**Sepsis Pathophysiology Breakdown**

**STEP 1: THE BODY'S IMMUNE RESPONSE IS TRIGGERED**

The body has been invaded by a pathogen (bacteria, virus, fungi, etc.), which causes the body's immune system to activate. (SIRS response)

**STEP 2: WHITE BLOOD CELLS COME TO THE RESCUE**

The immune system will send white blood cells to kill the invading pathogens. These white blood cells carry weapons called inflammatory mediators and cytokines, and this causes leukocytosis.

**STEP 3: VASODILATION, CAPILLARY LEAK, AND BLOOD CLOTTING**

The white blood cells release these inflammatory mediators and cytokines.

When WBC’s are released, the patient will exhibit the following:

1. The blood vessels dilate (vasodilation)
2. The small blood capillaries become leaky (capillary leak)
3. Tiny blood clots form throughout the body

These 3 factors decrease the blood's ability to get to the organs.

**STEP 4: THERE IS NOT ENOUGH BLOOD FLOW TO THE ORGANS**

Because of all the vasodilation, capillary leak, and blood clotting, the blood is not able to get to where it needs to go - the organs! This is why the fluid resuscitation is important, to make sure the organs are being perfused.

**STEP 5: METABOLIC ACIDOSIS**

When the organs don't get the blood they need, they can't get rid of the waste products that build up in the body. When this occurs the kidneys aren’t able to make enough bicarbonate to balance out the pH. Over time, the blood becomes more and more acidic, leading to metabolic acidosis.

**STEP 6: SEPTIC SHOCK**

A patient is in septic shock if they have received a full fluid resuscitation (30 mL of fluid per kilogram of body weight), but their blood pressure is not responding. (Vasopressors needed)

**STEP 7: MULTIPLE ORGAN DYSFUNCTION SYNDROME (MODS)**

MODS occurs when 2 or more of the patient's organs have stopped working properly. As sepsis continues, and the organs don't get the blood flow they need, they start to fail.