SCE 0815 Public Evidence Appendix

Longevity and anti-aging

Literature review date: September 13, 2026

Controlling principle. Aging-related evidence must remain product-, population-, endpoint-, comparator-, and follow-up-specific. Mechanistic or biomarker changes do not by themselves establish human rejuvenation, slowed organism-wide aging, or lifespan extension.

Point-by-point evidence framework

Controlling Point	Evidence focus	Interpretive boundary
Biological aging claims	Hallmarks of aging, inflammatory and metabolic pathways, cellular senescence, stem-cell exhaustion, intercellular signaling, and biological-age biomarkers.	Mechanistic relevance or biomarker movement does not establish clinically meaningful reversal of human aging.
Frailty	Validated physical performance, function, patient-reported outcomes, and randomized MSC trials in defined frailty populations.	Favorable frailty signals are clinically relevant but product-specific and do not establish generalized rejuvenation or lifespan extension.
Sarcopenia	Muscle strength, quantity/quality, physical performance, muscle repair, inflammatory and mitochondrial biology.	Frailty or walking improvements cannot be relabeled as treatment of consensus-defined sarcopenia without direct diagnostic enrollment and endpoints.
Cognitive aging	Normal cognitive aging versus disease-specific neurodegeneration; cognition, function, imaging, and exploratory regenerative studies.	Disease-specific early findings cannot be generalized to prevention or reversal of normal cognitive aging.
Sexual health claims	Vascular, neurologic, endocrine, medication-related, psychologic, relational, and age-associated contributors.	Condition-specific sexual-function improvement does not prove whole-body rejuvenation, restored youth, or improved fertility.
Absence of validated rejuvenation endpoints	Physical function, cognition, disability, multimorbidity, resilience, patient-reported outcomes, hospitalization, survival, and biomarkers.	No single validated endpoint currently proves whole-body human rejuvenation; biomarkers are not universal surrogate endpoints.

Evidence-handling rules

Positive, negative, mixed, null, and inconclusive findings are weighted by study design, directness, exact product identity, endpoint relevance, comparator, and duration of follow-up rather than by whether they favor regenerative intervention.

Mechanistic evidence, clinical efficacy, safety, development stage, regulatory status, guideline position, manufacturing quality, and claims of rejuvenation remain separate analytical dimensions.

Principal references

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