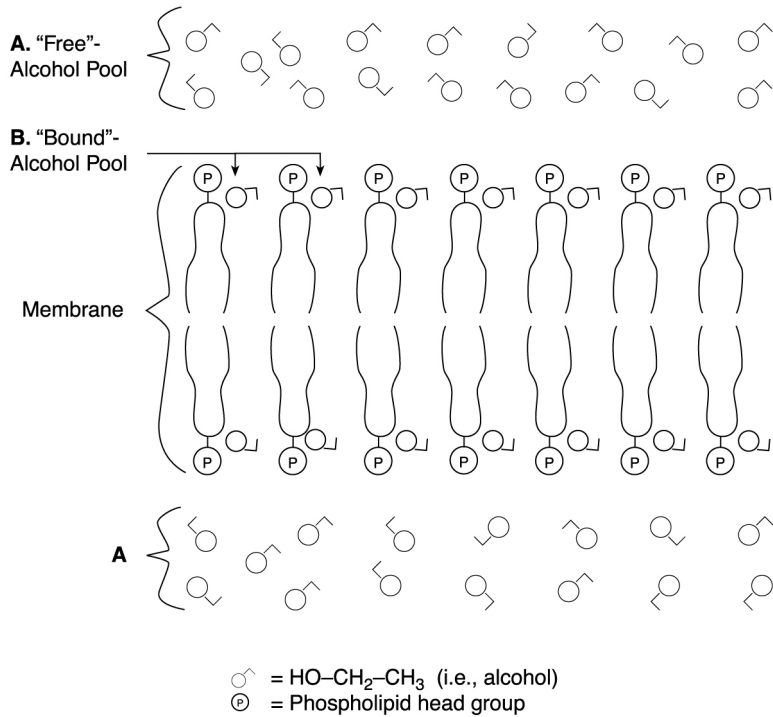


# Alcohol interacts with cell membranes



Researchers believe alcohol interacts with cell membranes in the brain, which contain relatively large molecules called phospholipids. These molecules are aligned so that the phosphorus-containing head groups (P) are at the surface of the membrane, which is arranged in a bilayer, and the long tails form the core of the membrane. (A) When alcohol enters the brain, it dissolves primarily in tissue water between and inside the cells (i.e., is a "free" pool of alcohol). (B) Some alcohol also binds to the membrane surface. Because the alcohol molecules interact with the membrane molecules, this pool of alcohol is restricted in its molecular mobility (i.e., is a "bound" pool of alcohol). The two alcohol pools create different types of signals in a hydrogen magnetic resonance spectrum.

Source: Fein, G., et al. Magnetic resonance spectroscopy of the brain in alcohol abuse. *Alcohol Health & Research World* 19(4):306–314, 1995.

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