

# TECHNICAL BULLETIN: SQA-V / VISION SAMPLE VOLUME REQUIREMENTS

## May 26, 2016

### BACKGROUND

Automated semen assessment using the SQA-V / Vision requires a pre-defined sample volume to be aspirated into the testing capillary in order to generate a full semen analysis report. The volume of the SQA testing capillary is 0.5 ml and this volume provides sufficient statistical representation of the entire ejaculate, resulting in a high level of precision using the automated SQA analyzer.

### OVERVIEW

Based on the required semen sample testing volume of 0.5 mL, it is recommended to fill the entire testing capillary with a semen sample without any dilution if the ejaculate volume is  $\geq 0.5$  mL. Sometimes though the ejaculate volume may be less than 0.5 mL. The dilution mode of the SQA-V and Vision can be used in this case as follows: If the semen sample volume is  $\geq 0.3$  mL, dilute the sample using the QwikCheck Dilution media two times (1:2 or 1+1). For example, 0.3 mL of semen sample is mixed with 0.3 mL of diluent resulting in a volume of 0.6 mL. This will provide an adequate sample volume to aspirate into the SQA testing capillary and the SQA software automatically compensates for the dilution and will provide a full report, no calculations are required by the operator. Follow the screens below based on the automated system in use in the lab:

#### SQA-V

IS SAMPLE VOLUME SUFFICIENT FOR  
COMPLETE TESTING  $\geq .5$  ml?  
YES/NO

LOW VOLUME SPECIMEN  
PLEASE SELECT SAMPLE TESTING OPTION:  
**DILUTE SEMEN 1:2 (1+1) WITH MEDIA**  
LOW VOLUME – 20 MICROLITERS ONLY  
MOTILITY PARAMETERS ONLY

#### SQA-VISION

The screenshot shows the SQA-Vision software interface. At the top, there are tabs for 'TEST PATIENT', 'FRESH', 'POST WASH', 'WASHED', 'SWIM UP', 'GRADIENT', 'FROZEN', 'LONGEVITY', and 'MANUAL'. Below these are input fields for 'QC / PROFICIENCY' (Patient ID: 2345678901, First Name: John, Last Name: Johnson), 'VISUALIZATION' (Sample ID: 1234567890, Birth Date: 07/31/2013, Abstinence: 3 days), and 'ARCHIVE' (Collected Date: 07/31/2013, Collected Time: 07:05, Received Date: 07/31/2013, Received Time: 08:05). There are also dropdown menus for 'SERVICE' (Appearance: NORMAL, Viscosity: NORMAL, Liquefaction: NORMAL) and 'SETTINGS' (Optional 1 and 2). At the bottom, there is a 'COMMENTS' field and a 'TEST NOW' button. A red circle highlights the '1+1 DILUTION' button.

### RECOMMENDATIONS

Based on the sample volume, M.E.S. recommends the following approach to testing the sample:

- Semen Volume  $\geq 0.5$  mL - No dilution is required
- Semen Volume  $\geq 0.3$  mL and  $< 0.5$  mL - Dilution 1:2 (1+1) using the QwikCheck Dilution kit
- Semen Volume  $< 0.3$  mL - Manual assessment [microscope or Vision Manual Mode or Vision Semi-automated Mode (10  $\mu$ L automated testing + 10  $\mu$ L manual motility assessment)]

### REFERENCES

- WHO laboratory manual for the examination and processing of human semen - 5th ed., WHO 2010.
- SQA-V GOLD User Guide Version 2.60 I-Button
- SQA-Vision User Guide Version 104.13.2

Lev Rabinovitch, PhD CTO Medical Electronic Systems  
Distribution: Distributors and SQA-V/Vision Users



[www.mes-global.com](http://www.mes-global.com)