SCE 0812 Public Evidence Appendix

Reproductive medicine

Literature review date: September 13, 2026

Controlling principle. Reproductive evidence must remain diagnosis-, product-, route-, endpoint-, and life-stage-specific. Surrogate hormonal, imaging, or mechanistic signals must not be converted into claims of restored fertility, reproductive rejuvenation, live-birth benefit, or offspring safety.

Point-by-point evidence framework

Controlling Point	Evidence focus	Interpretive boundary
Endometrial injury	Intrauterine adhesions, basal-layer injury, fibrosis, angiogenesis, stromal support, implantation biology, and endometrial regeneration.	Endometrial thickness or imaging change does not establish normal histology, implantation competence, live birth, or obstetric safety.
Ovarian insufficiency	Residual follicular activity, ovarian reserve, stromal and vascular support, inflammation, mitochondrial biology, and endocrine function.	AMH, FSH, antral follicle count, or menstrual change does not establish restoration of a durable oocyte pool, oocyte competence, pregnancy, or live birth.
Erectile dysfunction	Vascular, neural, endocrine, structural, medication-related, psychogenic, and mixed causes; endothelial and smooth-muscle support.	Small or uncontrolled studies cannot establish durable efficacy across etiologically different ED populations; validated function, hemodynamics, medication response, durability, and safety must be separated.
Infertility claims	Female and male factors, uterine and tubal causes, ovarian reserve, endometriosis, sperm parameters, fertilization, embryo development, implantation, pregnancy, and live birth.	Mechanistic or surrogate improvement does not prove restored fertility, improved egg or sperm quality, reversal of reproductive aging, or better cumulative live-birth outcomes.
Evidence and ethical limitations	Maternal, fetal, neonatal, offspring, genetic, epigenetic, procedural, consent, financial, and regulatory considerations.	Pregnancy or live birth alone is not a complete safety endpoint; interventions potentially affecting gametes, embryos, pregnancy, or offspring require explicit ethical governance and long-term surveillance.

Evidence-handling rules

Positive, negative, null, mixed, and inconclusive findings are weighted by design quality and directness rather than by whether they favor the intervention.

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

Hysteroscopic management, diagnosis-specific fertility treatment, assisted reproductive technology, fertility preservation, endocrine treatment, cardiovascular evaluation, PDE5 inhibitors, devices, and surgery remain the appropriate comparators where indicated.

Principal references

1. Galipeau J, Sensebé L. Mesenchymal stromal cells: clinical challenges and therapeutic opportunities. Cell Stem Cell. 2018;22:824-833.

2. Pittenger MF, Discher DE, Péault BM, Phinney DG, Hare JM, Caplan AI. Mesenchymal stem cell perspective: cell biology to clinical progress. NPJ Regen Med. 2019;4:22.

3. Relevant contemporary clinical and translational literature concerning MSC/EV interventions in endometrial injury, ovarian insufficiency, erectile dysfunction, infertility, and reproductive regenerative medicine.

4. Disease-specific reproductive endocrinology, infertility, gynecology, urology, and bioethics guidance should control statements concerning established care and ethical boundaries.

5. Exact product identity, reproductive diagnosis, age and reserve, route, dose, co-interventions, comparator, fertility endpoint, pregnancy outcome, offspring outcome, and follow-up must be matched before evidence is generalized.