ADRENOLEUKODYSTROPHY~ Disease causing the deterioration of the myelin. Myelin is the fatty covering of the nerve cells. Without myelin, nerves are unable to conduct an impulse, leading to increasing disability as myelin destruction increases and intensifies.

ALD is carried by the mother on the X-chromosome. Males have a 50% chance of receiving the gene if their mother is a carrier. This type of inheritance is sex-linked. Childhood X-linked onset occurs between the ages of 4-10.

The body is unable to produce an essential protein, called a transporter protein, which is needed to carry the enzyme that breaks down the long chains of saturated fatty acids (VLCFA’s).

Oleic acid, is an oil that can break down and destroy these fatty acids (used to make soaps, cosmetics and ointments). This in combination with erucic acid, is what makes up Lorenzo’s Oil.

1. What symptoms of the disease first appeared?
   ______________________________________
   ______________________________________
   ______________________________________

2. What medical tests were done to assess Lorenzo’s condition?
   ______________________________________
   ______________________________________
   ______________________________________

3. After Lorenzo gets diagnosed with ALD, what does the doctor first tell Mr. and Mrs. Odone would be the timeline of things to come:
   ______________________________________
   ______________________________________
   ______________________________________

*The next few answers can be found in the information above*

4. The inheritance pattern for the disease is referred to as… ________________

5. Lorenzo inherited the disease from which parent? ________________
6. What is myelin? __________________________________________

7. ALD cause the myelin to slowly breakdown (deteriorate) and what affects will this have? __________________________________________

8. One trial Lorenzo’s parents tried to help their son was chemotherapy and the other was withdrawing what type of fat from his diet? __________________________________________

9. After they did the chemotherapy, what symptoms appeared as the disease progressed? __________________________________________

10. What was the attitude of the people in the foundation towards research and new treatments and the Odone’s ideas and efforts? __________________________________________

11. What oil offers a possible solution to Lorenzo’s high level of VLCFA? __________________________________________

12. The second oil was erucic acid, which comes from rapeseed. Michaela’s sister could be tested with this oil because she was a carrier. Before Lorenzo tried the second oil his breathing was still very labored and couldn’t talk and was bedridden. After taking the second oil, how did his condition change? __________________________________________

Genotype for a carrier with this disease → XNXA
(mom and two aunts)

Genotype for a person with the disease → XAY
(Lorenzo)

Genotype for a healthy person → XNY
(Lorenzo’s father)