

# SEVERE ASTHMA AND THE ROLE OF THE EOSINOPHIL



inflammation  
tight chest  
airways  
Asthma  
coughing  
wheezing  
shortness of breath  
lungs control  
hospital  
chronic  
lung disease  
attack  
severe cough



NEARLY **242 MILLION** PEOPLE WORLDWIDE HAVE ASTHMA<sup>1</sup>



UP TO **10% MAY** HAVE SEVERE ASTHMA<sup>2</sup>



PEOPLE WITH SEVERE ASTHMA ARE AT **HIGH RISK** OF AN ASTHMA ATTACK OR 'EXACERBATION'<sup>3</sup>

Nearly **40%** are hospitalised at least once a year for the treatment of an exacerbation<sup>4</sup>



ASTHMA COSTS AN ESTIMATED **€19 BILLION** A YEAR ACROSS EUROPE<sup>5</sup>



Direct and indirect costs are up to **3 to 4** times higher for severe asthma patients compared to mild asthma patients<sup>6,7</sup>

Up to **1/5** of severe asthma patients have missed at least 1 day of work or education in a 2-week period<sup>8</sup>



## THE ROLE OF EOSINOPHILS

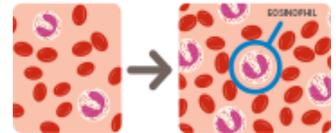
Not all asthma is the same: Severe asthma can have a number of underlying causes, including eosinophilic inflammation<sup>9</sup>

Studies suggest approximately **60%** of severe asthma patients may have eosinophilic airway inflammation<sup>10</sup>



**Eosinophils are a type of white blood cell.**

They are believed to play a role in protecting the body by increasing in number to defend the body against parasites and also accumulate wherever allergic reactions take place<sup>11,12</sup>



Blood smear showing increasing eosinophil levels

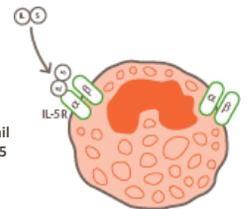
**Eosinophils play a role in the development of asthma.** In people with asthma, inflammatory mediators released from the eosinophil cause inflammation in the lungs, making it difficult to breathe and increasing the risk of an exacerbation<sup>13</sup>



Normal airway

Inflamed airway

Eosinophils are primarily regulated by the signalling protein **Interleukin-5 (IL-5)**, which binds to its receptor on the surface of eosinophils<sup>14</sup>



Single eosinophil cell showing IL-5 binding to a receptor on its surface

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