

EasyOne Connect V3.9.5: Changes in MBW Evaluation

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1. Introduction

With V3.9.5, the EasyOne Connect software introduced a change in its MBW algorithm. Due to the improved software algorithm, the average difference in measured values (compared to the previous software version) is -6.6% in FRC and -9.9% in LCI. A description of the changes implemented in this software release were published in the *Journal of Applied Physiology* (see [1]). These differences in FRC and LCI are valid for the tests of the subjects in the publication. Differences in FRC and LCI using other (internal) databases were slightly smaller.

This document describes how data from an existing EasyOne Pro LAB database can be re-computed using the most recent software algorithm. Re-computation can be performed on a separate PC or directly on the EasyOne Pro LAB. Both methods are described here.

2. Preparation for Re-Computation on a PC

If you would like to perform the re-computation on a PC, and not on the EasyOne Pro LAB, then a few extra steps need to be performed to transfer the data onto your PC first:

- 1) Plug a memory stick into your EasyOne Pro LAB. Use one of the USB ports on the back of the device. Switch on the device.
- 2) On your EasyOne Pro LAB, go to *Utilities / Advanced*; enter the password '8005' and press *Login*; then select *Export Data*.
- 3) In the dialog window that appears, only select the *Patient Data* item and press *Export*.
- 4) Select a folder on the memory stick and confirm. A database file with the extension .sqlite will be created on your memory stick.
- 5) Remove the memory stick and plug it into the PC that you intend to use to perform the re-computation. Make sure the EasyOne Connect software V3.9.5 (or higher) is installed on your PC. If you have not installed EasyOne Connect yet, please install the latest version by downloading the software installation from the ndd website.
- 6) Copy the database file on the memory stick to a folder on your PC, e.g., to C:\Temp.
- 7) Start EasyOne Connect on your PC.
- 8) Go to *Utilities / Configuration / Storage / Select*.
- 9) Choose *File based*, press *Select*, and select the file that you copied to a folder in step 6. Press *Open* and then *OK*.
- 10) Press the *Save* button. The program will now restart and open the new database.

Note: Since the database is also on your memory stick, you now have a backup of the original database and can perform operations on the database stored on your PC without losing data.

3. Re-Computation of MBW Tests

MBW tests can be recomputed manually or automatically. Recomputing them automatically is easier but, depending on the size of the database, it can take a long time and block your PC or EasyOne Pro LAB completely during that phase.

3.1 Setting Up

Installation of the new EasyOne Connect software:

- **On PC:** If the latest software is not yet installed, please download the EasyOne Connect software to the PC where the data evaluation is going to be carried out. Install or update the software. Depending on your IT setup you might need administrator rights for this step.
- **On EasyOne Pro LAB:** Download the EasyOne Connect software for EasyOne Pro LAB and update the software on your EasyOne Pro LAB (see separate Application Note available on the ndd website at www.nddmed.com under Resources / Downloads).

After software installation or update, go to *Utilities / Configuration* and change the following settings:

- 1) **On PC and EasyOne Pro LAB:** Under *General / Header*, enter 'Recalculate-FRC' in Header 1. Please be sure to type the word exactly as shown here. This enables the re-computation of MBW tests.
- 2) **On PC only:** Under *General / System Settings*, set the checkmark for *Show all Test / Device Settings*. This ensures that the support for MBW tests is available. Acknowledge the changes with *Save*.

3.2 Automatic Re-computation

- 1) **On PC:** Please make sure that your PC does not power down automatically and/or that no screen saver is activated automatically.
- 2) **On PC:** Go to *Utilities* and select *Recalculate all MBW tests*. This initiates the re-computation of all MBW tests.
On EasyOne Pro LAB: Go to *Utilities*, select *Advanced*, login with the password '8005', then select *Recalculate All MBW tests*.
- 3) Wait until the re-computation has been completed. Please be aware that this can take a long time. For a large database it can even take up to several hours.

3.3 Manual Re-computation

- 1) Select a patient and go into the patient's history.
- 2) All of the patient's tests are shown. Select and view the MBW test that needs to be re-computed.
- 3) Select a trial and press the *Recalculate* button on the right side below the N2 concentration graph.
- 4) Repeat these steps with each trial and each test of the patient, and for as many patients as needed.

After the steps above have been performed, all existing MBW tests contain the re-computed data.

4. References

- [1] Oestreich MA, Wyler F, Buess C, Etter B, Ramsey KA, Latzin P. Signal-correction errors in the EasyOne Pro LAB multiple-breath washout device significantly impact outcomes in children and adults. *J Appl Physiol* 2024; jappphysiol.00096.2022.