

IMPROVING GENOMIC INTEGRITY & PATIENT OUTCOMES

Understanding the latest science in the ZyMöt™ revolution

Not all sperm are equal

Using the best sperm helps increase the odds of a successful fertility treatment cycle. **But not all sperm are created equal:** up to 11% of men with a “normal” semen analysis have a measurable problem with sperm chromatin (DNA) fragmentation, and thus reduced motility.¹ Double-stranded sperm DNA damage is a cause of delay in embryo development and can impair implantation rates.²

ZyMöt Sperm Separation Devices are a better way to process sperm, without harmful centrifugation.^{3,4} ZyMöt devices enable the separation of sperm with nearly undetectable levels of DNA fragmentation and oxidative stress.⁵ Improved sperm health means better clinical outcomes.⁶⁻⁸ Building on research¹ from 2019, scientists at Weill-Cornell Medical College examined the impacts of improved genomic integrity.

Results: Sperm DNA damage lowers the odds of success

Work from Keating showed that double-stranded DNA breaks in sperm were a major factor in chromosomal abnormalities, embryo aneuploidy and pregnancy loss.⁹ This highlights the need to focus on genomic integrity – not just for male-factor patients, but for every sample.

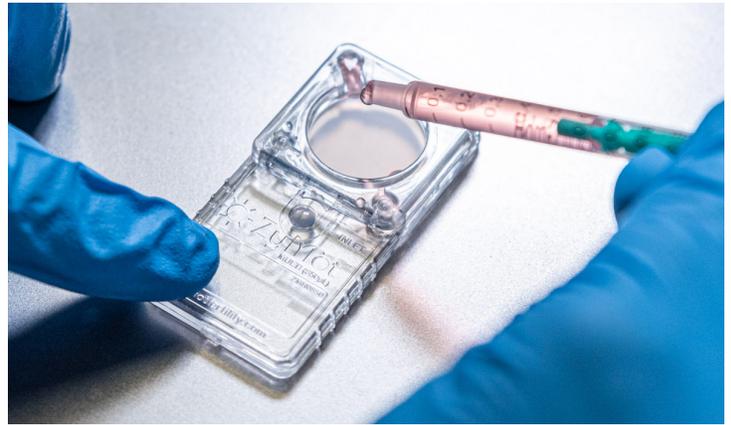
Results: An alternative to surgery

Men with high levels of sperm DNA fragmentation face a clinical challenge when they pursue ART. Research from Tavares and associates examined samples from male-factor couples who had experienced pregnancy failure.¹⁰ In a subsequent cycle, these patients selected either testicular biopsy or sperm preparation with the ZyMöt Multi (850µL) device. ZyMöt-prepared samples improved outcomes: the ongoing pregnancy rate improved to 92%, from 75% with density gradient centrifugation (DGC) methods.

Results: Improved outcomes for challenging patients

In an update to her 2019 publication¹, Parrella and colleagues studied patients with histories of ART failure and high sperm chromatin fragmentation (SCF) ($\geq 22\%$). This research asked if microfluidic sperm separation was able to select sperm with higher chromatin integrity.¹¹

One patient group underwent fresh embryo transfer (FET) after processing with DGC. Initially, this group saw low levels of clinical pregnancy and high levels of loss. These patients then had their semen specimens processed with ZyMöt in a subsequent ICSI cycle, yielding



significantly higher implantation rates, clinical/ongoing pregnancy rates, and decreased pregnancy loss.

In another group, patients also had both high SCF and a history of high embryo aneuploidy rates. Patients underwent PGT-A and frozen embryo transfer, after sperm processing with either DGC or ZyMöt. Euploidy rates were significantly higher with ZyMöt compared to DGC processing. Implantation rates, clinical pregnancy rates, ongoing/delivered rates (there were none with DGC) were all significantly higher with ZyMöt compared to DGC processing with greater pregnancy loss, respectively.

The ZyMöt Difference

The science is clear: it's essential to do everything we can to improve sample quality by selecting sperm with the lowest possible levels of DNA fragmentation. Avoiding centrifugation, which can cause additional sperm damage, is vital. Processing with ZyMöt **enhances sperm sample motility, progression and morphology**, along with providing a “remarkable reduction” of DNA fragmentation.¹ ZyMöt devices yield sperm with **higher genomic competence**, demonstrated by their improved euploid rate and ability to establish healthy pregnancies, even for couples with histories of previous ART failure. For some patients, **processing with ZyMöt can mean avoiding surgery.**

Learn more at zymotfertility.com.

References

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