

**Dylan Grote****Campus:** Round Rock Clinical Campus, Round Rock, TX**Research Area:** Emerging therapies for management of hepatic encephalopathy**Mentor:** Robyn Fader MD, Shannon Glaser PhD, Gloria M. Conover PhD, and Steve Maxwell PhD

Dylan Grote, a member of the Class of 2024 in the School of Medicine, is writing a review article on alternative treatment strategies for hepatic encephalopathy, as part of his MEID 820 course directed by [Gloria M. Conover, Ph.D.](#) and [Steve Maxwell Ph.D.](#) faculty in the Texas A&M Department of Medical Education, under the mentorship of [Shannon S. Glaser Ph.D.](#), Professor, in the Department of Medical Physiology at Texas A&M University and collaboration with his clinical mentor Robyn Fader, MD, FHM physician at Baylor Scott and White Healthcare in Round Rock, TX. Hepatic encephalopathy is a reversible syndrome sometimes seen in patients with advanced liver dysfunction. It presents as multiple neuropsychiatric abnormalities caused by the accumulation of neurotoxic substances, including ammonia, in the brain. Ammonia is produced by gut bacteria during protein digestion, and when liver function is impaired, ammonia buildup occurs. The mainstays of treating hepatic encephalopathy are lactulose and rifaximin. Lactulose works by acidifying gut contents, preventing ammonia absorption, and promoting elimination through stooling. However, lactulose has an unpalatable taste, unwanted side effects, and is not universally effective, with nearly 40% of patients experiencing recurrent episodes despite daily therapy. When lactulose alone is inadequate, rifaximin, a costly broad-spectrum antibiotic, is added to reduce the burden of urease-producing gut bacteria that generate a significant amount of ammonia. However, rifaximin's effectiveness is not consistent across all patients. Unfortunately, some patients still experience recurring episodes of hepatic encephalopathy despite strict adherence to these treatments. I am interested in exploring alternative therapies for those who cannot tolerate conventional treatments and for those who have recurrent hepatic encephalopathy despite standard treatment.