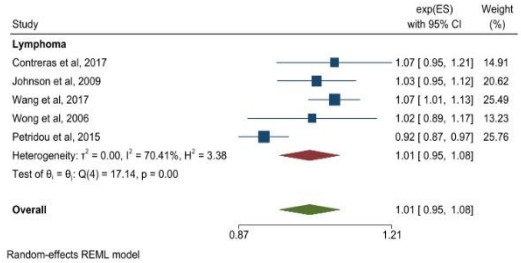
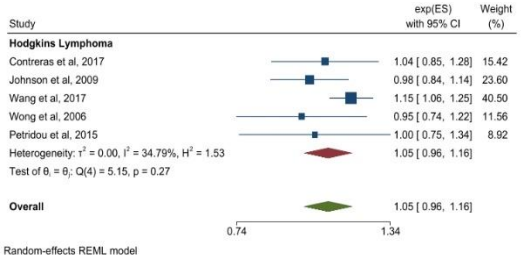
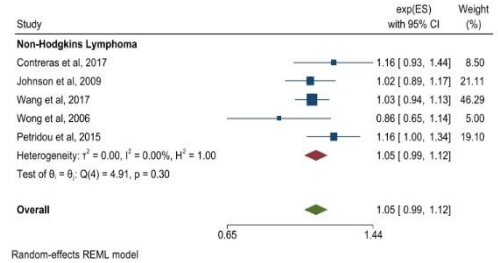
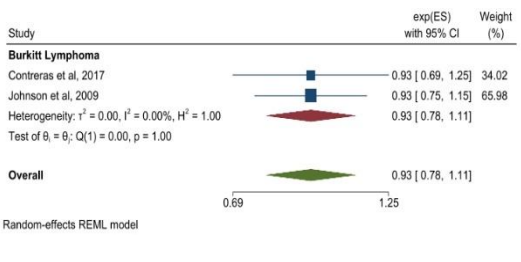
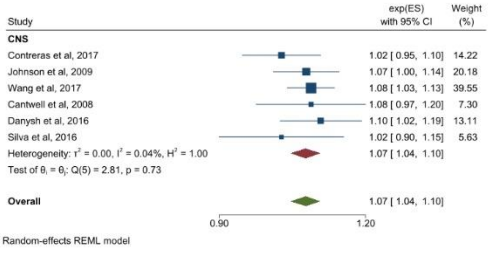
# Supplementary Material

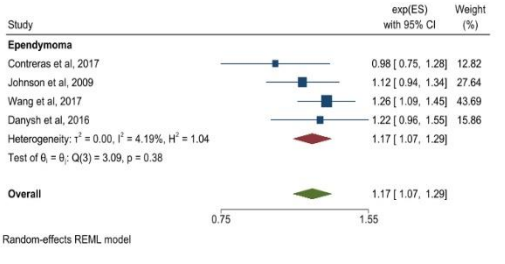


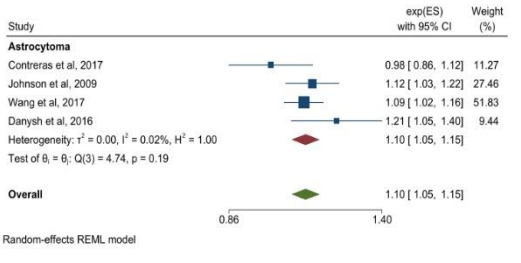



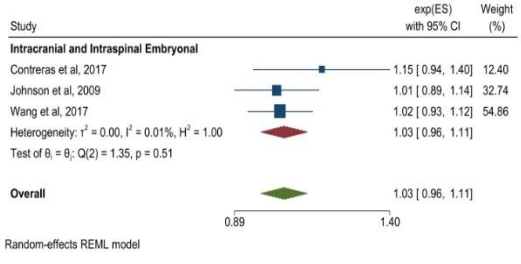



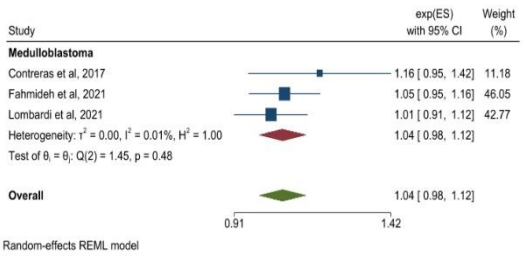



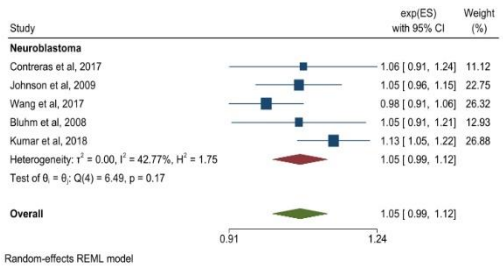



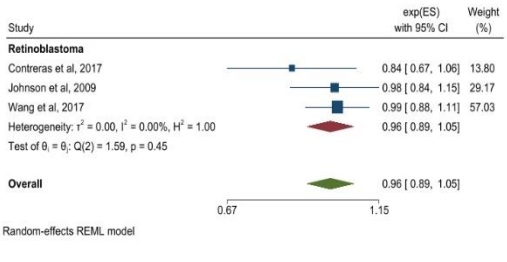



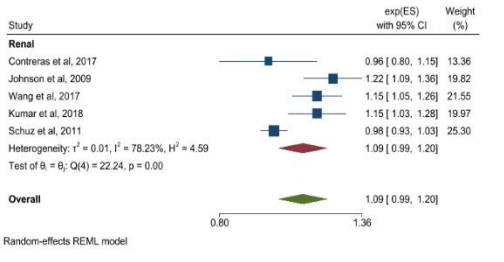



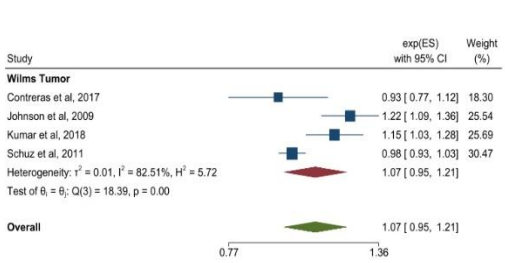



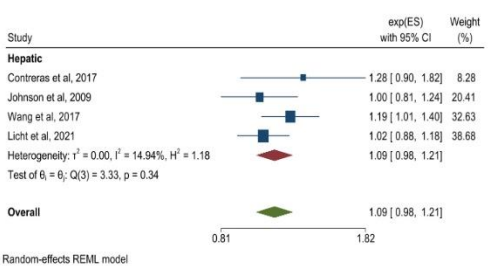



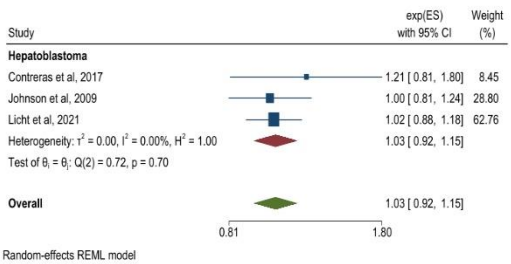



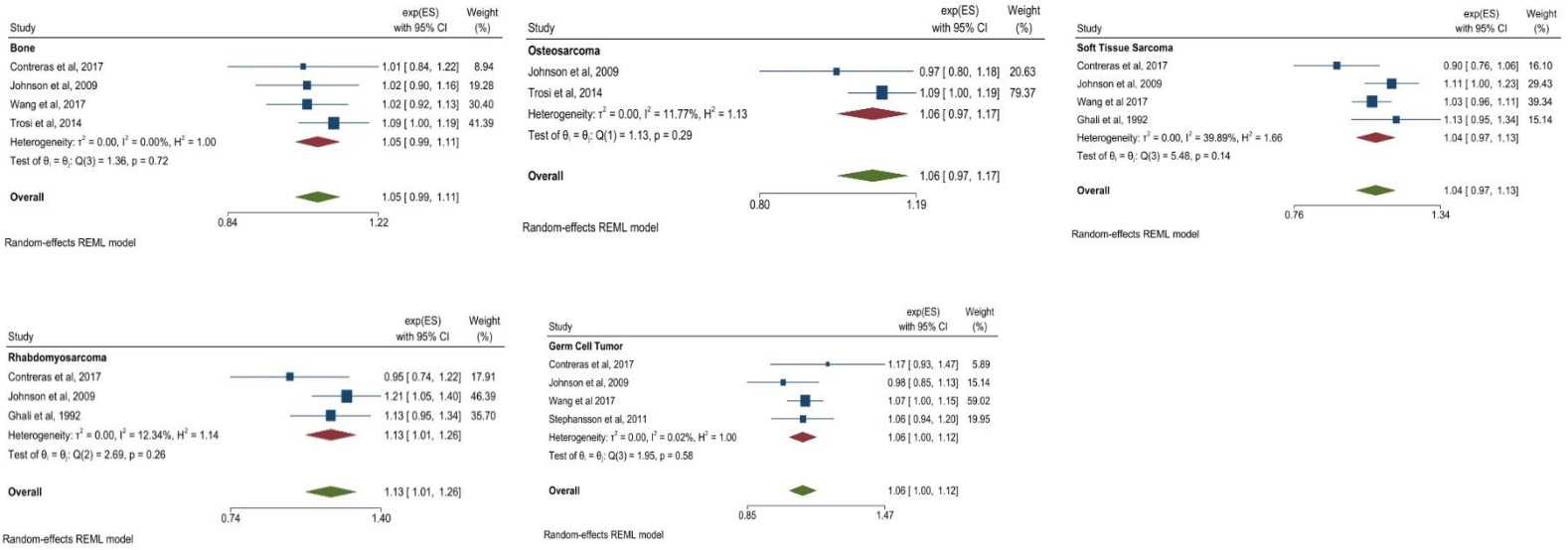



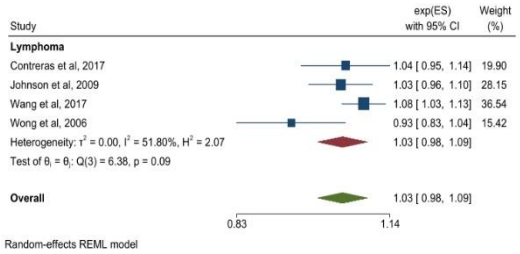



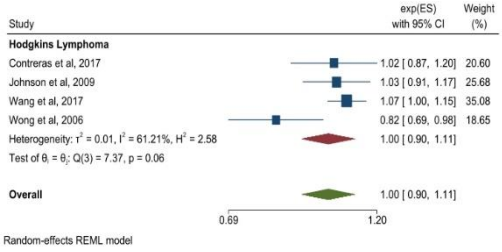



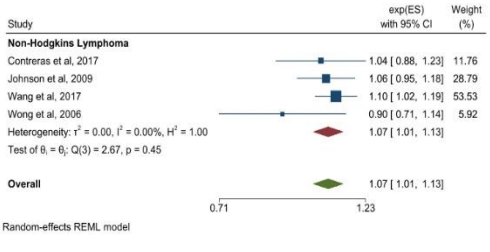



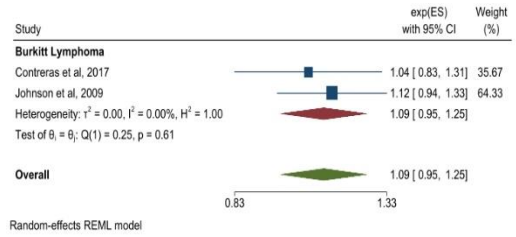


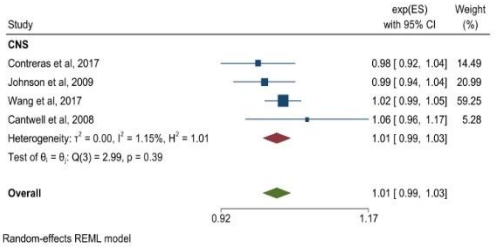

**Supplementary Figure 1.** Maternal meta-analysis results for a five-year increase in maternal age at birth by cancer type. Error bars represent 95% confidence intervals. Between study heterogeneity is presented in terms of the $\tau^2$, $I^2$, and $H^2$ statistic. Test of θi=θj refers to the Cochran's Q test of between study homogeneity. Random effects modeling using restricted maximum likelihood methods was used to produce summary estimates. All tests were two-sided. CI = confidence interval; ES = estimate (β); REML = restricted maximum likelihood.

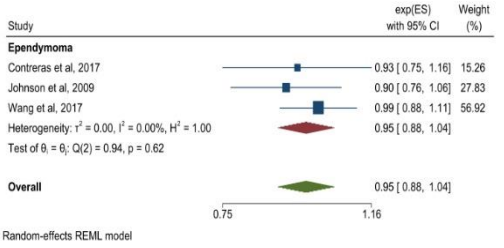

Study
exp(ES) with 95% CI
Weight (%)
Lymphoma
Contreras et al, 2017 1.04 [ 0.95, 1.14] 19.90
Johnson et al, 2009 1.03 [ 0.96, 1.10] 28.15
Wang et al, 2017 1.08 [ 1.03, 1.13] 36.54
Wong et al, 2006 0.93 [ 0.83, 1.04] 15.42
Heterogeneity: τ² = 0.00, I² = 51.80%, H² = 2.07 1.03 [ 0.98, 1.09]
Test of θi = θj: Q(3) = 6.38, p = 0.09
Overall 1.03 [ 0.98, 1.09]
0.83
1.14
Random-effects REML model

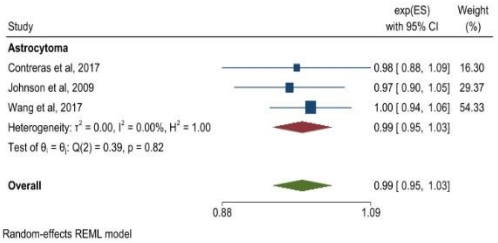

Study
exp(ES) with 95% CI
Weight (%)
Hodgkins Lymphoma
Contreras et al, 2017 1.02 [ 0.87, 1.20] 20.60
Johnson et al, 2009 1.03 [ 0.91, 1.17] 25.68
Wang et al, 2017 1.07 [ 1.00, 1.15] 35.08
Wong et al, 2006 0.82 [ 0.69, 0.98] 18.65
Heterogeneity: τ² = 0.01, I² = 61.21%, H² = 2.58 1.00 [ 0.90, 1.11]
Test of θi = θj: Q(3) = 7.37, p = 0.06
Overall 1.00 [ 0.90, 1.11]
0.69
1.20
Random-effects REML model

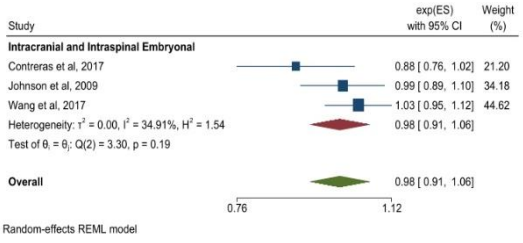

Study
exp(ES) with 95% CI
Weight (%)
Non-Hodgkins Lymphoma
Contreras et al, 2017 1.04 [ 0.88, 1.23] 11.76
Johnson et al, 2009 1.06 [ 0.95, 1.18] 28.79
Wang et al, 2017 1.10 [ 1.02, 1.19] 53.53
Wong et al, 2006 0.90 [ 0.71, 1.14] 5.92
Heterogeneity: τ² = 0.00, I² = 0.00%, H² = 1.00 1.07 [ 1.01, 1.13]
Test of θi = θj: Q(3) = 2.67, p = 0.45
Overall 1.07 [ 1.01, 1.13]
0.71
1.23
Random-effects REML model

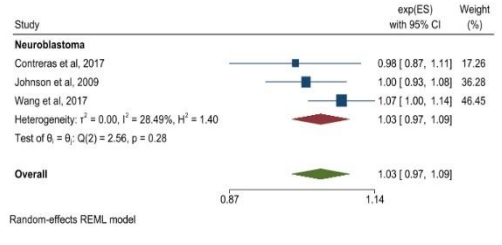

Study
exp(ES) with 95% CI
Weight (%)
Burkitt Lymphoma
Contreras et al, 2017 1.04 [ 0.83, 1.31] 35.67
Johnson et al, 2009 1.12 [ 0.94, 1.33] 64.33
Heterogeneity: τ² = 0.00, I² = 0.00%, H² = 1.00 1.09 [ 0.95, 1.25]
Test of θi = θj: Q(1) = 0.25, p = 0.61
Overall 1.09 [ 0.95, 1.25]
0.83
1.33
Random-effects REML model

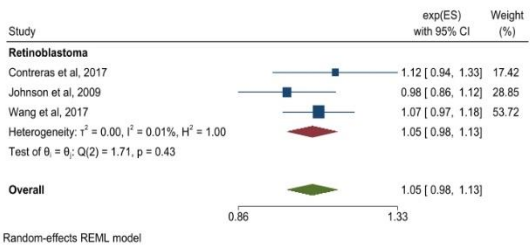

Study
exp(ES) with 95% CI
Weight (%)
CNS
Contreras et al, 2017 0.98 [ 0.92, 1.04] 14.49
Johnson et al, 2009 0.99 [ 0.94, 1.04] 20.99
Wang et al, 2017 1.02 [ 0.99, 1.05] 59.25
Cantwell et al, 2008 1.06 [ 0.96, 1.17] 5.28
Heterogeneity: τ² = 0.00, I² = 1.15%, H² = 1.01 1.01 [ 0.99, 1.03]
Test of θi = θj: Q(3) = 2.99, p = 0.39
Overall 1.01 [ 0.99, 1.03]
0.92
1.17
Random-effects REML model

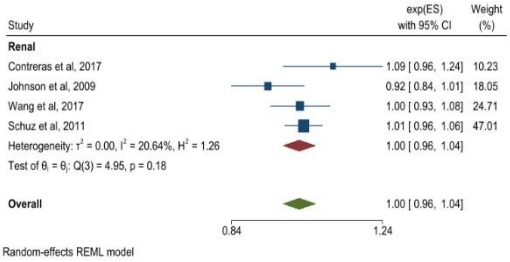

Study
exp(ES) with 95% CI
Weight (%)
Ependymoma
Contreras et al, 2017 0.93 [ 0.75, 1.16] 15.26
Johnson et al, 2009 0.90 [ 0.76, 1.06] 27.83
Wang et al, 2017 0.99 [ 0.88, 1.11] 56.92
Heterogeneity: τ² = 0.00, I² = 0.00%, H² = 1.00 0.95 [ 0.88, 1.04]
Test of θi = θj: Q(2) = 0.94, p = 0.62
Overall 0.95 [ 0.88, 1.04]
0.75
1.16
Random-effects REML model

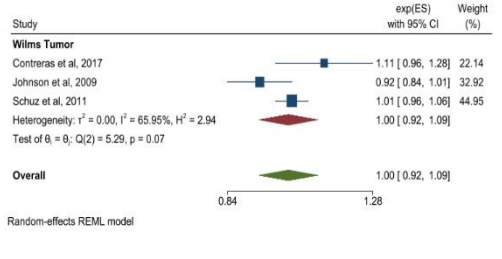

Study
exp(ES) with 95% CI
Weight (%)
Astrocytoma
Contreras et al, 2017 0.98 [ 0.88, 1.09] 16.30
Johnson et al, 2009 0.97 [ 0.90, 1.05] 29.37
Wang et al, 2017 1.00 [ 0.94, 1.06] 54.33
Heterogeneity: τ² = 0.00, I² = 0.00%, H² = 1.00 0.99 [ 0.95, 1.03]
Test of θi = θj: Q(2) = 0.39, p = 0.82
Overall 0.99 [ 0.95, 1.03]
0.88
1.09
Random-effects REML model

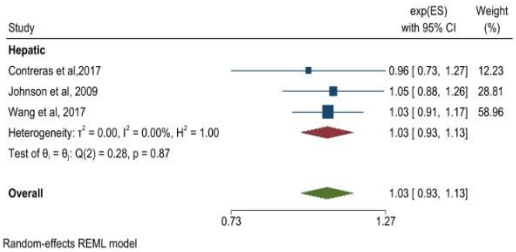

Study
exp(ES) with 95% CI
Weight (%)
Intracranial and Intraspinal Embryonal
Contreras et al, 2017 0.88 [ 0.76, 1.02] 21.20
Johnson et al, 2009 0.99 [ 0.89, 1.10] 34.18
Wang et al, 2017 1.03 [ 0.95, 1.12] 44.62
Heterogeneity: τ² = 0.00, I² = 34.91%, H² = 1.54 0.98 [ 0.91, 1.06]
Test of θi = θj: Q(2) = 3.30, p = 0.19
Overall 0.98 [ 0.91, 1.06]
0.76
1.12
Random-effects REML model

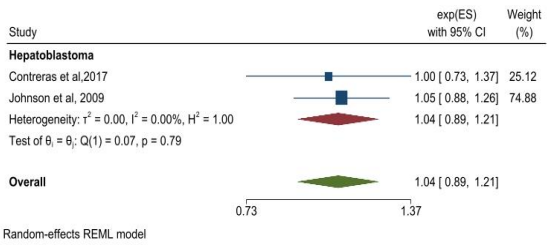

Study
exp(ES) with 95% CI
Weight (%)
Neuroblastoma
Contreras et al, 2017 0.98 [ 0.87, 1.11] 17.26
Johnson et al, 2009 1.00 [ 0.93, 1.08] 36.28
Wang et al, 2017 1.07 [ 1.00, 1.14] 46.45
Heterogeneity: τ² = 0.00, I² = 28.49%, H² = 1.40 1.03 [ 0.97, 1.09]
Test of θi = θj: Q(2) = 2.56, p = 0.28
Overall 1.03 [ 0.97, 1.09]
0.87
1.14
Random-effects REML model

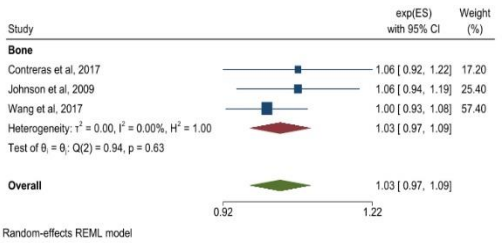

Study
exp(ES) with 95% CI
Weight (%)
Retinoblastoma
Contreras et al, 2017 1.12 [ 0.94, 1.33] 17.42
Johnson et al, 2009 0.98 [ 0.86, 1.12] 28.85
Wang et al, 2017 1.07 [ 0.97, 1.18] 53.72
Heterogeneity: τ² = 0.00, I² = 0.01%, H² = 1.00 1.05 [ 0.98, 1.13]
Test of θi = θj: Q(2) = 1.71, p = 0.43
Overall 1.05 [ 0.98, 1.13]
0.86
1.33
Random-effects REML model

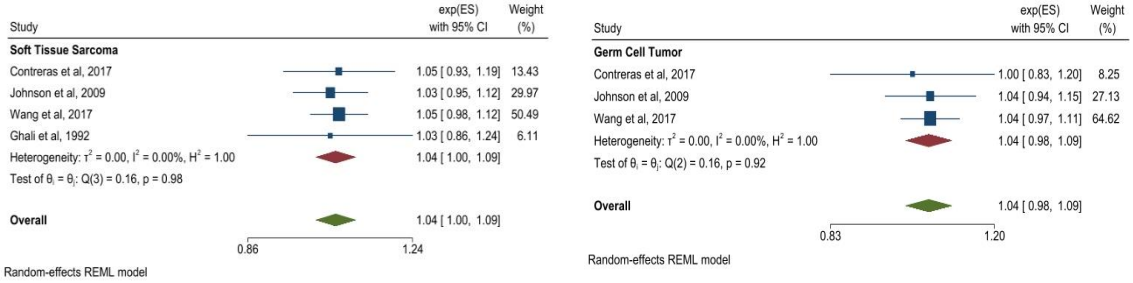

Study
exp(ES) with 95% CI
Weight (%)
Renal
Contreras et al, 2017 1.09 [ 0.96, 1.24] 10.23
Johnson et al, 2009 0.92 [ 0.84, 1.01] 18.05
Wang et al, 2017 1.00 [ 0.93, 1.08] 24.71
Schuz et al, 2011 1.01 [ 0.96, 1.06] 47.01
Heterogeneity: τ² = 0.00, I² = 20.64%, H² = 1.26 1.00 [ 0.96, 1.04]
Test of θi = θj: Q(3) = 4.95, p = 0.18
Overall 1.00 [ 0.96, 1.04]
0.84
1.24
Random-effects REML model


Study
exp(ES) with 95% CI
Weight (%)
Wilms Tumor
Contreras et al, 2017 1.11 [ 0.96, 1.28] 22.14
Johnson et al, 2009 0.92 [ 0.84, 1.01] 32.92
Schuz et al, 2011 1.01 [ 0.96, 1.06] 44.95
Heterogeneity: τ² = 0.00, I² = 65.95%, H² = 2.94 1.00 [ 0.92, 1.09]
Test of θi = θj: Q(2) = 5.29, p = 0.07
Overall 1.00 [ 0.92, 1.09]
0.84
1.28
Random-effects REML model


Study
exp(ES) with 95% CI
Weight (%)
Hepatic
Contreras et al,2017 0.96 [ 0.73, 1.27] 12.23
Johnson et al, 2009 1.05 [ 0.88, 1.26] 28.81
Wang et al, 2017 1.03 [ 0.91, 1.17] 58.96
Heterogeneity: τ² = 0.00, I² = 0.00%, H² = 1.00 1.03 [ 0.93, 1.13]
Test of θi = θj: Q(2) = 0.28, p = 0.87
Overall 1.03 [ 0.93, 1.13]
0.73
1.27
Random-effects REML model


Study
exp(ES) with 95% CI
Weight (%)
Hepatoblastoma
Contreras et al,2017 1.00 [ 0.73, 1.37] 25.12
Johnson et al, 2009 1.05 [ 0.88, 1.26] 74.88
Heterogeneity: τ² = 0.00, I² = 0.00%, H² = 1.00 1.04 [ 0.89, 1.21]
Test of θi = θj: Q(1) = 0.07, p = 0.79
Overall 1.04 [ 0.89, 1.21]
0.73
1.37
Random-effects REML model


Study
exp(ES) with 95% CI
Weight (%)
Bone
Contreras et al, 2017 1.06 [ 0.92, 1.22] 17.20
Johnson et al, 2009 1.06 [ 0.94, 1.19] 25.40
Wang et al, 2017 1.00 [ 0.93, 1.08] 57.40
Heterogeneity: τ² = 0.00, I² = 0.00%, H² = 1.00 1.03 [ 0.97, 1.09]
Test of θi = θj: Q(2) = 0.94, p = 0.63
Overall 1.03 [ 0.97, 1.09]
0.92
1.22
Random-effects REML model




**Supplementary Figure 2.** Paternal meta-analysis results for a five-year increase in paternal age at birth by cancer type. Error bars represent 95% confidence intervals. Between study heterogeneity is presented in terms of the $\tau^2$, $I^2$, and $H^2$ statistic. Test of $\theta i=\theta j$ refers to the Cochran's Q test of between study homogeneity. Random effects modeling using restricted maximum likelihood methods was used to produce summary estimates. All tests were two-sided. CI = confidence interval; ES = estimate (β); REML = restricted maximum likelihood.