

# Sperm viability testing using Octax lasers

When performing ICSI it is important to use viable sperm. However, in semen samples containing only immotile spermatozoa it is difficult to assess which sperm are viable or not. In such cases viability can be tested using the Octax laser. After a laser pulse has been fired at the end of the sperm tail, the tail will start curling or shrinking if the sperm is viable and can be used for micro injection.

## Proposed protocol

### Step 1:

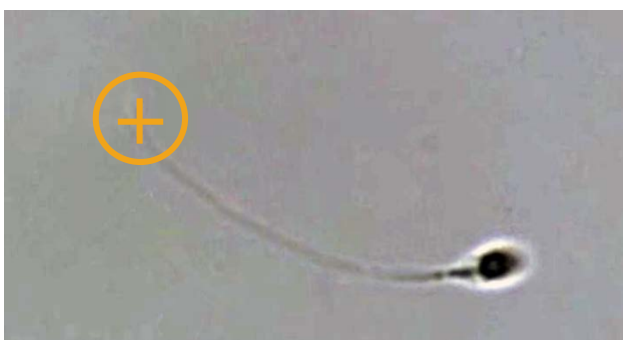
Use the laser lens (golden colour).

### Step 2:

Collect a few immotile sperm with normal morphology and flexible tail (they should be free of debris).

### Step 3:

Line up the collected sperm to be able to work in an economic way.



### Step 4:

Apply 1-2 laser shots to the end of the tail of each sperm.



If the end of the tail starts curling or shrinking (=osmotic reaction to the opening of the plasma membrane), the sperm is viable and can be used for microinjection.

### Useful hints

It might take 5-10 sec until the response to the laser pulse(s) becomes visible.

The laser pulse length needed for sperm viability testing may vary, depending on the individual microscope (with / without heated glass, brand of heated glass stage, magnification of laser lens etc.); test for the appropriate pulse length, start with times around 5-7 msec.

### Reference:

Nordhoff V, Schüring AN, Krallmann C, Zitzmann M, Schlatt S, Kliesch S. Optimizing TESE-ICSI by laser-assisted selection of immotile spermatozoa and polarization microscopy for selection of oocytes. *Andrology* 2013 Jan;1(1):67-74.