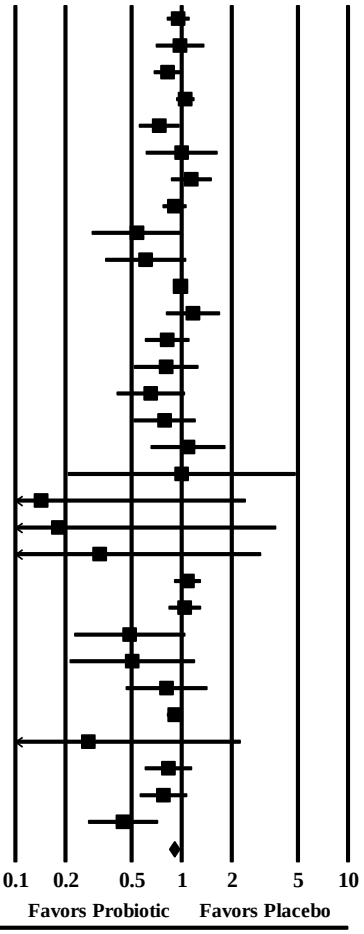
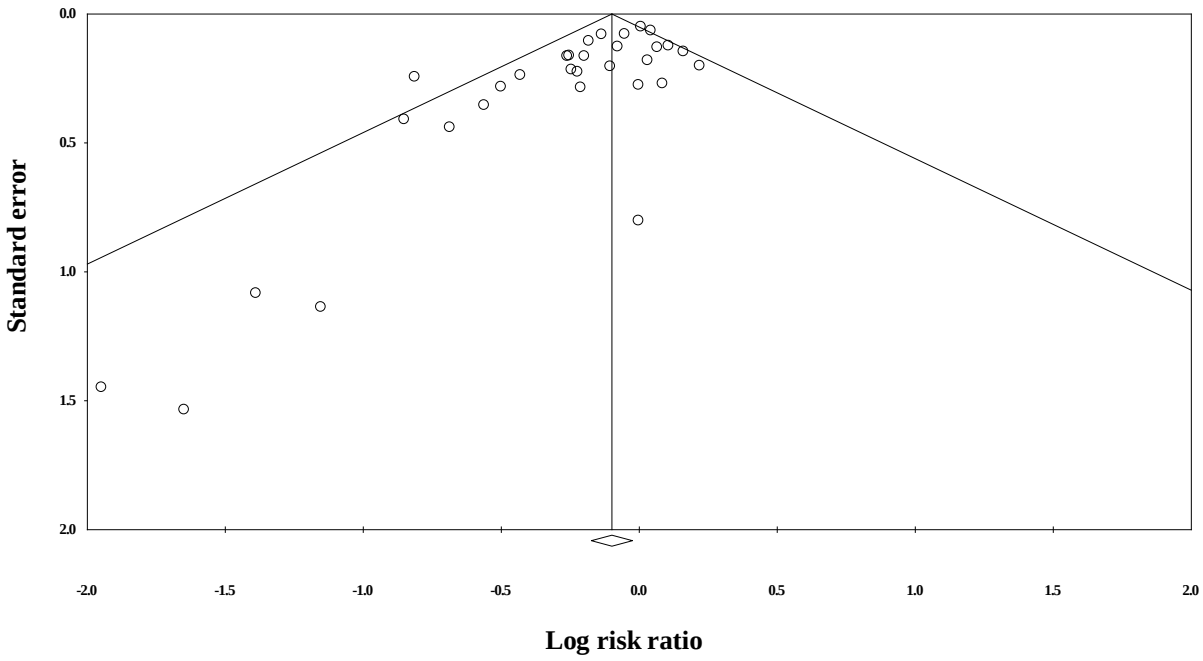
Supplemental Figure 1

Study name	Risk ratio	Lower limit	Upper limit	Z-Value	p-Value	RTI / Total: Probiotic	RTI / Total: Placebo
Ahrén 2021 (51)	0.95	0.82	1.11	-0.60	0.55	178 / 433	188 / 436
Altadill 2021 (52)	0.98	0.70	1.36	-0.13	0.90	31 / 56	30 / 53
Berggren 2011 (54)	0.82	0.68	1.00	-2.01	0.04	76 / 137	91 / 135
de Vrese 2005 (34)	1.05	0.93	1.19	0.78	0.43	158 / 225	153 / 229
Gleeson 2011 (56)	0.73	0.55	0.97	-2.17	0.03	21 / 32	23 / 26
Gleeson 2012 (57)	1.00	0.61	1.64	0.00	1.00	15 / 27	15 / 27
Gleeson 2016 (58)	1.14	0.86	1.51	0.93	0.35	60 / 126	49 / 117
Guillemard 2010 (35)	0.91	0.77	1.07	-1.18	0.24	169 / 478	189 / 484
Habermann 2001 (32)	0.54	0.29	1.01	-1.94	0.05	12 / 70	21 / 66
Habermann 2002 (33)	0.61	0.35	1.06	-1.75	0.08	15 / 78	25 / 79
Jespersen 2015 (36)	0.98	0.89	1.09	-0.31	0.76	315 / 538	314 / 528
Kekkonen 2007 (31)	1.17	0.81	1.70	0.83	0.41	32 / 61	26 / 58
Kumpu 2015 (61)	0.82	0.60	1.11	-1.28	0.20	14 / 19	18 / 20
Langkamp-Henken 2015 [R0052] (29)	0.81	0.52	1.26	-0.94	0.35	43 / 145	18 / 49
Langkamp-Henken 2015 [R0071] (29)	0.65	0.41	1.04	-1.78	0.07	34 / 142	18 / 49
Langkamp-Henken 2015 [R0033] (29)	0.79	0.51	1.21	-1.08	0.28	45 / 147	19 / 49
Michalickova 2016 (64)	1.09	0.65	1.83	0.33	0.74	12 / 19	11 / 19
Nishishira 2016 (65)	1.00	0.21	4.83	0.00	1.00	3 / 94	3 / 94
Pumpa 2019 (66)	0.14	0.01	2.42	-1.35	0.18	0 / 9	3 / 9
Rizzardini 2012 [BB12] (67)	0.18	0.01	3.69	-1.11	0.27	0 / 53	2 / 48
Rizzardini 2012 [431] (67)	0.32	0.03	3.00	-1.00	0.32	1 / 56	3 / 54
Schroder 2015 (68)	1.08	0.90	1.30	0.86	0.39	61 / 79	57 / 80
Smith 2013 (70)	1.04	0.83	1.30	0.37	0.71	63 / 101	58 / 97
Strasser 2016 (71)	0.49	0.23	1.05	-1.84	0.07	5 / 14	11 / 15
Sugimura 2015 (72)	0.50	0.21	1.20	-1.55	0.12	7 / 106	14 / 107
Tiollier 2007 (73)	0.81	0.46	1.42	-0.73	0.47	11 / 24	13 / 23
Turner 2017 (74)	0.91	0.82	1.01	-1.69	0.09	51 / 58	55 / 57
Vaisberg 2019 (75)	0.28	0.03	2.26	-1.20	0.23	1 / 20	4 / 22
West 2014 [Bl-04] (30)	0.83	0.60	1.15	-1.11	0.27	59 / 159	33 / 74
West 2014 [NCFM, Bi-07] (30)	0.78	0.56	1.08	-1.52	0.13	55 / 154	34 / 74
Zhang 2018 (77)	0.44	0.27	0.72	-3.30	0.00	16 / 67	36 / 67
	0.90	0.84	0.96	-3.03	0.00		



Supplemental Figure 1. Forest plot for the effects of probiotics versus placebo on the risk of experiencing one or more respiratory tract infections in non-elderly adults. Per protocol random effects meta-analysis using DerSimonian and Laird inverse variance method. Data extracted for Jespersen et al. (36) and Guillemard et al. (35) reflect incidence of upper respiratory tract infections. Lower and upper limits are the 95% CI. Individual study effect estimates (squares; sized by study weight) and pooled effects (diamond) are plotted. Heterogeneity from the fixed effect model: I^2 = 36.0, P = 0.03. RTI, number of individuals experiencing one or more RTI; Total, number completing study.

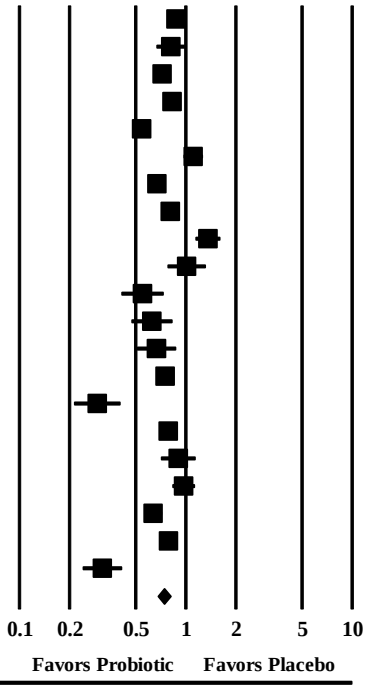
Supplemental Figure 2



Supplemental Figure 2. Funnel plot for intention-to-treat analysis of effects of probiotics on the risk of experiencing one or more respiratory tract infections in non-elderly adults.

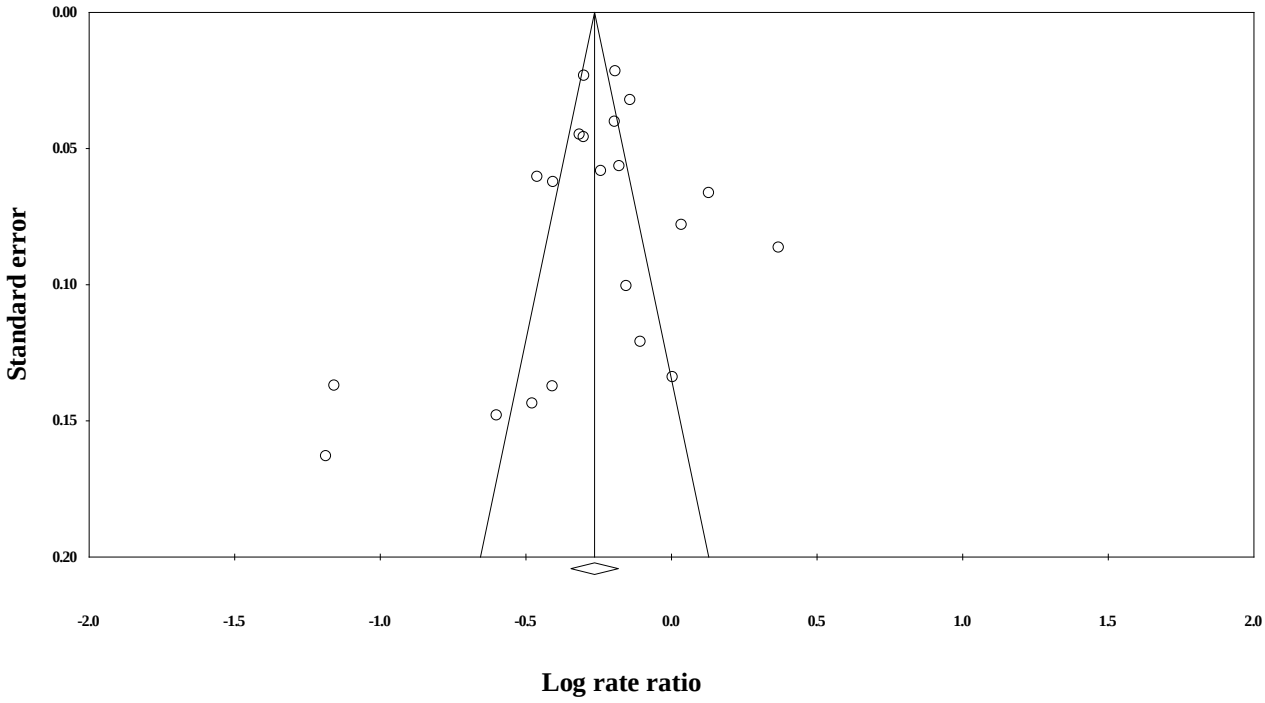
Supplemental Figure 3

Study name	Rate ratio	Lower limit	Upper limit	Z-Value	p-Value	RTI / Total: Probiotic	RTI / Total: Placebo
Ahrén 2021 (51)	0.87	0.82	0.93	-4.19	0.00	1768 / 100	2040 / 100
Altadill 2021 (52)	0.81	0.67	0.99	-2.05	0.04	183 / 13	213 / 12
Berggren 2011 (54)	0.72	0.66	0.79	-7.25	0.00	849 / 32	1161 / 31
de Vrese 2005 (34)	0.83	0.76	0.90	-4.70	0.00	1106 / 73	1362 / 74
Gleeson 2011 (56)	0.54	0.48	0.61	-9.76	0.00	426 / 10	637 / 8
Gleeson 2016 (58)	1.11	0.97	1.26	1.54	0.12	494 / 48	414 / 45
Hor 2018 (59)	0.67	0.64	0.70	-16.95	0.00	3142 / 72	4228 / 65
Jespersen 2015 (36)	0.81	0.77	0.84	-9.75	0.00	3800 / 62	4618 / 61
Kekkonen 2007 (31)	1.36	1.15	1.61	3.54	0.00	323 / 14	226 / 13
Langkamp-Henken 2015 [R0052] (29)	1.01	0.78	1.32	0.09	0.93	222 / 17	74 / 6
Langkamp-Henken 2015 [R0071] (29)	0.55	0.41	0.73	-4.04	0.00	118 / 16	74 / 6
Langkamp-Henken 2015 [R0033] (29)	0.63	0.47	0.83	-3.26	0.00	139 / 17	74 / 6
Michalickova 2016 (64)	0.67	0.51	0.87	-2.95	0.00	88 / 5	132 / 5
Schroder 2015 (68)	0.75	0.69	0.82	-6.20	0.00	820 / 20	1105 / 20
Shida 2017 (69)	0.29	0.21	0.40	-7.50	0.00	49 / 11	160 / 11
Smith 2013 (70)	0.78	0.70	0.88	-4.27	0.00	564 / 23	690 / 22
Tiollier 2007 (73)	0.90	0.71	1.14	-0.85	0.39	132 / 2	140 / 2
West 2011 (76)	0.97	0.83	1.13	-0.38	0.70	321 / 13	331 / 13
West 2014 [Bl-04] (30)	0.64	0.56	0.72	-7.45	0.00	643 / 66	470 / 31
West 2014 [NCFM, Bi-07] (30)	0.79	0.70	0.88	-4.09	0.00	770 / 63	470 / 31
Zhang 2018 (77)	0.32	0.24	0.41	-8.40	0.00	70 / 15	221 / 15
	0.74	0.68	0.81	-6.70	0.00		



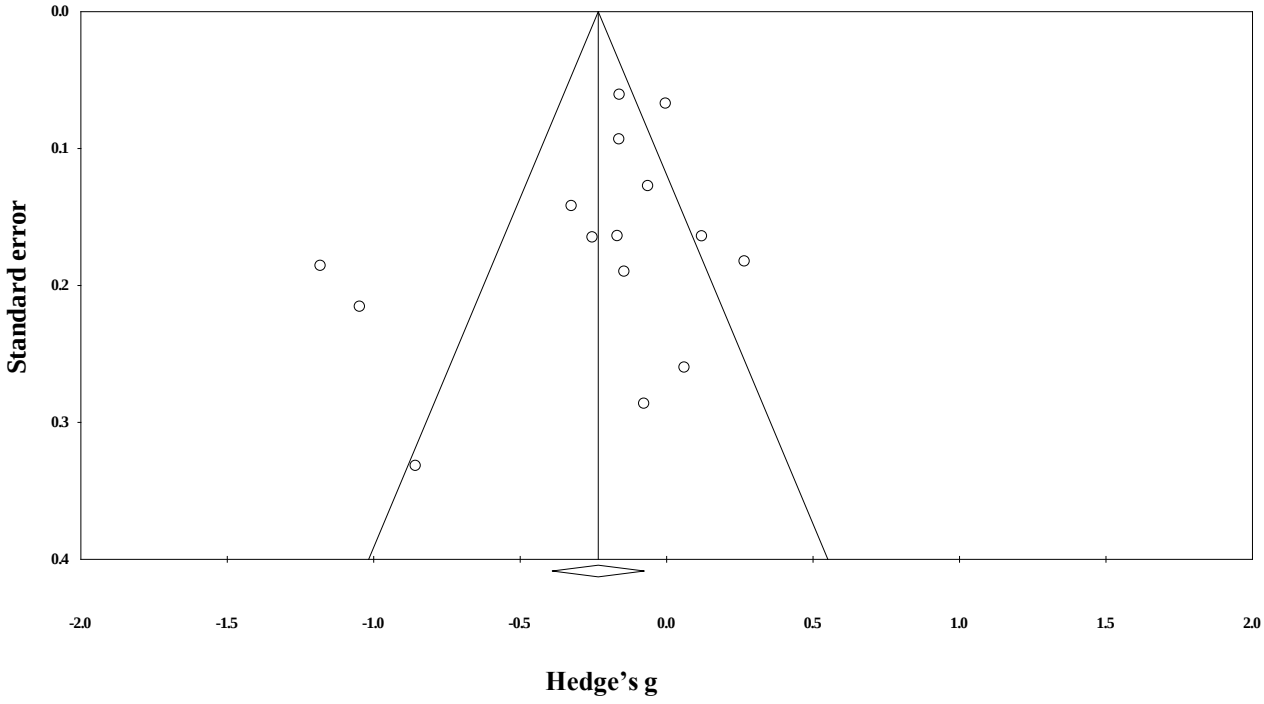
Supplemental Figure 3. Forest plot for the effects of probiotics on the total days of illness due to respiratory tract infection (RTI) in non-elderly adults. Per protocol random effects meta-analysis using DerSimonian and Laird inverse variance method. Lower and upper limits are the 95% CI. Individual study effect estimates (squares; sized by study weight) and pooled effects (diamond) are plotted. Heterogeneity from the fixed effect model: $I^2 = 92.7$, $P < 0.001$. RTI, total days of RTI; Total, total person years of exposure.

Supplemental Figure 4



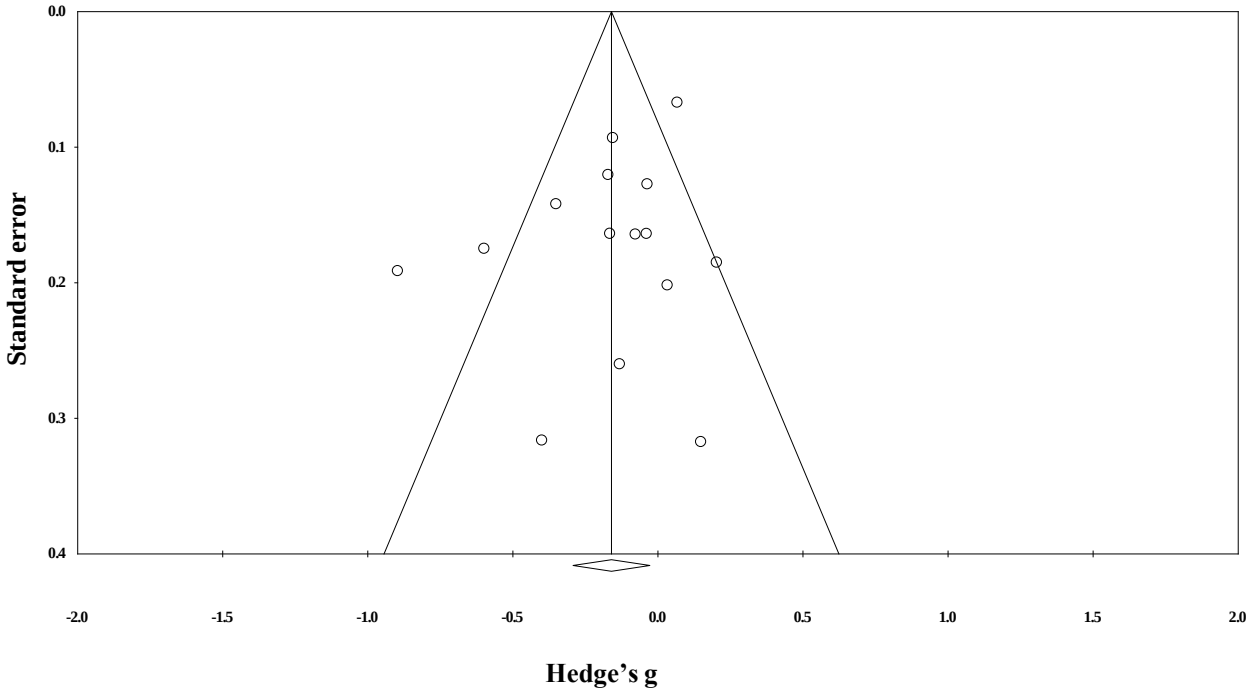
Supplemental Figure 4. Funnel plot for intention-to-treat analysis of effects of probiotics on the total number of days experiencing a respiratory tract infection in non-elderly adults.

Supplemental Figure 5



Supplemental Figure 5. Funnel plot for per protocol analysis of effects of probiotics on the duration of respiratory tract infection episodes in non-elderly adults.

Supplemental Figure 6



Supplemental Figure 6. Funnel plot for per protocol analysis of effects of probiotics on the severity of respiratory tract infections in non-elderly adults.

Supplemental Figure 7. Risk of bias assessment for all studies included in systematic review on effects of probiotics, prebiotics and synbiotics on the incidence, duration and severity of respiratory tract infections in non-elderly adults. Assessed using the Cochrane risk-of-bias assessment tool version 2.0. Plot produced using *robvis* (McGuinness LA and Higgins, JPT. Risk-of-bias VISualization (robvis): An R package and Shiny web app for visualizing risk-of-bias assessments. Res Syn Meth. 2020; 1-7; https://mcguinlu.shinyapps.io/robvis/).