1. Title
    a. Applications for visualization of the relationship between serum vitamin D and colorectal cancer incidence
2. Research Question
    a. How do serum levels of vitamin D (1,25-dihidroxycholecalciferol) predict the incidence/risk of colorectal cancer?
3. Objectives
    a. Create and modify coding tools to analyze and visualize vitamin D levels associated with healthy (no CRC) and unhealthy (CRC) individuals.
4. Approach
    a. Transform vitamin D serum levels into standardized quantities (number values), and compare to incidence of CRC (yes or no). comparisons will include graphic visualizations and statistical analyses. Further analysis will include age of onset, years of cancer, if death occurred, and these will be standardized and compared to vitamin D levels and graphed.
5. Selected References
    a. https://doi.org/10.15430/JCP.2022.27.3.147
    b. Serum 25-Hydroxyvitamin D Levels and Risk of Colorectal Cancer: An Age-Stratified Analysis Kim, Yejin et al. Gastroenterology, Volume 165, Issue 4, 920 - 931
    c. Barber LE, Bertrand KA, Petrick JL, Gerlovin H, White LF, Adams-Campbell LL, Rosenberg L, Roy HK, Palmer JR. Predicted Vitamin D Status and Colorectal Cancer Incidence in the Black Women's Health Study. Cancer Epidemiol Biomarkers Prev. 2021 Dec;30(12):2334-2341. doi: 10.1158/1055-9965.EPI-21-0675. Epub 2021 Oct 7. PMID: 34620630; PMCID: PMC8643345.