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**JSS2**

**TITLE: An essay on ‘Combatting Cancer and HIV/AIDS’**

For a very long time, the world has battled with two fearful diseases known to mankind such as ‘Cancer’ and ‘HIV/AIDS’. These diseases have claimed lots of lives causing grief, pain and suffering to families and loved ones. Cancer cells eat deep into the cells of humans and cause huge damages that if not well managed could lead to death. On the other hand, HIV/AIDS destroys the cells by reducing the immunity and could probably lead to death if not well managed.

However, with the improvement of scientific knowledge and medical innovation, there has been some solution to these health ravaging diseases. This essay tells us about new ideas on how to fight cancer and HIV/AIDS which would lead to health transformation in the society.

The disease called ‘cancer’ which was once a mystery has now been revealed in modern studies. There has been a lot of studies on the disease by researchers to understand how these cancer cells work. This has led to the developments of improved treatment of the disease. In this writing, I would like to introduce the immunotherapy, a pioneering approach to fighting this disease. It works by harnessing the power of the immune system to fight cancer cells. The introduction of CRISPR (Clustered Regularly Interspaced Short Palindromic Repeat) is a gene editing technology used to modify genes. This can be used to fight cancer cells by editing it. CRISPR can be used for direct gene editing in cancer cells by knocking out oncogenes -genes that when mutated or producing proteins in abnormal levels drive the growth and spread of cancer. Once these genes are knocked off, the spread of cancer cells is reduced.

The other disease known as ‘HIV/AIDS’ which was once a deadly disease has now been conquered by scientists who have made lots of progress by understanding the behavior of the virus. This has led to innovative treatments such as Antiretroviral therapy which helped to extend human lives. Explorers are currently exploring ways to use gene editing to eliminate HIV genes from infected cells. Immunotherapy is also being investigated to enhance the immune’s system ability to combat the virus. Stem cell transplants have shown promise in eradicating HIV reservoirs (places that the antiretroviral drugs cannot treat). This has made living without HIV/AIDS a future possibility.

Furthermore, a successful combat of cancer and HIV/AIDS would have a positive impact on humanity as it would reduce the rate of deaths and improve the quality of life, there would be an increase in productivity and reduced healthcare burdens, affected families would be reassured of hope and breakthroughs in scientific innovations.

In conclusion, the war against cancer and HIV/AIDS is gradually being won by humans through innovative ways. As scientists continue to work their way through the boundaries of knowledge, we will get to a future that these diseases will no longer be a threat to human lives but manageable or even completely eradicated. This will lead to a promising future of hope and boundless potential.