

TABLE 7.2 Peptide Therapies for Fertility

Peptide	Primary Benefit	Research Highlights	Fertility Applications
Kisspeptin (kisspeptin-54 or KP54)	Regulates GnRH → FSH and LH secretion	Phase 2 trials show it safely triggers oocyte maturation in IVF patients at risk of OHSS.	More physiological ovulation trigger than hCG; helpful in IVF and possibly for PCOS
AMHR2-binding peptides	Mimic AMH action	Cleveland Clinic research suggests protection of ovarian reserve during chemo.	Potential to delay ovarian aging or preserve follicles in high-risk cases
FEE peptide (fertilin-derived)	Enhances fertilization, embryo quality	Improves oocyte maturation and increases euploid embryos in human and mouse models	Could support chromosomal integrity and early embryo development
CNP	Improves ovarian blood flow and function	Animal studies show improved egg quality in aged ovaries; benefits to sperm motility too.	May enhance ovarian stimulation or sperm function in aging populations
Opiorphin	Boosts sperm motility	Inhibits enzymes that break down sperm-supportive peptides; ~120% motility increase in some men	Potential use in severe male factor or asthenozoospermia
BPC-157	Tissue healing, angiogenesis, anti-inflammatory	Accelerates ovarian tissue healing post-ovarian surgery in preclinical data	May be useful in endometriosis, postsurgical recovery, or uterine repair
PEA	Mast cell stabilizer, neuroimmune modulator	Reduces pelvic inflammation, pain; studied in endometriosis and chronic pelvic pain	Emerging adjunct for immune- or inflammation-driven infertility
KPV (lys-pro-val)	Anti-inflammatory, gut-repairing peptide	Reduces TNF-alpha and calms gut-immune axis; beneficial in animal models	Could benefit autoimmune or gut-linked infertility, implantation issues
GLP-1	Improves insulin sensitivity, reduces inflammation, may support ovulation	GLP-1 receptor agonists (for example, semaglutide) show benefit in PCOS and metabolic syndrome.	May benefit women with PCOS, metabolic dysfunction, or obesity-related infertility

AMH, anti-Müllerian hormone; AMHR2, anti-Müllerian hormone type-2 receptor; BPC, body protection compound; CNP, C-type natriuretic peptide; FSH, follicle-stimulating hormone; GLP-1, glucagon-like peptide-1; GnRH, gonadotropin-releasing hormone; hCG, human chorionic gonadotropin; IVF, in vitro fertilization; LH, luteinizing hormone; OHSS, ovarian hyperstimulation syndrome; PCOS, polycystic ovarian syndrome; PEA, palmitoylethanolamide; TNF, tumor necrosis factor.