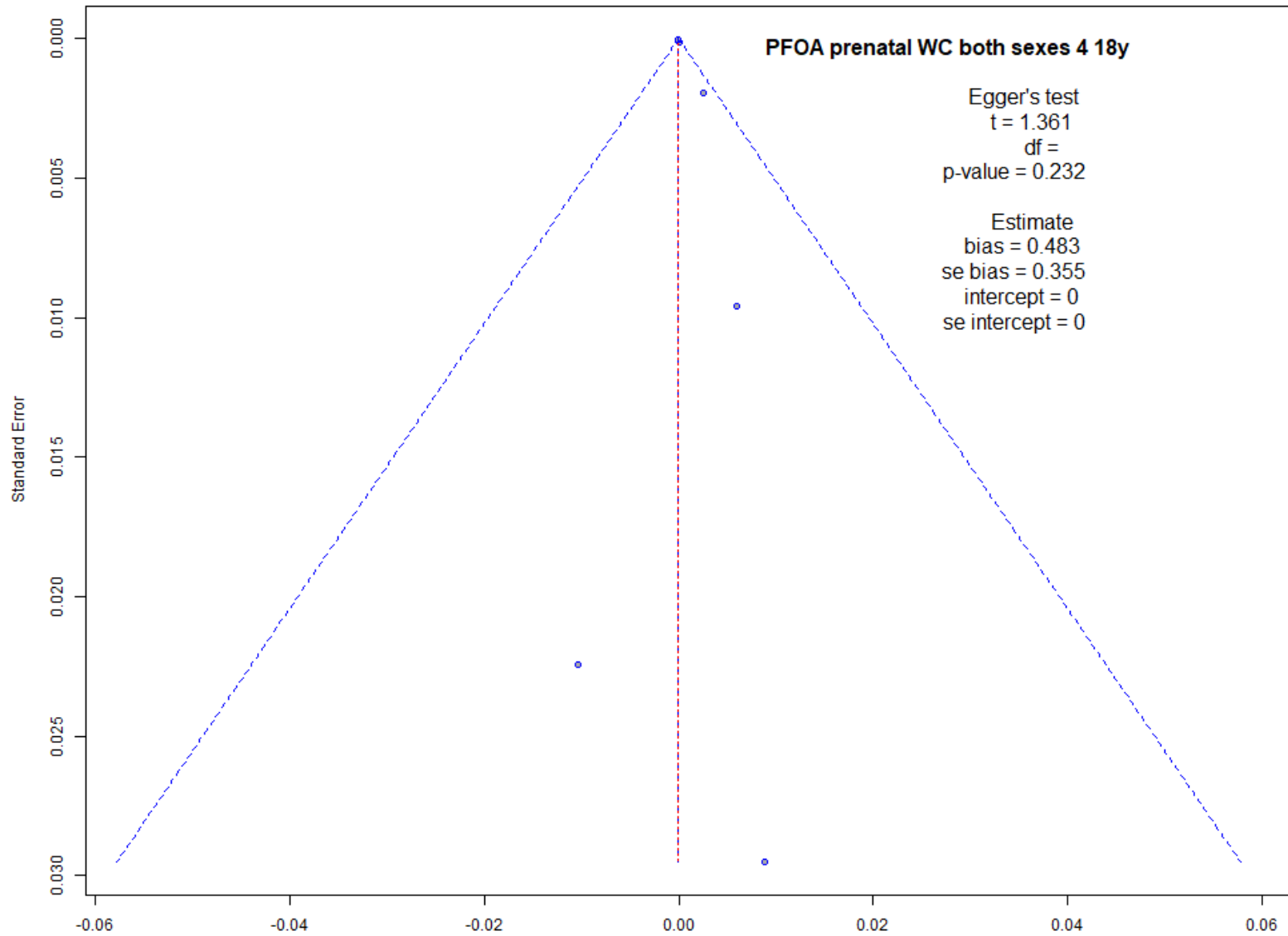
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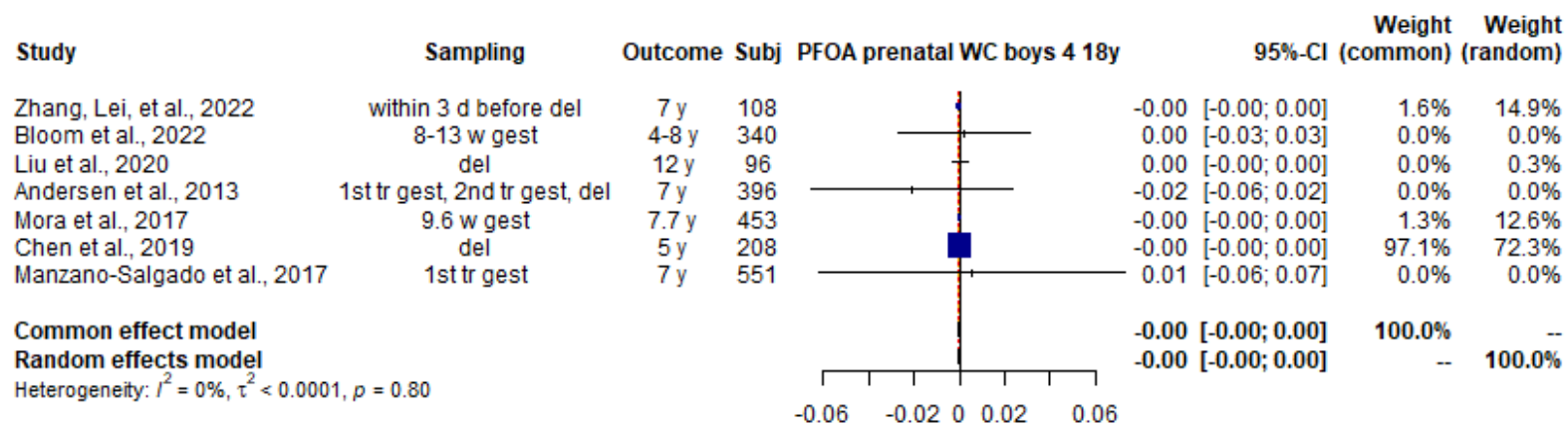
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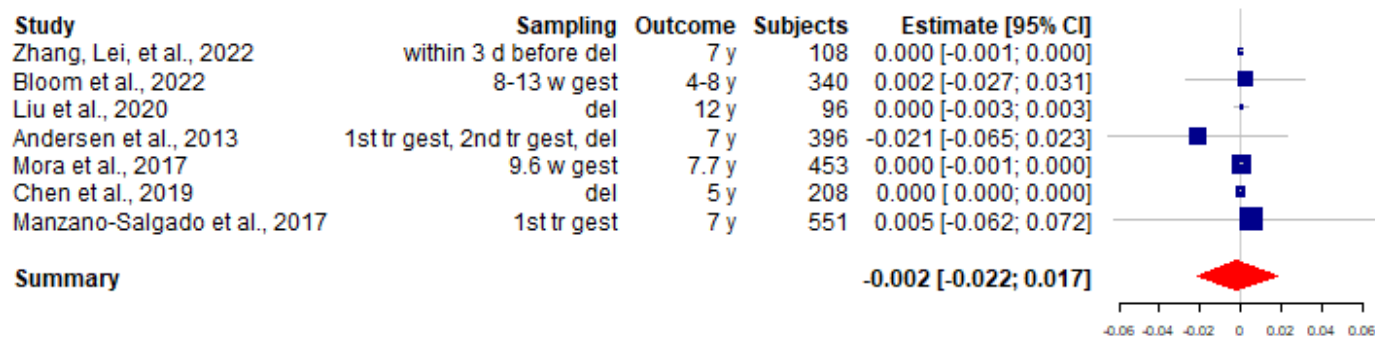
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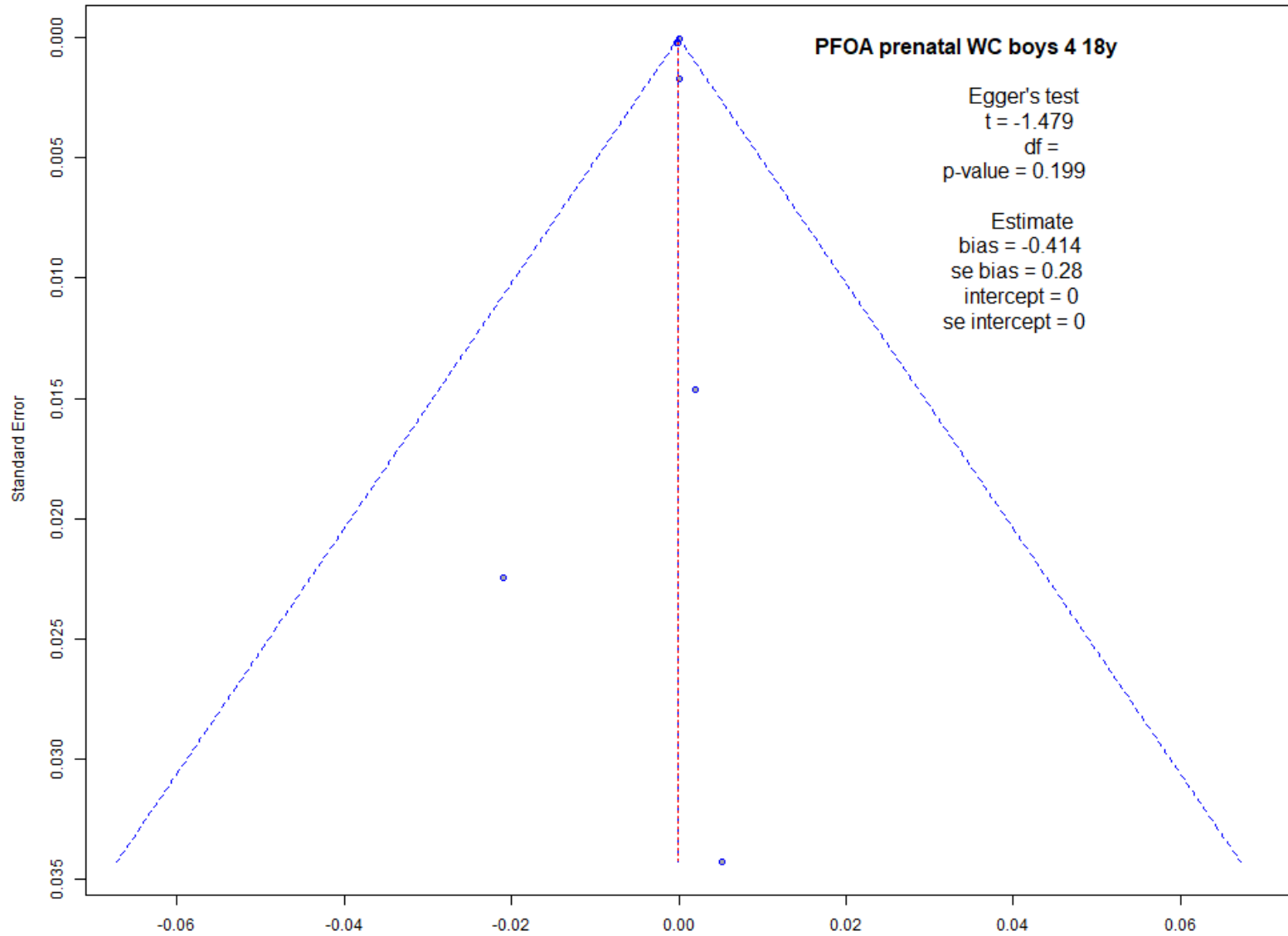
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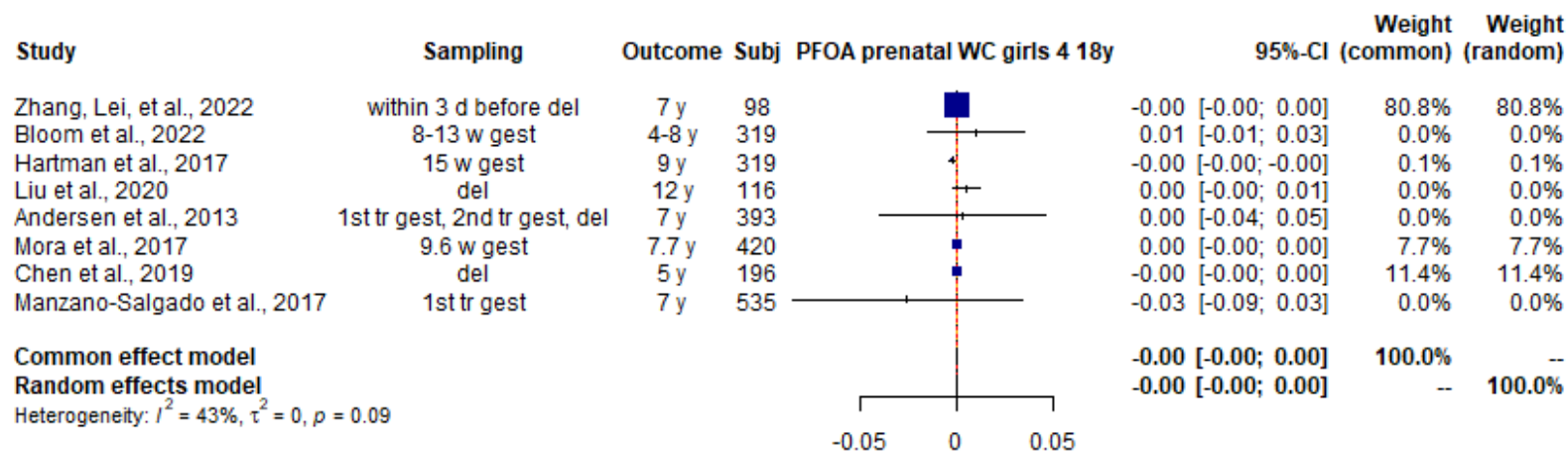
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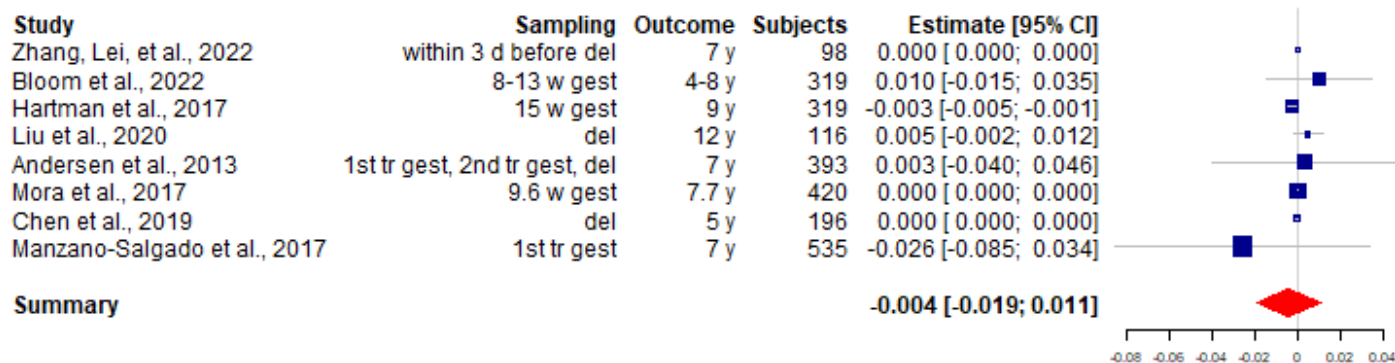
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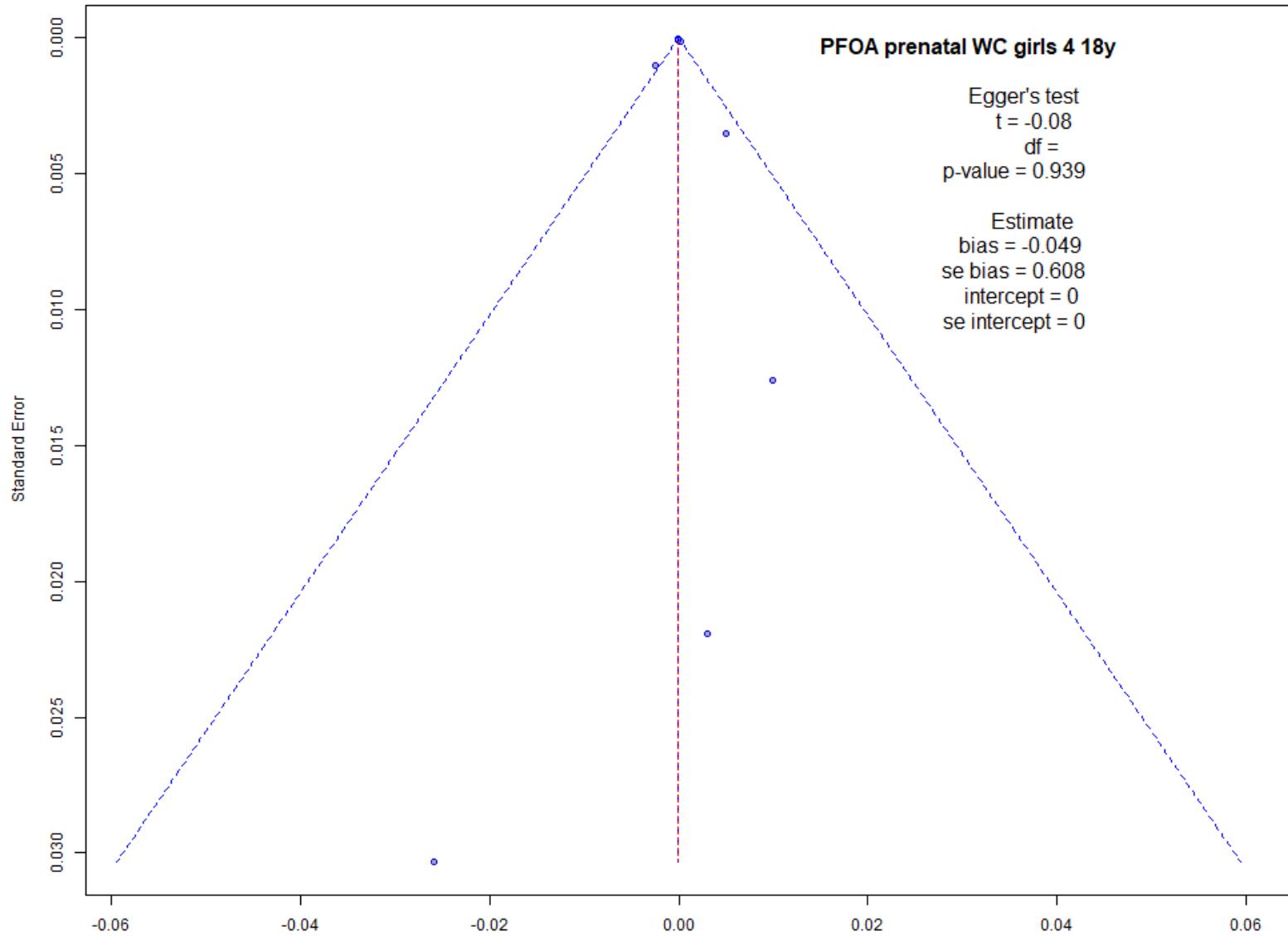
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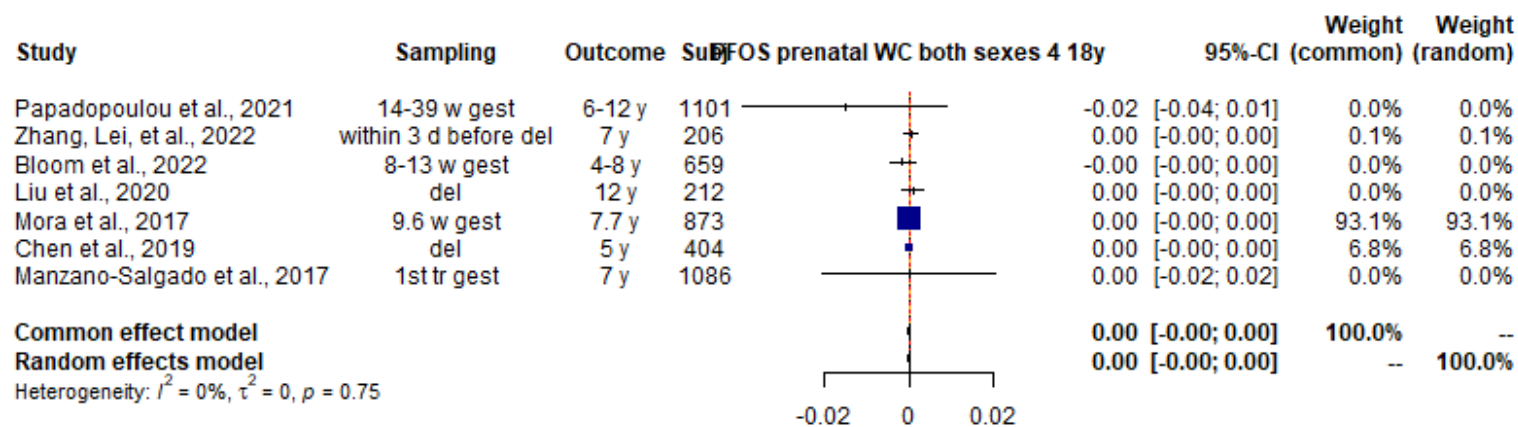
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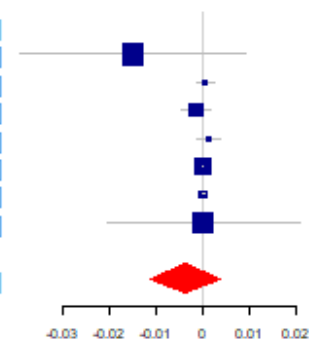
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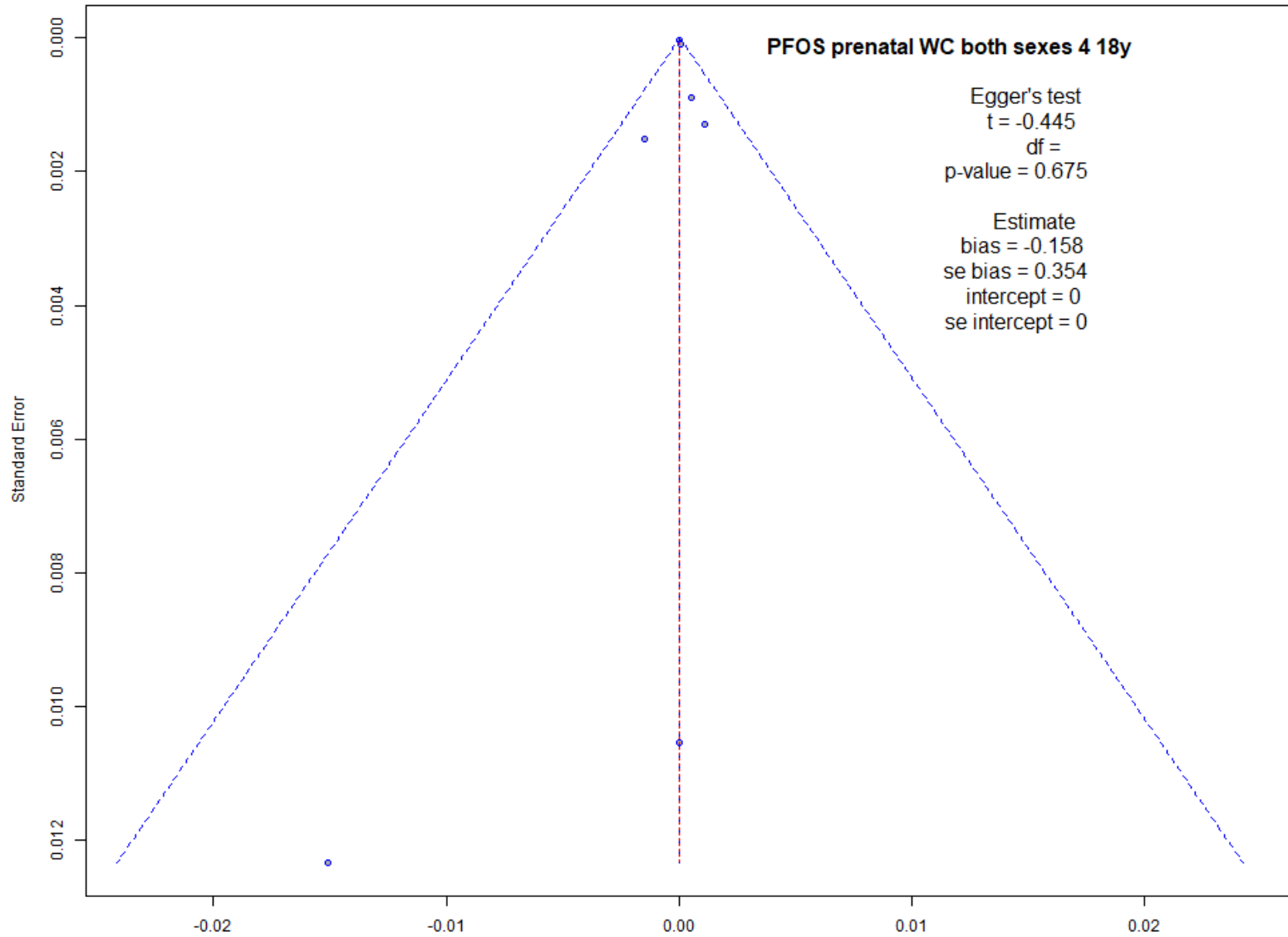
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Study	Sampling	Outcome	Subjects	Estimate [95% CI]
Papadopoulou et al., 2021	14-39 w gest	6-12 y	1101	-0.015 [-0.039; 0.009]
Zhang, Lei, et al., 2022	within 3 d before del	7 y	206	0.001 [-0.001; 0.002]
Bloom et al., 2022	8-13 w gest	4-8 y	659	-0.001 [-0.004; 0.001]
Liu et al., 2020	del	12 y	212	0.001 [-0.001; 0.004]
Mora et al., 2017	9.6 w gest	7.7 y	873	0.000 [0.000; 0.000]
Chen et al., 2019	del	5 y	404	0.000 [0.000; 0.000]
Manzano-Salgado et al., 2017	1st tr gest	7 y	1086	0.000 [-0.021; 0.021]
Summary				-0.004 [-0.011; 0.004]



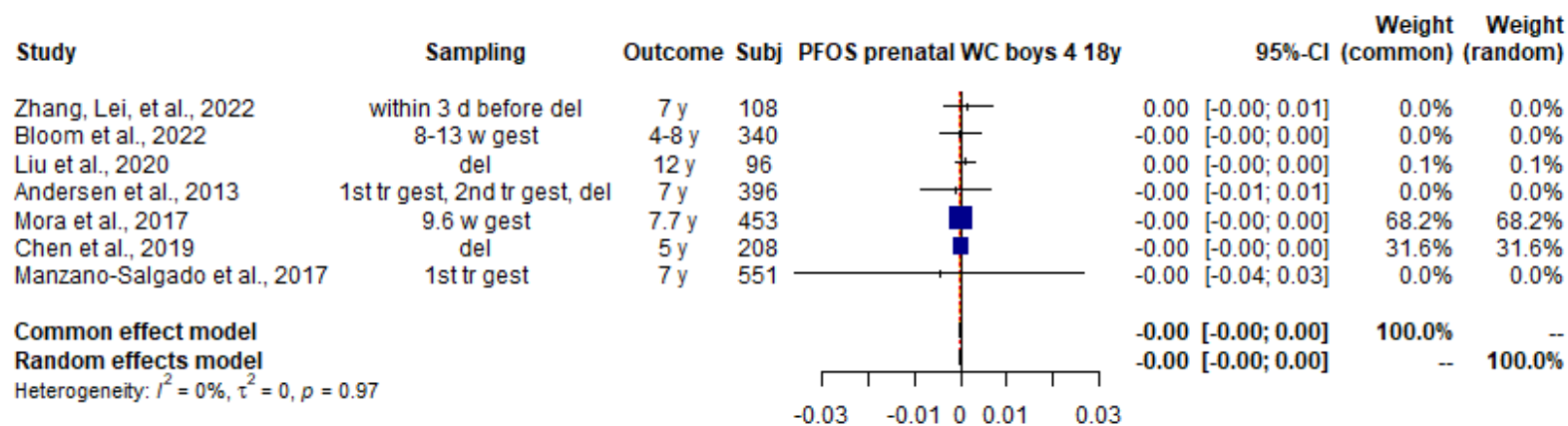
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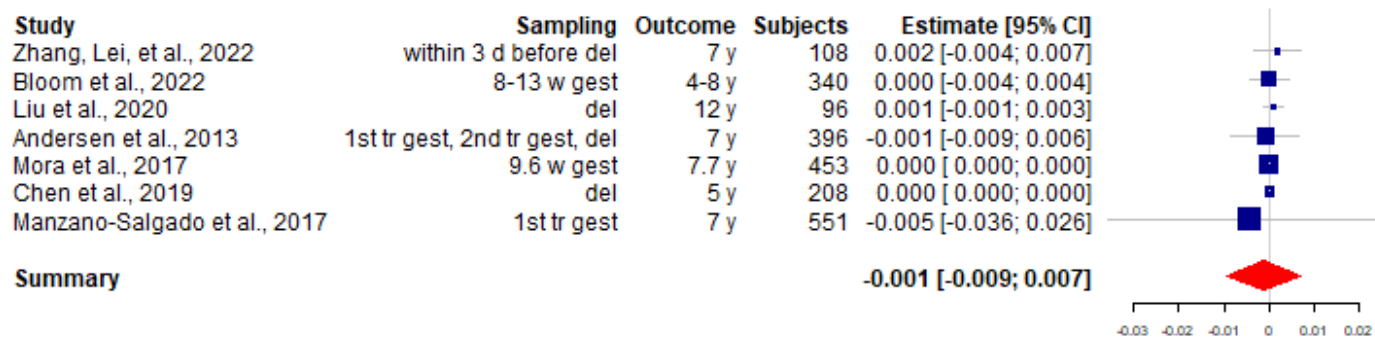
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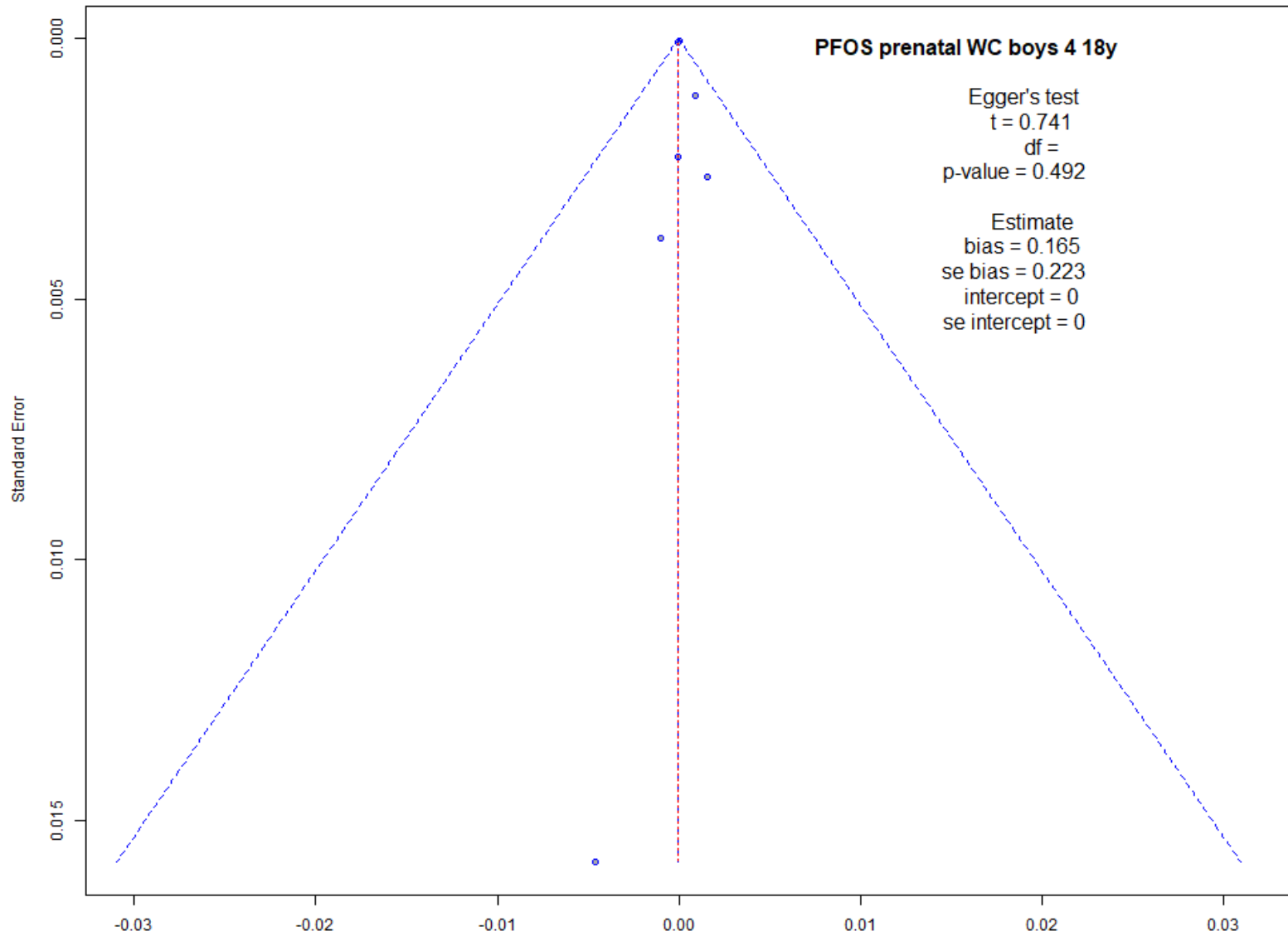
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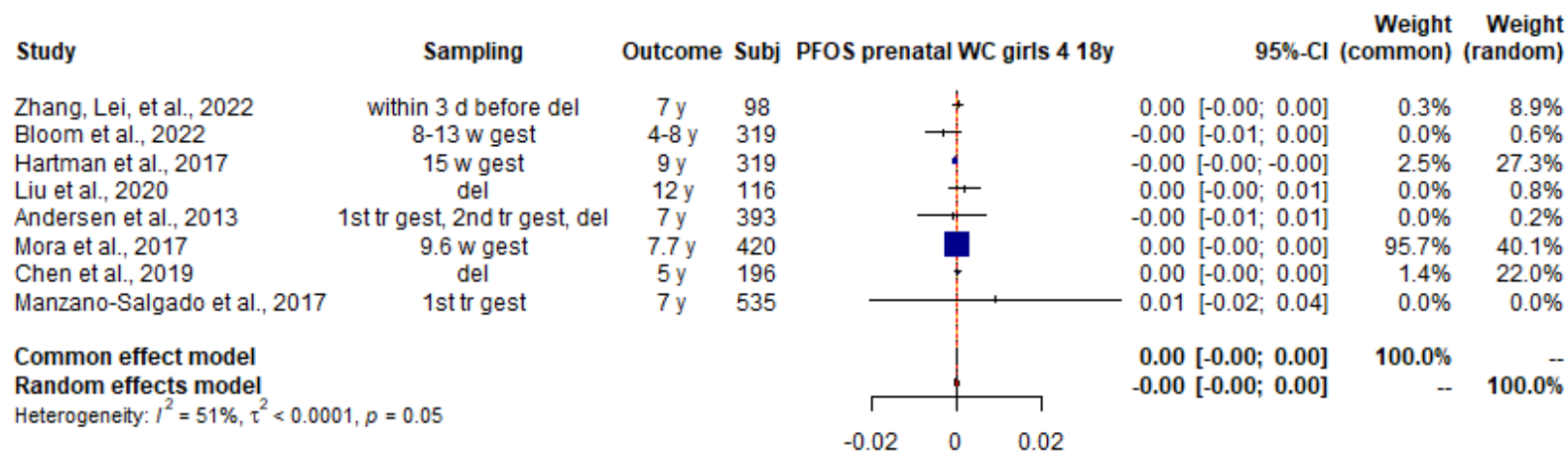
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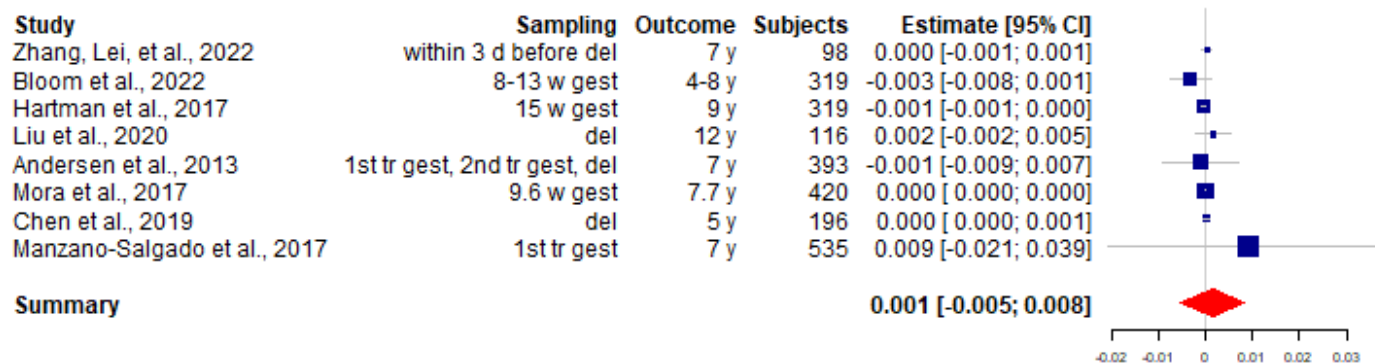
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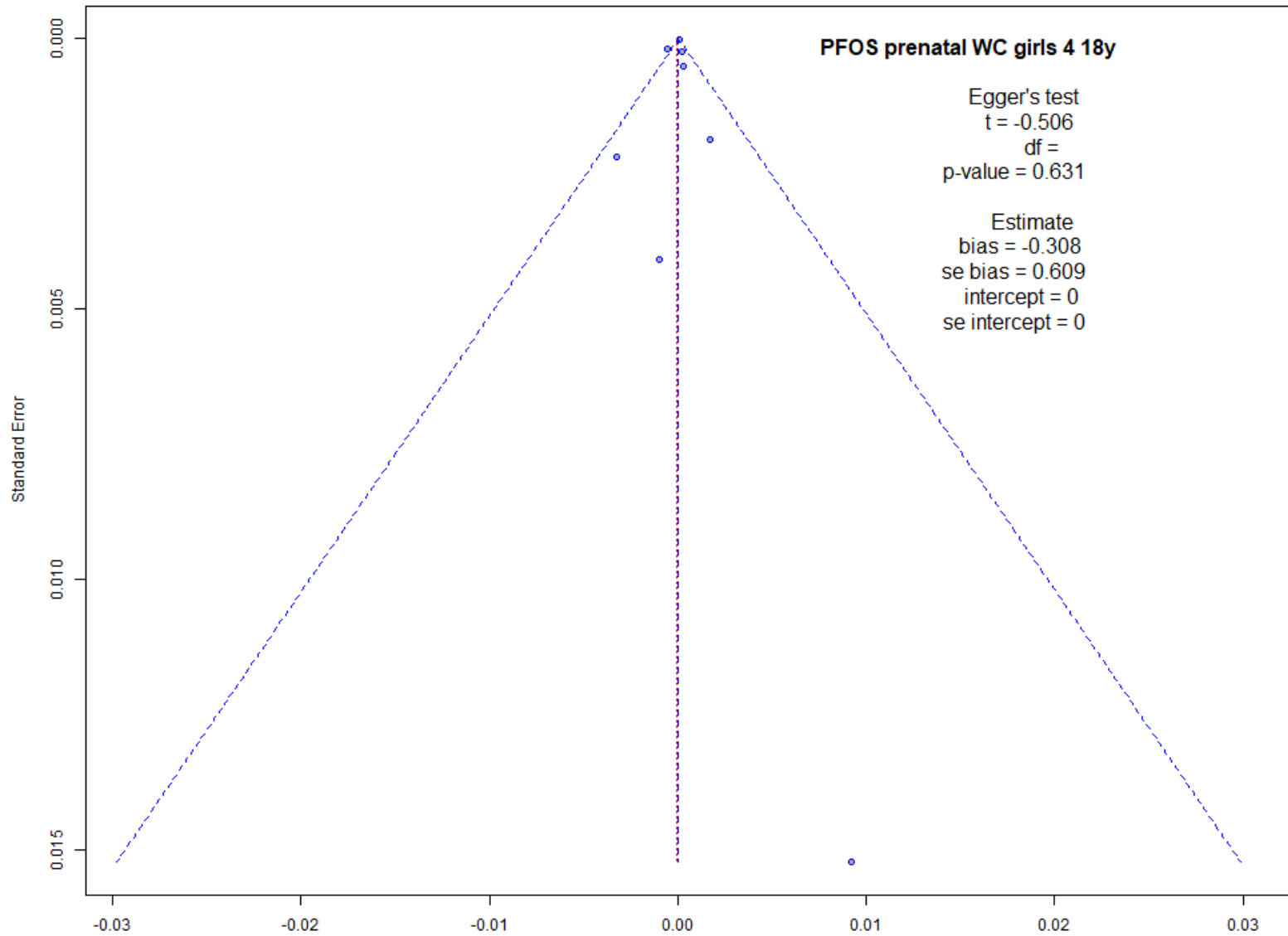
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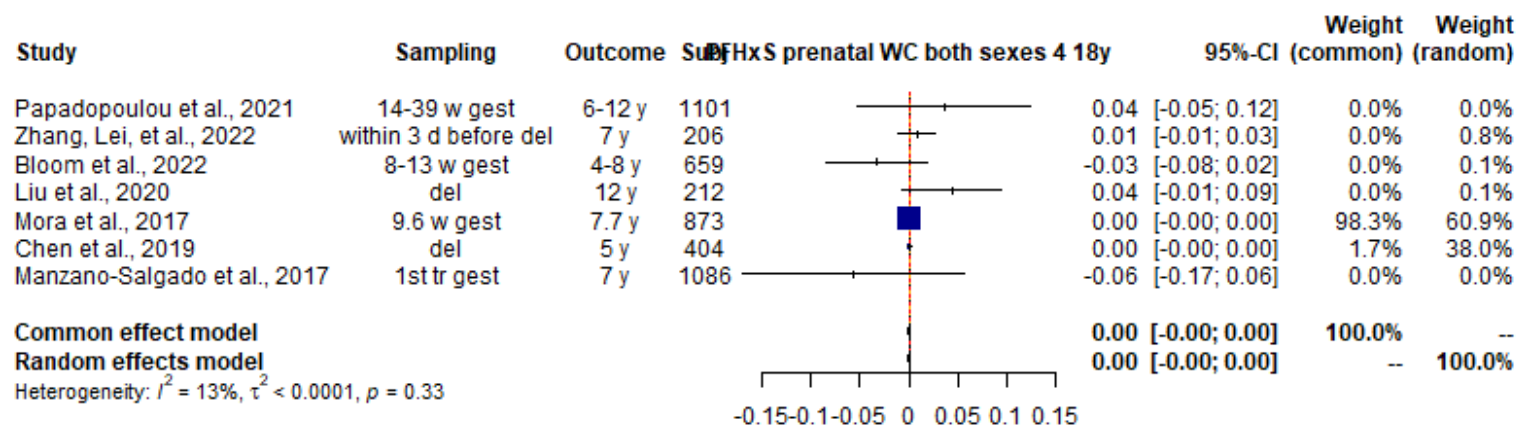
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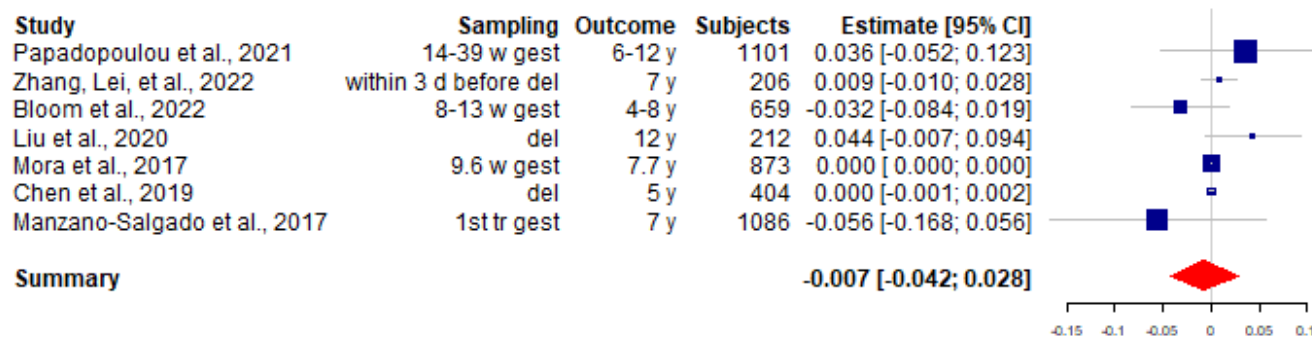
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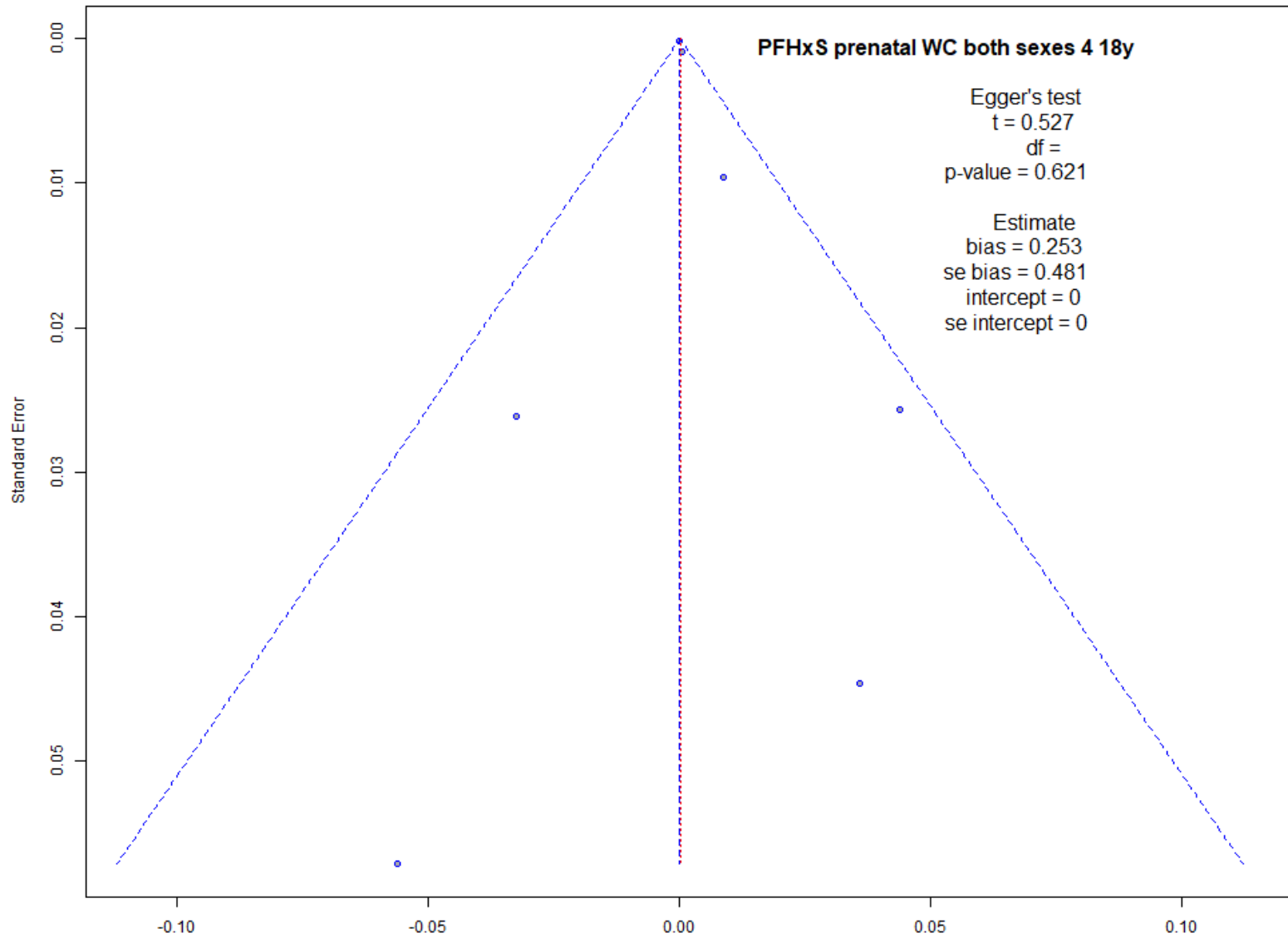
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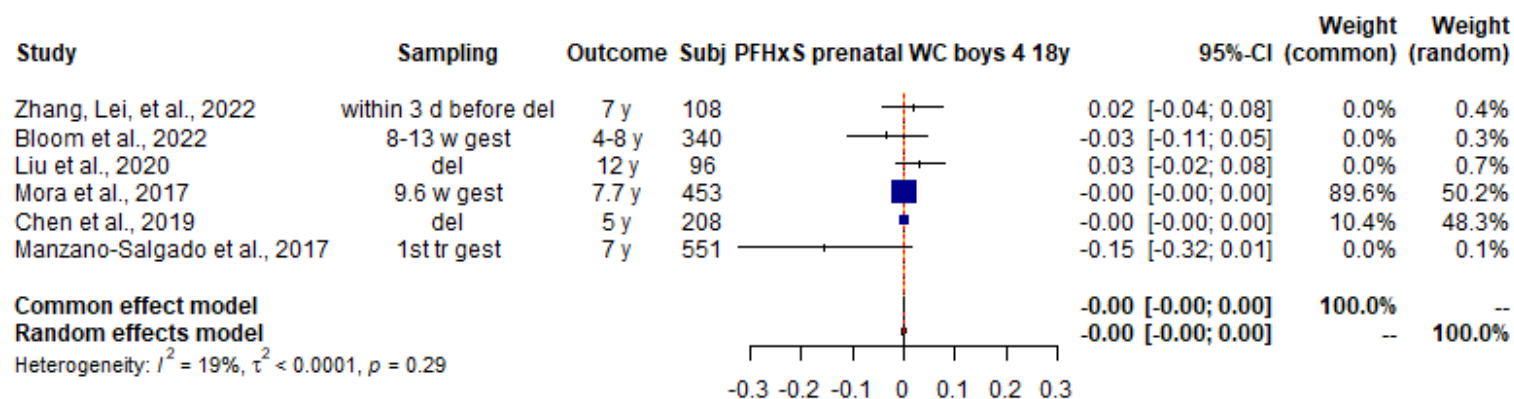
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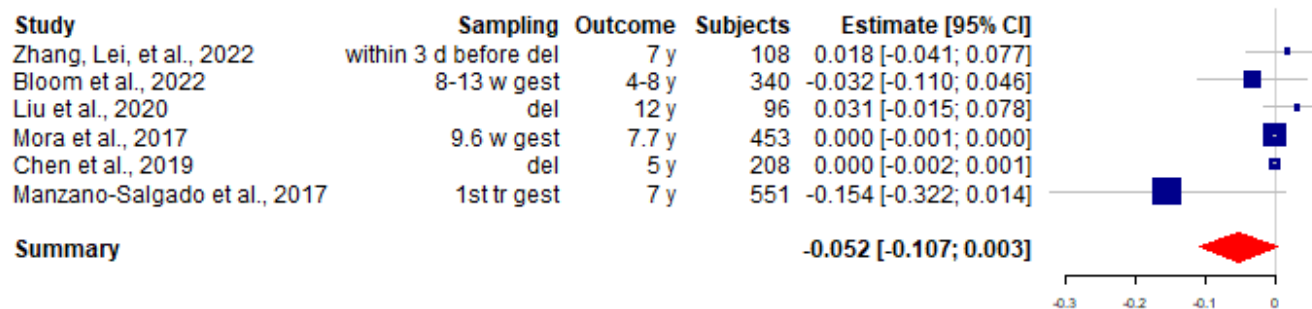
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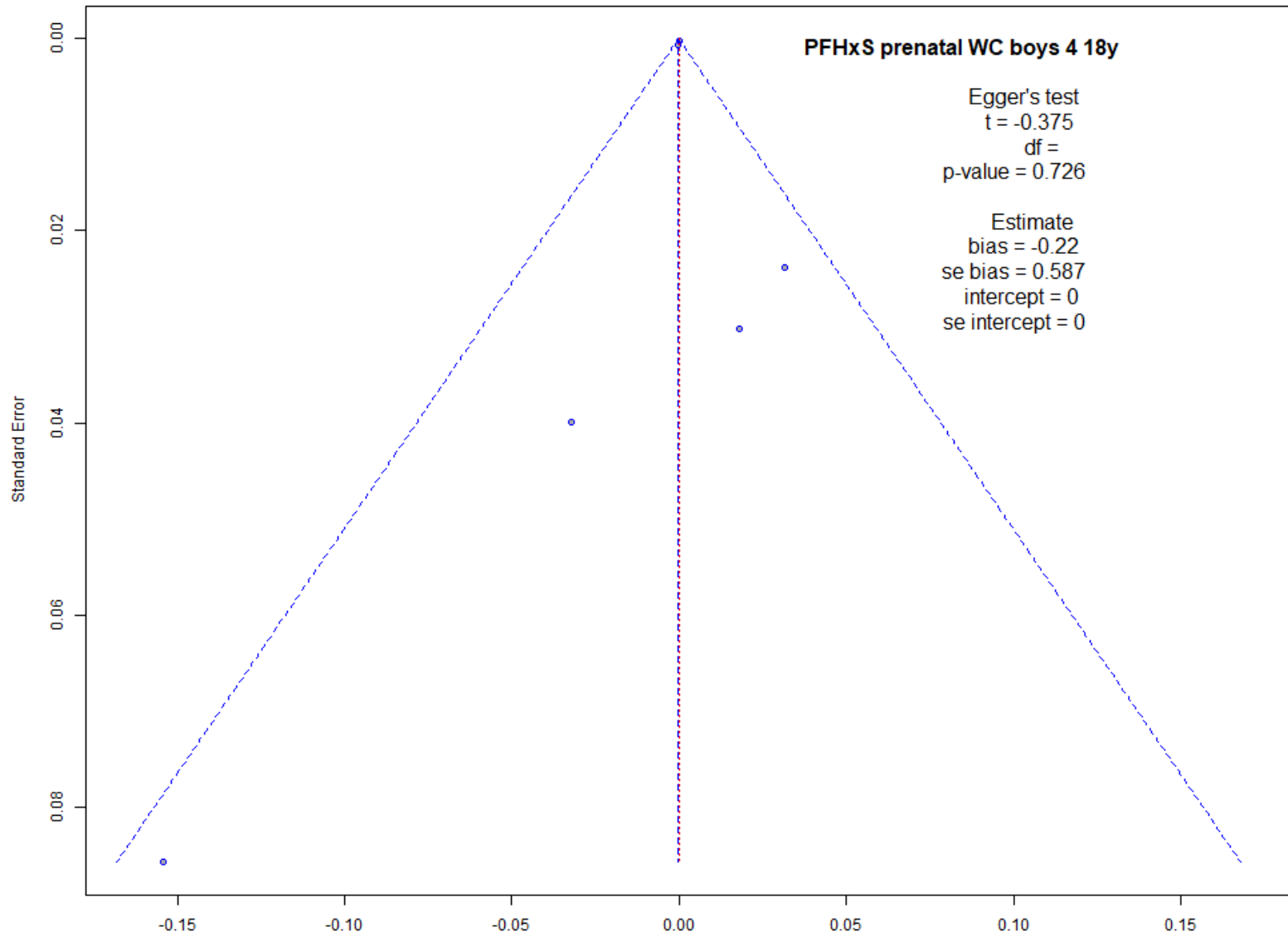
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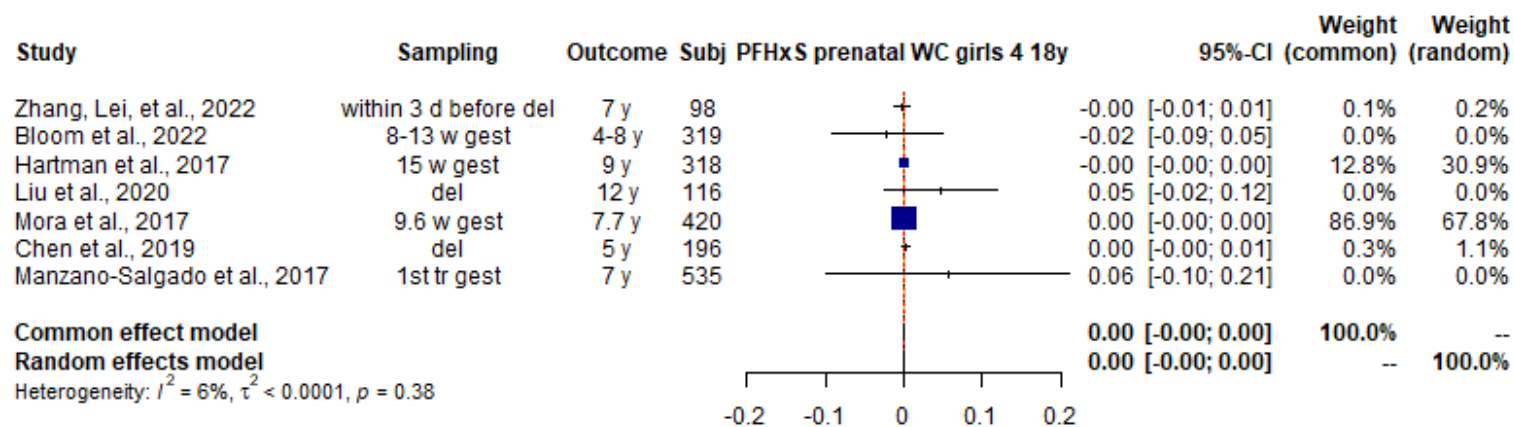
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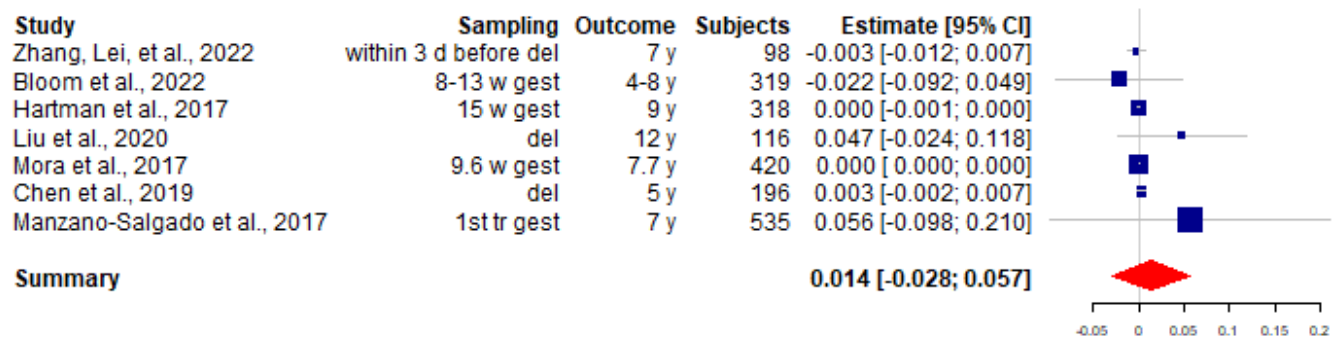
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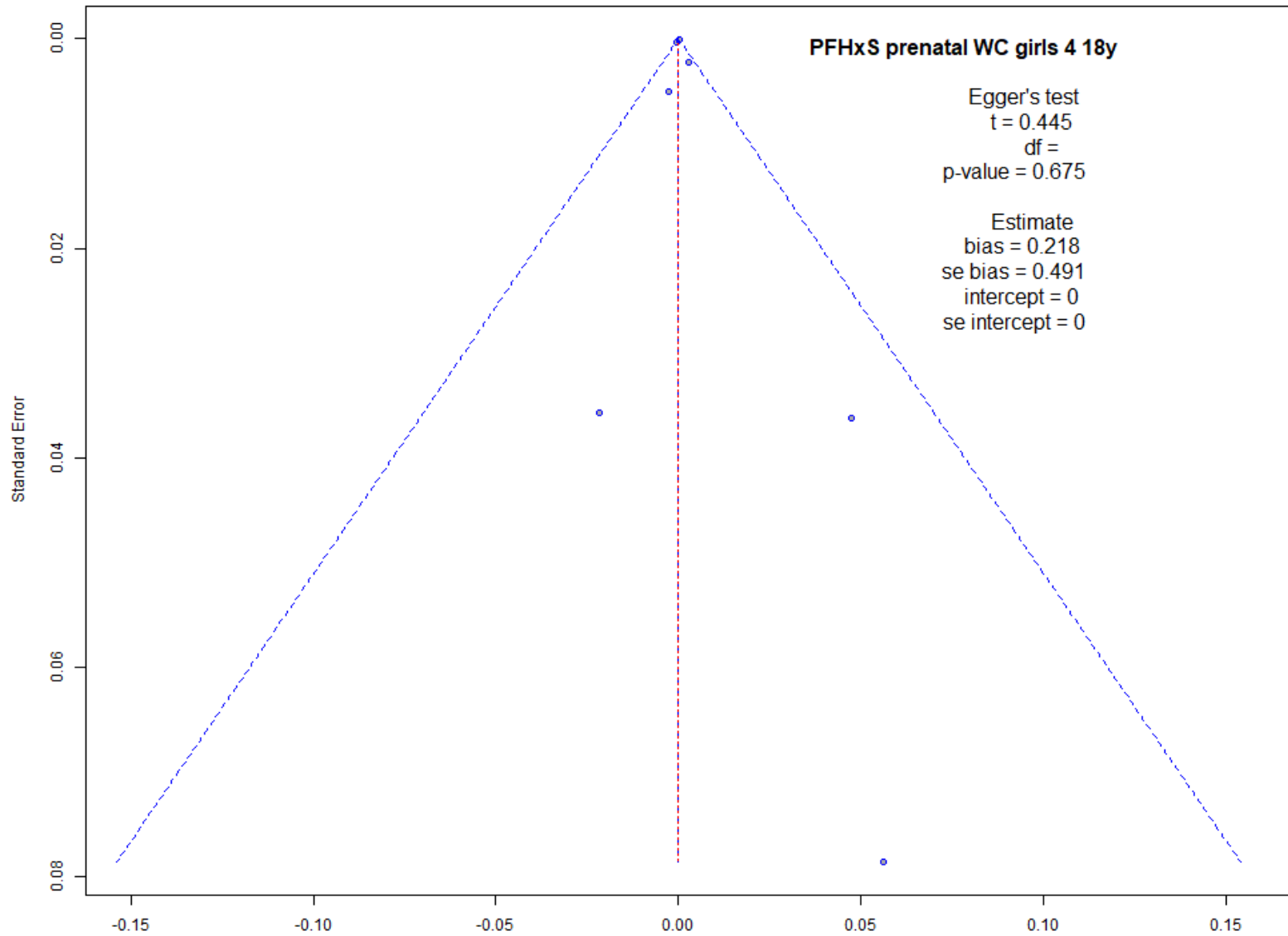
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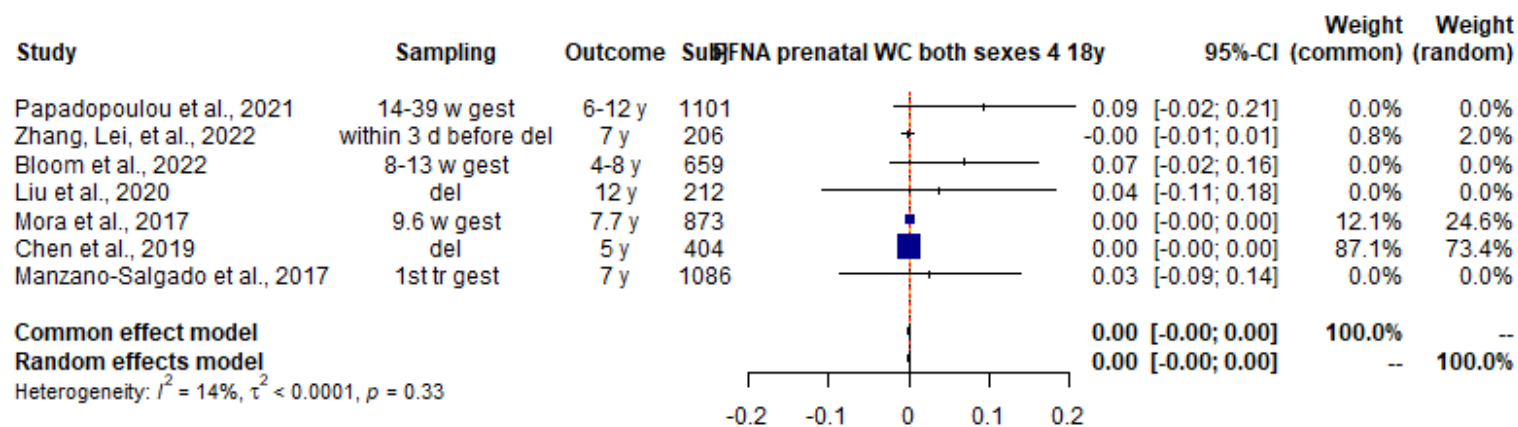
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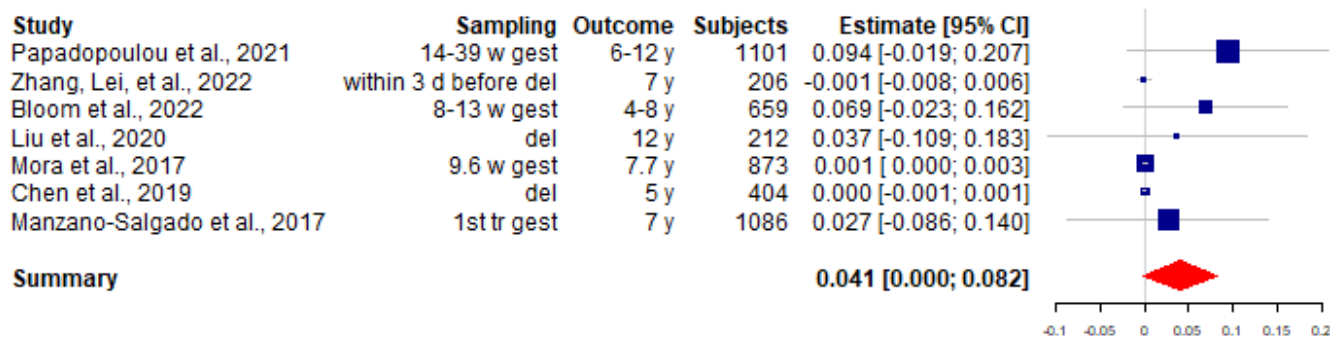
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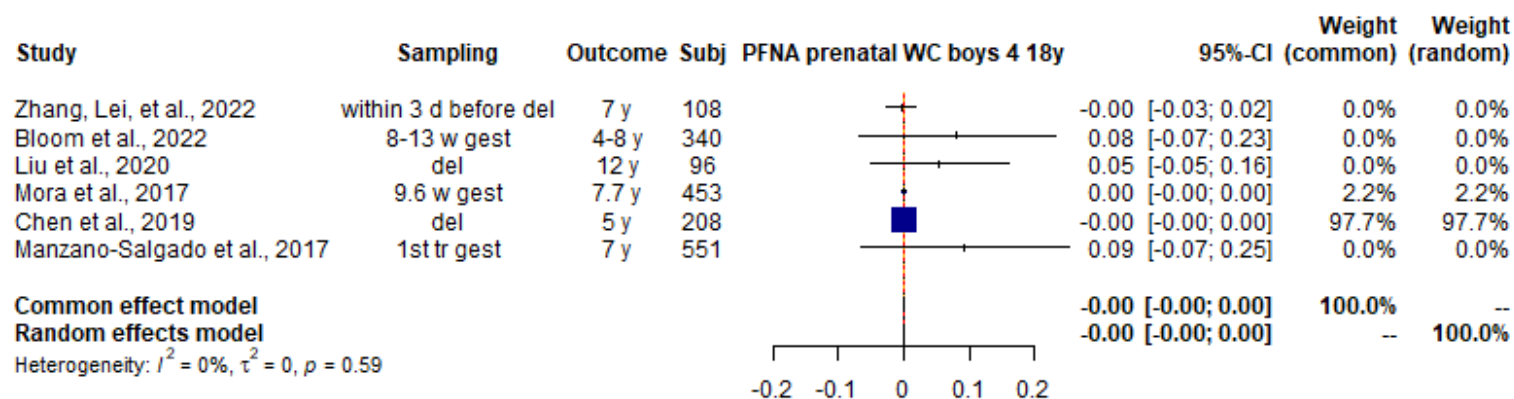
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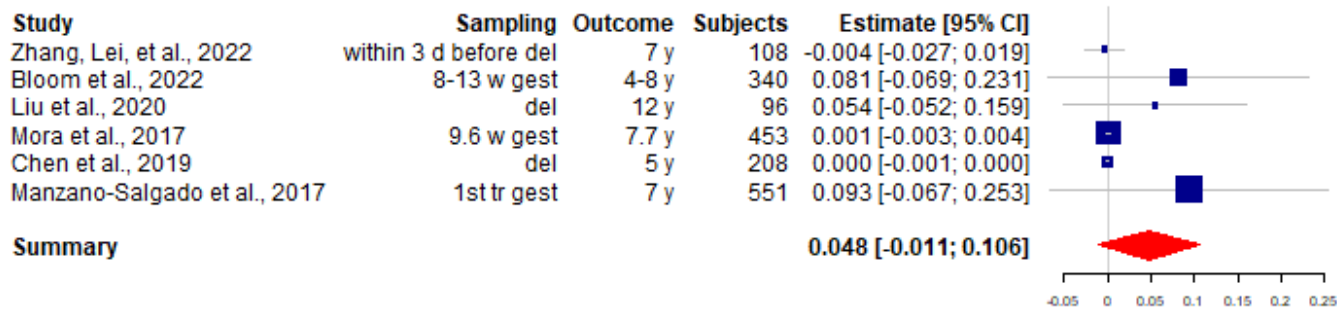
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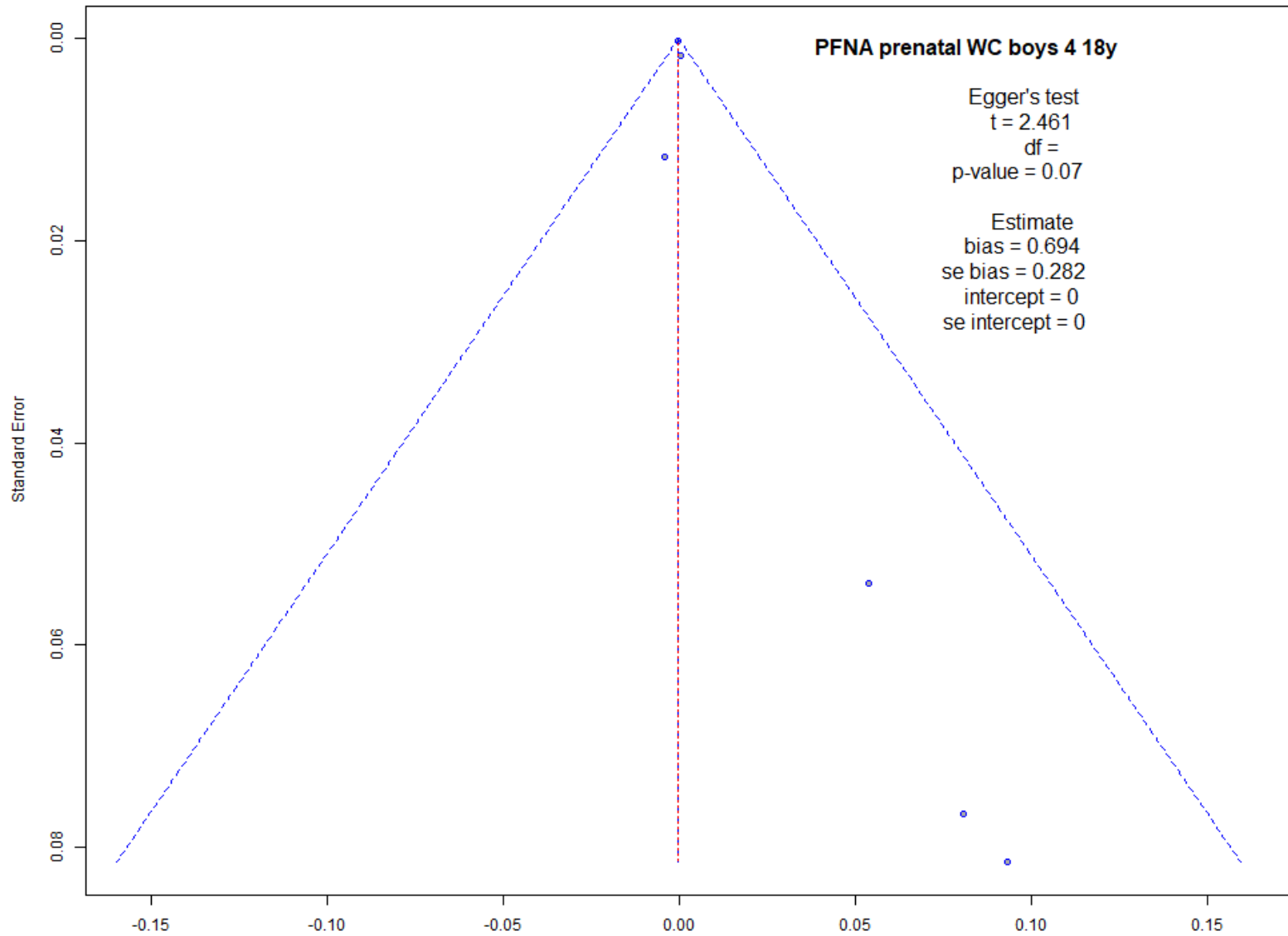
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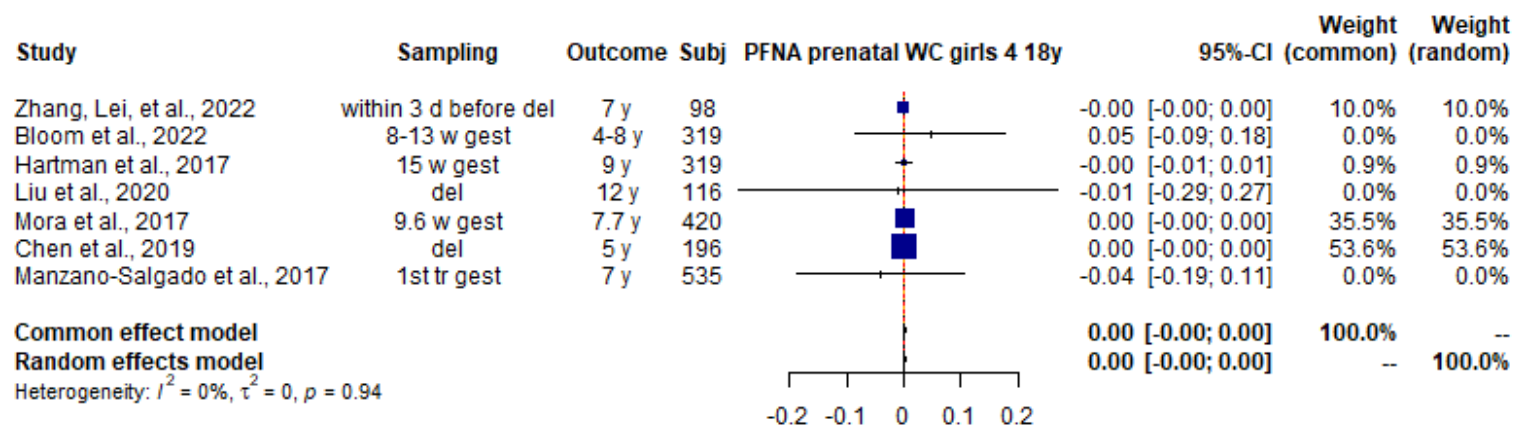
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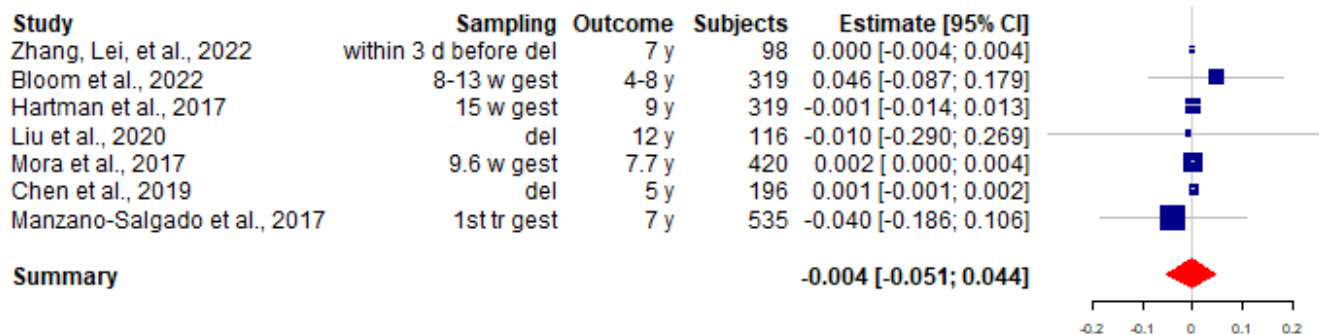
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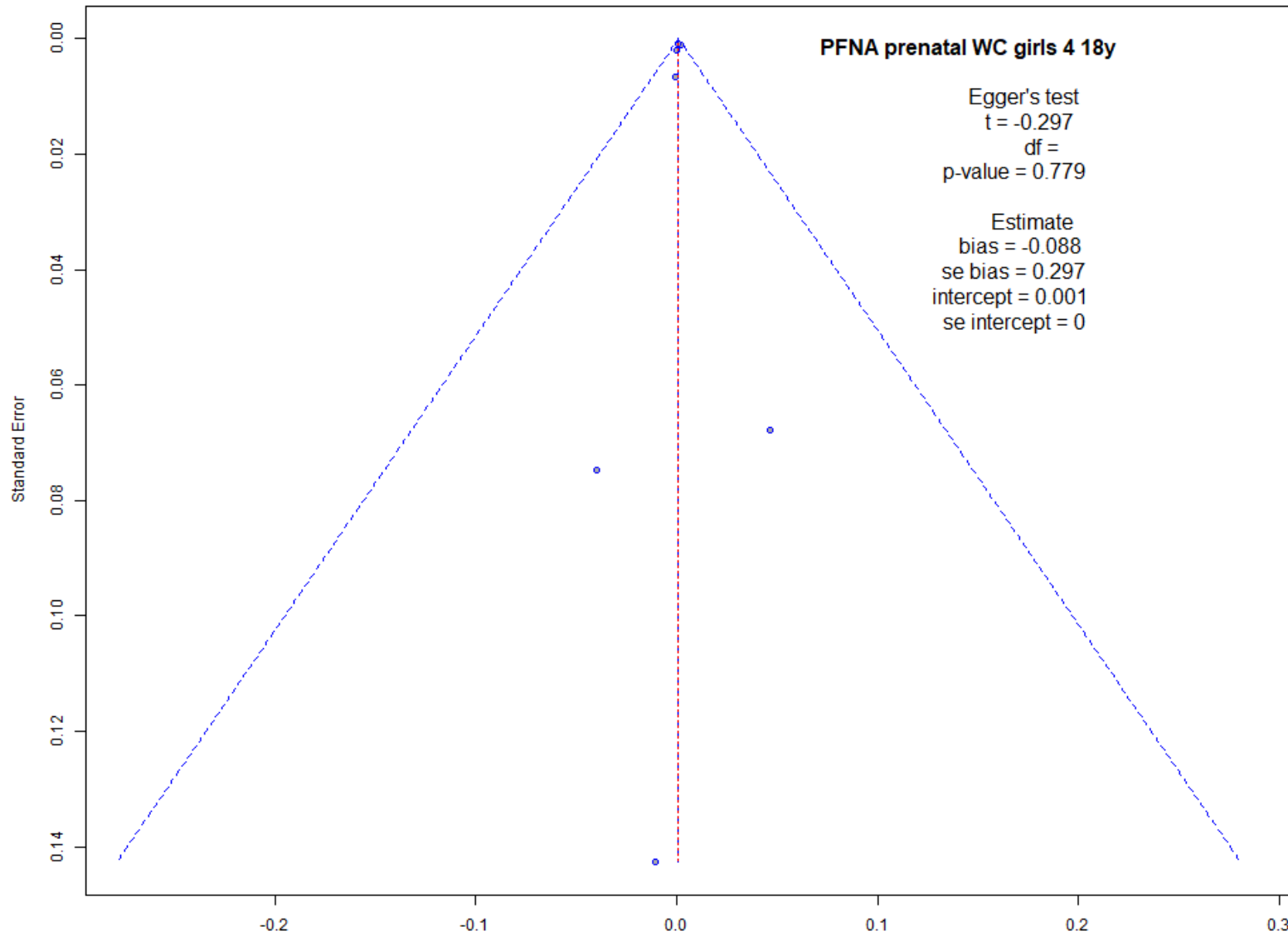
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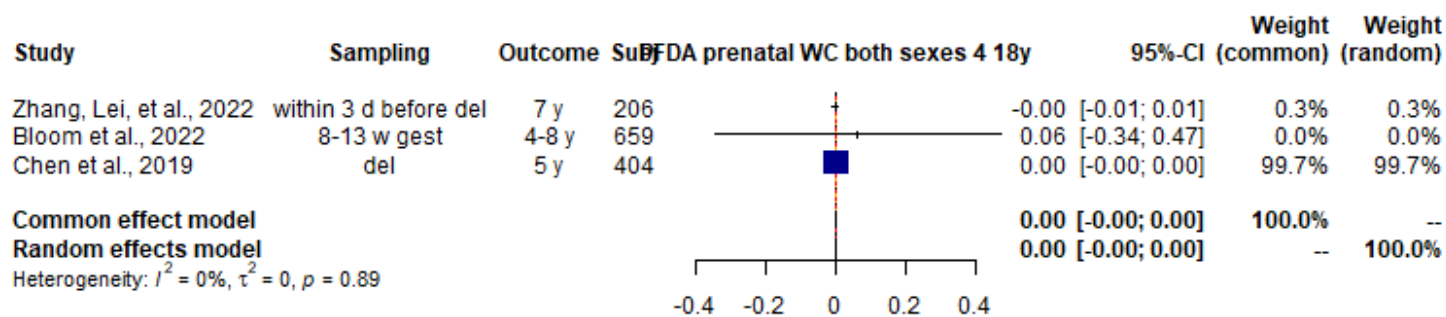
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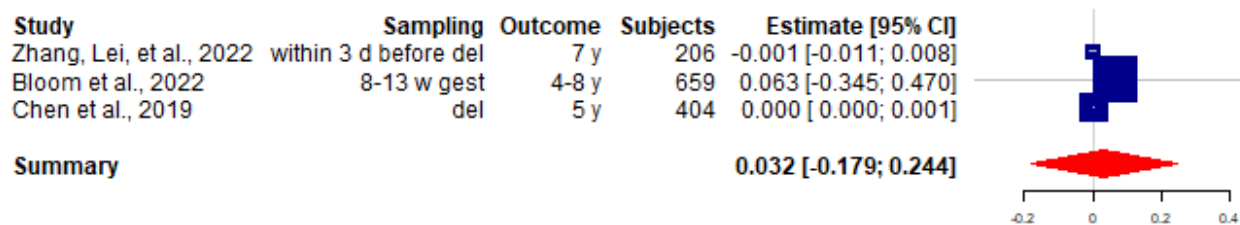
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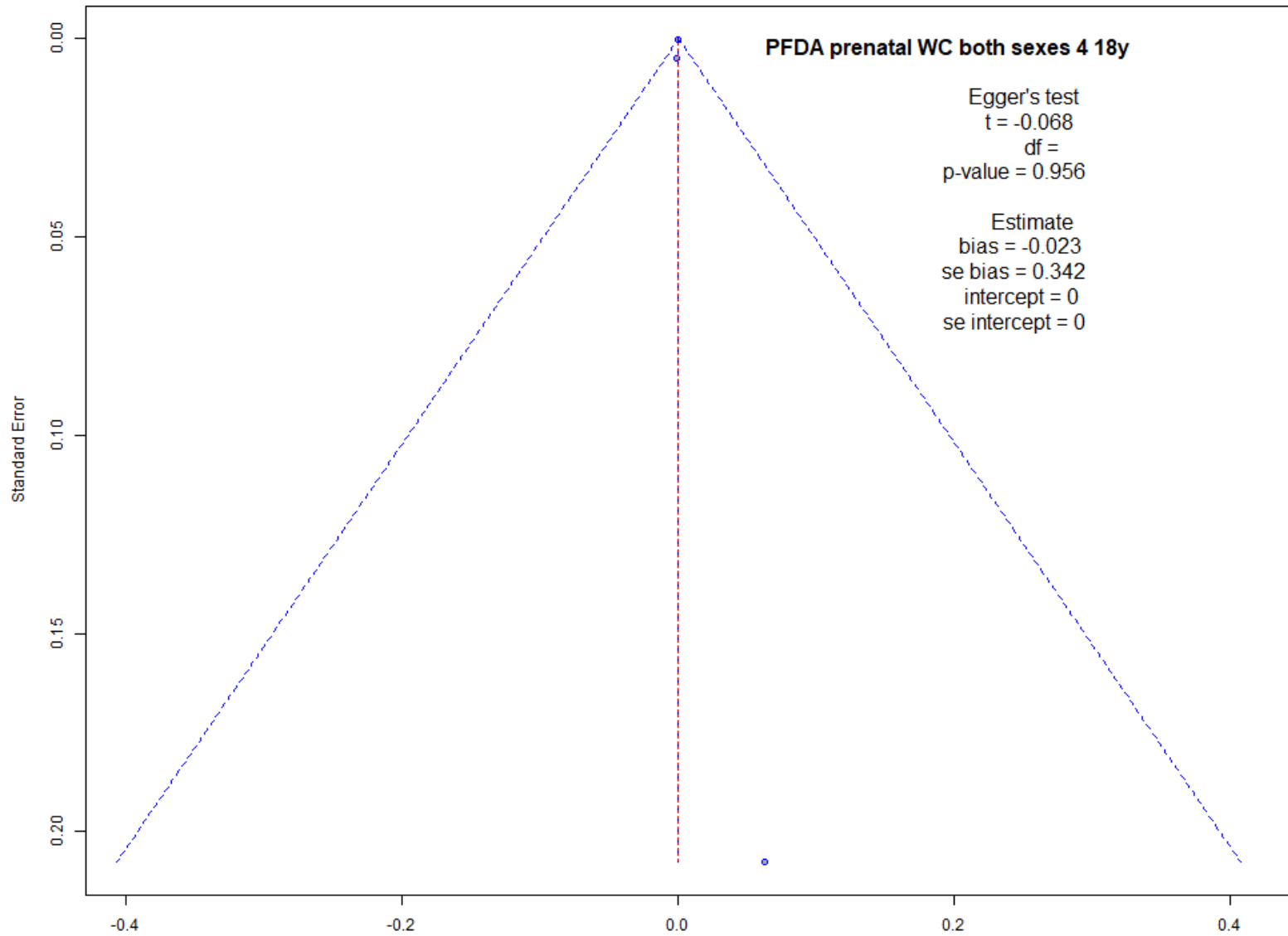
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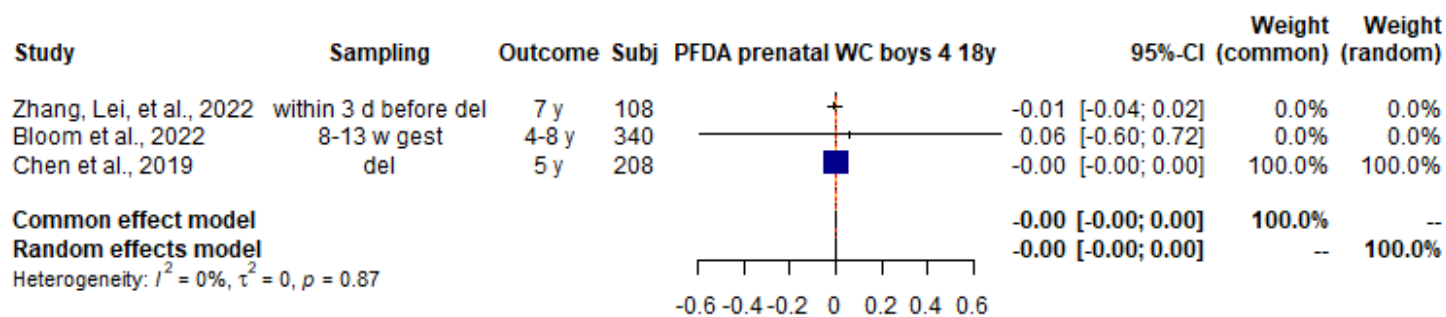
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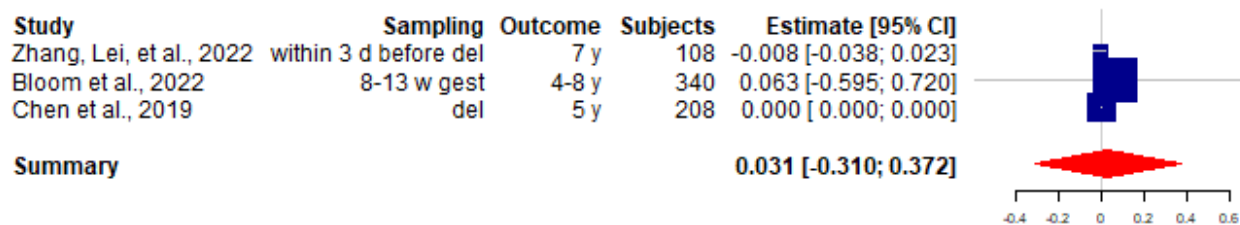
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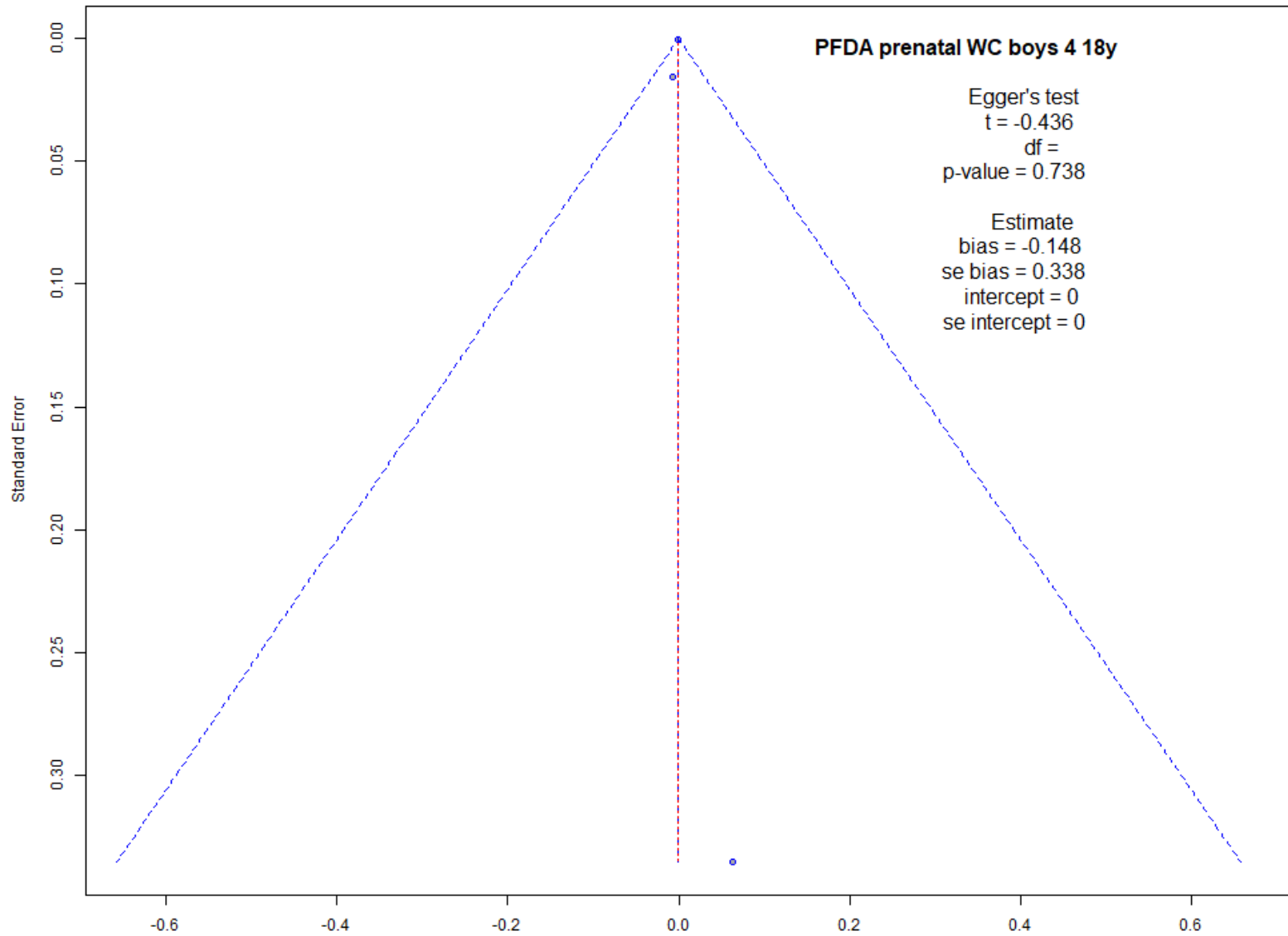
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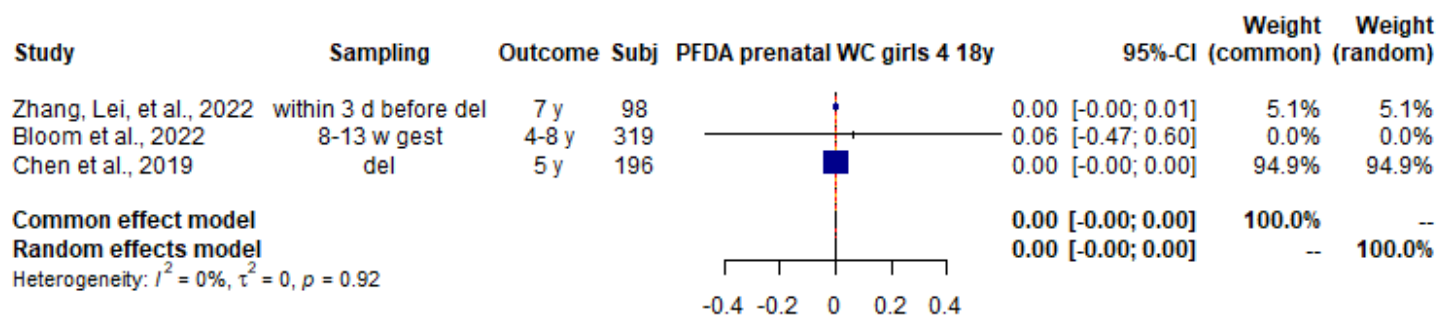
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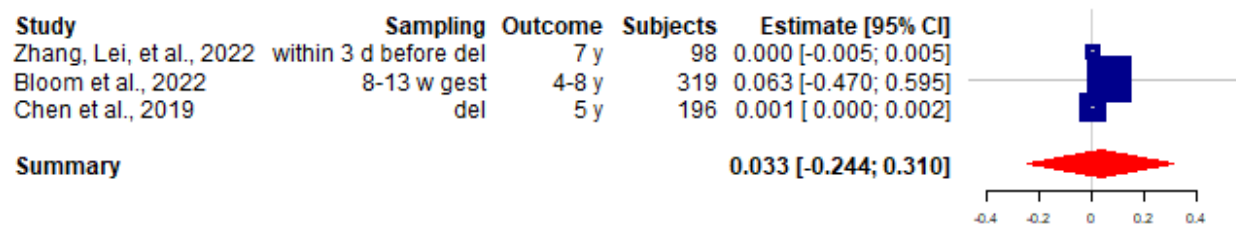
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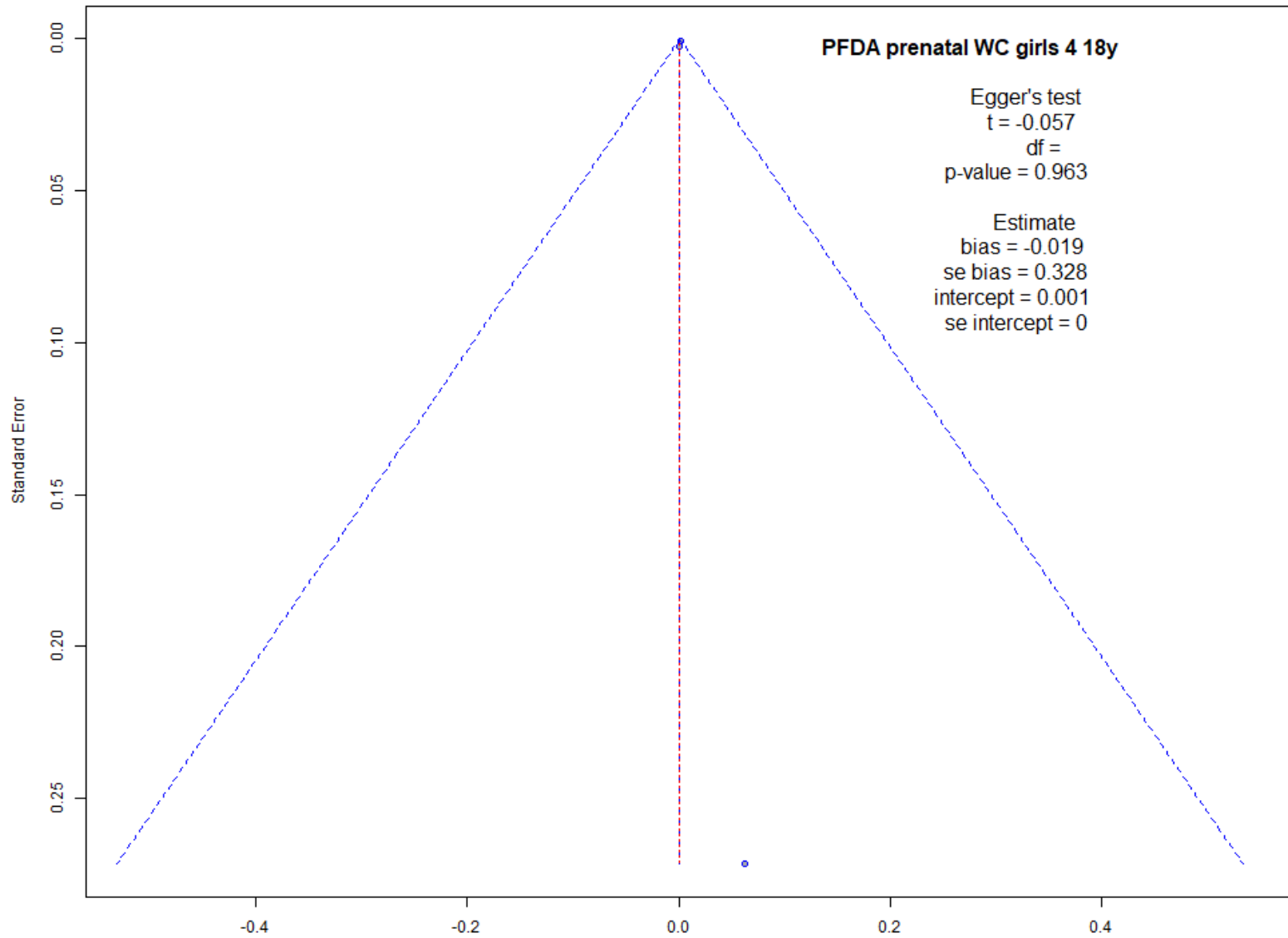
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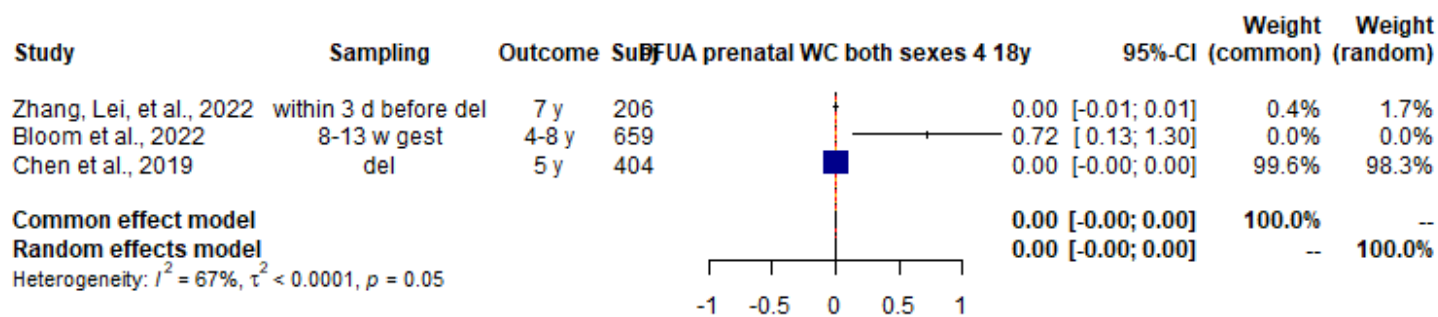
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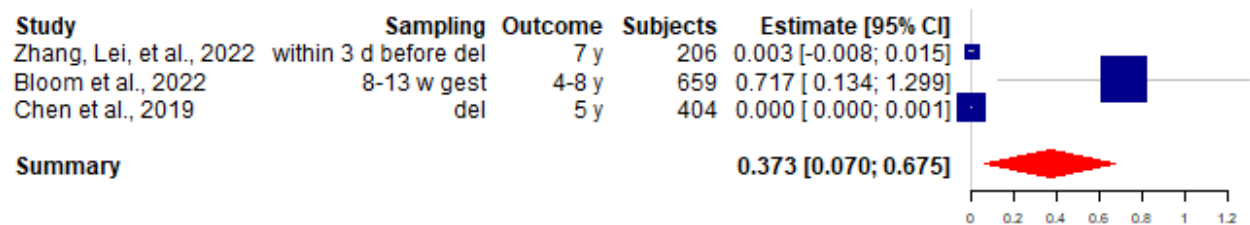
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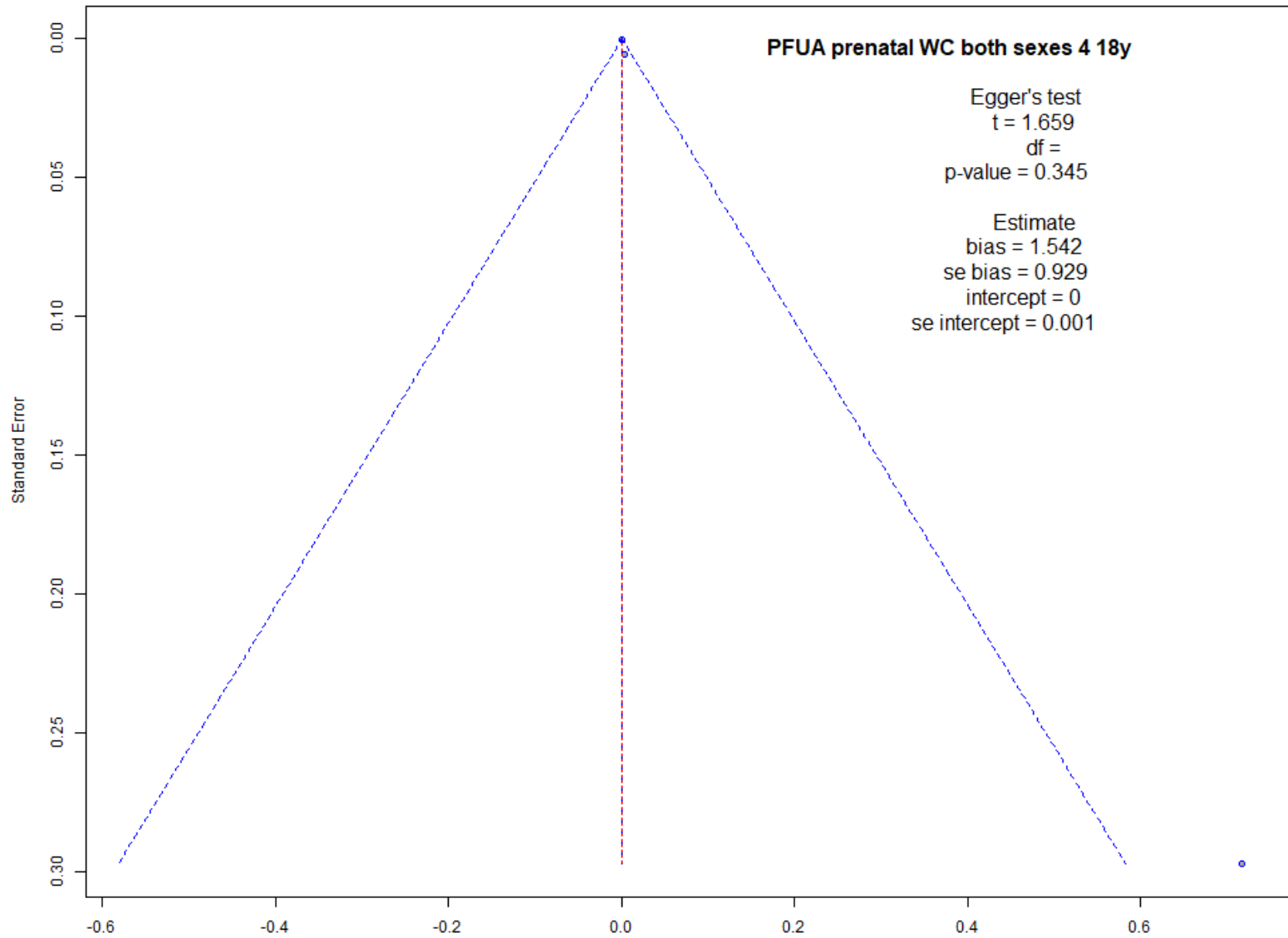
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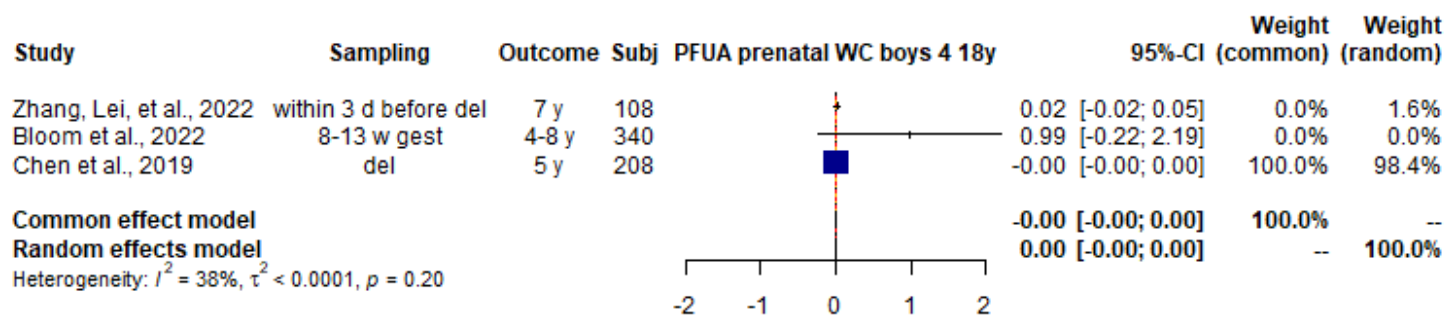
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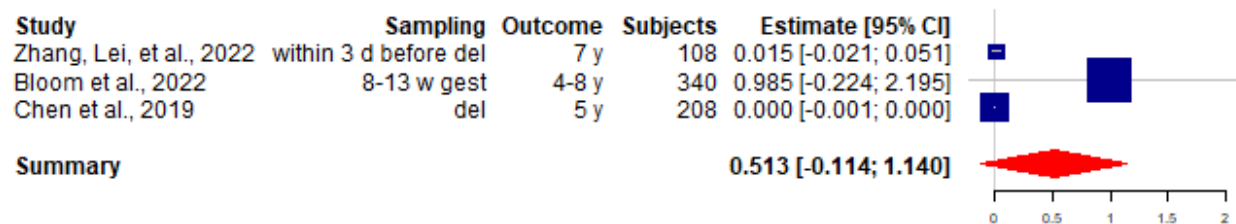
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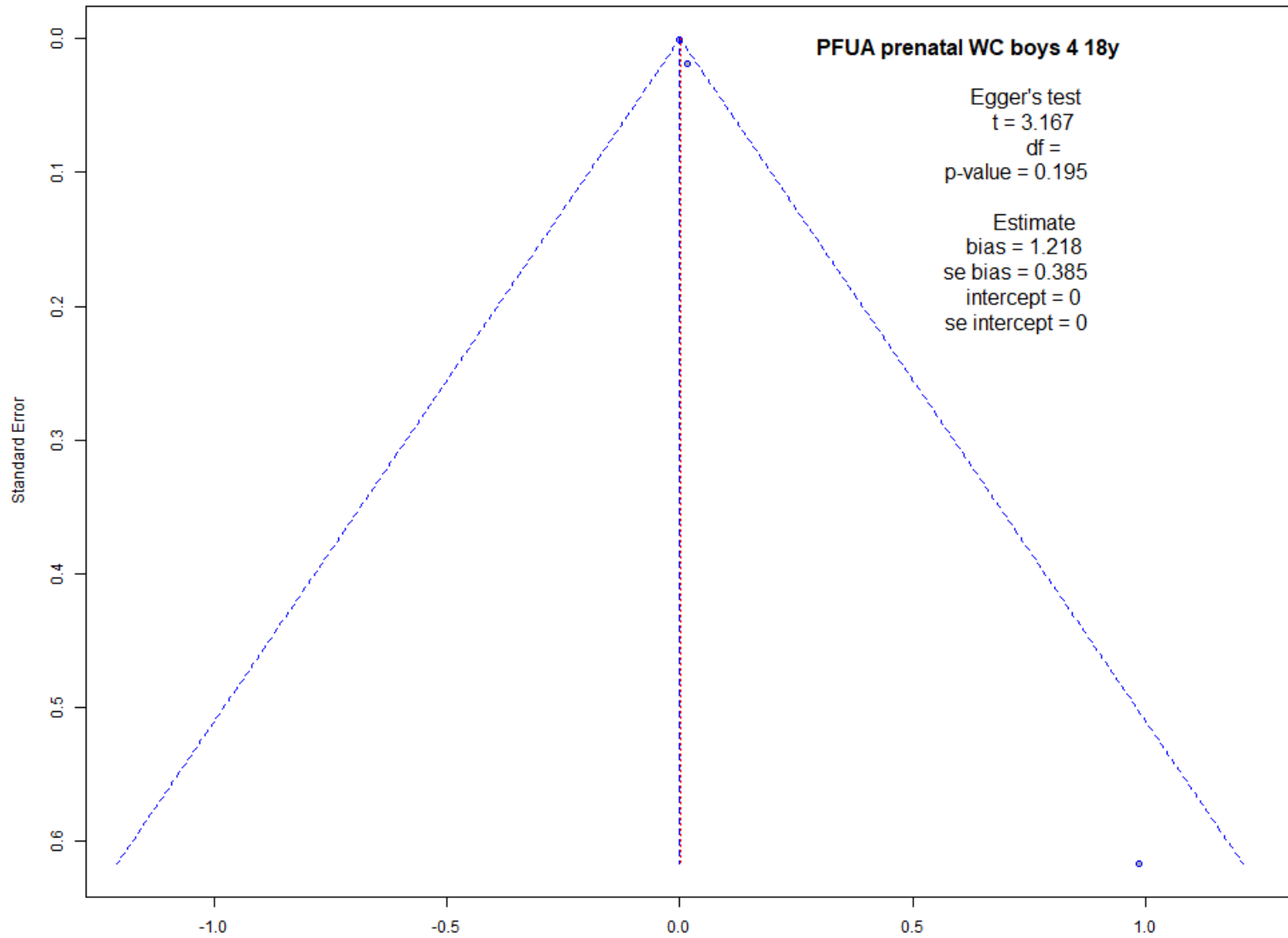
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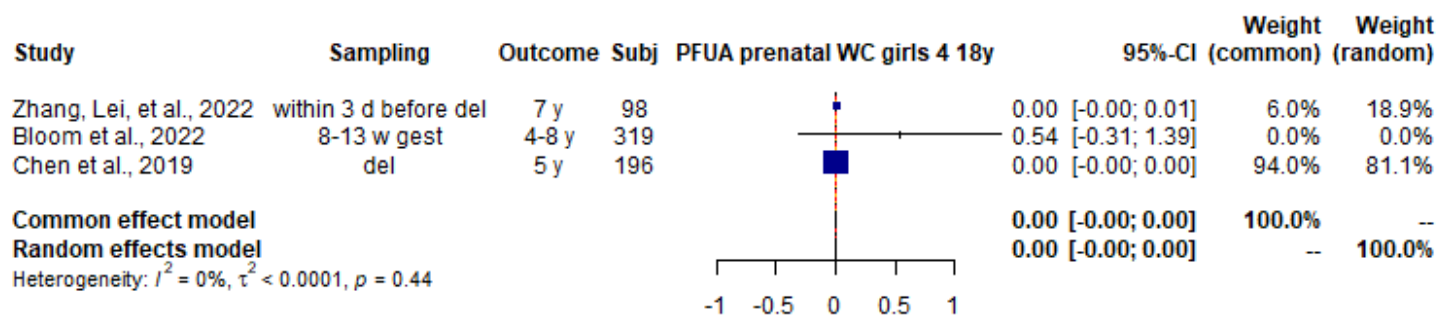
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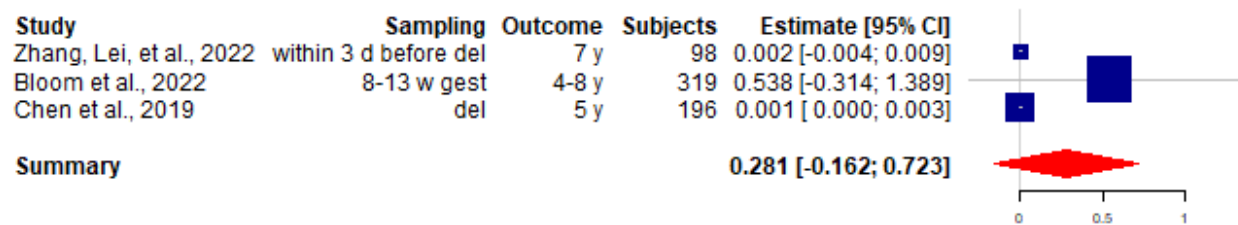
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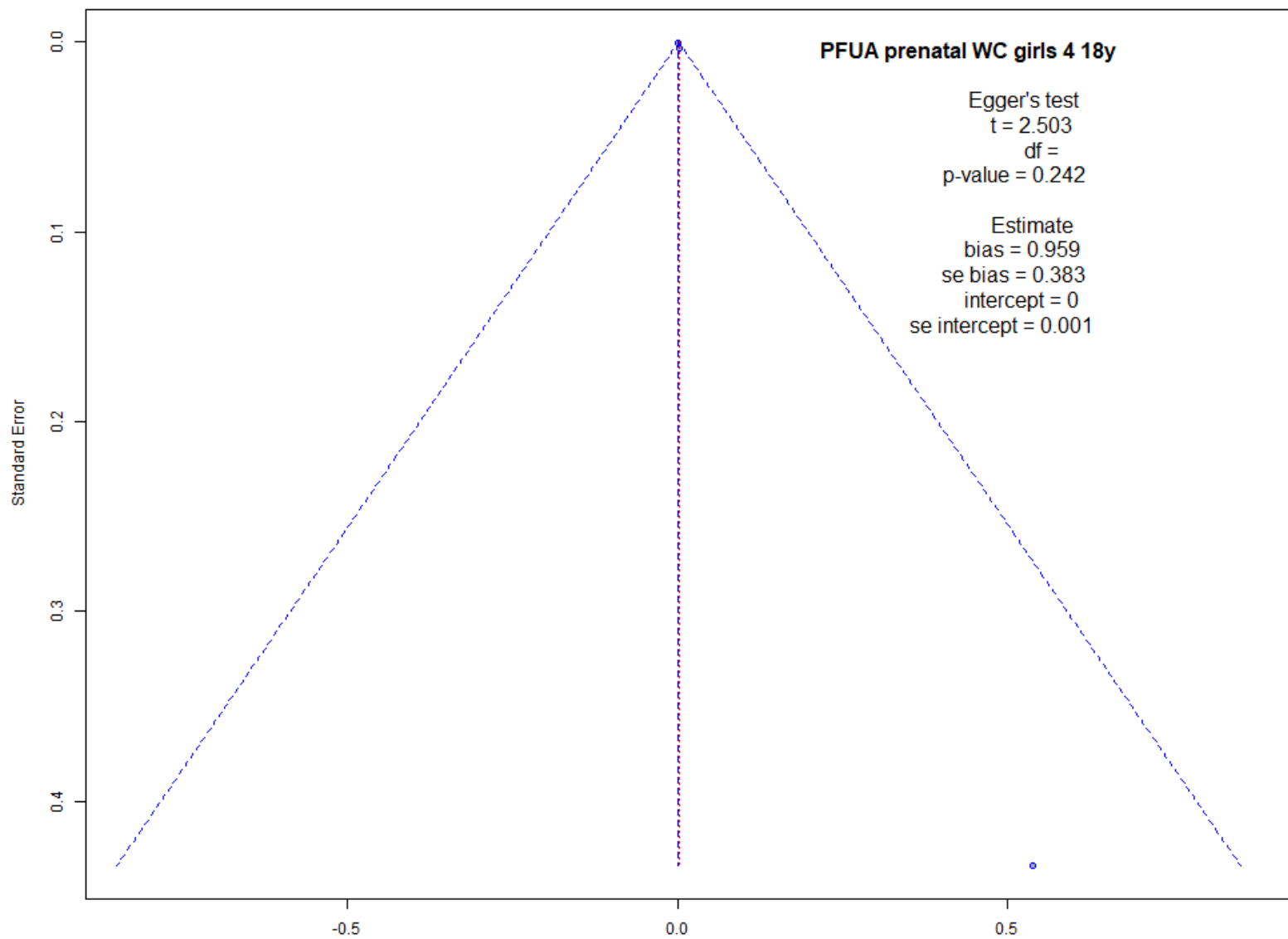
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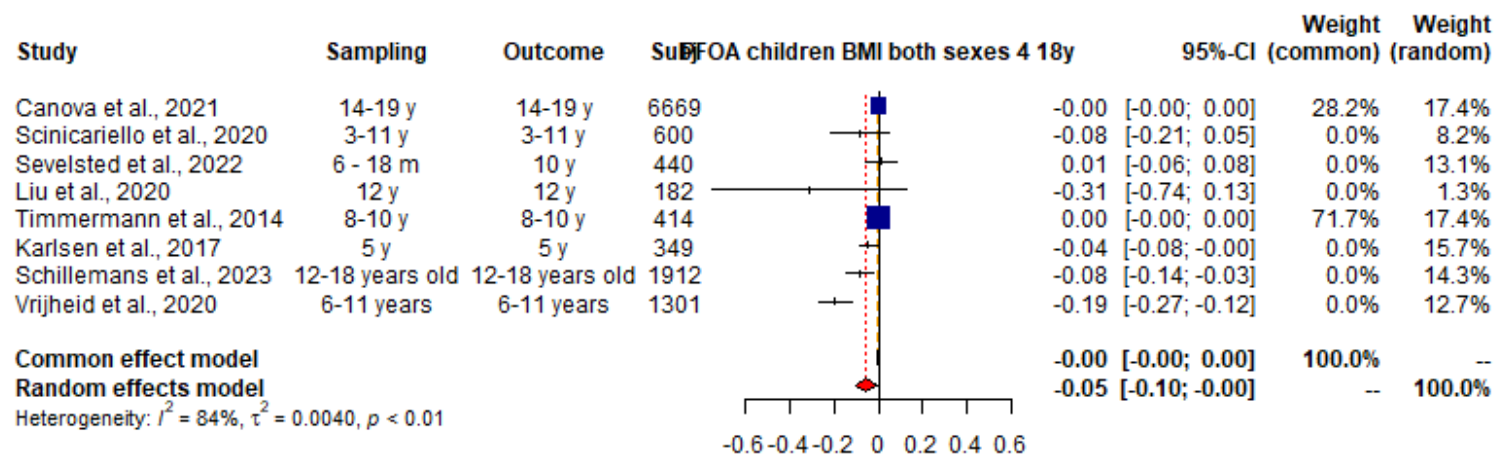
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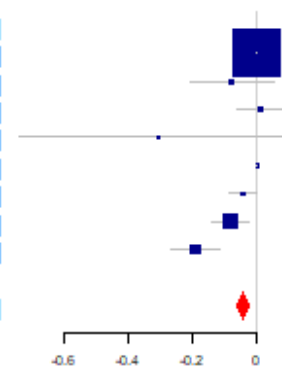
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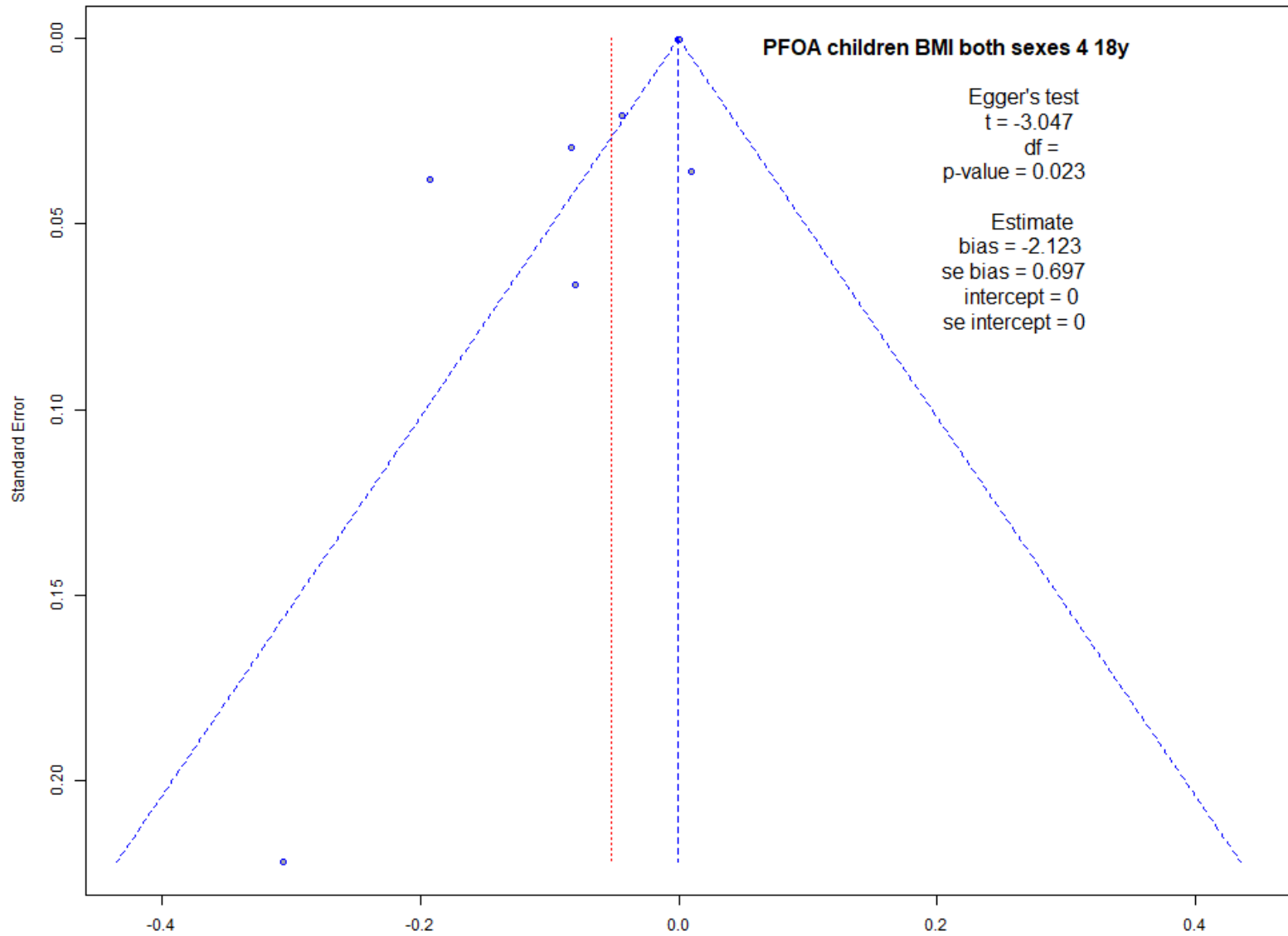
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Study	Sampling	Outcome	Subjects	Estimate [95% CI]
Canova et al., 2021	14-19 y	14-19 y	6669	-0.001 [-0.001; 0.000]
Scinicariello et al., 2020	3-11 y	3-11 y	600	-0.080 [-0.210; 0.050]
Sevelsted et al., 2022	6 - 18 m	10 y	440	0.010 [-0.060; 0.080]
Liu et al., 2020	12 y	12 y	182	-0.306 [-0.741; 0.129]
Timmermann et al., 2014	8-10 y	8-10 y	414	0.000 [0.000; 0.001]
Karlsen et al., 2017	5 y	5 y	349	-0.044 [-0.085; -0.003]
Schillemans et al., 2023	12-18 years old	12-18 years old	1912	-0.083 [-0.141; -0.026]
Vrijheid et al., 2020	6-11 years	6-11 years	1301	-0.193 [-0.267; -0.118]
Summary				-0.045 [-0.060; -0.029]



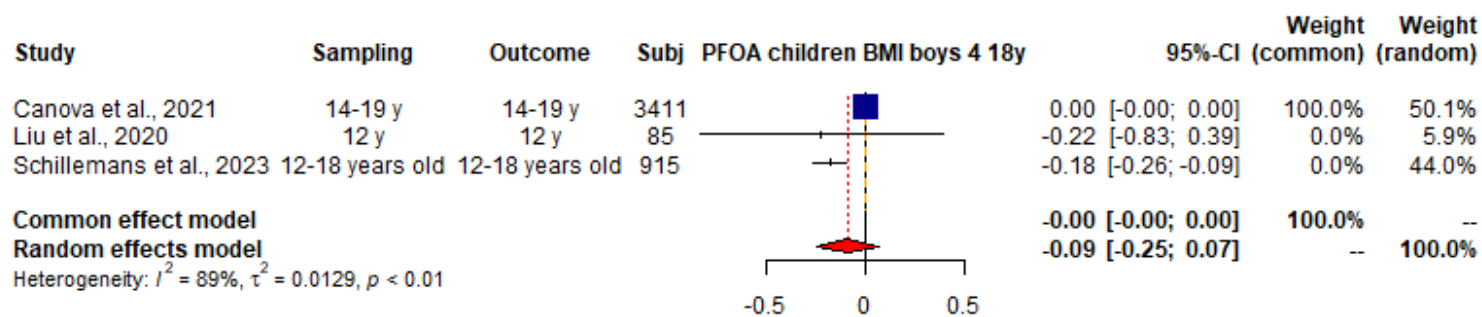
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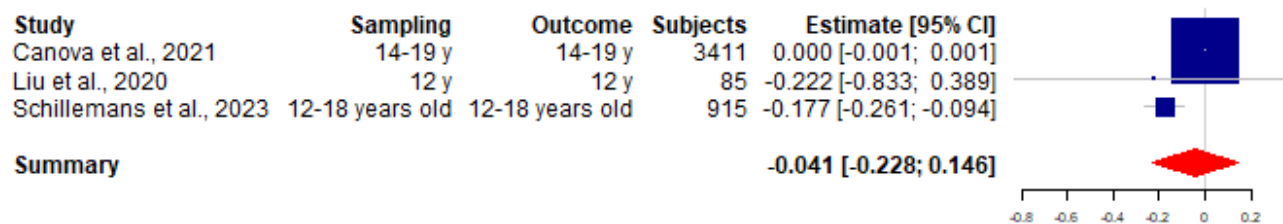
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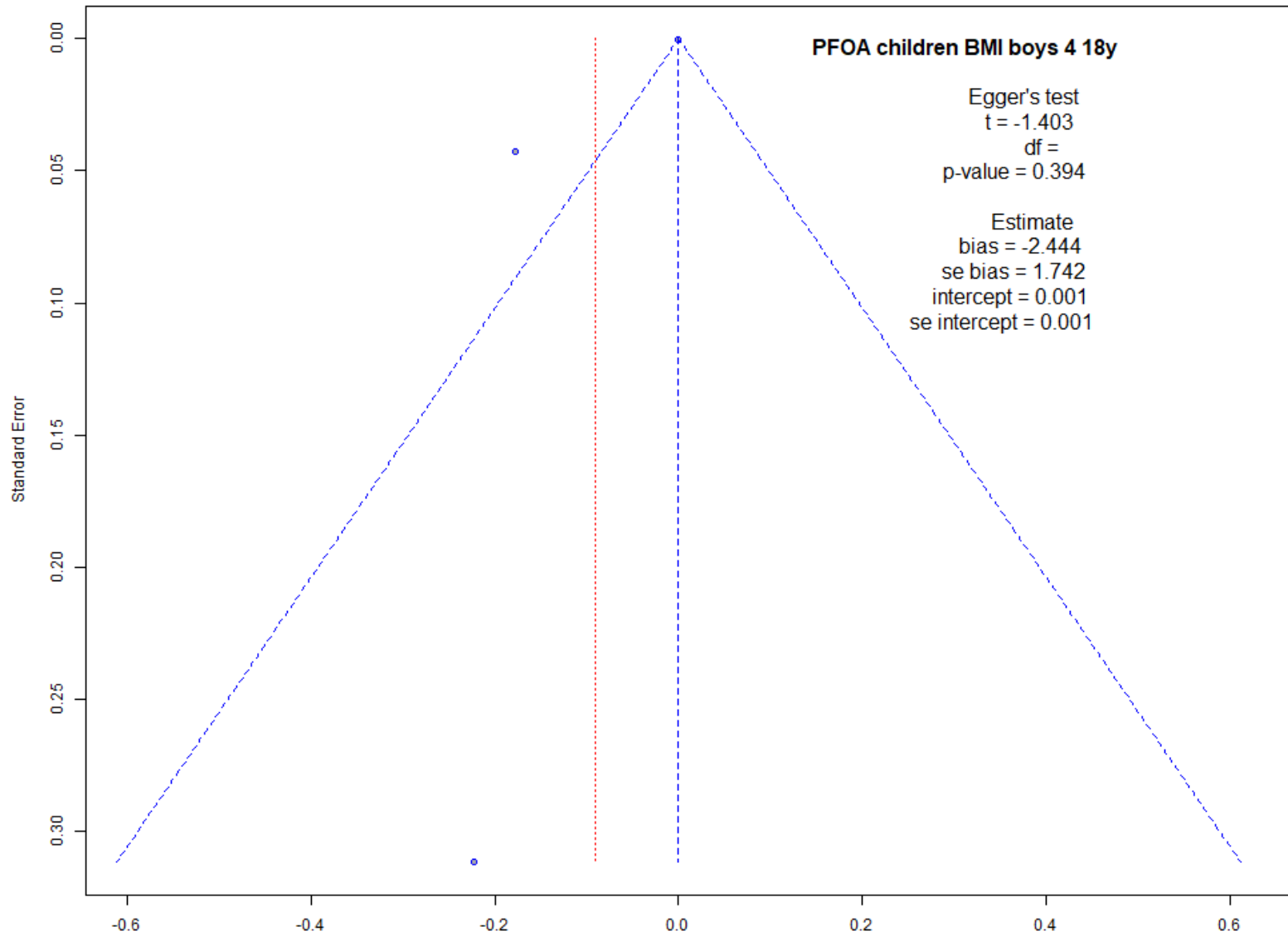
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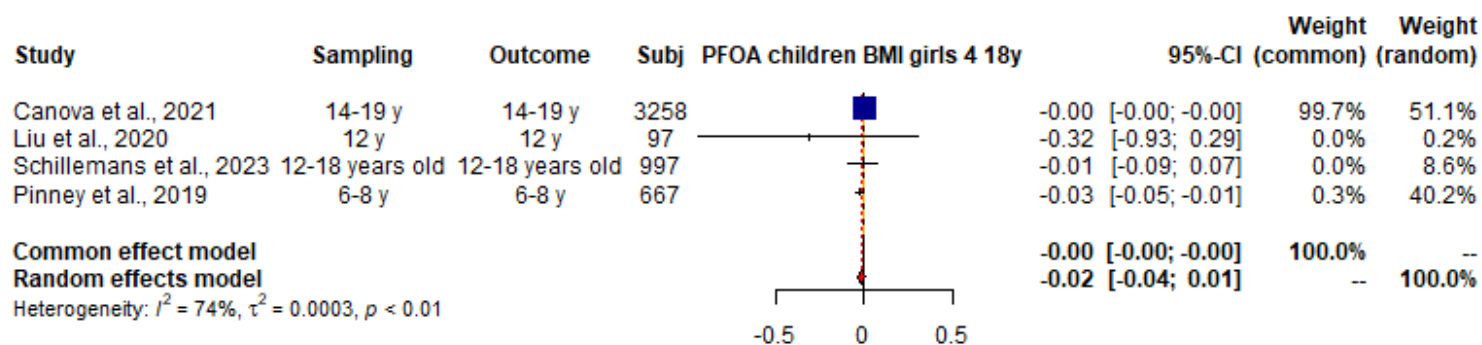
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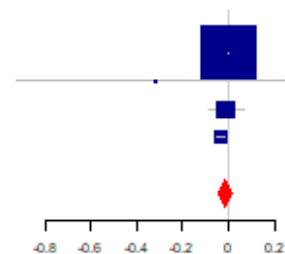
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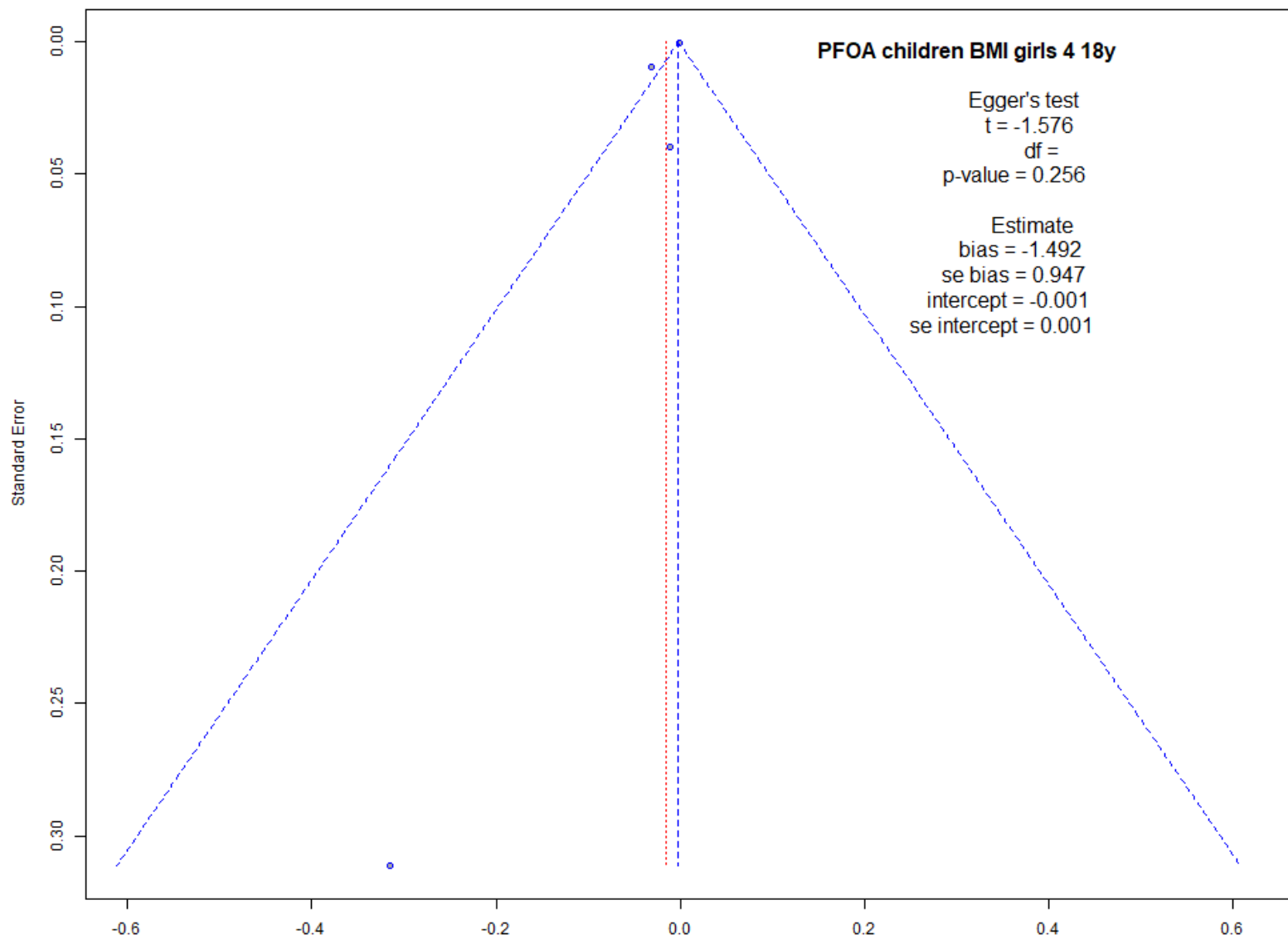
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Study	Sampling	Outcome	Subjects	Estimate [95% CI]
Canova et al., 2021	14-19 y	14-19 y	3258	-0.002 [-0.003; -0.001]
Liu et al., 2020	12 y	12 y	97	-0.316 [-0.926; 0.295]
Schillemans et al., 2023	12-18 years old	12-18 years old	997	-0.010 [-0.089; 0.068]
Pinney et al., 2019	6-8 y	6-8 y	667	-0.032 [-0.050; -0.013]
Summary				-0.013 [-0.046; 0.019]



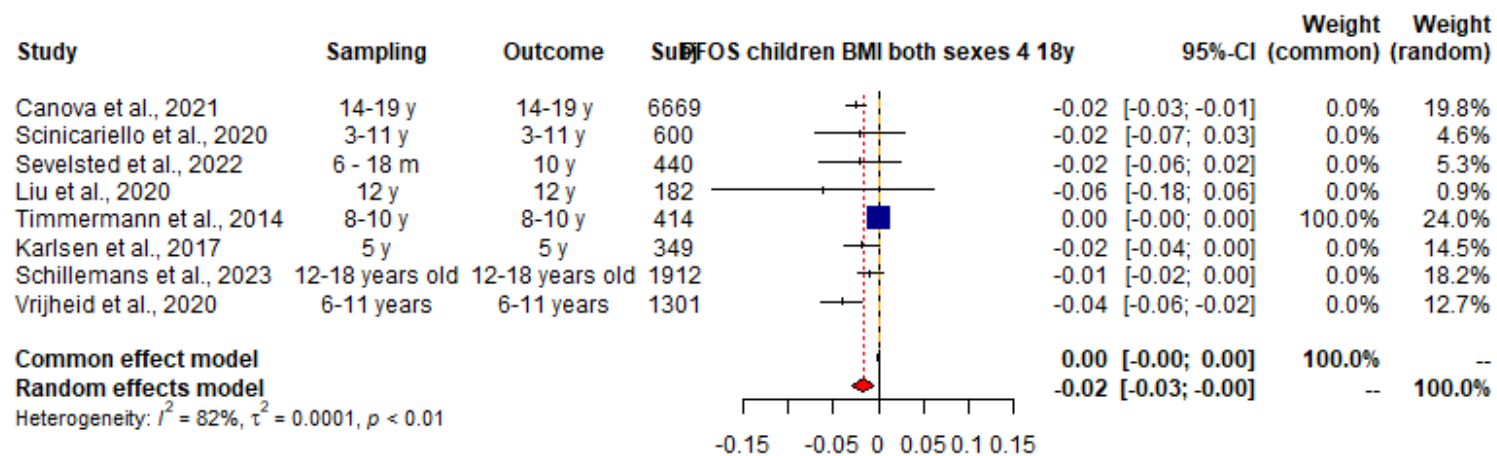
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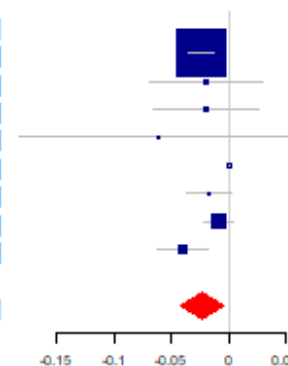
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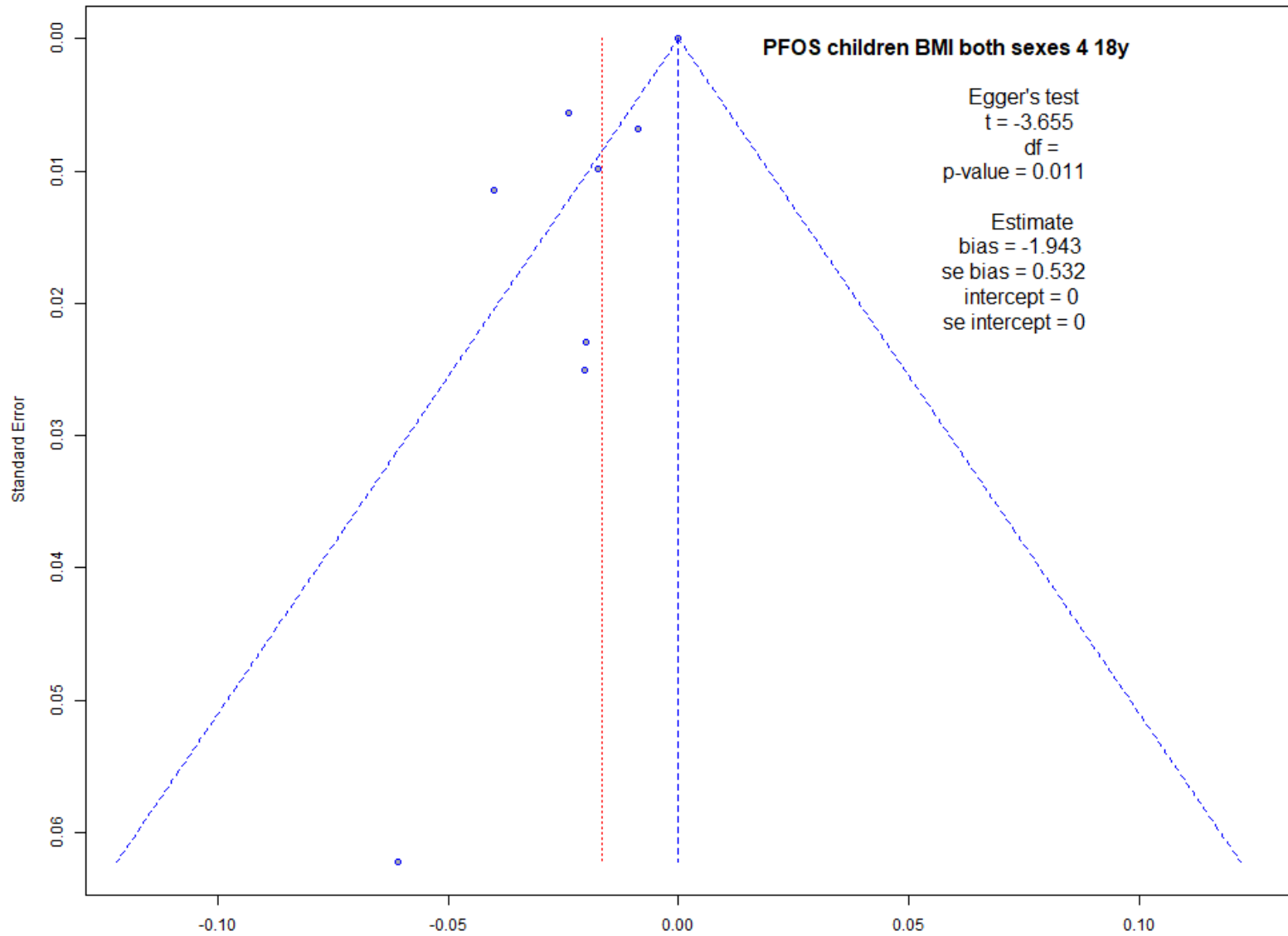
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Study	Sampling	Outcome	Subjects	Estimate [95% CI]
Canova et al., 2021	14-19 y	14-19 y	6669	-0.024 [-0.035; -0.013]
Scinicariello et al., 2020	3-11 y	3-11 y	600	-0.021 [-0.070; 0.029]
Sevelsted et al., 2022	6 - 18 m	10 y	440	-0.020 [-0.065; 0.025]
Liu et al., 2020	12 y	12 y	182	-0.061 [-0.183; 0.061]
Timmermann et al., 2014	8-10 y	8-10 y	414	0.000 [0.000; 0.000]
Karlsen et al., 2017	5 y	5 y	349	-0.018 [-0.037; 0.002]
Schillemans et al., 2023	12-18 years old	12-18 years old	1912	-0.009 [-0.022; 0.004]
Vrijheid et al., 2020	6-11 years	6-11 years	1301	-0.040 [-0.063; -0.018]
Summary				-0.023 [-0.041; -0.004]



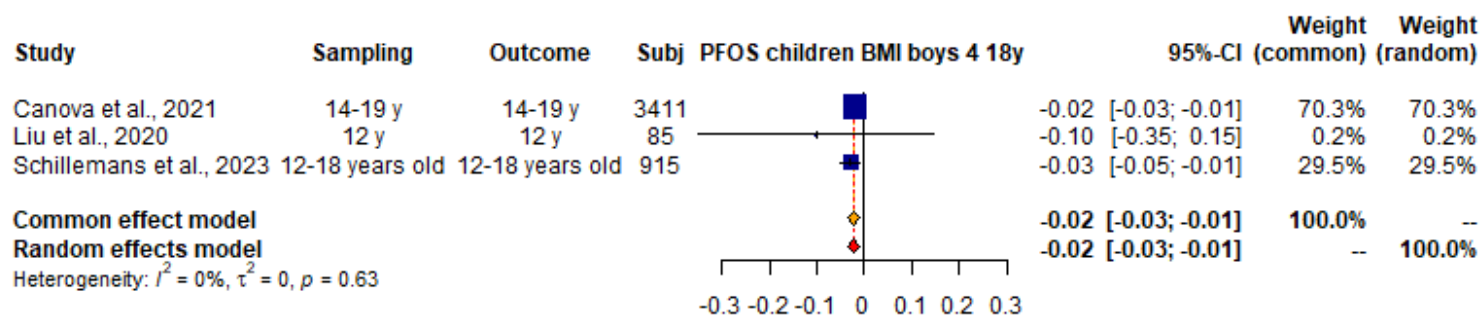
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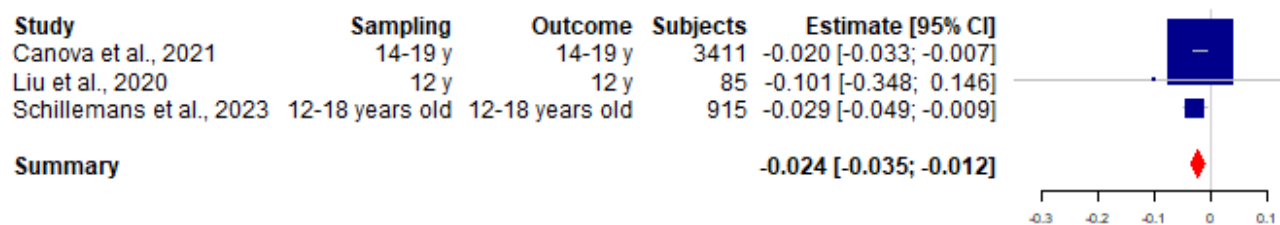
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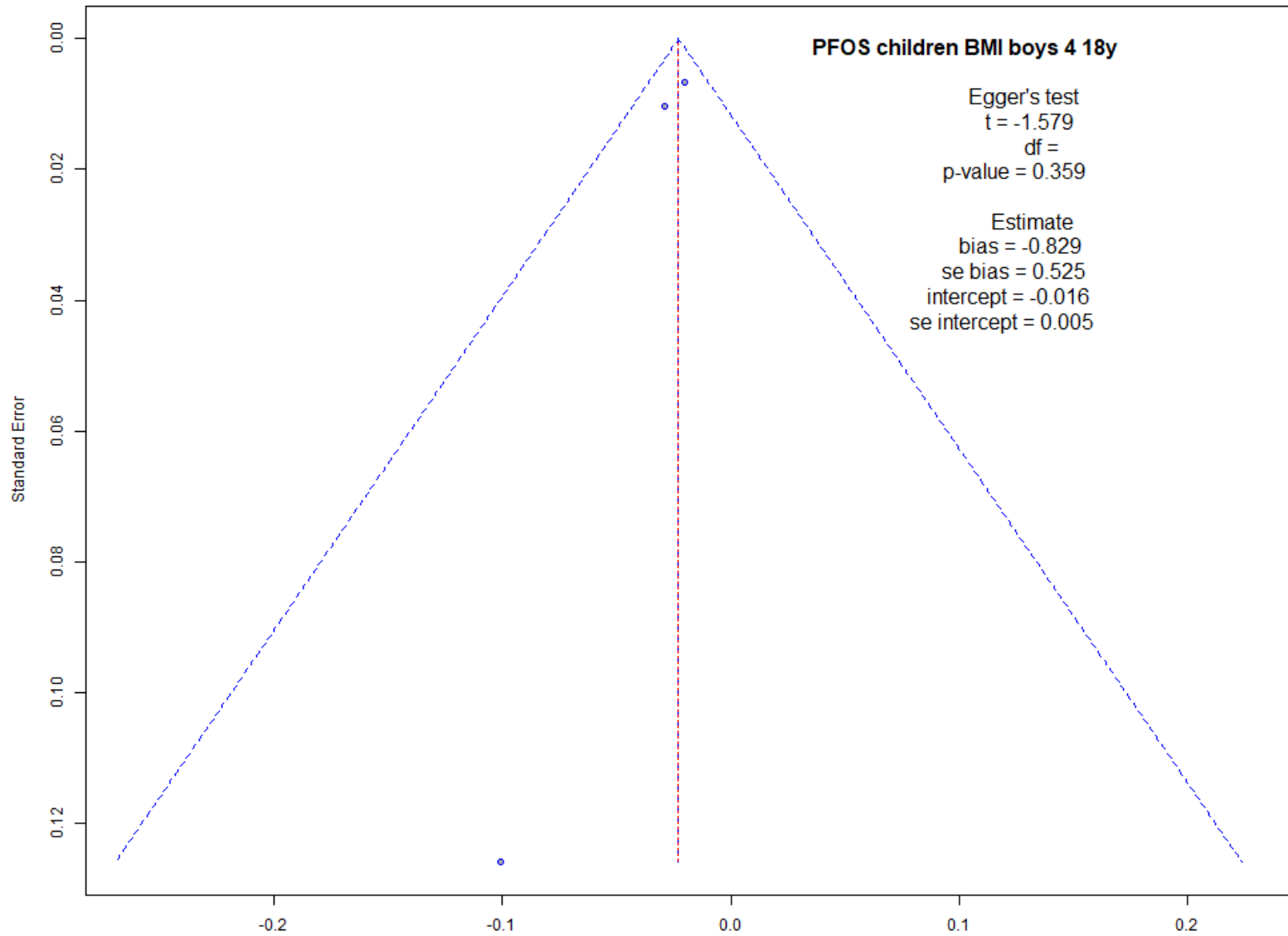
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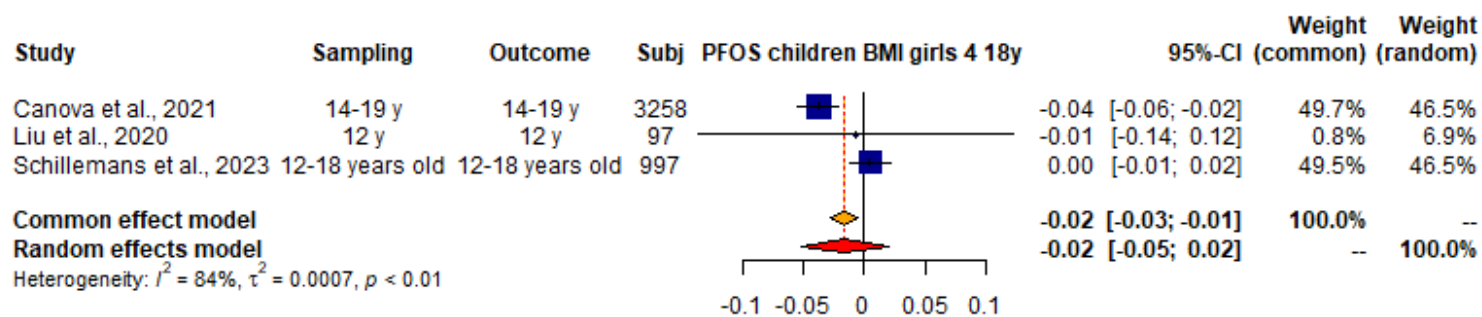
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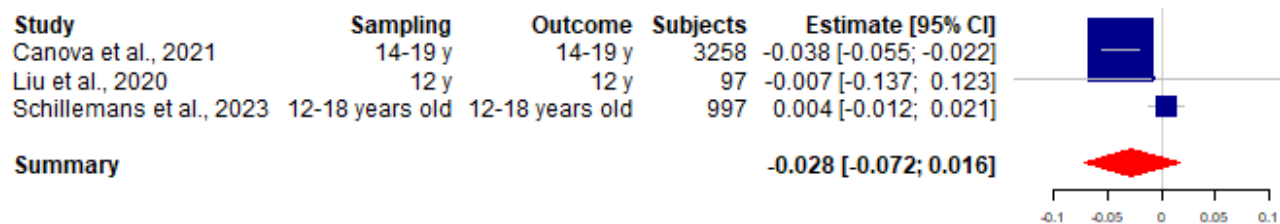
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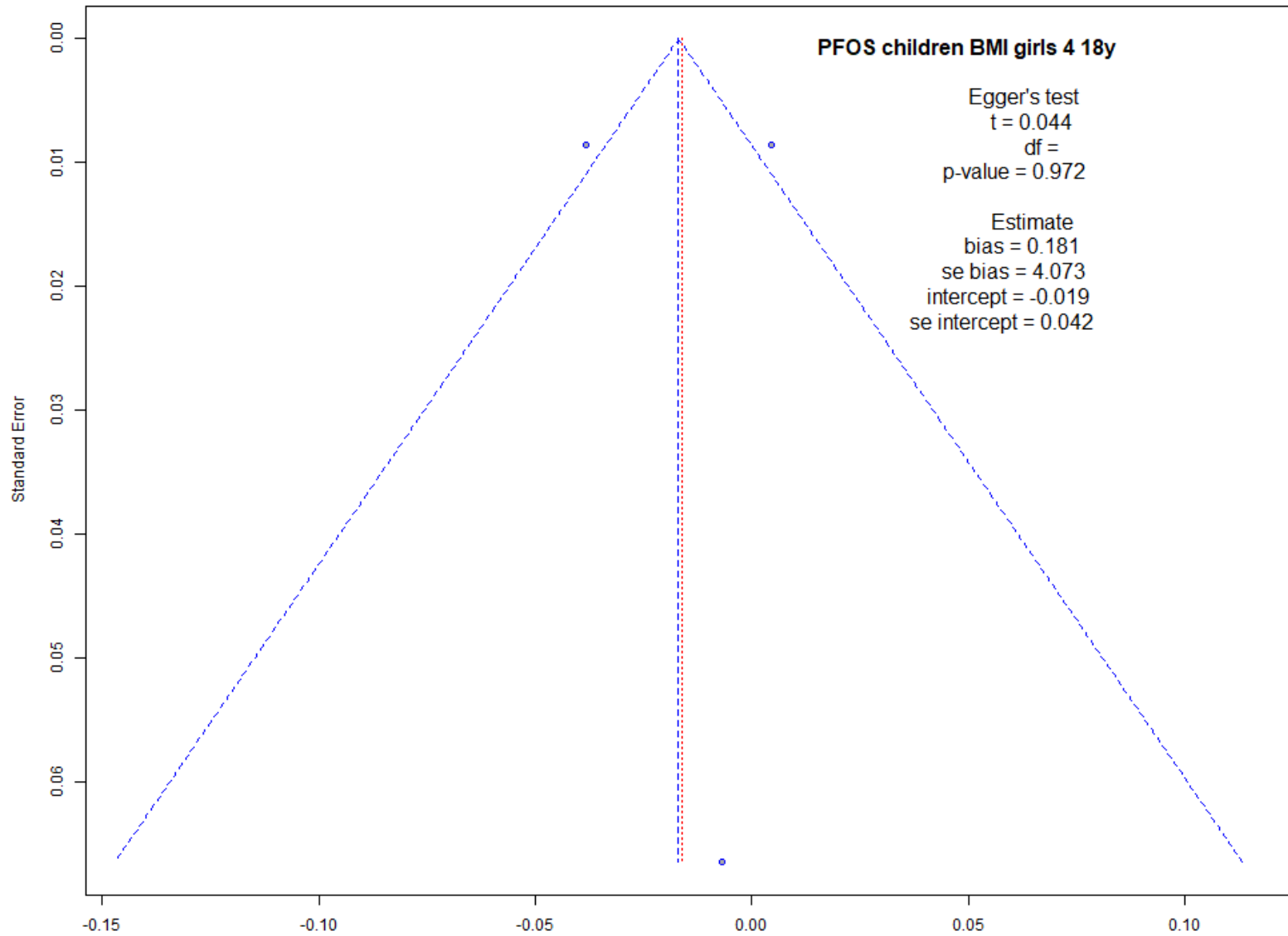
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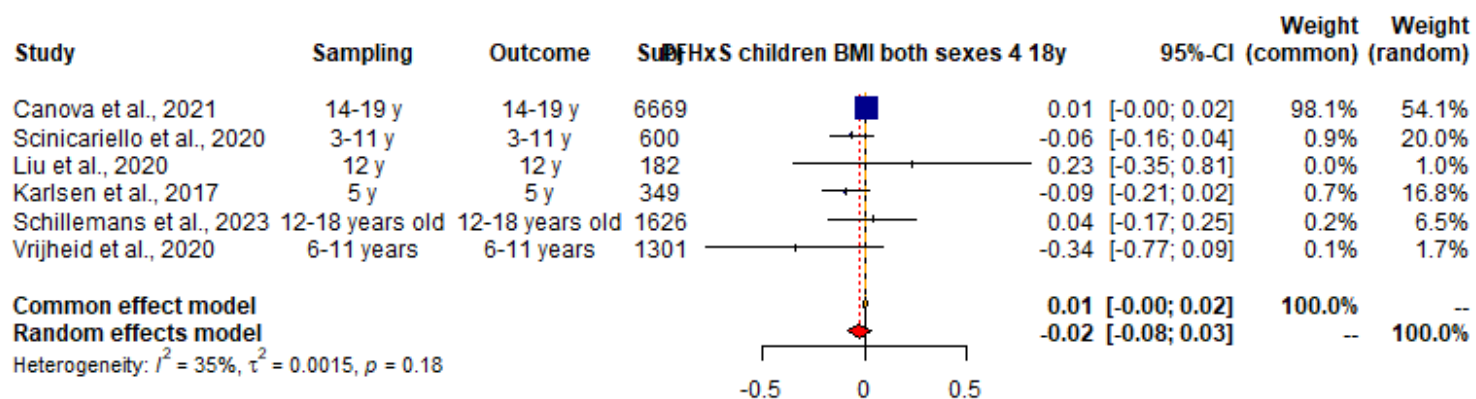
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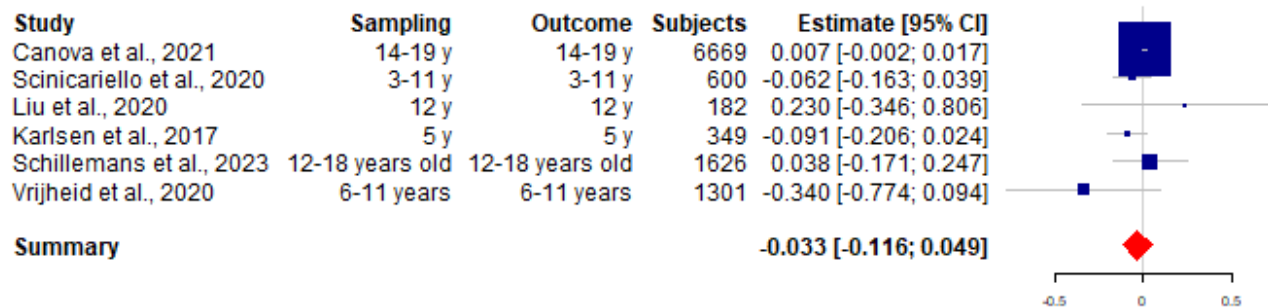
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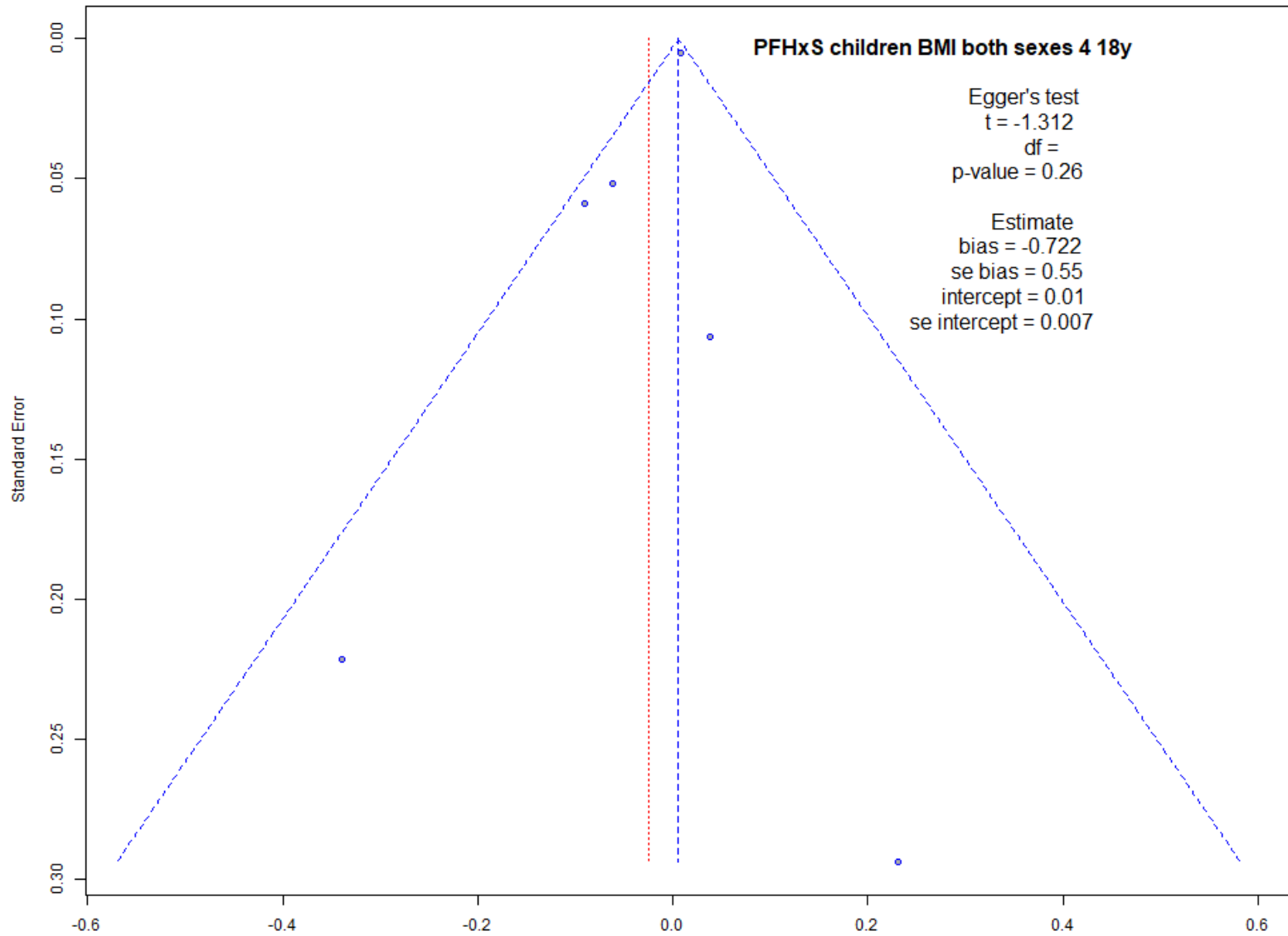
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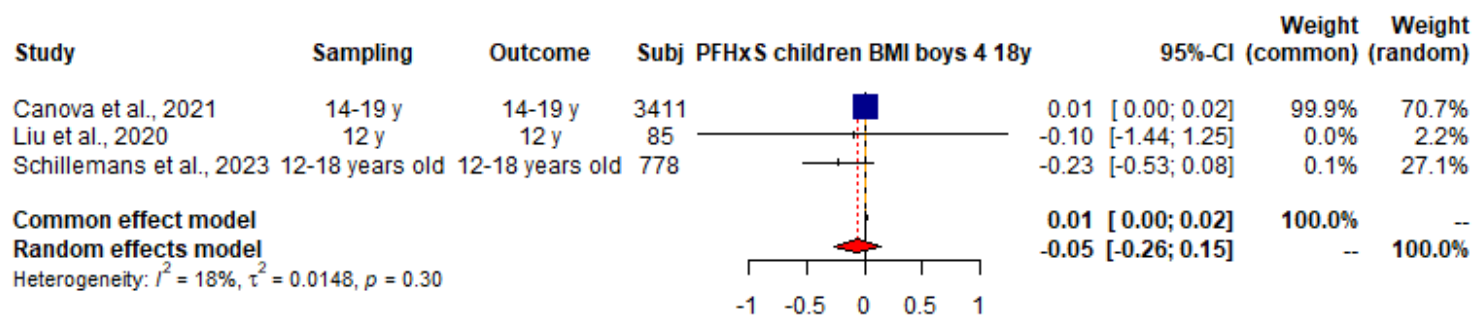
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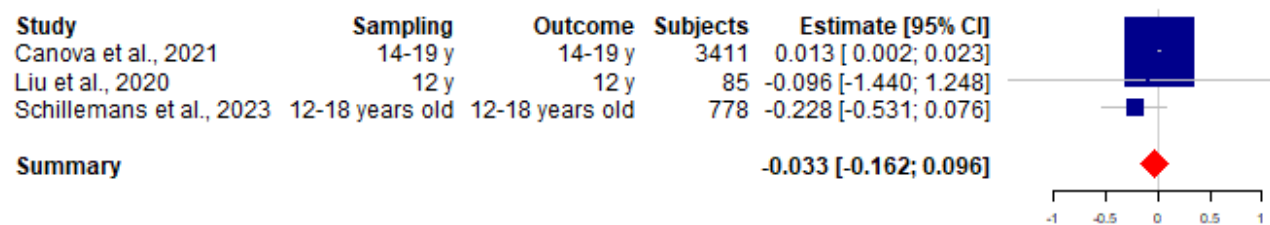
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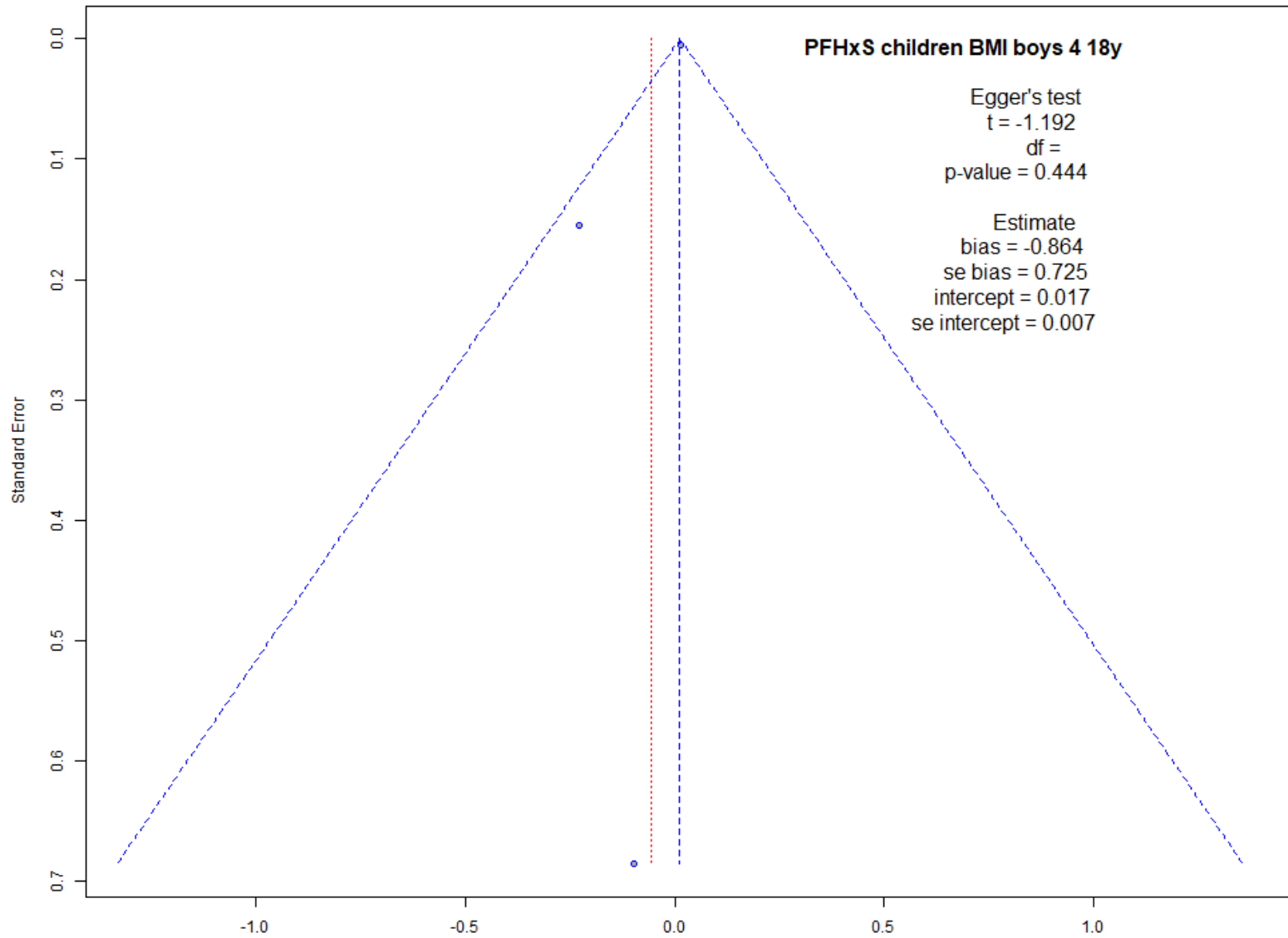
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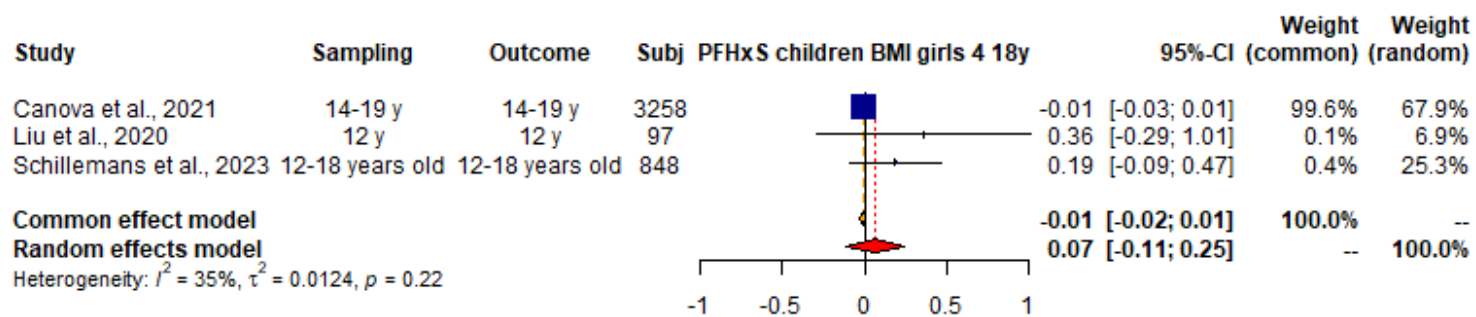
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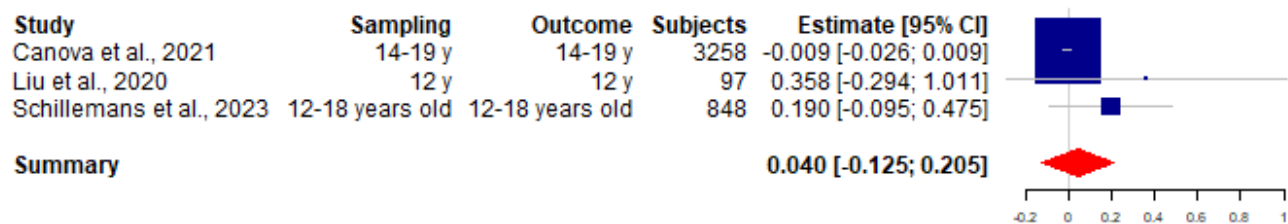
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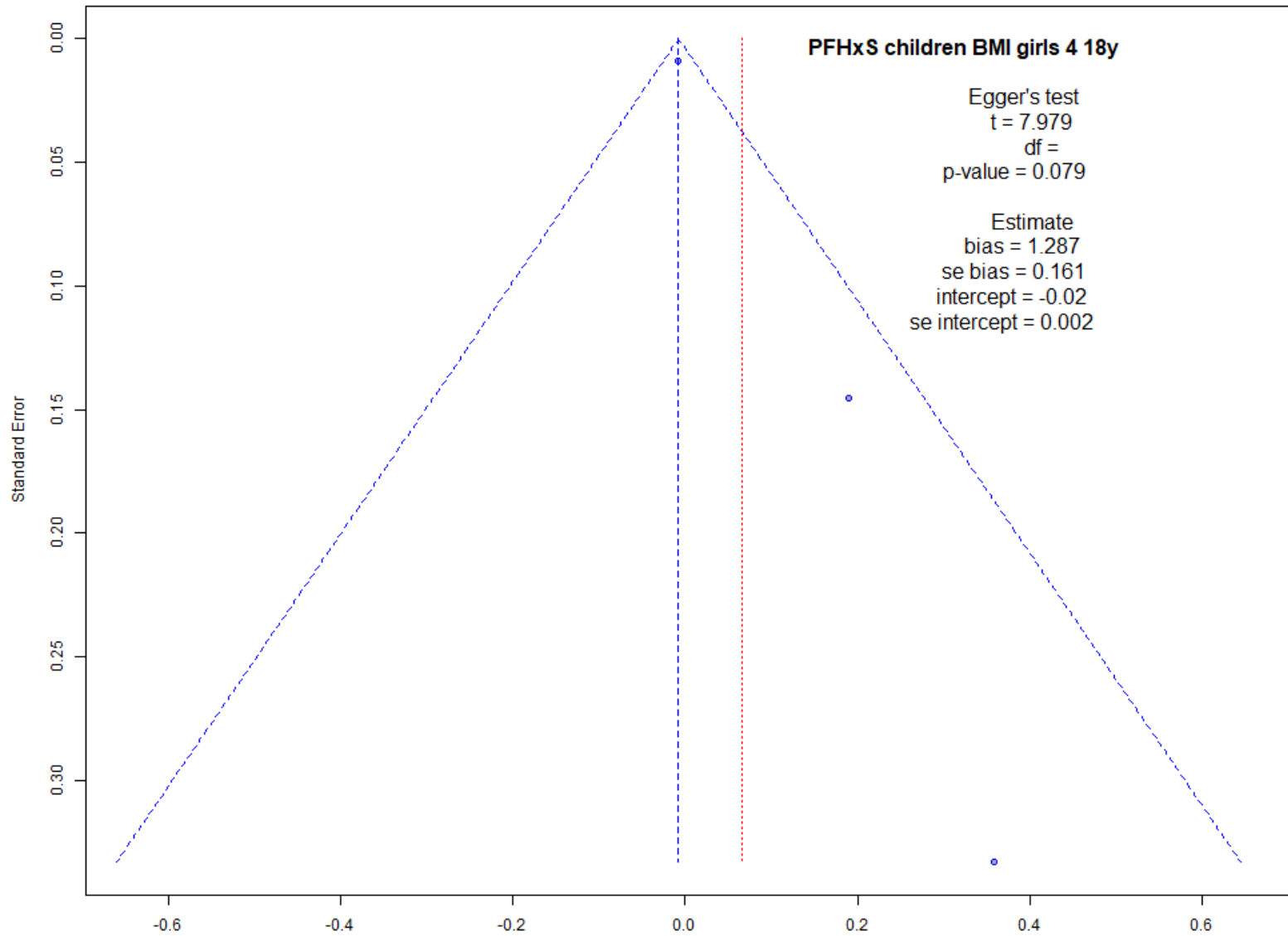
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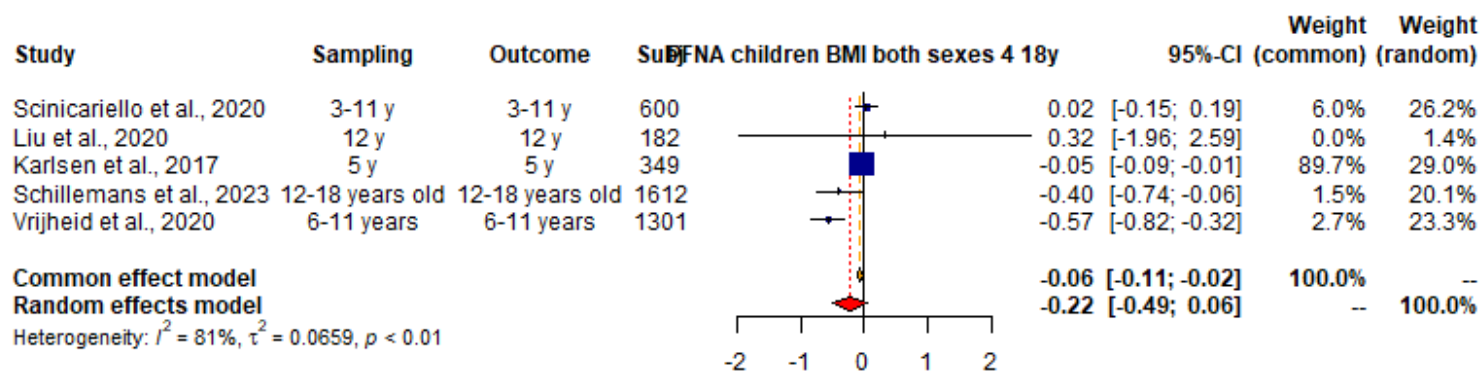
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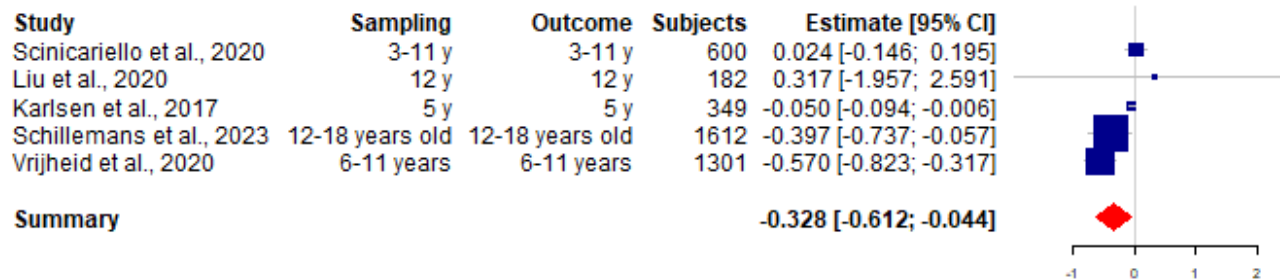
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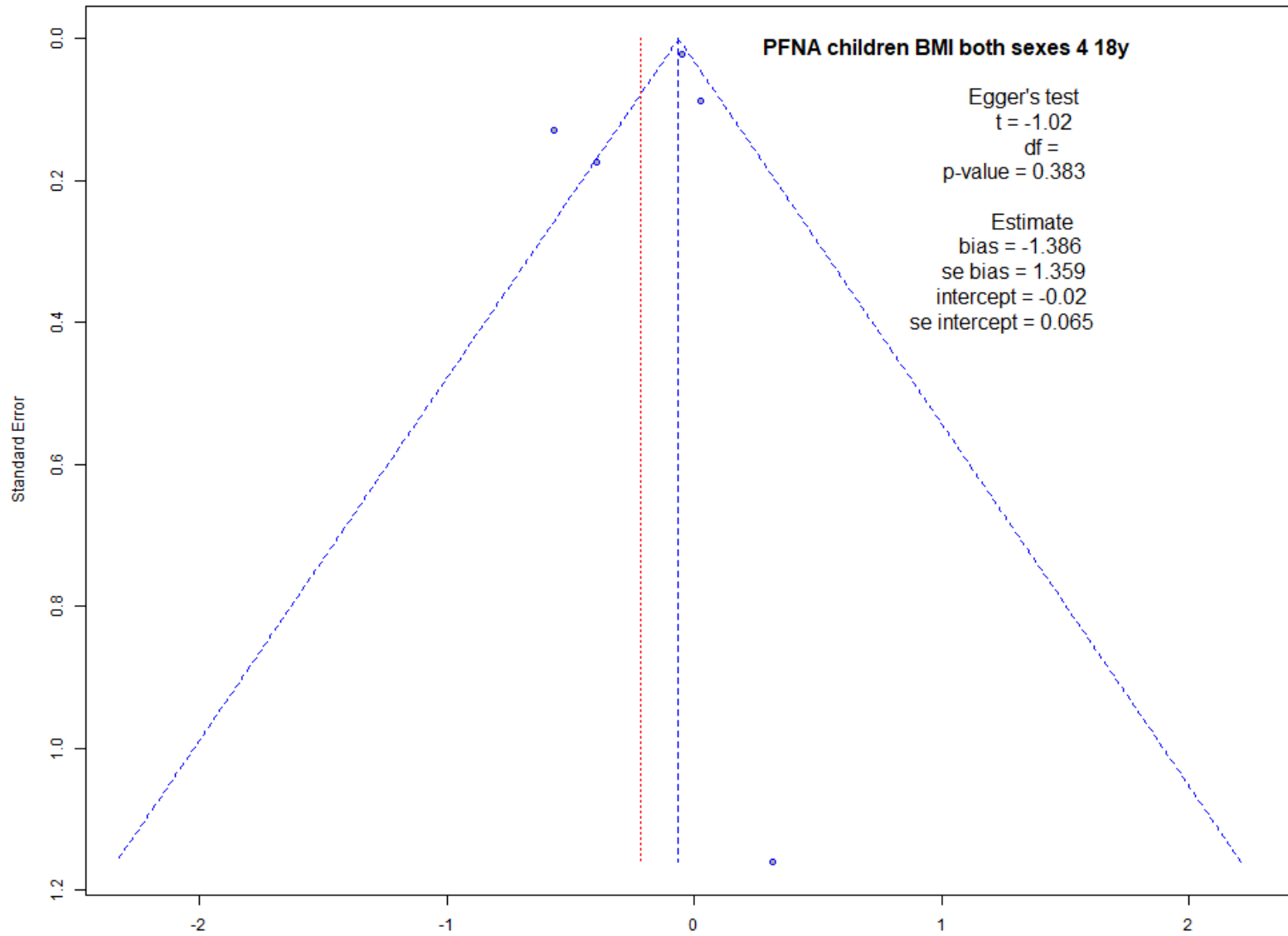
Prenatal and childhood exposure to per-/polyfluoroalkyl substances (PFASs) and its associations with childhood overweight and/or obesity: a systematic review with meta-analyses

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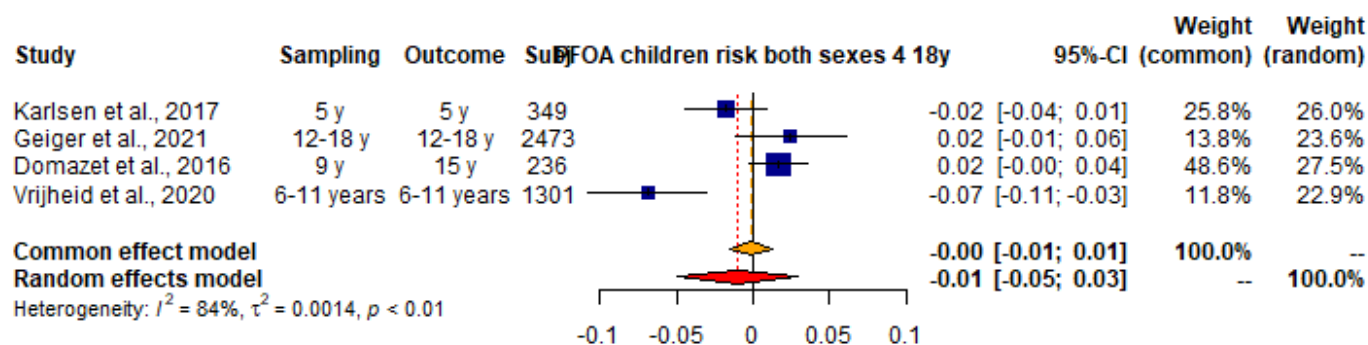
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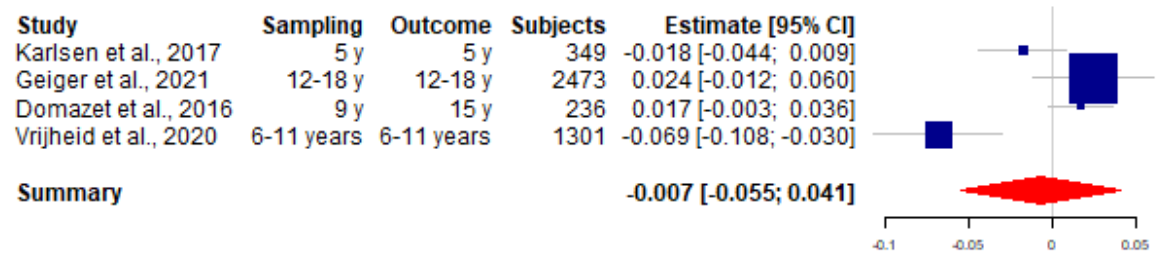
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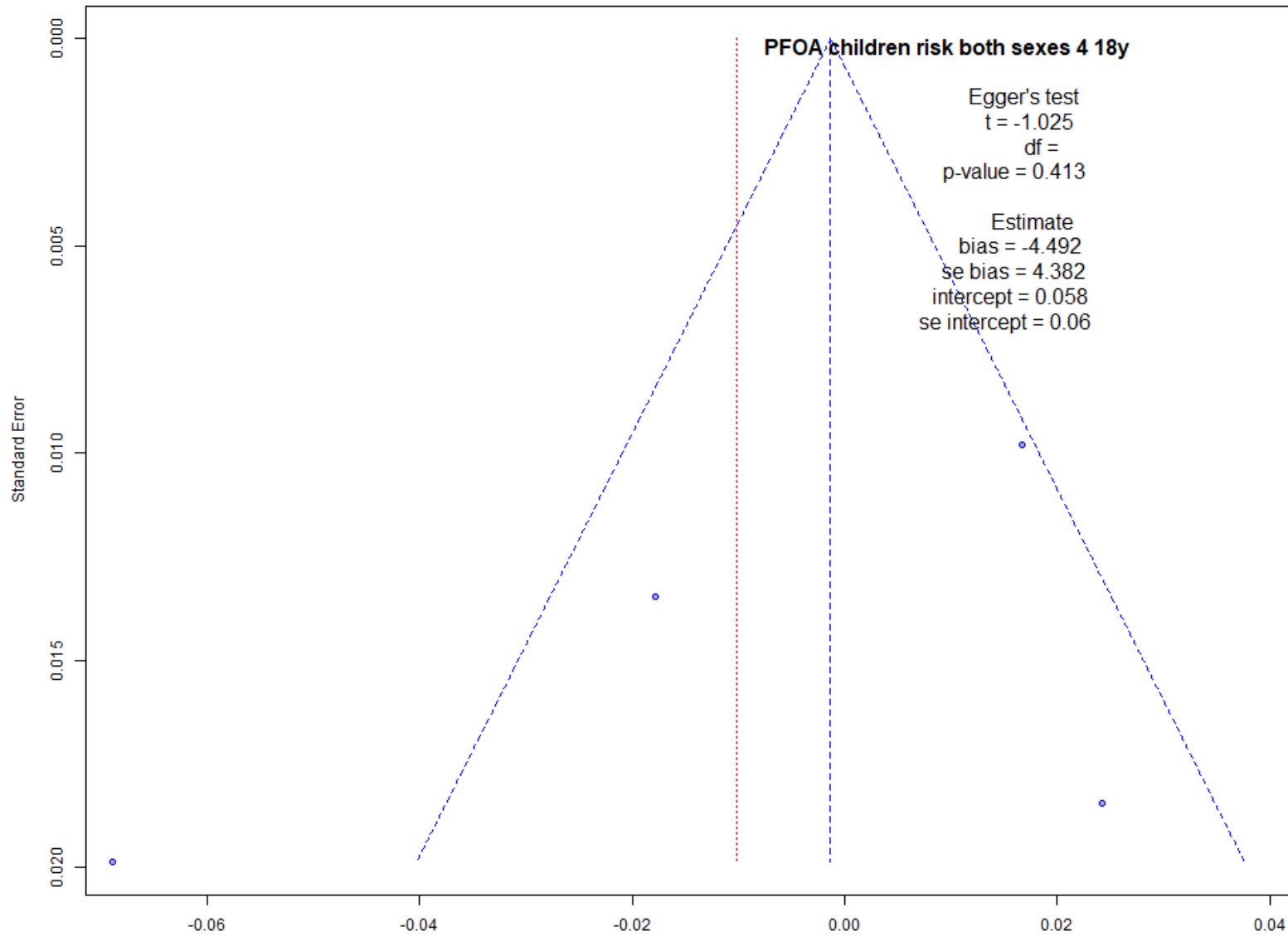
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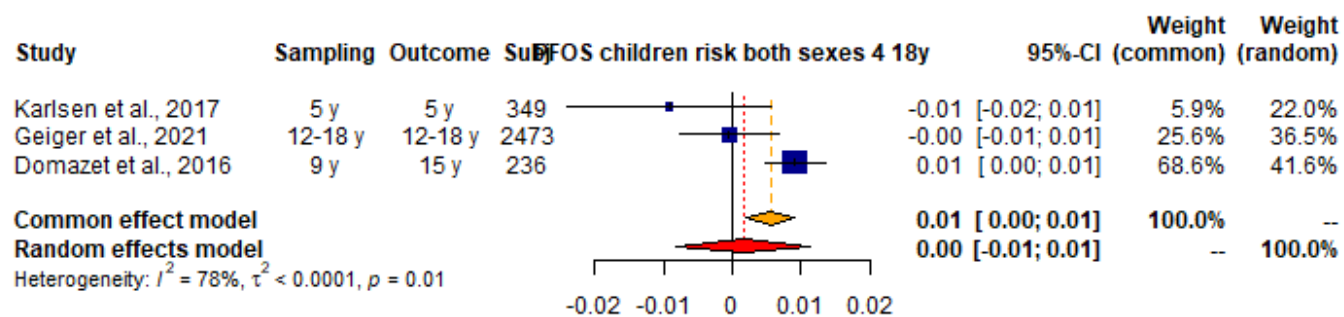
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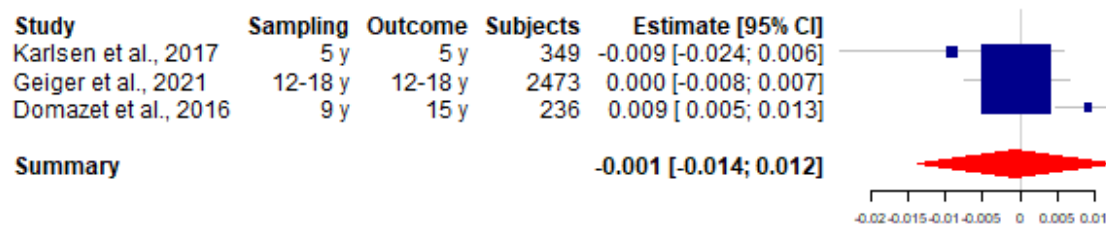
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