

NKR 22: Høfeber og allergisk helårssnue (allergisk rhinoconjunctivitis), PICO 7: Allergen-spezifisk immunterapi, husstøvmider.

Review information

Authors

Sundhedsstyrelsen¹

¹[Empty affiliation]

Citation example: S. NKR 22: Høfeber og allergisk helårssnue (allergisk rhinoconjunctivitis), PICO 7: Allergen-spezifisk immunterapi, husstøvmider.. Cochrane Database of Systematic Reviews [Year], Issue [Issue].

Characteristics of studies

Characteristics of included studies

Eifan 2010

Methods	<p>Study design: Randomized controlled trial</p> <p>Study grouping: Parallel group</p> <p>Open Label: YES</p> <p>Cluster RCT:</p>
Participants	<p>Baseline Characteristics</p> <p>Intervention</p> <ul style="list-style-type: none"> ● Age (Years): 7.00 (1.77) ● Gender males: 6 ● Patients with asthma and rhinitis: 11 ● Patients with asthma only: 2 ● Patients with rhinitis only: 3 ● Total rhinitis symptoms score (m, sd): 1.8 (0.9) ● Total medication score: 2.40 (1.4)

	<ul style="list-style-type: none"> ● Number of patients: 16 <p>Control</p> <ul style="list-style-type: none"> ● Age (Years): 7.57 (1.98) ● Gender males: 7 ● Patients with asthma and rhinitis: 10 ● Patients with asthma only: 4 ● Patients with rhinitis only: 2 ● Total rhinitis symptoms score (m, sd): 1.56 (1.05) ● Total medication score: 2.50 (1.50) ● Number of patients: 16 <p>Included criteria: All patients had to have skin test positivity and serum sIgE only to D.pt and/or D.f. Excluded criteria: Patients with polysensitization to other aeroallergens, systemic immunological disorders, severe asthma with forced expiratory volume in 1 s (FEV1) < 70%, severe atopic dermatitis and previous use of allergen immunotherapy were excluded from the trial.</p>
<p>Interventions</p>	<p>Intervention Characteristics</p> <p>Intervention</p> <ul style="list-style-type: none"> ● Description: SCIT HDM medication antihistamines, intranasal corticosteroids, antihistamines and oral steroids <p>Control</p> <ul style="list-style-type: none"> ● Description: medication antihistamines, intranasal corticosteroids, antihistamines and oral steroids
<p>Outcomes</p>	<p><i>Continuous:</i></p> <ul style="list-style-type: none"> ● TRSS ● TMS ● TSS (Total symptom score) <p><i>Dichotomous:</i></p> <ul style="list-style-type: none"> ● Adverse events ● Dropouts

Identification	<p>Sponsorship source: This work was supported by The Marmara University Scientific Research Committee (BAPKO no. TIP/SAGTUS-140607-0114, 2007).</p> <p>Country: Turkey</p> <p>Setting:</p> <p>Comments:</p> <p>Authors name: A. O. Eifan</p> <p>Institution: Division of Pediatric Allergy and Immunology, Marmara University Medical Faculty, Istanbul, Turkey</p> <p>Email: a.eifan@imperial.ac.uk</p> <p>Address: Aarif O. Eifan, Marmara University Medical Faculty, Pediatric Allergy and Clinical Immunology, Istanbul, Turkey</p>
Notes	<p>Identification:</p> <p>Participants:</p> <p>Study design:</p> <p>Baseline characteristics: <i>Kirsten Skamstrup Hansen</i> medication score seems to be both use of beta-2 agonist = asthma medication and antihistamines</p> <p>Intervention characteristics:</p> <p>Pretreatment:</p> <p>Continuous outcomes:</p> <p>Dichotomous outcomes:</p> <p>Adverse outcomes:</p>

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Quote: "Using a computer-generated randomization method, patients were randomized"
Allocation concealment (selection bias)	Unclear risk	Comment: Not described
Blinding of participants and personnel (performance bias)	High risk	Comment: Open la and outcome self-reported
Blinding of outcome assessment (detection bias)	Unclear risk	Comment: Probably not outcome is self-reported.

Incomplete outcome data (attrition bias)	Low risk	Comment: 2/16, 2/16 dropout in both groups. Equal dropout
Selective reporting (reporting bias)	Unclear risk	Comment: Described outcome seems assessed but no trial protocol.
Other bias	Low risk	

Pichler 1997

Methods	
Participants	
Interventions	
Outcomes	
Identification	
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Unclear risk	
Allocation concealment (selection bias)	Unclear risk	
Blinding of participants and personnel (performance bias)	Unclear risk	
Blinding of outcome assessment (detection bias)	Unclear risk	
Incomplete outcome data (attrition bias)	Unclear risk	
Selective reporting (reporting bias)	Unclear risk	
Other bias	Unclear risk	

Varney 2003

Methods	
Participants	
Interventions	
Outcomes	
Identification	
Notes	From ARIA Guideline

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	computer-generated random numbers.
Allocation concealment (selection bias)	Low risk	nor access to the randomization code, which was kept locked and sealed by a doctor not involved with the study. The code was only opened after all the data had been collected and were ready for statistical analysis.
Blinding of participants and personnel (performance bias)	Low risk	The trial was performed as a double-blind, randomized, placebo-controlled study,
Blinding of outcome assessment (detection bias)	Unclear risk	ALK). The doctors carrying out the SIT had no knowledge of, nor access to the randomization code, which was kept locked and sealed by a doctor not involved with the study.
Incomplete outcome data (attrition bias)	Low risk	There were dropouts early in the study, and data were insufficient on the subjects for an intention-to treat analysis. No flow chart.
Selective reporting (reporting bias)	Unclear risk	No study protocol
Other bias	Low risk	

Footnotes

Characteristics of excluded studies

Ali 2008

Reason for exclusion	not RCT, retrospective design
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Antunez 2008

Reason for exclusion	Wrong comparator
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Aydogan 2013

Reason for exclusion	Wrong intervention
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Backer 2010

Reason for exclusion	no full text article
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Bergmann 2012

Reason for exclusion	no full text article
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Bergmann 2012a

Reason for exclusion	no full text article
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Bergmann 2014

Reason for exclusion	Wrong intervention
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Bozek 2013

Reason for exclusion	Wrong intervention
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Bush 2011

Reason for exclusion	liquid allergen stalloral
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Casanovas 2007

Reason for exclusion	Wrong comparator
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CelioMurillo 2014

Reason for exclusion	no full text article
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CelioMurillo 2014a

Reason for exclusion	no full text article
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D'Anneo 2010

Reason for exclusion	Wrong study design
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deBot 2012

Reason for exclusion	Wrong intervention
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Demoly 2011

Reason for exclusion	no full text article
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Demoly 2011a

Reason for exclusion	no full text article
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Demoly 2011b

Reason for exclusion	no full text article
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Demoly 2013

Reason for exclusion	no full text article
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Dreborg 2012

Reason for exclusion	Wrong study design
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GuimaraesJunqueiraQueiros 2008

Reason for exclusion	Wrong intervention
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Hauswald 2013

Reason for exclusion	Wrong study design
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Inal 2007

Reason for exclusion	Wrong patient population
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Marogna 2010

Reason for exclusion	Wrong study design
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Martin Munoz 2013

Reason for exclusion	Wrong intervention
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Morris 2012

Reason for exclusion	Wrong intervention
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Mosbech 2014

Reason for exclusion	Wrong patient population
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Olaguibel 2008

Reason for exclusion	Wrong study design
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Petersen 2013

Reason for exclusion	Observational study
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Pfaar 2010

Reason for exclusion	Wrong intervention
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Reha 2007

Reason for exclusion	Wrong patient population
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Riechelmann 2010

Reason for exclusion	Wrong intervention
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Santos 2010

Reason for exclusion	no full text article
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Shao 2014

Reason for exclusion	Wrong intervention
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Tabar 2011

Reason for exclusion	Wrong intervention
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Tahamiler 2008

Reason for exclusion	Wrong comparator
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Tahamiler 2008a

Reason for exclusion	Wrong comparator
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Wang 2013

Reason for exclusion	Wrong intervention
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Yonekura 2010

Reason for exclusion	Wrong intervention
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Yukselen 2012

Reason for exclusion	Wrong intervention
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Yukselen 2013

Reason for exclusion	Wrong intervention
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Footnotes

Characteristics of studies awaiting classification

Footnotes

Characteristics of ongoing studies

Footnotes

References to studies

Included studies

Eifan 2010

Eifan, A. O.; Akkoc, T.; Yildiz, A.; Keles, S.; Ozdemir, C.; Bahceciler, N. N.; Barlan, I. B.. Clinical efficacy and immunological mechanisms of sublingual and subcutaneous immunotherapy in asthmatic/rhinitis children sensitized to house dust mite: An open randomized controlled trial.. *Clinical and Experimental Allergy* 2010;40(6):922-932. [DOI: <http://dx.doi.org/10.1111/j.1365-2222.2009.03448.x>]

Pichler 1997

Pichler et al 1997. *Allergy* 1997.

Varney 2003

[Empty]

Excluded studies**Ali 2008**

Ali I; Goksal K; Ozan B; Gulsen D. Long-term allergen-specific immunotherapy correlates with long-term allergen-specific immunological tolerance.. *Advances in Therapy* 2008;25(1):29-36. [DOI: <http://dx.doi.org/10.1007/s12325-008-0004-3>]

Antunez 2008

Antunez, C.; Mayorga, C.; Corzo, J. L.; Jurado, A.; Torres, M. J.. Two year follow-up of immunological response in mite-allergic children treated with sublingual immunotherapy. Comparison with subcutaneous administration.. *Pediatric Allergy and Immunology* 2008;19(3):210-218. [DOI: <http://dx.doi.org/10.1111/j.1399-3038.2007.00604.x>]

Aydogan 2013

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Backer 2010

Backer, V.; Malcus, I.; Prieto, L.; Trebas-Pietras, E.; Ljørring, C.; Andersen, B.; Canonica, G.. The house dust mite immunotherapy tablet provides improved quality of life in subjects with house dust mite allergy.. *Allergy: European Journal of Allergy and Clinical Immunology* 2010;65(Journal Article):577-578. [DOI: <http://dx.doi.org/10.1111/j.1398-9995.2010.02393.x>]

Bergmann 2012

Bergmann, K.; Demoly, P.; Roux, M.; Cadic, V.; Furrer, M.; Zeldin, R.. Patient benefits of treatment with 500IR and 300IR sublingual tablets of house dust mite allergen extract.. *Allergy: European Journal of Allergy and Clinical Immunology* 2012;67(Journal Article):134. [DOI: <http://dx.doi.org/10.1111/all.12034>]

Bergmann 2012a

Bergmann, K. -C; Demoly, P.; Worm, M.; Fokkens, W.; Anna, T.; Helene, N.; De Beaumont, O.; Melac, M.; Frereux, M.; Zeldin, R. K.. The post-treatment efficacy of house dust mite sublingual allergen immunotherapy tablets in adults with allergic rhinitis.. *World Allergy Organization Journal* 2012;5(Journal Article):S69. [DOI: <http://dx.doi.org/10.1097/01.WOX.0000411914.12461.9e>]

Bergmann 2014

Bergmann, K. -C.; Demoly, P.; Worm, M.; Fokkens, W. J.; Carrillo, T.; Tabar, A. I.; Nguyen, H.; Montagut, A.; Zeldin, R. K.. Efficacy and safety of sublingual tablets of house dust mite allergen extracts in adults with allergic rhinitis.. *Journal of Allergy and Clinical Immunology* 2014;133(6):1608-1614.e6. [DOI: <http://dx.doi.org/10.1016/j.jaci.2013.11.012>]

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Bozek A; Ignasiak B; Filipowska B; Jarzab J. House dust mite sublingual immunotherapy: a double-blind, placebo-controlled study in elderly patients with allergic rhinitis.. *Clinical and experimental allergy* 2013;43(2):242-8. [DOI: [10.1111/cea.12039](https://doi.org/10.1111/cea.12039)]

Bush 2011

Bush, R. K.; Swenson, C.; Fahlberg, B.; Evans, M. D.; Esch, R.; Busse, W. W.. House dust mite sublingual immunotherapy: Results of a US trial.. *Journal of Allergy and Clinical Immunology* 2011;127(4):974-981.e7. [DOI: <http://dx.doi.org/10.1016/j.jaci.2010.11.045>]

Casanovas 2007

Casanovas M; Martin R; Jimenez C; Caballero R; Fernandez-Caldas E. Safety of immunotherapy with therapeutic vaccines containing depigmented and polymerized allergen extracts.. *Clinical & Experimental Allergy* 2007;37(3):434-440. [DOI:]

CelioMurillo 2014

Celio Murillo, R.; Rodriguez Santos, O.; Lurrabaquio Miranda, A. M.; Cruz Suarez, M. A.; Cruz Marmolejo, M. A.. Efficacy and safety of immunotherapy specifies with extracts of mites on the allergic rhinoconjunctivitis and bronchial asthma.. *Allergy: European Journal of Allergy and Clinical Immunology* 2014;69(Journal Article):606-607. [DOI: <http://dx.doi.org/10.1111/all.12479>]

CelioMurillo 2014a

Celio Murillo, R.; Rodriguez Santos, O.; Cruz Suarez, M. A.; Lurrabaquio Miranda, A. M.. Studio double blind placebo with Mites therapeutic vaccines for the treatment of bronchial asthma and allergic rhinosinusitis.. *Allergy: European Journal of Allergy and Clinical Immunology* 2014;69(Journal Article):405-406. [DOI: <http://dx.doi.org/10.1111/all.12477>]

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Demoly 2011b

Demoly, P.; Worm, M.; Fokkens, W.; Tabar, A.; Nguyen, H.; De Beaumont, O.; Melac, M.; Montagut, A.; Bergmann, K.. The relationship between allergic disease severity and quality of life in patients treated with sublingual immunotherapy tablets for house dust mite-induced rhinitis.. *Allergy: European Journal of Allergy and Clinical Immunology* 2011;66(Journal Article):631. [DOI: <http://dx.doi.org/10.1111/j.1398-9995.2011.02608.x>]

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GuimaraesJunqueiraQueiros 2008

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Morris, M. S.; Lowery, A.; Theodoropoulos, D. S.; Duquette, R. D.; Morris, D. L.. Quality of life improvement with sublingual immunotherapy: A prospective study of efficacy.. *Journal of Allergy* 2012;(Journal Article). [DOI: <http://dx.doi.org/10.1155/2012/253879>]

Mosbech 2014

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Olaguibel 2008

Olaguibel, J. M.. Long-term benefits of specific immunotherapy (SIT).. *Drugs of Today* 2008;44(Suppl B):39-41. [DOI:]

Petersen 2013

Petersen, K. D.; Kronborg, C.; Larsen, J. N.; Dahl, R.; Gyrd-Hansen, D.. Patient related outcomes in a real life prospective follow up study: Allergen immunotherapy increase quality of life and reduce sick days.. 2013;(Journal Article). [DOI: <http://dx.doi.org/10.1186/1939-4551-6-15>]

Pfaar 2010

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Reha 2007

Reha CM; Ebru A. Specific immunotherapy is effective in the prevention of new sensitivities.. *Allergologia et Immunopathologia* 2007;35(2):44-51. [DOI:]

Riechelmann 2010

Riechelmann, H.; Schmutzhard, J.; Van Der Werf, J. F.; Distler, A.; Kleinjans, H. A. J.. Efficacy and safety of a glutaraldehyde-modified house dust mite extract in allergic rhinitis.. *American Journal of Rhinology and Allergy* 2010;24(5):e104-e109. [DOI: <http://dx.doi.org/10.2500/ajra.2010.24.3508>]

Santos 2010

Santos, C.; Reshamwala, N.; Vissamsetti, S.; Galant, J.; Swami, R.; Nadeau, K.. Safety of dual allergen sublingual immunotherapy in subjects with dermatophagoides farinae and timothy grass allergy.. *Annals of Allergy, Asthma and Immunology* 2010;105(5):A18. [DOI:]

Shao 2014

Shao J; Cui Y-X; Zheng Y-F; Peng H-F; Zheng Z-L; Chen J-Y; Li Q; Cao L-F. Efficacy and safety of sublingual immunotherapy in children aged 3-13 years with allergic rhinitis.. *American Journal of Rhinology & Allergy* 2014;28(2):131-9. [DOI: <http://dx.doi.org/10.2500/ajra.2014.28.4006>]

Tabar 2011

Tabar, A. I.; Arrobarren, E.; Echechipia, S.; Garcia, B. E.; Martin, S.; Alvarez-Puebla, M. J.. Three years of specific immunotherapy may be sufficient in house dust mite respiratory allergy.. *Journal of Allergy and Clinical Immunology* 2011;127(1):57-63.e3. [DOI: <http://dx.doi.org/10.1016/j.jaci.2010.10.025>]

Tahamiler 2008

Tahamiler R; Saritzali G; Canakcioglu S; Ozcora E; Dirican A. Comparison of the long-term efficacy of subcutaneous and sublingual immunotherapies in perennial rhinitis.. *Orl; Journal of Oto-Rhino-Laryngology & its Related Specialties* 2008;70(3):144-150. [DOI: <http://dx.doi.org/10.1159/000124286>]

Tahamiler 2008a

Tahamiler R.; Canakcioglu S.; Yilmaz S.; Isildak H.. Long-term immunotherapy for perennial allergic rhinitis: Relationship of specific IgG levels to skin-prick test results and clinical symptoms and signs.. *Ear, Nose and Throat Journal* 2008;87(12):E29. [DOI:]

Wang 2013

Wang, D. -H; Chen, L.; Cheng, L.; Li, K. -N; Yuan, H.; Lu, J. -H; Li, H.. Fast onset of action of sublingual immunotherapy in house dust mite-induced allergic rhinitis: A multicenter, randomized, double-blind, placebo-controlled trial.. *Laryngoscope* 2013;123(6):1334-1340. [DOI: <http://dx.doi.org/10.1002/lary.23935>]

Yonekura 2010

Yonekura, S.; Okamoto, Y.; Sakurai, D.; Horiguchi, S.; Hanazawa, T.; Nakano, A.; Kudou, F.; Nakamaru, Y.; Honda, K.; Hoshioka, A.; Shimojo, N.; Kohno, Y. Sublingual immunotherapy with house dust extract for house dust-mite allergic rhinitis in children.. *Allergy International* 2010;59(4):381-388. [DOI: <http://dx.doi.org/10.2332/allergoint.10-OA-0200>]

Yukselen 2012

Yukselen A.; Kendirli SG.; Yilmaz M.; Altintas DU.; Karakoc GB.. Effect of one-year subcutaneous and sublingual immunotherapy on clinical and laboratory parameters in children with rhinitis and asthma: a randomized, placebo-controlled, double-blind, double-dummy study.. *International archives of allergy and immunology* 2012;157(3):288-98. [DOI: 10.1159/000327566]

Yukselen 2013

Yukselen A; Kendirli SG; Yilmaz M; Altintas DU; Karakoc GB. Two year follow-up of clinical and inflammation parameters in children monosensitized to mites undergoing subcutaneous and sublingual immunotherapy.. *Asian Pacific journal of allergy and immunology / launched by the Allergy and Immunology Society of Thailand* 2013;31(3):233-41. [DOI: 10.12932/AP0276.31.3.2013]

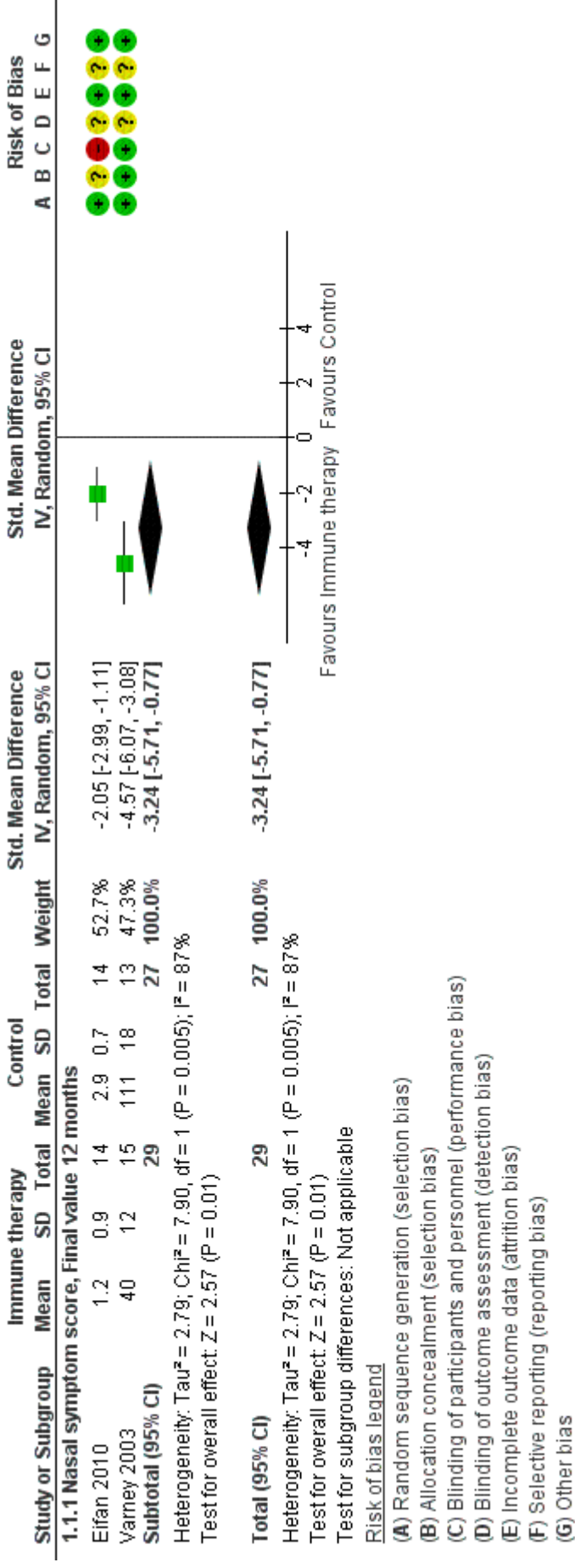
Data and analyses

1 Immune therapy vs Control

Outcome or Subgroup	Studies	Participants	Statistical Method	Effect Estimate
1.1 Nasal symptom score (Total nasal symptom score)	2	56	Std. Mean Difference (IV, Random, 95% CI)	-3.24 [-5.71, -0.77]
1.1.1 Nasal symptom score, Final value 12 months	2	56	Std. Mean Difference (IV, Random, 95% CI)	-3.24 [-5.71, -0.77]
1.2 Medicin scorer (Medication score)	2	56	Std. Mean Difference (IV, Random, 95% CI)	-0.54 [-1.12, 0.03]
1.2.1 Medication score, Final value 12 months	2	56	Std. Mean Difference (IV, Random, 95% CI)	-0.54 [-1.12, 0.03]
1.4 Anafylaksi (Anaphylaxis)	3		Risk Ratio (IV, Fixed, 95% CI)	No totals
1.4.1 Anafylaksi, Final value 12 months	3		Risk Ratio (IV, Fixed, 95% CI)	No totals

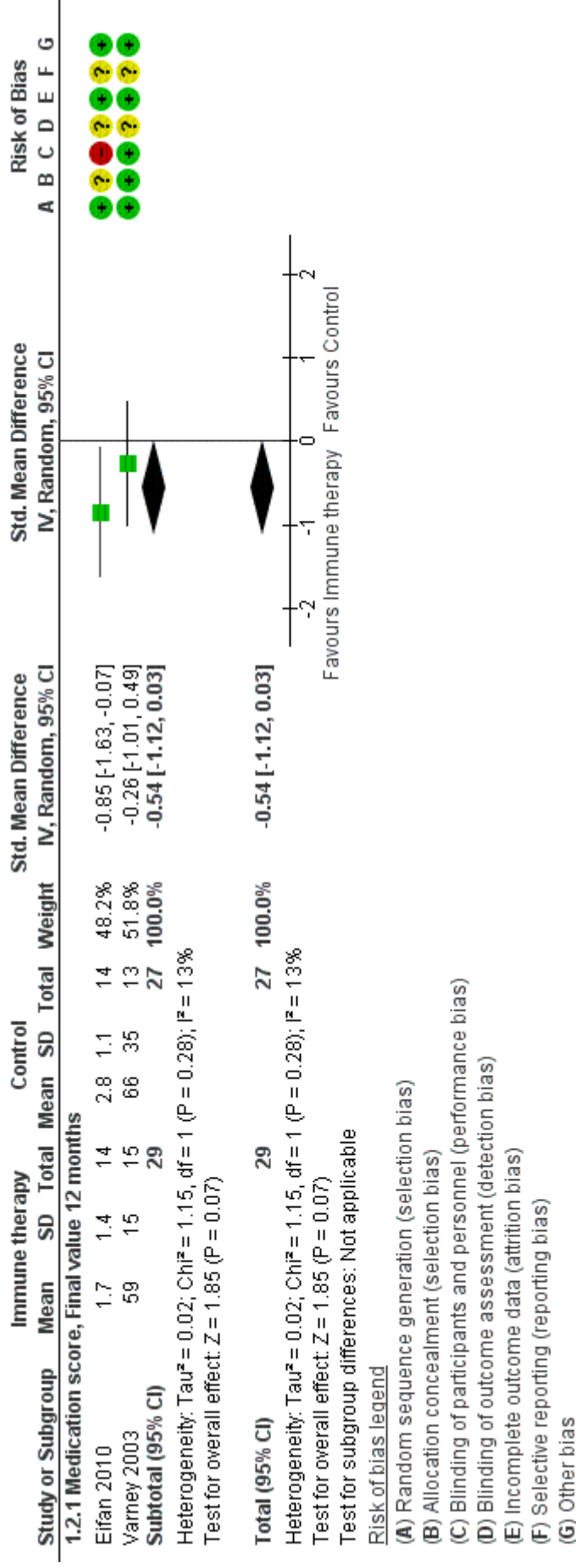
Figures

Figure 1 (Analysis 1.1)



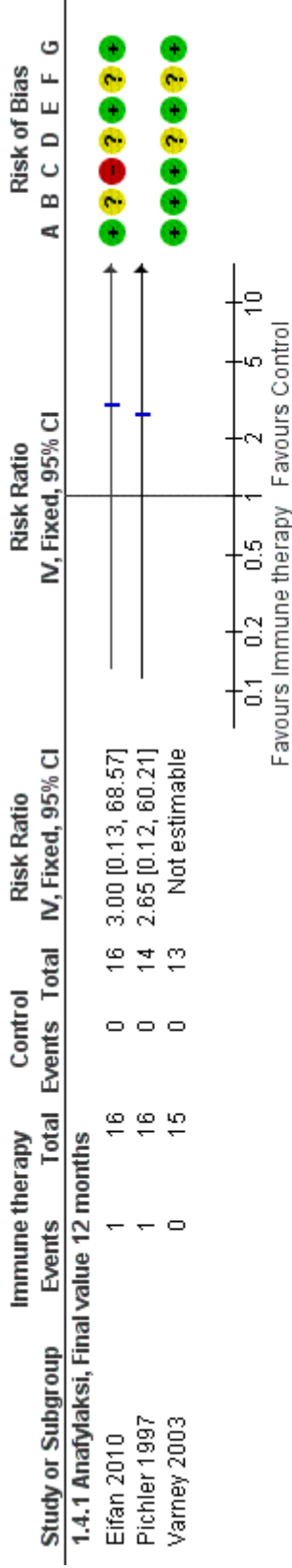
Forest plot of comparison: 1 Immune therapy vs Control, outcome: 1.1 Nasal symptom score (Total nasal symptom score).

Figure 2 (Analysis 1.2)



Forest plot of comparison: 1 Immune therapy vs Control, outcome: 1.2 Medication score (Medication score).

Figure 3 (Analysis 1.4)



Risk of bias legend

- (A) Random sequence generation (selection bias)
- (B) Allocation concealment (selection bias)
- (C) Blinding of participants and personnel (performance bias)
- (D) Blinding of outcome assessment (detection bias)
- (E) Incomplete outcome data (attrition bias)
- (F) Selective reporting (reporting bias)
- (G) Other bias

Forest plot of comparison: 1 Immune therapy vs Control, outcome: 1.4 Anafylaksi (Anaphylaxis).