

# THE NORTHWEST WELLBEING HUB



## HYPERBARIC OXYGEN THERAPY **IMMUNE SYSTEM**

### KEY POINTS

- Increased oxygenation
- Enhanced immune cell activity
- Modulation of inflammation
- Tissue repair and wound healing
- Potential antimicrobial effects

# THE NORTHWEST WELLBEING HUB

## IMMUNE SYSTEM

1. Increased oxygenation: HBOT involves breathing pure oxygen in a pressurised chamber, leading to increased oxygen levels in the bloodstream. Oxygen is vital for immune cell function and metabolism.

By enhancing oxygenation, HBOT may support the optimal functioning of immune cells, such as neutrophils, macrophages, and lymphocytes, which play a crucial role in defending against pathogens and maintaining immune homeostasis.

2. Enhanced immune cell activity: HBOT has been shown to enhance the activity of immune cells, including the production of cytokines, chemokines, and growth factors. These molecules play important roles in regulating immune responses and promoting immune cell communication and coordination. By boosting immune cell activity, HBOT may help strengthen the immune response to infections, promote healing, and support overall immune system function.

3. Modulation of inflammation: HBOT has anti-inflammatory effects and can help modulate the inflammatory response. Inflammation is a natural part of the immune response, but excessive or chronic inflammation can contribute to various health conditions. HBOT may help reduce inflammation by regulating the production of inflammatory mediators, improving tissue oxygenation, and promoting the resolution of inflammation. By modulating inflammation, HBOT may contribute to immune system balance and overall immune health.

4. Tissue repair and wound healing: HBOT has been used to promote tissue repair and wound healing in various conditions. It supports the growth of new blood vessels (angiogenesis) and the formation of granulation tissue, which is essential for wound healing. By accelerating tissue repair, HBOT can help restore the integrity of damaged tissues and improve immune responses at the site of injury or infection.

5. Potential antimicrobial effects: HBOT creates an environment in which oxygen levels are increased, which can inhibit the growth and survival of certain pathogens. Oxygen is toxic to some bacteria and fungi that thrive in low oxygen environments. By increasing oxygen levels, HBOT may help create an inhospitable environment for certain pathogens, potentially aiding in the treatment of infections and supporting immune system function.