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Human blueprint breakthrough: Scientists publish 'gapless' human genome

(Writing Assignment #5)

This article starts out by talking about how the human genome was not fully sequenced, only about 92% of the human genome was fully sequenced. When the human genome was initially sequenced about two decades ago only about 92% of it was fully sequenced this was due to technological limitation so the full genome could not be completely sequenced. Better technology needed to be developed in order for the rest of the genome to be fully sequenced and now that technology exists. This new technology allows for very long sections of the genome to be read. Some of the original places in the genome they had trouble sequencing or had gaps were at telomeres which are found on the ends of chromosomes and the centromere which links sister chromatids together, these are now able to be sequenced and the accuracy of sequencing has also been improved. This breakthrough in sequencing is just the start of a new era in genome analysis¹. The human genome is still not fully mapped but it is the most complete it has ever been.

The *Science* article supports the original article and goes into more detail about how the missing sequences were mapped. These unmapped sequences were able to be mapped by long-read sequencing of a hydatidiform mole, a doubly haploid growth, this effort adds ~200 megabases of genetic information—a full chromosome's worth—to the human genome².

Fully mapping the human genome is one of largest development in modern science not just for genetics but for many other scientific fields because it allows us to see what genes cause genetic diseases and if there are ways these genetic diseases could be cured through gene therapy or other methods. Fully mapping the human genome will benefit all of humanity and even though it is not 100% mapped yet ever year humanity comes one step closer to fully mapping the human genome.

Works Cited

1. Achenbach, J. Human blueprint breakthrough: Scientists publish 'gapless' human genome. <https://www.washingtonpost.com/science/2022/03/31/human-genome-complete/> (2022)
2. Zahn, L. Filling the gaps. *Science*; <https://www.science.org/doi/10.1126/science.abp8653> (2022)