Stem cell division. the second characteristic is that

Stem cells are the undifferentiated biological cells that can develop to many different cell types of the body during early life and growth. To our body, the stem cells are like an internal repair system. A stem cell divides and each new cell can remain the same, a stem cell or a new cell can become another type of a cell that has more specialized function. The examples of this are a muscle cell, a red blood cell, or a brain cell. Stem cells are different and distinguished from other cell types by two important characteristics. The first characteristic is that stem cells are unspecialized cells capable of restarting or renewing themselves through cell division. The second characteristic is that the stem cells, under certain physiologic or experimental conditions, they can be made to become tissue or organ-specific cells. Also, they are made to have some of the special functions.

In the gut and the bone marrow the stem cells have a task to divide in order to repair and replace damaged or out the date tissues. However, in the pancreas and the heart, stem cells do not divide casually, but only under the special conditions. Since stem cells have the ability to regenerate, that allows them to treat diseases. Some of the diseases that can be treated with the stem cells are diabetes or heart diseases. This is still a big question mark for the scientists who need to do a lot of more research in order to know what happens exactly and how the cells cure these diseases. The research scientists are making currently gives us information on how our cells are capable of replacing old cells with new ones and keeping us healthy.

To explain the application of stem cells in curing some of the diseases, I am going to use the stem cells in leukemia. Leukemia is sort of a blood cancer that also affects the bone marrow and the lymphatic system. The blood cells

that are involved in leukemia are, most often, the white blood cells. The reason for that is because the white blood cells protect our bodies from a lot sorts of infections. The problem with people suffering from leukemia is in the bone marrow which produces abnormal quantities of white blood cells that do not function the way they are supposed to and then the organism gets messed up. Leukemia occurs when blood cells contain mutations in the DNA of those blood cells. There are abnormalities that cause cells to grow and divide faster and to continue with their lives even though the normal cells would have died. However, these abnormal cells are, clearly, not meant to survive, but they do and that is the reason the healthy blood cells get occupied with the damaged blood cells which causes the symptoms of this disease.

The symptoms of leukemia vary and they depend on the type of leukemia, but the most common symptoms are: fever or chills, fatigue, weakness, infections, losing weight, but not purposely, swollen lymph nodes, larger liver or spleen, easy bleeding or bruising, nosebleeds, red spots that look like chicken pox on the skin, sweating and bone pain. The major and most common types of this disease are: Acute lymphocytic leukemia (ALL), Acute myelogenous leukemia (AML), Chronic lymphocytic leukemia (CLL), Chronic myelogenous leukemia (CML). There are some factors that affect the targeted people in order for leukemia to occur. These people are people who already had chemotherapy and radiation for other cancers than leukemia. People with genetic abnormalities can develop leukemia as well. For example, people who suffer from the Down syndrome have an increased risk of suffering from the leukemia.

People who work and are exposed to some of the chemicals chemicals, such as benzene, daily are also in danger of suffering from the leukemia. For smokers there is a big risk of getting the acute myelogenous leukemia. Also, it is a genetic disease, so if someone in your family had leukemia, it is an increased probability you will have it as well. Even though usage of stem cells in curing the diseases is something, let’s say, evolutionary, there are some ethical considerations that are often debated amongst people. Some people say it disrespects the human body and life while the others say it is something people need in order to cure the diseases and that in some period the stem cells might help us to cure the diseases that currently cannot be cured at all. Maybe the best would be to people to change their minds with time when they actually see how much stem cells help the damaged organism and that they do not really affect our bodies in a negative way. Also, a good reference is that Vatican actually called stem cells the “ future of medicine”.