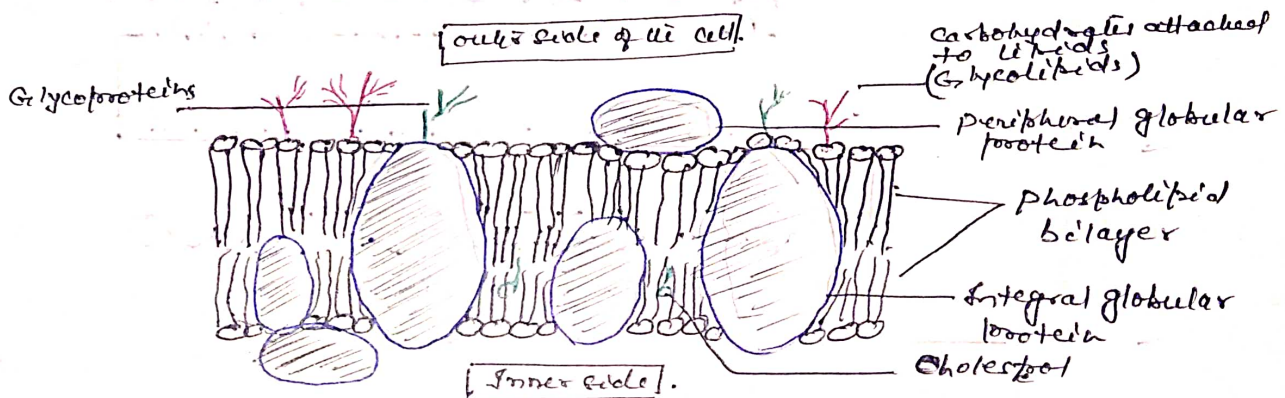


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IV. Fluid-Mosaic Model - Proposed by S.J. Singer and Garth L. Nicolson in 1972.

- They gave the most convincing model of the membrane which revolutionised the entire concept of plasma membrane.
 - According to this model, lipids are in the form of fluid bilayer and the globular proteins are partially or wholly embedded in the continuous lipid bilayer. Thus proteins do not form a sandwich covering of hydrophilic lipid layers.
 - The lipids are mostly phospholipids or glycolipids.
 - The proteins have been compared to icebergs floating in a sea of the phospholipid bilayer.
- The biological membrane are thus considered to be quasi fluid structure in which lipids and integral proteins are arranged in a mosaic manner.
- The Danielli-Davson model assumes hydrophilic bonding between lipids and proteins, whereas the Singer-Nicolson model considers hydrophobic association between lipids and proteins. The fluidity of the membrane is the result of this hydrophobic interaction.



- The globular proteins of the membrane are considered to be of two different types, extrinsic (peripheral) and intrinsic (integral) proteins.
- The peripheral proteins are superficially located and many of them function as enzymes. They are entirely outside the lipid layer and readily dissociate from the membrane. The integral proteins, associated with lipids, penetrate into the interior of the membrane along with fatty acid side chains. They are tightly bound to the lipids and constitute functional proteins which are not easily separable. All membrane bound enzymes and carriers are included in this category.