

# ZYMÖT™ DATA SPOTLIGHT: DNA & ROS

## Understanding the latest science in the ZyMöt revolution

### The Need for Healthy Sperm

Using healthy sperm for ICSI, IUI and IVF is more important than ever. In new research<sup>1</sup> from scientists at Imperial College London, recurrent pregnancy loss was directly connected to the presence of elevated sperm DNA fragmentation and reactive oxygen species, along with a lower percentage of normal morphology. This follows a growing body of evidence that links improved sperm health to better pregnancy outcomes.<sup>2</sup> ZyMöt devices enable the separation of sperm with nearly undetectable levels of DNA fragmentation and oxidative stress. Improved sperm health means better clinical outcomes.

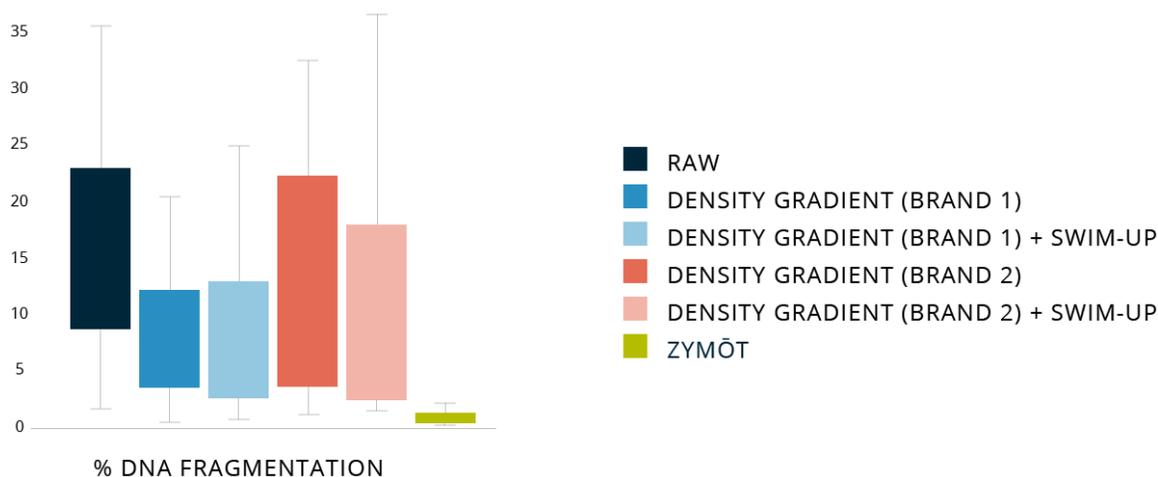
### Avoiding DNA Fragmentation and Oxidative Stress

ZyMöt ICSI Sperm Separation Devices have been shown to separate sperm with near-zero DNA fragmentation, compared to density gradient centrifugation.<sup>3</sup> In a new, independent study from Midwest Fertility Specialists, ZyMöt (850µL) Sperm Separation Devices were

directly compared to traditional sperm preparation techniques.<sup>4</sup> This clinical research determined which approach resulted in improved DNA fragmentation index (DFI) and other sperm health biomarkers such as oxidative stress adducts (OSA) and high DNA stainability (HDS).

**Results:** Using ZyMöt effectively reduced DFI ( $p < 0.05$ ) compared to standard protocols: two commercially available gradients, and gradients followed by swim-up. The device also significantly reduced ( $p < 0.05$ ) OSA levels, a measurement of oxidative stress, and HDS, a measurement of immature cells and high histone retention. **“Overall, the quality of the sperm obtained post-processing was improved by the use of the separation device,”** wrote the study author.

**Conclusion:** Using ZyMöt devices shows statistically significant improvements in three DNA- and stress-focused indicators of sperm health and function, when compared to traditional, centrifugation-based methods.



Comparison of DNA fragmentation levels for raw semen, after processing with commercially available gradients (with and without swim-up) and ZyMöt Sperm Separation Devices.

### Improving Efficiency and Outcomes

ZyMöt devices are simple to use, helping labs quickly achieve optimal performance. With only 5 minutes of total hands-on tech time per sample, every ZyMöt-processed specimen represents a significant time savings over traditional, centrifugation-based methods. In addition to increased efficiency, ZyMöt devices deliver improved sperm performance to achieve the best possible outcomes in ICSI, IUI and IVF procedures. [Learn more at zymotfertility.com](http://zymotfertility.com).

### References

1. A.P. Dimakopoulou et al. Elevated semen oxidative stress in male partners as novel marker of recurrent pregnancy loss. ENDO 2019, New Orleans, March 24, 2019.
2. C.N. Jayasena et al. Reduced testicular steroidogenesis and increased semen oxidative stress in male partners as novel markers of recurrent miscarriage. Clinical Chemistry. Volume 65, January 2019, p. 161.
3. M.M. Quinn et al. Microfluidic sorting selects sperm for clinical use with reduced DNA damage compared to density gradient centrifugation with swim-up in split semen samples. Hum Reprod. July 10, 2018. doi: 10.1093/humrep/dey239.
4. A. Broussard et al. Sperm DNA fragmentation (SDF) was most effectively improved by a sperm separation device compared to different gradient and swim-up methods. PCRS 2019, Indian Wells, April 5, 2019.