MAST CELLS

These master regulators of the immune system come from the bone marrow but travel all over the body looking for any sign of danger. They have important protective roles in wound healing and fighting pathogens. Each cell contains stores of biologically active granules which, when released, cause inflammation and allergies.

HISTAMINE

As one of the danger signals released by mast cells histamine plays an important role in inflammation. It causes the cells of the blood vessels to relax and make channels to let immune cells move from the bloodstream into the tissues where they can fight pathogens. Histamine has many other functions in the body including keeping you awake. That’s why medication that blocks it (antihistamines, hay fever tablets) can make you drowsy.

PLASMA

This is pale yellow fluid surrounds all the cells of the body and makes blood a liquid. Have you ever noticed a liquid seeping out of a wound in your skin? That is plasma. It may be mostly water but transports many important compounds like proteins, hormones, and nutrients that are required by cells. As well as delivering material it also takes waste, like carbon dioxide, away from cells.

BLOOD VESSELS

Veins and arteries are large vessels that branch off and narrow to form capillaries. These form the transportation network that carries products to every cell in the body. This network is constantly being repaired and redirected to meet the body’s needs. Finding out what signals control the growth of new vessels could help in many conditions from improving wound healing to limiting tumour growth.

LEUKOCYTES

This family of immune cells, also called White Blood Cells, protects the body from infections and foreign invaders. There are many different types of cells which all have different functions. Some attack parasites (eosinophil) as others fight bacterial and fungal intruders (neutrophil). Some cells act like a vacuum (monocytes) and hoover up dead cells and debris to help return the tissue to a healthy state.