


Files required

1. “Researchers_BL_data.xlsx”, a XLSX file which can be opened in Microsoft Excel (or similar) – this file has 3 empty columns: “length”, “sex”, and “GA”, ready to be populated with your data.
2. “INTERGROWTH newborn standards parameters (BL).xlsx” – this file has 7 columns and is the master file containing the parameters required to calculate respective z scores and centiles based on the INTERGROWTH-21st Newborn Standards for Weight, Length and HC (Ref: Villar et al. The Lancet 2014; 384 (9946): 857 – 68.). Please do not edit or alter the contents of this file.
3. “newborn standards script for researchers (BL).R”, an R-script for calculating respective z scores and centiles based on your data.

General instructions

1. Create a new folder in your local directory in which you would like all files to be saved – please note the full directory path as this will be required in the R-script provided.
2. Save the 3 files provided (two XLSX files and one R-script) in the folder you have created.
3. In “Researchers_BL_data.xlsx”, enter birth length measurements (**cm**), newborn sex (**Male** or **Female**) and gestational age at birth (**days**) for all cases for which you wish to calculate z scores or centiles. Do not change the order of the columns.
4. Save the populated file, still in .xlsx format, without changing the file name.
5. To run the script that calculates respective z scores and centiles you will be required to download R statistical software. This is freely available from <http://www.r-project.org/> – choose the correct version depending on whether you use a PC or MAC, and follow the installation process.

How to run the script

1. Open R.
2. In the main menu click on File > Open script... and then locate the directory in which you saved the 3 files. Select the file named “newborn standards script for researchers (BL).R”.
3. In the script, identify the 4 sections of code where file paths are specified (search the file for appearances of “O:\\Test”). Change these file paths to match the directory in which your files are stored.
4. Once you have changed the directory paths: To run the script, highlight the whole file and click on the “run” button. In R v3.1.3, when the ‘R Editor’ window is active, this is the third button along, and looks like this:  NB If prompted to set up a ‘personal library’, click Yes and select a CRAN ‘mirror’ from the dropdown list (choose a location or institution near to where you are based e.g. in the UK, you could select ‘Bristol’ or ‘London’).
5. This creates a new CSV file named “IG-21st newborn standards z scores and centiles (BL).csv” – this file will contain the data you provided (length, sex, GA) with 2 additional columns i.e. a z score column and a centile column. These are the equivalent z scores and centiles of your birthweight data based on the INTERGROWTH-21st Newborn Standards (Ref: Villar et al. The Lancet 2014; 384 (9946): 857 – 68.).

If you have any questions or require further information, please contact Eric Ohuma at eric.ohuma@obs-gyn.ox.ac.uk.