

How Acupuncture Improves IVF Outcomes

Mechanisms of Action and Clinical Evidence

Introduction: Integrating Acupuncture in IVF Support

Acupuncture is increasingly integrated into IVF care due to its documented physiological effects. This review outlines mechanisms by which acupuncture enhances blood flow, regulates hormones, and improves patient outcomes in fertility treatment.

1. Enhancing Pelvic Perfusion via Autonomic Nervous System Modulation

Acupuncture balances the autonomic nervous system, reducing sympathetic output and increasing parasympathetic activity. This vasodilatory response enhances blood flow to the ovaries and uterus.

2. Nitric Oxide and Local Vasoactive Compounds

Acupuncture induces release of nitric oxide (NO) and CGRP, relaxing vascular smooth muscle and improving microcirculation to reproductive tissues.

3. Hormonal Regulation via the HPO Axis

By increasing beta-endorphins in the brain, acupuncture modulates GnRH, LH, FSH, and estrogen levels. This supports ovulation and endometrial receptivity.

4. Stress Axis Modulation and Cortisol Reduction

Acupuncture reduces cortisol and stress, mitigating negative impacts on hormone balance and ovarian perfusion. This also improves IVF treatment compliance and emotional well-being.

5. Segmental Reflex Activation and Targeted Blood Flow

Point stimulation on the lower abdomen and limbs activates spinal reflexes that increase pelvic blood flow and support endometrial function.

6. Measurable Effects on Uterine and Ovarian Blood Flow

Doppler studies confirm improved blood flow indices in uterine and ovarian arteries following acupuncture, supporting implantation and ovarian response.

7. Special Consideration: PCOS and Insulin Sensitivity

In PCOS, acupuncture improves insulin sensitivity and reduces sympathetic tone, contributing to hormonal regulation and ovulatory restoration.

Summary Table: Mechanisms at a Glance

Mechanism:	ANS Modulation	Effect:	Vasodilation	Benefit:	up Blood Flow
Mechanism:	NO/CGRP Release	Effect:	Microcirculation	Benefit:	up Follicle Nourishment
Mechanism:	HPO Axis	Effect:	Hormonal Regulation	Benefit:	up Ovulation
Mechanism:	Cortisol Reduction	Effect:	down Stress	Benefit:	up IVF Compliance
Mechanism:	Reflex Activation	Effect:	Local Perfusion	Benefit:	up Endometrial Health
Mechanism:	PCOS Modulation	Effect:	down Androgens	Benefit:	up Ovulation

Clinical Integration for IVF Teams

- Begin acupuncture 6-10 weeks before embryo transfer
- Use Doppler and hormone markers to measure impact
- Educate patients using IVF-aligned language
- Consider acupuncture as mechanism-driven support for ART