

## **Explain what HLA groups are, and their significance.**

HLA stands for Human Leukocyte Antigen and is found on white blood cells, more specifically on chromosome 6. The HLA- group of an individual is determined by a combination of the three genes of the HLA- system, called A, B and C.

Each loci on the antigen have a large number of alleles, which means that it is a huge number of combinations. There are more precisely 9,5 million different ways of which they can recombine. HLA- A has 20 combinations, B has 40 and C has 20. It is extremely rare to find two people with the same combinations. One can say that the significance of the HLA- groups is to predict if a transplant will work or not. This is not easy because of the variety. The importance is to find the ‘best match’.

### *What is meant by the “genetic lotto”?*

The “genetic lotto” is a constructed model that is used to illustrate the possible connections between HLA- A, B and C, ABO blood types, and rhesus positive and rhesus negative. There are approximately 2 million combinations.

### *What factors limited the number of children born to a woman before the advent of modern contraceptive technology?*

A woman’s biological capacity is to give birth to 15 children but this is quite rare. 6-7 children are more common. In addition to the biological limitations there are mentioned three different factors at the exhibition. One of them was marriage, which indicates the fact that women stayed virgins until they got married. Another reason was breastfeeding. After birth a woman is temporally sterile for two months if breastfeeding is practiced. If breastfeeding is

practiced, infertility will increase. If a woman for example breastfeed for a year, she is sterile for ca. 8 months, and if she breastfeed for 2 years she will be sterile for 18 months. This means that the woman will have children only every 36<sup>th</sup> month (compared to normal 18 months). The last factor is voluntary limitation.

These three factors are obvious before the advent of modern contraceptive technology. Now contraception is the essential way of voluntary limiting pregnancy.