

your own children will be born with Down syndrome? Why or why not?  
 How can it be diagnosed prenatally?

The minor effects of Down syndrome are a round face, flatten nose bridge and small irregular teeth. Some of the more major effects are short stature, heart defects, susceptibility to respiratory infection, leukemia, and Alzheimer's disease. They also generally have a shorted life span than normal. The risk of Down syndrome increases with the mothers age, so if the younger brother was born after the mother was over 35, or more so if she was in her 40's, then the chances of your own children having Down syndrome are less than if the mother carried the syndrome itself. The syndrome can be easily detected by preparing a karyotype. This checks for the number of chromosomes in abnormal numbers.

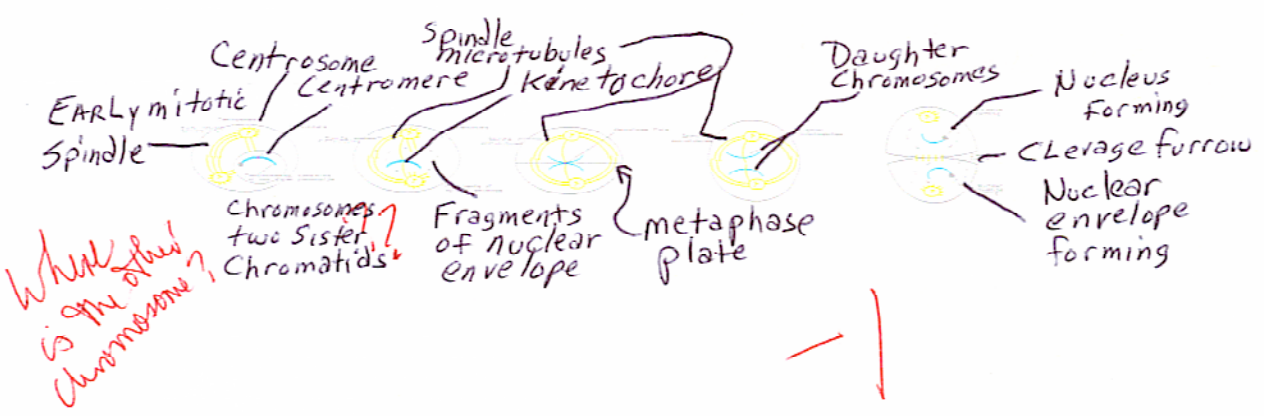
*amniocentesis - 0.15*

5. Explain how growth factors and density-dependent inhibition are related to cancer. How does chemotherapy combat this?

In cancer cell growth factors and density-dependent inhibition are by passed in the cell-cycle. They go on dividing indefinitely as long as they have a supply of nutrients. Chemotherapy attacks/disrupts cell division. Anfimitotic drugs prevent cell division by interfering in one way or another with the mitotic spindle.

6. Using colored pencils (one color for the maternal homologue and another for paternal) follow one pair of homologous chromosomes through mitosis, meiosis I, and meiosis II.

Mitosis                      Use Figure 8.6 as a guide  
 Prophase                      Metaphase                      Anaphase                      Telophase



*Where is the other chromosome?*

*original set* → *XX*  
*after this phase this is where you start for both mitosis + meiosis*