Stem Cell Transplant: HLA Typing

HLA (Human Leukocyte Antigen) typing is a system we use to identify some of the unique “markers,” called antigens, in certain white blood cells. These cell markers allow the body’s immune system to tell the difference between self and non-self.

For stem cell transplant, we are most concerned about finding a match for the A, -B and DR antigens. Everyone has 2 of each of these HLA antigens, for a total of 10. We get 5 from our mother and 5 from our father. Since these antigens are inherited, it is more likely that a relative, especially a brother or sister, is a perfect match (10 out of 10). There is a 25% chance of finding a perfect (10 out of 10) matched sibling in a family that has children from the same parents.

![HLA Typing Diagram]

**Picture 1** An example of HLA typing. The patient is a perfect 10/10 match with Sibling #4. For Siblings #1 and #2, only half of the antigens match perfectly (5/10 match). Sibling #3 does not match at all.
If a good match is not found in the family, stem cell registries all over the world are searched. These registries have HLA data on millions of people who have volunteered to give stem cells to someone who needs a stem cell transplant. If your child needs to have these registries looked at, the doctor or stem cell transplant nurse will give you more information and answer any questions you may have.

**How HLA Typing Is Done**

First, about 6 teaspoons of blood is drawn from both parents and from your child and his or her brothers and sisters. The blood is taken from a vein in the arm. If your child has a central venous line, we can get the blood from the catheter.

- It is important to eat before the blood is drawn and to drink a lot of fluids the day the blood is taken.
- Some people feel dizzy or faint after their blood is drawn.
- There may be a bruise at the place where the blood is taken.
- We should have some of the early test results in about 7 to 10 days. Final results are known in about 2 weeks.

If you have any questions, please be sure to ask your doctor or nurse.