

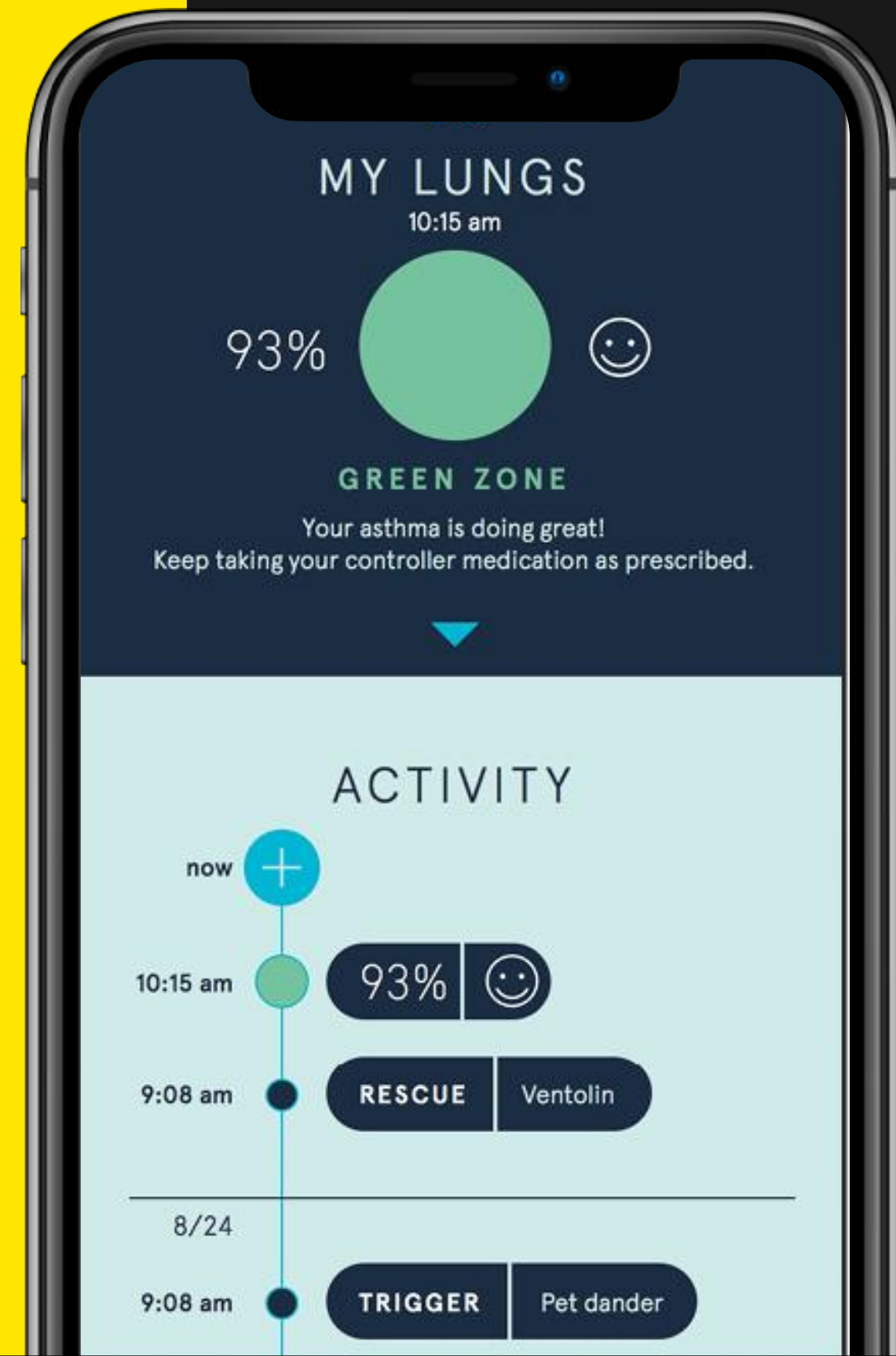


Asthma Prediction

→ Using ML and Smartphone application

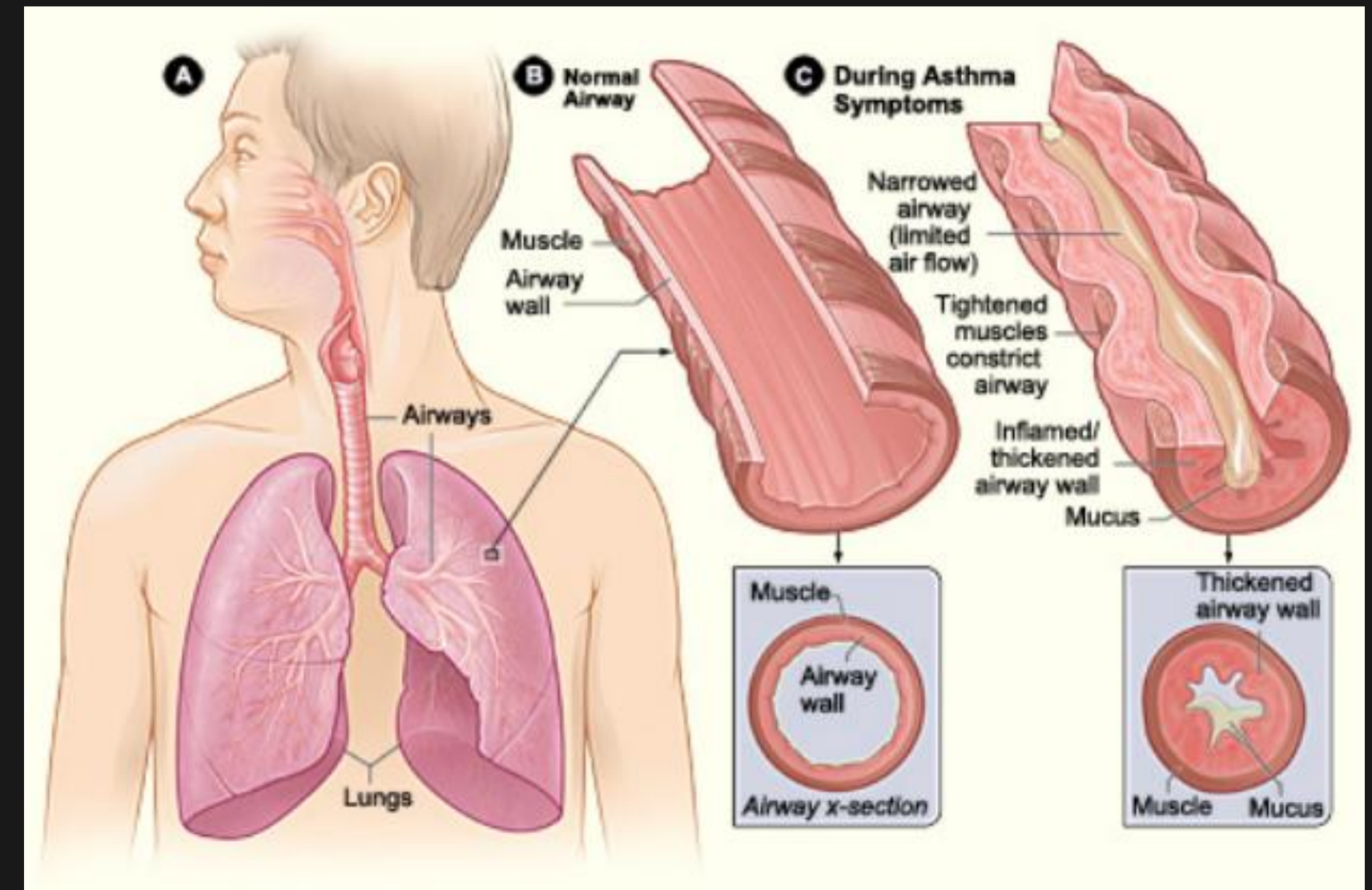
TEAM 11:

Sabarinath
Shyam Ganesh
Sidesh Sundar
Sasank Sami
Bharadwaj



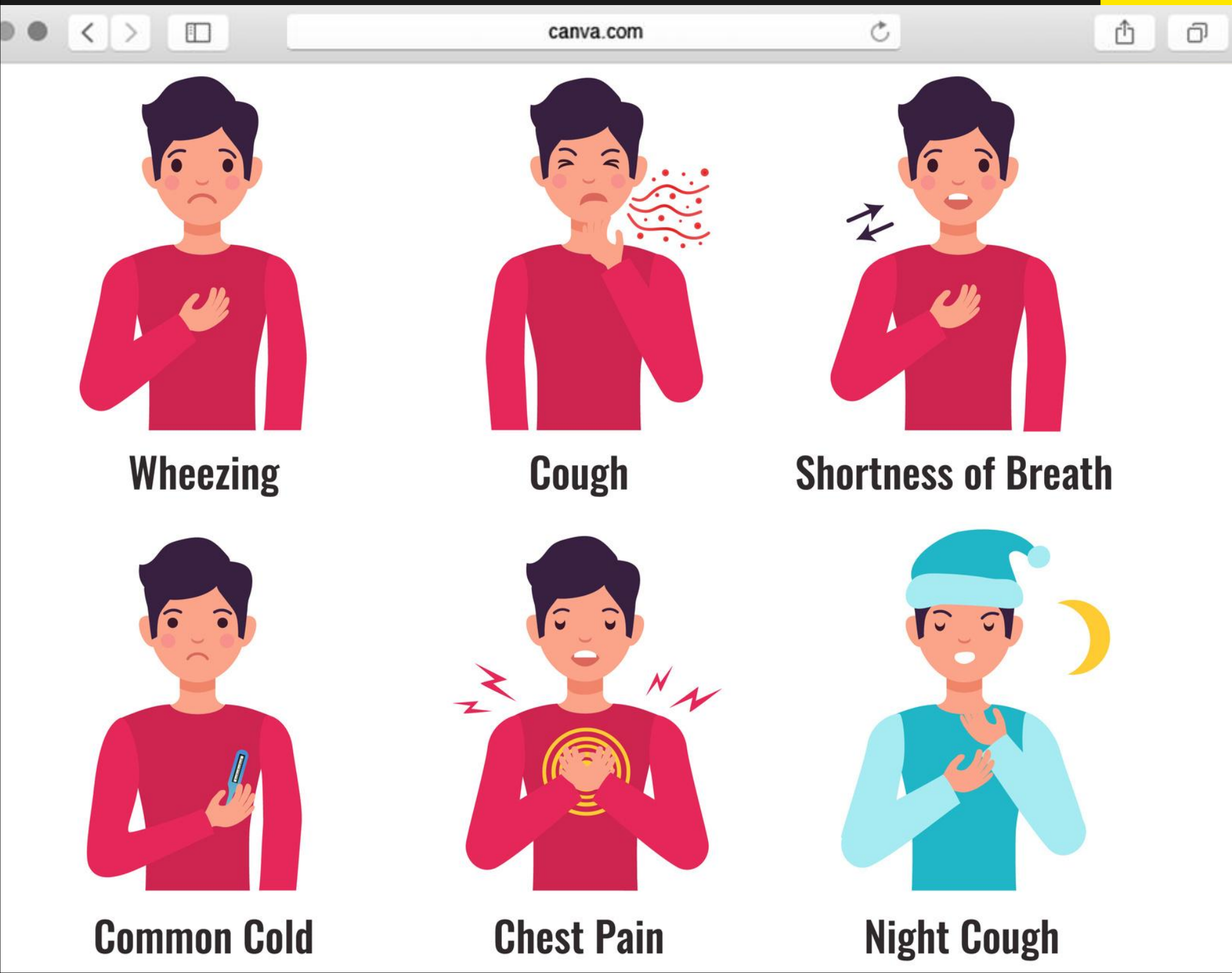
What is Asthma

- Asthma is a condition in which your airways become:
 - Narrow
 - Swell
- Produce extra mucus.
- This makes breathing difficult



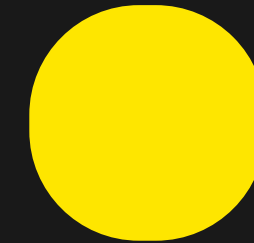
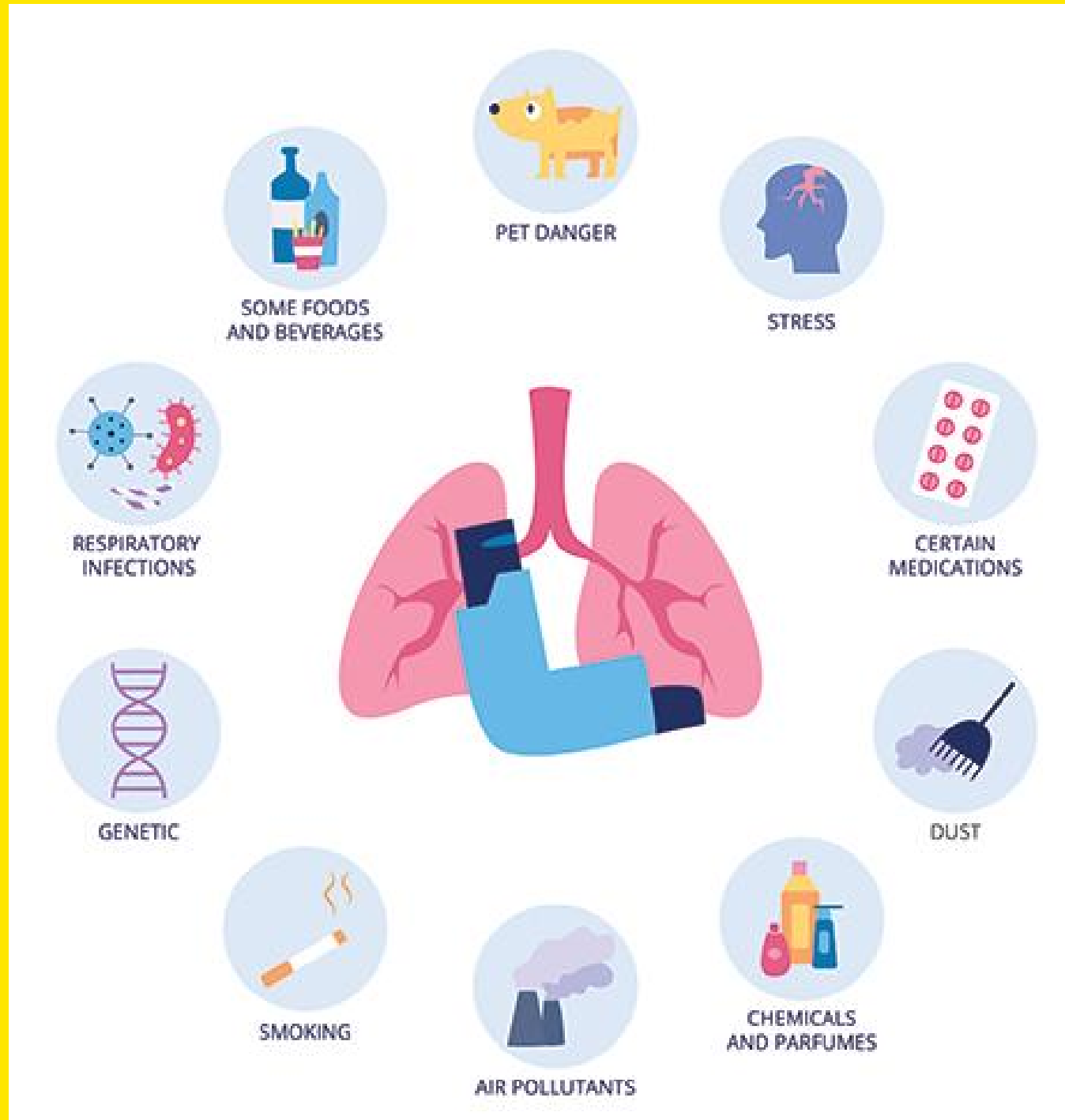


Smyptoms

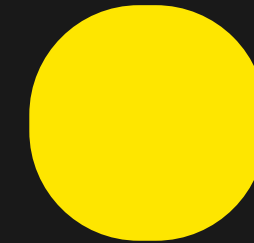


- Shortness of breath
- Chest tightness or pain.
- Wheezing
- Trouble sleeping
- Coughing

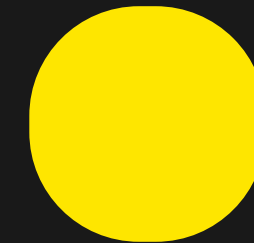
Causes



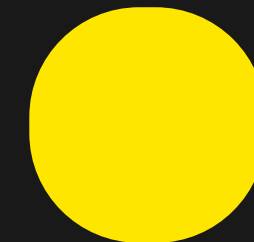
Tobacco Smoke



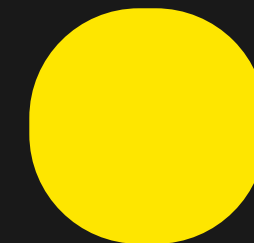
Dust Mites



Outdoor Air Pollution



Pests and pets



Mold ,cleaning and disinfection

Characteristic	Age Groups (Years)	
	Weighted Number With Current	Asthma Percent (SE)
0–4	394,206	2.0 (0.43)
5–11	1,641,279	5.9 (0.58)
5–14	2,699,214	6.6 (0.55)
5–17 (School Age)	3,832,453	7.2 (0.49)
12–14 (Young Teens)	1,057,935	8.1 (1.10)
12–17	2,191,174	8.6 (0.77)
15–17 (Teenagers)	1,133,239	9.1 (1.11)
15–19	1,833,105	9.3 (0.93)
11–21 (Adolescents)	4,136,845	9.0 (0.63)
20–24	2,253,542	10.3 (1.05)
22–39 (Young Adults)	6,621,732	8.5 (0.40)
25–34	3,600,545	8.1 (0.51)
35–64	10,245,123	8.3 (0.28)
65+	4,215,039	7.8 (0.34)



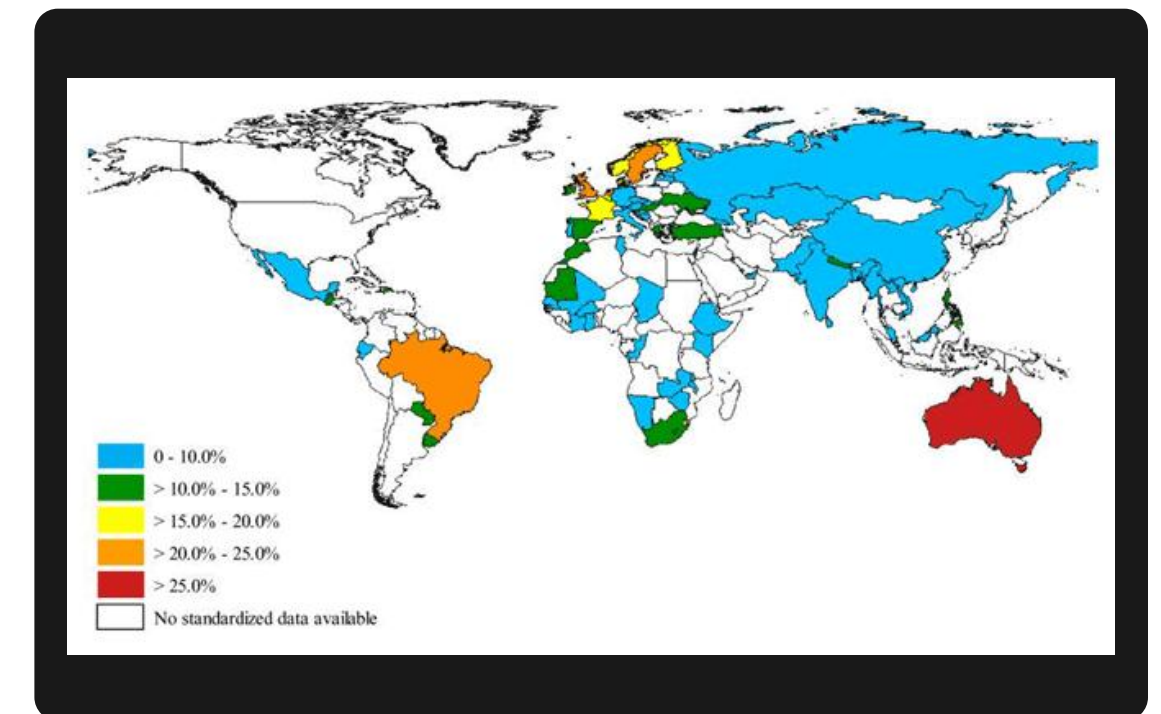
A wide range of indoor and outdoor allergens, irritants, as well as cold temperatures, can exacerbate asthma.

For some children, environmental allergies can trigger asthma symptoms or make them worse.

Household exposures to dust mites and cockroach allergens, and the irritant effects of environmental tobacco smoke, contribute significantly to asthma morbidity.

Countries with the highest prevalence of clinical asthma were Australia (21.5%), Sweden (20.2%), UK (18.2%), Netherlands (15.3%) and Brazil (13.0%); however, the US and Canada were excluded.

The lowest rates were observed in Vietnam (1.0%), Bosnia-Herzegovina (1.4%), and China (1.4%)



Genetic factors

There are different experimental approaches to establishing a connection between a gene and a disease such as asthma.

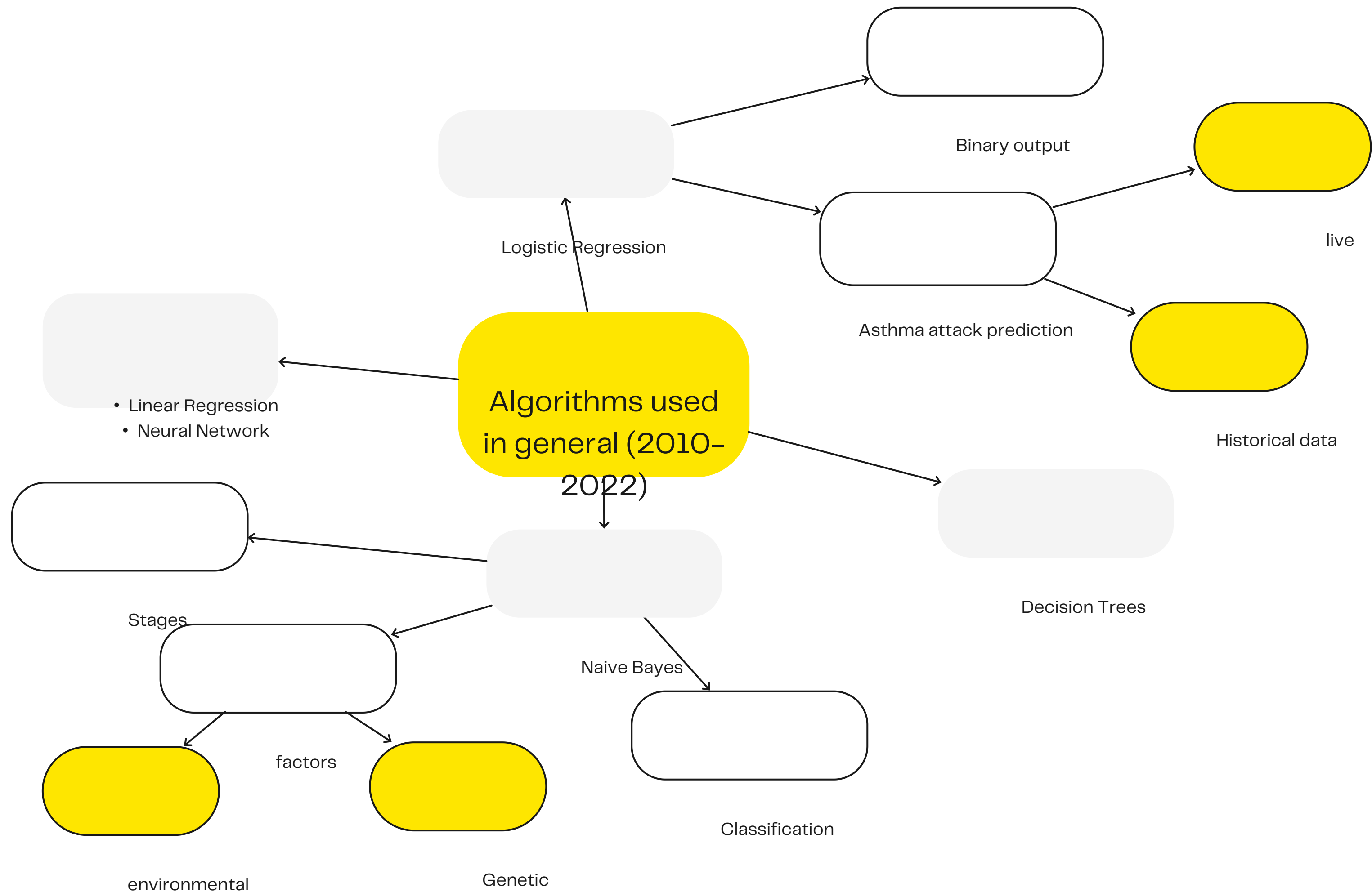
The two main options are genetic linkage analysis and genetic (allelic) association analysis.

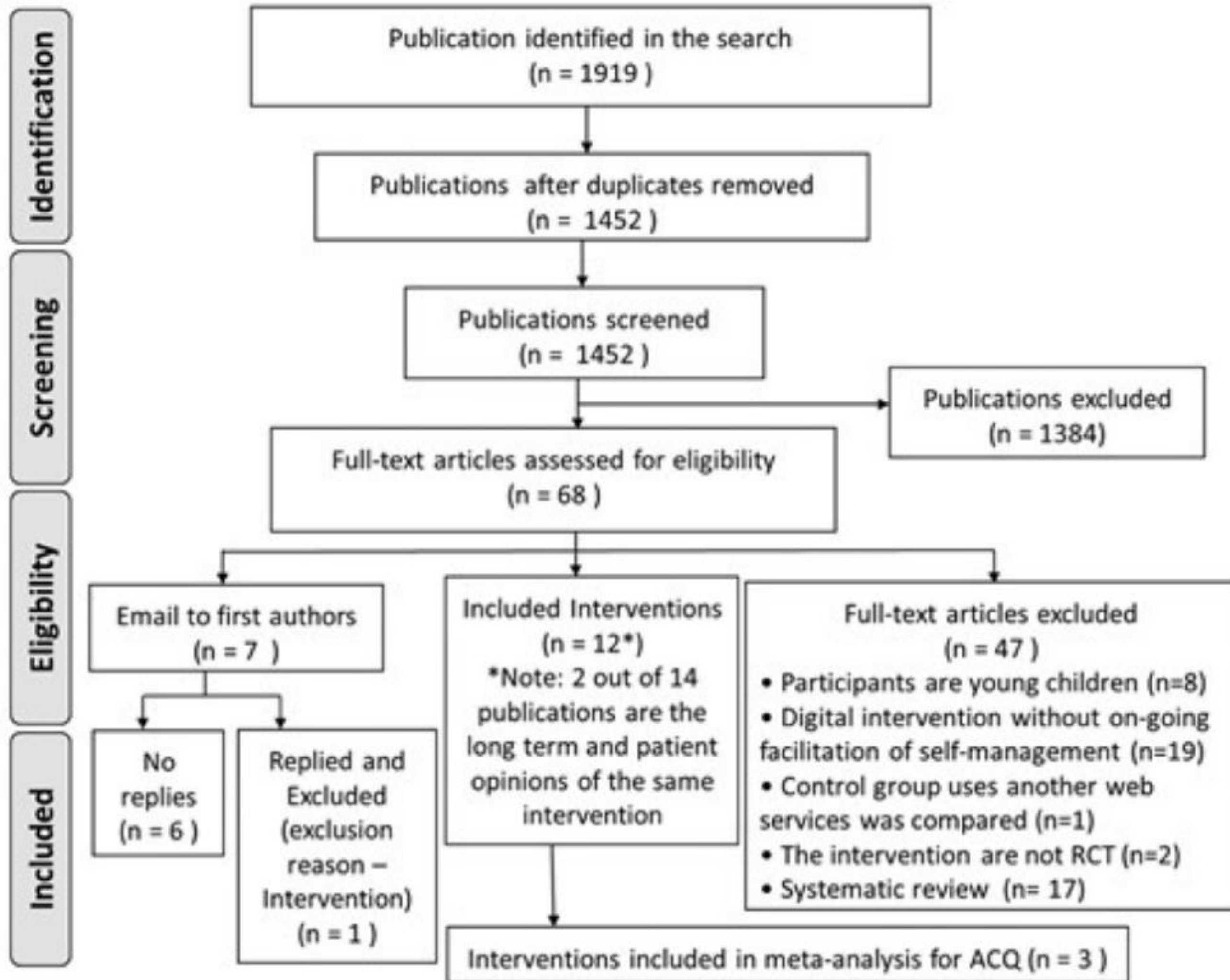
The recurrence risk of asthma in children with one affected parent is around 25%, whereas the risk if both parents are affected is around 50%.

Referenc

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4629762/#:~:text=The%20recurrence%20risk%20of%20asthma,close%20relative%20with%20the%20disease.>

Recurrence risk of asthma	
Affected relative	Person's own risk of asthma (%)
No family history	5
Uncle/nephew/niece	10
Half sibling	10
Full sibling	25
One parent	25
Dizygotic twin	35
Two parents	50
Monozygotic twin	75





Biomarkers of type 2 inflammation include:

- Sputum
- Blood eosinophils,
- Exhaled nitric oxide levels
- Serum periostin.