Appendix C

An example of a meta-analysis conducted in Stata 16.

The meta-analysis was conducted using the classic Cochrane bronchoconstriction dataset used in many texts to demonstrate meta-analysis. Below are the results from the meta-analysis including bias tests and funnel plots.

. meta esize ne me se nc mc sc, esize(hedgesg)

source	estimate	se	zval	pval	ci.lb	ci.ub
Stata	-1.08	0.10	-10.39	0	-1.28	-0.87

. meta summarize

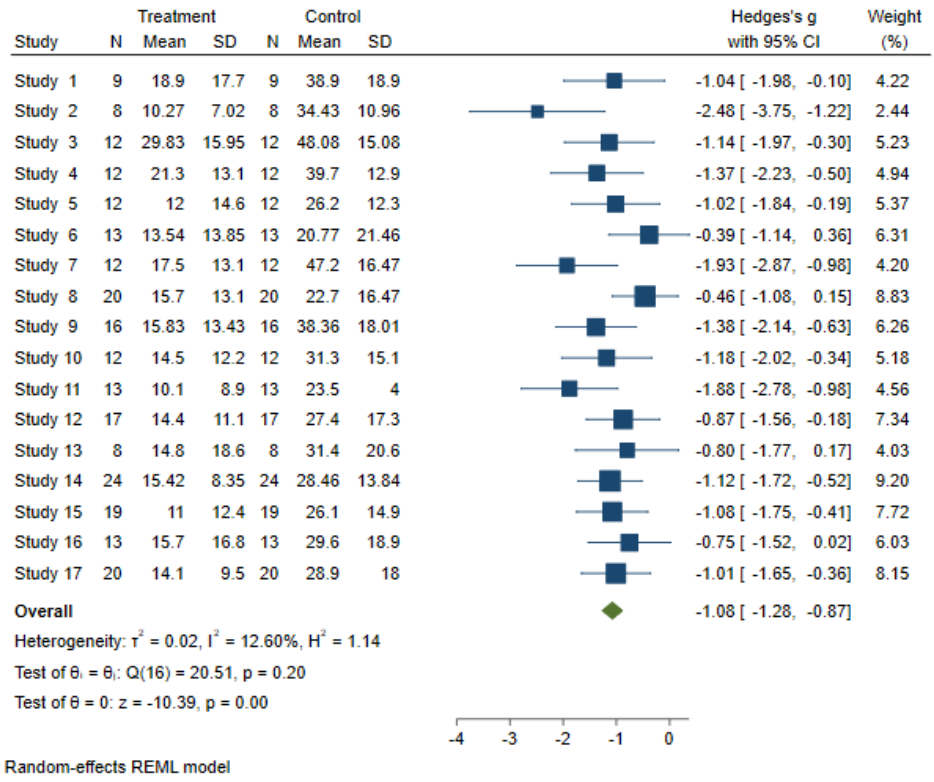
```
  Effect-size label:  Hedges's g
        Effect size:  _meta_es
          Std. Err.:  _meta_se

Meta-analysis summary                     Number of studies =     17
Random-effects model                      Heterogeneity:
Method: REML                                          tau2 =  0.0228
                                          I2 (%) =   12.60
                                              H2 =   1.14
```

Study	Hedges's g	[95% Conf.	Interval]	% Weight
Study 1	-1.040	-1.984	-0.097	4.22
Study 2	-2.482	-3.746	-1.218	2.44
Study 3	-1.135	-1.972	-0.299	5.23
Study 4	-1.367	-2.230	-0.503	4.94
Study 5	-1.016	-1.840	-0.191	5.37
Study 6	-0.388	-1.140	0.364	6.31
Study 7	-1.927	-2.873	-0.982	4.20
Study 8	-0.461	-1.077	0.155	8.83
Study 9	-1.382	-2.138	-0.627	6.26
Study 10	-1.182	-2.023	-0.340	5.18
Study 11	-1.881	-2.784	-0.978	4.56
Study 12	-0.873	-1.562	-0.185	7.34
Study 13	-0.800	-1.767	0.167	4.03
Study 14	-1.122	-1.722	-0.522	9.20
Study 15	-1.079	-1.747	-0.410	7.72
Study 16	-0.753	-1.525	0.019	6.03
Study 17	-1.008	-1.654	-0.362	8.15
theta	-1.076	-1.279	-0.873	

```
Test of theta = 0: z = -10.39                 Prob > |z| = 0.0000
Test of homogeneity: Q = chi2(16) = 20.51       Prob > Q = 0.1981
```

. meta forestplot



Study	Treatment N	Mean	SD	Control N	Mean	SD	Hedges's g with 95% CI	Weight (%)
Study 1	9	18.9	17.7	9	38.9	18.9	-1.04 [-1.98, -0.10]	4.22
Study 2	8	10.27	7.02	8	34.43	10.96	-2.48 [-3.75, -1.22]	2.44
Study 3	12	29.83	15.95	12	48.08	15.08	-1.14 [-1.97, -0.30]	5.23
Study 4	12	21.3	13.1	12	39.7	12.9	-1.37 [-2.23, -0.50]	4.94
Study 5	12	12	14.6	12	26.2	12.3	-1.02 [-1.84, -0.19]	5.37
Study 6	13	13.54	13.85	13	20.77	21.46	-0.39 [-1.14, 0.36]	6.31
Study 7	12	17.5	13.1	12	47.2	16.47	-1.93 [-2.87, -0.98]	4.20
Study 8	20	15.7	13.1	20	22.7	16.47	-0.46 [-1.08, 0.15]	8.83
Study 9	16	15.83	13.43	16	38.36	18.01	-1.38 [-2.14, -0.63]	6.26
Study 10	12	14.5	12.2	12	31.3	15.1	-1.18 [-2.02, -0.34]	5.18
Study 11	13	10.1	8.9	13	23.5	4	-1.88 [-2.78, -0.98]	4.56
Study 12	17	14.4	11.1	17	27.4	17.3	-0.87 [-1.56, -0.18]	7.34
Study 13	8	14.8	18.6	8	31.4	20.6	-0.80 [-1.77, 0.17]	4.03
Study 14	24	15.42	8.35	24	28.46	13.84	-1.12 [-1.72, -0.52]	9.20
Study 15	19	11	12.4	19	26.1	14.9	-1.08 [-1.75, -0.41]	7.72
Study 16	13	15.7	16.8	13	29.6	18.9	-0.75 [-1.52, 0.02]	6.03
Study 17	20	14.1	9.5	20	28.9	18	-1.01 [-1.65, -0.36]	8.15
Overall							-1.08 [-1.28, -0.87]	

Heterogeneity: τ^2 = 0.02, I^2 = 12.60%, H^2 = 1.14

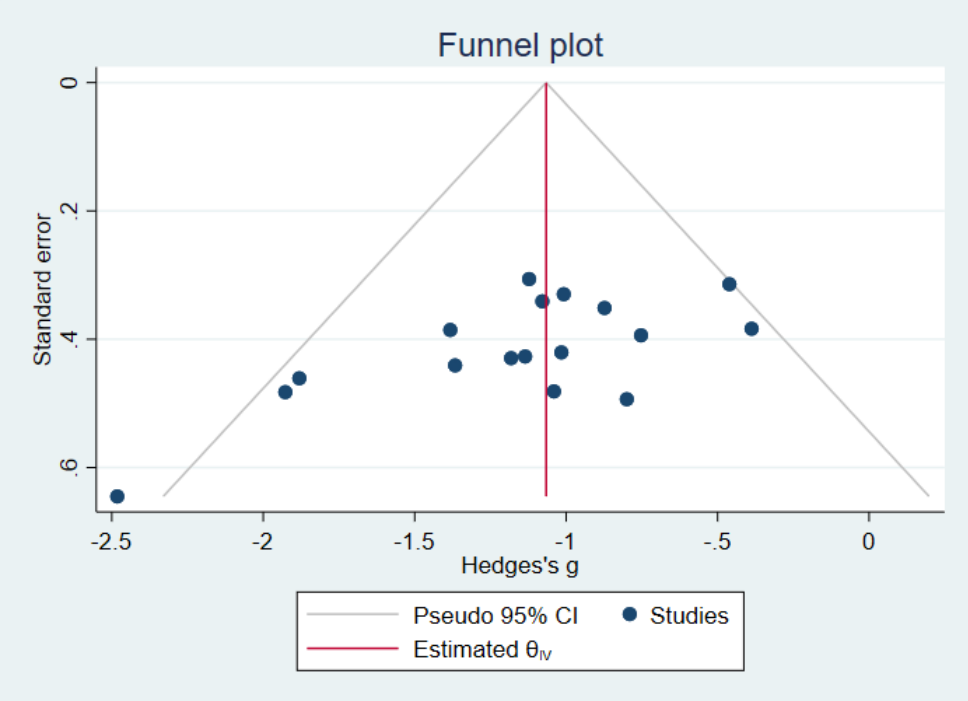
Test of $\theta_i = \theta_j$: Q(16) = 20.51, p = 0.20

Test of θ = 0: z = -10.39, p = 0.00

-4 -3 -2 -1 0

Random-effects REML model

. meta funnelplot



```
. meta bias, egger


  Effect-size label:  Hedges's g
        Effect size:  _meta_es
          Std. Err.:  _meta_se
Regression-based Egger test for small-study effects
Random-effects model
Method: REML
H0: beta1 = 0; no small-study effects
           beta1 =     -3.73
       SE of beta1 =     1.373
                 z =     -2.72
        Prob > |z| =    0.0066
```