

**Health Technology Engineering  
Meta-analysis Lab**

**WARWICK**  
THE UNIVERSITY OF WARWICK

# OpenMeta[Analyst] Software

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Data table

Raw data

Effect sizes

Confidence intervals

	include	study name	year	tx A n	tx A N	tx B n	tx B N	OR	lower	upper
1	<input checked="" type="checkbox"/>	Gonzalez	1993	6	27	9	27	0.571	0.170	1.916
2	<input checked="" type="checkbox"/>	Prins	1993	3	59	7	64	0.436	0.107	1.772
3	<input checked="" type="checkbox"/>	Giamarellou	1991	0	30	5	30	0.076	0.004	1.441
4	<input checked="" type="checkbox"/>	Maller	1993	19	164	13	152	1.401	0.667	2.945
5	<input checked="" type="checkbox"/>	Sturm	1989	0	36	2	36	0.189	0.009	4.080
6	<input checked="" type="checkbox"/>	Marik	1991	26	155	49	145	0.395	0.229	0.680
7	<input checked="" type="checkbox"/>	Muijsken	1988	8	32	6	35	1.611	0.491	5.289
8	<input checked="" type="checkbox"/>	Vigano	1992	1	74	0	70	2.878	0.115	71.821
9	<input checked="" type="checkbox"/>	Hansen	1988	2	28	11	31	0.140	0.028	0.704
10	<input checked="" type="checkbox"/>	De Vries	1990	6	80	3	76	1.973	0.475	8.188

outcome: clinical failure  
follow-up: first

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Binary data:

- Odds Ratio (OR)
- Relative Risk (RR)
- Risk Difference (RD)
- Number Needed to Treat (NNT)

Continuous data

- Mean Difference (MD)
- Standard Mean Difference (SMD)

$$T = \mu_{NT} - \mu_C$$

A= new treatment

B= control

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File Edit Analysis Dataset Help

metric  
meta-analysis...  
cumulative meta-analysis...  
leave-one-out meta-analysis...  
subgroup meta-analysis  
meta-regression  
change confidence level

	incl				tx A #total	tx B #evts	tx B #total	OR	lower	upper	latitude (c)
1	<input checked="" type="checkbox"/>				123	11	139	0.391	0.121	1.262	44.000
2	<input checked="" type="checkbox"/>				306	29	303	0.189	0.077	0.462	55.000
3	<input checked="" type="checkbox"/>				231	11	220	0.250	0.069	0.908	42.000
4	<input checked="" type="checkbox"/>				13598	248	12867	0.233	0.176	0.308	52.000
5	<input checked="" type="checkbox"/>	Frimodt-Moller	1973	33	5069	47	5808	0.803	0.514	1.256	13.000
6	<input checked="" type="checkbox"/>	Stein & Aaronson	1953	180	1541	372	1450;	0.384	0.316	0.466	44.000
7	<input checked="" type="checkbox"/>	Vandiviere	1973	8	2545	10	629	0.195	0.077	0.497	19.000
8	<input checked="" type="checkbox"/>	TB Prevention Trial	1980	505	88391	499	88391	1.012	0.894	1.146	13.000
9	<input checked="" type="checkbox"/>	Coetzee & Berjak	1968	29	7499	45	7277	0.624	0.391	0.996	27.000
10	<input checked="" type="checkbox"/>	Rosenthal61	1961	17	1716	65	1665	0.246	0.144	0.422	42.000
11	<input checked="" type="checkbox"/>	Comstock	1974	186	50634	141	27338	0.711	0.571	0.886	18.000
12	<input checked="" type="checkbox"/>	Comstock & Webster	1969	5	2498	3	2340;	1.563	0.373	6.548	33.000
13	<input checked="" type="checkbox"/>	Comstock76	1976	27	16913	29	17854	0.983	0.582	1.661	33.000
14	<input type="checkbox"/>										

outcome: tuberculosis  
follow-up: first

open file: C:/Users/Lilly/Desktop/cose inglesi/summer school/open\_meta\_analyst\_win8 (1)/dist/sample\_data/BCG.oma

confidence level: 95.0%

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The screenshot shows the OpenMeta[analyst] software interface. On the left, a list of studies is displayed with checkboxes for inclusion. The 'Method & Parameters' dialog box is open, showing the 'forest plot' method selected. The 'analysis method' is set to 'Binary Random-Effects'. The 'DL: DerSimonian-Laird' method is chosen for the random-effects model. The confidence level is set to 95.0, and the number of digits of precision to display is 3. The correction factor is 0.5, and it is applied to 'only0' cells.

include	study name	year
<input checked="" type="checkbox"/>	Aaronson	194
<input checked="" type="checkbox"/>	Ferguson & Simes	194
<input checked="" type="checkbox"/>	Rosenthal	196
<input checked="" type="checkbox"/>	Hart & Sutherland	197
<input checked="" type="checkbox"/>	Frimodt-Moller	197
<input checked="" type="checkbox"/>	Stein & Aaronson	195
<input checked="" type="checkbox"/>	Vandiviere	197
<input checked="" type="checkbox"/>	TB Prevention Trial	198
<input checked="" type="checkbox"/>	Coetzee & Berjak	196
<input checked="" type="checkbox"/>	Rosenthal61	196
<input checked="" type="checkbox"/>	Comstock	197
<input checked="" type="checkbox"/>	Comstock & Webster	196
<input checked="" type="checkbox"/>	Comstock76	197
<input type="checkbox"/>		

outcome outcome  
follow-up: first

confidence level: 95.0%

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## First example:

- Open the existing project “BCG.oma”
- Study the effect on a new vaccine preventing the development of tuberculosis(TB)
- Outcomes of interest: number of subjects who developed the TB

	Diseases Cases	Non diseased
New Treatment	a	b
Control	c	d

## Second example:

- Open the existing file “continuous.oma”
- Comparing the operative time of a surgical procedures performed by two different techniques (A and B)

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## Acute mental stress assessment via short term HRV

### Outcomes of interest: Mean RR

	N	Stress		Rest	
		Mean	SD	Mean	SD
Lackner (2011)	20	765.31	314.3	837.1	324.5
Papousek (2010)	65	617.92	210	819.7	244.1
Shubert (2009)	50	686.49	240.8	808.6	206.2
Taelman (2011)	43	755.44	134.5	863.5	147.1
Tharion (2009)	18	777.4	114.3	867.7	114.3
Visnovcova (2014)	70	675.99	120.7	847.8	130.4
Vuksanovic (2007)	23	740.74	263.2	806.5	249.5

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## Results: Fixed Model

Metric: Mean Difference

Estimate	Lower bound	Upper Bound	Std. error	p-Value
-142.155	-168.862	-115.448	13.626	< 0.001

## Weights

Study names	Weights
Lacker	1.820%
Papousek	11.640%
Shubert	9.238%
Taelman	20.097 %
Tharion	12.791%
Visnovcova	41.167%
Vuksanovic	3.247 %

# Health technology Engineering Meta-analysis Lab

## Results: Fixed Model

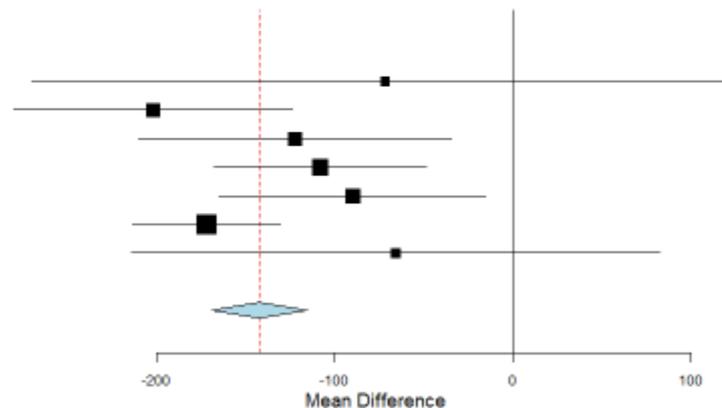
### Heterogeneity

Q(df=6)	Het. p-Value
9.023	0.172

### Forest Plot

#### Forest Plot

Studies	Estimate (95% C.I.)
Lackner 2011	-71.790 (-269.778, 126.198)
Papousek 2010	-201.780 (-280.060, -123.500)
Shubert 2009	-122.110 (-209.982, -34.238)
Taelman 2011	-108.060 (-167.635, -48.485)
Tharion 2009	-89.900 (-164.575, -15.225)
Visnovcova 2014	-171.810 (-213.435, -130.185)
Vuksanovic 2007	-65.760 (-213.973, 82.453)
Overall (I <sup>2</sup> =0 % , P=0.172)	-142.155 (-168.862, -115.448)



# Health technology Engineering Meta-analysis Lab

## Results: Random Model

Metric: Mean Difference

Estimate	Lower bound	Upper Bound	Std. error	p-Value
-135.488	-171.749	-99.228	18.500	< 0.001

Weights

Study names	Weights
Lacker	3.125%
Papousek	14.606%
Shubert	12.409%
Taelman	20.469%
Tharion	15.559%
Visnovcova	28.540%
Vuksanovic	5.293 %

# Health technology Engineering Meta-analysis Lab

## Results: Fixed Model

### Heterogeneity

$Tau^2$	Q(df=6)	Het. p-Value	$I^2$
748.219	9.023	0.172	33.507%

### Forest Plot

#### Forest Plot

##### Studies

Estimate (95% C.I.)

Lackner 2011	-71.790	(-269.778, 126.198)
Papousek 2010	-201.780	(-280.060, -123.500)
Shubert 2009	-122.110	(-209.982, -34.238)
Taelman 2011	-108.060	(-167.635, -48.485)
Tharion 2009	-89.900	(-164.575, -15.225)
Visnovcova 2014	-171.810	(-213.435, -130.185)
Vuksanovic 2007	-65.760	(-213.973, 82.453)
<b>Overall (<math>I^2=33.51\%</math>, <math>P=0.172</math>)</b>	<b>-135.488</b>	<b>(-171.749, -99.228)</b>

