



Cloning's Promise

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Over the past century, medicine has conquered infectious diseases in the developed world while more effective delivery systems continue to transform health in the developing world. Instead of half the population dying in childhood, we have now crafted life expectancy with death nearer to maximal lifespan and thus succumb to degenerative conditions of aging. In contrast to infectious disease treatment, medicine has only addressed the outcomes of degenerative conditions in order to provide therapy but not cures, leading to continued medical interventions without fundamentally understanding the nature of age dependent decline. The imperative is to provide more effective treatment for diabetes, Alzheimer's and other diseases responsible for the majority of adult morbidity and mortality and improve the quality of life for an aging population.

Cloning offers the hope of renewing function without complete understanding of the fundamental basis for decline. Either replacing non-functional cells or maintaining them through support cells is being actively explored. These approaches are still evolving due to mechanistic understanding, e.g. the benefits of dopaminergic treatment for Parkinson's disease are achieved through maintaining the function of the neuron rather than the transplant.

Further work to minimize the risk of stem cell derived tumors is essential. An even more promising work is shown with drugs that can increase renewal of the adult stem cells and solve the issue of rejection and limited cell sources. Future work to maximize safety as well as address the ethics of changing survival curves will make cloning the intellectual hot bed of biomedical research for decades to follow.

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