

Online Supplemental File

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Supp file 1: Search Strategy - ROP and Adverse neurodevelopmental Outcomes

Search performed on : 8.4.22

PubMed:

P: #1 Neonate OR Neonatal* OR Newborn OR Preterm OR Premature* OR Premature OR Infant OR 'Low birth weight' OR 'very low birth weight'

AND

O: #2 'Retinopathy of prematurity' OR 'ROP' OR retinopathy* OR 'retrolental fibroplasia'

AND

O: #3 'Neurodevelopmental outcome' OR 'Neurodevelopment* outcome' OR 'Neuropsychiatric outcome' OR 'Neuropsychiatry* outcome' OR 'Cognitive' OR 'development*'

Search: #1 AND #2 AND #3

PubMed: English: 407, All Languages: 416

Supp file 2: List of important excluded studies

Study ID	Reason for Exclusion
Opsina et al	No data for controls (No ROP data)
Schimdt 2003	ROP outcome data not available
Stahl 2022 (CARE-ROP)	No data for controls (No ROP data)
Naravane 2022	Case series
Jacobson 1998	No data for controls (No ROP data)
Holsti 2018	ROP outcome data not available
Cevik 2020	No data for controls (No ROP data)
Castellanos 2013	No data for controls (No ROP data)

Bowen 1993	Outcomes for all ELBW, no ROP data specifically available
Yazici 2022	BPD study, no ROP outcome data available

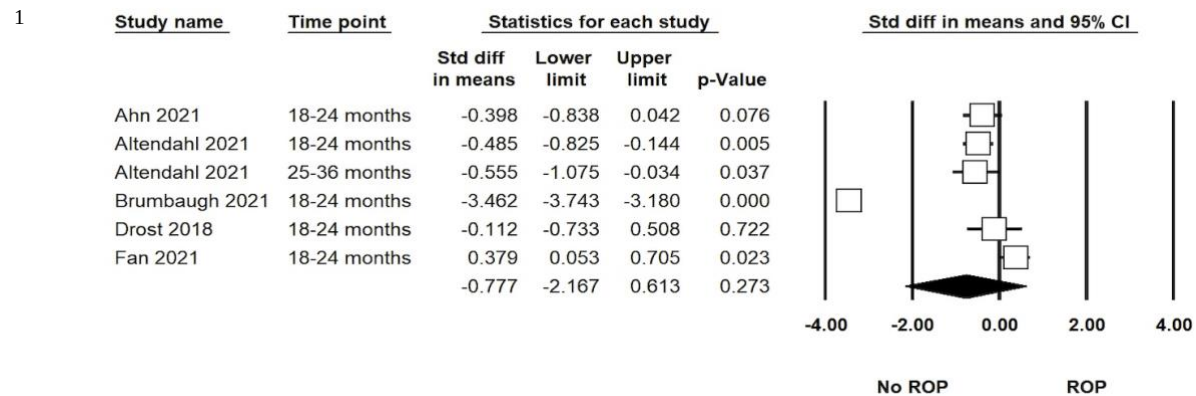
Supp file 3 : Forest plots: ‘Any ROP’ versus ‘No ROP’

1: Cognitive Composite score BSID III (Combined time points 18-48 months)

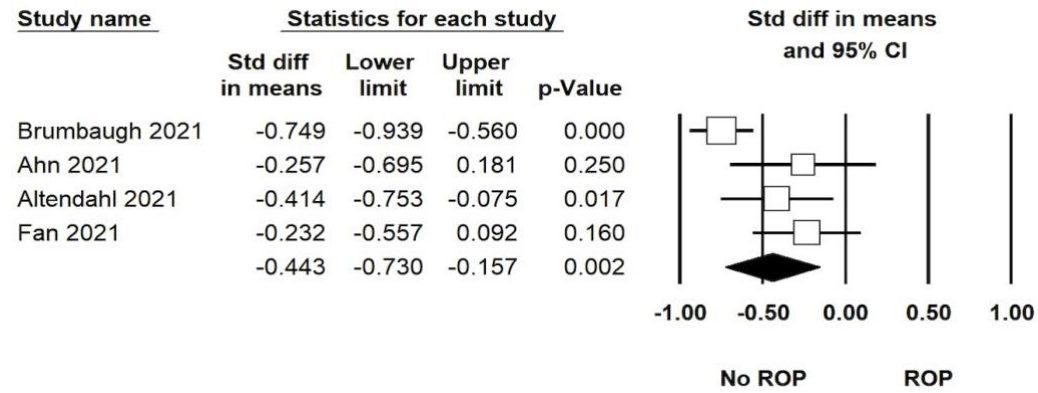
2a : Language Composite score – BSID III (18-24 months) ; 2b Language Composite score – BSID III (combined time points 18-48 months)

3a.Motor Composite score – BSID III (18-24 months); 3bMotor Composite score – BSID III (combined time points 18-48 months)

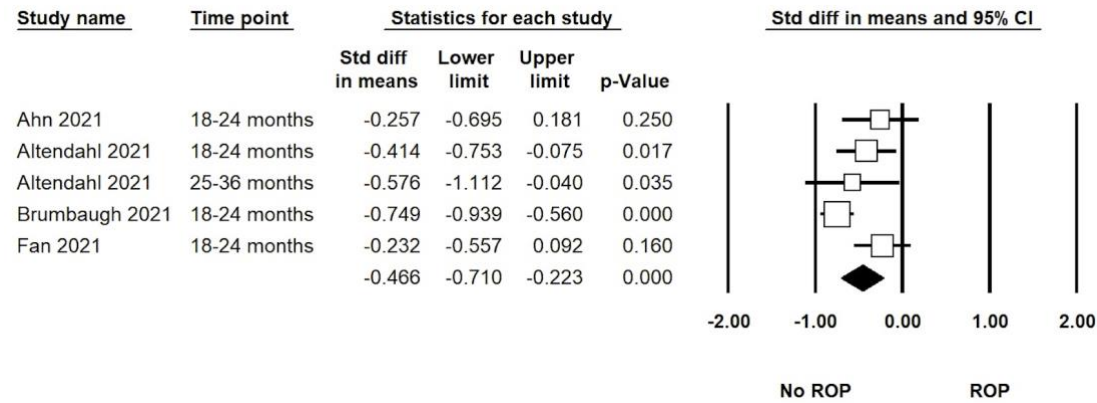
4: Neurodevelopmental impairment (defined by authors)

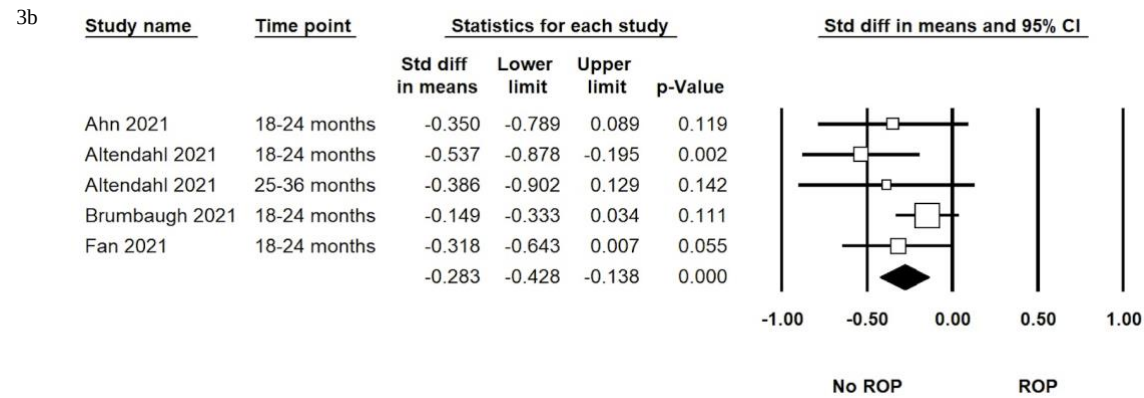
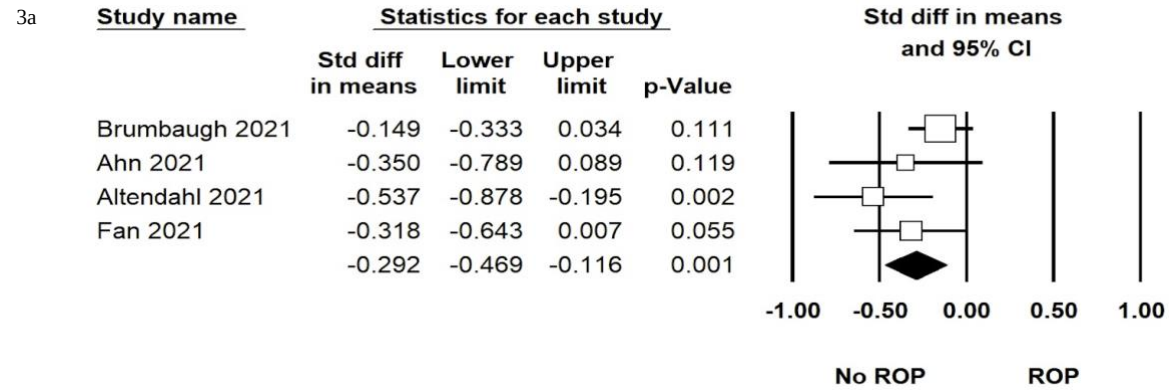


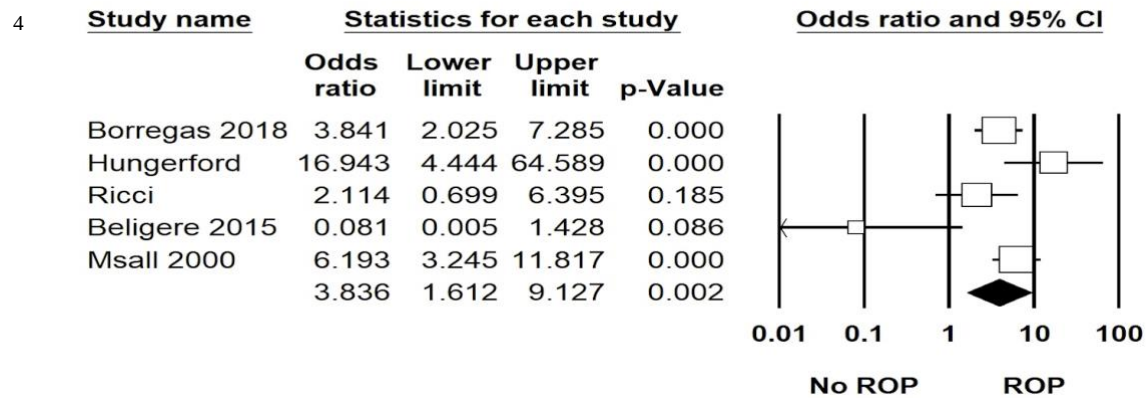
2a



2b





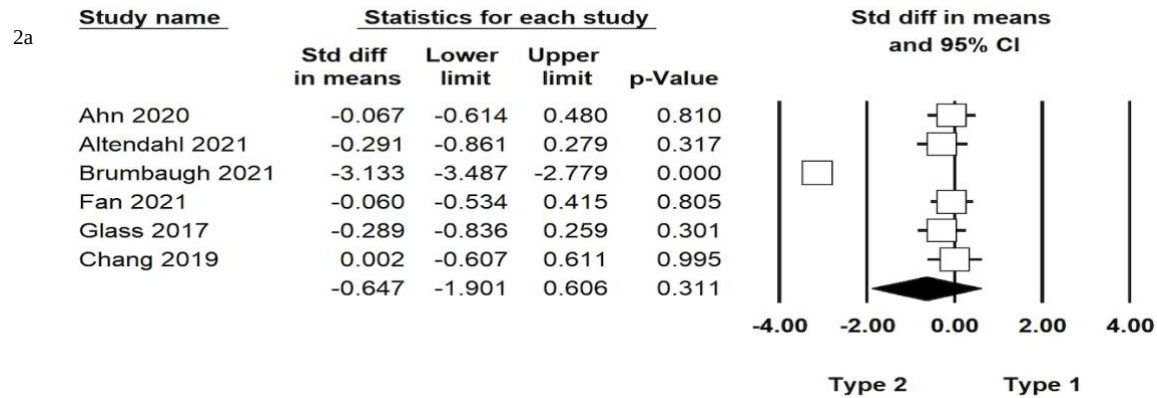
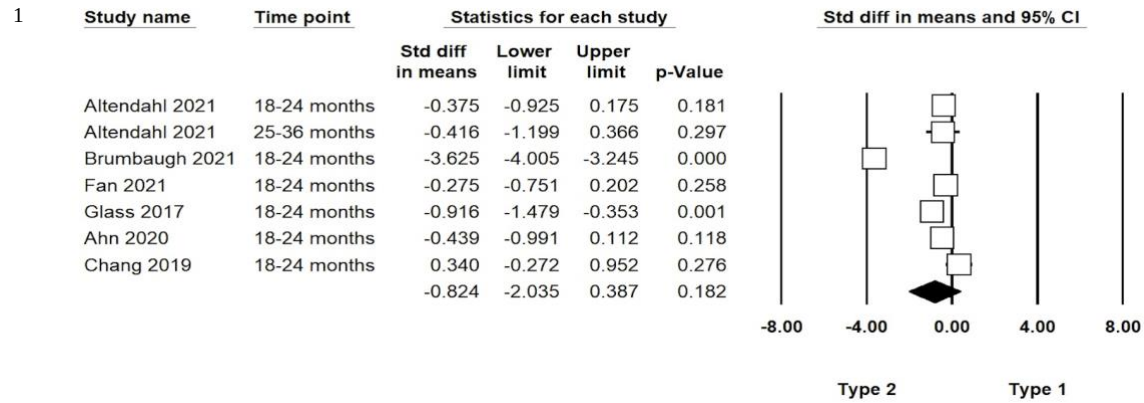


Supp file 4: Forest plots: ‘Type 1’ versus ‘Type 2’

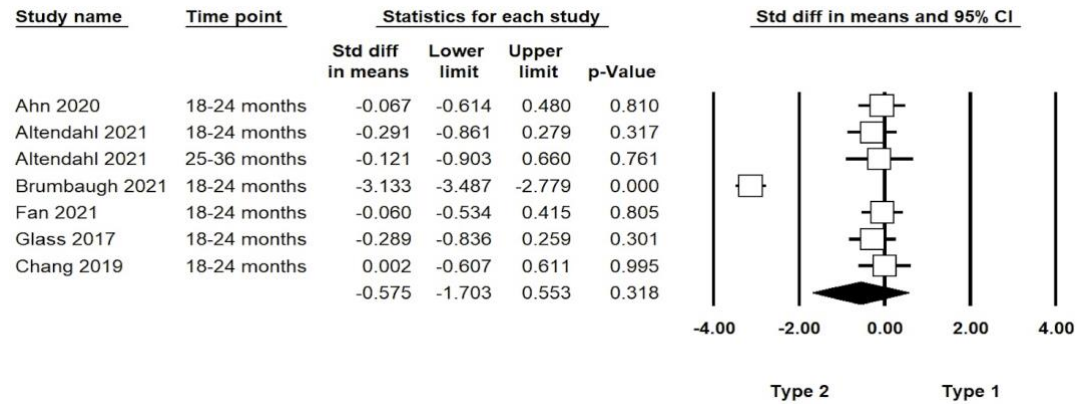
1: Cognitive Composite score BSID III (combined time points 18-48 months)

2a : Language Composite score – BSID III (18-24 months) ; 2b Language Composite score – BSID III (combined time points 18-48 months)

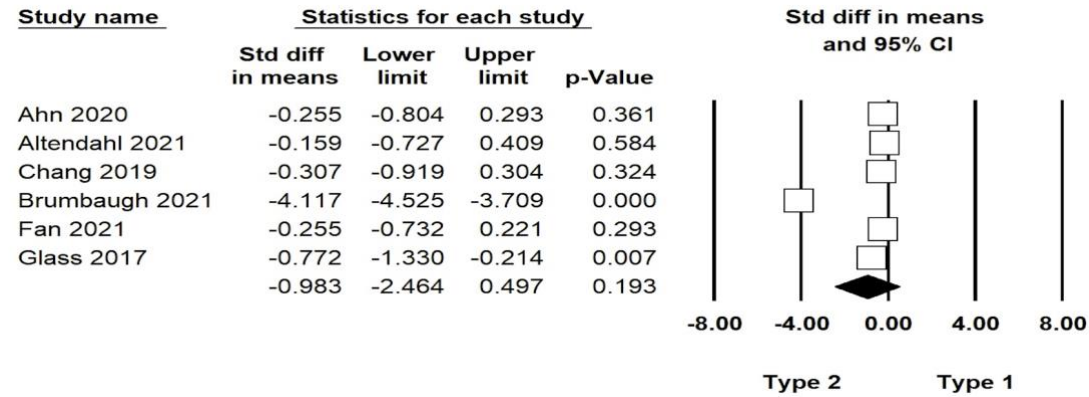
3a.Motor Composite score – BSID III (18-24 months); 3b Motor Composite score – BSID III (combined time points 18-48 months)

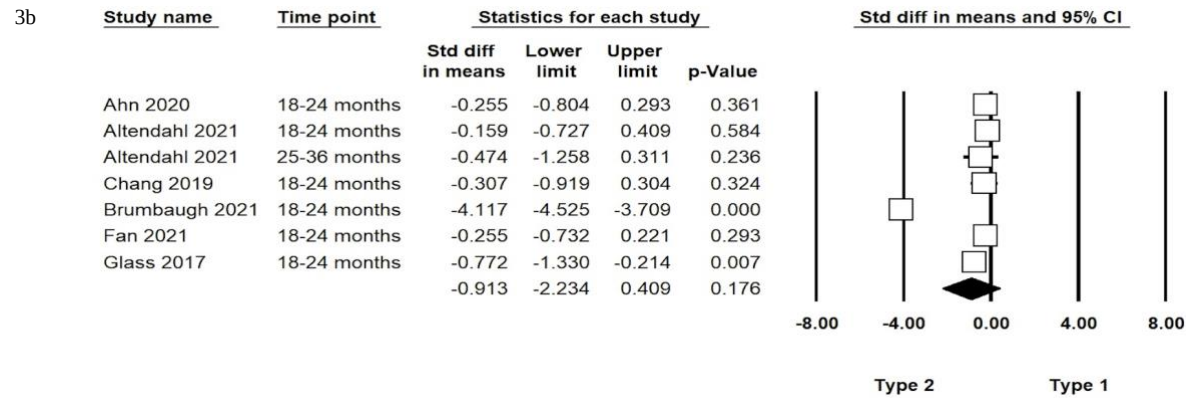


2b



3a





Supp file 5: Forest plots: Laser versus ‘Anti-VEGF’

1: Cognitive Composite score BSID III (combined time points 18-48 months AND scales)

2a : Language Composite score – BSID III (18-24 months) ; 2b Language Composite score – BSID III (combined time points 18-48 months)

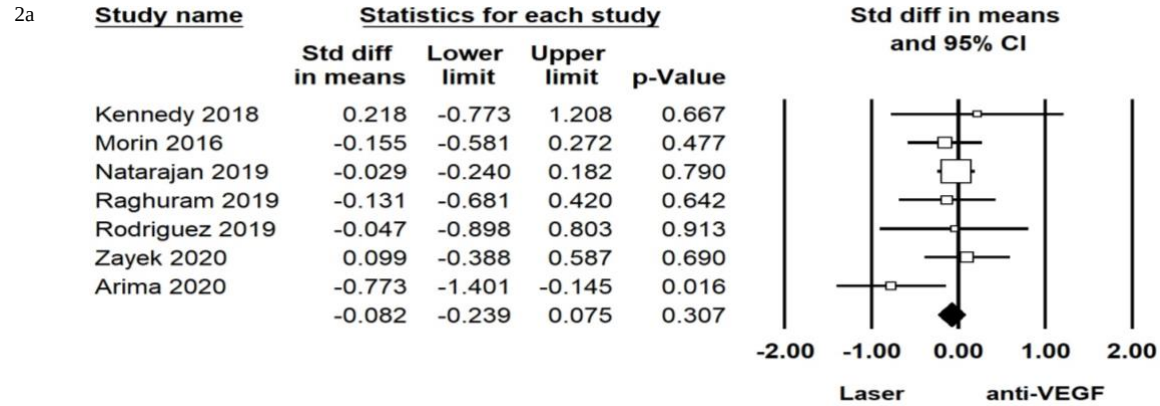
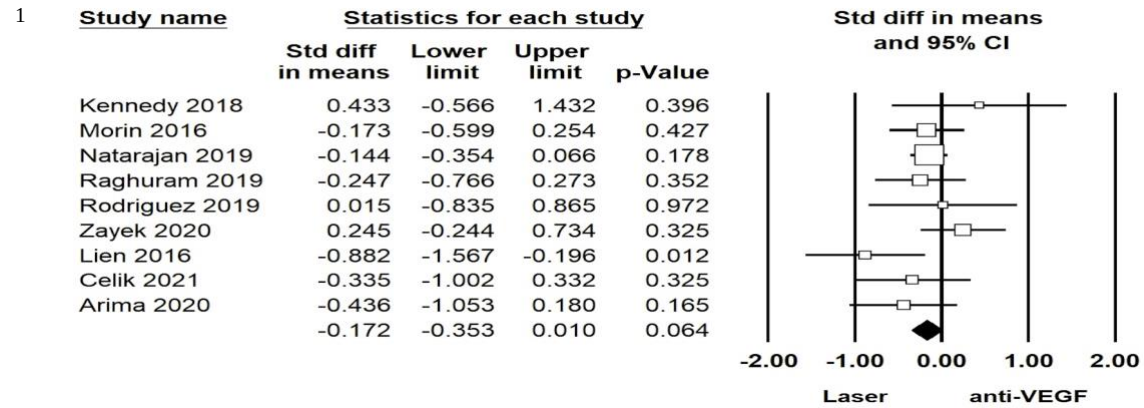
3a. Motor Composite score – BSID III (18-24 months); 3b. Motor Composite score – BSID III (combined time points 18-48 months)

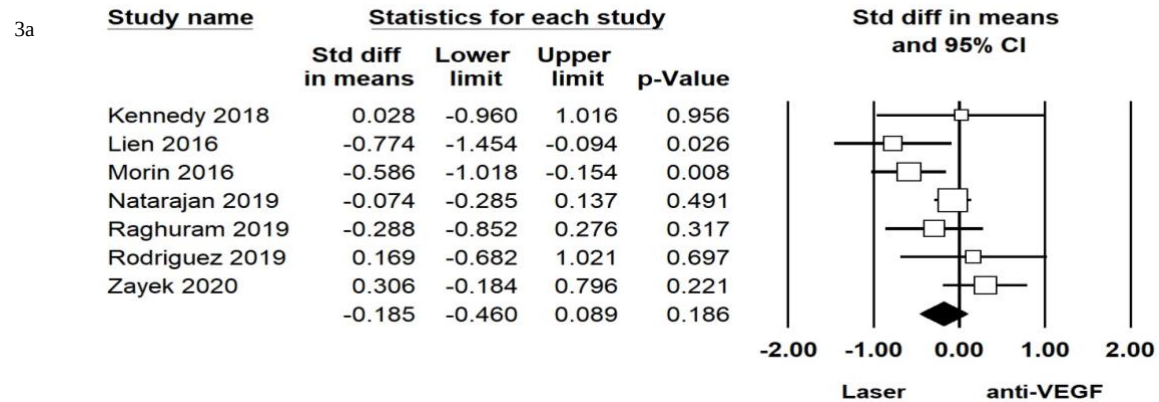
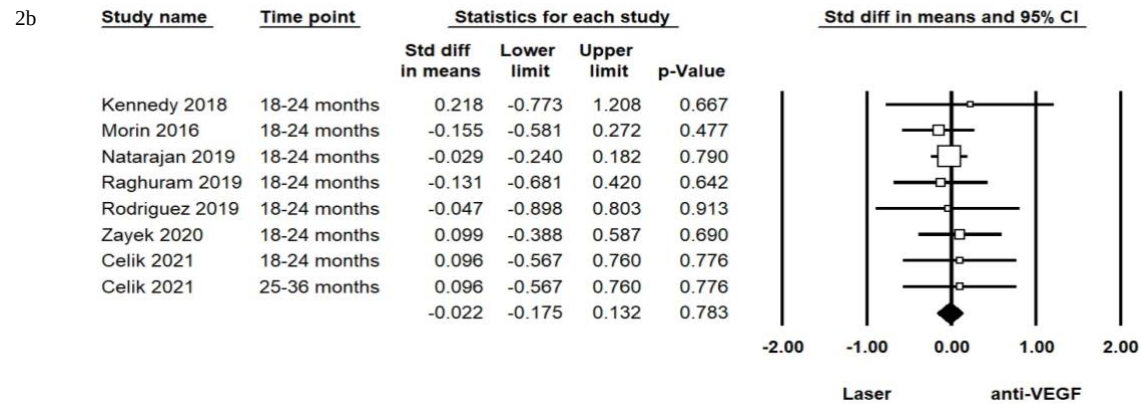
4. Moderate -Severe NDI 4b. Severe NDI

5. Cognitive impairment

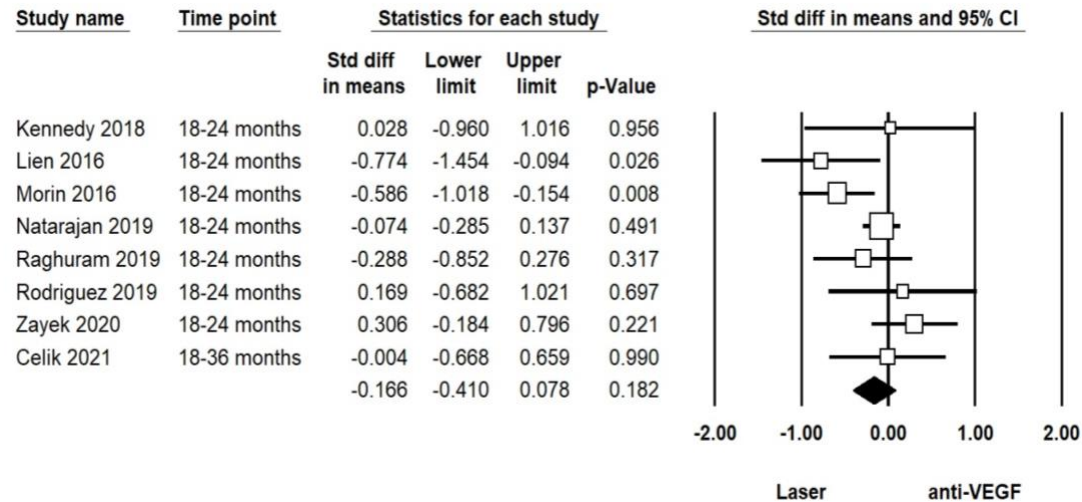
6a. Moderate language impairment- BSID III; 6b. Severe language impairment- BSID III;

7a. Moderate motor impairment- BSID III; 7b. Severe motor impairment- BSID III;

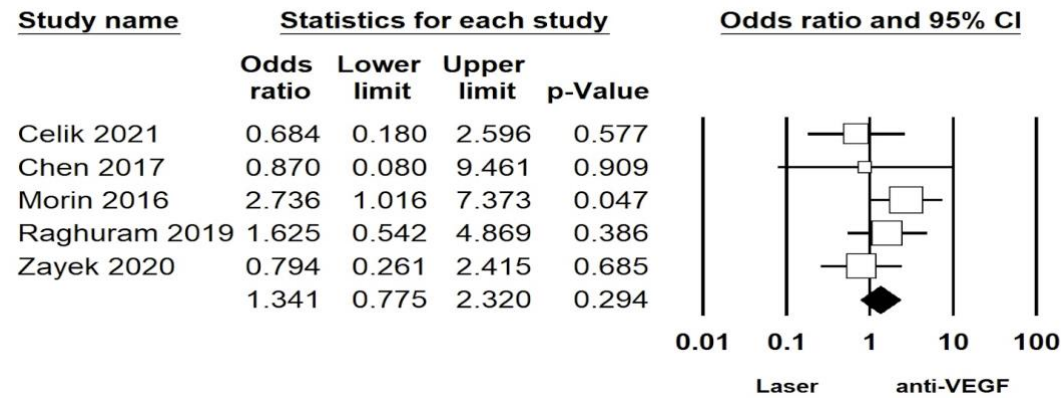




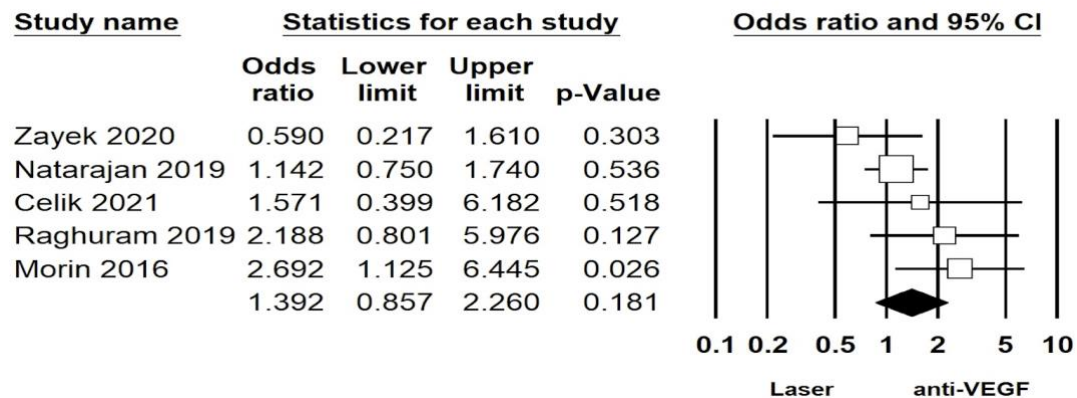
3b



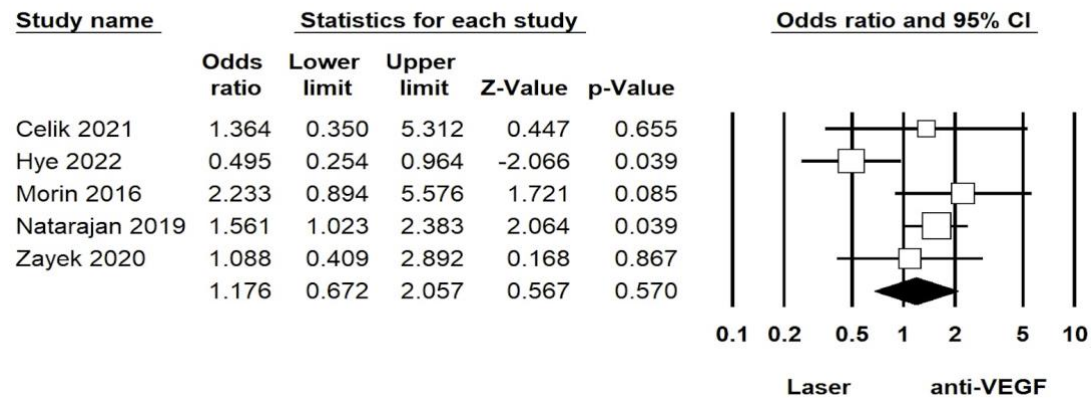
4



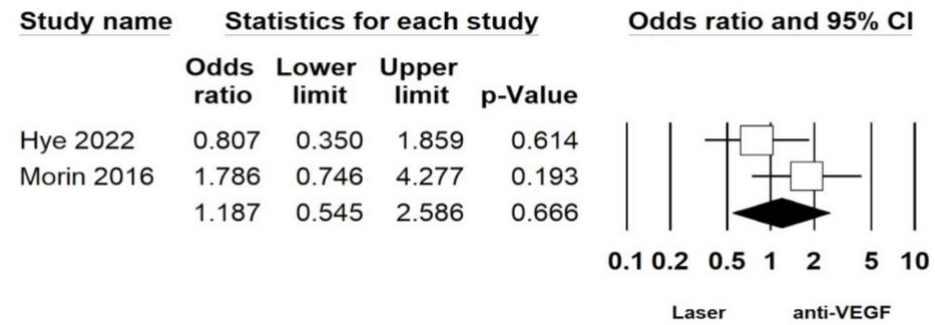
5



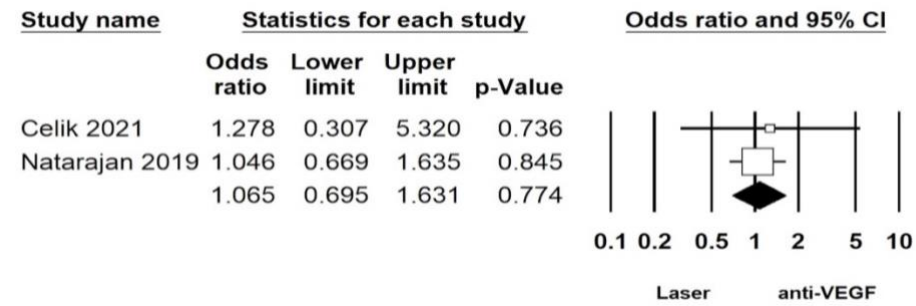
6a



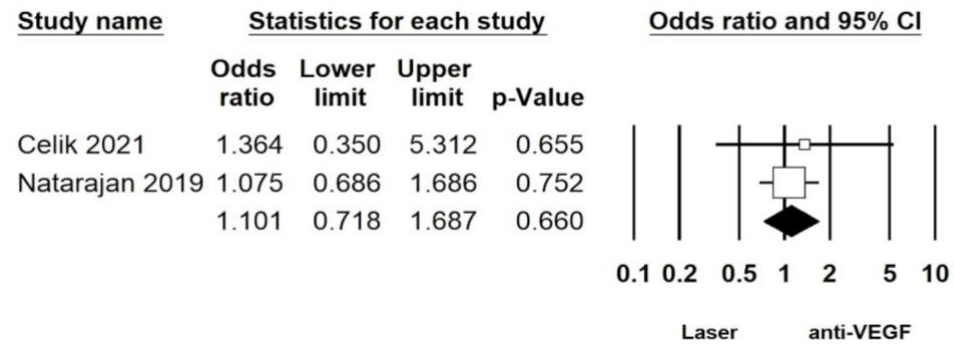
6b



7a



7b



Supp file 6: ROB 2.0 tool for RCT studies for all included studies

		Risk of bias domains					
		D1	D2	D3	D4	D5	Overall
Study	Brumbagh 2021						
	Quinn (CRYO-ROP) 2001						
	Kennedy 2018						
	Marlow 2021						
	Schimdt 2014						
Domains:		D1: Bias arising from the randomization process. D2: Bias due to deviations from intended intervention. D3: Bias due to missing outcome data. D4: Bias in measurement of the outcome. D5: Bias in selection of the reported result.					
		Judgement					
		High					
		Some concerns					
		Low					

Supp file 7: New-Castle Ottawa Scale score for all included studies

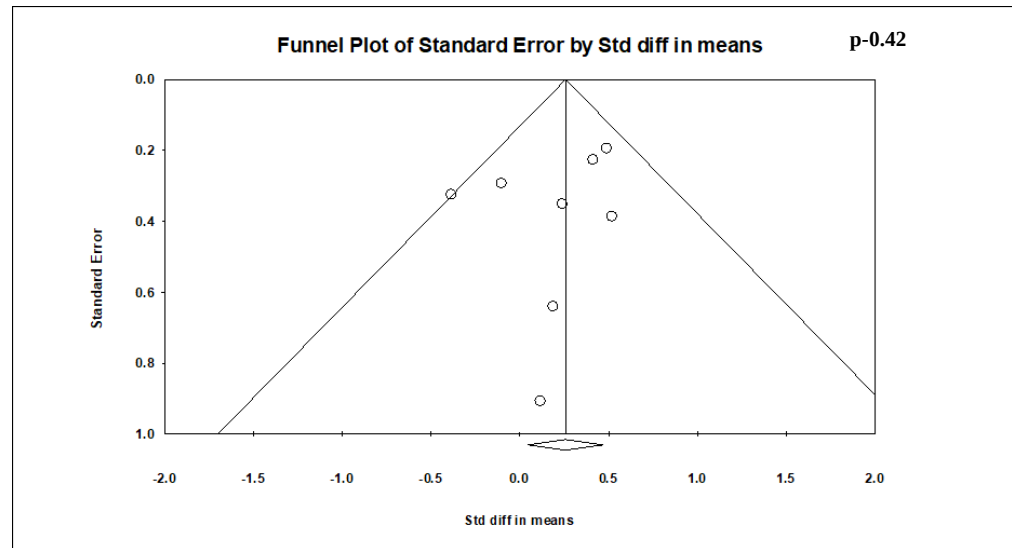
	Study ID	Selection (max 4)				Outcome (max 3)			Comparative (max 2)		Total Score (max 9)	Interpretation
		Representativeness of the exposed cohort (1)	Ascertainment of exposure (1)	Demonstration that outcome of interest was not present at start of study (1)	Selection of non-exposed amongst cohort (i.e., sample drawn from same neonatal population/nicu) (1)	Assessment of outcome (1)	Was follow-up long enough for outcomes to occur (1)	Adequacy of follow up of cohorts (1)	Study controls for GA and Sex (1)	Study controls for additional factors (1)		> /=6 (Good quality) 4,5 (fair quality) 1,2,3 (poor quality)
1	Ahn 2021	1	1	1	0	1	1	1	0	0	6	good
2	Altendahl et al 2021	1	1	1	1	1	0	1	0	1	7	good
3	Arima et al 2020	1	1	1	1	1	0	1	0	1	6	good

4	Allred et al 2014	1	1	1	1	1	1	1	1	1	9	good
5	Borregas et al 2018	1	1	1	0	0	0	0	1	1	5	fair
6	Bae et al 2021	1	1	1	1	1	0	1	1	0	7	good
7	Bohm et al 2002	1	1	1	0	1	0	1	0	0	5	fair
8	Chen et al 2017	1	1	1	0	1	1	1	1	0	7	good
9	Chen et al 2003	1	1	1	1	1	1	1	0	0	7	good
10	Celik et al 2021	1	1	1	1	1	1	1	1	0	8	good
11	Jin choi et al 2022	1	1	1	1	1	1	0	0	0	6	good
12	Chang et al 2019	1	1	1	1	1	0	0	1	1	7	good
13	Chou et al 2020	1	1	1	1	1	1	1	0	1	8	good
14	Drost et al 2018	1	1	1	1	0	1	1	0	0	6	good
15	Fan 2021	1	1	1	1	1	1	0	1	0	7	good
16	Glass et al 2017	1	1	1	1	1	0	1	1	0	7	good

17	Hungerford et al 1986	1	1	1	0	1	0	0	1	0	5	fair
18	Hye et al 2022	1	1	1	1	1	1	1	1	0	8	good
19	Holsti 2018	1	1	1	0	1	1	1	0	0	6	Good
20	Jacobson et al 2020	1	1	1	1	0	1	1	1	1	8	good
21	Kennedy 2018	1	1	0	1	1	1	1	1	0	7	good
22	Lien 2016	1	1	1	1	1	1	1	1	0	8	good
23	Morin et al 2016	1	1	1	0	1	0	1	0	1	6	good
24	Moujahed et al 2020	1	1	1	1	1	0	0	1	1	7	good
25	Msall et al 2000	1	1	1	1	1	1	0	0	1	7	good
26	Natarajan et al 2019	1	1	1	0	1	1	1	1	0	7	good
27	Raghuram et al 2019	1	1	1	1	1	1	0	0	1	7	good
28	Ricci et al 2020	1	0	1	1	1	0	1	1	0	6	good

29	Sugimoto et al 1998	1	1	1	0	0	0	1	1	0	5	fair
30	Stephenson et al 2007	1	1	1	1	1	1	1	0	0	7	good
31	Todd et al 2012	1	1	0	0	1	0	1	1	1	6	good
32	Zayek et al 2020	1	1	1	1	1	0	1	0	1	7	good
33	Zhang et al 2020	1	1	1	1	0	1	1	0	0	6	good

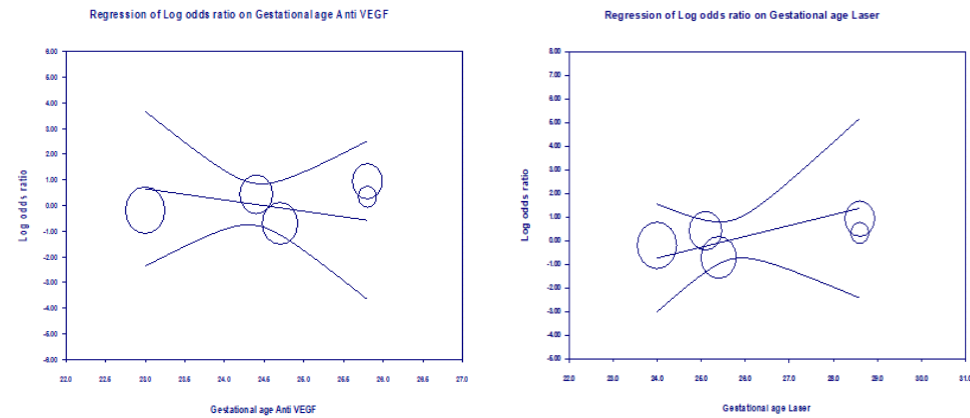
Supp file 8: Funnel Plot for Publication bias



Supp file 9: Meta-regression scatter plots

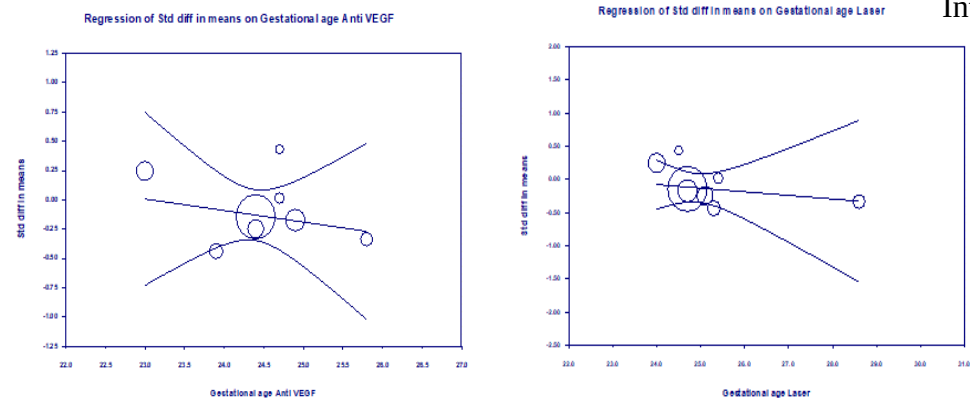
- a. Cerebral Palsy (anti-VEGF versus laser)

Intercept- 0.90

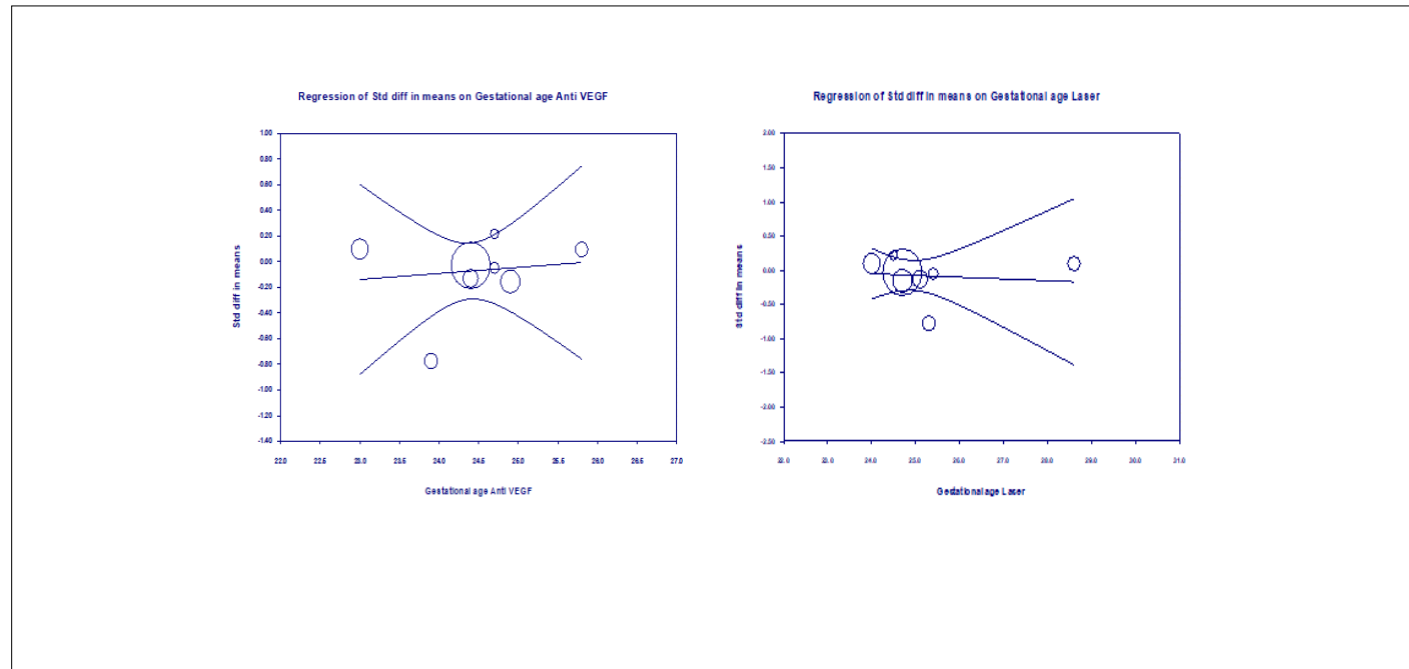


b. Cognitive composite score (anti-VEGF versus laser)

Intercept- 0.26



c. Language composite score (anti-VEGF versus laser)



d. Motor composite score (anti-VEGF versus laser)

Intercept- 0.08

