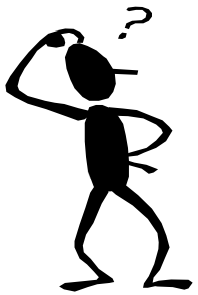
Conferenza Tecnologie e innovazione per una gestione sostenibile dell'agricoltura,
dell'ambiente e della biodiversità (Ti4AAB)

Museo di Storia Naturale presso la Certosa di Calci (PI) - Università di Pisa
7-8 Luglio 2016

AIS: Sistemi Informativi Aerobiologici per la gestione delle allergie da polline.

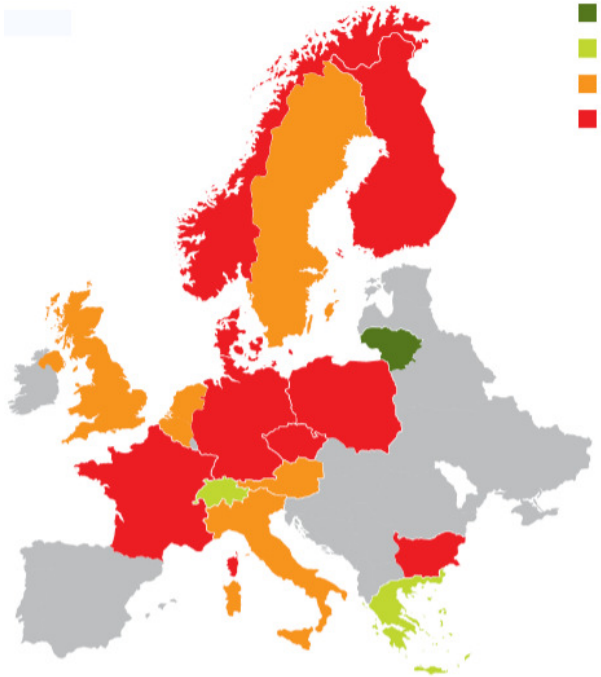
Sandra Baldacci, Sara Maio
UdR di Epidemiologia Ambientale Polmonare, Istituto di Fisiologia Clinica
CNR, Pisa

Aerobiological Information Systems and allergic respiratory disease management - AIS LIFE. LIFE13 ENV/IT/001107

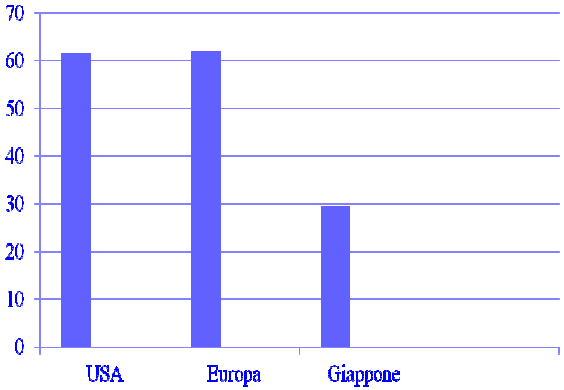


Problema: allergopatie respiratorie

Chronic respiratory disease	Year of estimation	Prevalence	Reference
Asthma	2004	300 million	*15*
Chronic obstructive pulmonary disease	2000	210 million	*30–32*
Allergic rhinitis	1996–2006	400 million	*33–37*
Other respiratory diseases	2006	>50 million	*38–44*
Sleep apnea syndrome	1986–2002	>100 million	*45–48*

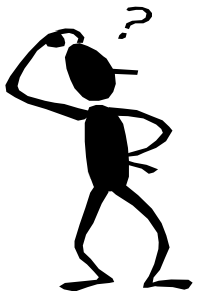


Fonte: EFA Book sulle allergie respiratorie



- Prevalenza di rinite allergica 25.8%
- 15 milioni di italiani soffrono di allergie al polline
- 1 persona su 5 soffre di malattie allergiche per lunghi periodi della vita: in TOSCANA >700.000 persone

REGIONE TOSCANA



Problema: allergopatie respiratorie

IL TIRRENO
PISA

PARLA L'ESPERTO

Allarme pollini centomila persone sono a rischio

di Gian Ugo Berti
PISA

Scatta l'allarme pollinosi, il cosiddetto raffreddore da fieno. Infatti, il rapido e consistente sbalzo delle temperature in pochi giorni ha anticipato la fioritura e la diffusione dei pollini, prevista di solito per la fine di marzo e i primi d'aprile.

Così, nell'arco di alcune settimane, circa 100mila persone a Pisa e provincia accuseranno fastidioso naso chiuso, occhi arrossati e gonfi, disturbi respiratori di tipo asmatico. Sotto accusa la parietaria (erba dei muri), l'ambrosia (quella dei campi), l'olivo e la betulla.

«Questo massiccio scarto termico provocherà una maggiore intensità dei disturbi», spiega il professor Luigi Paggiaro, docente di malattie respiratorie all'Azienda ospedaliera universitaria pisana

REGIONE TOSCANA

quotidianosanità.it 24/04/2012

I dati. Le allergie colpiscono il 30% degli italiani

LA STAMPA

E boom di allergie in anticipo colpa di caldo e inquinamento 01/02/2016

CORRIERE DELLA SERA

Allergie, pollini e cibi: quali sono gli alimenti da evitare per chi è allergico 14/04/2016

LA STAMPA

Boom di allergie: 9 milioni sensibili a Graminacee e Parietarie 06/05/2016

Perché occuparsi di malattie respiratorie allergiche e in particolare di POLLINOSI ?

La prevalenza di allergie respiratorie è in costante aumento.

Le malattie respiratorie allergiche hanno un notevole impatto socio-economico sui costi diretti, indiretti e intangibili.

In Europa meno del 45% di questi pazienti si rivolge a un medico. La maggior parte ricorre all'automedicazione o alla terapia antistaminica da banco.

La pollinosi è favorita dall'inquinamento atmosferico, soprattutto nei contesti urbani.

ORIGINAL PAPER

Clinical and Experimental Allergy, **37**, 188–196

Skin prick-test reactivity to aeroallergens and allergic symptoms in an urban population of central Italy: a longitudinal study

Perugia

M. L. Dottorini*, B. Bruni*, F. Peccini*, P. Bottini*, L. Pini†, F. Donato‡, G. Casucci* and C. Tantucci†

**Dipartimento di Medicina Interna e Scienze Endocrino Metaboliche (DiMISEM), Università di Perugia, Perugia, Italy, †Cattedra di Malattie dell' Apparato Respiratorio, Università di Brescia, Brescia, Italy and ‡Cattedra di Igiene, Università di Brescia, Brescia, Italy*

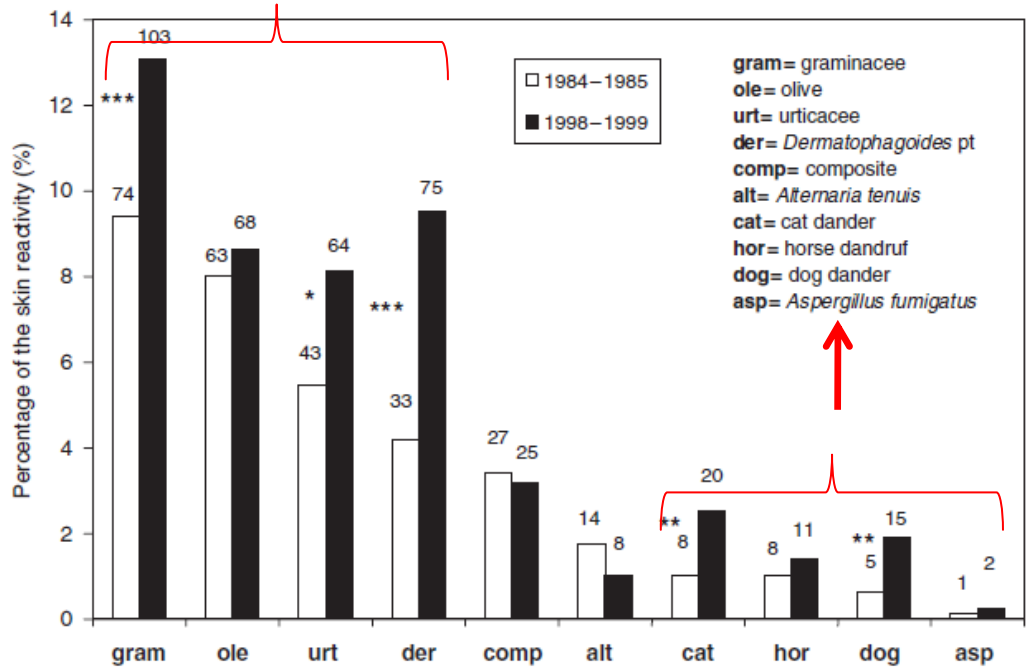


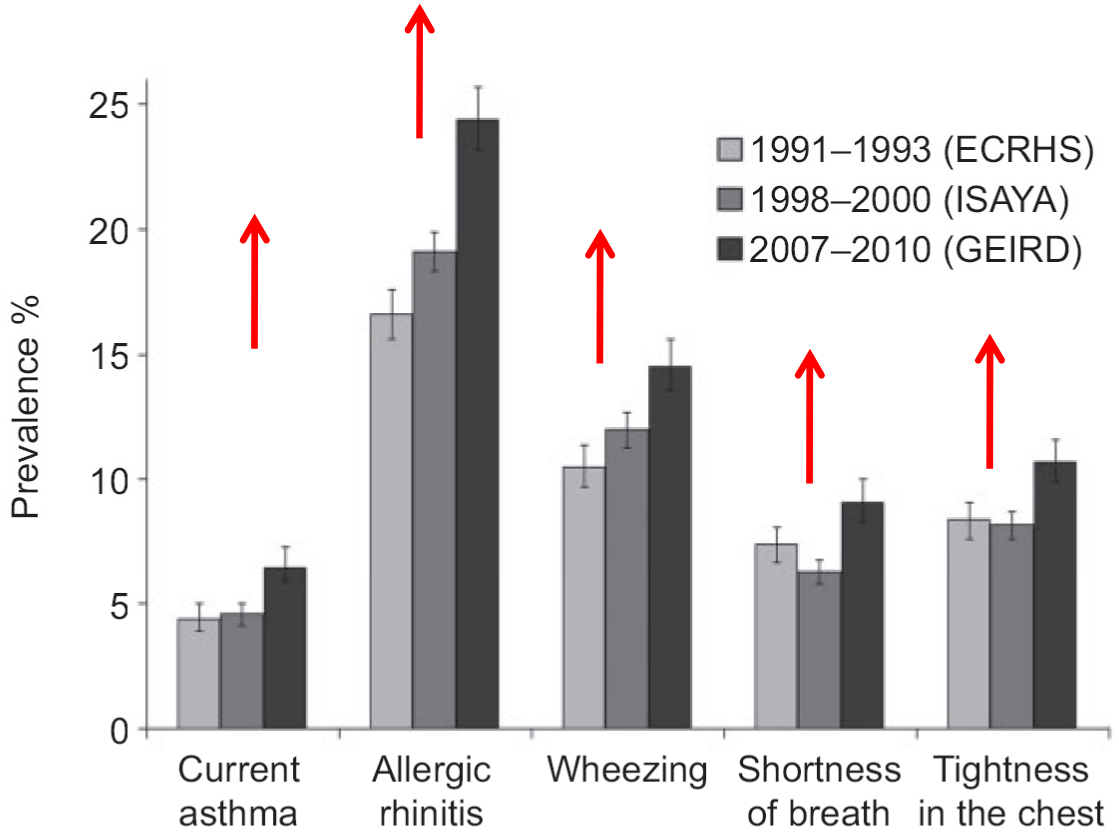
Fig. 2. Prevalence of the prick-test positivity to the different aeroallergens in the overall population ($n = 788$) in the two surveys. $^{*}P = 0.05$; $^{**}P < 0.05$; $^{***}P < 0.001$ vs. 1984–1985 survey.

In the second survey **24.9%** had skin reactivity to at least one aeroallergen, while in the first survey 18.1% had skin prick-test reactivity.

Trends in the prevalence of asthma and allergic rhinitis in Italy between 1991 and 2010

Eur Respir J 2012; 39: 883–892

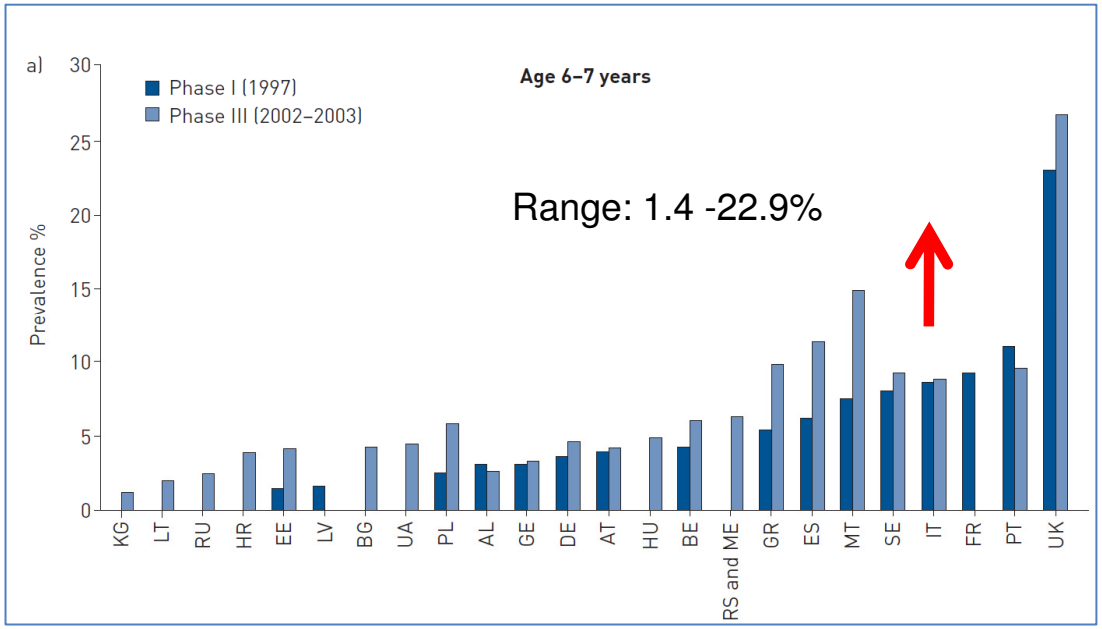
R. de Marco*, V. Cappa*, S. Accordini*, M. Rava*, L. Antonicelli#, O. Bortolami*, M. Braggion*, M. Bugiani¶, L. Casali+, L. Cazzoletti*, I. Cerveri§, A.G. Fois/, P. Girardi*, F. Locatelli*, A. Marcon*, A. Marinoni**, M.G. Panico##, P. Pirina/, S. Villani**, M.E. Zanolin* and G. Verlato* for the GEIRD study group¶¶

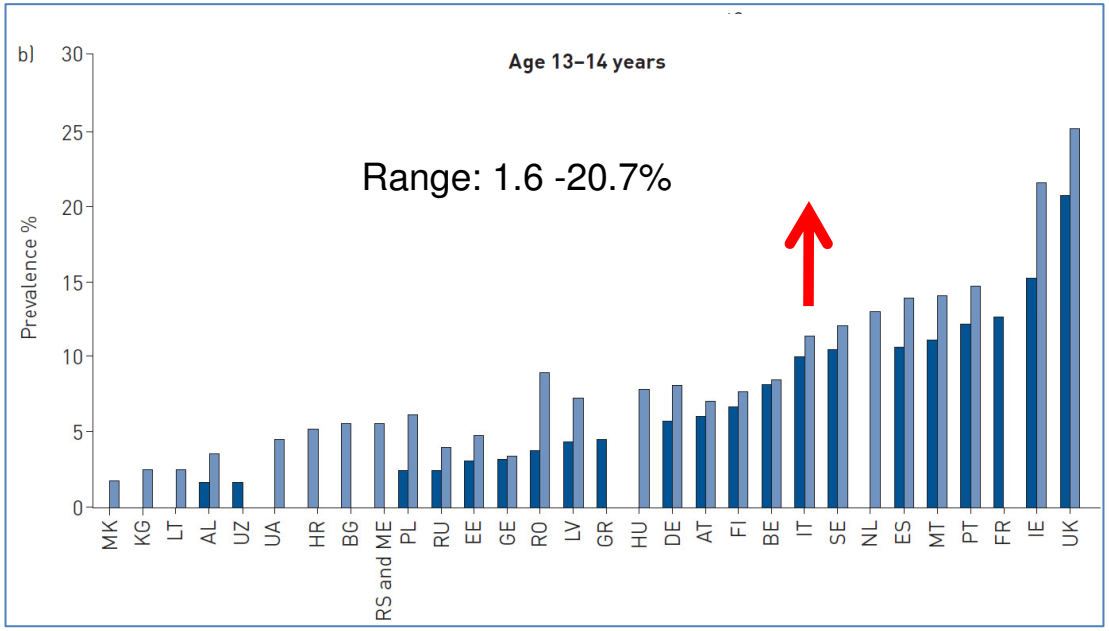


age 20-44 yrs

FIGURE 2. Overall mean prevalence, adjusted for sex, age, season of response, type of contact (mail/phone) and percentile rank of cumulative response, of current asthma, allergic rhinitis, wheezing, shortness of breath and tightness in the chest in the four centres (Pavia, Sassari, Turin and Verona) that participated in at least two surveys.

Trends – ISAAC Phases I and II





PREVALENCE

Figure 2 – Lifetime prevalence of asthma in a) 6–7-year-old and b) 13–14-year-old children in 1997 and 2002–2003. Source: International Study of Asthma and Allergy in Childhood phases I and III.

SIDRIA
Studi italiani sui disturbi respiratori e l'ambiente

PREVALENZA DI SINTOMI

Epidemiol Prev 2005;

STUDI ITALIANI SUI DISTURBI RESPIRATORI NELL'INFANZIA E L'AMBIENTE

Capitolo 15

L'andamento della frequenza di asma e allergie

Trends in the frequency of asthma and allergies

Manuela De Sario,[1] Claudia Galassi,[2,3] Annibale Biggeri,[4] Luigi Bisanti,[5] Giovannino Ciccone,[2] Silvano Piffer,[6] Elisabetta Chellini,[7] Maria G. Petronio,[8] Piersante Sestini,[9] Franca Rusconi,[10,13] Riccardo Pistelli,[11] Giuseppe Corbo,[11] Giovanni Viegi,[12] Francesco Forastiere[1] e il Gruppo Collaborativo SIDRIA-2

Centro	Prevalenza di sibili respiratori (ultimi 12 mesi)				Prevalenza di sintomi di rinocongiuntivite allergica (ultimi 12 mesi)				Prevalenza di sintomi di dermatite (ultimi 12 mesi)			
	1995	2002	Δ	IC 95%	1995	2002	Δ	IC 95%	1995	2002	Δ	IC 95%
Torino	6,5	5,8	-0,7	-2,4; 1,0	5,5	6,4	1,0	-0,5; 2,4	6,1	10,8	4,7	3,0; 6,4
Milano	7,3	7,7	0,4	-1,1; 2,0	6,0	7,5	1,5	0,0; 3,0	7,1	10,1	3,0	1,7; 4,4
Emilia-Romagna	7,9	9,1	1,3	-0,3; 2,8	5,5	6,8	1,3	-0,1; 2,6	6,0	10,5	4,6	3,1; 6,0
Firenze	10,0	8,9	-1,1	-4,0; 1,8	6,5	6,7	0,2	-1,6; 1,9	5,9	10,1	4,3	2,1; 6,4
Empoli	8,9	1,0	1,1	-0,9; 3,2	4,5	6,6	2,1	0,5; 3,6	5,6	8,8	3,2	1,5; 4,9
Roma	7,7	9,0	1,4	-0,1; 2,8	5,4	6,6	1,2	0,2; 2,2	5,8	10,5	4,7	3,3; 6,1

Tabella 1. SIDRIA-2, 2002. Cambiamenti (Δ e intervalli di confidenza al 95%, IC 95%) nella prevalenza di sibili respiratori, sintomi di rinocongiuntivite, sintomi di dermatite in sedi specifiche (ultimi 12 mesi) nei bambini (6-7 anni) in sei centri in Italia partecipanti allo studio SIDRIA, 1994-2002.

Table 1. SIDRIA-2, 2002. Changes (Δ and 95% confidence intervals, 95%CI) in prevalence of wheezing, rhinoconjunctivitis symptoms, atopic eczema symptoms (past 12 months) in 6-7 yr old children in the 6 italian areas partecipating in SIDRIA, 1994-2002.

Centro	Prevalenza di sibili respiratori (ultimi 12 mesi)				Prevalenza di sintomi di rinocongiuntivite allergica (ultimi 12 mesi)				Prevalenza di sintomi di dermatite (ultimi 12 mesi)			
	1995	2002	Δ	IC 95%	1995	2002	Δ	IC 95%	1995	2002	Δ	IC 95%
Torino	9,1	11,4	2,3	-1,2; 5,7	15,8	18,1	2,3	-2,0; 6,5	9,4	10,3	0,8	-2,7; 4,4
Milano	10,7	9,0	-1,7	-4,3; 0,8	16,7	19,4	2,8	-2,0; 7,6	7,0	8,4	1,4	-0,1; 2,9
Trento	5,9	4,2	-1,7	-3,0; -0,5	9,0	9,9	0,9	-0,9; 2,7	5,6	6,9	1,3	-0,3; 2,8
Emilia-Romagna	10,6	8,8	-1,8	-3,9; 0,3	16,0	13,9	-2,1	-4,5; 0,2	7,0	8,8	1,8	-0,3; 3,9
Firenze	10,9	9,0	-1,9	-4,7; 0,9	18,8	15,8	-3,0	-7,4; 1,5	6,1	8,0	1,9	-0,9; 4,7
Empoli	13,7	8,0	-5,7	-9,0; -2,4	16,2	12,4	-3,8	-8,8; 1,2	5,0	5,4	0,4	-1,8; 2,6
Siena	13,9	10,6	-3,3	-7,4; 0,9	17,9	20,1	2,3	-1,7; 6,3	7,5	10,1	2,5	-1,7; 6,8
Roma	10,5	11,9	1,8	-1,1; 4,8	14,8	23,0	8,2	4,8; 11,6	4,9	8,1	3,1	1,8; 4,5

Tabella 3. SIDRIA-2, 2002. Cambiamenti (Δ e intervalli di confidenza al 95%, IC 95%) nella prevalenza di sibili respiratori, sintomi di rinocongiuntivite, sintomi di dermatite in sedi specifiche (ultimi 12 mesi) negli adolescenti (13-14 anni) in otto centri in Italia partecipanti allo studio SIDRIA, 1994-2002.

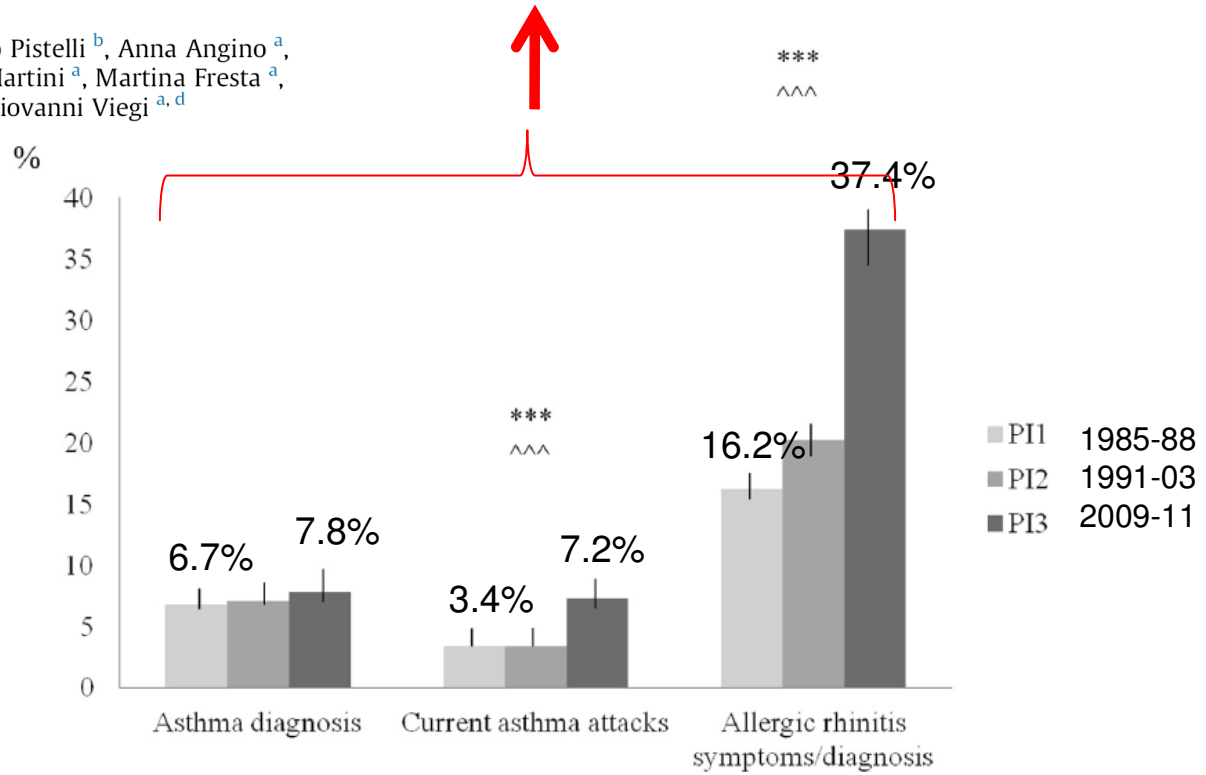
Table 3. SIDRIA-2 ,2002. Changes (Δ and 95% confidence intervals, 95%CI) in prevalence of wheezing, rhinoconjunctivitis symptoms, atopic eczema symptoms (past 12 months) in 13-14 yr old adolescents in the 8 italian areas partecipating in SIDRIA, 1994-200

Respiratory symptoms/diseases prevalence is still increasing: a 25-yr population study

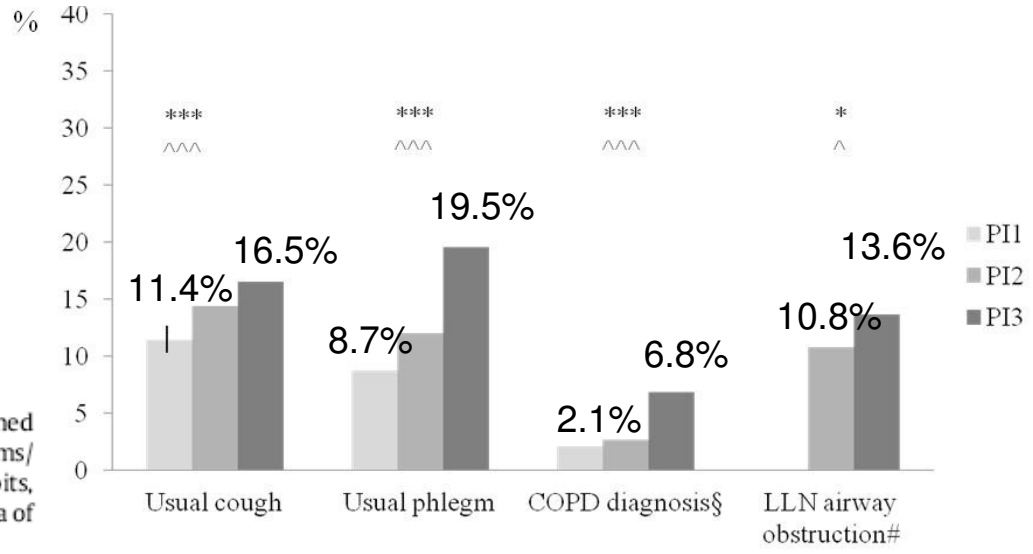
Sara Maio [a, *], Sandra Baldacci [a], Laura Carrozzi [b], Francesco Pistelli [b], Anna Angino [a], Marzia Simoni [a], Giuseppe Sarno [a], Sonia Cerrai [a], Franca Martini [a], Martina Fresta [a], Patrizia Silvi [a], Francesco Di Pede [a], Massimo Guerriero [c], Giovanni Viegi [a, d]

Respiratory Medicine 110 (2016) 58–65

PISA



b

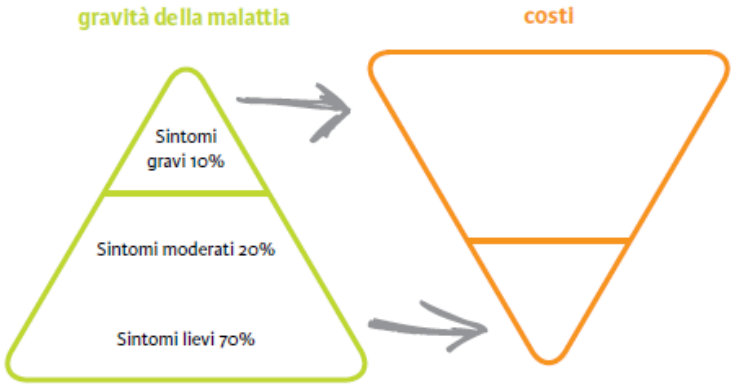


Adjusted prevalence of symptoms/diseases was obtained through logistic regression models with respiratory symptoms/diseases as dependent variables and sex, age, smoking habits, educational level, occupational exposure to fumes/gases and area of residence as independent variables.

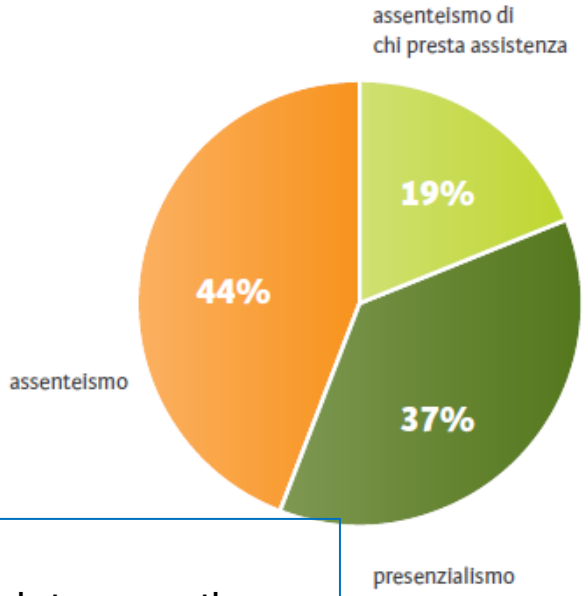
Impatto socio-economico

Tabella 3. Costi diretti annuali per rinite allergica e asma nei paesi esaminati

Paese	Rinite allergica moderata/grave	Asma allergica
Austria [1]	—	Tra € 220M e € 450M nel 2004 [2]
Belgio	—	€ 2.441 per paziente (1996) [3]
Danimarca [4]	Diretti e indiretti: DKK 16.000 per paziente	Costi diretti e indiretti stimati DKK1,9 miliardi (2000)
Finlandia [5]	€ 118M	€ 230M (2005) € 626 per paziente
Francia	—	€ 1,5 miliardi € 1.122 per paziente [6]
Germania	€ 220M [7]	—
Irlanda	—	€ 265 per paziente - stima del 2007 [8]
Italia	€ 1.000 per paziente [9]	€ 1.400 per paziente [10]
Polonia	—	PLN 3.988 per paziente
Svezia [11]	—	SEK 4.931 per paziente [12]
Paesi Bassi	—	€ 300 per paziente [13]
Regno Unito	—	£ 889M (£ 171 per paziente) [14]



Cause della perdita di produttività per i pazienti con rinite allergica



Burden economico connesso alle allergie respiratorie e le loro principali comorbilità = € 7.33 miliardi: 27.5% associato a costi indiretti (€ 2.02 miliardi), 72.5% a costi diretti (€ 5.32 miliardi).

Recenti Prog Med 2015; 106: 517-527

Clin Exp Allergy. 2008 Nov;38(11):1803-7. doi: 10.1111/j.1365-2222.2008.03085.x. Epub 2008 Aug 20.

Spreading and impact of the World Health Organization's Allergic Rhinitis and its impact on asthma guidelines in everyday medical practice in France. Ernani survey.

Demoly P[1], Concas V, Urbinelli R, Allaert FA.

Abstract

OBJECTIVES: The aim of this study was to determine the spreading level of the WHO-ARIA (World Health Organization's Allergic Rhinitis and its Impact on Asthma) guidelines among the medical community and their influence on medical practices.

METHODS: A cross-sectional study based on a questionnaire was performed between April and July 2005 on randomly chosen general practitioners (GPs) (943) and ear, nose and throat (ENT) physicians (277).

RESULTS: About 54.4% of the physicians claimed to know the WHO-ARIA guidelines and 49.7% said they followed them. These results vary significantly, mainly according to medical specialty (ENT vs. GP). In comparison to those who did not know the guidelines, their patients benefited more frequently (P<0.0001) from allergen search (42.2% vs. 31.7%), a nasal endoscopy (38.3% vs. 26.0%), a follow-up consultation (64.9% vs. 52.6%) and written information on rhinitis (30.7% vs. 14.1%). Paradoxically, they do not search more frequently for asthma and do not provide different first-line treatment strategy and duration.

FRANCIA

Respir Med. 2012 Jun;106(6):777-85. doi: 10.1016/j.rmed.2012.02.013. Epub 2012 Mar 20.

The ARGA study with general practitioners: impact of medical education on asthma/rhinitis management.

Baldacci S[1], Maio S, Simoni M, Cerrai S, Sarno G, Silvi P, Di Pede F, Borbotti M, Pala AP, Bresciani M, Viegi G; ARGA study group.

Abstract

AIM: To evaluate the impact of a medical education course (MEC) on the behaviour of general practitioners (GPs) to treat asthma and allergic rhinitis (AR).

METHODS: Data on 1820 patients (mean age 41 yrs ± 17 yrs) with asthma or AR were collected by 107 Italian GPs: 50% attended a MEC and 50% didn't (group B). The adherence for AR and asthma treatment was evaluated according to ARIA and GINA guidelines (GL).

RESULTS: AR and asthma were diagnosed in 78% and 56% of patients; 34% had concomitant AR and asthma. Regardless of the MEC, the adherence to GL was significantly higher for AR than for asthma treatment (52 versus 19%). Group B GPs were more compliant to ARIA guidelines in the treatment of mild AR, whereas group A were more compliant in the treatment of moderate-severe AR; the adherence didn't differ between the groups for AR patients with comorbid asthma. Adherence to GINA GL for asthma treatment did not differ between GPs of groups A and B, independently from concomitant AR. Though insignificantly, group A were more compliant to GINA GL in the treatment of patients with only severe persistent asthma (63 versus 46%) as group B were for patients with severe persistent asthma and concomitant AR.

CONCLUSIONS: GPs often tend to treat patients independently from GL. The impact of a single MEC did not improve adherence to GL in treating less severe AR and asthma patients, while there was a trend towards the opposite attitude in more severe AR patients without concomitant asthma.

ITALIA

Lin Chung Er Bi Yan Hou Tou Jing Wai Ke Za Zhi. 2015 Mar;29(5):396-9.

[Value of patient education in the treatment of allergic rhinitis].

[Article in Chinese]

Chu Z, Zhang X, Meng B.

Abstract

OBJECTIVE: To evaluate the effect of patient education on patients with allergic rhinitis (AR).

METHOD: From January 2009 to December 2013, 100 cases of allergic rhinitis were treated. The patients were randomly divided into experimental group or control group by Stochastic tables law,50 patients in control group accepted only drug treatment, 50 patients in experimental group accepted both drug treatment and patient education. The difference in compliance with treatment, treatment effect, incidence of adverse drug reactions and complications, average costs and times of treatment between two groups were evaluated by the rhinoconjunctivitis quality of life questionnaire (RQLQ) score. The independent sample t-test and $\chi 2$ test were used for statistical analysis.

RESULT: The patients of experimental group showed more positive attitude to treatment compared to the patients of control group ($P < 0.01$). The average scores of each classification and overall symptoms after treatment in experimental group were lower than those in control group ($P < 0.05$). The incidence of adverse drug reactions (nose-bleed, dry nose,nasal mucosa ulcer)and complications in patients with AR (asthma, chronic cough, secretory otitis media) in experimental group was lower than that in control group, with statistically differences ($P < 0.05$). The average times of treatment and costs of diagnosis and treatment(calculation of budesonide nasal spray)in experimental group were significantly lower than those in control group ($P < 0.01$). The total score for RQLQ and the scores of seven dimensions in experimental group were lower than those in control group ($P < 0.05$).

CONCLUSIONS: Patient education can help the patients with AR to cooperate actively with treatment, to reduce the incidence of adverse drug reactions and AR complications, and to save medical costs and improve the quality of life.

Eur Respir J. 2015 Nov;46(5):1262-4. doi: 10.1183/13993003.01303-2015.

Asthma education: an essential component in asthma management.

Boulet LP[1].

Targeted simple educational interventions including key messages to the patient can help reduce asthma burden

In conclusion, initiatives that allow effective educational interventions to be more easily integrated into current care are welcome. This will hopefully help improve long-term outcomes for a disease that can be controlled in the vast majority of patients. Asthma therapy should further improve over time but simple interventions can already make a major difference.

J Pediatr Nurs. 2012 Feb;27(1):65-73. doi: 10.1016/j.pedn.2010.07.007. Epub 2011 Aug 24.

Impact of online support for youth with asthma and allergies: pilot study.

Letourneau N[1], Stewart M, Masuda JR, Anderson S, Cicutto L, McGhan S, Watt S.

Abstract

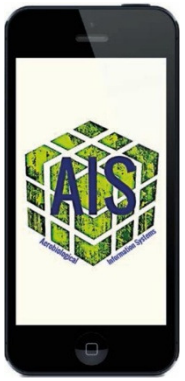
Youth with asthma and allergies often feel isolated and different from their peers. The objective of this study was to test the impact of online social support for these youth. Three months of support was provided using weekly synchronous chat sessions. Online sessions were facilitated by trained peer mentors (older youth with asthma and/or allergies) and health professionals. Youth could also e-mail one another between chat sessions and post messages on an electronic community bulletin board. Twenty-eight adolescents across Canada participated. Social isolation and loneliness were significantly reduced. Youth reported gaining confidence and a sense of normality.

Soluzione proposta

EDUCAZIONE

\+

PPI
Personalized Pollen Information system

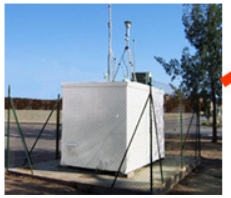


IIS
Integrated Information System

Pollen data

Weather data

Air quality data



Sistema Informativo Integrato

Medical recommendations

Improvement in allergic respiratory diseases management

Innovatività?

Nord Tirreno

Bollettino dal 11/01/2016 al 17/01/2016 – previsioni dal 21/01/2016 al 26/01/2016

Pollini	lun 11	mar 12	mer 13	gio 14	ven 15	sab 16	dom 17	Tendenza
BETULACEAE								▭
Betula								▭
CORYLACEAE								▭
Corylus avellana								▭
Spore	**lun 11**	**mar 12**	**mer 13**	**gio 14**	**ven 15**	**sab 16**	**dom 17**	**Tendenza**

Legenda classi di concentrazione

Assente | Bassa | Media | Alta | Dato non rilevato

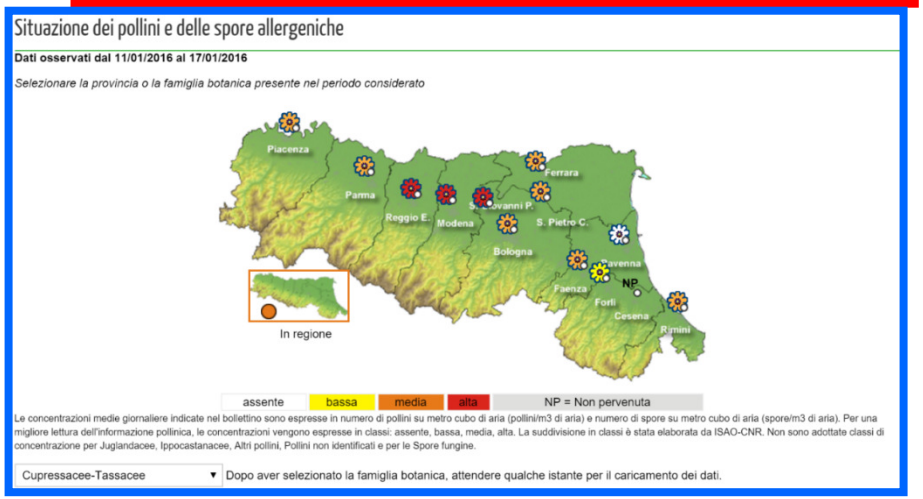
▼ in diminuzione ▭ stabile ▲ in aumento

POLLnet Rete italiana di monitoraggio aerobiologico

ARPA: Bollettino dei pollini +/- commento aerobiologico/medico

AIA Associazione Italiana di aerobiologia
www.ilpolline.it

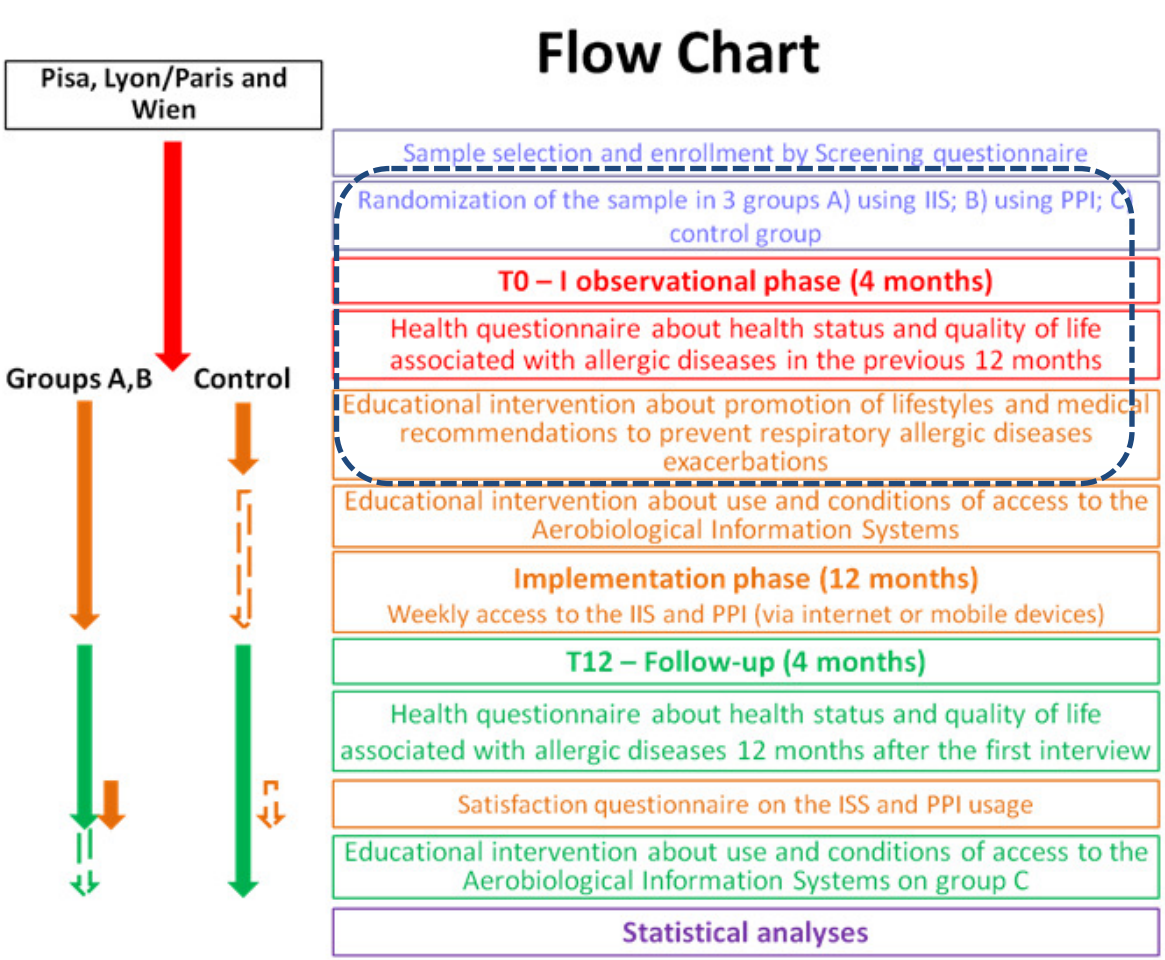
App con le previsioni sullo stato dei pollini in Italia
Bollettini quotidiani della qualità dell'aria
ARPAE- Previsioni di Qualità dell'ARIA



ARPA Emilia Romagna
http://www.arpa.emr.it/

ARPAT
Agenzia regionale per la protezione ambientale della Toscana
INSIEME PER UN FUTURO SOSTENIBILE

Protocollo metodologico



PISA

Country	Italy
Participants	N (%)
group A	44 (32)
group B	44 (32)
group C	48 (36)
Total participants	**136 (100)**
Non participants	
1. died	2 (1)
2. disabling disease	2 (1)
3. not interested	21 (14)
4. family problems	
5. health problems	6 (4)
6. unreachable	34 (24)
7. negative screening/moved on	78 (53)
8. refusal after positive screening	5 (3)
Total non_participants	**148 (100)**
Subjects pending Health Q completion	**11**

Risultati attesi

Riduzione dei sintomi allergici, miglioramento nella qualità della vita e riduzione dei costi diretti/indiretti

% atteso di decremento nei costi socio-economici (target: decremento annuale di almeno il 3% delle ospedalizzazioni, ricorsi al Pronto Soccorso, visite non programmate, prescrizioni di farmaci, assenteismo lavorativo/scolastico)
% atteso di decremento nel carico dei sintomi (target: decremento annuale di almeno il 3% del carico sintomatologico)

↓

= Eur 220.000.000 milioni

↑

Burden economico connesso alle allergie respiratorie e le loro principali comorbilità = € 7.33 miliardi: 27.5% associato a costi indiretti (€ 2.02 miliardi), 72.5% a costi diretti (€ 5.32 miliardi).
Recenti Prog Med 2015; 106: 517-527

Per maggiori informazioni visitate il sito http://www.ais-life.eu/

Come partecipare?

Partecipare è semplicissimo e gratuito: basta avere un accesso ad internet.

Contatta l'Unità di Epidemiologia Ambientale Polmonare (EPAP) dell'Istituto di Fisiologia Clinica del Consiglio Nazionale delle Ricerche di Pisa e se le tue caratteristiche rispondono ai criteri di inclusione del progetto entrerai a far parte del campione di studio.

Ti verrà richiesto di rispondere a un questionario telefonico e ti verranno fornite informazioni dettagliate in merito alla modalità di partecipazione allo studio AIS LIFE.

Referente per Unità EPAP: Dr.ssa Sandra Baldacci
Tel. 050-3153734; e-mail: baldas@ifc.cnr.it

Grazie per l'attenzione