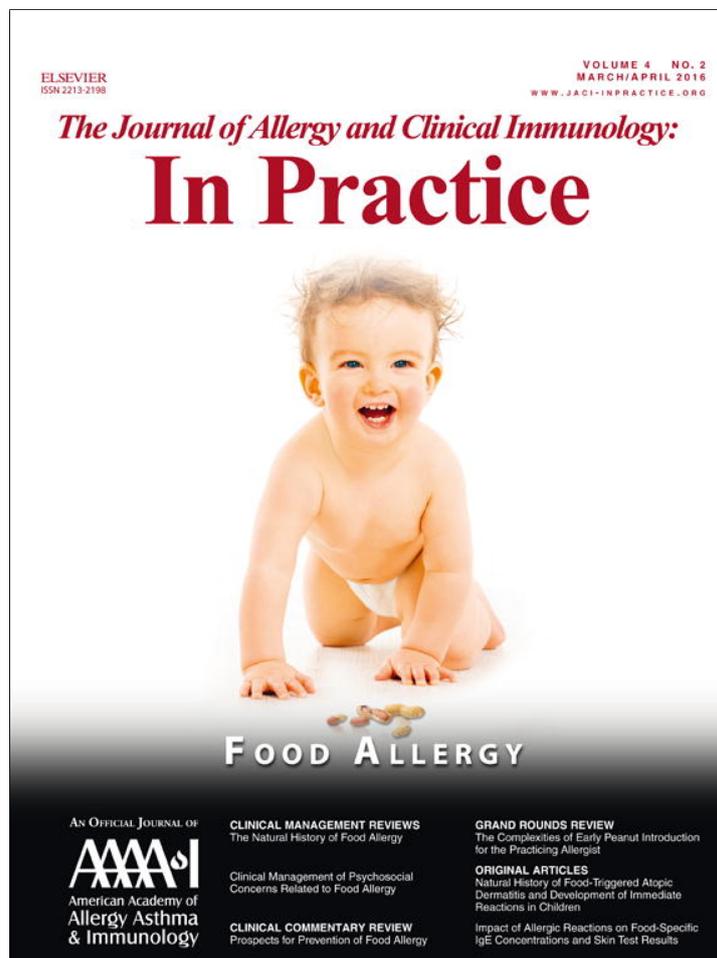


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Clinical Communications

Views of AAAAI members on climate change and health

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Clinical Implications

- American Academy of Allergy Asthma and Immunology members are witnessing medical problems caused by climate change among their patients. They support physician leadership on environmental sustainability, advocacy by physicians and their associations, and education for themselves, their patients, the public, and undergraduate medical students.

TO THE EDITOR:

There is a rapidly growing literature documenting the health impacts of climate change in the United States.¹⁻³ The American Academy of Allergy Asthma and Immunology (AAAAI) assessed their members' knowledge, attitudes, and experiences with climate change and health in collaboration with George Mason University in a survey of the membership. Survey topics included perceptions about the existence and causes of climate change, experiences with any health effects of climate change in clinical practice, and preferred actions, if any.

The survey instrument, which was administered online using Qualtrics software, was an expansion of a previously validated instrument adapted by adding questions for a clinical audience.⁴⁻⁶ It included 28 closed-ended and 4 open-ended questions. The project was approved by Mason's Institutional Review Board (Project 701651-1).

In February 2015, a letter of invitation to participate in the survey—including a link—was emailed to the US membership (N = 5615); 141 invitations bounced back because of invalid email addresses. Up to 4 additional requests were emailed to nonrespondents at 1 week intervals (only nonrespondents received reminders); a notice was posted at the Annual Meeting. To encourage participation, participants were entered into a raffle to win free registration for the AAAAI annual meeting and a \$5 donation to the ARTrust. A total of 1184 people responded; the response rate was 22%. The sample included respondents from 47 states and the District of Columbia.

Stata statistical software was used to run descriptive statistics on all variables, using unweighted data. The 95% confidence intervals (CIs) for proportional data were $\pm 3.5\%$ or less,⁷ and mean differences were deemed significant if $P < .05$ in a 2-tailed test. Open-ended responses were edited for grammar and spelling. Find full results and the survey in the Online Repository at www.jaci-inpractice.org.

RESPONDENTS

Most respondents held an MD/DO degree (91%); other degrees included PhD (10%), masters (5%), or another clinical

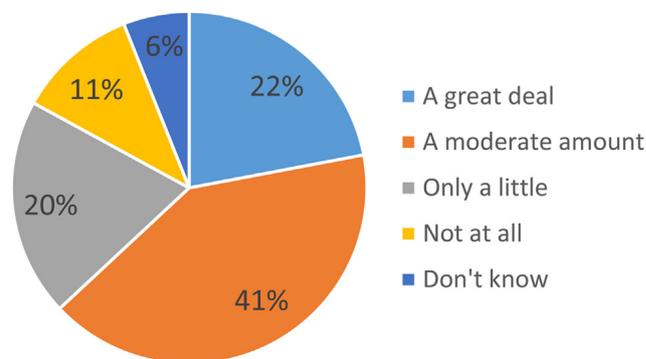


FIGURE 1. Climate change is relevant to direct patient care.

degree (5%). Most worked in outpatient clinical medicine (74%), hospital medicine (4%), or academia (18%).

There were no significant differences in age or gender, race and/or ethnicity, or the location (state) of work, between the respondent group and the sample.

KNOWLEDGE, BELIEFS, AND ATTITUDES

A majority of respondents (81%) think that human-caused climate change is happening. Over half of respondents (54%) indicated that climate change is *mostly* (47%) or *entirely* (7%) caused by human activity, and 22% thought that it was *equally* caused by human and natural activities; 73% indicated that they had personally experienced climate change to some extent outside their role as a health professional. However, only a minority of respondents felt “very” (10%) or “moderately” (33%) knowledgeable about climate change and health.

CLINICAL EXPERIENCE

A majority of respondents (63%) indicated that climate change is relevant to direct patient care “a great deal” or “a moderate amount.” Another 20% considered it “a little” relevant to direct patient care (Figure 1). Most reported that climate change is already affecting the health of their own patients, “a great deal” (10%), “a moderate amount” (38%), or “only a little” (26%). In bivariate regression analysis, older (50 years or more) physicians perceived climate change to be less relevant to direct patient care compared with younger physicians, but this relationship became insignificant when controlling for strength of belief in climate change. Older physicians perceived climate change to be affecting their own patients to a lesser extent compared with physicians below age 50, even when controlling for strength of belief in climate change (OR: 0.70, 95% CI: 0.54, 0.89).

Respondents were asked: “In which of the following ways, if any, do you think *your* patients are currently being affected by climate change, or might be affected in the next 10-20 years?” The most common health effects identified for *currently being affected* were as follows:

TABLE I. Brief responses to the question, "Please describe if you have a relevant anecdote about a patient who has experienced one of these (listed) impacts" (in parenthesis is the location of work of the respondent)

Allergies	<ul style="list-style-type: none"> • Tree pollen season is starting 3 wk earlier and seasonal allergy symptoms are more severe and last longer (Florida). • [I see] Numerous patients with fall mold allergies whose symptoms now last well into December because the ground takes longer to freeze (Michigan). • A patient who previously had seasonal allergy symptoms to grass now has year-round symptoms because of the warmer climate overall and the extension of grass season (Texas).
Air pollution	<ul style="list-style-type: none"> • A combination of high automobile pollution in Washington, DC, metro area with heat, humidity, and high pollen produced not only nasal allergy and wheeze, but also very severe redness, itch, and eye irritation in August (DC). • Patients with asthma probably have increased problems with air pollution. I used to think that it was psychological, but I think that it is real. In Arizona, we have been seeing pollen season (trees) starting earlier in February rather than March 1 (Arizona). • We have all seen increasing pollen and pollution levels affecting our patients—if you have not seen it, your eyes are not open (Illinois).
Injury from severe weather, including storms, floods, droughts, and fires	<ul style="list-style-type: none"> • Flooding causing mold growth in homes impacting asthma (Missouri). • Sudden flare of asthma after cleaning a basement after flooding (New Jersey). • The onset symptoms due to ash tree pollination in Southern California used to be early February; now patients are becoming symptomatic in early January. Another major trigger of morbidity is Santa Ana Winds due to arid [dry]air. When I began practice, they were occasionally present primarily in the fall. Now they are frequently occurring fall through winter months (California).

- "air pollution-related increases in severity of chronic disease, such as asthma, COPD, pneumonia, cardiovascular disease" (73%);
- "increased care for allergic sensitization and symptoms of exposure to plants or mold (visits to office/ER for asthma/allergic symptoms)" (63%);
- injuries due to severe storms, droughts, and fires (49%).

Selected anecdotes about these harms witnessed by respondents are presented in Table I. The state in which the respondent works is in parenthesis.

A larger percentage of respondents reported that their patients are likely to experience these health effects of climate change in every category in the next 10-20 years than the percentage who report that this is occurring in the present. (Air pollution remained the same at 73%.) Conditions less likely to be cared for by allergists rose also, but were selected by a smaller percentage, for example "Vector borne infection (eg, Lyme, West Nile, Dengue Fever, Malaria)" increased to 51%, and those expecting "heat-related effects (eg, heatstroke, heat exhaustion, cardiorespiratory illness)" increased to 47%.

AFFECTED GROUPS

Most respondents indicated that *certain specific groups* of people will be disproportionately affected by climate change, including people with chronic diseases (73%), young children aged 0-4 (57%), adults above age 60 (53%), and the poor and working poor (50%).

RESPONDING TO CLIMATE CHANGE: ADVOCACY, EDUCATION, AND SUSTAINABILITY

A majority of respondents (70%) indicated that "physicians should have a leadership role in encouraging offices, clinics, hospitals to be as environmentally sustainable as possible"; 58% indicated that they want guidance on how to do this. Majorities showed support for education on climate and health in the form of continuing medical education (71%), undergraduate medical

education (67%), and patient education materials (66%). Majorities also supported medical advocacy roles: "physicians should have a significant advocacy role" (65%), "physicians have a responsibility to bring the health effects of climate change to the attention of the public" (56%), AAAAI should have "a significant advocacy role" in relation to climate and health (61%), and AAAAI should have policies on climate change and health (67%).

The main limitation to the survey is its response rate (22%). This group was 54% of those who opened the emails. In recent years, response rates to most surveys have been declining and this response rate is not unusual.⁸

CONCLUSION

The results of this survey—which are consistent with the results of 2 prior physician surveys—suggest an important educational agenda for AAAAI and other medical societies. Most respondents are eager to see more information about the health effects of climate change and health for themselves, patients, and the public. They are interested in playing a larger role on climate change and environmental sustainability, and they support leadership by physicians and their professional society. AAAAI, and other medical societies, should actively consider the implications of climate change for human health, and rise to the challenge by working toward solutions.

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Section A

A1a. Climate change refers to the idea that the world's average temperature has been increasing over the past 150 years, may be increasing more in the future, and that the world's climate is changing as a result.: Do you think that climate change is happening at this time?

- Yes
- No
- Don't know

A1b. If answer to the above question is "yes" or "no": How sure are you about this answer?

- Not at all sure
- Somewhat sure
- Very sure
- Extremely sure

A2. Do you think climate change over the past 150 years was...

- None of the below, because climate change is not happening
- Caused entirely by human activities
- Caused mostly by human activities
- Caused about equally by human activities and natural changes in the environment
- Caused mostly by natural changes in the environment
- Caused entirely by natural changes in the environment

A4. How knowledgeable do you feel about the association between climate change and health impacts?

- Not at all knowledgeable
- Modestly knowledgeable
- Moderately knowledgeable
- Very knowledgeable

A5. How much, if at all, do you think climate change is relevant to direct patient care?

- Not at all
- Only a little
- A moderate amount
- A great deal
- Don't know

Section B

B1. How much, if at all, do you think climate change is affecting the health of your patients?

- Not at all
- Only a little
- A moderate amount
- A great deal
- Don't know
- I don't currently see patients

[If answer is "I don't see patients," skip to C1.]

B2. In which of the following ways, if any, do you think *your* patients are currently being affected by climate change, or might be affected in the next 10-20 years?

	Currently			In the Next 10-20 Years		
	Yes	No	DK	Yes	No	DK
Heat-related effects (e.g., heatstroke, heat exhaustion, cardio-respiratory illness)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vectorborne infection (e.g. Lyme, West Nile, Dengue Fever, Malaria)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Diarrhea from food/waterborne illnesses (e.g. Salmonella, Giardia, Cryptosporidia) following downpours or floods	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Injuries due to severe storms, floods, droughts, fires	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Air pollution related increases in severity of illness (e.g., asthma, COPD, pneumonia, cardiovascular disease)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increased care for allergic sensitization and symptoms of exposure to plants or mold (visits to office/ER for asthma/allergic symptoms)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If you have a relevant anecdote about a patient who has experienced one of these impacts, please describe here:

B3. Do you include the following as part of your management of Asthma?

	Always	Almost Always	At Times	Rarely	Never
Discussion of the effect of outdoor air quality on symptoms?	<input type="radio"/>				
Instructions on how to use outdoor air quality data?	<input type="radio"/>				
Information about where to find a regular source of air quality data.	<input type="radio"/>				
Information about the increase in length of the Ragweed pollen season?	<input type="radio"/>				
If you include information about the lengthening pollen season, do you mention climate change?	<input type="radio"/>				

Comments: _____

B4. Which of the following, if any, are barriers that prevent you from addressing climate change-related health issues with patients and their families?

	Strongly agree	Agree	Neutral	Disagree	Strongly-disagree
My patients/families would not be interested or knowledgeable enough to discuss this issue	<input type="radio"/>				
Lack of knowledge regarding how to approach the issue with my patients	<input type="radio"/>				
Addressing these issues with my patient will not make much difference in their overall health	<input type="radio"/>				

Other(s) (please specify here): _____

Section C

C1. How much do you agree or disagree with the following statements?

	Strongly agree	Agree	Neutral	Disagree	Strongly-disagree
a. Teaching about environment (e.g., climate change) and its association with health impacts should be integrated into medical education	<input type="radio"/>				
b. Physicians should have a significant advocacy role in relation to climate change and health	<input type="radio"/>				
c. My medical societies should have a significant advocacy role in relation to climate change and health	<input type="radio"/>				
d. I feel that actions I take in my personal and/or professional life can contribute to effective action on climate change	<input type="radio"/>				
e. Physicians have a responsibility to bring the health effects of climate change to the attention of the <u>public</u>	<input type="radio"/>				
f. Physicians should have a leadership role in encouraging offices, clinics, hospitals to be as environmentally sustainable as possible.	<input type="radio"/>				
g. Physicians have a responsibility to bring the health effects of climate change to the attention of their <u>patients</u> .	<input type="radio"/>				

If there are specific topics you would like included in undergraduate or continuing medical education, please describe here: _____

C2. Would you like to assist in education or advocacy focused on climate and health in your community?

- Yes
- No

If yes, please provide your name and email address on a separate page accessed through this link.....

C3. Outside your role as a health professional, to what degree have you personally experienced climate change?

- Not at all
- Only a little
- A moderate amount
- A great deal
- Don't know

C4. Which, if any, of the following groups will disproportionately experience any negative health effects from climate change? [check all that apply]

- None of the below because climate change is not happening
- Young children ages 0 to 4
- Older children ages 5 to 17
- Young adults ages 18 to 39
- Middle aged adults ages 40 to 60
- Older adults ages 60+
- People with chronic diseases
- The poor and the working poor
- People of color

C5. Which of the following resources, if any, would be helpful to you?

	Strongly agree	Agree	Neutral	Disagree	Strongly-disagree
a. Policy statements provided by my professional associations	<input type="radio"/>				
b. Continuing medical education (CME) on climate change and health	<input type="radio"/>				
c. Patient education materials	<input type="radio"/>				
d. Guidance on how to make my workplace sustainable.					
e. Specifics related to a, b, c, d or other resources: _____					

C6. How much do you trust each of the following as a source of information about the potential health effects of climate change?

	Strongly Distrust	Somewhat Distrust	Neutral	Somewhat Trust	Strongly Trust	Don't know
American Academy of Allergy, Asthma, Immunology						
American College of Asthma & Immunology						
American Thoracic Society						
Centers for Disease Control and Prevention						
Institute of Medicine (National Academy Sciences)						
United Nations Intergovernmental Panel on Climate Change (IPCC)						
US National Climate Assessment (US Climate Change Research Group)						

C7. How big of an effort should your country make to reduce climate change?

- No effort
- A small-scale effort, even if it has small economic costs
- A medium-scale effort, even if it has moderate economic costs
- A large-scale effort, even if it has large economic costs

C8. How big of an effort should your country make to protect people from harmful health effects caused by unavoidable climate change (preparedness)?

- No effort
- A small-scale effort, even if it has small economic costs
- A medium-scale effort, even if it has moderate economic costs
- A large-scale effort, even if it has large economic costs

Section D**D1. Which of the following degrees or certifications do you hold? [check all that apply]**

- MD/DO (or equivalent)
- PhD (or equivalent)
- PA or CRNP
- RN
- Master's degree (specify) _____
- Other clinical (specify) _____
- Other non-clinical (specify) _____

D2. What is, or if retired was, your primary work setting?

- Outpatient (clinical)
- Hospital (clinical)
- Non-clinical Administrative
- Academic
- Other non-clinical (specify) _____
- Other clinical: (specify) _____

D3. Which best describes your primary practice or type of work?

- Primary Care (Pediatrics vs Adult vs Both)(specify) _____
- Allergy and Immunology
- Pulmonary Medicine
- Other Specialty (specify) _____
- Occupational/Environmental Medicine _____
- Retired
- Other practice (please specify) _____
- I do not see patients (please specify work type) _____

D4. I have passed Medical Boards in the following specialty/ies _____**D4. In which U.S. state do you work? _____ (If you don't work in the US, skip this question)****D5. What is your gender?**

- Male
- Female
- Prefer Not to Reply

D6. What is your age?

- 18-30
- 31-50
- 51-65
- 66+
- Prefer Not to Reply

D7. Please specify your ethnicity:

- Hispanic or Latino
- Not Hispanic or Latino
- Prefer Not to Reply

D8. Please specify your race (check all that apply):

- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Islander
- White
- Other
- Prefer Not to Reply

D9. In general, do you think of yourself as...

- Very liberal
- Somewhat liberal
- Moderate, middle of the road
- Somewhat conservative
- Very conservative
- Other

Thank you for participating!
Continued on next page

5. How knowledgeable do you feel about the association between climate change and health impacts?

<i>(95% CI: +/- 3% or less)</i>	n	%
Not at all knowledgeable	142	14
Modestly knowledgeable	444	43
Moderately knowledgeable	342	33
Very knowledgeable	100	10
Total	1,028	100

6. How much, if at all, do you think climate change is relevant to direct patient care?

<i>(95% CI: +/- 3% or less)</i>	n	%
Not at all	114	11
Only a little	200	20
A moderate amount	419	41
A great deal	228	22
Don't know	60	6
Total	1,021	100

7. How much, if at all, do you think climate change is affecting the health of your patients?

<i>(95% CI: +/- 3% or less)</i>	n	%
Not at all	132	13
Only a little	268	26
A moderate amount	385	38
A great deal	103	10
Don't know	76	7
I don't currently see patients	62	6
Total	1,026	100

8. Currently being affected

<i>(95% CI: +/- 3% or less)</i>	Yes n (row %)	No n (row %)	Don't know n (row %)	Total Responses
1. Heat-related effects (e.g., heatstroke, heat exhaustion, cardio-respiratory illness)	301 (34%)	348 (39%)	246 (27%)	895
2. Vectorborne infection (e.g. Lyme, West Nile, Dengue Fever, Malaria)	321 (36%)	318 (36%)	253 (28%)	892
3. Diarrhea from food/waterborne illnesses (e.g. Salmonella, Giardia, Cryptosporidia) following downpours or floods	207 (23%)	412 (46%)	271 (30%)	890
4. Injuries due to severe storms, floods, droughts, fires	439 (49%)	309 (34%)	152 (17%)	900
5. Air pollution related increases in severity of illness (e.g., asthma, COPD, pneumonia, cardiovascular disease)	658 (73%)	156 (17%)	92 (10%)	906
6. Increased care for allergic sensitization and symptoms of exposure to plants or mold (visits to office/ER for asthma/allergic symptoms)	567 (63%)	183 (20%)	149 (17%)	899

9. Affected in the next 10-20 years

<i>(95% CI: +/- 3 or less)</i>	Yes n (row %)	No n (row %)	Don't know n (row %)	Total Responses
1. Heat-related effects (e.g., heatstroke, heat exhaustion, cardio-respiratory illness)	411 (47%)	157 (18%)	303 (35%)	871
2. Vectorborne infection (e.g. Lyme, West Nile, Dengue Fever, Malaria)	446 (51%)	123 (14%)	302 (35%)	871
3. Diarrhea from food/waterborne illnesses (e.g. Salmonella, Giardia, Cryptosporidia) following downpours or floods	333 (38%)	189 (22%)	351 (40%)	873
4. Injuries due to severe storms, floods, droughts, fires	493 (57%)	132 (15%)	235 (27%)	860
5. Air pollution related increases in severity of illness (e.g., asthma, COPD, pneumonia, cardiovascular disease)	625 (72%)	85 (10%)	155 (18%)	865
6. Increased care for allergic sensitization and symptoms of exposure to plants or mold (visits to office/ER for asthma/allergic symptoms)	588 (67%)	99 (11%)	186 (21%)	873

10. Please describe if you have a relevant anecdote about a patient who has experienced one of these impacts.

Selection of representative responses. See Appendix for all responses (n=77).

Allergies

Many elderly report the seasons lack consistency over the past 25 years coinciding with unseasonal symptoms of their allergy.

I have been in practice in the same location in the Pacific Northwest for over 25 years. I have watched a generation grow up in my practice. Suddenly, I am seeing 21-25 year olds coming in for significant hay fever symptoms much earlier than when I started in 1989.

Tree pollen season is starting three weeks earlier and seasonal allergy symptoms are more severe and last longer.

Personal experience of becoming mulberry tree sensitive with asthma, with widening of time frame over past two years to episodic need for Ventolin over whole year, related to very fine dust.

The onset of symptoms due to ash tree pollination in Southern California used to be early February; now patients are becoming symptomatic in early January. Another major trigger of morbidity is Santa Ana Winds due to arid air. When I began practice they were occasionally present primarily in the fall. Now they are frequently occurring fall through winter months.

Because of the late spring and rain, the pollen counts have been higher and our allergic patients are not doing well. Also, we have seen many new patients having Allergic Rhinitis that in a normal pollen year would not need to be seen.

Many patients are experiencing more prolonged and severe seasonal allergy symptoms due to changes in weather and pollination patterns.

Patients move from areas of lower allergenicity to higher allergenicity and I see at least one each week.

Tree pollen count elevations and seasonal rhinitis have been occurring earlier than "usual" and lasting longer for 4-5 years now compared to averages from the previous 20 years.

A patient who previously had seasonal allergy symptoms to grass now has year round symptoms because of the warmer climate overall and the extension of grass season.

A lot of my patients have allergic rhinitis symptoms earlier and earlier in the year - pollen patterns don't seem to follow the known patterns.

A combination of high automobile pollution in Washington, D.C. metro area with heat, humidity, and high pollen produced not only nasal allergy and wheeze, but very severe redness, itch and eye irritation in August.

Too many patients that I have seen moving to Houston with its humidity and pollution becoming much worse correlated with pollution levels more than airborne allergen levels. The cloud over Houston is impressive in the summer fall.

Asthma

I have several asthmatic patients with limitation of outdoor activities on smoggy days.

Work related symptoms in regards to rhinitis and asthma are increasing. Air pollution does affect our patients especially those who walk on major streets.

Recent rainfall and flooding increased patient in-home exposure to mold and humidity resulted in asthma emergency visits and hospitalizations.

Patients living in Hurricane Sandy-damaged homes have issues with mold and worse asthma control than those not affected by Sandy.

Vector-borne Illness

Increase in fire ant sensitivity and tick borne illnesses moving North with warmer temperatures.

The increase in bee sting anaphylaxis this summer is an indicator for a severe winter.

11. Do you include the following as part of your management of asthma?

<i>(95% CI: +/- 3 or less)</i>	Always n (row %)	Almost Always n (row %)	At Times n (row %)	Rarely n (row %)	Never n (row %)	Total Responses
(A) Discussion of the effect of outdoor air quality on symptoms?	167 (18%)	269 (29%)	365 (39%)	112 (12%)	27 (3%)	940
(B) Instructions on how to use outdoor air quality data?	70 (7%)	137 (15%)	357 (38%)	244 (26%)	131 (14%)	939
(C) Information about where to find a regular source of air quality data.	50 (5%)	121 (13%)	327 (35%)	254 (27%)	182 (19%)	934
(D) Information about the increase in length of the ragweed pollen season?	84 (9%)	166 (18%)	312 (33%)	177 (19%)	195 (21%)	934
(E) If you include information about the lengthening pollen season, do you mention climate change?	78 (8%)	168 (19%)	216 (24%)	183 (20%)	273 (30%)	918

12. Which of the following, if any, are barriers that prevent you from addressing climate change-related health issues with patients?

<i>(95% CI: +/- 8 or less)</i>	Strongly Agree n (row %)	Agree n (row %)	Neutral n (row %)	Disagree n (row %)	Strongly Disagree n (row %)	Total Responses
My patients would not be interested or knowledgeable enough about climate impacts to discuss this issue	31 (3%)	152 (17%)	352 (40%)	295 (33%)	59 (7%)	889
Lack of knowledge regarding how to approach the issue with my patients	46 (5%)	259 (29%)	254 (29%)	238 (27%)	92 (10%)	889
Addressing these issues with my patient will not make much difference in their overall health	84 (10%)	211 (24%)	275 (31%)	262 (30%)	43 (5%)	875
Others (please specify)	55 (40%)	27 (20%)	42 (30%)	10 (7%)	4 (3%)	138

Other barriers:

Selection of representative responses. See Appendix for all responses (n=89).

Time

We barely have time to deal with disease, quality, costs, and other pressures.

Not enough time during a clinic visit to address these issues.

Current clinical practice precludes discussion about climate change because of time constraints. This issue has political overtones and could evoke a prolonged and possibly charged discussion.

Lack of time/interest in argument with a climate change denier.

Political Concerns

Many patients' politics do not admit possible climate change.

Concern that my patient will feel I'm pushing a political agenda, because climate change may affect them, but it does not really change my management, as they can't avoid climate change.

Active resistance to the existence of climate change, impeding the physician-patient relationship. This is a very political issue.

Don't want to alienate patients.

Lack of Knowledge / Resources

We need better resources for patients.

Lack of actionable recommendations.

Too much misinformation in the lay press.

Teaching module about climate change.

I lack the knowledge about climate change related health issues.

Low Priority

Variability of weather trumps long term effects of climate change. Patients have short memories.

You can't treat the climate to affect near-term symptom improvement.

Not applicable many times.

No radical changes in our area.

Not an individually modifiable risk factor.

Climate change, if happening, is not important now.

13. How much do you agree or disagree with the following statements?

<i>(95% CI: +/- 3% or less)</i>	Strongly Agree n (row %)	Agree n (row %)	Neutral n (row %)	Disagree n (row %)	Strongly Disagree n (row %)	Total Responses
Teaching about environment (e.g., climate change) and its association with health impacts should be integrated into medical education	180 (19%)	446 (48%)	154 (17%)	83 (9%)	62 (7%)	925
Physicians should have a significant advocacy role in relation to climate change and health	184 (20%)	411 (45%)	186 (20%)	71 (8%)	70 (8%)	922
My medical societies should have a significant advocacy role in relation to climate change and health	187 (20%)	382 (41%)	183 (20%)	82 (9%)	87 (9%)	921
I feel that actions I take in my personal and/or professional life can contribute to effective action on climate change	121 (13%)	340 (37%)	261 (28%)	109 (12%)	91 (10%)	922
Physicians have a responsibility to bring the health effects of climate change to the attention of their patients	144 (16%)	373 (40%)	234 (25%)	89 (10%)	81 (8%)	921
Physicians have a responsibility to bring the health effects of climate change to the attention of the public	156 (17%)	362 (39%)	234 (25%)	81 (9%)	86 (9%)	919
Physicians should have a leadership role in encouraging offices, clinics, hospitals to be as environmentally sustainable as possible	228 (25%)	410 (45%)	176 (19%)	45 (5%)	57 (6%)	916

14. If there are specific topics you would like included in undergraduate or continuing medical education, please describe here:

- Selection of representative responses. See Appendix for all responses (n=91).*
- Effects of pollutants, gases, etc. should be discussed. Basic climatology and meteorology course would be helpful, as well as basic geology course.*
 - Interaction of pollution with changes in climate and the role of dietary antioxidants in combating oxidative stress potentially related to climate change.*
 - Lifestyle modification. Prevention is most important.*
 - Migration of allergenic or toxic flora and fauna due to climate change.*
 - Effect of air quality on respiratory disease.*
 - Include presentations on air pollution, climate changes, and aeroallergen ecology in poster, oral abstract, and speaker sessions at the annual meeting - this has been done to a limited extent already.*
 - Air pollution, environmental effects on allergic disorders and other health conditions*
 - Effect of climate change (air quality, processed food, stressors) on rhinitis and chronic rhinosinusitis.*
 - How climate change affects different regions of US as part of decision to change living location.*
 - Information on how global warming affects pollen levels and might be contributing to increasing incidence of food allergy in plant related foods.*
 - Environment, climate change, and its effect on the body should be included as curriculum in medical schools so we can be prepared to treat patients in the future.*
 - The effects on duration of pollen seasons.*
 - Dietary changes and habits that must change with local changes in crop availability and agricultural changes due to increased heat. Spread of vector-borne diseases (such as Dengue fever and Chikungunya) which may come to the USA with increased warmer temps.*
 - Differences between indoor and outdoor air pollution and how this impacts health.*
 - How changes in the environment could affect health.*
 - Effects on food resources, effects on water availability, and effects on disease vectors.*
 - What does the allergen count mean? Put it germane to their, the public, and or depending on who the audience is, properly presented so they understand it. e.g. population health versus individuals, or regional differences.*
 - Articles on climate change and the environment should be included in the recommended readings for the resident and student rotation curriculum developed by the AAAAI.*
 - I think these topics should occur at ALL levels of education....starting in elementary school. More courses need to be taught and mandated in all schools as required courses.*
 - I am presently developing a course of undergraduate education on Health and Climate Change.*

15. Outside your role as a health professional, to what degree have you personally experienced climate change?

<i>(95% CI: +/- 3% or less)</i>	n	%
Not at all	217	23
Only a little	320	34
A moderate amount	290	31
A great deal	76	8
Don't know	35	4
Total	938	100

16. Which, if any, of the following groups will disproportionately experience any negative health effects from climate change? [check all that apply]

	n	%
Young children ages 0 to 4	502	57
Older children ages 5 to 17	264	30
Young adults ages 18 to 39	169	19
Middle aged adults ages 40 to 60	135	15
Older adults ages 60+	470	53
People with chronic diseases	646	73
The poor and the working poor	440	50
People of color	179	20
None of the below because climate change isn't happening	99	11

17. Which of the following resources, if any, would be helpful to you?

<i>(95% CI: +/- 3% or less)</i>	Strongly Agree n (row %)	Agree n (row %)	Neutral n (row %)	Disagree n (row %)	Strongly Disagree n (row %)	Total Responses
(A) Policy statements provided by my professional associations	196 (22%)	408 (45%)	169 (19%)	48 (5%)	87 (10%)	908
(B) Continuing medical education (CME) on climate change and health	219 (24%)	431 (47%)	136 (15%)	49 (5%)	74 (8%)	909
(C) Patient education materials	182 (20%)	412 (46%)	164 (18%)	59 (7%)	83 (9%)	900
(D) Guidance on how to make my workplace sustainable	150 (17%)	370 (41%)	246 (27%)	65 (7%)	71 (8%)	902

18. Other resources, or comments on the resources above:

Selected representative responses. See Appendix for all responses (n=49).

Educational Resources

Include teaching of students in high school and various college levels/fields.

Sustainable workplace, CME [Continuing Medical Education], and patient education materials.

Getting people to pay attention and start to take a more sustainable view on energy, water, the food supply and financial resources to devote to healthcare (meaning preventative health) are all appropriately concerning, but we need to focus on this year's simple message, then get a new one the following year and so on. The public (and I) are easily overwhelmed by too much information.

Need help with patient information materials.

Information on the RATE of climate change, if such exists.

I'd like to better understand how to raise this topic with my patients, as, again, I don't want to be seen as pushing a political agenda. It's not quite the same as vaccination policies.

Policy Statements from Professional Organizations

I hope the professional organizations I belong to use scientific reason and not politics to create their resources.

Data

Data on the economic advantages of sustainable workplaces - that often makes the strongest argument

Data on regional pollen season changes and pollen concentrations that might be affected by changes in climate

[Localized] information is probably more important and relevant. I am enjoying the huge snow storms (in Ohio, where it has been colder), although I cringe at the amount of salt that is spread on the roads... From my own garden, which was eaten up by cutworms last summer despite organic precautions, to the empty reservoir and dying almond trees in California, to the algae bloom on Lake Erie..., to the flooding of parts of Brooklyn last year, to genetically modified crops that don't provide food for pollinators. Who in Congress is looking out for the land (besides my Congresswoman)?

Internet, Film, and Social Media

NIEHS [National Institute of Environmental Health Sciences] website on climate change. HIE [Health Information Exchange], EPA [Environmental Protection Agency], California Air Resources Board, the ALA [American Lung Association] and the ATS [American Thoracic Society] all have GREAT resources.

Seminars broadcast on the web.

YouTube videos, Facebook, and [Twitter]. List of required reputable movies in case we missed it all, like Gore's 'An Inconvenient Truth.'

19. How much do you trust each of the following as a source of information about the potential health effects of climate change?

<i>(95% CI: +/- 3% or less)</i>	Strongly Distrust	Distrust	Neutral	Trust	Strongly Trust	Don't Know	Total
	n (row %)	n (row %)	n (row %)	n (row %)	n (row %)	n (row %)	
American Academy of Allergy, Asthma, & Immunology	23 (2%)	32 (5%)	117 (13%)	280 (30%)	457 (49%)	17 (1%)	926
Centers for Disease Control and Prevention	44 (5%)	55 (6%)	111 (12%)	265 (29%)	427 (46%)	23 (2%)	925
Institute of Medicine (National Academy of Sciences)	42 (5%)	48 (5%)	160 (17%)	233 (25%)	366 (40%)	73 (8%)	922
United Nations Intergovernmental Panel on Climate Change (IPCC)	136 (15%)	84 (9%)	164 (18%)	207 (22%)	194 (21%)	137 (15%)	922
US National Climate Assessment (US Climate Change Research Group)	97 (11%)	66 (7%)	164 (18%)	233 (25%)	191 (21%)	171 (19%)	922
American Thoracic Society	25 (3%)	30 (3%)	163 (18%)	278 (30%)	340 (37%)	85 (9%)	921
American College of Asthma & Immunology	23 (2%)	36 (4%)	144 (16%)	306 (33%)	388 (43%)	29 (3%)	926

20. How big of an effort should your country make to reduce climate change?

<i>(95% CI: +/- 3% or less)</i>	n	%
No effort	120	13
A small-scale effort, even if it has small economic costs	107	12
A medium-scale effort, even if it has moderate economic costs	287	31
A large-scale effort, even if it has large economic costs	408	44
Total	922	100

21. How big of an effort should your country make to protect people from harmful health effects caused by unavoidable climate change (preparedness)?

<i>(95% CI: +/- 3% or less)</i>	n	%
No effort	87	9
A small-scale effort, even if it has small economic costs	130	14
A medium-scale effort, even if it has moderate economic costs	327	36
A large-scale effort, even if it has large economic costs	377	41
Total	921	100

22. Which of the following degrees or certifications do you hold? [check all that apply]

	n	%
MD / DO (or equivalent)	841	91
PhD (or equivalent)	91	10
PA or CRNP	24	3
RN	22	2
Master's and other clinical degrees / certifications	108	12
<i>Public Health (MPH or MSPH)</i>	21	2
<i>Nursing / Health Sciences</i>	13	1
<i>Chemistry / Biochemistry / Medicinal Chemistry</i>	7	<1
<i>Biology / Microbiology</i>	6	<1
<i>Business Administration</i>	6	<1
<i>Hospital Administration</i>	2	<1
<i>Immunology</i>	3	<1
<i>Clinical research</i>	5	<1
<i>Physician Assistant</i>	2	<1
<i>Other Master's degree</i>	29	3
<i>Other clinical degree</i>	18	2
<i>Other non-clinical degree</i>	2	<1
<i>Fellowships</i>	6	<1

23. What is, or if retired was, your primary work setting?

<i>(95% CI: +/- 3 or less)</i>	n	%
Outpatient (clinical)	668	74
Academic	159	18
Hospital (clinical)	32	4
Non-clinical Administrative	6	1
Other non-clinical	23	3
<i>Research / Laboratory</i>	5	<1
<i>Regulatory / Government</i>	4	<1
<i>Consulting / Other Private Sector</i>	6	1
<i>Other</i>	8	1
Other clinical	13	1
<i>Academia</i>	3	<1
<i>Private practice</i>	6	1
<i>Education</i>	3	<1
Total	901	100

24. Which best describes your practice or type of work?

<i>(95% CI: +/- 2% or less)</i>	n	%
Allergy and Immunology	802	87
Primary Care	11	1
Pulmonary Medicine	13	1
Occupational/Environmental Medicine	3	<1
Other Specialty	18	2
Retired	42	5
I do not see patients (please specify work type):	33	4
<i>Laboratory / Research</i>	17	2
<i>Medical Education</i>	4	<1
<i>Regulatory / Government</i>	3	<1
<i>Consulting / Other Private Sector</i>	4	<1
<i>Other</i>	4	<1
Total	922	100

25. I have passed Medical Boards in the following specialties:

	n	%
Allergy and Immunology	96	50
Internal Medicine	54	28
Pediatrics	37	19
Pulmonary	4	2
Other	2	1
Total	193	100

26. In which U.S. state do you work? (If you do not work in the US, you can skip this question)

<i>(95% CI: +/- 2 or less)</i>	n	%
Alabama	7	1
Alaska	3	0
Arizona	8	1
Arkansas	3	0
California	91	11
Colorado	22	3
Connecticut	16	2
Delaware	4	0
District of Columbia	4	0
Florida	39	5
Georgia	13	2
Hawaii	0	0
Idaho	2	0
Illinois	28	3
Indiana	11	1
Iowa	3	0
Kansas	10	1
Kentucky	9	1
Louisiana	6	1
Maine	3	0
Maryland	33	4
Massachusetts	37	5
Michigan	29	4
Minnesota	17	2
Mississippi	4	0
Missouri	21	3
Montana	2	0
Nebraska	11	1
Nevada	4	0
New Hampshire	4	0
New Jersey	26	3
New Mexico	7	1
New York	66	8
North Carolina	20	2
North Dakota	3	0
Ohio	27	3
Oklahoma	5	1
Oregon	4	0
Pennsylvania	37	5
Rhode Island	0	0
South Carolina	6	1
South Dakota	0	0
Tennessee	19	2
Texas	61	8
Utah	4	0
Vermont	3	0
Virginia	26	3
Washington	18	2
West Virginia	3	0
Wisconsin	30	4
Wyoming	0	0
Total	809	100

27. What is your gender?

<i>(95% CI: +/- 3% or less)</i>	n	%
Female	328	36
Male	568	62
Prefer not to answer	30	3
Total	926	100

28. What is your age?

<i>(95% CI: +/- 3% or less)</i>	n	%
18-30	9	1
31-50	351	38
51-65	332	36
66+	185	20
Prefer not to answer	43	5
Total	920	100

29. Please specify your ethnicity:

<i>(95% CI: +/- 3% or less)</i>	n	%
Hispanic or Latino	36	4
Not Hispanic or Latino	726	80
Prefer not to answer	141	16
Total	903	100

30. Please specify your race [check all that apply]:

	n	%
White	620	69
Asian	127	14
Black or African American	14	2
Native Hawaiian or Other Pacific Islander	2	0
American Indian or Alaska Native	8	1
Other	53	6
Prefer not to answer	106	12

31. In general, do you think of yourself as...

	n	%
Very Liberal	93	10
Somewhat Liberal	265	29
Moderate, middle of the road	281	31
Somewhat Conservative	193	21
Very Conservative	57	6
Other	27	3
Total	916	100

32. Do you have any other comments, patient anecdotes, or feedback?**Selection of representative responses.****Education and outreach**

The vast majority of people in the world will ignore climate change as a problem as they are too busy trying to survive. If half the population in the world today suddenly disappeared, there would be no serious discussion about climate change. If climate changes exists today, it is a byproduct of the population explosion around the world. In short, it is a symptom only. Treat the illness not the symptom.

Very interesting survey and an important initiative to bring awareness to the medical community of how can we may play a role in helping promote solutions to this complex problem.

Thanks for doing this research. Of course it is prone to selection bias because people who don't believe climate change is happening or don't think it affects them will likely not take time to fill out this survey. Still, I would be interested to see the results and hope you will present them soon.

There are many areas that physicians can 'lead the charge' and be good examples for our communities. When we are stretched due to paperwork, compliance issues, continuing education AND trying to balance all other aspects of life, choices must be made. Climate change is important- if we destroy our environment, it really does not matter what else we do.

The professional medical organizations should be strongly active in their opposition to the oil and gas industry driven opposition and misinformation behind the denial of climate change. This is exactly the same thing we saw with support for cigarettes from the greed-driven tobacco lobby in the past. The lives and well-being of ourselves, our patients and the world depend on our taking a strong stand in this matter.

I have not researched climate change myself. My information comes from the media generally. It seems like the information is biased either for or against the concept. Everyone seems to have an agenda, even the scientists. That is what makes climate change information difficult to interpret as a clinician. We need better data distribution and better transparency regarding biases. Also we need concrete solution proposals that we can advocate. General statements like "make less pollution" are not helpful. Also, we also need a global solution, not just a U.S. solution. As for my specialty, it would be nice to have some bullet points to refer to when seeing patients.

This is an important but unmet educational need.

Whether human-caused or not, there are changes in weed distribution and possibly house dust mites and molds that can have an impact in allergic sensitization and elicitation. We should make some effort to study that, and maybe the data can be used in terms of treatment, but probably only if we can verify changed clinical patterns.

This is an important step in educating the public and the profession. I am basically a conservative person and feel that "environmentalism" is often more of a religion than a science. Nonetheless, climate change is real and will no doubt be a force to be dealt with as time goes by. The extent that individual and group efforts will have on climate change is a matter of speculation. It is utterly important that trenchant advocates and doomsday philosophers not prevail as they may have negative rather than positive effects on public acceptance of true scientific fact, unclouded by political, social, and economic agendas. As the ancient Chinese philosopher said, "A journey of many miles begins with a single step."

Until big oil and big industry are restrained from running the government everywhere and cornering the water resources in the west, and sensible programs such as homeowner financial incentives to support improved insulation in homes, public transportation on a larger scale, eliminating the floating trash can in the Pacific, etc., I don't see much hope for education of the public making a significant dent... until it is too late and a huge chunk of the country is under water (that is not safe for living things, including fish).

The medical profession should focus on the negative health effects of pollutants, regardless of whether those pollutants are causing climate change. I don't believe we have enough data to prove whether human activities are causing the warming that we have monitored for the past 150 years on a planet that is 4.5 billion years old. We can prove the adverse effects of pollutants on cardiovascular health and the public might accept this as a better argument than the over-politicized global warming apocalypse argument.

The threat of accelerating global warming is not accepted by many people in the USA. I am afraid that any interventional efforts by our society may be too late.

Skepticism about the existence of climate change

Your survey data will be flawed because you are equating climate change to concern over the environment. One can be a climate change "skeptic" and still be extremely concerned about the environment.

I would be thought a fool to offer assistance teaching such nonsense. I have worked too long in my community to build the trust of referring physicians to make such a fool of myself. As a matter of fact I will do just the opposite and work to discredit anyone claiming climate change has resulted in health effects. They will be seen as snake oil salesman akin to the medi-spas and bio-identical hormone cultists.

I think the climate change data are showing no significant global warming in 15-17 years. Local variations of course. There is more political science manipulation than would be tolerated for a minute in the basic science labs and societies in which I have worked. The quality of science supporting catastrophic human induced climate change globally is pathetic and in some cases falsified.

This winter has been very cold and snowy. It is hard to believe that there is global warming. This summer was not particularly hot in the Northeast as well. I believe change in overall temperature should be closely monitored.

The so-called science of this movement is appalling and much of it is outright faked, or analyzed while competing data are completely ignored. We should not let our serious concerns for patients be diverted into this political quagmire.

I believe there is much we don't know about climate change. Many pundits proposing that humans are the primary cause of climate disturbances are ill-informed.

The climate is always changing. How much of this is man-made is the question, which sadly to say has become a political rather than a scientific one. This is a controversial and unproven subject with scientists split 50/50. I have seen no evidence global warming has in any way adversely affected my patients. Our indoor environment (carpeting, pet dander, and mold) is more problematic - not the outdoor clean air.

If human influence is the major impetus for climate change, then crippling the US economy is not going to make a significant difference. Deforestation of the rain forests of South America, the Pacific Islands and Africa; horrendous air pollution; and fouling of the water in huge population centers like China, Brazil and India are much more damaging to the Earth than coal burning US power plants.

We have been able to accurately measure temperature worldwide for 100-150 years. The earth has had cooling and warming effects from unknown causes prior to man made changes. We must reduce our pollution as it is simply common sense. I do not think man directly causes 'global warming'. Emerging nations like China and India are the largest polluters. So we need to figure out how they can have the benefit of cheap, CLEAN energy.

11. Do you include the following as part of your management of asthma? Further comments:**(A) Discussion of the effect of outdoor air quality on symptoms**

I practice in Southern Alabama; Seasons are long and airborne allergens are always present.

I see a patient who, every time they report a flare-[up] of symptoms, always receives [counseling on all five topics].

Only as needed for allergic subjects and those wherein pollution worsens symptoms. Not a blanket discussion for all patients.

Only discuss with a patient to specifically inquire as these data are quite controversial, and to me are long-term cyclical variations, and only in that apolitical context am I comfortable in venturing in that direction of discussion, but all questions always answered to the best of my ability

Outdoor air quality meaning allergens, pollen and Alternaria. I do not discuss "air pollution," particulates or sulfur with them. Ragweed season has not lengthened in my part of the country. Grass pollen season is occurring earlier, however.

What matters most are patients' symptoms when they actually occur. Each season is terrible for some patients and mild for others despite pollen counts, length of season, etc.

(B) Instructions on use of outdoor air quality data

Air quality risk is generally low in my region during winter, so I tend not to discuss this for young children who wheeze only during colds and mostly in the winter. I just looked up the AQHI site for my region, so I will know how to direct my patients, when relevant, from now on.

(C) Information about where to find a regular source of air quality data

I have felt for years that our Academy should do a much better job of providing this sort of information. Information from the National Allergy Bureau has been disappointing to me, particularly in terms of providing information for specific geographic areas.

Weather and pollen/mold predictions are rampant online and news items. We need to take the lead and be seen as the leaders in areas where we are. Easier said than done, but we are obligated with evidence based information. I believe we can co-exist and co-present our information with them (i.e. pollen.com, weather stations, online, etc.). Even supposedly knowledgeable medicine information providers do not know [how to differentiate predicted] allergen counts from real [ones].

(D) Information about the increase in length of the ragweed pollen season

I live in Southwest Florida. It is warm and sunny here all year round. Always has been. Ragweed is detectable all year round but it always has been that way down here.

I sample the air locally and I haven't seen any changes pertaining to the above questions. The local ragweed season hasn't changed. My levels are actually lower now than they were years ago.

Here, the length of ragweed season is a smaller issue than flooding, water damage, and potable water source issues

In Central Florida, ragweed pollen counts and duration have always been different than in the rest of the country (can bloom May-November and never go over low/low-end moderate counts), and are not the pollen affected by climate change

In my area, ragweed season is not lengthening. In fact, the ragweed pollen counts are moderating, due to the effects on weed production of "Roundup Ready" GM crops on decreasing ragweed growth.

In New England, we seem to have less of a problem with ragweed; perhaps due to climate change. Perhaps this change is more relevant in the south. It is difficult to predict the seasonal changes in the Northeast, but the ragweed season is earlier each year and lasts longer.

The length of ragweed pollen in the area has not changed in my year of practice. Routine year-to-year variation greatly outweighs any negligible effect from purported long-term climate trends.

The ragweed season is not longer. Ragweed pollenates based on minutes of daylight/nightlight per day. Temperature has nothing to do with it. This has been well established. People who say otherwise are not scientific.

Ragweed is not present in my practice area.

Alaska does not have ragweed and I practice in a rural area so I rarely have air quality concerns

There is very little ragweed in our area so that question was not applicable to my patients.

Ragweed is not common in my area. I would like to see data on effect of climate change on season of pollination for other weeds/trees (California).

Don't practice in ragweed zone

No ragweed on the west coast

Ragweed not present significantly in this area (Pacific Northwest).

We don't have ragweed on the West Coast; therefore the question above is too restrictive.

We have a very short, mild ragweed season

I discuss pollens but not ragweed since there is very little ragweed where I practice.

I live high in the mountains. Air quality not a problem. No ragweed either

I live in a place with good air quality and not much ragweed! (Lots of mold and trees and grass though)

No comment about ragweed-it is NOT relevant in my area

No pathogenic ragweed in California

Ragweed is a relatively minor allergen here in northern California, but I do mention air quality and drought

Ragweed is an unimportant pollen allergen in my area.

I practice in Southern California, and we don't have the same "ragweed season" as other parts of the U.S., so it's not as big a topic here. Due to our climate, we have near year-round pollen season.

I practice in the Rocky Mountain region where there is little Ragweed. With increased temperatures the grass season will most likely become longer grass pollen being the most significant pollens in our area.

I see people in the U.K. so we do not have ragweed pollen here, but I do talk about the tree pollen season.

In the West Coast, our major pollen allergen are the trees and grasses, and not ragweed.

Other pollen cycles are also impacted, including birch.

(continued)

11. (Continued)

(E) Mention climate change if / when addressing the lengthening pollen season

When we did pollen counts we did not see an increase in grass and ragweed pollen. Ragweed stopped pollinating long before the first freeze. Over 24 years we saw a significant increase in tree pollen. There are multiple explanations for this including climate change.

I practice in an area where many people vote in a certain way that predicts that they will be hostile to the scientific basis of climate changes. Usually, this topic is "safer" to discuss with teachers, professors and other middle class but highly educated individuals.

This is a controversial topic; certainly air quality in urban centers is understood to be primarily human derived, highly relevant for respiratory diseases, and "actionable" in that interventions can modify its impact; the discussion of a lengthening pollen season is also relevant, yes- but whether or not this is a result of human endeavor or natural causes is less clear and even less so whether the process is amenable to intervention and thus in a limited time appointment it is a low priority.

I have performed local pollen counts for 22 years. There has been no significant change in counts or "length of season" over that time. Best evidence is 0.3 degree Fahrenheit change over past 30 years. Average annual temperature varies by 1 degree Fahrenheit every 50 mile latitudes, which means our pollen season now mimics that found 15 miles south of here.

In the Northeastern U.S. this is leading to early and higher tree pollen levels, rather than increased ragweed.

Just earlier today, a pediatric patient's father asked me if I thought that climate change may be affecting the duration and severity of his son's pollen exposures.

Tangential Responses

Climate change is BS propagated by university types as it represents a money train especially with the current administration in charge

Again, there is always "climate change." It is very deceptive. It warmed up from this morning, or it got windy blowing the pollen around, the climate changed.

Climate changes every day. Warmer in daylight hours and cooler at night. And warmer in summer and cooler in winter. All this talk and hysteria about so-called "Climate Change" is bunkum.

How can one tell? People get sick and we have had all these problems throughout history. It is irresponsible to blame illness on climate change which is a long-term phenomenon. Weather causes a lot more problems for my patients.

As climate change illogically is rejected by a large fraction of the US, I hesitate to discuss this as climate change, but rather "changes with the weather" to avoid conflict. I don't feel that climate change has much relevance for allergy besides slightly altered mold/pollen seasons. I do feel that climate change has the potential for severe economic/migratory destabilization and more severe weather patterns.

Climate change has been going on for many years without the aid of humans. However, the greatest casualty when all said and done is destruction of the lower and lowest classes because of no work and bad unemployment numbers and more dependence on government....Liberals love it.

For most patients, it will not affect their day-to-day life. Are they just going to stay inside on days when air quality is poor? Also, majority of my patients have very little education or understanding of the matter.

I hope AAAAI is not going on board into this "climate change" or global warming and use pollen changes to support an idea that has not clearly been documented. Frankly, I don't like where this survey is getting into but clearly seems to try to "support Global Warming".

I inform patients about acute, specific adverse events (dust storms, fires, etc.). I believe that some global "warming" is cyclical, and that alarmist talk is unwarranted and intellectually shaky extrapolation and fear mongering.

I live on the Great Lakes where the air is pretty clean most of the time.

I practice pediatrics primarily and thus the direct effect of pollen on asthma is less frequently encountered.

It's important for our organization to be in the forefront re: advocating for environmental pollution controls and climate change-related legislation to protect our patients.

My clinical focus is on environmental effects that the patient can alter.

My impression of the length of the pollen season is that it is variable. I am not aware of any data indicating that this is happening.

My job is physical not political.

My practice is in San Francisco, so some of the broader effects have been tempered by our microclimate.

Pollen season has always been highly variable in this area. Those in practice for a long time (over 30yrs) in this area do not feel the pollen seasons are any more variable than they have been traditionally.

The assertion that climate change is man-made is based on data inference and is inherently flawed. With 150 years of climate data relative to the natural climate cycles of the planet, the argument that man is causing climate change is as sound as the argument that the Earth is flat because the land around me is flat. There was a high consensus for a Flat Earth at the time, just as there is now for Climate Change. High consensus is not proof. My job is to educate my patients on dealing with the reality, not engaging in the politics or the validity of the science.

The data on ragweed is varied and again the supposition proposed above assumes that this change is absolutely true.

The link between ragweed pollen season length and the development of allergy to ragweed is specious, and at best not adequately studied. Medical professionals should not be swaying to the fad du jour but rather on well-studied science.

The original premise is that there are increasing temperatures and this has stopped in the last 10-15 years. On the next question. There is nothing that would prevent me from discussing sports or other subjects. Your survey is slanted. I choose not to address it since there is data supporting both sides.

Watching the gradual disappearance of glaciers is very convincing to me that climate change is a real thing.

We have higher CO2 levels but Global Warming is a liberal obsession. One giant volcano eruption and we will be in the ice age. The temperature changes are all within the earth's natural ebb and flow. Only environmental extremists buy into that man is so important that he/she can change the earth. The earth is much smarter than the environmentalists.

With the warmer temperatures, which validity is of question, there is less indoor air pollution during the winter time when the house is closed up, and there is more fresh air in the indoor environment decreasing VOC exposure, dust mite exposure, indoor mold exposure, and pet exposure. In addition, if we look at the percentage of chlorophyll being utilized by plants now; it is only 10 percent, which means that plants have a marked increased ability to increase photosynthesis should increase levels of carbon dioxide occur. As part of the study, we should be looking at all of the science. Looking at the study questions, there seems to be a marked bias.

12. Which of the following, if any, are barriers that prevent you from addressing climate change-related health issues with patients? (Open-ended "other" responses).**Time***Lack of time/interest in argument with a climate change denier**Clinic time**Insufficient time**Lack of time**Lack of time during visits**No time during the visit**Not enough time**Not enough time during clinic visit**Not enough time to address.**Not enough time to discuss this in addition to everything else that needs to be discussed**Time**Time constraints**Time limitation in clinic**Time restraints**Too much else to talk about, no time to talk climate change during a visit***Political Concerns***Climate change deniers**Concern over offending people who do not believe in climate change**Ideology, beliefs, politics.**I'm not a liberal**It's too politically motivated a topic**Patients' socio-economic status**Political**Political (i.e., deniers of climate change): Texas is a state of deniers, where AAAAAI is meeting without me!**Political bias of some patients**Political close-mindedness**Political denial.**Political division on issue can make it tough to discuss in the healthcare setting where time is already limited with patients**Politics**Resistance to including politically charged topics in my discussions with patients, lack of time**The fact the climate change seems to be a politically charged issue**The issue has politically polarized**This would lend credibility to a political scare-mongering philosophy.**Too many Republican nut jobs in Colorado***Lack of Knowledge / Resources***Discussing them in the context of their health problems and time Would be good to have information to hand out to patients about facts and myths of climate change.**Frustration, since there is little that can be done about the issue, with the oil industry so prominent in Houston.**I work at Georgia Tech, the patients know more than I do.**Lack of my knowledge of subject**My personal knowledge**Need handout**Patients want to learn**What is the climate change related health issues?***Low Priority***It is a minor issue.**Not pertinent to our discussion**Patients don't express much interest.**Patients don't really care, they want to get better and a long winded discourse on climate change is not warranted.**Patients feel it does not pertain to them.**Discussed in context of remediation, but I already have long discussions with most patients about something related to the medical problem, so discussions center on what is relevant to the patient now.**Some are convinced it is only a hoax by scientists.**(continued)*

12. (Continued)

Tangential Responses

Validity of data supporting the relevance of "climate change" in patient care

Your version does not exist.

Climate change overrated

Climate is always and will always be changing.

Don't think it's worth bringing up.

Facts versus hype

I like to include things based on data that are reliable and trustworthy.

In my state the legislature does a great job in convincing locals that climate change is not true.

Manmade climate change is not supported by consistent scientific data.

Many of these issues about the climate are still being researched and debated.

My patients want real science.

Not science

Now I see where you guys are getting really into! You are already assuming that "global warming already causing increase illnesses! Oh, please give me some data on that! Who is sponsoring this study, by the way? I hope it's not membership money! Or my taxpayer money. Maybe George Soros funding?

Not predictable in the short term

14. If there are specific topics you would like included in undergraduate or continuing medical education, please describe here:

Climate change and impact on health is appropriate in education, similar to occupational hazards and health.

Recognize the importance of allergic diseases, which are very common.

The facts and the controversies, point and counter point facts, educate us about both.

As outlined above - heat, elevated temperatures, impact of reduced water supplies, weeds etc....

Importance of recycling, and the finite resources we have on our planet

Pollen counts and climate change

Possible effect of climate changes of the plant growing season

My concern over climate change is more about future flooding and destruction of coastal areas. Climate change effects on individuals still seem a long way off. If immediate effects (occurring now and in the next 10-20 years) were established, I would answer "strongly agree" to all of these.

Known effects of particulate pollution on deaths from CV disease. How horrible China's pollution is and how it drifts to affect other continents

All of the above-mentioned climate-health topics, plus mental health impacts

The relation between the obstructed nasal airway in children under four years old, and the changes of the cranial-facial bones that lead to orthodontic problems, TMJ, and eventually OSA...plus sleep and learning problems in early life of these mouth breathers

Air quality effects on health

Rise in pollution

Indoor air quality

CME- role of climate change on medical conditions

I would be interested in examining the possible benefits of "earthing" on patients with allergic inflammation (grounding people to the earth's electric field on a regular basis).

Strategies for minimizing medical solid waste

Would appreciate more provider inclusive language and focus regarding all health care issues, including impact of environment on health. All health care professionals can educate and be advocates.

Teaching should also involve physicians in academics and practice.

I recommend integrating advocacy into medical education and getting formal programs up and running at your institution.

Given the general ignorance regarding allergies in most medical schools, perhaps climate change is the way to approach improving the dialogue.

Strong emphasis on environment quality in buildings, and places of work. Also political work on environmental regulation for [indoor] quality of air in new houses, offices [or other new buildings] for humans [to] work or live.

How to be nice to each other and the earth itself

We should add to teach medical student

Exposure to allergists in undergraduate and resident medical education is woefully inadequate. Instead of mandatory rotations through an allergy department, it is mostly passed on information from the resident one year ahead; the blind leading the blind.

Having comparative data, over last 50 years to report in an efficient manner the data. Have a pro and con argument. Like Arnold Schwarzenegger just changed his Hummer to a hybrid after he was convinced of the effect.

How to objectively evaluate scientific research and separate from political or emotional hyperbole

Truth in science

An unbiased evaluation of studies that claim or disprove human causation of climate change; correlation does NOT equal causation.

Present the scientific data not the politically charged misinformation.

Better controlled studies and case based approach will instill science behind many observations.

(continued)

14. (Continued)

Tangential Responses

Teach them how to interpret studies in prospective scientific methods using anecdotal information as a simple basis for further study. Fostering reliance of anecdotal information or unreliable science is leading to medical idiocracy. Please don't buy into the politically correct social justice crap being promoted by celebrities that cannot even spell immunology much less begin to understand complex scientific ideas such as global climate. I have in my possession a copy of a National Geographic magazine from 1979 predicting another ice age by the year 2000 because of "global cooling". Then I hear Al Gore of all people preach global warming just as global temps begin to cool again. Man Made Climate Change is the very definition of a boondoggle and we as physicians should rise above it to teach sound scientific investigation.

A scholarly approach to assessment of the manipulation of climate data, flawed models, and the political corruption involved would be very enlightening to students not educated to learn what to think, but how to think.

The students should be taught all about the falsification of scientific data and how it is a scam. It is a way for the government to redistribute wealth.

We don't know if global warming is occurring or it's man-made. The data is all over the place and big money is involved. How can physicians educate the public when we don't understand it? Of course we should sustain our environment.

These are pie-in-the sky questions. I work over 60 hours a week and make less than a school teacher because I am spending a lot of time in teaching patients about their particular disorder. We talk about water and air pollution and damage when relevant to the patient. I leave copies of science news in the office for reading material, as well as nature conservancy and occasionally sierra club info. No physician is going to persuade the hospital that switched from washable dishes and silverware to paper and plastic that the environmental change outweighs the cost consideration.

The environment is an important issue, some of the discussion at meeting seems more politically based, and emotionally centered. That's usually when I leave. The best way to discuss any issue is with pro and con approach and leave Al Gore or his type out of it.

The cause of climate change (extreme heat, extreme cold, extreme storms) are multifactorial. Most jump to the conclusion it is air pollution. There are many overlaying reasons to cause this change. The view that it is all be air pollution is not able to be discerned.

Once the science is definitive I think more people will discuss climate change with their patients.

I think that the issue of climate change should primarily be addressed by vetted scientists who are knowledgeable about this.

People are distracted by "global warming" when the real issue is increased atmospheric CO2. If we don't do anything about CO2 increase soon, we'll be like the Apollo 13 astronauts, with too many people in the capsule for the size of the CO2 scrubber.

Clean up the nomenclature. "Climate change" is a PC word that IGNORES real problems like pollution, destruction of sensitive natural habitats by unrestricted growth. Your questions above are flawed - you are defining environmental concerns with climate change. We had an ice age before the industrial age. What do you think caused the Grand Canyon? It certainly was not man-made global warming.

Nothing specific. But in comments about physicians responsibility, we have been pushed to the corner, beaten down and burnt out by all administrative and regulations requirements that I don't know if we can take on more "responsibilities." Particularly, in Allergy, Dr. Casale, we are concerned about our practice future thanks to some of and particularly one of your predecessors.

How weather and climate effects health is important to discuss but to imply that humans have any significant control over climate should only be taught if absolute evidence exists that human behavior can change climate. There is no absolute data. Recycling and conserving are good moral and ethical ideas but scientific evidence does not exist. Global warming due to human behavior is a religion or a cult that requires the adherents to have blind faith no matter what.

Physicians have enough to cover in there 15 minute visit with a patient. Discussing climate change should not be another area physicians should be responsible for.

Note, being environmentally sustainable - not wasting resources and creating trash - is TOTALLY different than the fairy tale of "climate change". FYI Climate change has been occurring since the dawn of the earth. Too bad Yale had to cancel their "global warming/climate change" protest this week - Feb 17 week - due to TOO MUCH SNOW.

Is this our new avenue to try to save our specialty, climate change? We are now going to be allergy, immunology and climate changeology?

Greater emphasis on how to establish truth. This questionnaire takes it for granted that everyone knows that climate change is occurring, that it is caused by human action and can be changed by human behavior. I do not accept this party line.

This is such a biased, unscientific survey, reminds me of push-polling the major political parties do to promote their own agenda, and I consider and insult to anyone with reason. I'm certain the authors of this questionnaire know "Climate Change" has political implications and does not equal "Environment."

How to write a study without leading questions.

You people need to read Prof. Ian Plimer's book, "Heaven and Earth: Global Warming, the Missing Science." You will see why you should not be presenting questions on this subject as if the underlying hypothesis is already proven. It isn't. Undergraduates should get BOTH SIDES of this issue in a more sophisticated and informed way than your questions suggest is currently the case.

I am not sure what is being taught in medical schools. I would hope it is based on facts and not politics.

These questions were obviously compiled by someone with a political agenda.

Before integrating it into curriculum, I think more work needs to be done to know for sure if it's real. To try and make conclusions about climate change over only 100 years considering how old the earth is and how much the climate changed before humans were even around is maybe a bit hasty and arrogant on our part.

Please use truthful science, not science based on agendas that have little to do with reality. Unfortunately, there's a great deal of bias in the questions asked in the survey, and I believe that the authors of this study are not interested in the truth, but have a pre conceived agenda.

Why is climate change being specifically targeted by our organization? Has there been a vote of the members? Why not ask a question about understanding the tradeoffs of economic growth and the improving health of individuals in third world countries vs. strangling economic growth with climate change interventions?

I feel the AAAAI has much more pressing issues at hand for me and my practice. Their focus should be on the significant decrease in reimbursement across the board that endangers the future of the specialty. Ridiculous for AAAAI to be focusing on climate change at such a crucial time.

(continued)

14. (Continued)

The AAAAI has no business involving us in this advocacy.

Wasted government money to finance your worthless surveys and propaganda should be kept to politicians. Enough is enough.

We should state facts not hype. The yearly "this is the worst pollen season ever", does not help. The news media wants dramatics, but this does not help educating the public.

Once again, my job is not to teach political ideology. I do not believe that climate change is man-made, and I do not believe that I have time to help serve a political agenda by addressing it with my patients.

A balanced approach on this topic would add credibility. A one side discussion by individuals who have a lot to gain financially on the topic looks like propaganda.

When and if there is a scientifically credible body of evidence on the health effects of climate change, not just speculation, then and only then should the evidence be part of medical curriculum.

A healthy discussion about climate change could start with reading the book, Unstoppable Global Warming, Every 1500 Years. This is an excellent scientific resource that outlines the natural cycling of climate change. In the 1970's, there were alarmists who warned of the "next ice age". Now it is supposedly manmade global warming. Computer modeling, which cannot even accurately predict weather patterns over 30 days, is not a useful construct to evaluate climate change. Rather, looking at trends over thousands of years is more realistic when discussing this issue.

You assume that a physician's god-like powers enable him to know what is going on. For goodness sake, Al Gore believes in climate change enough to buy a mansion on the beach. He must think it is pretty insignificant.

Physicians do not have the expertise to interpret the science and models behind climate. However, we can attempt to force authorities to bring science back into the climate discussion, which is currently dominated by the dogma more characteristic of ideology and religion than science.

Climate change is mostly a political problem being pushed by the left wingers and ecological radicals like Greenpeace. Climate changes naturally, and man can have very little impact on it.

This is an irrelevant and an obnoxious premise that has no basis in science field. East Anglia data was fabricated....read up on Lake Vostok ice core samples evaluated by Russia in the Antarctic.

Again you all have the presumption that climate change are caused by human actions it looks like here and that is only the reason I disagree. But yes, reduce pollution, smoking, etc. are important issues in health care, BUT not a discussion on climate change, whether "cold" as it was proposed many year ago, then warm now is "climate change."

I feel like climate change is a money making model so that global warming activists can keep their job.

I recycle. I try not to waste food, etc. Being conscientious is always important but promoting an agenda from a narcissistic, self-serving elite should never be a physician's intent. Climate change will not affect a patient over their lifetime (if you believe in climate change).

19. Which of the following resources, if any, would be helpful to you (additional comments)?**Educational Resources**

All of the above. Resources regarding how to discuss climate change with patients

Policy Statements from Professional Organizations

AMA is already involved in too many items that have a political component to them.

Need more data before policy statements from societies

Last thing we need is the bureaucrats and ivory tower types speaking for us.

Data

Have climate experts and researchers publish their findings in science journals outside their field of specialty. For example, how warmer temps in subtropical areas contributes to wider distribution of malaria.

Unless they contain information about atmospheric CO2, any of the above efforts are worthless.

Objective reviews.

I think we need emotionally neutral data.

Internet, Film, and Social Media

Most and all information is now online! And personal computing devices or smart phones. Also social media! We are barely, if at all, present there.

Tangential Responses

Since this is not a settled issue, and because climate has been a variable for millions of years, advocacy, which inevitably ends up trying to convince folks that human behavior is the main cause of climate change, is not only intellectually hypocritical, but it wastes valuable time and other resources.

Such "educational" resources can't yet be based on science. It's not about whether climate change is occurring (it is, at least in the short run), but whether health effects can be proven. There might be as many positive effects as negative. We just are speculating.

Climate change is happening, and important question, is human activity contributing to it. Maybe, but to go over board and put everyone out of work and have a continual pity party about something we can not change. Besides China holds all the cards to our terrible trillions of dollars deficit...We can set the example, but they will be laughing all the way to the bank.

Your question about which group will be more effected than other groups tells me that the survey writer is an adherent to the global warming caused by humans religion.

I repeat, the issue of whether climate change is occurring and its potential causes should primarily be addressed by objective scientists in this field and their work, research and conclusions should be peer reviewed.

No control over the workplace

Your questions have very little for normal century upon century old normal variations.

(continued)

19. (Continued)

These resources have potential bias so I would be leery of using them.

We will have more food with a little warming.

Will you educate us on sun cycles, the ice ages and the recent Little Ice Age and suggest why those happened? Can we discuss why it was hotter in Roman times than now?

This survey is too long.

The climate changes continuously over millions of years. There are cold spells and warm spells lasting years, decades or centuries. Why do you think Greenland, currently a frozen land inhospitable to human colonization is called Greenland. The answer is instructive.

We should worry more about the effects of pesticides in our food and flame retardants in our mattresses. It's fine to work diligently to reduce our impact on our environment, but to interpret every weather event as caused by us is absurd and not scientific. If we focus more on harmony of thought, we can improve the climate better than by obsessing about our small role in it.

Since most people are having "global warming" and "climate change" pushed down their throats ad nauseum, it is unfortunate that to be in the dissenting camp will likely alienate most patients and organizations that need political backing to survive. Of course to even suggest that we are wasting billions of dollars on "climate change" agendas that could be used for proven healthcare is blasphemy.

Save the resources for cancer research... I beg you.

Adopt the Kyoto protocols.

In my opinion there are a variety of climate changes over time in different parts of the world that are true but hard to predict and certainly not significantly affected globally by human activities. Local pollution is another issue separate from global climate change.

We need to get the media to stop allowing this issue to be politically driven and only spoken about as a byproduct of what political agenda a person favors or has...

I am retired. Do not use the resources.

I'd like to better understand how to raise this topic with my patients, as, again, I don't want to be seen as pushing a political agenda. It's not quite the same as vaccination policies.

Controversial issue we need the science on both sides of the issue not the political motivation.

None of these would be helpful as the jury is still out and you are being manipulated by hype and science tied to politics... A terrible mix. The remainder of these questions are irrelevant until you look at the science with an unbiased eye. Again go back to the 70's when the world was facing the dangers of global cooling. Read the article and see how strikingly similar the hype was. Either you "smart" people at GMU and AAAAI are being manipulated or have a political agenda.

This whole survey is based on assuming climate change/global warming is true. See referenced article about how data has been changed. NOT GOOD SCIENCE!

32. Do you have any other comments, patient anecdotes, or feedback?**Education and outreach**

Glad these efforts are starting for the good of future generations.

Allergists should only drive hybrids, natural gas or electric cars.

Send results to your two U.S. senators and governing members of AAAAI.

Validated information from well controlled studies and trends need to be published and not opinions from financially driven companies, who want to sell products. Then again, even benefit of vaccination is touted, and groups who do not believe are more vocal than scientific groups. Where are the clinical immunologists explaining these to public? They hide behind their own ROI or animal models- and contribute nothing to population health care. AAAAI, ATS, National academy of sciences need to do more.

I believe that the justification for minimizing pollution, etc., is responsible stewardship of what we have.

Not just USA, but China, India, Middle East, Soviet Union need to address climate change, we all share the same Earth.

I have lived with an urban planner, so perhaps I am slightly biased. There are many studies in urban planning on effects of climate change (e.g., urban heat islands, etc.), but few of these seem to trickle down to the medical community.

I'd like to be involved with the movement for climate restoration.

Skepticism about climate change

Some of my answers are based on the fact that I am not clear on true climate changes and, if climate change is in fact occurring, what the health effects/potential health effects are.

We have been able to accurately measure temperature worldwide for 100-150 years. The earth has had cooling and warming effects from unknown causes prior to man made changes. We must reduce our pollution as it is, is simply common sense. I do not think man directly causes 'global warming'. Emerging nations like China and India are the largest polluters. So we need to figure out how they can have the benefit of cheap, CLEAN energy.

I take issue with the way in which this survey is framed as "climate change" when you are really asking about global warming. The earth's climate has always changed over time and will continue to change in the future. I believe that the potential for humans to cause [climate] change is miniscule compared to the forces contained in the earth (volcanoes, earthquakes) and the solar system. The data does not show warming over the past twenty years unless the numbers are adjusted. The issue of global warming is political, and our organization should stay out of this issue because it will tarnish our reputations if we jump on this bandwagon. If we get involved, it should be as unbiased scientists who look at evidence objectively and hold researchers on both sides to high standards- not accepting every flawed study suggesting global warming and calling skeptics "deniers."

(continued)

32. (Continued)

I believe that issue of climate changes evolved from initial idea of global warming and is part of political correctness. I am not aware of any convincing evidence that it is caused by man related activities. In fact I am not aware of any serious discussion on this subject and Al Gore presentations is not it. However it quite believable that Earth is subjected to cyclical temperature and climate changes as recorded in past several centuries.

How can we believe global warming when they make up temperature readings? <http://www.telegraph.co.uk/news/earth/environment/globalwarming/11395516/The-fiddling-with-temperature-data-is-the-biggest-science-scandal-ever.html>.

I think this survey is biased. It is sad that the academy is using its platform to support political issues like global warming which IS a natural phenomenon and using health issues to scare people and using the data obtained here to support directly or indirectly ideas that has not been proven. Unfortunately my voice is only minute, I realize that, but at least now I clearly know what AAAI's position is on this, which makes me disgusted.

I just cancelled my ski vacation because it is going to be 5 below zero for 4 days this weekend. Last week we had over 25 inches of snow in Boston, shutting down our practice for 2 days. I DID GET TO REREAD THE ARTICLE IN THE NEWYORK TIMES on the end of snow in New England published last year. I was able to ski at Stowe, Vermont in beautiful snow over thanksgiving weekend earlier than usual this year. Come to New England and let's discuss climate change myth outside this someday. What a waste of effort and money for the academy to spend time on this when insurance companies won't pay for life saving epi pens for kids with peanut allergy. - David Riester

Gosh this survey wasn't a bit prejudiced, was it? I can't wait for the validation... just like global warming, which is 99% political. It will be nice to grow rice in Siberia and Canada.

Sustainability and global warming are political agendas that have very little relevance to health care. It is a waste of resources to pursue this; it is fiscally irresponsible for medical organizations to involve themselves in such endeavors, but to remain "apolitical" and focus on patient care, not governmental agendas.

This is entirely inappropriate for this organization. Who do you think that you are? Climate change has ALWAYS occurred and blaming it largely on man is either arrogant and/or foolish. The clear liberal bias makes me consider dropping my membership.

I am not against a properly scientific, rigorous investigation of long-term climate trends. But when a single volcanic eruption puts more carbon into the air than all of human industry and I see the discourse of 'climate change' supporters devolve into the language of religion I worry that climate has been hijacked by the ideological left as yet another expedient concept to justify the latest scheme of resource redistribution according to the whims of centralized authorities. We should not rush to impose sweeping health care edicts in such a setting.

Poorly worded questions (most would truly be unanswerable) for those who respond "DON'T KNOW" to the question, "What do you think: Do you think that climate change is happening?"

History tell us that the earth temperatures vary tremendously from the ice age period up to Greenland being green long before the invention of the combustion engine etc. It is my understanding from NASA data and astrophysicists that these variations occur more because of astronomical issues unrelated to humans on earth (i.e. variations in solar activity, variations in our solar system position in milky way, etc. that results in increase or decrease of radiant heating from sun etc.). Thus, while we should be friendly to the earth's environment (which we all agree), I believe it is overly presumptuous to blame human activity for the variations in temperature of the earth that are still within the normal historical ranges.

Your questions assume that climate change is caused by human activities. Last I read, the amount of the warming caused by human activities was 20% of the total warming. So if we ended all human activities that cause warming, it would not make a significant difference in the amount of climate change in the future.

You did not include the possibility that there is climate change (which there always is) and that it is not necessarily caused by human activity.

"Would you like to assist in education or advocacy focused on climate and health in your community?" You wouldn't have a bias, would you?

Your survey seemed politically focused.

Bad questionnaire; rather worthless if you are trying to get honest opinions

This was a very biased study.

This is a patently biased and poorly-conceived "survey". The questions are very leading. And you fail to make a distinction between climate change and possible health effects thereof. One doesn't necessarily lead to the other. It probably was written by a naive college student.

The nature of the questions in this survey strongly suggest that it has been designed by people who have already made up their minds on this issue and are mainly interested in advocacy for a predetermined point of view. This is not going to be seen as a "scientific" study of any kind. Shame on you!

This survey had an enormous editorial bias. That is confirmed when it concludes by recruiting those being surveyed to join environmental activist groups in their community. You ask those being surveyed how knowledgeable they are. I ask in return, how knowledgeable are you?

When was the last time you prepared a scientific survey of physicians regarding their medical opinion and included a question re their political leanings? That alone ought to tell you something.

Very biased survey! Some questions cannot be answered if one does not accept the premise that climate change exists, please consider me a skeptic. Your survey has an evident 'liberal' bias. You have wasted my and others time.

See my comments within this extremely unscientific, biased survey. This is the equivalent of push polling by either of the major political parties and am embarrassed the AAAAI would be a party. The AAAAI should be more responsible with the moneys it receives from its membership and stick to medical science rather than joining the political activists trying to use science to justify ways to achieve their own socioeconomic goals.

Your survey makes assumptions that climate change is a relatively new phenomenon rather than a continuing evolutionary process of warming and cooling of our planet. Your presumption that man can impact this process is pure folly.

Climate is always changing. If you objectively look at the data there has been no significant change in average temperatures in the US or globally in the past decade or longer. Global warming, now euphemistically called climate change, has been discredited by professionals looking at the facts alone.

Global warming may be happening. Contribution of human activity is highly questionable. Why was there global warming 10,000 years ago? Nobody would say it was due to human activity. "Global warming" has become a very big business. Certain people particularly the academics are making a living out of this. Government has spent billions of dollars in this research so certain people, particularly the academics, have to keep the pot boiling to earn a livelihood. It all may be a big hoax.

(continued)

32. (Continued)

I believe the AAAAI has specific and definable targets for action that it should pursue, such as the migration of invasive species, the changing incidence and prevalence of certain allergies, rather than participation in some omnibus consortium where that fact-based message is lost in a political debate.

This is one of the poorest and most biased "research" tools I've come across. I feel the AAAAI should NOT have sent it to members.

The time and effort associated with creating and responding to this survey could more effectively be directed elsewhere.

Science is not based on consensus!

AAAAI needs to focus on important issues for the specialty. That is why we pay dues.

It seems Advocacy is a done deal for AAAAI. Stay out of politics!

Since global warming and climate change is already a "proven fact," this survey is a waste, or intended to target those "deniers."

Your survey showed a bias toward assuming that climate change is occurring. I do not have the expertise to make this conclusion and I am open to peer reviewed scientific data. In many questions of your survey it was not easy to make a decision that was free of the bias that climate change is occurring.

Your survey should be neutral. I am not a naysayer to climate change and I depend on rigorous data. I think it is occurring but I really do not know.

Because I believe that your survey was not neutral I question whether it is a bona fide data gathering exercise or a disguised effort at advocacy.

General Feedback

Thank you for conducting this survey.

Long survey - should have been shorter

I wasn't able to connect to the separate website for advocacy.

In my opinion, questions about race belongs to the 1930-ties.

Didn't get to answer some questions right. The program kept jumping ahead, and if I wanted to go back. I had to start at the beginning. I retired from private allergy practice in 2010 and currently teach at a medical school in Arizona. For about a third of the questions I wish we had a choice of a different option, or write in answer.

Some of the questions could not be answered because the bubbles did not respond.

Many of the questions do not fit in a yes or no format. Unfortunately, I would need to study the data before being able to answer these questions.

I would like to see results.

Tangential Responses

I find it interesting that we are trying to engage allergists and their leadership on climate change and other issues when they don't seem to be leading themselves very effectively.

When I saw Al Gore's movie I tried to have the temperature in our office changed by just two degrees Fahrenheit. The immediate reaction from the multi-specialty practice I was in was no. It went nowhere from there.

I have noticed among my patients who are practicing Christians, that generally Catholics who read and study the new testament are more likely to "believe in a human role in climate change" and the importance of recycling even if they are very conservative otherwise, versus other Christians who may focus more on the old testament "teachings" display a different attitude such as humans were given infinite resources and free hand on Earth and that God takes care of things. Appeasing deities was the way primitive civilizations approached climate changes thousands of years ago. This subject is at the core of how humans understand their own existence and reason of being.

My house burned down in one of the California wild fires as a result of drought.

Lobbying in Congress

In KY, we have been having the coldest winters in many years.

A review article entitled Climate Change and Allergic Disease (Dapul-Hidalgo, Bielory) addressing these issues was published in the September 2013 issue of Annals of Allergy, Asthma and Immunology.