

# Definitions:

## Incel DX

### Cytokine array 14

**IL6** is high in inflammation and pain with major function being differentiation of B cells into plasma cells and IgG production, it is associated with **oxidative stress, inflammation, endothelial dysfunction and thrombogenesis (This cytokine also confers a pro-thrombotic environment by inducing the expression of fibrinogen, the precursor of fibrin and is up in COVID) IL 6 is secreted by macrophages and stimulates the production of neutrophils in the bone marrow**

**IFN gamma** = proinflammatory cytokine with antiviral action and activation of macrophages, increases WBC and monocytes on MHC1 and MHCC11 expression on cells

**IL2**= proliferation and activation of NK cells, T and B cells

**IL4** a cytokine that induces naïve helper cells to TH2 cells. **IL4** is also made by mast cells, eosinophils and basophils

**IL8** is a chemokine produced by **mast cells**

**IL10** is an inflammatory cytokine

**IL13** is a mediator of allergic inflammation, and is produced by TH2 cells, mast cells and is a key regulator of IGE, and mucous secretion and airway hyperresponsiveness

**GMCSF** is produced by mast cells, T cells and fibroblasts and stimulates granulocytes, monocytes and eosinophils

**IFN gamma** is a cytokine produced by NK and NKT cells as an immune response

**CCL3** is involved in NK cell and T cell migration and is a chemokine involved in the acute inflammatory state. It also recruits and activates polymorphonuclear leukocytes

**VEGF** = vascular inflammation and indicates fractalkine is activated

**TNF alpha** is a pro inflammatory cytokine and indicates macrophage activation

**sCD40L- is platelet activator**

**TNF- $\alpha$  and IFN- $\gamma$  induce CX3CL1/Fractalkine production** by vascular endothelial cells creating the conditions to promote survival of nonclassical monocytes.

**CCR5** is a protein on the surface of white blood cells that is involved in the immune system as it acts as a receptor for cytokines. CCL5 is produced by PLATELETS, MACROPHAGES, eosinophils, fibroblasts, ENDOTHELIUM, epithelial and endometrial cells." **Innate immune cells, NK cells, macrophages and dendritic cells all have CCR5 receptors**

RANTES is a chemokine secreted by platelets that have been activated predominantly during flow conditions.

RANTES is important in perivascular recruitment of IFN- $\gamma$ -producing T cells, which may affect vascular dysfunction

**RANTES is secreted by endothelium, epithelial, t-cells, and macrophages**

*CCL5/RANTES mediates recruitment of T lymphocytes and monocytes; it has also been implicated in arterial injury and in sustaining CD8 T-cell responses during a viral infection [9].*

<https://pubmed.ncbi.nlm.nih.gov/25152735/> "CCL5 is released and deposited on endothelium by activated platelets thereby triggering atherogenic monocyte recruitment, which can be attenuated by blocking the corresponding chemokine receptor CCR5."