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# Case: Enhancement, Anti-Aging Medicine & Life-Extending Biotechnologies

## Author(s)

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## Description

Marissa, a young mother, provides substantial support to her aging parents. When her parents begin exploring novel anti-aging treatments, Marissa wonders about the potential social outcomes of such technology.

## Body

Marissa frequently visits her elderly parents who live a few hours away from her to make sure they are healthy and comfortable in their retirement community. During her most recent trip last weekend, her father was excited to tell her about a special news report he watched on biomedical research on anti-aging interventions and rejuvenation biotechnologies, and that these new scientific breakthroughs could soon extend natural lifespans by decades. He became so enthusiastic about this new science that he looked into the prospects of undergoing gene therapy as an anti-aging measure for both himself and his wife, Marissa's mother. For example, scientists are discussing the possibility of using gene therapy to enable cells to

produce additional enzymes to help clear accumulated waste from aging cells with dysfunctional lysosomes. But then, he explained to Marissa how furious he was to find out that his expensive health insurance plan would not cover this intervention because it considers it to be a case of enhancement rather than a case of medical treatment.

Marissa's father is really upset because he envisioned a retirement filled with travel and other activities with his wife, but lately, several small ailments have interrupted their plans. He thinks the people at the insurance company just don't understand what it's like to experience aging and they are just being stubborn and unsympathetic.

Meanwhile, Marissa's mother heard from the neighbors that the local university's medical center is conducting a research study on a new "anti-aging therapy." The study, she explained to Marissa, is to test a new drug that inhibits something called telomerase, which is linked with age-related cancers. Telomerase is an enzyme that works to lengthen the tips of chromosomes called telomeres. Changes in the length of telomeres over time is associated with the deterioration of human cells and cancer. Her neighbor then suggested that they might be able to access that anti-aging intervention without any financial cost as research subjects. But, her father says he doesn't want to be a guinea pig. Marissa's mother told Marissa that she thinks she can bring him around by reminding him of all the things they still want to do, places they want to visit, etc., and how tired she is of managing the pain in her joints and how she fears her memory is getting worse everyday.

Marissa told her mother to not do anything before she gets a chance to look into this new biomedical research and that she'd also review her parents' insurance plan. Marissa feels conflicted after their conversation. Of course, she wants her parents to be healthy and happy, and to enjoy their retirement for as long as possible. But, she's not convinced that the anti-aging procedures are necessary or that they are even safe or effective. And, what if her retired parents live for another forty years? Marissa thinks it would be wonderful for her young children to have their grandparents around for that long, but she also worries about whether her parents would be able to maintain their living standards with the rising cost of living. To Marissa, these prospective changes seem all too sudden.

# Discussion Questions

1. If Marissa finds out that these particular therapies happen to be low risk, would she still have reasons to be concerned with these interventions? If so, why?
2. If the non-experimental therapy is deemed low-risk and has the potential to prevent age-related illnesses, should private health insurance cover the cost? Or, should the intervention be considered an enhancement rather than healthcare or therapy? What are some implications of defining these interventions one way or the other?
3. Consider the case in which Marissa's parents live in a country with universal health care. Should these types of interventions be considered as preventative health measures? What implications might this have on our conception of aging and the way we organize and prioritize certain life plans?

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### **Links:**

- The President's Council on Bioethics, Washington, D.C. *Beyond Therapy: Biotechnology and the Pursuit of Happiness*. October 2003. (Chapter Four): <https://bioethicsarchive.georgetown.edu/pcbe/reports/beyondtherapy>
- SENS Research Foundation: <http://www.sens.org>

### **Notes**

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