

The Medicalization of Aging: Exploring the Ethics and Impacts of Anti-Aging Interventions

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Abstract

This paper explores the ethical implications and societal impacts of gerotherapeutics, which aim to delay aging and age-related diseases. As medical advancements target aging as a condition to be treated, the medicalization of aging raises concerns about reinforcing ageist stereotypes and marginalizing older adults. The growing anti-aging industry, fueled by societal pressures, particularly for women, may lead to economic and healthcare disparities. Misclassifying aging as a disease risks diverting resources away from essential public health needs. This paper argues for a shift in perspective, emphasizing aging as a natural process deserving of respect, rather than a condition to be “cured.”

Body

The term gerotherapeutics refers to pharmacological and behavioral interventions that affect biological mechanisms of aging with the intent to prevent or delay age-related diseases and lengthen the time spent without illness or disability (1). According to the National Institute of Aging, the geroscience hypothesis “posits that since aging physiology plays a role in many – if not all – chronic diseases, addressing aging physiology will allow a reduction or delay in the appearance of multiple chronic diseases” (2). The National Institute of Aging

was established in 1974 to conduct research focused on improving the health and well-being of older adults (3). Approximately 13 years ago, the Trans-NIH Geroscience Interest Group was created to study the biological process of aging and its intersection with the biological processes of other common chronic diseases (3). The study of aging is becoming increasingly imperative as the aging population continues growing (4). A study by Donner et al. found that a majority of people wished to live to 120 years of age or longer if health was guaranteed (5). In 2013, Pew Research Center found that 63% of US adults believed that “medical advances that prolong life are generally good because they allow people to live longer” (6). Moreover, the global anti-aging market is estimated to be worth billions (7). Some researchers and policymakers have even proposed classifying aging as a disease in order to direct more funding toward aging-related research and incentivize the development of therapeutic interventions. With all these vested interests in gerotherapeutics, it is critical to evaluate the ethical implications of anti-aging interventions.

Aging has long been studied in relation to health. In Dr. Ilia Stambler’s article in *Frontiers in Genetics*, he discusses that the concept of fighting against aging traces back to approximately 100 BCE with the works of Cicero (8). In the late 1700s-early 1800s German hygienist Christoph Wilhelm Hufeland

described aging as the “enemy of life” (8). In 1903 immunologist Elie Metchnikoff coined the term “gerontology”, describing aging as similar to disease and considering it to be a mistake to view aging as physiologic phenomenon (8). In 2021, the World Health Organization (WHO) proposed the inclusion of “old age” in the 11th revision of the International Classification of Diseases (ICD-11) (9). However, WHO decided to use “ageing associated decline in intrinsic capacity” instead of “old age” because their “inclusion of ‘old age’ in ICD-11 was not intended to cast age or ageing as a disease...the intention was to recognise that the physiological process of ageing has a detrimental effect on a person's intrinsic capacity” (9). However, despite its long history as a natural process, the perception of aging in contemporary society has been significantly influenced by cultural values that often position it as a condition to be avoided or corrected, particularly through the lens of medical and cosmetic interventions.

Societal pressures to maintain a youthful appearance have profoundly influenced perceptions of aging, particularly for women. Wrinkles, body fat, sagging skin, and grey hair have become not only signs of aging but also markers of failure in a culture that equates physical attractiveness with social value (10). Women are inundated with advertising that promises miraculous anti-aging products and procedures, from Botox to chemical peels, creating an industry driven by the fear of becoming “invisible” as they age (11). In North America alone, the anti-aging products market accounted for 30.4% of the global market revenue in 2024, and the anti-aging products market size is projected to reach USD 80.61 billion by 2027, reflecting society's growing investment in countering visible signs of aging (12). It is also important to notice that although women account for the majority of cosmetic procedure patients, indicating a gendered targeting of anti-aging interventions, men are

becoming more interested in surgical interventions. According to the 2024 Procedural Statistics Release of Cosmetic Surgery Procedures, while in 2023 males comprised only 5% of lower body lift patients, this number increased to 10% in 2024, a procedure rooted in the weight loss-related body concerns that are coming back along with the increasing interest in taking GLP-1 medications for weight loss (13). The idea that aging bodies are inherently flawed fuels the normalization of interventions that “fix” these perceived imperfections, rendering aging itself a defect requiring correction (10).

These beauty work practices reinforce ageist stereotypes that depict youth as desirable and old age as repulsive or unworthy (11). Social media amplifies these standards by showcasing idealized and often unrealistic images of youthful beauty, compelling individuals to engage in medical or cosmetic interventions as a form of self-care and self-esteem (10). This dynamic reflects a broader rejection of the traditional view that aging, while tragic, is a normal process, and part of the natural order (14). Instead, the medicalization of aging redefines it as a problem requiring intervention, betraying a disregard for older adults and exacerbating their marginalization (14). For example, a cross-national study conducted by the WHO's Ageism Report found that ageism leads to poorer health outcomes, reduced life expectancy, and increased social exclusion for older adults (15).

Western culture has historically framed aging in opposition to health and vitality, perpetuating narratives of decline and dependency. From as early as the writings of Claudius Galen, aging has been viewed as a “natural condition” distinct from disease, though modern perspectives often blur these lines (16). Anti-aging advocates further complicate this framework by asserting that while aging is natural, it remains undesirable and should therefore be ameliorated through intervention (17). This perspective aligns with Western cultural ideals

that prioritize the optimization of the body and liberation from biological constraints, reinforcing a perception of aging as a process to be resisted rather than embraced (17).

These cultural values also intersect with societal pressures, particularly for women, who are often compelled to equate their worth with physical youthfulness. The moralizing narrative that “letting oneself grow old” equates to “letting oneself go” reflects deep-seated ageism and a rejection of aging as a valued stage of life (10). Ageism perpetuates the assumption that old age is undesirable and fraught with dependency, loss, and unhappiness (11). Framing aging as a universal process, anti-aging proponents argue that it is both knowable and therefore improvable, situating interventions at the intersection of health preservation and restoration (17). However, conflating aging with disease betrays a broader societal discomfort with mortality, further marginalizing older adults while prioritizing biomedical interventions over acceptance of aging as an essential aspect of life (14).

Misclassifying aging as a disease carries significant dangers, particularly in how resources are allocated in healthcare systems. One notable example is the significant venture capital investment in biotechnology firms focused on anti-aging drugs and cellular reprogramming, such as Calico (a Google subsidiary), which has received over \$1.5 billion in funding despite limited clinical translation to date (18). In contrast, many public health systems remain underfunded in areas like mental health and chronic disease prevention (19). If aging is regarded as a medical issue that needs treatment, significant resources could be redirected toward anti-aging solutions, potentially neglecting important public health concerns like chronic illness management, mental health services, and preventative care (20). This redistribution of resources might worsen current inequities, mainly favoring those who can afford costly anti-aging therapies, while

marginalized groups are left without necessary care (20). In Brazil, for instance, government resources have increasingly supported aesthetic medicine training and clinics, while funding for geriatric primary care and dementia services has stagnated (21). A health system that overly prioritizes the postponement of aging may overlook the intricate and varied needs of senior citizens, potentially sidelining at-risk groups and exacerbating health inequalities. Policymakers and clinicians must find a balance - encouraging innovation in geroscience while ensuring that critical care infrastructure and preventive services for the general population remain well-supported. Mechanisms such as public-private partnerships, evidence-based prioritization, and regulatory oversight can help align longevity research with broader health equity goals.

The economic consequences of viewing aging as a disease go beyond just healthcare. The worldwide anti-aging industry flourishes by taking advantage of societal anxieties about aging, potentially leading to the endorsement of unverified or insufficiently researched treatments (22). This expanding market amplifies socioeconomic disparities, as access to effective gerotherapeutics could be confined to affluent groups, further intensifying inequalities. Moreover, the quest for extending lifespan without emphasizing healthspan might impose significant pressure on social and economic frameworks, such as pensions, long-term care, and workforce stability (23). Focusing on healthspan-oriented approaches can aid in reducing these risks while promoting ongoing economic and social growth.

Ultimately, recasting aging as an illness might reduce societal value for the inherent process of aging, impairing the life quality and contentment of older individuals. Presenting aging as a disease could strengthen ageist views, labeling older adults as fundamentally deficient and reliant. These beliefs might undermine intergenerational connections, diminish the chances for older adults to make

meaningful societal contributions, and sustain the notion that youth is the only life phase deserving of aspiration. In contrast, accepting aging as a natural and worthwhile stage of life enables a more comprehensive view of health, emphasizing the importance of preserving functional independence, social ties, and mental well-being. At the same time, certain medical and public health advances, such as

access to geriatric care, fall prevention programs, cognitive health support, and lifestyle interventions like nutrition and physical activity, can meaningfully promote healthy and comfortable aging without framing it as a pathology. Aging, while inevitable, should be viewed not as a condition to be “cured” but as a journey to be navigated with care, respect, and support.

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