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The vocabulary of geromedicine: gerovocabulary

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In ancient Greek, **γέρων** (gérōn) is both an adjective and a noun meaning "old (man)". Notably, in modern Greek, this word has evolved into **γέρος** (géros), retaining the same meaning. In stark contrast, however, the term **γερός** (gerós, with a different accentuation), used in Hellenistic Greek, the supranational language spoken during the Hellenistic period and throughout the Roman and Byzantine empires, translates to "fit and healthy". This linguistic duality lends a striking ambiguity to the term geromedicine, as coined by us in 2024 and 2025[1,2].

The prefixes "geronto-", "geront-", and "geron-", frequently used in neologisms across scientific and medical literature, clearly denote old age. These prefixes appear in terms such as gerontal or gerontic (senile), gerontocomium (an asylum for the elderly), gerontechnology (technological innovations addressing the needs of older individuals), gerontarchy or gerontocracy (governance by the elderly), gerontogens (environmental factors that accelerate aging, analogous to carcinogens), gerontology (the scientific study of old age), gerontomorphic (exhibiting characteristics of old age), gerontophilia (sexual attraction to older individuals), gerontophobia (fear or aversion toward older adults), gerontotherapy (therapeutic interventions targeting the elderly), gerontotoxon (cholesterol or hyaline deposits in the corneal stroma typical of old age, also known as arcus senilis), and gerontotrophium (a hospice for elderly men). Notably, these prefixes are sometimes condensed to "gero-" or "ger-" (before a vowel), as seen in terms such as geranosis (a disease characteristic of old age), geransis (the process of growing old), gerocomia (medical care for the elderly), geroderma (age-related skin atrophy), gerodontics or gerondontology (dentistry for older adults), geromarasmus (generalized tissue atrophy due to aging), geropsychiatry (a subspecialty of psychiatry focused on the elderly), geroscience (the scientific study of aging), geratology (the biological study of age-related population decline), and most prominently, geriatrics (the branch of medicine focused on the healthcare of older adults). Among these, only geriatrics and its derivatives, geriatrician (the physician specializing in elderly care) and geriatric (as in "geriatric patients"), are in widespread use among the genera educated public. Within professional circles, however, the term geroscience has gained traction to define the research domain supported by the National Institute of Aging of the United States[3].

We recently defined **geromedicine** as a medical subspecialty that, in contrast to geriatrics, "seeks to optimize health and extend healthspan by targeting fundamental aging processes across the entire adult lifespan, encompassing individuals regardless of their current health status (...). Thus, geromedicine does not concentrate solely on older adults or diseased populations but emphasizes the inclusion of younger individuals prior to the clinical manifestation of age-related diseases"[2]. In this context, the prefix "gero" does not refer to the age of the target population, but rather to the overarching goal of promoting healthy aging trajectories. Indeed, geromedicine aligns closely with the mission of the Healthy Longevity Medicine Society.

In this context, we propose the introduction of a new set of terminology to enrich the lexicon of geroscientific and geromedical discourse. Below is a concise list of newly recommended nouns and their corresponding adjectives:

Gerogene/Gerogenic: A gene that promotes the aging process, analogous to an oncogene that drives cancer development and

progression. These genes and their products (**geroproteins**) are typically overexpressed with age and/or exhibit gain-of-function mutations or polymorphisms that accelerate biological aging.

Gerosuppressor gene/Gerosuppressive: A gene that counteract the aging process, comparable to a tumor suppressor (or oncosuppressor) gene that inhibits tumor initiation and progression. Such genes and their corresponding gerosuppressor proteins are characteristically underexpressed with aging and/orshow loss-of-function mutations or polymorphisms that promote biological aging.

Gerodiagnostics/Gerodiagnostic: Diagnostic approaches that quantify biological aging affecting at the systemic or organ-specific level. These are based on comprehensive biomarker panels[4], high-throughput omics methodologies, and the individual's exposome profile[5].

Geroprevention/Geropreventive or Geroprophylaxis/Geroprophylactic: Interventions aiming to (i) optimize health and functional trajectories, (ii) prevent the onset of specific pathologies, and (iii) intercept subclinical lesions (such as asymptomatic tumors or arterial stenoses) to prevent their progression to clinical disease.

Gerotherapeutics/Gerotherapeutic: Medical or non-medical interventions used in geroprevention or geroprophylaxis to maintain systemic or organ-specific fitness, or to decelerate (and potentially halt or even reverse) age-related functional decline and disease.

Gerostrategy/Gerostrategic: The integrated framework of of gerodiagnostic, geropreventive, and gerotherapeutic measures aimed at optimizing health and extending healthspan across the adult lifespan.

Ultimately, the semantic ambiguity of the prefix ‘gero’, rooted in its ancient and Hellenistic Greek origins, endures not as a constraint, but as a conceptual advantage. Geromedicine thrives precisely because it embraces the paradox of aging and vitality. Gero- no longer exclusively signals decline; it now also embodies the pursuit of sustained health. The language we create reflects the future we seek to build.

Declarations

Authors contribution

The author contributed solely to the article.

Conflicts of interest

Guido Kroemer is the Editor-in-Chief of *Geromedicine*; Carlos López-Otín is an Editorial Board Member; and Andrea B. Maier is one of the Deputy Editors. The authors declare no other conflicts of interest.

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