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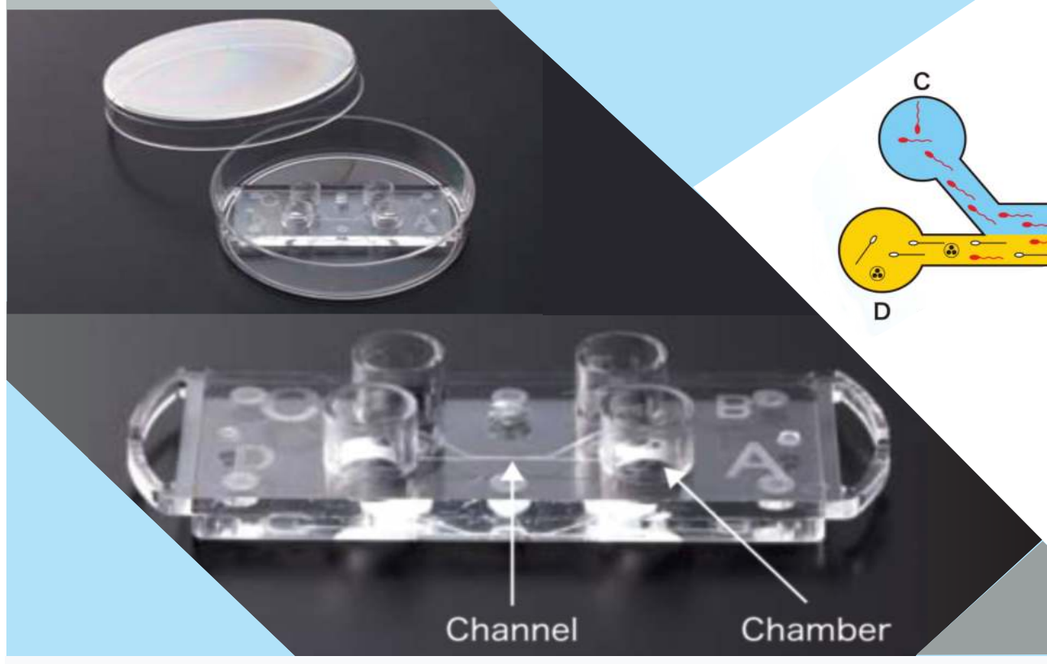
IMPROVE YOUR ICSI RESULTS

QUALIS SPERM SORTER

MICRO-FLUIDIC SPERM SORTING DEVICE

- Doesn't require centrifugation
- Recovery of sperm with normal Morphology &
- Without DNA Fragmentation



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How to use QUALIS SPERM SORTER

1.Preparation

- Warm sperm washing medium to 37°C before use
- Allow semen to liquefy after ejaculation
- Dilute liquified semen with Sperm Washing Medium at the ratio of 1:1
- Keep sperm suspension warm at 37°C
- FIx Qualis Sperm Sorter in a 60mm dish

2.Motile Spermatozoa Isolation

1. Load 100µl sperm washing medium into chamber A of Qualis Sperm Sorter (figure 1) and allow the medium to flow to whole micro channels and chamber B, C and D

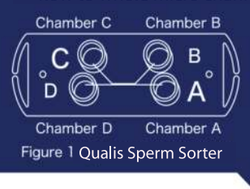


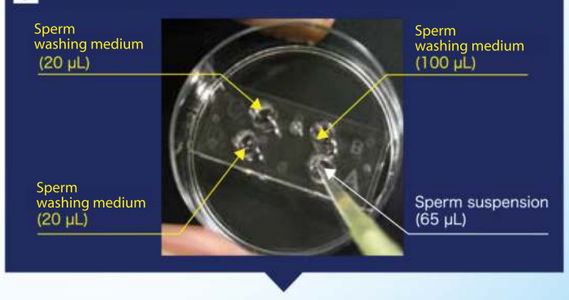
Figure 1 Qualis Sperm Sorter

2. Load 100µl sperm washing medium into chamber B,C and D respectively

3. Pull out all the sperm washing media from all chambers

4. Load 20µl sperm washing medium into chamber C and D respectively and load 100µl into chamber B

5. Load 65µl sperm suspension into chamber A



6. Adjust the amount of sperm washing medium in chamber B untill the width of laminar flow from chamber A reach 40% of the overall width of the micro channel (figure2)

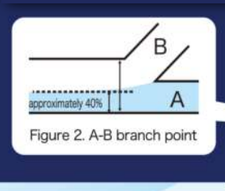


Figure 2. A-B branch point

7. Allow Qualis sperm sorter to stand for 30 minutes and extract completely isolated spermatozoa from chamber C

ARTICLES PUBLISHED

Separation efficiency of a microfluidic sperm sorter to minimize sperm DNA damage

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Objective: To evaluate whether microfluidic sperm sorters (MFSSs) allow effective recovery of sorted motile sperm without DNA damage compared with the centrifugation and swim-up procedure.
Design: Experimental laboratory study. All participants completed questionnaires regarding previous and/or current diseases, surgery, reproductive experiences, lifestyle factors, and date of the preceding ejaculation.
Setting: University research laboratory.
Patient(s): Male volunteers were recruited without setting conditions. Semen samples from healthy volunteers (n = 37) were collected in sterile containers by masturbation.
Intervention(s): Flow cytometric measurement and sperm chromatin structure assay analysis of DNA damage after sperm preparation using MFSS and the centrifugation and swim-up procedure.
Main Outcome Measure(s): Efficacy and efficiency of sperm preparation, correlation between sperm DNA fragmentation index (DFI) and semen parameters, and relationship between basic characteristics and DFI after the centrifugation and swim-up procedure.
Result(s): Final sperm concentration and motility were significantly different between the centrifugation and swim-up procedure and MFSS sperm preparations. A significantly lower sperm DNA fragmentation rate was detected with MFSS compared with the centrifugation and swim-up procedure use. No correlation was observed between DFI and smoking or drinking, but significant correlations were observed between DFI and medication use and sexual abstinence duration.
Conclusion(s): MFSSs can be used to efficiently and reliably prepare sperm compared with the centrifugation and swim-up procedure. Further research on the clinical use of MFSSs is required to evaluate the safety and usefulness of this device. (Fertil Steril® 2016;105:315–21. ©2016 by American Society for Reproductive Medicine.)

Key Words: Assisted reproductive technology, intracytoplasmic sperm injection, microfluidic sperm sorter, sperm DNA fragmentation, sperm chromatin structure assay

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Frequency of Sperm DNA Fragmentation According to Selection Method: Comparison and Relevance of a Microfluidic Device and a Swim-up Procedure

Obstetrics and Gynaecology Section

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ABSTRACT

Introduction: Multiple rounds of centrifugation or washing spermatozoa can cause sperm DNA fragmentation (SDF); however, a microfluidic approach to select spermatozoa does not require centrifugation. Reports have suggested that sperm sorting using a microfluidic device is an effective method to select good quality spermatozoa, however, it is not known whether it reduces sperm DNA damage. We investigated whether the frequency of SDF was affected by selection method during sperm processing.

Materials and Methods: Semen samples from ten men with normal, oligozoospermia and asthenozoospermia were split into two groups and sorted using a microfluidic device or by a swim-up method. Subsequently, semen parameters and SDF were measured and analyzed using paired or non-paired Student's t-tests.

Results: For samples sorted by the microfluidic device (Sperm Sorter Qualis®; Menicon, Kasugai, Japan) or the swim-up method, both showed a decrease in SDF. However, the decrease was more significant when the microfluidic device was used.

Conclusion: Sorting using the microfluidic device resulted in less SDF than did the swim-up method.

Keywords: Sperm concentration, Spermatozoa, Sperm selection