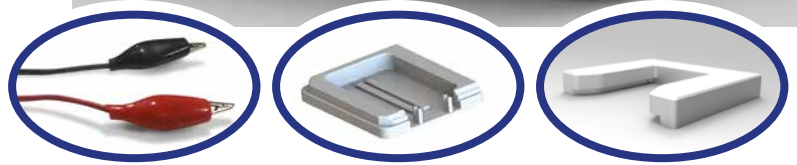


# ZEUS

## PULSE STIMULATOR (ZPS 19)

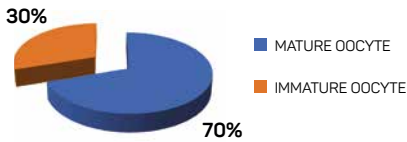
### Indications for Pulse Stimulated Oocyte Activation

- ◆ Total Fertilisation Failure
- ◆ Low Fertilisation
- ◆ Severe Male Infertility
- ◆ Round/Elongated Spermatid Injection
- ◆ High Sperm DNA Fragmentation
- ◆ Immotile Sperm Injection
- ◆ TESE Retrieved Sperm Injection

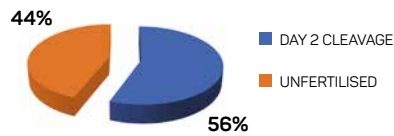


15 years data pile up proves that PIEZO electric stimulation is an efficient tool for oocyte activation in Total Fertilisation Failure (TFF) patients.

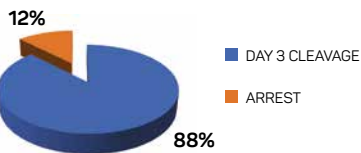
#### MATURATION



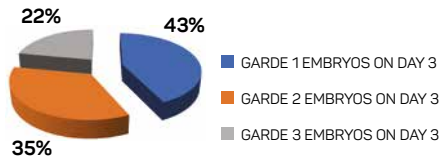
#### FERTILISATION



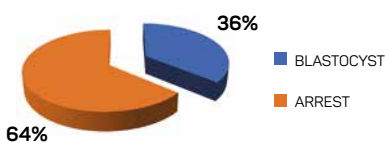
#### DAY 3 CLEAVAGE



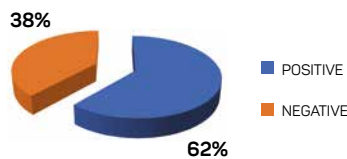
#### DAY 3 EMBRYO GRADE



#### BLASTOCYST



#### PREGNANCY



#### TFF Patient Criterias :

- ◆ ≤37 Age
- ◆ ≥5 M2 Oocyte
- ◆ ≥5 million sperm concentration
- ◆ Fertilisation was not observed at least 2 previous IVF attempts



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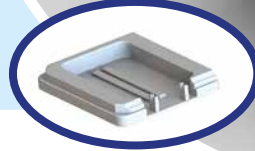
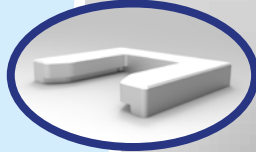


# ZEUS

## PULSE STIMULATOR (ZPS 19)

### PACKAGE INCLUDES

- ◆ 1 x Pulse Stimulator Main Body
- ◆ 2 x Stimulation Cuvettes
- ◆ 1 x Electrode Cable
- ◆ 1 x User's Manual
- ◆ 1 x Warranty Certificate
- ◆ 1 x Dish Fastener
- ◆ 2 x Electroliquid Solution
- ◆ 1 x Adaptor



# ZPS 19



- ◆ Digital Touch-Pad, Power Inlet
- ◆ Produces constant current specific for cell
- ◆ Designed for cell suspension and in vitro applications
- ◆ Stable, standard and safe pulse on cellular level
- ◆ Pulse stimulator device with a power cable, electrode cable and cable ends, sterile cuvette (electrodish), non-toxic electrolyte (electroliquid), touch-pad, dish fastener operating manual, warranty certificate, technical assistance (English, Turkish, Russian).

### The effectiveness of intracytoplasmic sperm injection combined with piezoelectric stimulation in infertile couples with total fertilization failure

Volkan Baltacı, M.D.,<sup>a</sup> Özge Üner Ayvaz, Ph.D.,<sup>b</sup> Evrim Ünsal, Ph.D.,<sup>b</sup> Yasemin Aktaş, M.Sc.,<sup>b</sup> Aysun Baltacı, M.D.,<sup>b</sup> Feriba Turhan, M.Sc.,<sup>b</sup> Sarp Özcan, M.D.,<sup>b</sup> and Murat Sönmez, M.D.<sup>c</sup>

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**Objective:** To assess the effectiveness of intracytoplasmic sperm injection (ICSI) combined with piezoelectric stimulation in infertile couples with a history of total fertilization failure (TFF).

**Design:** Prospective controlled trial.

**Setting:** Clinical IVF laboratory.

**Patient(s):** Seventy-one couples undergoing ICSI on sibling oocytes having at least one previous ICSI attempt with TFF.

**Intervention(s):** ICSI or ICSI with piezoelectric activation.

**Main Outcome Measure(s):** Fertilization rate.

**Result(s):** The patients were allocated to two groups: group I included 21 patients with only one previous TFF and group II included 50 patients with more than one previous TFF. Collectively, a total of 823 metaphase II (MII) oocytes were retrieved in 78 oocyte retrievals. In Group I, combined ICSI with piezoelectric stimulation was applied to 123/211 (58.2%) of MII oocytes (group IA), whereas standard ICSI procedure was applied to 88/211 (41.8%) of MII oocytes (group IB). The fertilization rate was 62% and 12% in group IA and group IB respectively. In group II, piezoelectric activation was applied in all 612 MII oocytes, of which 296 (48.3%) were fertilized. The rates for implantation and pregnancy/embryo transfer were obtained as 30.6% and 44.1%, respectively.

**Conclusion(s):** Piezoelectric activation seems to improve IVF outcome in patients with previous TFF history. (Fertil Steril® 2009; 92:1111-1115. ©2009 by American Society for Reproductive Medicine.)

**Key Words:** ICSI, electrical activation, fertilization rate, embryo grade, pregnancy



Human Genetics & Embryology

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Research Article

Open Access

### The Effect of Piezoelectric Stimulation in Patients with Low Fertilization Potential

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#### Abstract

**Objective:** To assess the value of the electrical activation of oocytes in ICSI patients with previous limited fertilization outcomes.

**Design:** Prospective randomized study.

**Settings:** Clinical IVF laboratory.

**Patient(s):** A hundred and seven couples undergoing ICSI with possible low fertilization outcomes.

**Intervention(s):** TESE, TESA, ICSI with Piezoelectric Activation

**Main Outcome Measure(s):** Fertilization, clinical pregnancy rates, embryo grades.

**Result(s):** Patients were subdivided into six study groups. In Group I, testicular elongated spermatis were used and 27.8% fertilization, 2.3% clinical pregnancy rates were evaluated. In testicular immotile spermatozoa injected group (Group II), 56.5% fertilization and 50% clinical pregnancy rates were obtained. 68.7% fertilization and 30% clinical pregnancy rates were achieved in Group III with testicular motile spermatozoa. In Group IV, patients with severe oligospermia, 64% fertilization and 28.6% clinical pregnancy rates were achieved. Group V included patients with total immotile spermatozoa and fertilization and clinical pregnancy rates were 50% and 57.1% respectively. In patients with history of low fertilization rate (Group VI), 38.7% fertilization and 19% clinical pregnancy rates were obtained.

**Conclusion(s):** Piezoelectric stimulation can be used for patients with low fertilization rates and total immotile spermatozoa: as we detected an improvement in the fertilization and clinical pregnancy rates of these patients.

**ZEUS**  
PULSE STIMULATOR

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