Lesson 3, Part B  Random Assignment

“A hernia happens when part of an internal organ or tissue bulges through a weak area of muscle. Most hernias are in the abdomen.”

1) If you or your child were having surgery for a hernia, would you rather have three small incisions or one large incision? Why?

Objectives for the lesson

You will understand:

☐ The need for random assignment in experiments.

You will be able to:

☐ Describe a process for randomly assigning subjects to experimental groups in a given experiment.

Suppose that the parents of 30 children with hernias were asked to allow their children to participate in an experiment comparing the two surgical methods. The age of each child is shown in the table.


2) Describe a method for randomly assigning each child to either Method 1 (laparoscopic repair with three small incisions) or Method 2 (open repair with one large incision).

3) Work with a partner to randomly assign the children to a surgical method. For example, which method of surgery will Subject Number 1 undergo? What is Subject Number 1’s age? (Note: It is possible that the two groups will be different sizes.)
4) One person in your pair should create a dotplot for Method 1’s ages and calculate the mean of those ages. The other person should create the dotplot and calculate the mean for Method 2’s ages.

   Mean age for Method 1:

   [Dotplot image]

   Mean age for Method 2:

   [Dotplot image]

5) Does one group have a substantially higher mean age or are they about the same? Explain your reasoning.

6) Compare your dotplot to a few of your neighbor’s dotplots. Considering the dotplots and the averages, do you think the random assignment was successful in creating groups that were similar with respect to the ages of the children in the groups?