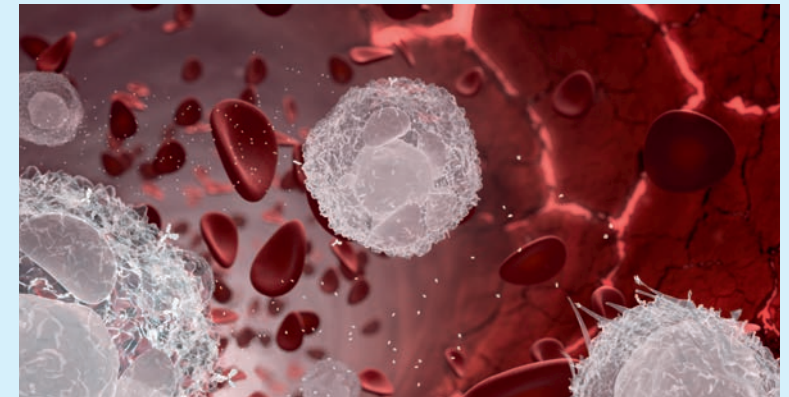


## Know more about your patient's immune response status

Patients with inflammatory diseases are common on many hospital wards whereby it is important to quickly differentiate between the various possible conditions. One of the prime objectives is to distinguish between inflammations caused by infections and those that are not. One also has to determine the pathogen responsible and the status of the immune response in case of infection. Haematological inflammation parameters, part of the blood count available on Sysmex haematology analysers, provide early information about the inflammatory reaction of patients' immune systems and so support the diagnosis and follow up of these conditions.



A 23-year old man with an intermittent fever visited his physician three days after the initial onset of fever. The man reported the following symptoms: shortness of breath, productive cough, abdominal pain, diarrhoea, night sweats and malaise. Considering the man's symptoms, a complete blood count with WBC differential analysis was performed. The results of the Sysmex haematology analyser revealed leucocytopenia with a relative increase in neutrophils. The neutrophils showed an increased activation and there were slightly increased antibody-synthesizing lymphocytes; the results indicated an early response of the innate immune system to an active infection by intracellularly located bacteria.

### **Sysmex offers a practical solution**

A combination of novel diagnostic inflammation parameters are readily available from a routine laboratory test, together with the complete blood count. The parameters quantify and characterise the activation status of white blood cell subpopulations, such as:

- Immature granulocytes (IG)
- Activated neutrophils (NEUT-RI, NEUT-GI)
- Activated lymphocytes (RE-LYMP, AS-LYMP)

These diagnostic inflammation parameters provide additional information about the activation of the immune response and help clinicians investigate inflammatory conditions in details. More information on the individual parameters is found overleaf.

INFECTION/  
INFLAMMATION

Know more.  
Decide with confidence.  
Act faster.

**Table** The diagnostic inflammation parameters support differentiation between the different types of immune response, such as early innate, adaptive cell-mediated and humoral immune response. This information may help identify the stage of an infection. Furthermore they can support the management of inflammatory diseases and differentiation between inflammation and infections, as well as different pathogenic causes of infection (e.g. bacterial, viral).

Cell populations and/or their characteristics	Description	Immunological interpretation	Parameter	Unit
<b>Total reactive lymphocytes</b>	This includes activated B and T lymphocytes recognised by an increased fluorescence intensity compared to that of common lymphocytes.	Increased in innate and adaptive cell-mediated immune response	RE-LYMP# RE-LYMP% <sup>1</sup>	Cells/L %
<b>Antibody-synthesizing lymphocytes<sup>2</sup></b>	These are exclusively activated B lymphocytes recognised by the markedly increased fluorescence intensity compared to that of common lymphocytes.	Increased in innate and adaptive humoral immune response	AS-LYMP# AS-LYMP% <sup>1</sup>	Cells/L %
<b>Granularity of neutrophils</b>	A measure of the cytoplasmic granularity of the neutrophil population, representing their response to inflammatory processes.	Increased in early innate immune response	NEUT-GI: Neutrophil Granularity Intensity	Scatter Intensity (SI)
<b>Reactivity of neutrophils</b>	A measure of the fluorescence intensity of the neutrophil population, representing their metabolic activity.	Increased in early innate immune response	NEUT-RI: Neutrophil Reactivity Intensity	Fluorescence Intensity (FI)
<b>Immature granulocytes</b>	The total of metamyelocytes, myelocytes and promyelocytes are counted as a single population, separately from the common neutrophils.	Indicates the severity of the early innate immune response	IG# IG% <sup>1</sup>	Cells/L %

<sup>1</sup> As a percentage of all WBC

<sup>2</sup> When antibody-synthesizing lymphocytes (AS-LYMP) are present, they are also included in the total reactive lymphocytes (RE-LYMP).

## Your benefits

- The parameters in the table are available from a complete blood count with differential and quickly provide an initial indication based on immune cell activation.
- Additional information from inflammation parameters support an early diagnosis so that targeted treatment can be started, changed or modified faster.
- Following up patients with inflammatory diseases and the success of their therapy can help to avoid the overuse of antibiotics.

Benefit from more background information in our freely accessible white papers: [www.sysmex-europe.com/whitepapers](http://www.sysmex-europe.com/whitepapers)

For references to independent publications, please visit [www.sysmex-europe.com/academy/library/publications](http://www.sysmex-europe.com/academy/library/publications) or contact your local Sysmex representative.