



Assignment 3: Mercury and Human Health Case Study

Many people are exposed to methylmercury from eating fish, such as tuna. Below is a true case study of a 54-year-old man that ate one can of tuna every day for five years.

Average weight of a can of tuna: 5 ounces
(It takes 16 ounces to equal 1 pound)

Number of days in a year: 365

1) Calculate (and show) how many cans of tuna the man ate during that time:

2) Calculate how many pounds of tuna the man ate over five years

3) After five years, the man went to the doctors, where his blood was tested for levels of methylmercury. The only way to reduce mercury is to stop being exposed. On his first visit, he was told to stop eating tuna. The man stopped eating tuna and continued going to the doctors. Each time he visited the doctors, the amount of methylmercury was measured in his blood to see if it was being excreted.

This table shows how the level of mercury in his blood changed over time.

Day of test	Level of methylmercury in blood (ug/L)
Day 0 (first doctor's visit)	52 ug/L
Day 7	50ug/L
Day 100	22 ug/L
Day 225	7 ug/L

4) On the chart on the next page, plot this data to show the rate at which the methylmercury was excreted once the man stopped eating canned tuna. Once you have plotted all of the points, draw a line between all the points.

5) What happened to the amount of methylmercury in the man's body after he stopped eating canned tuna every day?

6) Using your graph of blood methylmercury and time, estimate how many days it took the amount of methylmercury to be half of what it was at day 0. This is the half-life of this compound in blood.

