Homework: What is the state of your gut microbiome?

To help you start thinking about the diversity of the Microbiome, your assignment for next week’s lab is to look for a scientific article or a review of a scientific article that describes the general microbial population found under various conditions within the human population. As a group, decide which four conditions your group would like to research. Then, decide who will look for an article about each particular condition. Individually, you only need to find and read a paper about one of the conditions that may cause alterations in the microbial populations of the gut.

The conditions to consider are:

- Antibiotic therapy
- High protein/high fat diet vs. Primarily grain/complex carbohydrate
- Obesity
- Type I diabetes
- Type II diabetes
- Irritable Bowel Disease
- Crohn’s Disease
- Yogurt consumption
- Anorexia
- Autism

After you have found the article for your chosen condition, read through the article and fill in the information about the condition on the Altered State Worksheet. Specifically, you should be able to describe the main type(s) of microbes found in the research subjects under a given condition. For example, you should be able to find information in your chosen article about the types of bacteria found in the human gut after eating yogurt. You should also record any potential effects suggested by the authors on having that type of microflora in your gut. For example, the researchers will likely talk about the role that microbes play in helping to get calories from food in obese or diabetic patients. Fill in the information for your assigned condition before next week’s lab period. During next week’s lab, you will explain the main details of your paper to others in your group. They, in turn, will explain the contents of their research papers to you. At the end of the next lab period, based on what you read in your papers, you should have a better understanding of the potential role of microbes in human health and disease.

Key points:
This week’s homework:
- Determine how the balance of gut microflora shifts in one of the disease/altered states given above
  - NOTE: This may be identified simply as the ratio of one type of bacteria to another
- Find and read an original research article that supports the proposed shift in gut flora
- Determine what effect the predominant type of bacteria may have in the disease/altered state

Next week’s Microflora lab activity:
- Share your finding with others in your group.
- Record on your worksheet the information shared by other members of your group.
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<tr>
<th>Disease/Altered state</th>
<th>Observed gut microflora population</th>
<th>Potential effect the predominant microflora has in altered state</th>
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