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Title: Fecal Microbiota Transplant (FMT) in Sjögren's Syndrome

Research Description: Sjögren's syndrome (SS) is a disease with a high disease morbidity and no cure. Individuals with SS have been found to have unhealthy gut bacteria compared to healthy controls. A similar finding was seen in mice who had a disease similar to SS. Interestingly, the dry eye in these mice improved when they ate feces from a healthy animal. Fecal Microbiota Transplant (FMT) is a technique that is used to restore a healthy gut bacterial environment in individuals with persistent gut infections. However, this treatment may also be useful in auto-immune conditions as it is known that gut bacteria interact with the immune system. In fact, products made by gut bacteria are involved in T cell regulation with consequences on the development of an auto-immune disease, such as SS. Given this preliminary data, improving the health of the gut bacterial with FMT may be a safe and effective treatment to improve the manifestations of SS.

Scientific Abstract: Study the feasibility and efficacy of Fecal Microbiota Transplant (FMT) in SS patients. Significance: Sjögren's syndrome (SS) is a disease with significant morbidity and no cure. Given the immune destruction of exocrine glands seen in SS, several immune modulators have been evaluated as treatments but none have consistently improved gland function and/or clinical metrics of disease. Individuals with SS have been found to have gut dysbiosis; that is to have a less diverse gut microbiome with a greater abundance of pathologic organisms and a lower abundance of healthy ones. In fact, the severity of SS ocular and systemic disease inversely correlated with microbial diversity. Furthermore, mice that spontaneously develop SS and DE were also found to have gut dysbiosis. Interestingly, DE in these mice worsened when mice were given antibiotics and improved when mice were fed feces from a healthy animal. Benefits of the Proposed Research: This brings into question whether Fecal Microbiota Transplant (FMT) can improve the DE phenotype in patients with SS.