**Activity: Interpreting Cholesterol Levels**

**Introduction:** High levels of cholesterol have been linked with strokes and heart disease. In fact, people who have high total cholesterol (240+ mg/ dl) have a six time greater risk of heart disease than those in the general population. To learn more about Cholesterol visit the following link:

http://www.webmd.com/cholesterol-management/guide/understanding-numbers

In this activity, you will graph the total cholesterol levels for three persons over the course of the past twelve years. Subject A is a 48 year-old female nurse that works in an emergency room. Subject B is a 37 year-old professional baseball player in the twilight of his career. Subject C is a 52 year-old stockbroker known for his energy and ability to consume doughnuts in a single bite.

**Total Cholesterol Levels of 3 Subjects in mg/dl:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Year** | **Subject A** | **Subject B** | **Subject C** |
| 2001 | 189 | 233 | 187 |
| 2002 | 184 | 235 | 194 |
| 2003 | 192 | 242 | 198 |
| 2004 | 198 | 241 | 207 |
| 2005 | 202 | 238 | 217 |
| 2006 | 178 | 241 | 226 |
| 2007 | 169 | 246 | 234 |
| 2008 | 172 | 252 | 240 |
| 2009 | 170 | 247 | 257 |
| 2010 | 171 | 227 | 259 |
| 2011 | 168 | 222 | 264 |
| 2012 | 167 | 224 | 275 |

**Assignment:**

1. Using the rules of graphing that you have learned, graph the data for the three subjects.
2. Total cholesterol greater than 240 mg/dl is considered high. Shade the area of the graph greater that this value orange.
3. Cholesterol levels between 200 and 239 mg/ dl is considered borderline high risk. Shade this yellow.

**Analysis Questions:**

1. Based upon total cholesterol, who is at the most risk for health consequences? Explain.
2. Describe how high cholesterol can lead to heart disease?
3. Can physically fit people have high cholesterol? Explain with evidence.
4. Subject A made major lifestyle changes in 2006 when she noticed her cholesterol level becoming too high. What changes might she have made to reduce her cholesterol?
5. Cholesterol actually includes LDL (Low Density Lipoprotein) that is considered “bad” cholesterol and HDL (High Density Lipoprotein) “good” cholesterol. If it turns out that subject B has an HDL of 35 and Subject C has an HDL of 84, who is actually at a greater risk of heart disease? Explain.
6. What is the role of HDL?