

### Thirsty Thursdays And \$2 Coors Light

Picture this (and imagine the taste): It's Thursday night and Jimmy invites you for a bucket of \$2 Coors Light. It ends up being the best night of your life, but you happened to have one too many and have made some juvenile mistakes. How could this happen? Oh, let me tell you.

Muscle recruitment, to pick up that beautiful bottle of blue mountains, begins in the primary motor cortex (M1). There, sits a big collection of the largest CNS cells, the Betz cells. Magic happens in the brain (sodium-potassium pump; calcium on the outside and potassium on the inside of the cell) and sends axons down the spinal cord to the ventral horn (also known as the anterior horn). Here the upper motor neuron depolarizes the lower motor neuron with glutamate and zips it across the Node of Ranvier (saturated with action potentials), known as Saltatory Conduction, to the axon terminal. Then, an influx of calcium binds to the receptors on vesicles that holds acetylcholine and pulls it to the synaptic cleft. Acetylcholine is transmitted across to nicotinic receptors and depolarizes the muscle fibers, giving contraction to move your arm and pick up that beautiful cheap, cold beer. Acetylcholinesterase breaks down acetylcholine to stop signaling and finalize the process.

Unlike your ability to stop drinking classiest alcoholic beverage known on Earth, motor units are an 'all-or-nothing'. Meaning, you cannot 'half-way' stimulate a motor unit for a partial reaction. Although, M1 is not all to blame, supplementary motor areas such as; premotor cortex, posterior parietal cortex and supplementary motor cortex assist in the motor movement to help you drink with Jimmy until 2 o'clock in the morning.