The term “transmembrane” refers to a structure or process that spans or crosses a cell membrane. This can refer to a variety of molecular features, including proteins, lipids, and other molecules.

For example, a transmembrane protein is a type of membrane protein that spans the cell membrane, with part of the protein exposed to the extracellular space or the cytoplasm and another part exposed on the other side of the membrane. Transmembrane proteins can have a variety of functions, such as serving as receptors or transporters for molecules across the membrane.

Transmembrane transport refers to the movement of molecules or ions across the cell membrane, either through protein channels or by active transport mechanisms. This process is essential for maintaining cellular homeostasis and is involved in a wide range of biological processes, including nerve conduction, muscle contraction, and nutrient uptake.

The transmembrane potential is the electrical potential difference across the cell membrane, resulting from the separation of charged ions on either side of the membrane. This potential is maintained by ion pumps and channels and is critical for many physiological processes, including neuronal signaling and muscle contraction.

Overall, the concept of “transmembrane” refers to any process or structure that spans or crosses the cell membrane, and these processes and structures are critical for many aspects of cellular function and organismal physiology.