



  **RCPA**
The Royal College of Pathologists of Australasia

NATA Accreditation: #20770



Lab ID
Patient ID P000061
Ext ID 26082-0425

Test Patient

Sex: Male • 56yrs • 01-Jan-70
123 Home Street, Test Suburb VIC 3125

RECEIVED
23-Mar-26

CYTOKINES, Extensive Panel

Specimen type - Blood-Serum

Collected

15-Mar-26

PRO-INFLAMMATORY CYTOKINES

[illegible]

ANTI-INFLAMMATORY CYTOKINES

TEST	RESULT	H/L		REFERENCE	UNITS
G-CSF	1.7			(<2.0)	pg/ml
Interleukin-2	5.2			(<10.0)	pg/ml
Interleukin-3	2.2			(<10.0)	pg/ml
Interleukin-4	1.4			(<3.0)	pg/ml
Interleukin-5	3.7			(<5.0)	pg/ml
Interleukin-10	5.5	H		(<2.0)	pg/ml
Interleukin-12	4.0			(<5.0)	pg/ml
Interleukin-13	3.8			(<5.0)	pg/ml
INF-g	15.9	H		(<10.0)	pg/ml



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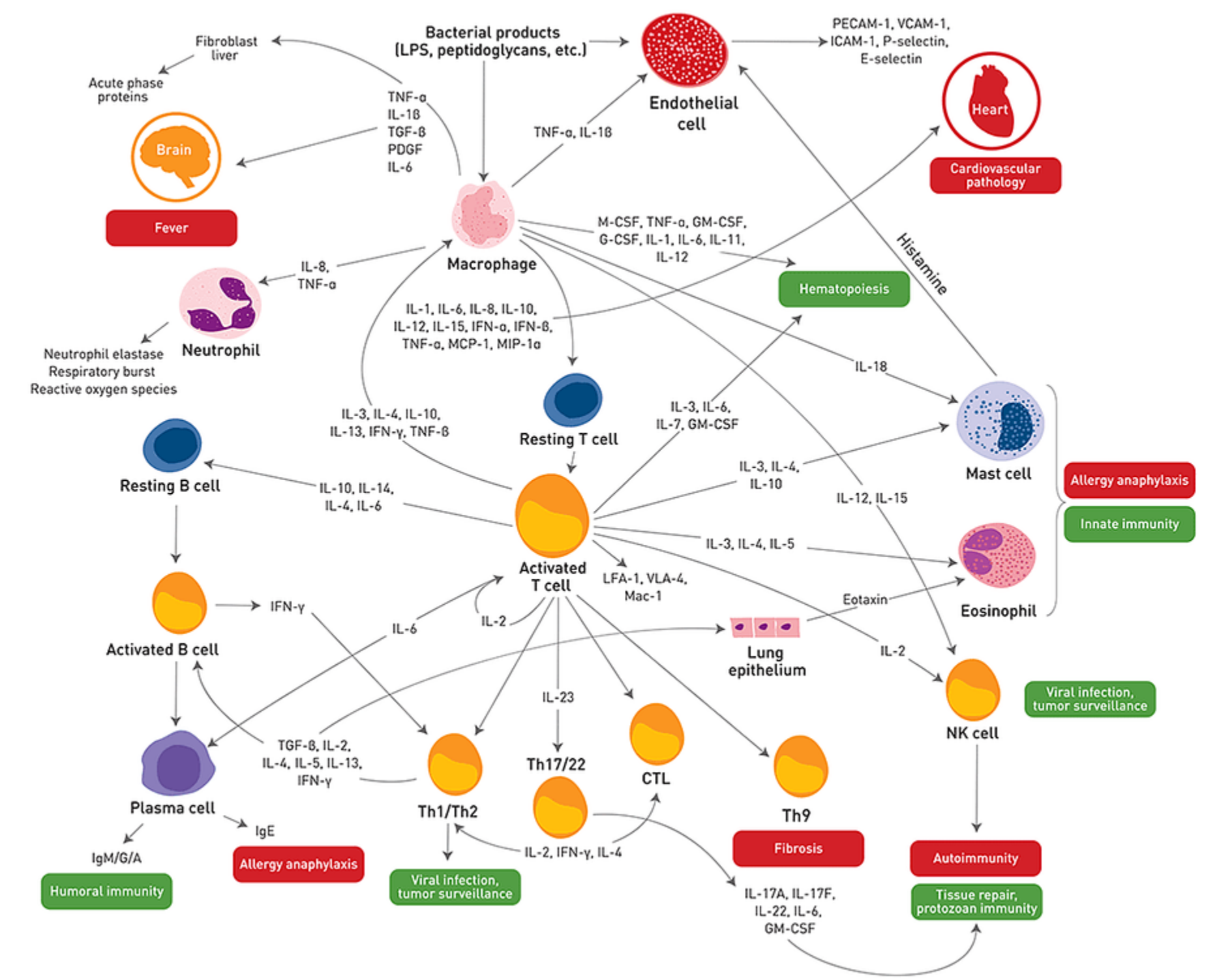
CYTOKINES OVERVIEW:

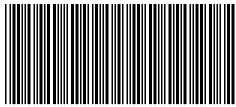
Cytokines are a diverse group of low molecular weight signalling proteins that play a central role in the regulation of immune responses, inflammation, and intercellular communication. They are produced by a range of cell types, including lymphocytes, monocytes/macrophages, and epithelial cells, and act to coordinate both innate and adaptive immune processes.

Cytokines may be broadly classified as pro-inflammatory (e.g. IL-6, TNF- α), anti-inflammatory (e.g. IL-10), or associated with specific immune pathways such as Th1, Th2, and Th17 responses, each reflecting distinct patterns of immune activation and regulation. The balance between these pathways is important for maintaining immune homeostasis.

Measurement of circulating cytokines may provide insight into immune system activity and regulatory balance. Elevated levels can be observed in a range of contexts, including acute or chronic inflammation, immune activation, allergic responses, and immune dysregulation. As cytokines function within complex, interrelated networks, interpretation is most informative when considered as part of an overall pattern rather than as isolated findings.

Cytokine concentrations are frequently low or undetectable in healthy individuals and may be influenced by physiological, environmental, and pre-analytical factors. Accordingly, results should be interpreted in conjunction with clinical findings and other relevant laboratory investigations.





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PRO-INFLAMMATORY CYTOKINES COMMENT

INTERLEUKIN 1 (IL-1 α) ELEVATED:

Elevated IL-1 α is a pro-inflammatory cytokine released in response to cellular stress or injury and is involved in local inflammatory signalling. Increased levels may reflect tissue-level inflammation and activation of innate immune pathways.

INTERLEUKIN 6 (IL-6) ELEVATED:

Elevated IL-6 is a key pro-inflammatory cytokine involved in acute-phase signalling, immune regulation, and metabolic processes. Persistent elevation may indicate chronic low-grade inflammation and has been associated with metabolic dysfunction and inflammatory stress. This finding may also reflect barrier dysfunction and systemic immune activation. Correlation with other inflammatory markers is recommended.

INTERLEUKIN-17 (IL-17) ELEVATED:

Elevated IL-17A reflects activation of Th17-mediated immune pathways, which play a key role in mucosal defence and barrier integrity. Increased levels are associated with chronic inflammation and may indicate immune activation at epithelial surfaces. Persistent elevation may reflect barrier dysfunction and dysregulated immune responses.

TUMOR NECROSIS FACTOR-ALPHA (TNF- α) ELEVATED:

Elevated TNF- α is a central mediator of systemic inflammation and is involved in immune regulation, apoptosis, and cellular signalling. Persistent elevation may reflect chronic inflammatory burden and has been associated with metabolic and immune dysregulation. Correlation with IL-6 and clinical findings is recommended.

ANTI-INFLAMMATORY CYTOKINES COMMENT

INTERLEUKIN 10 (IL-10) ELEVATED:

Elevated IL-10 is an anti-inflammatory cytokine that regulates immune responses and promotes immune tolerance. Increased levels may represent a compensatory response to ongoing inflammation or immune activation. When elevated alongside pro-inflammatory cytokines, this may indicate immune dysregulation with concurrent activation and suppression signals.

INTERFERON gamma (IFN- γ) ELEVATED:

Elevated IFN- γ is a key marker of Th1-mediated immune activation and is involved in macrophage activation and intracellular pathogen defence. Increased levels may reflect chronic immune stimulation and heightened cellular immune activity. Interpretation alongside IL-2 may assist in identifying Th1-dominant immune responses.

Methodology

Enzyme-Linked Immunosorbent Assay (ELISA)