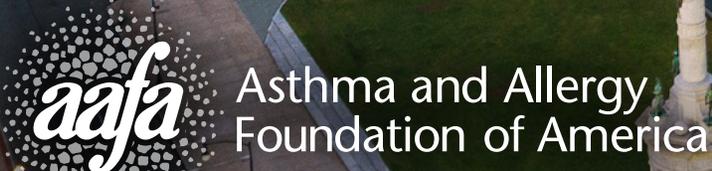


2022 Allergy Capitals

The Most Challenging Places
to Live With Allergies



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Improving the Quality of Life for People With Seasonal Allergies

The Asthma and Allergy Foundation of America (AAFA) has produced Allergy Capitals™ reports since 2003 to help people recognize, prevent, and manage seasonal allergies. Since that first report, seasonal allergies have worsened. Climate change has caused the growing seasons to get longer and warmer, leading to higher pollen counts in both spring and fall. The warmer temperatures also get trapped in urban areas, which impacts air pollution.

The 2022 Allergy Capitals™ report uses both spring and fall allergy data to rank how challenging it is to live with pollen allergies in the 100 largest cities in the continental United States. The report looks at four important factors: **spring and fall pollen scores, over-the-counter medicine use, and availability of board-certified allergists/immunologists.** In 2022, AAFA updated the data sources to more accurately capture estimates for access to allergists/immunologists.

Through this report, AAFA raises awareness on:

- The impact of seasonal allergies on health
- How to better manage pollen allergy and improve quality of life
- How climate change impacts allergy and respiratory health
- How urban heat islands and air pollution are related to pollen
- Health disparities experienced by predominantly Black and Hispanic communities who have higher exposure to air pollution, and more limited access to specialists like allergists

Communities need to work together to provide solutions to the challenges raised by climate change, rising health care costs, and access to specialized care.

AAFA is dedicated to improving the quality of life for people with asthma and allergic diseases through education, advocacy, research, and support. We will continue to promote public policy ideas that improve and protect quality of life and treatment options for people affected. People with asthma and allergies should be able to find relief *no matter where they live.*



THE IMPACT OF COVID-19

In 2021, AAFA reported that fewer people were affected by pollen allergies in 2020. This was linked to COVID-19 restrictions that kept many people inside more and limited their exposure to pollen. Children felt the least impact from seasonal allergies due to closed schools and less time spent outdoors. These trends continued in spring 2021. But by fall 2021, the number of people affected by seasonal allergies rose to pre-pandemic levels. Experts believe this jump was due to fewer COVID-19 restrictions and more people going out, likely because of the introduction of COVID-19 vaccines.



ABOUT THE ASTHMA AND ALLERGY FOUNDATION OF AMERICA

Founded in 1953, AAFA is the oldest and largest nonprofit patient organization dedicated to saving lives and reducing the burden of disease for people with asthma, allergies, and related conditions through research, education, advocacy, and support.



AAFA empowers patients and their families by providing practical, evidence-based information and community programs and services. AAFA offers extensive online support communities for individuals and families affected by asthma and allergic diseases, such as food allergies and atopic dermatitis (eczema). AAFA also helps consumers identify products to help them have healthier homes through the **asthma & allergy friendly**[®] Certification Program. For more information, visit aafa.org, aafa.org/certified, and kidswithfoodallergies.org.

About Allergic Rhinitis

Allergies are a major health concern. Allergic conditions are among the most common medical conditions affecting people in the United States. More than 50 million Americans suffer from various types of allergies every year.¹ People with allergies need to know what allergens trigger their symptoms, find ways to reduce their exposure to those allergens, and have access to the right treatments for their needs.

There is no cure for allergies. But allergies can be managed with prevention and treatment. A good allergy treatment plan is based on medical history, the results of allergy tests, and symptom severity. See the “Managing Your Contact With Pollen” section on page 5 for tips on ways to manage your seasonal allergy symptoms.

One of the most common allergic conditions is **seasonal allergic rhinitis, often called “hay fever.”** About 7.7% of adults and 7.2% of children have been diagnosed with seasonal allergic rhinitis.² It causes symptoms such as:

- Sneezing
- Stuffy nose (nasal congestion)
- Runny nose (usually a thin, clear discharge)
- Red, and watery eyes
- Itchy nose, eyes, ears, or mouth
- Swelling around the eyes

Symptoms of seasonal allergic rhinitis occur most often in spring, summer, and/or fall. Allergic sensitivity to airborne pollen from trees, grasses, or weeds causes the allergy symptoms. Pollen allergies can worsen asthma as well.

About Seasonal Pollen Allergies

People with seasonal allergic rhinitis may have symptoms that get worse during one season over another. Why? Different types of pollen allergens peak at different times of the year. In the spring, tree pollen is more common. In the fall, weed pollen peaks.

SPRING

Tree pollen causes most springtime seasonal allergies. It also often overlaps with grass pollen in the spring and summer. Throughout the U.S., trees produce the most pollen from March through May. But in some regions, such as the South, trees may produce pollen as early as January and peak at multiple times during the year.³

The most common tree pollen culprits are:

- Alder
- Ash
- Aspen
- Beech
- Birch
- Box elder
- Cedar
- Cottonwood
- Elm
- Hickory
- Mountain elder
- Mulberry
- Oak
- Olive
- Pecan
- Poplar
- Willow

FALL

When it comes to fall pollen allergies, ragweed pollen is the worst offender. Ragweed allergy is the most common weed pollen allergy. One ragweed plant can produce billions of light, dry pollen grains, which can then travel for hundreds of miles. Other weed pollens can cause symptoms as well.

These plants are responsible for causing most pollen allergy symptoms in the fall:

- Burning bush
- Cocklebur
- Lamb's-quarters
- Mugwort
- Pigweed
- Ragweed
- Russian thistle
- Sagebrush
- Tumbleweed



Managing Your Contact With Pollen

Spring allergy season begins with pollen released by trees. Grass pollen appears later in the spring and continues through the summer in some parts of the United States. Weeds release pollen in the late summer and through the fall. On days when pollen is high, take these actions to reduce pollen contact:

- Check pollen counts or forecasts daily and plan outdoor activities on days when pollen counts are expected to be lower.
- Keep windows closed during pollen season or peak pollen times.
- Use central air conditioning or air cleaners with a CERTIFIED **asthma & allergy friendly**[®] filter and/or HEPA filtration
- Wear sunglasses, a mask, and a hat or other hair covering when outdoors.
- Take a shower and if your hair was uncovered outside, wash it before bed.
- Change and wash clothes after outdoor activities.
- Dry laundry in a clothes dryer or on an indoor rack, not on an outdoor line.
- Limit close contact with pets that spend a lot of time outdoors. Wipe pets off with a towel before they enter your home.
- Remove your shoes before entering your home.
- Wash bedding in hot, soapy water once a week.

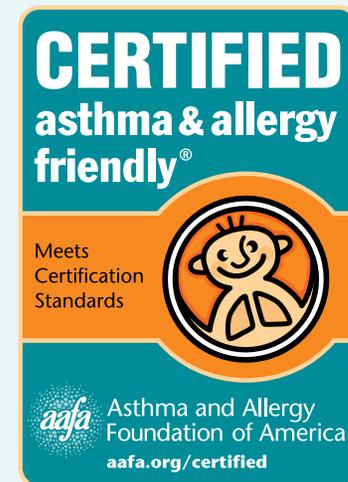
There are also options available to prevent or treat allergy symptoms. Some of these treatments work best if taken before allergy season begins:

- Nasal corticosteroid sprays (the most effective medicine treatment)
- Allergy medicines – such as non-drowsy, long-acting antihistamines
- Decongestants (use for a short time period – check with your doctor before using if you have high blood pressure, glaucoma, thyroid disease, or trouble urinating)
- Leukotriene receptor antagonists and/or cromolyn sodium
- Immunotherapy – shots or tablets available as a long-term treatment that can help prevent or reduce the severity of reactions

Talk with your allergist before allergy season begins about which treatment is right for you.

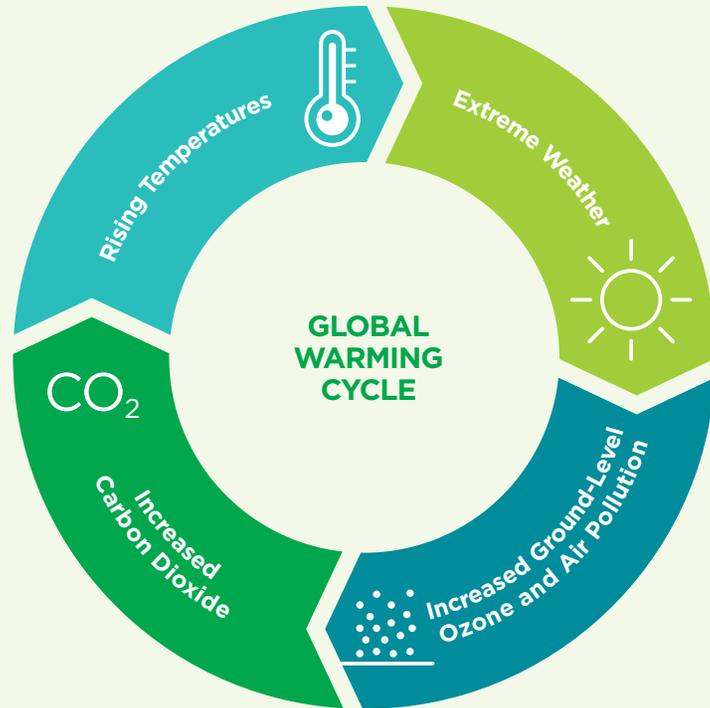


Through the **asthma & allergy friendly**[®] Certification Program, we have tested and certified products to help you reduce allergens in your home. When you are shopping for products for your home, look for the CERTIFIED **asthma & allergy friendly**[®] mark. Visit aafa.org/certified to search for CERTIFIED products and learn more about our program.



Spotlight: Climate Change and Allergies

The National Climate Assessment from the U.S. Global Change Research Program confirms that climate change is a major threat to public health.⁴ The science clearly shows that communities across the nation are seeing the health impacts of climate change, causing a public health emergency. Every American's health is at risk. But some populations are at an even greater risk. This includes infants, children, seniors, pregnant women, low-income communities, communities of color, people with disabilities, and many people with chronic diseases like asthma.



Climate change is a dangerous cycle. As global temperatures rise, extreme weather events become worse. Weather changes – such as heat waves and droughts – can lead to stagnant air (a lack of air flow). When the air doesn't move, pollutants react together in the heat and sun. This increases ground-level ozone.⁵

Ground-level ozone is a major part of urban smog. More air pollution and smog cause higher levels of carbon dioxide (CO₂). This results in warmer temperatures. And the cycle continues.

Longer and more intense allergy seasons and increased asthma/allergy triggers caused by climate change particularly impact people with allergies and asthma.^{6,7,8} Warmer temperatures and increased levels of CO₂ lead to longer growing seasons that change flowering time and increase pollen.

The length of the growing season refers to the number of days when plant growth takes place. Higher concentrations of pollen are linked to increased CO₂ levels. And longer growing seasons increase exposure to allergens that trigger asthma and other respiratory and allergic responses.⁹

In 2021, an example of the climate change impacts could be seen in the southern central and southeast regions of the United States. A polar vortex impacted these regions in early February. It caused the spring pollen season to end later than normal. As a result, more people in these regions were affected by pollen later in the year.

URBAN HEAT ISLANDS

Many of the health impacts of climate change are felt more in urban centers. Warmer temperatures and extreme heat waves are made worse in urban areas due to an effect called an “urban heat island” (UHI). A UHI is a metropolitan area that has higher temperatures than its surrounding areas. Buildings, roads, infrastructure, population density, and a lack of green space can make cities several degrees warmer than nearby more rural areas.¹⁰ Climate change is expected to intensify the UHI effect.¹¹

Extreme heat made worse by UHIs increases air pollution and can increase allergic sensitivity.¹² CO₂ pollution from vehicles, power plants, and industry in cities can be very high and can impact pollen production. One study on ragweed pollen found that it could be seven times higher in a city that averaged 3.6° F warmer and had 30% more CO₂ than the city’s rural surrounding area.¹³



Source: Climate Central; U.S. EPA 2012

This graphic shows how daytime and nighttime temperatures can vary depending on location. Temperatures are highest both during the day and night in downtown, urban areas. This is the urban heat island (UHI) effect.

Black and Hispanic populations bear the disproportionate burden of both the UHI effect and air pollution.^{14,15} This is the result of long history of housing policies in the U.S. that discriminate against these groups. These policies have pushed people of color to live in undesirable neighborhoods with greater environmental and social risks. As a result of systemic racism in U.S. policies, governance, and culture, racial and ethnic minority populations are more vulnerable to the health impacts of climate change.

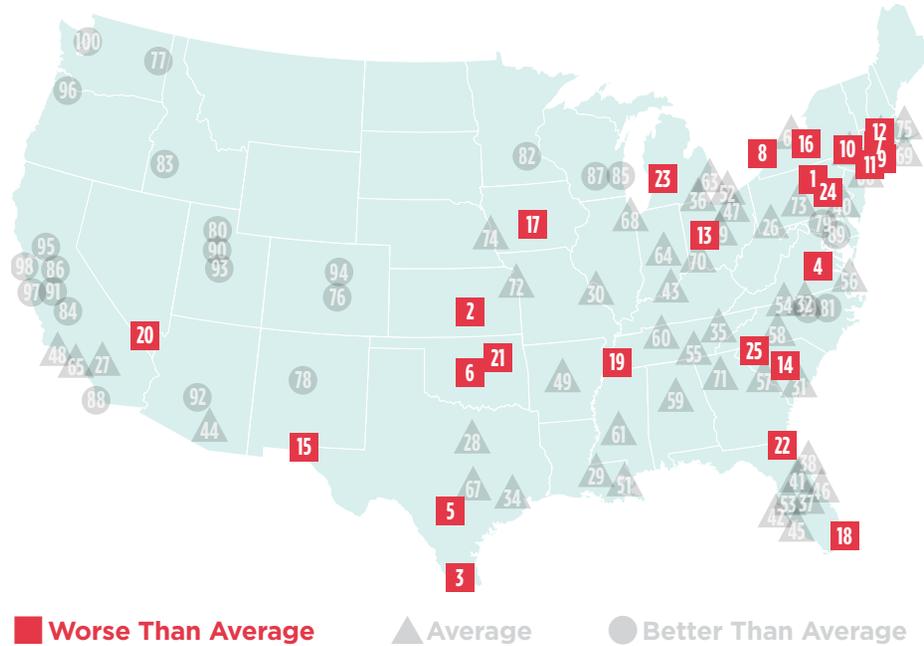
It is critical to slow the cycle of climate change to improve health and social justice. If we don’t act, pollen counts will only get worse, temperatures will continue to rise, and urban centers will continue to experience the harsh effects of climate change.



How do we fix the issue of climate change and its impact on people with allergies?

Laws created to reduce emissions and air pollution can make a difference. We need policy makers to act now to slow down climate change, reduce its impact on human health, and to combat environmental injustice. Join AAFA at aafa.org/join and follow our blog for Advocacy Action Alerts. We offer simple ways to contact your representatives to encourage them to act on issues important to the health of people with allergies and asthma.

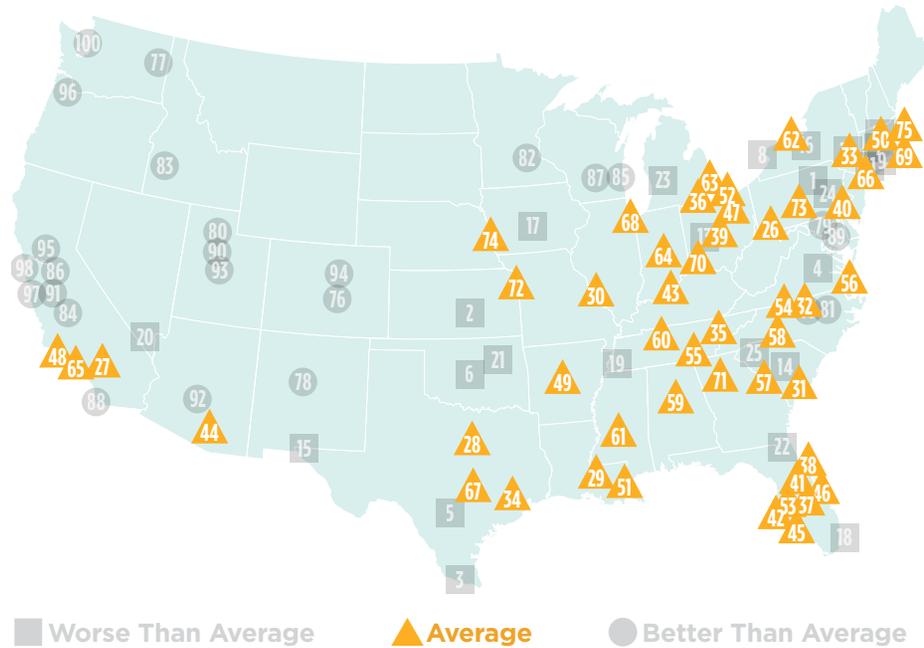
2022 Allergy Capitals™



OVERALL RANKING

2022 Rank	Metropolitan Area	Total Score (Avg 62.07)	Overall
1	Scranton, PA	100.00	■
2	Wichita, KS	92.60	■
3	McAllen, TX	86.11	■
4	Richmond, VA	85.79	■
5	San Antonio, TX	84.63	■
6	Oklahoma City, OK	83.78	■
7	Hartford, CT	81.68	■
8	Buffalo, NY	81.15	■
9	New Haven, CT	80.44	■
10	Albany, NY	78.27	■
11	Bridgeport, CT	77.34	■
12	Springfield, MA	77.11	■
13	Dayton, OH	76.54	■
14	Columbia, SC	76.28	■
15	El Paso, TX	76.23	■
16	Syracuse, NY	74.53	■
17	Des Moines, IA	72.82	■
18	Miami, FL	72.03	■
19	Memphis, TN	71.91	■
20	Las Vegas, NV	70.73	■
21	Tulsa, OK	70.53	■
22	Jacksonville, FL	70.45	■
23	Grand Rapids, MI	70.26	■
24	Allentown, PA	70.04	■
25	Greenville, SC	69.91	■

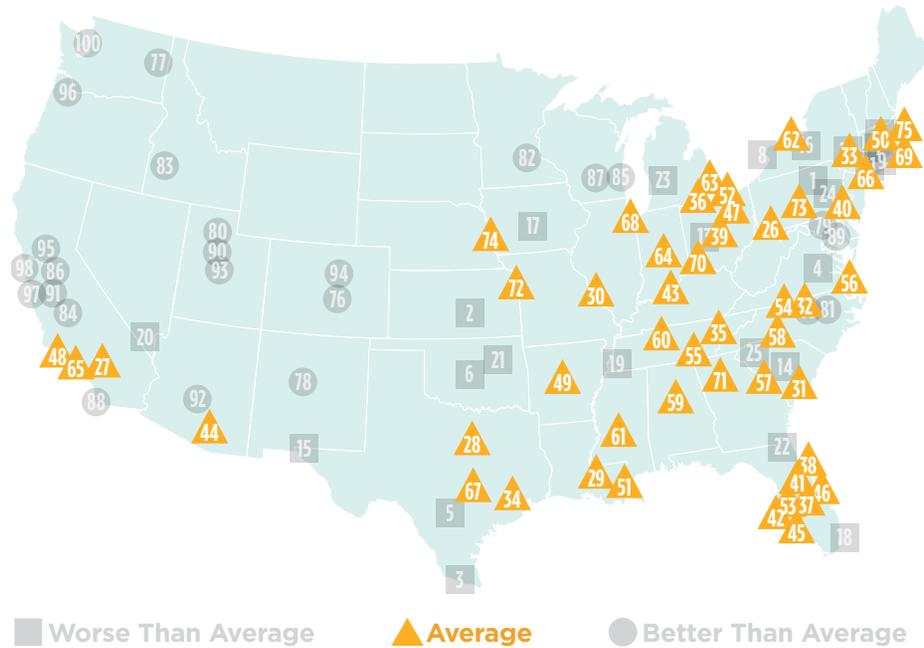
2022 Allergy Capitals™



OVERALL RANKING

2022 Rank	Metropolitan Area	Total Score (Avg 62.07)	Overall
26	Pittsburgh, PA	69.68	▲
27	Riverside, CA	69.36	▲
28	Dallas, TX	68.85	▲
29	Baton Rouge, LA	67.95	▲
30	St. Louis, MO	67.78	▲
31	Charleston, SC	67.71	▲
32	Greensboro, NC	66.06	▲
33	Poughkeepsie, NY	66.04	▲
34	Houston, TX	66.03	▲
35	Knoxville, TN	65.53	▲
36	Toledo, OH	65.45	▲
37	Lakeland, FL	64.95	▲
38	Daytona Beach, FL	64.59	▲
39	Columbus, OH	64.11	▲
40	Philadelphia, PA	63.65	▲
41	Orlando, FL	63.23	▲
42	Sarasota, FL	63.14	▲
43	Louisville, KY	63.02	▲
44	Tucson, AZ	62.88	▲
45	Cape Coral, FL	62.83	▲
46	Palm Bay, FL	62.77	▲
47	Akron, OH	62.54	▲
48	Oxnard, CA	62.51	▲
49	Little Rock, AR	62.35	▲
50	Worcester, MA	62.21	▲

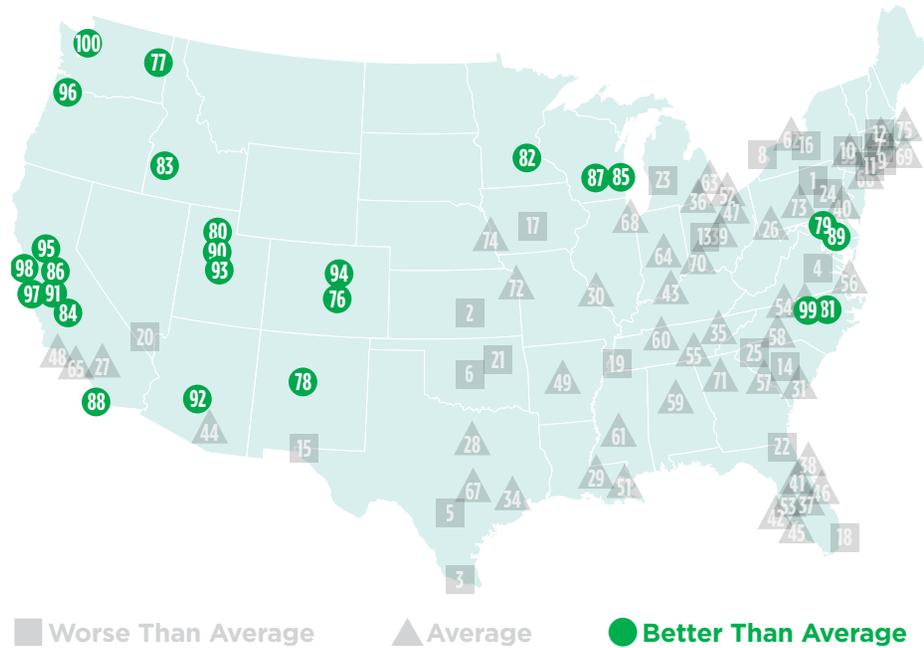
2022 Allergy Capitals™



OVERALL RANKING

2022 Rank	Metropolitan Area	Total Score (Avg 62.07)	Overall
51	New Orleans, LA	61.97	▲
52	Cleveland, OH	61.83	▲
53	Tampa, FL	61.07	▲
54	Winston-Salem, NC	60.24	▲
55	Chattanooga, TN	60.09	▲
56	Virginia Beach, VA	59.99	▲
57	Augusta, GA	59.41	▲
58	Charlotte, NC	59.20	▲
59	Birmingham, AL	58.87	▲
60	Nashville, TN	58.71	▲
61	Jackson, MS	58.55	▲
62	Rochester, NY	58.30	▲
63	Detroit, MI	57.93	▲
64	Indianapolis, IN	57.80	▲
65	Los Angeles, CA	57.53	▲
66	New York, NY	57.34	▲
67	Austin, TX	56.99	▲
68	Chicago, IL	56.98	▲
69	Providence, RI	56.46	▲
70	Cincinnati, OH	56.01	▲
71	Atlanta, GA	55.14	▲
72	Kansas City, MO	54.98	▲
73	Harrisburg, PA	54.93	▲
74	Omaha, NE	54.57	▲
75	Boston, MA	54.51	▲

2022 Allergy Capitals™



OVERALL RANKING

2022 Rank	Metropolitan Area	Total Score (Avg 62.07)	Overall
76	Colorado Springs, CO	54.24	●
77	Spokane, WA	53.65	●
78	Albuquerque, NM	52.32	●
79	Baltimore, MD	52.31	●
80	Ogden, UT	51.92	●
81	Raleigh, NC	51.91	●
82	Minneapolis, MN	50.10	●
83	Boise, ID	49.33	●
84	Bakersfield, CA	49.24	●
85	Milwaukee, WI	48.61	●
86	Stockton, CA	48.13	●
87	Madison, WI	47.41	●
88	San Diego, CA	47.09	●
89	Washington, DC	46.72	●
90	Salt Lake City, UT	45.61	●
91	Fresno, CA	45.52	●
92	Phoenix, AZ	44.93	●
93	Provo, UT	44.47	●
94	Denver, CO	44.40	●
95	Sacramento, CA	44.34	●
96	Portland, OR	44.28	●
97	San Jose, CA	43.99	●
98	San Francisco, CA	42.19	●
99	Durham, NC	39.59	●
100	Seattle, WA	38.44	●

Seasonal Ranking of Most Challenging Places to Live With Allergies

SPRING RANKING

2022 Spring Rank	Metropolitan Area
1	Scranton, PA
2	Richmond, VA
3	Wichita, KS
4	Hartford, CT
5	New Haven, CT
6	Oklahoma City, OK
7	Albany, NY
8	Bridgeport, CT
9	McAllen, TX
10	Springfield, MA
11	Buffalo, NY
12	Columbia, SC
13	San Antonio, TX
14	Dayton, OH
15	Syracuse, NY
16	Des Moines, IA
17	Memphis, TN
18	Allentown, PA
19	Miami, FL
20	Jacksonville, FL
21	Greenville, SC
22	Las Vegas, NV
23	Grand Rapids, MI
24	Tulsa, OK
25	St. Louis, MO

FALL RANKING

2022 Fall Rank	Metropolitan Area
1	Scranton, PA
2	Wichita, KS
3	McAllen, TX
4	San Antonio, TX
5	Oklahoma City, OK
6	El Paso, TX
7	Buffalo, NY
8	Hartford, CT
9	New Haven, CT
10	Richmond, VA
11	Albany, NY
12	Dayton, OH
13	Syracuse, NY
14	Bridgeport, CT
15	Springfield, MA
16	Columbia, SC
17	Des Moines, IA
18	Miami, FL
19	Memphis, TN
20	Las Vegas, NV
21	Tulsa, OK
22	Dallas, TX
23	Riverside, CA
24	Pittsburgh, PA
25	Grand Rapids, MI

Seasonal Ranking of Most Challenging Places to Live With Allergies

SPRING RANKING

2022 Spring Rank	Metropolitan Area
26	Poughkeepsie, NY
27	Pittsburgh, PA
28	Riverside, CA
29	Charleston, SC
30	El Paso, TX
31	Baton Rouge, LA
32	Dallas, TX
33	Greensboro, NC
34	Philadelphia, PA
35	Lakeland, FL
36	Columbus, OH
37	Knoxville, TN
38	Toledo, OH
39	Akron, OH
40	Worcester, MA
41	Daytona Beach, FL
42	Sarasota, FL
43	Cleveland, OH
44	Houston, TX
45	Cape Coral, FL
46	Louisville, KY
47	Orlando, FL
48	Little Rock, AR
49	Tucson, AZ
50	Palm Bay, FL

FALL RANKING

2022 Fall Rank	Metropolitan Area
26	Jacksonville, FL
27	Houston, TX
28	Greenville, SC
29	Baton Rouge, LA
30	Allentown, PA
31	Charleston, SC
32	Toledo, OH
33	Knoxville, TN
34	Greensboro, NC
35	Daytona Beach, FL
36	St. Louis, MO
37	Lakeland, FL
38	Orlando, FL
39	Tucson, AZ
40	Palm Bay, FL
41	Oxnard, CA
42	Columbus, OH
43	Louisville, KY
44	Sarasota, FL
45	Little Rock, AR
46	Cape Coral, FL
47	New Orleans, LA
48	Poughkeepsie, NY
49	Philadelphia, PA
50	Akron, OH

Seasonal Ranking of Most Challenging Places to Live With Allergies

SPRING RANKING

2022 Spring Rank	Metropolitan Area
51	Oxnard, CA
52	New Orleans, LA
53	Tampa, FL
54	New York, NY
55	Winston-Salem, NC
56	Virginia Beach, VA
57	Charlotte, NC
58	Augusta, GA
59	Chattanooga, TN
60	Birmingham, AL
61	Nashville, TN
62	Rochester, NY
63	Indianapolis, IN
64	Jackson, MS
65	Cincinnati, OH
66	Providence, RI
67	Los Angeles, CA
68	Boston, MA
69	Detroit, MI
70	Harrisburg, PA
71	Chicago, IL
72	Atlanta, GA
73	Austin, TX
74	Spokane, WA
75	Kansas City, MO

FALL RANKING

2022 Fall Rank	Metropolitan Area
51	Chattanooga, TN
52	Tampa, FL
53	Worcester, MA
54	Cleveland, OH
55	Virginia Beach, VA
56	Detroit, MI
57	Birmingham, AL
58	Winston-Salem, NC
59	Nashville, TN
60	Augusta, GA
61	Jackson, MS
62	Austin, TX
63	Charlotte, NC
64	Rochester, NY
65	Chicago, IL
66	Los Angeles, CA
67	Indianapolis, IN
68	Kansas City, MO
69	Omaha, NE
70	Colorado Springs, CO
71	Providence, RI
72	Atlanta, GA
73	Harrisburg, PA
74	Cincinnati, OH
75	New York, NY

Seasonal Ranking of Most Challenging Places to Live With Allergies

SPRING RANKING

2022 Spring Rank	Metropolitan Area
76	Omaha, NE
77	Baltimore, MD
78	Colorado Springs, CO
79	Albuquerque, NM
80	Raleigh, NC
81	Ogden, UT
82	Boise, ID
83	Stockton, CA
84	Minneapolis, MN
85	Washington, DC
86	Milwaukee, WI
87	Bakersfield, CA
88	San Diego, CA
89	Madison, WI
90	Sacramento, CA
91	Portland, OR
92	San Jose, CA
93	Salt Lake City, UT
94	San Francisco, CA
95	Fresno, CA
96	Provo, UT
97	Phoenix, AZ
98	Denver, CO
99	Seattle, WA
100	Durham, NC

FALL RANKING

2022 Fall Rank	Metropolitan Area
76	Ogden, UT
77	Spokane, WA
78	Raleigh, NC
79	Boston, MA
80	Albuquerque, NM
81	Baltimore, MD
82	Minneapolis, MN
83	Bakersfield, CA
84	Milwaukee, WI
85	Boise, ID
86	Madison, WI
87	Fresno, CA
88	San Diego, CA
89	Salt Lake City, UT
90	Phoenix, AZ
91	Denver, CO
92	Stockton, CA
93	Provo, UT
94	Washington, DC
95	Portland, OR
96	San Jose, CA
97	Sacramento, CA
98	Durham, NC
99	San Francisco, CA
100	Seattle, WA

METHODOLOGY

The 2022 Allergy Capitals™ research and ranking is reported by the Asthma and Allergy Foundation of America (AAFA). The ranking is based on analysis of data from the 100 most-populated Metropolitan Statistical Areas (MSAs) in the contiguous 48 states as determined by the most recent U.S. Census Bureau population estimates (2019). The individual factors analyzed for the 2022 rankings are seasonal pollen scores (spring and fall), over-the-counter medication use (allergy), and number of allergy specialists.

For each factor, AAFA used the most recently available 12-month data. Weights are applied to each factor; factors are not weighted equally. Total scores are calculated as a composite of all four factors, and cities are ranked from highest total score (city rank #1) to lowest total score (city rank #100). Cities are assigned icons for ■ worse than average (top 25), ▲ average (middle 50), and ● better than average (lower 25).

Seasonal (Spring and Fall) Pollen Scores

For each city, AAFA obtained a comprehensive index of the population at risk of being affected by airborne allergenic pollen, derived from actual pollen counts, allergy prevalence for each pollen type, and related factors (by Designated Market Area). Data were obtained from the IQVIA Allergy Activity Notification (AAN) Program Database for the most recent spring and fall allergy seasons (2021).

Medication Use

For each MSA, AAFA obtained over-the-counter sinus and allergy medication sales data per patient prevalence. Data were obtained from the IRI Medication Sales Database for the most recent calendar year (2021).

Number of Allergy/Immunology Specialists

For each MSA, AAFA obtained the number of board-certified allergists/immunologists per patient prevalence. Data were obtained from the Komodo Health Prism Health Care Database for the most recent calendar year (2021). In 2022, AAFA updated data collection procedures to more accurately capture estimates for allergist and immunologist access. The updated data source may impact cities' rankings in comparison with previous years.

Limitations

Data presented in this report have limitations that AAFA would like to acknowledge. Estimates around pollen-affected population are limited in Alaska and Hawaii, and therefore are not included in this report. Additionally, not all of the 100 markets included in our report have estimates for pollen-affected population. In these instances, pollen data has been supplemented from nearby markets. Finally, our medication sales data uses only estimates for over-the-counter allergy medication sales. While many people use over-the-counter medicine for pollen allergies, the data may not capture individuals who use only prescription medicines for allergies. Additionally, this category of medicine includes over-the-counter decongestants, which may be used for other purposes, such as colds.

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ACKNOWLEDGEMENTS

The 2022 Allergy Capitals™ report is an independent research project by the Asthma and Allergy Foundation of America.

This comprehensive report would not have been possible without the following contributors:

- Clifford Bassett, MD; Member of AAFA's Medical Scientific Council; Founder and Medical Director of Allergy and Asthma Care of New York
- Tanya Bumgardner, lead editor
- Melanie Carver, editor and reviewer
- Sanaz Eftekhari, reviewer
- Nicole Gaghan, designer
- Hannah Jaffee, lead researcher
- Kimberly Rafferty, project manager
- Jenna Riemenschneider, contributor

AAFA would like to thank Komodo Health, IRI, and IQVIA Consumer Health for support with data and report content.

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