# Executive Summary: Adult


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## Screening for Adults with Nasal Allergies

The identification and interview of a national sample of 2,500 adults with allergic rhinitis was conducted by telephone screening of a national sample of households selected by random digit dialing. The RDD sample for household screening was geographically stratified in proportion to adult population. There were no quotas by region or gender since the population parameters for the distribution of allergies were unknown.

An adult respondent was interviewed in a national sample of 31,470 households between January 5 and January 21, 2006. A total of 6,470 of these households initially reported that one or more adults in the household had been diagnosed with hay fever, rhinitis or nasal allergies. Since there were more than one adult in many households, a total of 8,735 adults with allergies were identified among a total population of 61,655 adults in the households screened.

The requirement for eligibility in the survey was restricted to adults with current nasal allergies. Hence, in addition to having been diagnosed with nasal allergies, eligible respondents either had to have had symptoms in the past year or be taking medicine for their allergies. A total of 5,970 households reported persons diagnosed with nasal allergies who were either symptomatic or being treated for the condition.

Individual level screening was conducted to confirm survey eligibility. In order to designate a single eligible respondent in each household, the ages of all persons with current diagnosed nasal allergies was requested from the household informant with whom the household level screening was conducted. (The gender of all eligible respondents was also added to the screener after the first week in the field.) A total of 5,645 respondents were randomly selected and designated by age (and gender) as the person to be interviewed about their allergies.

During the relatively short field period, 3,482 out of the total 5,645 potentially eligible respondents could be reached to conduct the individual level screening. In most cases, these respondents were in callback status to conduct the individual level screening. Since the field period was less than four weeks long, more potentially eligible samples had to be identified than could be interviewed to ensure that 2,500 eligible respondents could be interviewed by the end of the field period.

Among the 3,482 selected respondents reached for individual screening, 178 refused to conduct the screening, compared to 3,304 who agreed to continue. A total of 2,933 out of the 3,304 respondents confirmed that they had ever been diagnosed with hay fever, allergic rhinitis or nasal allergies. Slightly fewer, 2,878 confirmed that they had allergy symptoms or were being treated for their allergies.

Among the national sample of 2,878 persons who confirmed that they had been diagnosed with nasal allergies and continued to suffer from them or were receiving treatment for them, 2,865 began the interview. A total of 365 of these eligible respondents did not complete the interview due to its length (35 minutes). Some of these were in “callback to complete” status at the time that the desired sample size of 2,500 completed interviews with eligible nasal allergy sufferers was reached.

The age and gender of the eligible sample from the household screening was used to weight the achieved sample. This should eliminate any age and gender bias in the completion rate among the eligible respondents.

## Overview

**Allergies in America: A Landmark Survey of Nasal Allergy Sufferers** is the largest and most comprehensive national survey of patient and health provider perspectives concerning allergic rhinitis, more commonly known as nasal allergies or "hay fever." A national probability sample of 2,500 adults, aged 18 and older, who had been diagnosed with allergic rhinitis, nasal allergies or "hay fever", and who had nasal allergy symptoms or had taken prescription medicine for allergies in the past 12 months, were interviewed by telephone about their condition and treatment. This national sample of patients with nasal allergies was obtained by systematically screening a national sample of 31,470 households in the United States to identify nasal allergy sufferers. Individual screening was conducted with a randomly selected patient (if more than one) in the household to confirm that they had been diagnosed with nasal allergies and suffered from them or been treated for them in the past 12 months. A parallel survey was conducted among 400 healthcare practitioners, including a national sample of 300 doctors in direct patient care in outpatient settings --- including 100 in Adult Primary Care specialties, 100 in Allergy, and 100 in Otolaryngology, as well as 50 Nurse Practitioners and 50 Physician Assistants --- were interviewed as part of the survey **(Figure 1)**.

The survey was conducted by the national public opinion research organization, Schulman, Ronca and Bucuvalas, Inc. (SRBI). Serving as advisors on the project were Michael Blaiss, MD, Jennifer Derebery, MD, James Hadley, MD, Eli Meltzer, MD, Robert Naclerio, MD, Harold Nelson, MD, and Stuart Stoloff, MD.

**Figure 1**

**Study Design**

| Population | Sampling Frame | Interview Length | Completed Sample |
|---|---|---|---|
| Population Aged 18+ diagnosed with hay fever, allergic rhinitis or nasal allergies, symptomatic or being treated for nasal allergies in the past 12 months | National RDD | 34.8 minutes | 2,500 |
| | | | |
| Health Professionals | | 19.4 minutes | |
| Doctors | AMA/AOA Master List: | | |
| – Adult Primary Care | | | 100 |
| – Allergy | | | 100 |
| – Otolaryngology | | | 100 |
| Nurse Practitioners | State Licensing Boards | | 50 |
| Physician Assistants | American Academy of Physician Assistants | | 50 |

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The survey results yielded a number of important conclusions about the current state of nasal allergies among adult Americans.

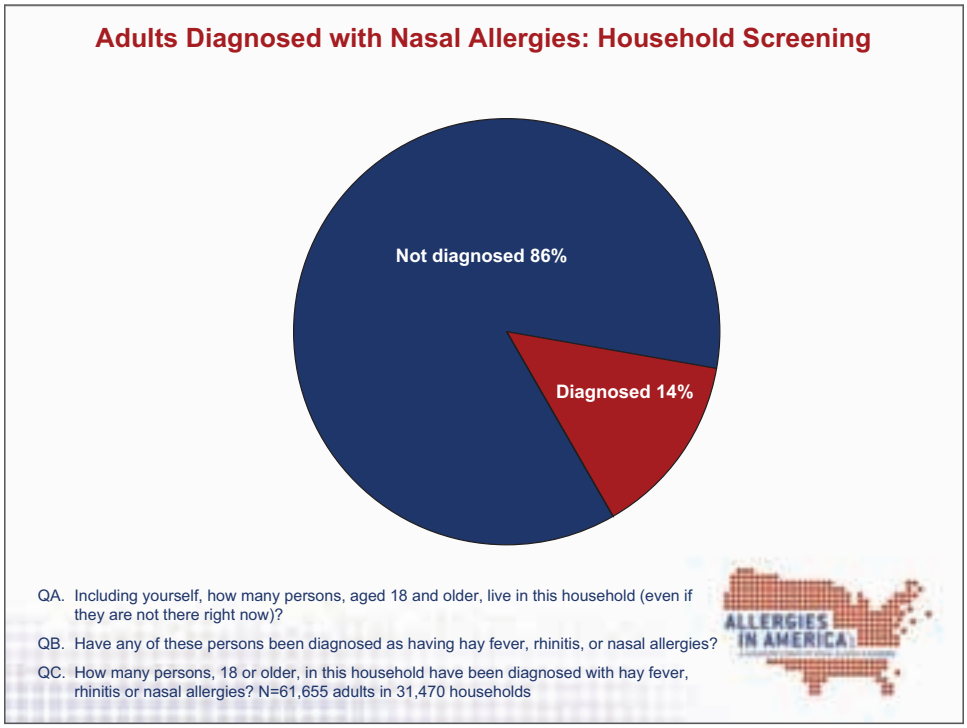
- One in seven adults surveyed in the United States (14%) have reported having been diagnosed with nasal allergies. If this incidence rate is extrapolated to the general population that would equate to approximately 30 million persons in the United States being afflicted with Allergic Rhinitis;
- Nasal congestion was the most frequent and bothersome symptom for patients;
- Patients suffer considerable discomfort during allergy attacks, such that nearly two out of five (38%) said that their discomfort was not tolerable without relief;
- Cost of nasal allergies to employers is considerable with an average productivity loss of 25% among workers on days when their allergies are at their worst, in addition to 30% of those employed losing workdays to allergies in the past year;
- Most patients with allergic rhinitis (69%) have taken medication for their nasal allergies in the past 4 weeks, including 45% using prescription medicines;
- Nearly half of patients reported that their nasal allergy medicine does not provide 24-hour relief and most patients reported that continuing effectiveness began wearing off after a matter of months;
- Patient dissatisfaction with the effectiveness of nasal allergy medicines caused them to ask their doctor to change medication or to simply stop taking them;
- Healthcare professionals have a good understanding of the burden of disease among patients with allergic rhinitis who see their doctor;
- However, healthcare professionals overestimate patient satisfaction with their prescription medications and the management of their condition;
- Patient non-compliance with prescribed treatment for the condition is driven more by dissatisfaction with product effectiveness and duration than side effects, cost or ease of administration;
- Doctors and patients agreed that better education of patients with allergic rhinitis about their condition and treatment is important;
- With less than half of primary care doctors aware of any professional guidelines for the management of allergic rhinitis, improved professional education is important as well.

The findings from the Allergies in America survey identify important challenges to the treatment and management of one of the most common chronic diseases in the United States. Half of the patients who have been diagnosed with the condition, and who continue to be symptomatic, have not seen a doctor about their nasal allergies in the past year. Those patients who do see a doctor may not follow the prescribed treatment regimen because of dissatisfaction with the medication – and fail to inform their physician. Health professionals overestimate their patients' satisfaction with their disease management and their allergy medicines. Most patients with nasal allergies see a primary care doctor for the management of their condition, and most primary care doctors are not aware of professional guidelines for the diagnosis and management of allergic rhinitis. Overall, the survey finds considerable room for improvement in the management of allergic rhinitis in the United States. The Allergies in America survey also provides a baseline against which progress towards better management of this condition can be assessed in the coming years.

## Allergic Rhinitis and the American Public

Although allergic rhinitis is recognized as one of the most common chronic conditions in the United States, the population prevalence and incidence rates published for allergic rhinitis differ. The population prevalence and incidence of allergic rhinitis is not collected in the national health surveys conducted by the Federal government, such as the National Health Interview Survey and the National Health and Nutrition Examination Survey. The National Health Interview Survey estimates the rate of "hay fever", one component of allergic rhinitis, at 9%.[1] The International Survey of Asthma and Allergy in Children (ISAAC) has estimated the prevalence of "hay fever" in the United States at 16%.[2] The American Academy of Allergy, Asthma and Immunology has estimated that more than 50 million Americans suffer from allergic diseases, which would represent about 23% of the current population of 213 million.[3] The National Health and Nutrition Examination Survey found that more than half of the public tested positive to one or more allergens.[4] The Agency for Healthcare Research and Quality, like many other authoritative sources, has simply concluded that 10 to 30 percent of adults are affected by allergic rhinitis, making it the sixth most common chronic illness in the United States.[5] The wide variation in the estimates of prevalence of allergic rhinitis in the United States is the result of differences in definitions of the condition, sampling frame and data collection methods.

**Figure 2**



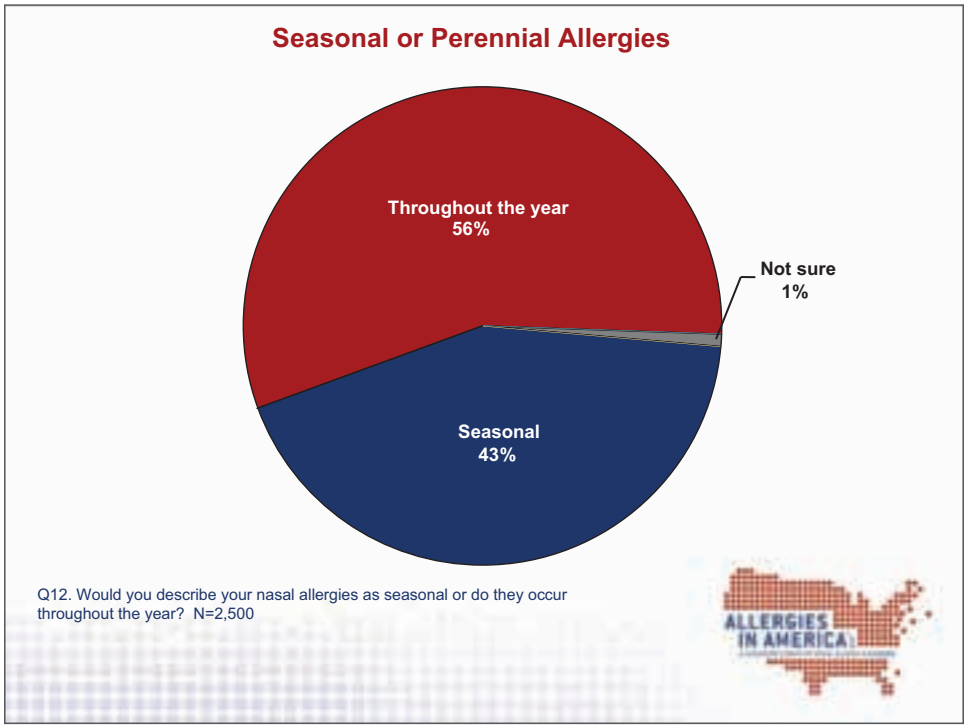
The population for Adult Allergies in America was restricted to adults, aged 18 or older. The data collection method of a telephone survey restricts the sampling frame to the approximately 95% of the U.S. population in telephone households. An adult household informant was used to report on the total number of adults in the household and the total number of adults who have been diagnosed with nasal allergies. In a national sample of 31,470 households, the survey found a total of 8,735 adults reported to have been diagnosed as having nasal allergies out of 61,655 adults living in those households. Hence, the Allergies in America survey suggests that approximately 14.2% of the adult population of the United States, or approximately 30 million persons, have been diagnosed with nasal allergies **(Figure 2)**.

Since the purpose of the Allergies in America Survey was to describe the symptoms, burden of disease and treatment of allergic rhinitis, the definition of the study population was further restricted to patients with current or active nasal allergies. At the household level, the eligibility was restricted to diagnosed persons who had symptoms like sneezing, itching, watery eyes, nasal congestion or other nasal allergy symptoms in the past 12 months, or who had taken any medication for "hay fever", rhinitis or nasal allergies in the past 12 months. At the individual level, the designated respondent was confirmed to have been diagnosed with "hay fever", allergic rhinitis or nasal allergies and experienced symptoms of "hay fever" or nasal allergies in the past 12 months; or had taken prescription medication to treat nasal allergies in the past 12 months. A total of 2,500 interviews, averaging approximately 35 minutes in length, were completed with this national sample of patients diagnosed with allergic rhinitis and symptomatic or being treated for this condition in the past 12 months. The interviews were conducted between 1/5/06 and 1/31/06.

## Nasal Allergy Symptoms

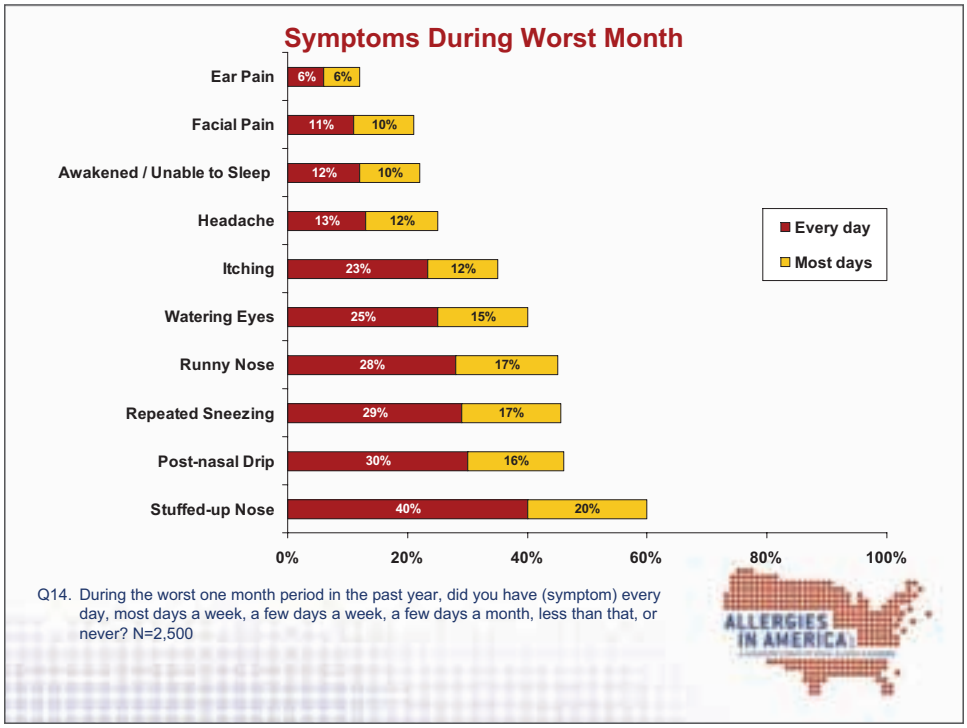
Less than half of patients with nasal allergies (43%) said they would describe their nasal allergies as seasonal. The majority (56%) said that their nasal allergies occurred throughout the year **(Figure 3)**. Nonetheless, 71% of those who considered their allergies as occurring throughout the year reported that their allergy symptoms were more frequent or worse during certain times of the year.

**Figure 3**



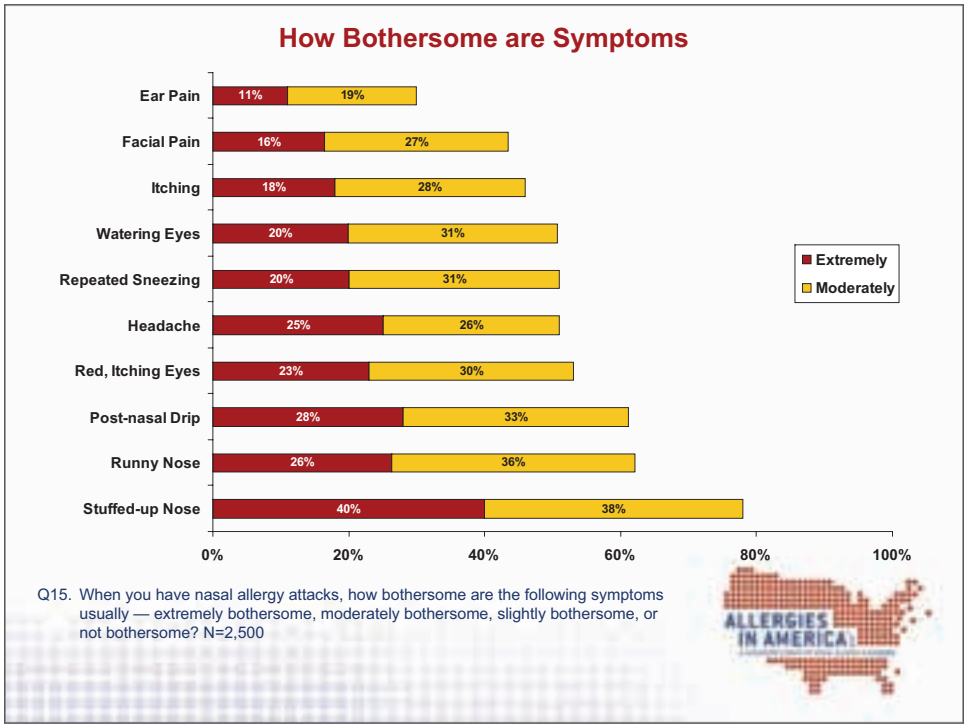
Given the variability of allergy severity, patients with nasal allergies were asked about the frequency with which they experienced ten allergy symptoms during the most severe one month period within the past year. The most frequent symptom experienced as a result of nasal allergies is nasal congestion or a stuffed up nose. Nearly 60% of patients with nasal allergies reported nasal congestion either every day (40%) or most days a week (20%) during their worst one month of allergies in the past year. Nearly half of patients with nasal allergies reported post-nasal drip (46%), repeated sneezing (46%) and runny nose (45%) on all or most days during their worst month in the past year. Two out of five (40%) reported watering eyes on all or most days during their worst one month period. More than a third (35%) reported itching on all or most days. A quarter or less reported headache (25%), being awakened by symptoms (22%) and facial pain or pressure (21%) on all or most days. Ear pain was the least common symptom, reported by 12% of nasal allergy sufferers on all or most days during their worst one month period during the past year **(Figure 4)**.

**Figure 4**



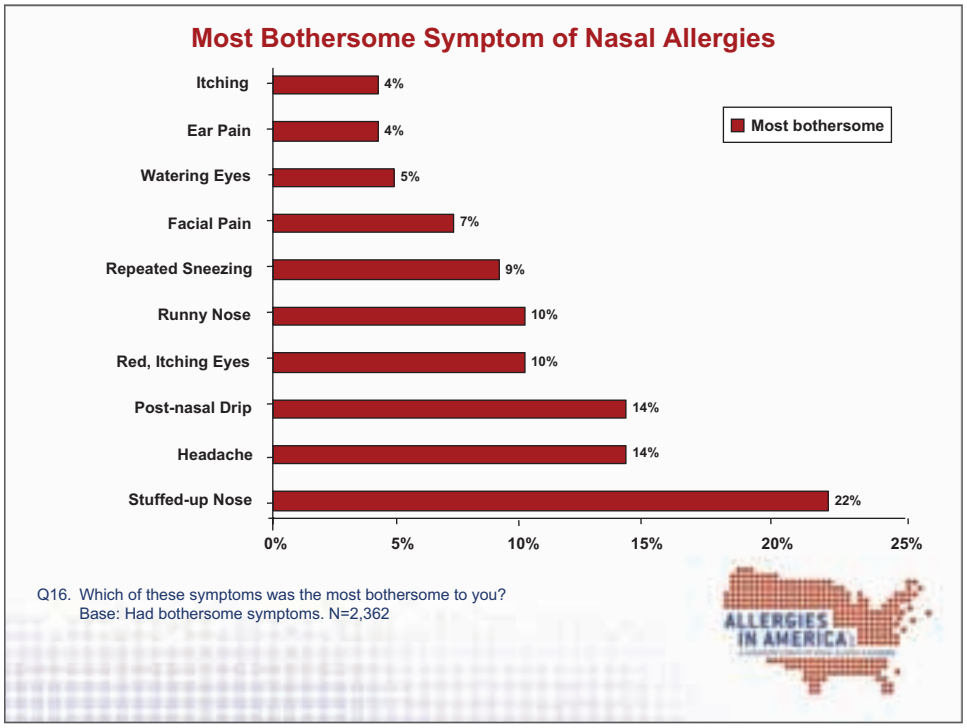
Allergy sufferers were also asked how bothersome their specific symptoms of nasal allergies were during nasal allergy attacks. Nasal congestion or stuffed up nose was the most bothersome symptom of nasal allergies. Nearly four out of five patients with nasal allergies reported nasal congestion as extremely bothersome (40%) or moderately bothersome (38%) when they had nasal allergy attacks. Three out of five allergy sufferers reported a runny nose (62%) and post-nasal drip (61%) as usually extremely or moderately bothersome during allergy attacks. About half of nasal allergy sufferers reported red, itching eyes (53%), headache (51%), watering eyes (51%) and repeated sneezing (51%) as extremely or moderately bothersome. Fewer than half reported itching (46%), facial pain or pressure (43%), and pressure related ear pain (30%) as usually extremely or moderately bothersome during nasal allergy attacks **(Figure 5)**.

**Figure 5**



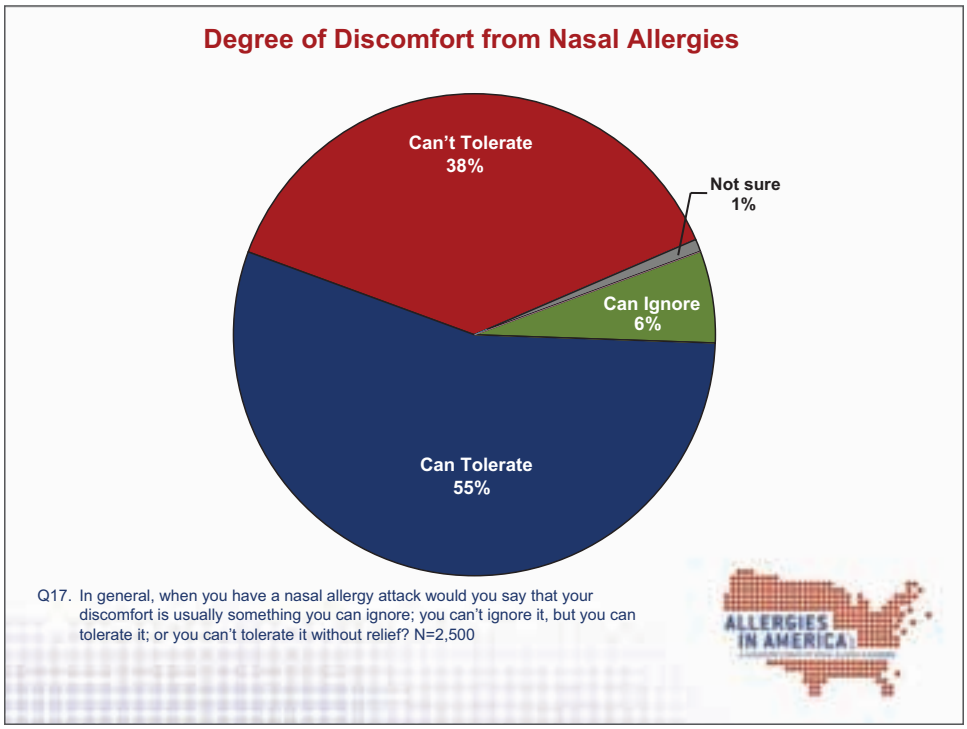
Nearly all of the nasal allergy sufferers (94%) reported some symptoms as usually extremely or moderately bothersome during allergy attacks. These individuals were asked which single symptom was most bothersome to them. Nasal congestion or stuffed up nose was the symptom most commonly identified by allergy sufferers (22%) as the most bothersome. Post-nasal drip (14%) and headache (14%) were the next most common symptoms described as most bothersome. Red, itching eyes (10%), runny nose (10%), repeated sneezing (9%) and facial pain or pressure (7%) were somewhat less commonly described as the most bothersome symptoms of nasal allergies. The symptoms that were least likely to be described as the most bothersome symptom were watering eyes (5%), ear pain (4%) and itching (4%). **(Figure 6)**

**Figure 6**



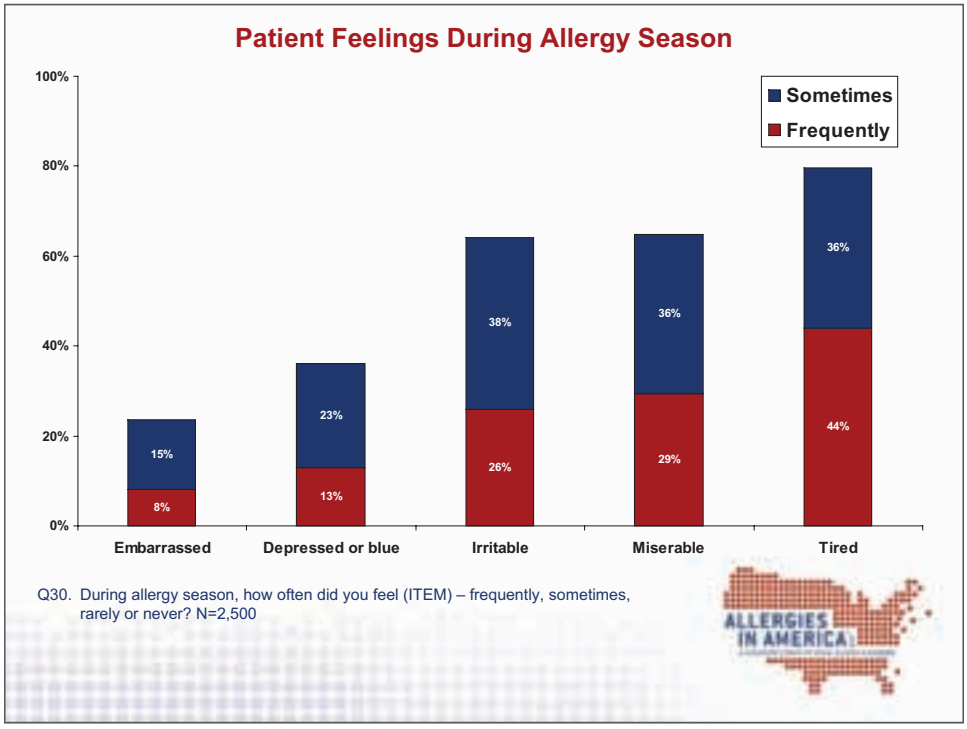
Patients with nasal allergies reported a significant amount of discomfort during nasal allergy attacks. Only 6% of allergy sufferers said that, in general, when they had a nasal allergy attack, the discomfort was something they could ignore. By contrast, the majority of nasal allergy sufferers said their discomfort during an allergy attack was something that they could not ignore, but could tolerate. Nonetheless, nearly two out of five patients with allergic rhinitis said that the discomfort that they experienced during a nasal allergy attack was something they could not tolerate without relief **(Figure 7)**.

**Figure 7**



Aside from physical symptoms, nasal allergies can cause a major burden on sufferers' mood and feelings. Four out of five allergy sufferers reported that they frequently (44%) or sometimes (36%) felt tired during allergy season. Nearly two-thirds of patients with allergic rhinitis reported that they frequently (29%) or sometimes (36%) felt miserable. Approximately the same proportion of patients said that they frequently (26%) or sometimes (38%) felt irritable during allergy season. More than a third said that they frequently (13%) or sometimes (23%) felt depressed or blue during allergy season. Less commonly, allergy sufferers reported that they frequently (8%) or sometimes (15%) felt embarrassed during allergy season **(Figure 8)**.

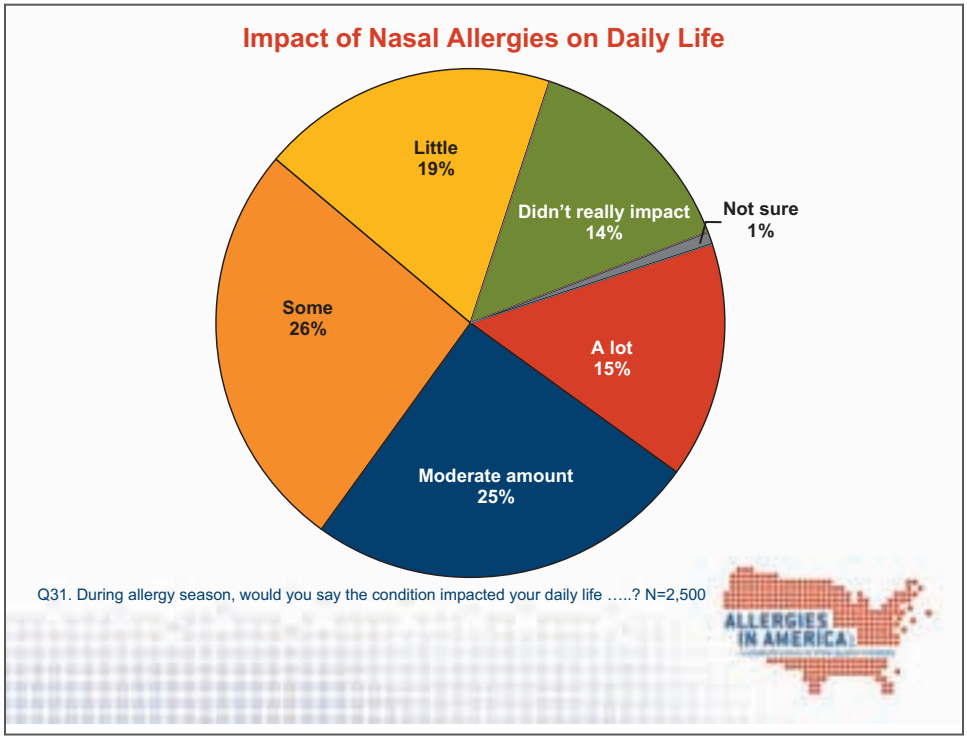
**Figure 8**



## Impact of Nasal Allergies on Patients

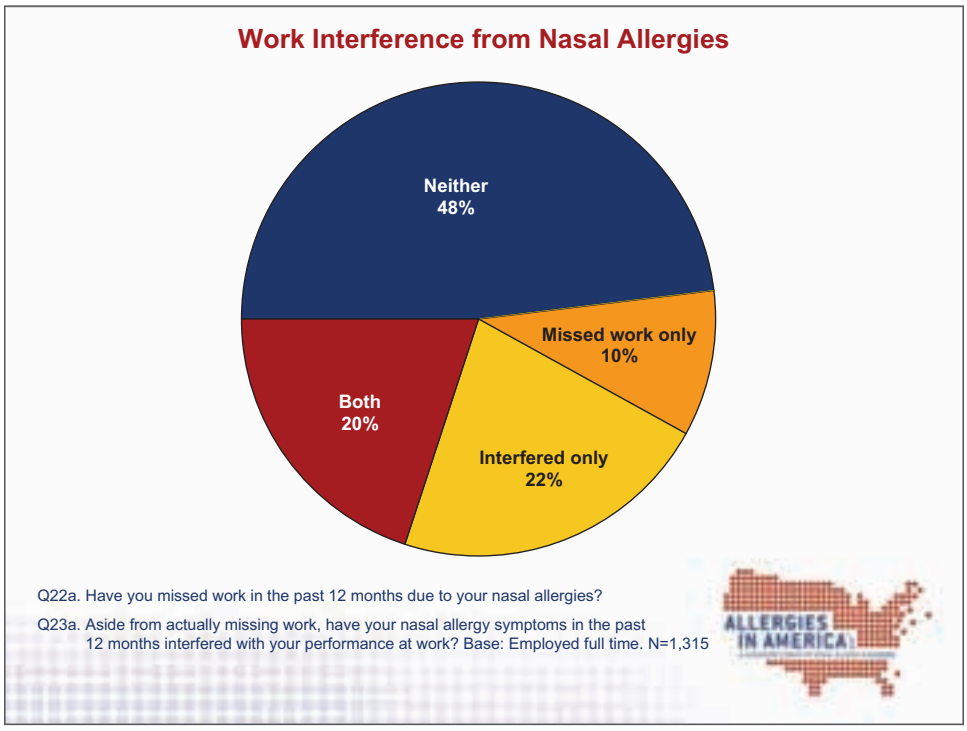
Almost all patients with allergic rhinitis said that the condition had an impact on their life during allergy season. Two in five patients with nasal allergies said that the condition had a lot (15%) or a moderate amount (25%) of impact on their daily life. Another 26% reported that nasal allergies had some impact on their daily life. By contrast, only a minority said the condition had a little (19%) or no impact (14%) on their daily life **(Figure 9)**.

**Figure 9**



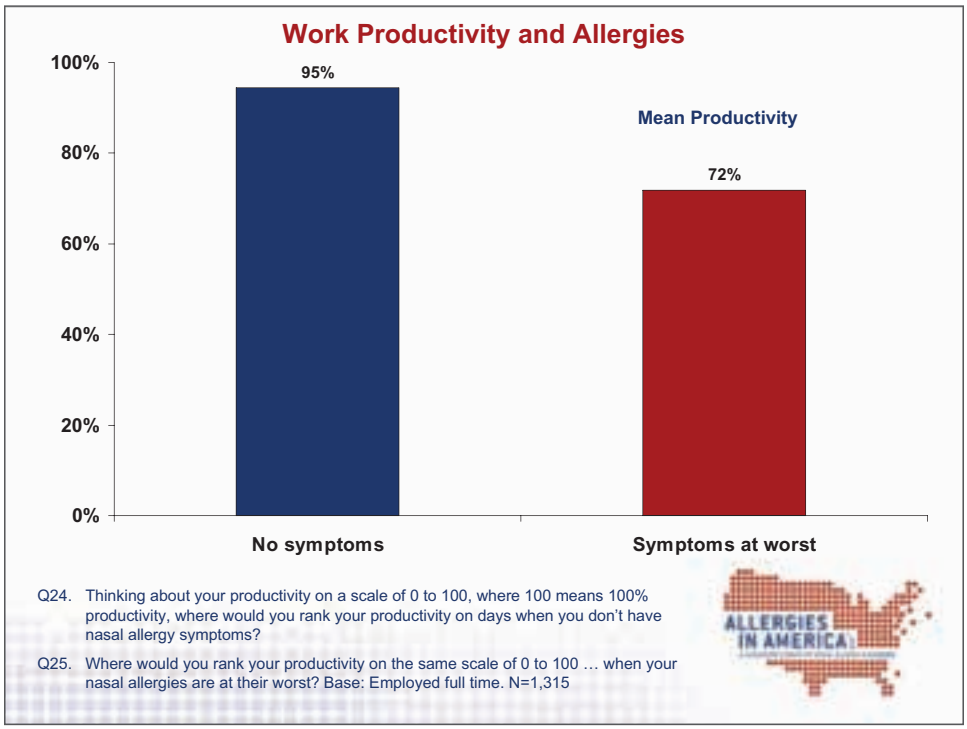
A majority of patients with nasal allergies reported that they were currently employed full time or in the military. The majority (52%) of employed patients with nasal allergies reported their allergies caused them to miss work or interfered with their performance at work during the past 12 months. Three out of ten (30%) said that they had missed work during the past 12 months due to their nasal allergies. More than two out of five (42%) said that nasal allergy symptoms interfered with their performance at work. One in five patients with nasal allergies who were employed full time said that their allergies both caused them to miss work and interfered with their performance at work on days they were there **(Figure 10)**.

**Figure 10**



The issue of allergy symptom interference with work has often been described, but rarely quantified. To do so in this survey, employed allergy sufferers were asked to rank their productivity on a scale of 0 to 100 on days when they did not have nasal allergy symptoms. On average, employed patients with nasal allergies rated their productivity at 95% on days without allergy symptoms. However, when their nasal allergies were at their worst, the same workers ranked their productivity at 72% on average. This suggests an average productivity loss of about 25% for nasal allergy sufferers on days when their symptoms were at their worst **(Figure 11)**.

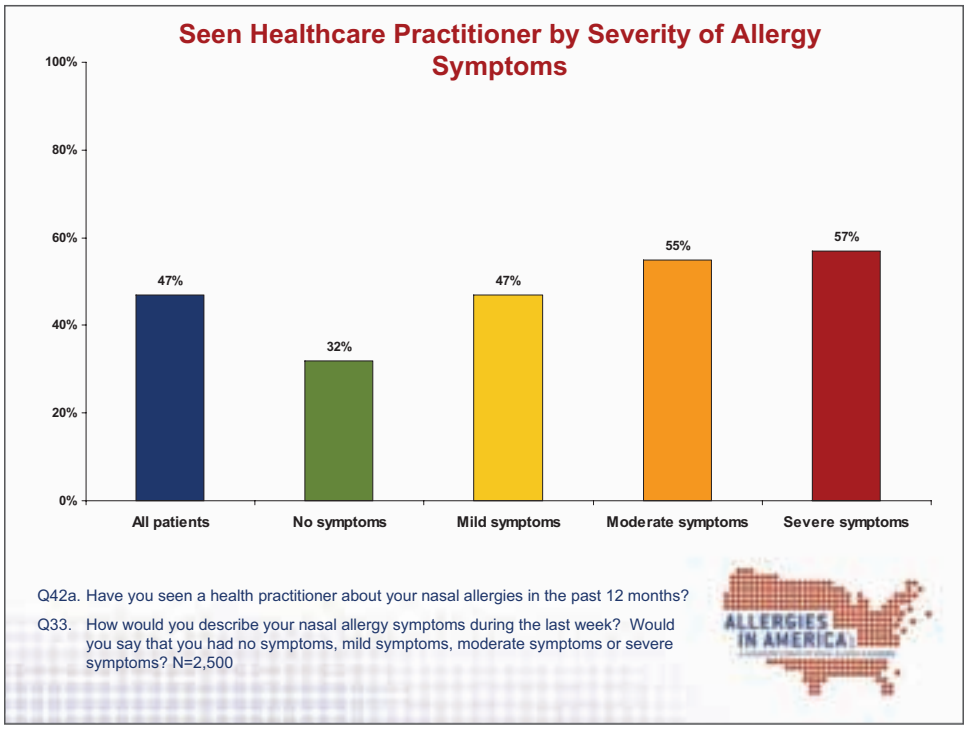
**Figure 11**



## Treatment of Nasal Allergies

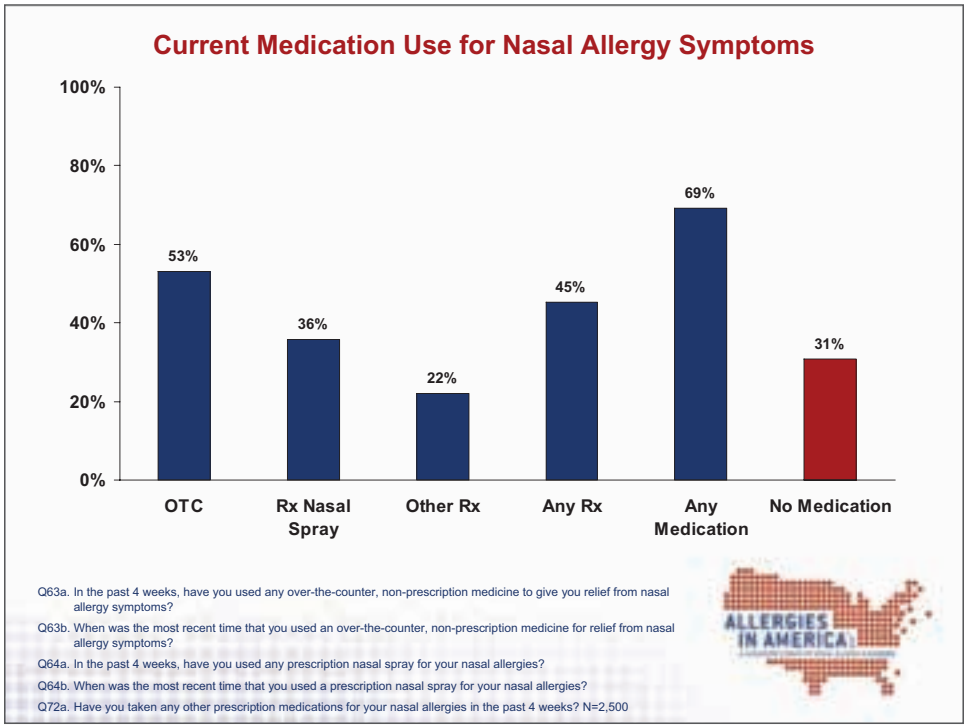
Despite the impact of symptoms and burden of disease, less than half (47%) of nasal allergy sufferers reported seeing a health practitioner about their nasal allergies in the past 12 months. Symptom severity was associated with treatment seeking among patients with nasal allergies. Only a third (32%) of those who said they had no symptoms in the past week reported seeing a doctor for their allergies in the past year, compared to 47% of those with mild symptoms, 55% of those with moderate symptoms, and 57% of those with severe symptoms **(Figure 12)**. However, it is notable that more than two out of five (41%) patients who reported severe nasal allergy symptoms in the past week had not seen a doctor about their allergy symptoms in the past year.

**Figure 12**



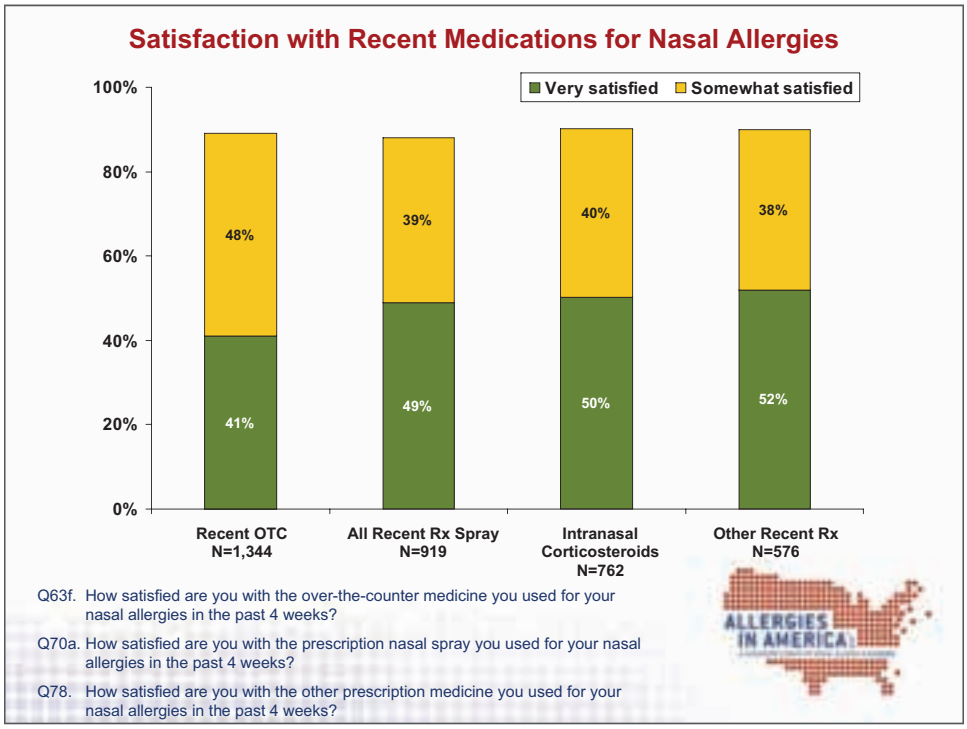
Most nasal allergy sufferers take some medication for their condition. More than half (53%) reported that they have used an over-the-counter, non-prescription medicine to give them relief from nasal allergy symptoms in the past four weeks. More than a third (36%) said that they have used a prescription nasal spray for their nasal allergies in the past four weeks. More than one in five (22%) reported taking some other prescription medications for their nasal allergies in the past four weeks. Somewhat fewer nasal allergy sufferers reported taking any prescription medicine for their nasal allergies (45%) in the past four weeks than over-the-counter medicines (53%). In total, nearly seven out of ten (69%) nasal allergy sufferers reported taking either an OTC or prescription medicine for their nasal allergies in the past four weeks **(Figure 13)**.

**Figure 13**



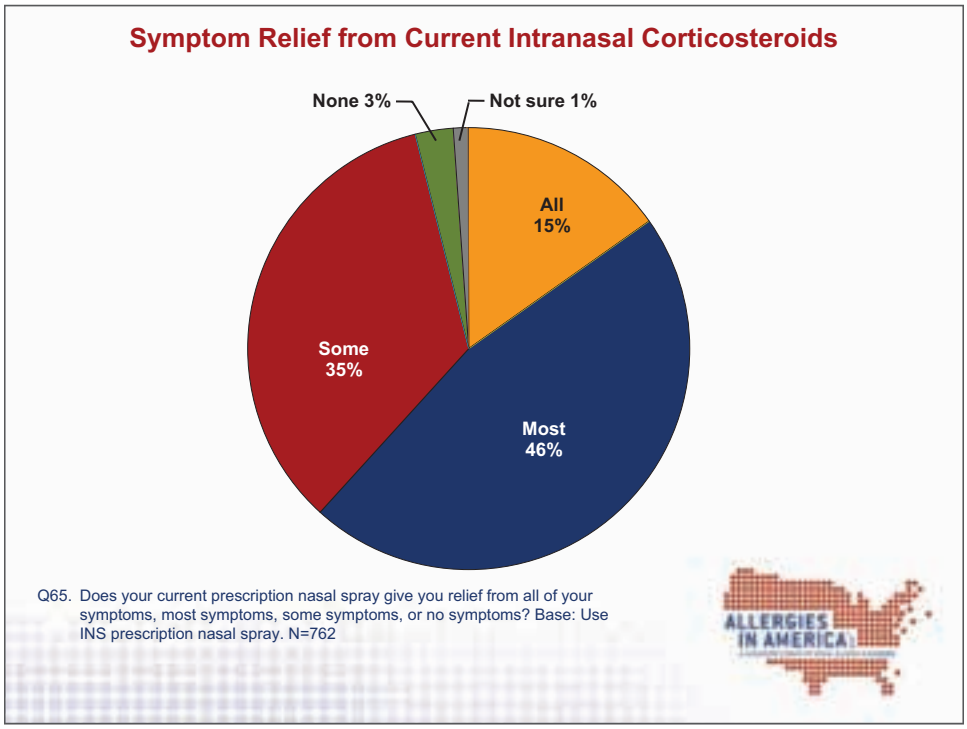
Most allergy sufferers who were taking medication for their symptoms were less than very satisfied with the products they have used in the past four weeks. Among those who have used an OTC for the nasal allergy symptoms in the past four weeks, 41% said that they were very satisfied with the medicine they used. Among those who have used a prescription nasal spray for their allergies in the past four weeks, 49% said that they were very satisfied with the product they were using. The specific medications reported by those using a prescription nasal spray in the past 4 weeks were overwhelmingly intranasal corticosteroids. When looking only at those using INS medications, 50% said that they were very satisfied with the product and 40% said they were somewhat satisfied. Finally, a bare majority of 52% of those using some other type of prescription medicine for their allergy in the past four weeks said that they were very satisfied with the medicine. But while many allergy sufferers were not "very" satisfied with the medicines they were using, the vast majority of those using OTC medicines (89%), prescription nasal sprays (88%) and other prescription medicines (90%) were at least "somewhat" satisfied with the products they were using **(Figure 14)**.

**Figure 14**



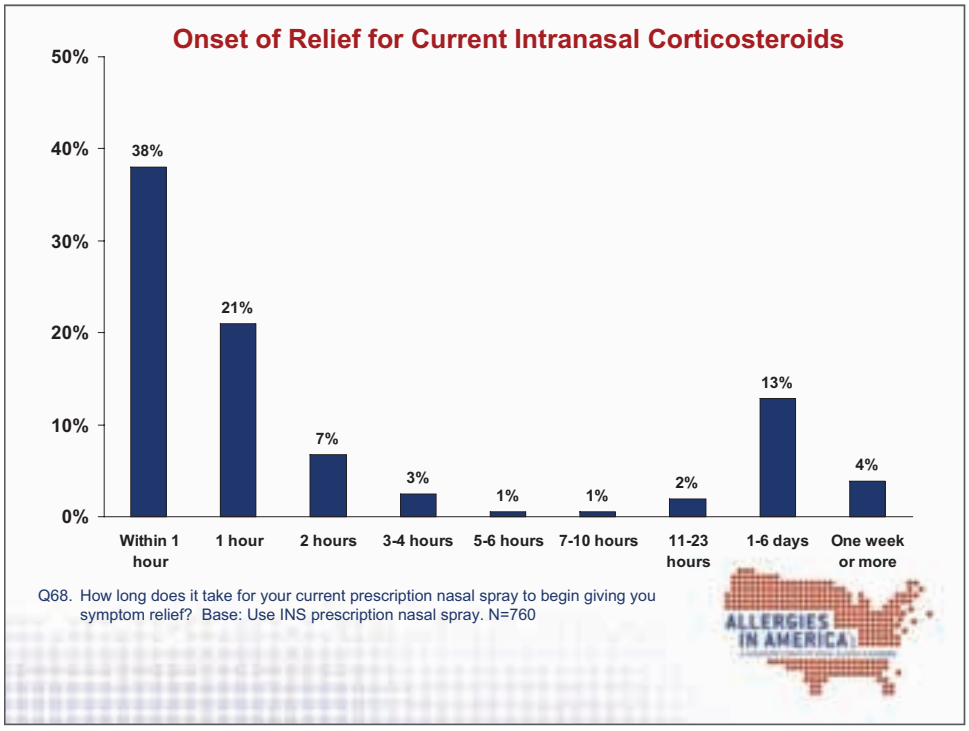
In order to better understand treatment satisfaction among patients with allergic rhinitis, patients were asked how the medicines they were currently taking performed on speed of relief, completeness of relief, and duration of relief. For example, patients who had used a prescription nasal spray in the past four weeks were asked whether their current prescription spray gave them relief from all of their symptoms, most symptoms, some symptoms, or no symptoms. Only 15% of those using a prescription nasal spray said their current prescription gave them relief from all of their symptoms. Nearly half (46%), however, said that their current prescription gave them relief from most of their symptoms. By contrast, more than a third (35%) said that their current prescription nasal spray gave them relief from only some symptoms, and 3% said it gave them relief from no symptoms **(Figure 15)**.

**Figure 15**



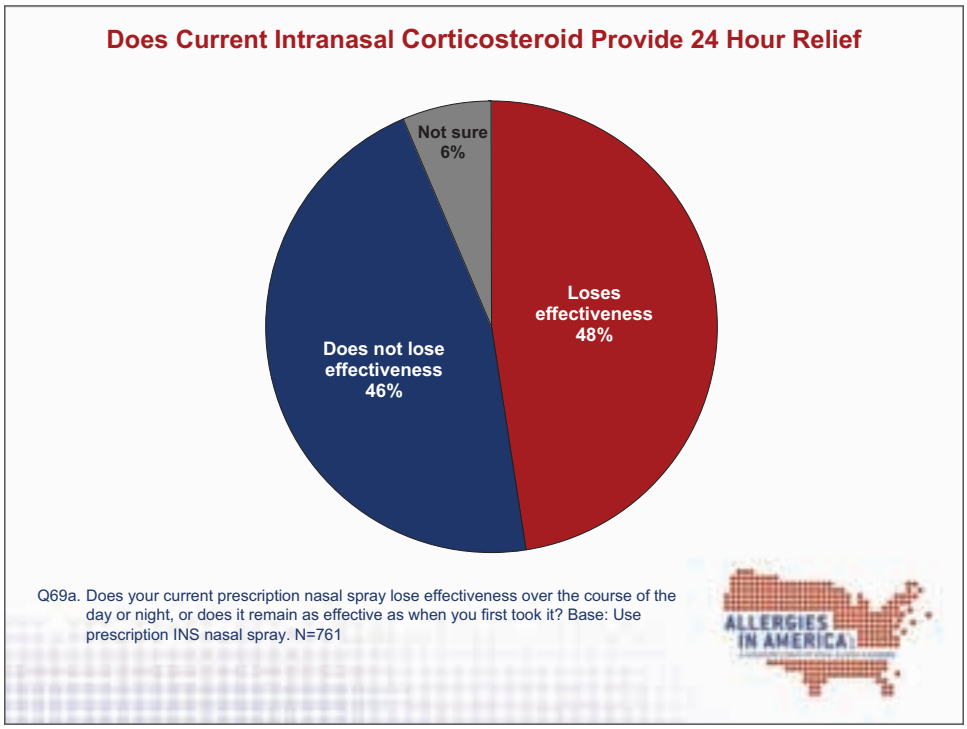
Patients using prescription intranasal corticosteroids reported very fast symptom relief. Indeed, the majority reported that their current prescription nasal spray began giving them symptom relief in less than one hour (38%) or in one hour (21%). Only a small proportion of prescription nasal spray users (17%) reported that it took more than 24 hours for their prescription to begin giving them symptom relief **(Figure 16)**.

**Figure 16**



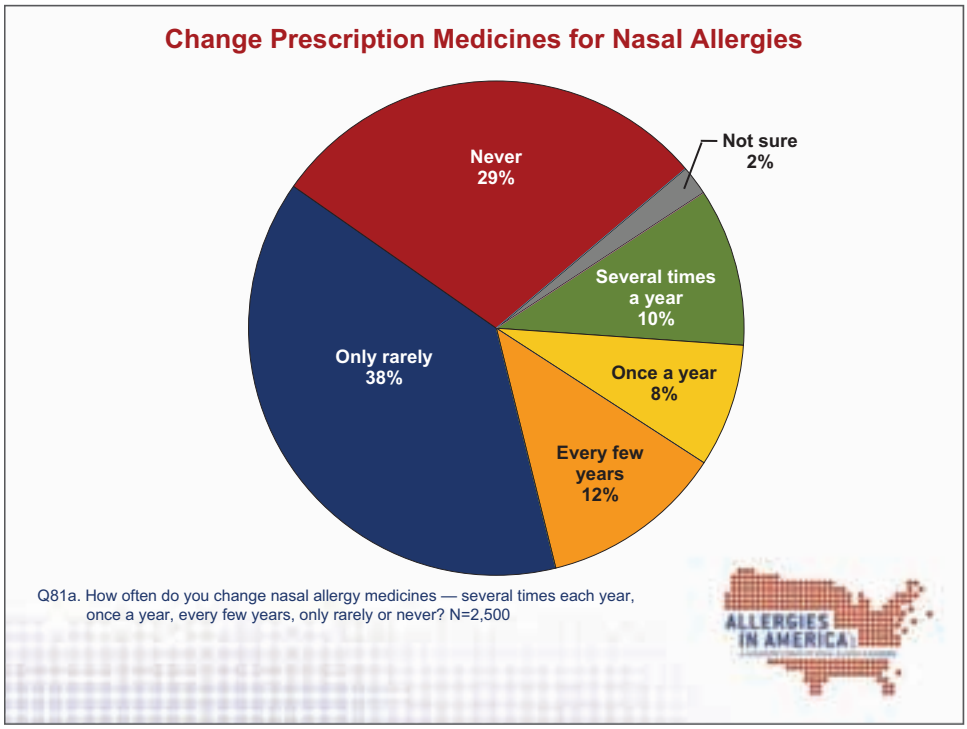
Although most users of prescription intranasal corticosteroids credit their current prescription with quick relief, most do not credit it with long lasting relief. When asked whether their current prescription nasal spray loses effectiveness over the course of the day or night, or remains as effective as when they first took it, nearly half (48%) reported that it lost effectiveness. Another 6% were not sure whether it lost effectiveness. Only 46% of those who had used a prescription nasal spray in the past four weeks said that their current prescription remains as effective as when they first took it **(Figure 17)**.

**Figure 17**



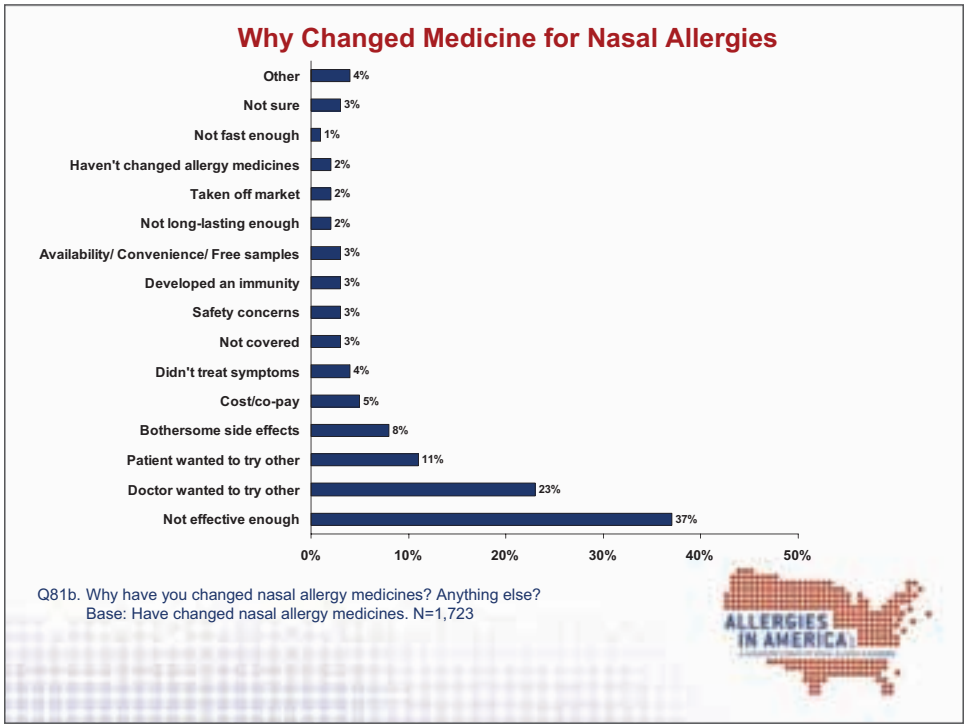
Patients with allergic rhinitis sometimes change their allergy medicines. Three out of ten said that they change their allergy medicines several times a year (10%), once a year (8%) or every few years (12%). Nearly two of out five patients (38%) said that they rarely change their nasal allergy medicines. Less than three out of ten (29%) nasal allergy sufferers said that they never change their allergy medicines **(Figure 18)**. Those who were currently taking a prescription nasal spray (37%) or had seen a doctor in the past 12 months about their allergies (37%) were more likely to have changed allergy medicines at least every few years.

**Figure 18**



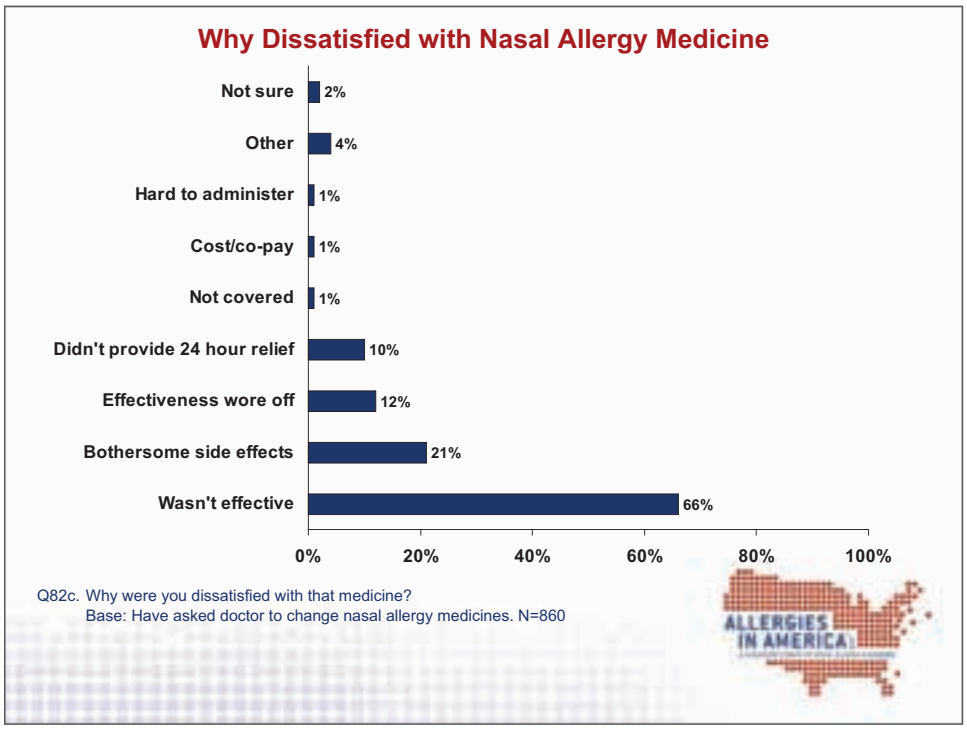
The allergy patients who reported having changed their allergy medicines were asked the reason for changing nasal allergy medicines. The most common reason for changing medications was that the allergy medicine was not effective enough (37%). The next most common reasons for changing allergy medicines were that either the doctor wanted them to try another medicine (23%) or the patient wanted to try another medicine (11%). Bothersome side effects were cited by only 8% of those who changed allergy medicines as the reason for changing. Fewer still reported cost or co-payments (5%), not covered by insurance (3%) or safety concerns (3%) as the reason for changing nasal allergy medicines **(Figure 19)**.

**Figure 19**



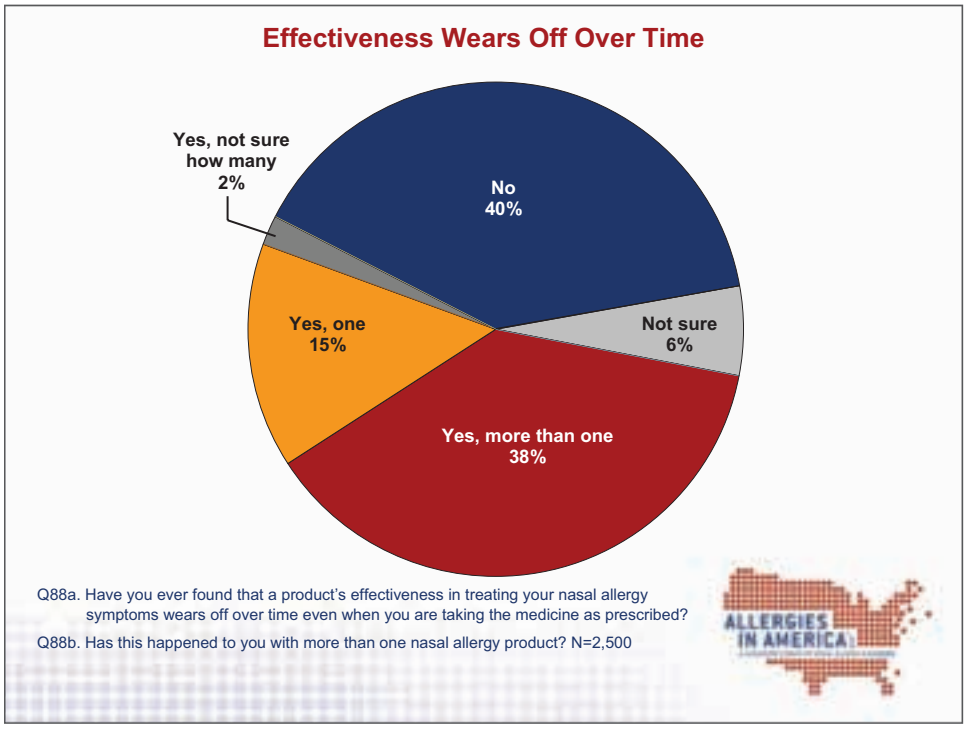
Although relatively few nasal allergy sufferers said that they were dissatisfied with their current over-the-counter or prescription allergy medications, a third (34%) said that they had asked their doctor to change their nasal allergy medication because they were dissatisfied with it. Two-thirds (66%) of those who asked their doctor to change their allergy medication because of dissatisfaction with it said the reason was that the medicine was not effective enough. Bothersome side effects (21%) were a very distant second to effectiveness as the reason for dissatisfaction with allergy medication. Effectiveness wearing off (12%) and not providing 24-hour relief (10%) also caused patients to ask their doctors to change their allergy medication. By contrast, almost no one who asked their doctor to change their allergy medicine because they were dissatisfied with the medication said insurance coverage (1%), cost or co-payment (1%), it was hard to administer (1%) or some other reason (4%) were the reasons for their dissatisfaction **(Figure 20)**.

**Figure 20**



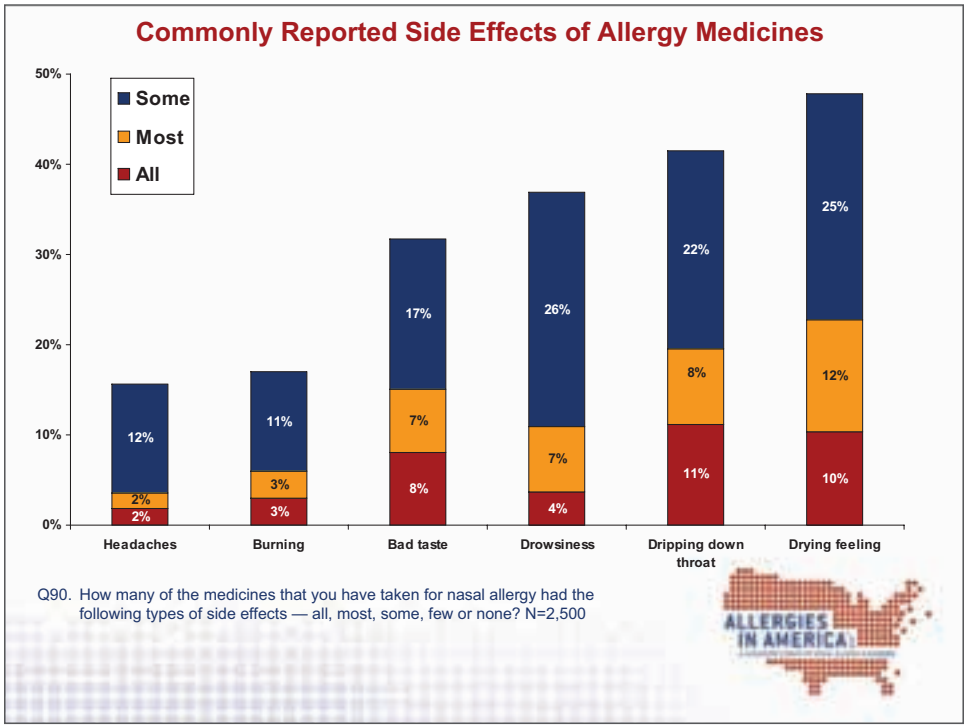
Aside from loss of effectiveness throughout the day, allergy patients were asked whether they ever found a product's continuing effectiveness in treating their nasal allergy symptoms wearing off over time even when taking the medicine as prescribed. The majority of allergy sufferers reported they had experienced loss of product effectiveness over time. Nearly two out of five (38%) said they had experienced loss of effectiveness with more than one nasal allergy product, while another 15% said they had experienced it in only one product, and 2% said they had experienced it, but were not sure with how many products **(Figure 21)**.

**Figure 21**



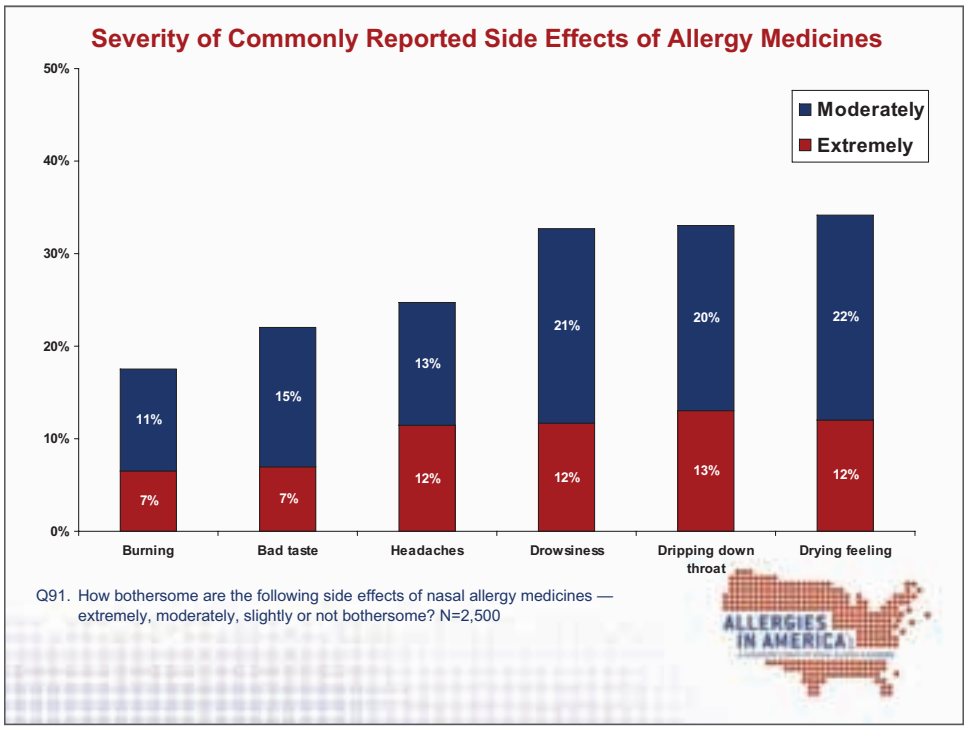
Patients with allergic rhinitis were also asked about their experience with common side effects of allergy medicines. Patients were asked how many of the medicines they had taken for allergy symptoms had the following side effects --- all, most, some, few, or none. The most common type of these six side effects of nasal allergy medicines, according to patients, was a drying feeling. Nearly half of patients with allergic rhinitis said that all (10%), most (12%) or some (25%) of the medicine they had taken for allergies had a side effect of a drying feeling. The next most common side effect of allergy medicine was dripping down the throat. Two out of five patients with nasal allergies said that all (11%), most (8%) or some (22%) of the medicines they had taken for allergy had a side effect of dripping down the throat. Drowsiness was the third most common side effect reported for allergy medicines with 4% saying all, 7% saying most, and 26% saying some of the medicines they had taken for allergies had this effect. Nearly a third (32%) of nasal allergy sufferers said that all, most or some of the medicines they had taken for their allergies had a bad taste. Less than one in five said that all, most or some of the medicine they had taken for allergies had a side effect of burning (17%) or headaches (16%). **(Figure 22)**

**Figure 22**



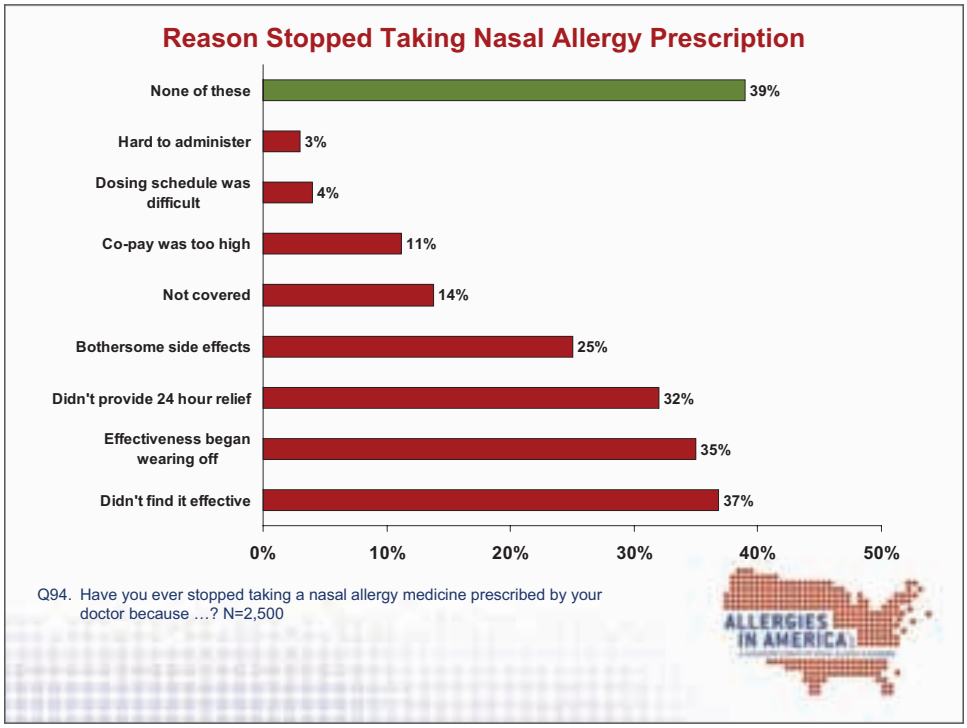
The most bothersome side effects of allergy medicines are the drying feeling, dripping down the throat and drowsiness. A little more than one third of nasal allergy sufferers said that the drying feeling from nasal allergy medicines was extremely (12%) or moderately (22%) bothersome. A third said that the dripping down the throat side effect of nasal allergy medicines was extremely (13%) or moderately (20%) bothersome. A third also described the drowsiness side effect of nasal allergy medicines as extremely (12%) or moderately (21%) bothersome. A quarter of nasal allergy sufferers said that the side effect of headaches from allergy medications was extremely (12%) or moderately (13%) bothersome. The bad taste of some nasal allergy medications was reported to be extremely (7%) or moderately (15%) burdensome by more than two out of five patients with allergic rhinitis. The burning sensation of some nasal allergy medicines was least commonly described as extremely (7%) or moderately (11%) burdensome **(Figure 23)**.

**Figure 23**



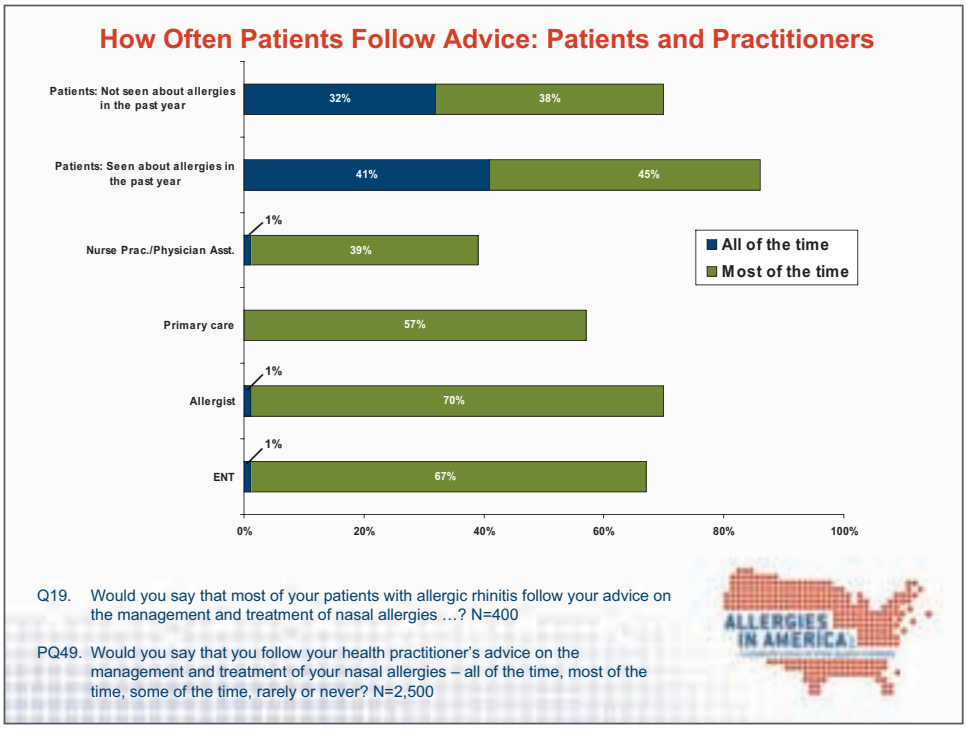
The perceived efficacy, speed, duration and side effects of nasal allergy medications have a direct effect on patient's use of prescription medicines for their nasal allergies. The majority of patients with allergic rhinitis (61%) reported that they had stopped taking a nasal allergy medicine prescribed by their doctor because of an attribute of the medication, rather than a change in their condition. Most commonly, 37% of nasal allergy sufferers reported that they had stopped taking a nasal allergy medicine prescribed by their doctor because they did not find it effective. Nearly as many (35%) said that they had stopped taking a prescription medicine for their nasal allergies because its effectiveness began wearing off over time. Nearly a third (32%) said that they had stopped taking a prescription medicine for their nasal allergies because it did not provide 24-hour relief. A quarter (25%) reported stopping a prescription medicine for their nasal allergies because of bothersome side effects. Relatively few patients reported they had ever stopped taking a nasal allergy medicine prescribed by their doctor because it was not covered by their insurance (14%) or the co-payment was too high (11%). Only a handful had ever stopped a prescription medicine for their allergies because the dosing schedule was difficult (4%) or it was hard to administer (3%). **(Figure 24)** Among those who had ever stopped taking a nasal allergy medicine prescribed by their doctor for any of these reasons, barely half (51%) said that they always told their doctor right away when they stopped taking a medication for their nasal allergies.

**Figure 24**



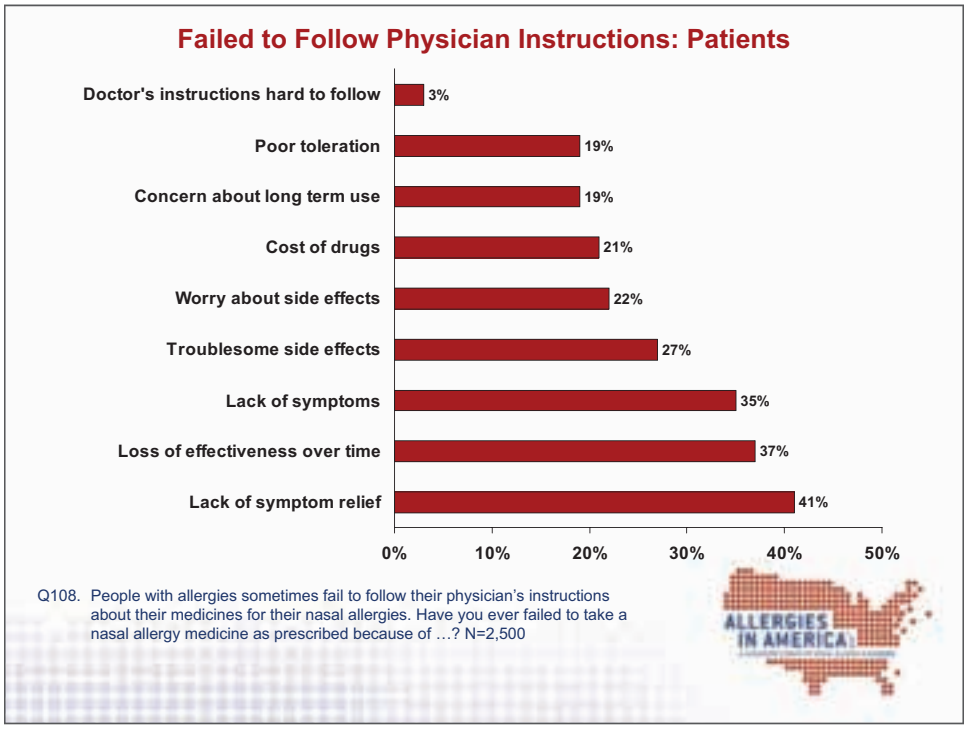
Most patients with allergic rhinitis said that they followed their doctor's advice on the management and treatment of nasal allergies. Nearly nine out of ten patients who have seen a health practitioner about their nasal allergies in the past year say that they follow the doctor's advice all (41%) or most (45%) of the time. Even those who have not seen a health practitioner about their nasal allergies in the past year said, overwhelmingly, that they followed their doctor's advice all (32%) or most (38%) of the time. However, health professionals do not share this sanguine assessment of patient compliance. Seven out of ten allergists said that most of their patients followed their advice on the management and treatment of nasal allergies either all (1%) or most (70%) of the time. Similarly, two-thirds of otolaryngologists said their patients followed their advice on nasal allergy treatment either all (1%) or most (67%) of the time. Fewer doctors in primary care (57%) said that most of their patients followed their advice on the management and treatment of nasal allergies either all or most of the time. Only a minority of nurse practitioners and physician assistants (40%) said that most patients followed their advice on management and treatment of nasal allergies all or most of the time **(Figure 25)**.

## Figure 25



When the question is posed a different way, the health professional perspective on compliance appears to be more accurate. The vast majority of patients with allergic rhinitis said that they had failed to take an allergy medicine as prescribed for one or more reasons. Most commonly, 41% of nasal allergy sufferers said that they had failed to take an allergy medicine as prescribed because of lack of symptom relief. Almost as many patients with allergic rhinitis (37%) said that they had failed to take an allergy medicine as prescribed because of its loss of effectiveness over time. Indeed, lack of symptoms (35%) was only the third most common reason for not taking an allergy medicine as prescribed, while troublesome side effects (27%) was the fourth most common reason. Other reasons that patients with allergic rhinitis had not taken an allergy medicine as prescribed included worrying about side effects (22%), cost of drugs (21%), concern about long term use (19%) and poor tolerance (19%). Very few patients (3%) said that they had failed to take an allergy medicine as prescribed because the doctor's instructions were hard to follow **(Figure 26)**. In combination, 72% of patients with allergic rhinitis said that they had failed to take an allergy medicine as prescribed because of one of these nine reasons.

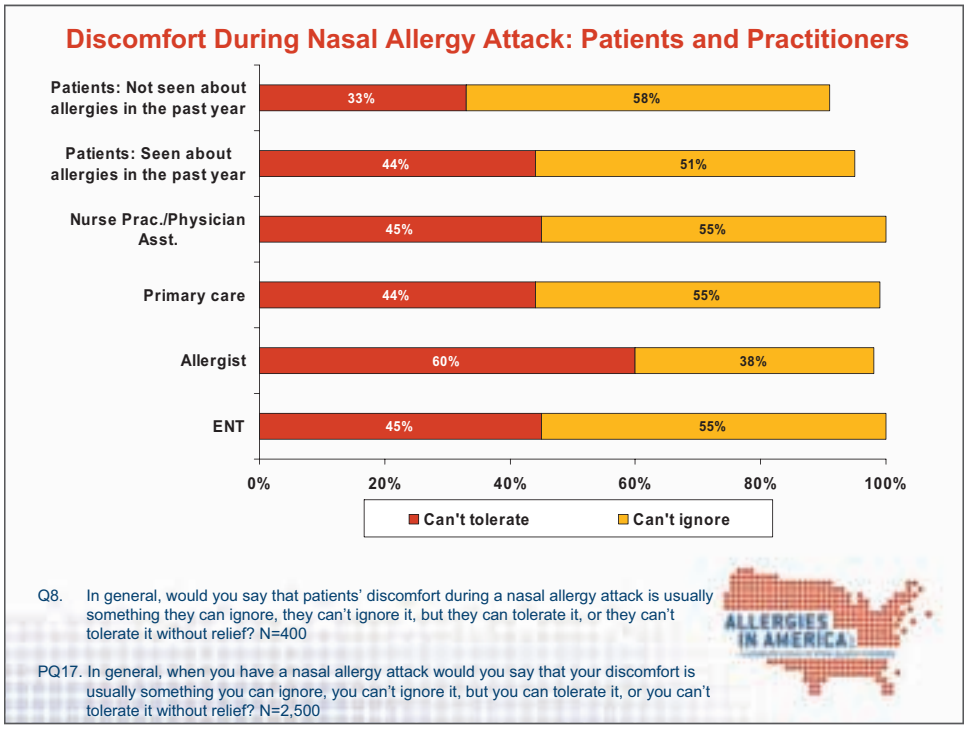
**Figure 26**



## Professional and Patient Perspectives

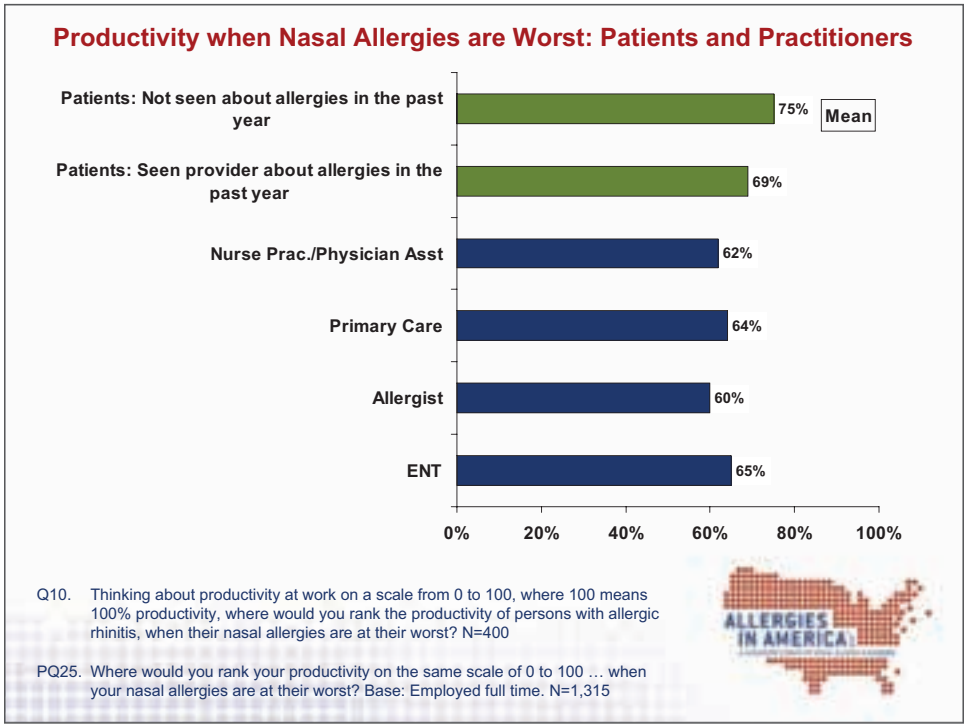
Doctors, nurse practitioners and physician assistants appear to be very aware of the degree of discomfort that patients experience during a nasal allergy attack. When asked whether, in general, patients' discomfort during a nasal allergy attack was usually something they could ignore; something they could not ignore, but could tolerate; or something they could not tolerate without relief, almost no health practitioners said that the discomfort was something the patients could ignore. Indeed, nearly half of health professionals said the discomfort was something patients could not tolerate without relief, including 60% of allergists, 45% of otolaryngologists, 44% of primary care doctors, and 45% of nurse practitioners and physician assistants. When comparing the professional perspective about patients to the patient perspective, it is important to note that half of the allergy patients have not seen a health practitioner about their allergies in the past 12 months. The healthcare professionals' perspective on the degree of discomfort to patients from nasal allergies closely matches the degree of discomfort reported by patients who had seen a health practitioner about their allergies in the past year **(Figure 27)**.

### Figure 27



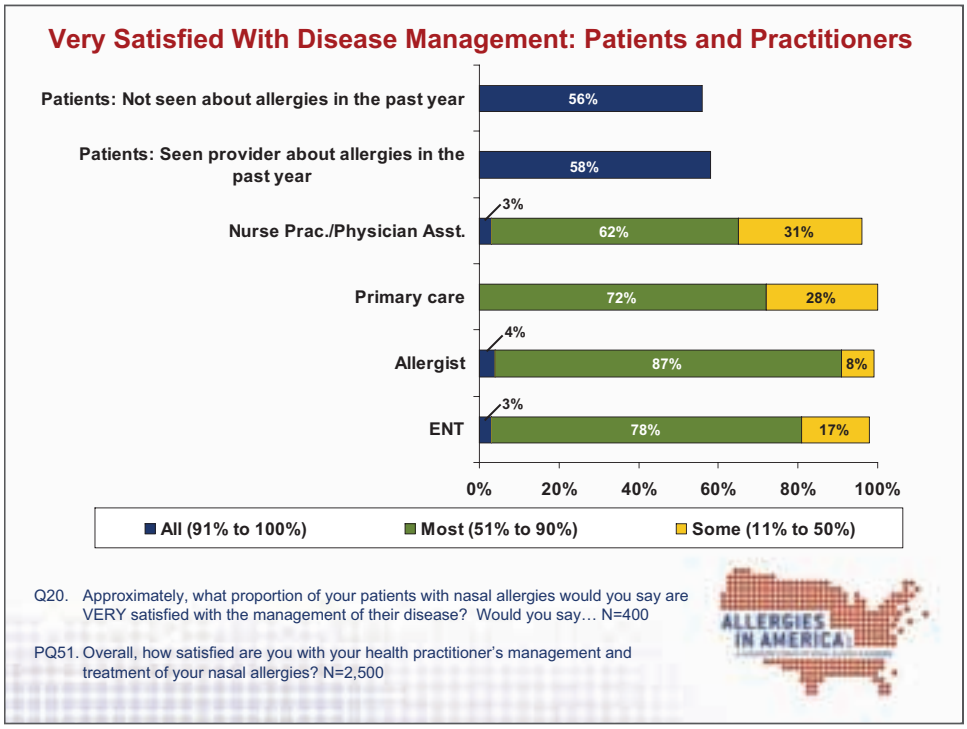
Health professionals also recognize the impact of allergic rhinitis on productivity for patients who work. When asked to rank the productivity of patients with allergic rhinitis, on a scale of 0 to 100, when their nasal allergies were at their worst, there was a remarkably consistent assessment across specialty. The allergists gave the lowest estimate of average productivity for allergy patients of 60% when their nasal allergies were the worst. The primary care doctors (64%) and otolaryngologists (65%) gave a somewhat higher estimate of productivity for patients with allergic rhinitis when their allergies were at their worst. The nurse practitioners and physician assistants gave an intermediate estimate of patient productivity (62%) when their allergies were at their worst. These estimates were quite similar to the estimate of average productivity when nasal allergies were at their worst (69%) given by patients who have seen their health practitioner about allergies in the past year. It is notable that the average productivity loss on days when their allergies are their worst is not much better (75%) for allergy sufferers who have not seen a health practitioner in the past year **(Figure 28)**.

**Figure 28**



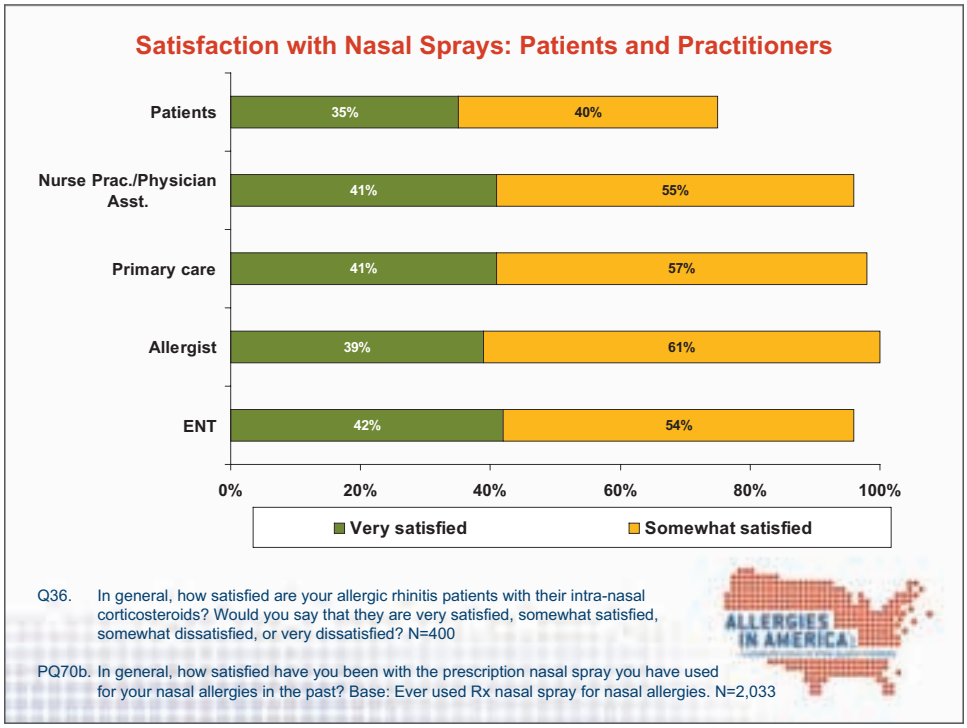
While there was very good agreement between patients and health professionals with regards to their assessment of the burden of allergic rhinitis, there was a disjuncture in their perceptions of patient satisfaction with management and treatment of the disease. When asked to estimate what proportion of their patients with nasal allergies were "very satisfied" with the management of their disease, nine out of ten allergists said all (4%) or most (87%) of their patients were very satisfied with disease management. Four out of five otolaryngologists said all (3%) or most (78%) of their patients were very satisfied. Somewhat fewer, but still more than seven out of ten primary care doctors said that all (0%) or most (72%) of their patients were very satisfied with the management of their disease. And nearly two-thirds of nurse practitioners and physician assistants said that all (3%) or most (62%) of their patients were very satisfied with the management of their disease. But only 58% of patients with allergic rhinitis who have seen a health practitioner in the past year said that they were very satisfied with the management of their disease. Indeed, the proportion of patients with nasal allergies who are very satisfied with their health practitioner's management of their disease is only slightly lower among those not seeing a health practitioner about their condition **(Figure 29)**.

**Figure 29**



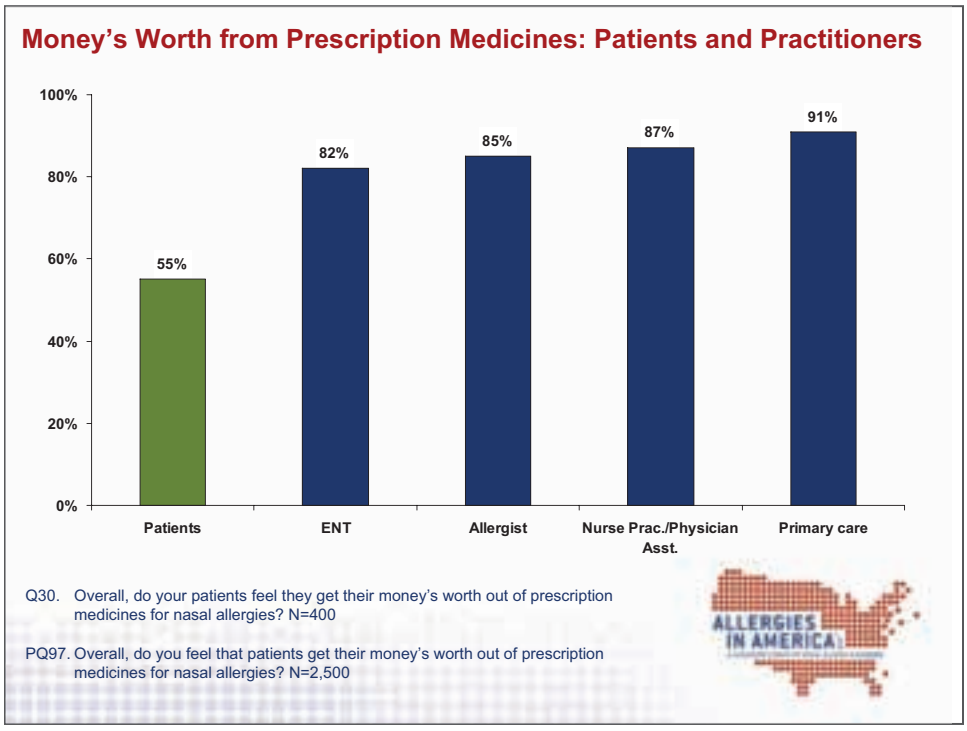
Similarly, health professionals were asked how satisfied, in general, their patients with allergic rhinitis were with their intranasal corticosteroids. Approximately two out of five allergists (39%), otolaryngologists (42%), primary care doctors (41%) and nurse practitioners or physician assistants (41%) said patients were very satisfied with this treatment. By contrast, only a third (35%) of patients who have taken a prescription nasal spray for their allergies said that they were very satisfied with the prescription nasal sprays they have used. Virtually all allergists (100%), otolaryngologists (96%), primary care doctors (98%) and nurse practitioners or physician assistants (96%) said that patients with allergic rhinitis, in general, were very or somewhat satisfied with intranasal corticosteroids. However, only 75% of patients who have used prescription nasal sprays said that they were very or somewhat satisfied with the prescription nasal sprays they have used in the past **(Figure 30)**. Indeed, the proportion of patients who were very satisfied with their prescription nasal sprays was almost identical for those who had (33%) and those who had not (34%) seen a health practitioner about their nasal allergies in the past year.

**Figure 30**



Not surprisingly, then, health professionals and patients have different perceptions about whether patients feel they get their money's worth out of prescription drugs for nasal allergies. Nine out of ten primary care doctors (91%) and nearly as many nurse practitioners and physician assistants (87%) said that, overall, their patients get their money's worth out of prescription medicines for nasal allergies. Somewhat fewer allergists (85%) and otolaryngologists (82%) agreed that patients get their money's worth from prescription drugs for nasal allergies. By contrast, only 55% of patients with allergic rhinitis felt they get their money's worth out of prescription medicines for their nasal allergies **(Figure 31)**.

**Figure 31**



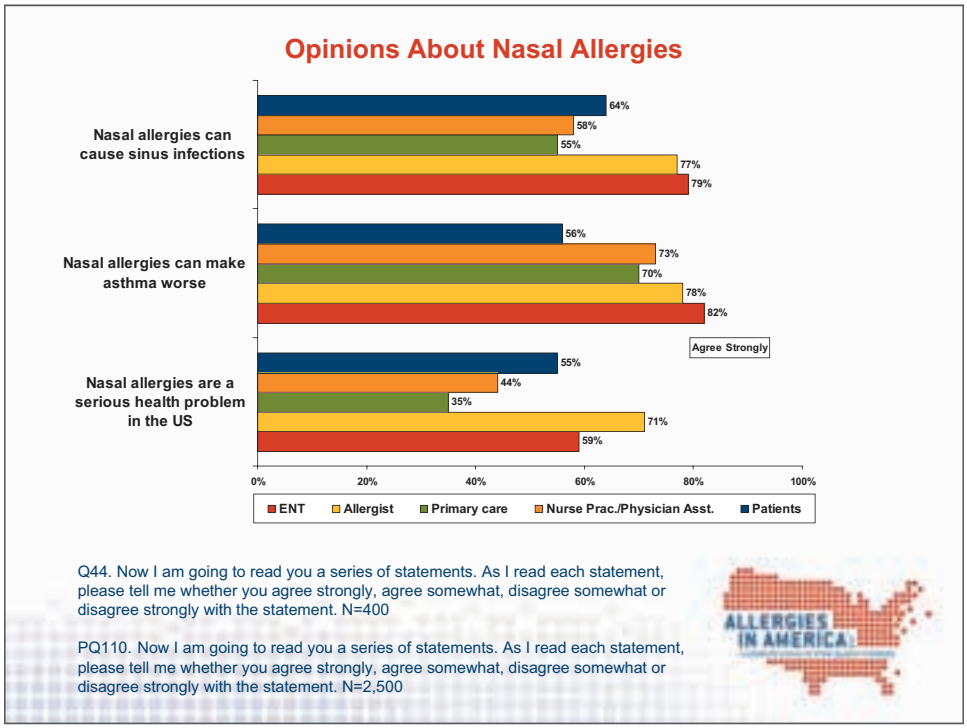
## Education about Allergic Rhinitis

There are important differences between patients and health professionals, and within the health professional community, in attitudes toward allergic rhinitis and its treatment. One of the most profound differences is about whether nasal allergies are a serious health problem in the United States. A majority of patients (55%), allergists (71%), and otolaryngologists (59%) would agree strongly that nasal allergies are a serious health problem. However, only a minority of primary care doctors (35%) and nurse practitioners or physician assistants (44%) would agree strongly that nasal allergies are a serious health problem in the United States.

Allergists (77%) and otolaryngologists (79%) were most likely to strongly agree that nasal allergies can cause sinus infections. Primary care doctors (55%) and nurse practitioners and physician assistants (58%) were less likely to strongly agree with that statement. The majority of patients (64%) strongly agree that nasal allergies can cause sinus infections.

There was more agreement between the health professionals that nasal allergies can make asthma worse. The allergists (78%) and otolaryngologists (82%) were somewhat more likely to strongly agree with this statement than primary care doctors (70%) and nurse practitioners and physician assistants (73%). However, while a majority of patients strongly agree that nasal allergies can make asthma worse (56%), there was a bigger difference in patient and professional perceptions regarding asthma than sinus infections. **(Figure 32)**

**Figure 32**

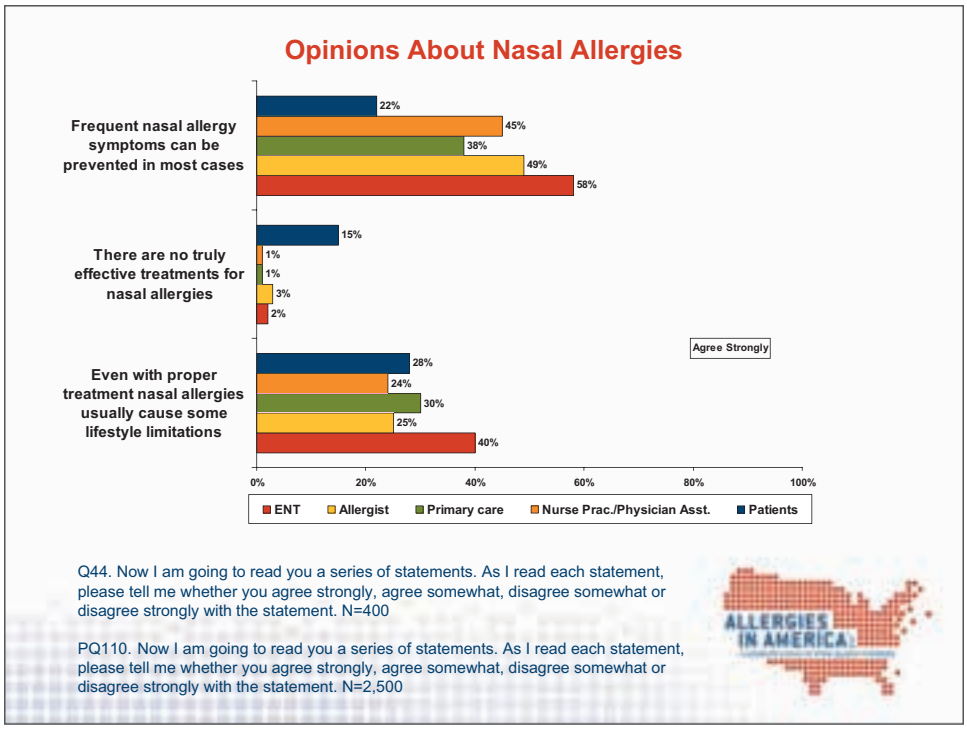


Nearly three out of ten patients (28%) agree strongly that even with proper treatment, nasal allergies usually cause some lifestyle limitations. Similar proportions of primary care doctors (30%), nurse practitioners or physician assistants (24%), and allergists (25%) would strongly agree with this statement. Somewhat more otolaryngologists (40%) would strongly agree that even with proper treatment, nasal allergies usually cause some lifestyle limitations.

The perceptions of patients and health professionals were more divergent on attitudes toward treatment. Almost no allergists (3%), otolaryngologists (2%), primary care doctors (1%) or nurse practitioners or physician assistants (1%) agreed strongly that there are no truly effective treatments for nasal allergies. A larger proportion of the patient population (15%), however, agreed strongly that there were no truly effective treatments for nasal allergies.

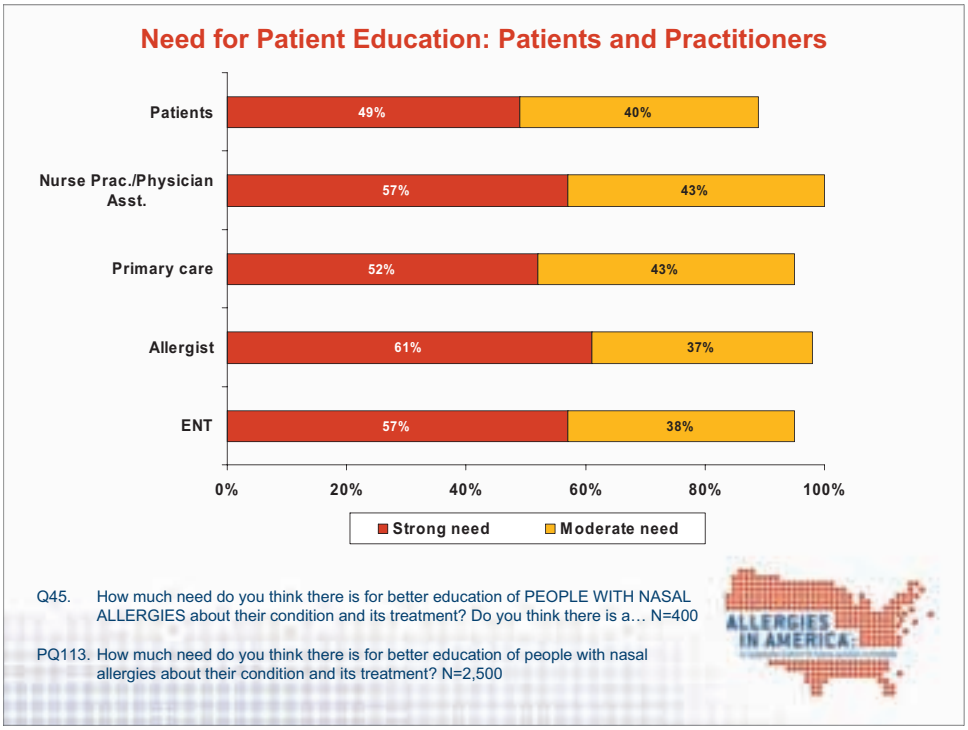
A more dramatic difference between health professionals and patients emerges when asked if they agreed or disagreed that frequent nasal symptoms can be prevented in most cases. There were differences between the proportion of allergists (49%), otolaryngologists (58%), primary care doctors (38%) and nurse practitioners or physician assistants (45%) who would agree strongly that frequent nasal symptoms can be prevented in most cases. More dramatically, only 22% of patients with allergic rhinitis would agree strongly that frequent nasal symptoms can be prevented in most cases **(Figure 33)**.

**Figure 33**



There is an overwhelming agreement among patients and health professionals about the need for better education of patients with allergic rhinitis about the condition and its treatment. Nearly nine out of ten patients with nasal allergies said that there is a strong need (49%) or a moderate need (40%) for better education of people with nasal allergies about the condition and its treatment. Nearly all allergists (98%), otolaryngologists (95%), primary care doctors (95%) and nurse practitioners or physician assistants (100%) said that there is at least a moderate need for better education of patients with nasal allergies about their condition and treatment. Indeed, a majority of allergists (61%), otolaryngologists (57%), primary care doctors (52%) and nurse practitioners or physician assistants (57%) felt there was a strong need for better education of patients with allergic rhinitis **(Figure 34)**.

**Figure 34**



## Conclusions

Allergic rhinitis affects approximately one in seven adults surveyed. If this prevalence rate would be extrapolated to the the general population that would equate to approximately 30 million persons within the United States being afflicted with allergic rhinitis. This prevalence rate would make allergic rhinitis the sixth most common chronic disease in the United States. According to a 2003 report of the Agency for Healthcare Research and Quality, estimates of the direct medical costs of allergic rhinitis in the United States range from $1.16 billion to $4.5 billion, rising to $7.7 billion when indirect costs are included.

Many patients with allergic rhinitis suffer from nasal congestion, post-nasal drip, repeated sneezing, runny nose and other symptoms on all or most days during the times of year that their allergies are worst. Nasal allergy symptoms such as nasal congestion, runny nose, post-nasal drip, itching eyes, headache, watering eyes and repeated sneezing are described as at least moderately bothersome by most allergy sufferers. These symptoms cause most nasal allergy sufferers to feel tired, miserable and irritable at least sometimes during allergy season.

These frequent and burdensome symptoms can profoundly affect allergy sufferers' lives and work performance. Two out of five patients with nasal allergies said their condition had a lot or moderate amount of impact on their daily life. Since the majority of allergy patients are employed full time, work is an important part of life affected by their condition. The majority of employed adults with nasal allergies said that they have lost workdays due to allergy symptoms in the past 12 months or had symptoms interfere with their performance at work on days when they were present. According to employed patients with nasal allergies, their productivity falls by nearly 25% on average between days when they have no allergy symptoms and days when their allergy symptoms are at their worst. This is a very large, but hitherto unmeasured, economic consequence of allergic rhinitis in the United States.

Almost all nasal allergy sufferers said that the discomfort during an allergy attack is not something they can ignore. Nearly two out of five (38%) patients said that the discomfort is something that they cannot tolerate without relief. Relief is sought through prescription and over-the-counter medications. The majority of patients (69%) have used some medication for their nasal allergies in the past 12 months.

The majority of health professionals reported that all or most of their patients with nasal allergies were very satisfied with the management of their disease. Almost all health professionals reported that their patients were very or somewhat satisfied with their intranasal corticosteroid medication, which health professionals reported that the majority of their patients are taking for nasal allergies. Patients reported less satisfaction with both the management of their disease, in general, and the prescription nasal sprays they have taken that healthcare providers ascribe to them. One issue in the behavior of patients with allergic rhinitis is that less than half of those diagnosed and symptomatic reported seeing a physician about their nasal allergies in the past 12 months. However, even those patients who have seen a physician about their nasal allergies in the past 12 months are not as satisfied with their medications or the management of their condition as health practitioners assume.

Prescription nasal sprays are a case in point since the majority of healthcare practitioners said the preferred medicines to treat moderate to severe allergy symptoms were inhaled corticosteroids. On the one hand, only a third (35%) of patients reported being very satisfied with the prescription nasal sprays they have used for their allergies, while 75% reported being either very or somewhat satisfied with the medication. However, when asked about product performance, the majority of nasal allergy sufferers reported that their prescription allergy medications do not provide 24-hour relief and their continued effectiveness wears off over time, even when taken as prescribed. As a result of their dissatisfaction with prescription medications for nasal allergies, most patients with allergic rhinitis have asked their doctor to change their medication or they simply stopped taking it. Only half who stop taking their prescription medicines because they are dissatisfied bother to inform their doctor about it.

In the treatment of allergic rhinitis, as with most chronic medical conditions, patient compliance with prescribed treatment is a necessary, if not sufficient, condition for a favorable treatment outcome. Unfortunately, the patients' dissatisfaction with the effectiveness and duration of products they have used in the past is discouraging compliance and communication with their health practitioners about their condition and treatment. A large proportion of patients with allergic rhinitis and moderate to severe symptoms have simply stopped seeing doctors about their condition in the past 12 months. Patients are more likely than healthcare practitioners to believe that there are no truly effective treatments for nasal allergies and they are much less likely to believe that frequent nasal allergy symptoms can be prevented in most cases. The experience of these patients with medications that promised 24-hour relief that wore off in less than half that time, or medications whose effectiveness declined over a matter of months, appears to have discouraged patient expectations about treatment outcomes more than health professionals realize.

Better education of patients about their condition and treatment is viewed as important by both patients and health professionals. At the same time, better communication between patients and health professionals is also important for better understanding of patients' expectations and experiences that may affect compliance. Finally, most patients see a primary care doctor for their nasal allergies, but less than half of the physicians are aware of professional guidelines for the diagnosis and management of allergic rhinitis, and fewer still can cite the source of those guidelines. Thus, better education and communication about nasal allergies, both for patients and healthcare professionals, are an important step to improving the state of Allergies in America.

## Methods

Allergies in America is one of the largest and most comprehensive national surveys ever conducted about allergic rhinitis. The survey is actually composed of two distinct surveys, each based on telephone interviews with national probability samples of five populations:

- **National Survey of Patients with Allergic Rhinitis**. A total of 2,500 telephone interviews were conducted with a national sample of persons aged 18 and older, who had been diagnosed with "hay fever", allergic rhinitis or nasal allergies, and who had allergy symptoms or take prescription medicines for their nasal allergies in the past 12 months. These are patients with a diagnosed condition and current or active nasal allergies. They were identified by screening a national random digit dialing sample of 31,470 telephone households. The interviews were conducted between January 5 and January 31, 2006 and averaged 34.8 minutes in length.

- **National Survey of Healthcare Professionals**. A total of 300 interviews were conducted by telephone with national samples of three physician populations: Adult Primary Care, Allergy and Otolaryngology. A total of 100 interviews were completed with physicians in each of the three physician strata. The Adult Primary Care population is defined as the medical specialties of General Practice, Family Practice, and Internal Medicine. The samples were drawn as probability samples from the American Medical Association/American Osteopathic Association Master List of physicians in the United States. The samples were restricted to physicians in these three specialty strata who were in active practice in direct patient care in an outpatient setting.

  A fourth stratum of nurse practitioners and physician assistants completed the national survey of healthcare professionals. The nurse practitioner sample was drawn from state licensing boards. The physician assistant sample was drawn from the membership of the American Academy of Physician Assistants. A total of 50 interviews were completed within each of the two strata or 100 in total. These interviews were conducted by telephone using the same survey instrument as the physician survey. The interviews for the Survey of Healthcare Professionals were conducted between January 17 and February 14, 2006 and they averaged 19.4 minutes in length.

The maximum expected sampling error for a simple random sample of 2,500 (e.g., the patient survey) would be ± 1.2 percentage points at the 95% confidence level. The maximum expected sampling error for a simple random sample of 100 (e.g., primary care doctors) would be ± 9.8 percentage points at the 95% confidence level.

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