



# 2022 HIGHLIGHTS REPORT

Cystic Fibrosis in Europe  
Facts and Figures

version 1.1

The European Cystic Fibrosis Society Patient Registry (European CF Registry) is proud to present this report with key information about how cystic fibrosis (CF) affects people with CF and their families throughout Europe.

The European CF Registry collects, measures and compares data of people with CF living in Europe and neighbouring countries who agree to be in the Registry. The information is important to better understand CF, encourage new European standards of care and treatment, conduct research and inform public health planning.

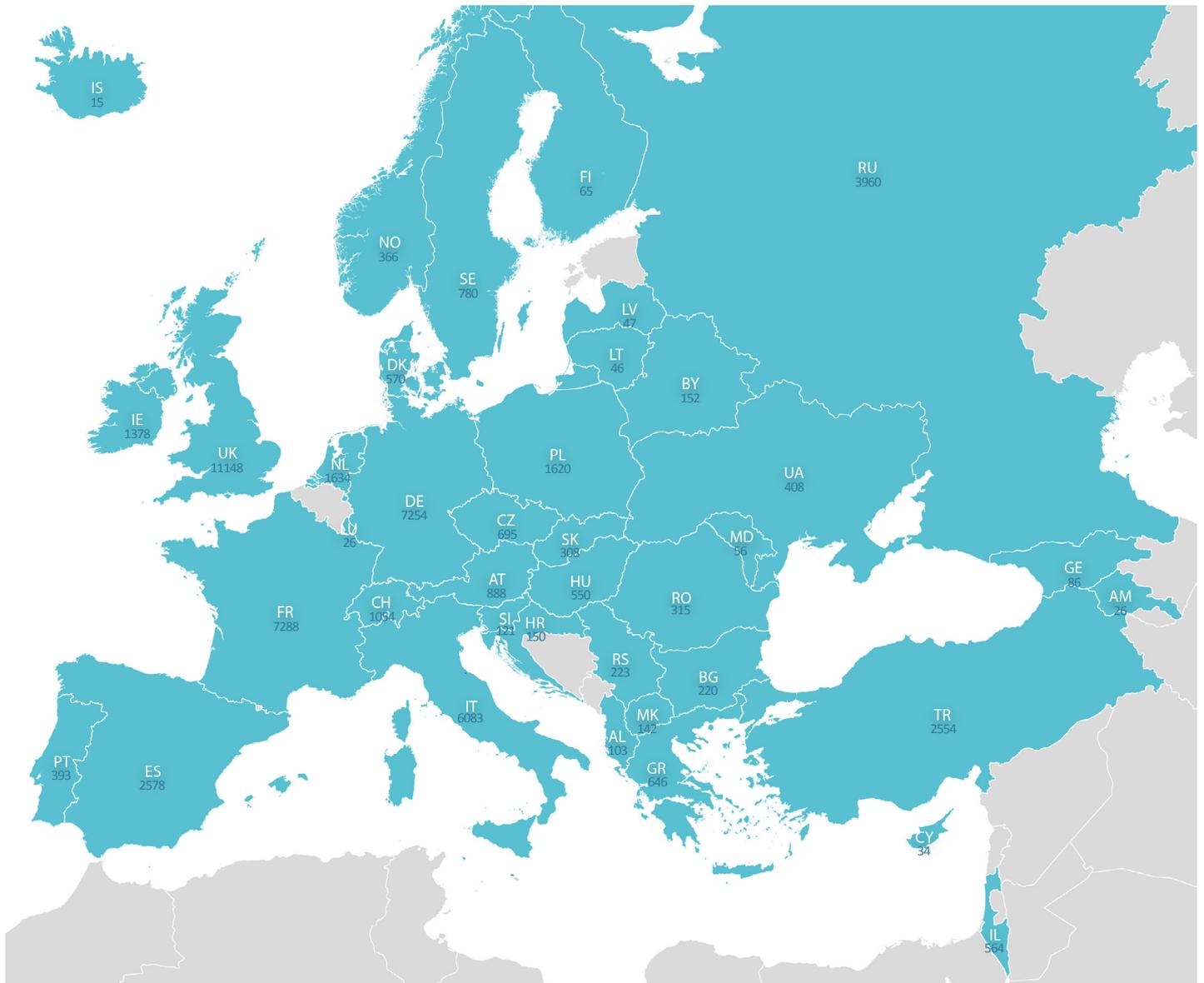
If you want to know more about the European CF Registry visit our [website](https://www.ecfs.eu/ecfspr).

June 2024



# WHO & FROM WHERE?

Total number of people and countries that contributed 2022 data to the ECFSPR



 **54,546**

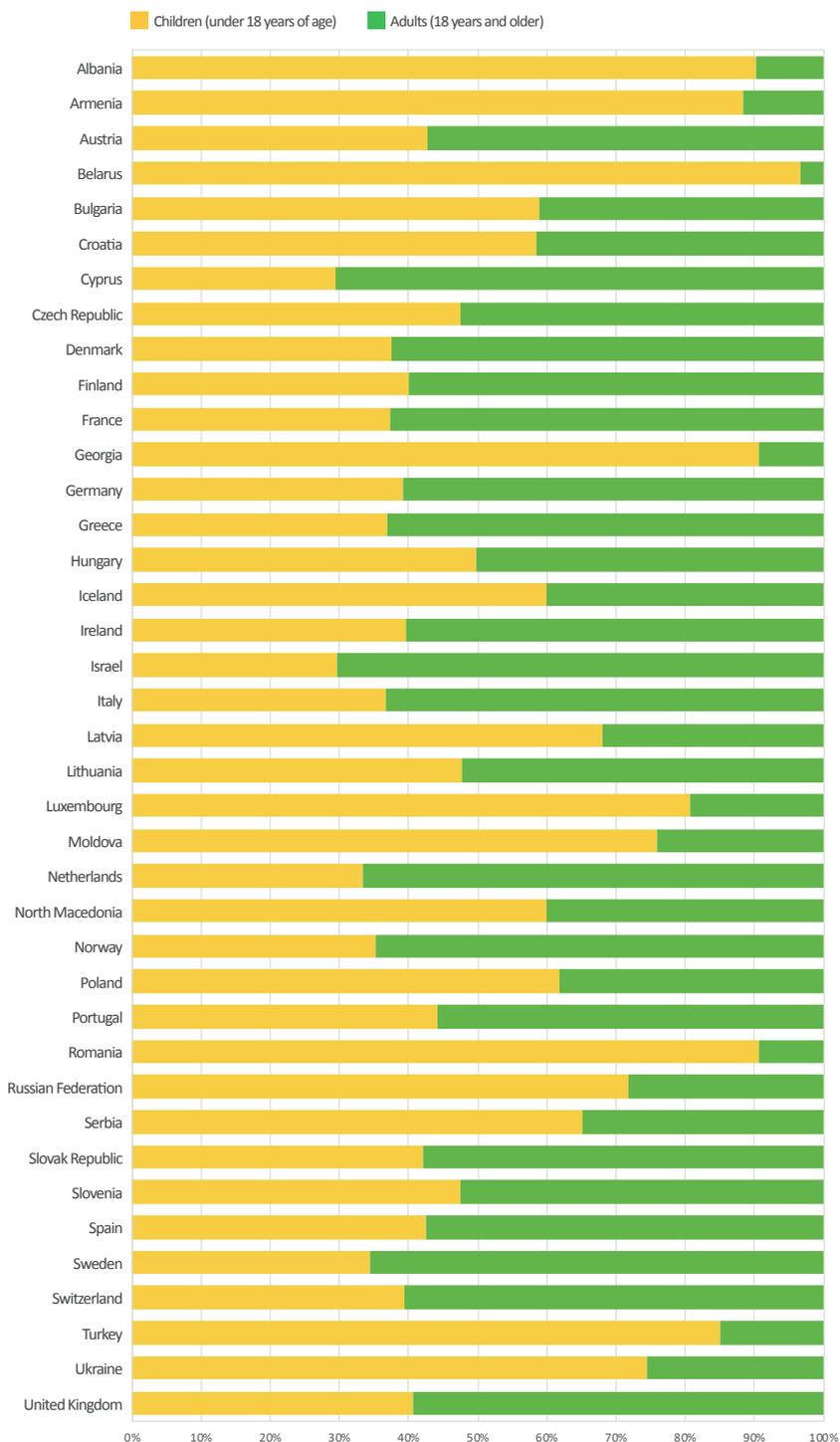
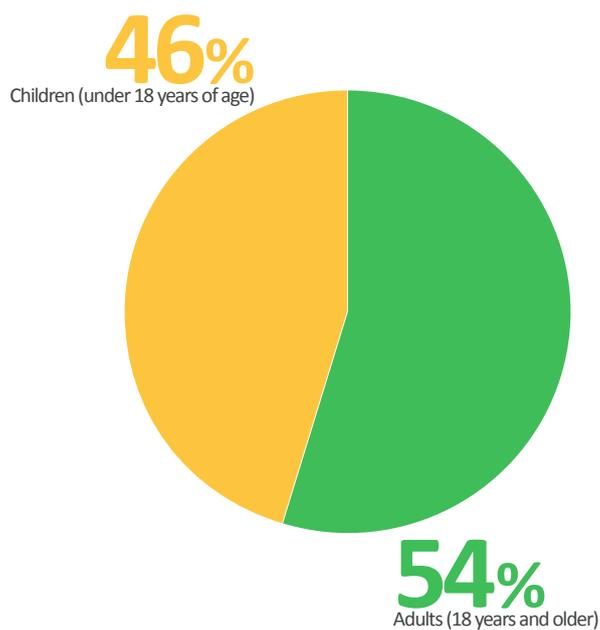
Registered people with CF in 39 countries

For some countries only a few individual centres sent data to the European CF Registry.

# People with CF

## % CHILDREN & ADULTS

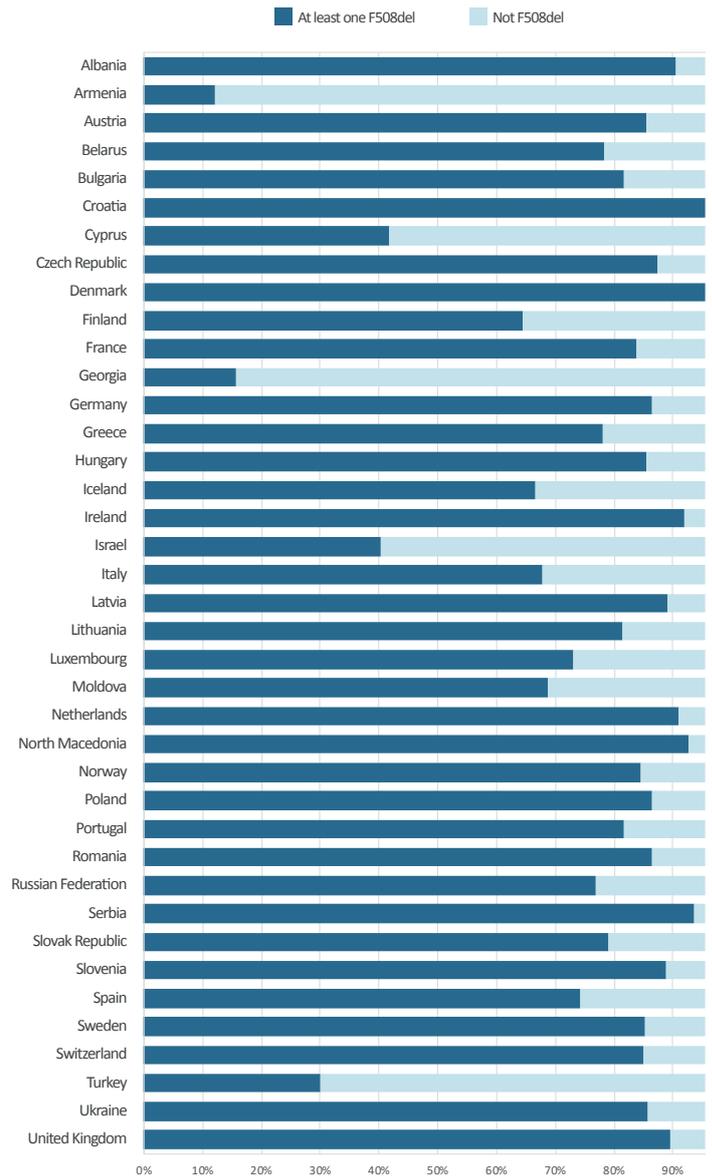
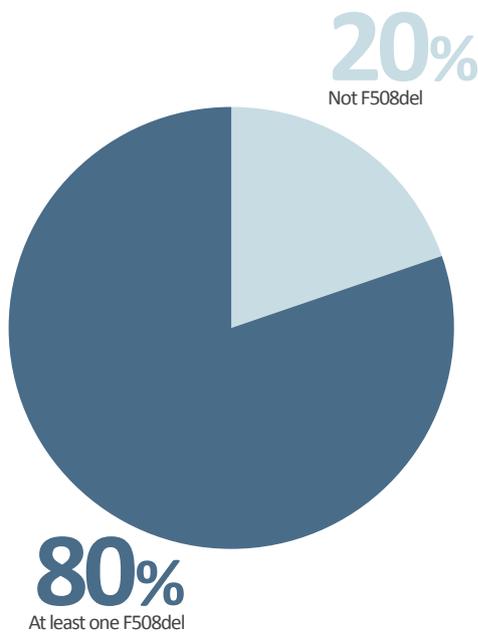
The proportion children-adults varies between the countries.



# MUTATIONS AND DIAGNOSIS

## Distribution of mutations

People with CF have two CF-causing mutations in their DNA. One mutation is inherited from the mother and one from the father. F508del is the most common CF-causing mutation in Europe.



## Diagnosis of CF

Most people are diagnosed with CF in their childhood. The age at diagnosis, especially in children and adolescents, is strongly influenced by the presence or absence of a national CF newborn screening programme.

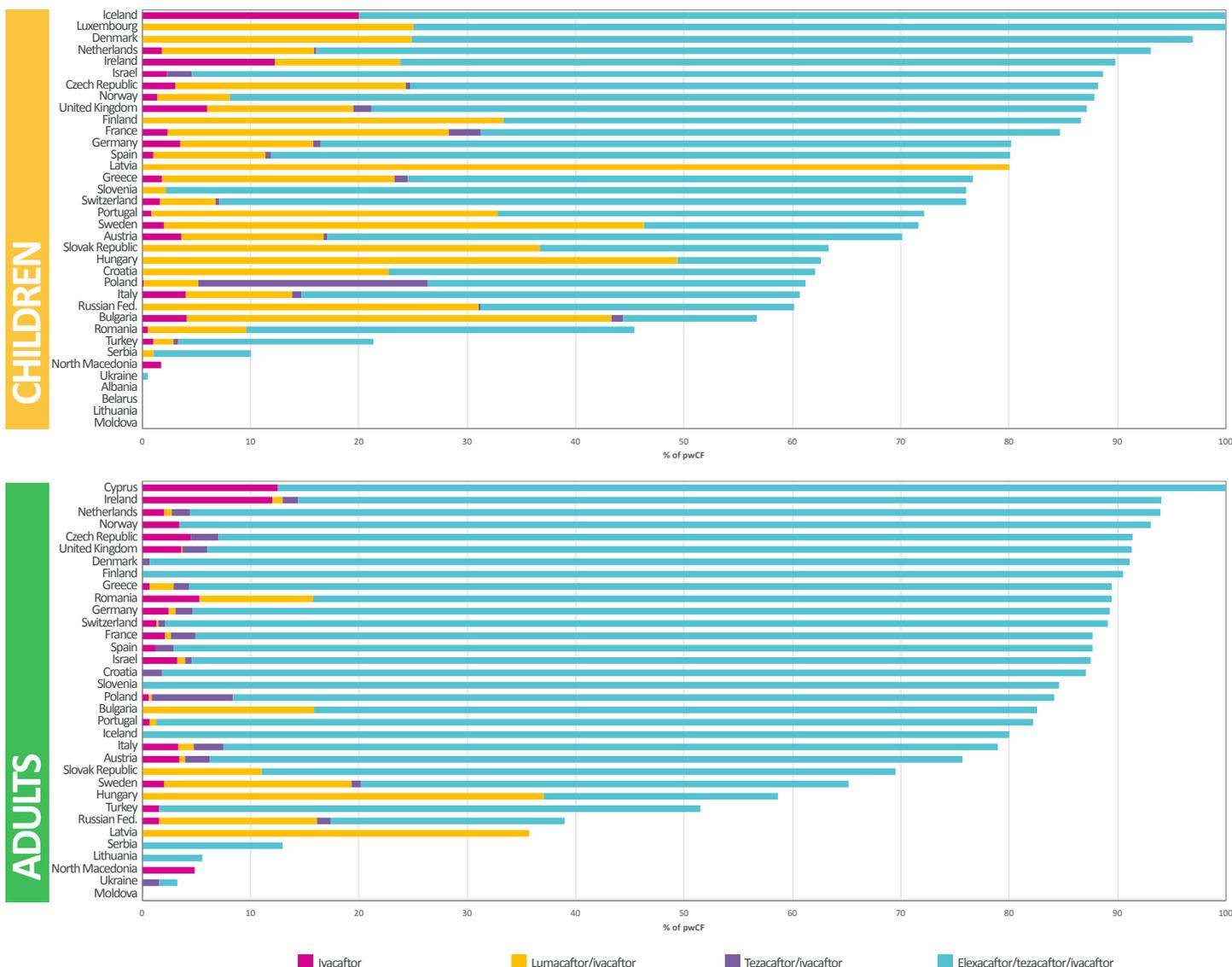
The median age at CF diagnosis is 3.6 months, meaning half of all people with CF are diagnosed before they are 3.6 months old and the other half are diagnosed at a higher age. The majority of people with CF are diagnosed before they are a year old.

**MEDIAN AGE DIAGNOSIS**  
**3.6 MONTHS**

# CFTR MODULATORS

## Modulator information

**CHILDREN & ADULTS** with CF eligible for and treated with at least one modulator - by country and last CFTR modulator prescribed, seen in 2022 and who have never had a transplant.



Note: Not included in this graph are countries with a high number of missing values or when <5 people with CF.

CFTR modulators are medicines that act by improving the production, functioning or processing of the malfunctioning CFTR protein which is the cause of CF. Not everyone with CF can benefit from a CFTR modulator, either because the medicines do not work for the mutation(s) they have or because the medicines are not reimbursed by their national health service. The combination of elexacaftor/tezacaftor/ivacaftor is currently prescribed for most children with CF. In the majority of countries in Europe more than 50% of all adults with CF are now eligible and treated with one of the CFTR modulators.

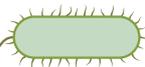
# INFECTION

## People with CF who have a lung infection

### *Pseudomonas aeruginosa*

CHILDREN  
**21%**

ADULTS  
**41%**



### Methicillin-sensitive *Staphylococcus aureus*

CHILDREN  
**55%**

ADULTS  
**47%**

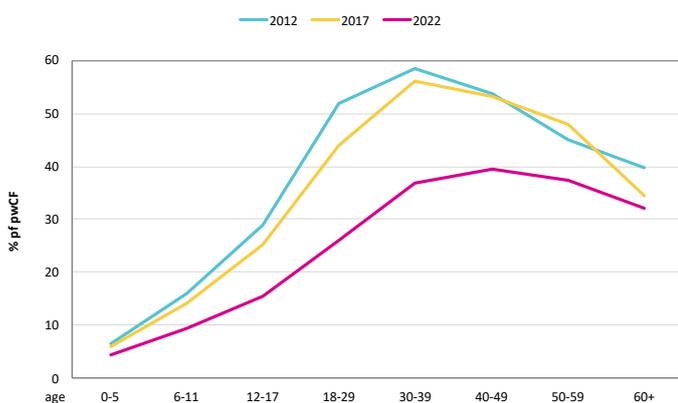


These figures show how many people with CF<sup>1</sup> were infected with *Pseudomonas aeruginosa* and methicillin-resistant *Staphylococcus aureus* (MRSA) in 2022. These bacteria are the most common causes of lung infection in people with CF.

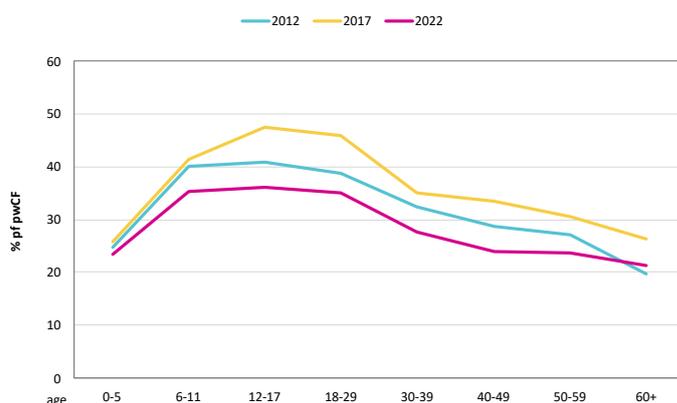
<sup>1</sup> People seen in a CF centre in 2022 who have never had a transplant.

## Over the years

### *Pseudomonas aeruginosa*



### Methicillin-sensitive *Staphylococcus aureus*



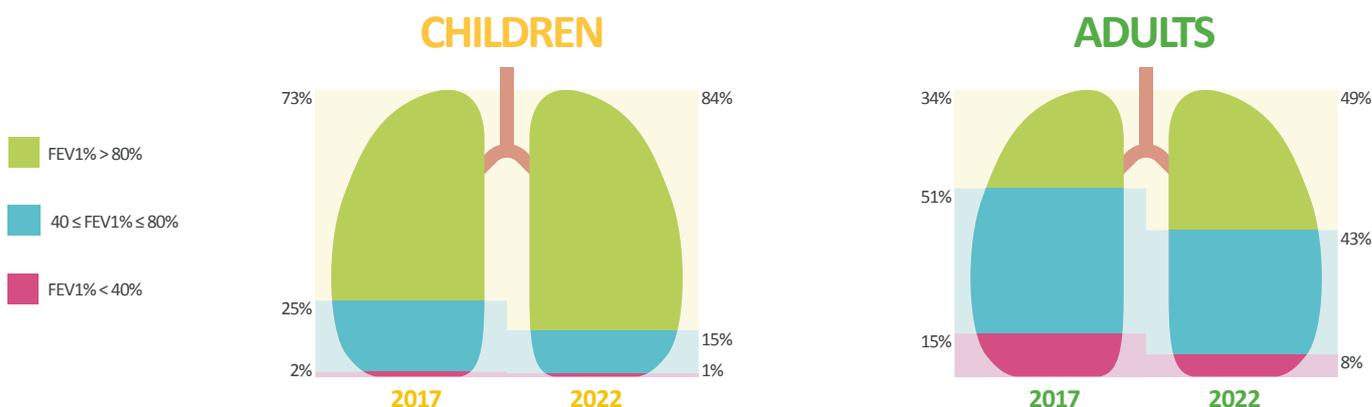
The incidence of *Pseudomonas aeruginosa* infection increases with age, up to around 30 years old, though over the last 10 years detection of Pa in all age groups has fallen. With methicillin-resistant *Staphylococcus aureus*, the infection rate decreases in adulthood (18 years and older), with no significant change in the last 10 years.

# HEALTH INFORMATION

## Lung function

FEV1, or Forced Expiratory Volume 1, is a measure of lung function. It is the maximum amount of air that can be forcefully exhaled in the first second after taking a deep breath.

For people with CF, FEV1 is measured then expressed as a percentage of the average value (FEV1%) for healthy people of the same age, gender and height which is set at 100%. An FEV1% of 80% or higher is considered a healthy lung function.



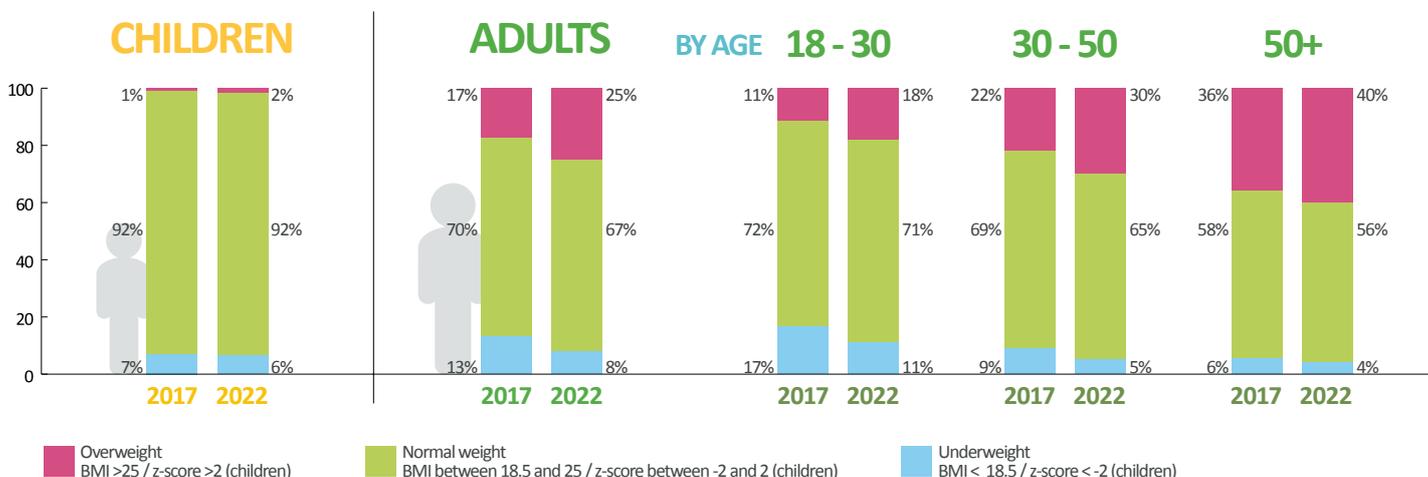
Overall, the lung function of people with CF was higher in 2022 than in 2017, as was the number of both children and adults with a healthy lung function (FEV1% of 80% or higher).

## Height and weight

BMI (body mass index) is a measure that determines whether or not someone has a healthy weight compared to their height.

In children with CF, their BMI is compared to that of healthy children and is expressed by a z-score (how different something is from the reference value). A z-score of 0 means the BMI is the same as that of a healthy child of the same age and gender.

As people with CF get older, BMI increases.



The percentage of people with CF who are overweight increased in all age groups between 2017 and 2022. Fewer people are underweight in 2022 than in 2017.



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