A Pedigree of Hemophilia in the Royal Families of Europe

Selected members of the pedigree
- I-1 = King George III
- III-1 and III-2 = Prince Albert and Queen Victoria
- IV-5 and IV-6 = Alice of Hesse and Ludwig IV of Hesse (Germany)
- V-13 and V-14 = Alix and Nicholas II (Tsar of Russia)
- VI-16 = Alexei
- VIII-1 = Prince Charles

ANSWER QUESTIONS:
1. Royal families from what countries are represented in this pedigree?

2. How many children did King George III have?

3. What sex are all of the hemophiliacs in this pedigree?

4. How many hemophiliacs are in each generation (make a list)?
5. What relation was Queen Victoria to King George III?

6. Did Queen Victoria have hemophilia? Was she a carrier of the disease?

7. What are the symptoms of this disease?

8. From this pedigree, can you tell if hemophilia shortens life-expectancy?

9. How many of Queen Victoria’s sons had the disease? Daughters?

10. Is it possible for a female to have hemophilia? EXPLAIN.

11. What generation(s) represents the modern (current) Royal Family of England?

12. Why do you think that royal families from one country marry into royal families from another country?

13. Why is hemophilia so much more prevalent in this pedigree than in the general European population?

Extra credit: add on to generation VIII to show Princess Diana (deceased), and Prince William and Prince Harry of the current generation of royals (generation IX).

For more answers and explanation, visit http://www.sciencecases.org/hemo/hemo.asp