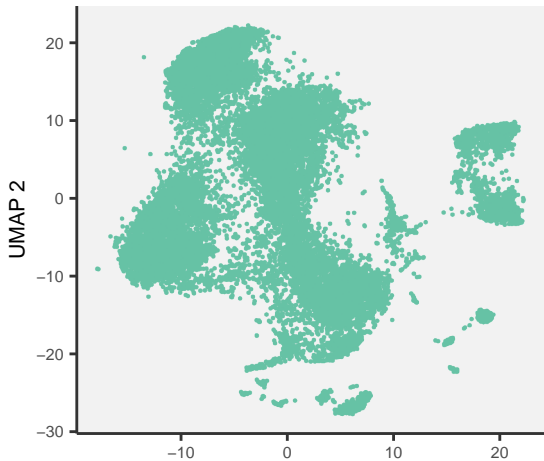stratified by 2 disease status