

Is Thanksgiving Dinner Really Aggravating Your Acid Indigestion?

Thanksgiving dinner is filled with a much wider variety of foods than your every day supper menu. Which one of those traditional favorites is most likely to contribute to acid indigestion¹? In this experiment, you will use a pH Sensor to test the acidity of a variety of foods. The acidity of a solution can be expressed using the pH scale. Acidic solutions have pH values less than 7, basic solutions have pH values greater than 7, and neutral solutions have pH equal to 7. A pH Sensor, cranberry juice, canned chicken broth², sweet pickle juice, distilled water for rinsing, an interface and a data-collection program are needed.

Connect the pH Sensor to Channel 1 of the interface and start the data collection program. If a pH Sensor is not automatically identified, set up Channel 1 for a pH Sensor. Remove the storage bottle from the end of the pH Sensor by unscrewing the bottle and then sliding off the lid. Rinse the pH Sensor tip with distilled water.

Put about 2-3 cm of each of the liquids listed above in three different cups. Place the pH Sensor in the cranberry juice and swirl. Monitor the live readings on the graph or main screen of your program. When the pH reading stabilizes, record the pH value for cranberry juice in a data table. Repeat these steps for canned chicken broth and sweet pickle juice. Be sure to rinse with distilled water after each liquid. When you are finished, wash the Sensor with distilled water and return it to the storage solution. Discard the solutions. **Caution:** *Do not eat or drink anything that comes in contact with the pH Sensor.*

1. Which of the liquids tested, if any, are acidic?
2. Which of the liquids tested, if any, are basic?
3. Which of the liquids would most likely give you acid indigestion (increase the acidity of your stomach)? Why?

¹ Acidic food and drink may cause pain if the esophagus is already raw from stomach acid reflux. It is unlikely that such foods could cause the problem in the first place.

² Use canned broth that is at least 99% fat free to avoid damaging the pH Sensor.