Täiskasvanute astma käsitlus esmatasandil
Tõendusmaterjali kokkuvõte

Kliiniline küsimus nr 3b

Kliinilise küsimuse tekst: Kas astma diagnoosiga patsiente tuleks nõustada järgmistel teemadel:

b. allergilise astma korral allergeenist hoidumine vs mittehoidumine

Kokkuvõte, sh kriitiliste tulemusnäitajate kaupa:

Tolmulesta ekspositsiooni vähendamise erivõtteid analüüsiv süstemaatiline ülevaade (Gøtzsche 2008, täiendatud 2011) hõlmas kokku 55 uuringut kokku 3121 uuritavaga: nendest 37 uuringut käsitles füüsikalisi sekkumisi (sh 26 uuringut spetsiaalseid madratsikatteid), 10 uuringut keemilisi sekkumisi ja 8 uuringut füüsikaliste ja keemiliste sekkumiste kombineerimist. Nendest sekkumistest ei olnud kasu mitte ühegi astma olulise tulemusnäitaja osas. Samuti ei ole tolmulestatundlikel inimestel leitud olevat kasu erinevatest niiskuse eemaldamise võtetest (Singh 2013, vt GRADE tabel allpool)
Kodulooma-allergeenidest hoidumise kohta on seni väga vähe andmeid (Cochrane andmebaasi süstemaatiline ülevaade Kilburn 2003, täiendatud 2008). Mitmekülgne kodukeskkonna parandamine on andnud soodsaid tulemusi astma diganoosiga lastel (Crocker 2011), täiskasvanute kohta vastavaid andmeid seni ei ole (Labre 2012). Kokkuvõtlik tabel sekkumisuuringutest allergeenide ekspositsiooni vähendamiseks Labre 2012 süstemaatiliste ülevaadete katus-ülevaatest (*umbrella-review*) on toodud lisas F (appendix F), vt manus

Ravijuhendites soovitatakse allergeenist hoiduda eriti allergilise astmaga patsientidel. GINA juhend käsitleb erinevaid allergeene ja nendest hoidumise meetodeid veel eraldi.

SUMMARY OF FINDINGS FOR THE MAIN COMPARISON *[Explanation]*

MHRV compared with placebo for asthmatics with sensitivity to house dust mite

Patient or population: asthmatics with sensitivity to house dust mite
Settings: Community
Intervention: MHRV
Comparison: placebo

Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)	Comments
	Assumed risk	Corresponding risk				
	Placebo	MHRV				
Change in Morning PEF after 12 months (% predicted) Follow-up: 12 months	**Change of -7% on placebo**	**Change of +6.4% on MHRV**	**MD 13.59 %** (-2.66 to 29.84)	100 (1 study)	⊕⊕⊕○ **moderate**[1]	
Change in Evening PEF after 12 months (% predicted) Follow-up: 12 months	**Change of -12% on placebo**	**Change of +12% on MHRV**	**MD 24.56 %** (8.97 to 40.15)	100 (1 study)	⊕⊕⊕○ **moderate**[1]	
Change in FEV1 after 12 months (% predicted) Follow-up: 12 months	**Change of +1.8% on placebo**	**Change of +1.0% on MHRV**	**MD 1.32 %** (-2.55 to 5.19)	100 (1 study)	⊕⊕⊕○ **moderate**[1]	
Quality of life SGRQ Scale from 0 to 100 (0 on the scale is better) Follow-up: 12 months	**Change of -2.1 units on placebo**	**Change of -5.2 units on MHRV**	**MD -2.83 units** (-7.82 to 2.16)	100 (1 study)	⊕⊕⊕○ **moderate**[1]	
Exacerbations needing oral steroids Follow-up: 12 months	**362 per 1000**	**228 per 1000** (111 to 413)	**OR 0.52** (0.22 to 1.24)	100 (1 study)	⊕⊕⊕○ **moderate**[1]	
Exacerbations needing ED visit Follow-up: 12 months	**43 per 1000**	**76 per 1000** (14 to 319)	**OR 1.84** (0.32 to 10.52)	100 (1 study)	⊕⊕⊕○ **moderate**[1]	
Exacerbations needing hospitalisation Follow-up: 12 months	**85 per 1000**	**8 per 1000** (0 to 138)	**OR 0.09** (0 to 1.72)	100 (1 study)	⊕⊕⊕○ **moderate**[1]	

*The basis for the **assumed risk** is the mean control group risk. The **corresponding risk** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).
CI: Confidence interval; **OR:** Odds ratio;

GRADE Working Group grades of evidence
High quality: Further research is very unlikely to change our confidence in the estimate of effect.
Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.
Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.
Very low quality: We are very uncertain about the estimate.

[1] Single study with wide confidence interval
MD: mean difference
MHRV: mechanical heat recovery ventilation system
OR: odds ratio
PEF: peak expiratory flow

Dehumidifiers for chronic asthma (Review)
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Ravijuhendid
Kokkuvõte ravijuhendites leiduvatest soovitustest:

Üldiselt soovitatakse allergeenist hoiduda eriti allergilise astmaga patsientidel, väheneb sümptomite teke. GINA-2012 juhend käsitleb erinevaid allergeene ja nendest hoidumise meetodeid eraldi. GINA-2014: avoidance of indoor allergens is not generally recommended as a general strategy in asthma

Viited

"Asthma/prevention and control"[Mesh] AND ("Environment, Controlled"[Mesh] OR "Allergens"[Mesh]) AND (Meta-Analysis[ptyp] OR systematic[sb] OR Randomized Controlled Trial[ptyp])

CONTEXT: Asthma exacerbations are commonly triggered by exposure to allergens and irritants within the home. The purpose of this review was to evaluate evidence that interventions that target reducing these triggers through home visits may be beneficial in improving asthma outcomes. The interventions involve home visits by trained personnel to conduct two or more components that address asthma triggers in the home. Intervention components focus on reducing exposures to a range of asthma triggers (allergens and irritants) through environmental assessment, education, and remediation. EVIDENCE ACQUISITION: Using methods previously developed for the Guide to Community Preventive Services, a systematic review was conducted to evaluate the evidence on effectiveness of home-based, multi-trigger, multicomponent interventions with an environmental focus to improve asthma-related morbidity outcomes. The literature search identified over 10,800 citations. Of these, 23 studies met intervention and quality criteria for inclusion in the final analysis. EVIDENCE SYNTHESIS: In the 20 studies targeting children and adolescents, the number of days with asthma symptoms (symptom-days) was reduced by 0.8 days per 2 weeks, which is equivalent to 21.0 symptom-days per year (range of values: reduction of 0.6 to 2.3 days per year); school days missed were reduced by 12.3 days per year (range of values: reduction of 3.4 to 31.2 days per year); and the number of asthma acute care visits were reduced by 0.57 visits per year (interquartile interval: reduction of 0.33 to 1.71 visits per year). Only three studies reported outcomes among adults with asthma, finding inconsistent results. CONCLUSIONS: Home-based, multi-trigger, multicomponent interventions with an environmental focus are effective in improving overall quality of life and productivity in children and adolescents with asthma. The	*http://www.ncbi.nlm.nih.gov/pubmed/21767736* *Crocker DD, Kinyota S, Dumitru GG, Ligon CB, Herman EJ, Ferdinands JM, Hopkins DP, Lawrence BM, Sipe TA; Task Force on Community Preventive Services.* *Effectiveness of home-based, multi-trigger, multicomponent interventions with an environmental focus for reducing asthma morbidity: a community guide systematic review.* *Am J Prev Med. 2011 Aug;41(2 Suppl 1):S5-32.*

effectiveness of these interventions in adults is inconclusive due to the small number of studies and inconsistent results. Additional studies are needed to (1) evaluate the effectiveness of these interventions in adults and (2) determine the individual contributions of the various intervention components.	
BACKGROUND: The warm, humid environment in modern homes favours the dust mite population, but the effect of improved home ventilation on asthma control has not been established. We tested the hypothesis that a domestic mechanical heat recovery ventilation system (MHRV), in addition to allergen avoidance measures, can improve asthma control by attenuating re-colonization rates. METHODS: We conducted a randomized double-blind placebo-controlled parallel group trial of the installation of MHRV activated in half the homes of 120 adults with asthma, allergic to Dermatophagoides pteronyssinus. All homes had carpets steam cleaned and new bedding and mattress covers at baseline. The primary outcome was morning peak expiratory flow (PEF) at 12 months. RESULTS: At 12 months, the primary end-point; change in mean morning PEF as compared with baseline, did not differ between the MHRV group and the control group (mean difference 13.5 l/min, 95% CI: -2.6 to 29.8, P = 0.10). However, a secondary end-point; evening mean PEF, was significantly improved in the MHRV group (mean difference 24.5 l/min, 95% CI: 8.9-40.1, P = 0.002). Indoor relative humidity was reduced in MHRV homes, but there was no difference between the groups in Der p 1 levels, compared with baseline. CONCLUSIONS: The addition of MHRV to house dust mite eradication strategies did not achieve a reduction in mite allergen levels, but did improve evening PEF.	Wright GR, Howieson S, McSharry C, McMahon AD, Chaudhuri R, Thompson J, Donnelly I, Brooks RG, Lawson A, Jolly L, McAlpine L, King EM, Chapman MD, Wood S, Thomson NC. Effect of improved home ventilation on asthma control and house dust mite allergen levels. Allergy. 2009 Nov;64(11):1671-80.
BACKGROUND: Although pet removal has been recommended in guidelines on the management of allergic asthma, pet ownership remains high in families where one or more members have an allergy to pet dander. Allergen control measures such as air filtration units placed in the homes of pet-allergic asthmatics have been used as a means of reducing allergen exposure. OBJECTIVES: To determine the clinical efficacy of pet allergen control measures in the homes of people with pet-allergic asthma. SEARCH STRATEGY: An electronic search of the Cochrane Controlled Trials Register was carried out. No restriction was placed on language of publication. SELECTION CRITERIA: Randomised controlled trials comparing an active allergen reduction measure with control were considered for analysis.	Kilburn S, Lasserson TJ, McKean M. Pet allergen control measures for allergic asthma in children and adults. Cochrane Database Syst Rev 2003(1):CD002989. http://www.ncbi.nlm.nih.gov/pubmed/12535446 Update 2008 – vt Cochrane andmebaasi

Participants had stable pet-allergic asthma. DATA COLLECTION AND ANALYSIS: 34 references were identified by electronic searching, but only three appeared suitable for potential inclusion in the review. Two met the inclusion criteria for the analysis. Both examined the effectiveness of air filtration units. Two reviewers extracted data independently. A limited amount of data were usable for a meta-analysis. MAIN RESULTS: Both trials were small (n=22 and n=35). No significant differences were detected between active intervention and control on the primary and secondary outcome measures reported in the studies. Data on absence from school or work were not reported in either study. No meta-analysis could be performed due to lack of common outcomes. REVIEWER'S CONCLUSIONS: The available trials are too small to provide evidence for or against the use of airfiltration units to reduce allergen levels in the management of pet-allergic asthma. Adequately powered trials are needed. There are no trials of other allergen reduction measures, such as pet washing or possibly pet removal.	
Abstract BACKGROUND: The major allergen in house dust comes from mites. Chemical, physical and combined methods of reducing mite allergen levels are intended to reduce asthma symptoms in people who are sensitive to house dust mites. OBJECTIVES: To assess the effects of reducing exposure to house dust mite antigens in the homes of people with mite-sensitive asthma. SEARCH STRATEGY: PubMed and The Cochrane Library (last searches Nov 2007), reference lists. SELECTION CRITERIA: Randomised trials of mite control measures vs placebo or no treatment in people with asthma known to be sensitive to house dust mites. DATA COLLECTION AND ANALYSIS: Two authors applied the trial inclusion criteria and evaluated the data. Trial authors were contacted to clarify information. MAIN RESULTS: Fifty-four trials (3002 patients) were included. Thirty-six trials assessed physical methods (26 mattress encasings), 10 chemical methods, and 8 a combination of chemical and physical methods.	Cochrane Database Syst Rev. 2008 Apr 16;(2):CD001187. doi: 10.1002/14651858.CD001187.pub3. House dust mite control measures for asthma. Gøtzsche PC, Johansen HK. http://www.ncbi.nlm.nih.gov/pubmed/18425868

Despite the fact that many trials were of poor quality and would be expected to exaggerate the reported effect, we did not find an effect of the interventions. For the most frequently reported outcome, peak flow in the morning (1565 patients), the standardised mean difference was 0.00 (95% confidence interval (CI) -0.10 to 0.10). There were no statistically significant differences either in number of patients improved (relative risk 1.01, 95% CI 0.80 to 1.27), asthma symptom scores (standardised mean difference -0.04, 95% CI -0.15 to 0.07), or in medication usage (standardised mean difference -0.06, 95% CI -0.18 to 0.07). AUTHORS' CONCLUSIONS: Chemical and physical methods aimed at reducing exposure to house dust mite allergens cannot be recommended. It is doubtful whether further studies, similar to the ones in our review, are worthwhile. If other types of studies are considered, they should be methodologically rigorous and use other methods than those used so far, with careful monitoring of mite exposure and relevant clinical outcomes.	
BACKGROUND: Humidity control measures in the home environment of patients with asthma have been recommended, since a warm humid environment favours the growth of house dust mites. However, there is no consensus about the usefulness of these measures. OBJECTIVES: To study the effect of dehumidification of the home environment on asthma control. SEARCH METHODS: The clinical trials registers of the Cochrane Collaboration and Cochrane Airways Group were searched. Searches were current as of March 2013. SELECTION CRITERIA: Randomised controlled trials on the use of humidity control measures in the home environment of patients with asthma were evaluated for inclusion. DATA COLLECTION AND ANALYSIS: Data were extracted independently using a pre-designed data extraction form by two review authors. MAIN RESULTS: A second trial has been added for the 2013 update of this review. The original open-label trial compared an intervention consisting of mechanical ventilation heat recovery system with or without high efficiency vacuum cleaner fitted in 40 homes of patients with asthma who had positive tests for sensitivity to house dust mite. The new double-blind trial also compared a mechanical ventilation heat recovery system with a placebo machine in the homes of 120 adults with allergy to house dust mite. The new trial, which was at low risk of bias, showed no significant difference in morning peak flow (mean difference (MD) 13.59; 95% confidence interval (CI) -2.66 to 29.84), which was the primary outcome of the trial.	Cochrane Database Syst Rev. 2013 Jun 13;6:CD003563. doi: 10.1002/14651858.CD003563.pub2. Dehumidifiers for chronic asthma. Singh M, Jaiswal N. http://www.ncbi.nlm.nih.gov/pubmed/23760885

However, there was a statistically significant improvement in evening peak flow only (MD 24.56; 95% CI 8.97 to 40.15). There was no significant difference in quality of life, rescue medication, requirement for oral corticosteroids, visits to the GP, emergency department (ED) or hospitalisations for asthma. There was no significant difference in the house dust mite count and the antigen levels in the new trial, in contrast to the previous trial. AUTHORS' CONCLUSIONS: Evidence on clinical benefits of dehumidification using mechanical ventilation with dehumidifiers remains scanty, and the addition of a new double blind trial to this review does not indicate significant benefit in most measure of control of asthma from such environmental interventions.	
The further increase of allergies in industrialized countries demands evidence-based measures of primary prevention. The recommendations as published in the guideline of 2004 were updated and consented on the basis of a systematic literature search. Evidence from the period February 2003-May 2008 was searched in the electronic databases Cochrane and MEDLINE as well as in reference lists of recent reviews and by contacting experts. The retrieved citations were screened for relevance first by title and abstract and in a second step as full paper. Levels of evidence were assigned to each included study and the methodological quality of the studies was assessed as high or low. Finally the revised recommendations were formally consented (nominal group process) by representatives of relevant societies and organizations including a self-help group. Of originally 4556 hits, 217 studies (4 Cochrane Reviews, 14 meta-analyses, 19 randomized controlled trials, 135 cohort and 45 case-control studies) were included and critically appraised. Grossly unchanged remained the recommendations on avoiding environmental tobacco smoke, breast-feeding over 4 months (alternatively hypoallergenic formulas for children at risk), avoiding a mold-promoting indoor climate, vaccination according to current recommendations, and avoidance of furry pets (especially cats) in children at risk. The recommendation on reducing the house dust mite allergen exposure as a measure of primary prevention was omitted and the impact of a delayed introduction of supplementary food was reduced. New recommendations were adopted concerning fish consumption (during pregnancy / breast-feeding and as supplementary food in the first year), avoidance of overweight, and reducing the exposure to indoor and outdoor air pollutants. The revision of this guideline on a profound evidence basis led to (1) a confirmation of existing recommendations, (2) substantial revisions, and (3) new recommendations. Thereby it is possible to give evidence-based and up-to-date recommendations on primary prevention of allergies.	J Dtsch Dermatol Ges. 2010 Sep;8(9):718-24. doi: 10.1111/j.1610-0387.2009.07313.x. Epub 2009 Oct 29. Allergy prevention. [Article in English, German] Muche-Borowski C, Kopp M, Reese I, Sitter H, Werfel T, Schäfer T; German Society for Allergology and Clinical Immunology (DGAKI); Society of German Allergologists (ADA); German Society for Pediatric and Adolescent Medicine (DGKJ); German Society of Dermatology (DDG); German Society of Pediatric Allergology (GPA).
Asthma is a chronic respiratory disease increasingly prevalent in the U.S., particularly among children and certain minority groups. This umbrella review sought to assess and summarize existing systematic reviews of asthma-related interventions that might be carried out or supported by state or community asthma control programs, and to identify gaps in knowledge. EVIDENCE ACQUISITION: crocker Eleven databases were searched through September 2010, using terms related to four concepts: asthma, review, intervention, and NOT medication. Reviews of the effectiveness of medications, medical procedures, complementary and alternative medicine, psychological interventions, family therapy, and nutrients or	Public health interventions for asthma: an umbrella review, 1990-2010. Labre MP, Herman EJ, Dumitru GG, Valenzuela KA, Cechman CL. Am J Prev Med. 2012 Apr;42(4):403-10 http://www.ncbi.nlm.nih.gov/pubmed/22424254

nutritional supplements were excluded. Two coders screened each record and extracted data from the included reviews. EVIDENCE SYNTHESIS: Data analysis was conducted from May to December 2010. Of 42 included reviews, 19 assessed the effectiveness of education and/or self-management, nine the reduction of indoor triggers, nine interventions to improve the provision of health care, and five examined other interventions. Several reviews found consistent evidence of effectiveness for self-management education, and one review determined that comprehensive home-based interventions including the reduction of multiple indoor asthma triggers are effective for children. Other reviews found limited or insufficient evidence because of study limitations. CONCLUSIONS: State or community asthma control programs should prioritize (1) implementing interventions for which the present review found evidence of effectiveness and (2) evaluating promising interventions that have not yet been adequately assessed.	