WELFORD CHART NOTES
NEWSLETTER

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CREATING YOUR OWN FORMULAS *(User's Manual, pgs.1379-1382)*

You can create mathematical formulas which contain numerical data about patients. The program looks up the numerical data in the Lab Book and other locations in the chart, and then calculates the result of the formula. Let's see how this is done.

1. Press Tools\Formulas**Add** to create a new Formula. We will create one which corrects the serum calcium level for a low serum albumen.

2. Enter a **Name** for the Formula which reminds you of its purpose. In this example, enter "Corrected Calcium".

3. For **Formula**, enter "4 x Albumen * 0.8 + Calcium". Note that you can use mathematical operators (+, -, *, /, and ^ for plus, minus, times, divided by, and to the power) as well as names of tests recorded in the Lab Book Vocabulary (Albumen, Calcium). You can also enter any @function which has an numeric result (like @age). You can also enter "@formula" followed by the name of a Formula to "nest" one formula into another formula. Note that formulas are evaluated left to right, and cannot contain parentheses. If you need to create a Formula in which parentheses would be required in order to force the evaluation of the formula in a different order, then you should create a different Formula representing the portion in parentheses, and then nest that portion into the main Formula, or else reorder the Formula so that it can be written in such a way that it is evaluated from left to right.

4. When your cursor leaves the **Formula** box, the program looks up in the Lab Book Vocabulary each test listed in your Formula and shows the names of these **Tests** along with their **Units** in the grid at the bottom of the screen. Make sure that the Units used by the Lab Book match the **Units** of the Formula you are using. (For example, if you have defined Weight in the Lab Book to be measured in pounds, but the Formula you are entering relies on Weight to be expressed in kilograms, then you need to revise your Formula so that the Weight is expressed in pounds, in other words by multiplying it by 2.2).

5. For **Units**, enter the units of measurement of the resulting Formula (if any; some formulas result in a unitless result). In this case, "mg/dl".
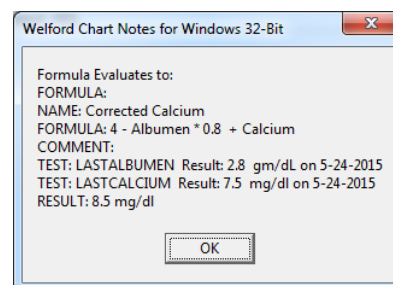
6. Enter an optional **Comment** explaining more about this Formula, such as what it is used for, any limitations on its interpretation (e.g. only for adults), which units of measurement are required for each of its elements, or a reference to the literature or a website where you found the Formula.
7. If you would like the program to automatically add the result of this Formula into the Lab Book each time you record in the Lab Book all of the Tests mentioned in your Formula, then check **Auto Add to Lab Book**.
8. If you want to move to another part of the program, for example to look up something in the Lab Book Vocabulary, press the **Jump** button.
9. Press **OK** to store your Formula.

EVALUATING A FORMULA

Now that you have created a Formula, you can have the program look up the results of the tests mentioned in the Formula and thus calculate the value for the Formula. You can either do this while you are editing a Formula, or from the main Formula window. Let's see how to do this:

1. Press View\Lab Book.
2. Enter Kelly Erickson as the name of the patient and press **OK**.
3. Press **Add**.
4. For **Test**, enter CALCIUM.
5. For **Result**, enter 7.5.
6. Press **OK** to store this.
7. Press **Add**.
8. For **Test**, enter ALBUMEN.
9. For **Result**, enter 2.8.
10. Press **OK** to store this.
11. Press **Cancel** to close the Lab Book.
12. Press Tools\Formulas.
13. Highlight the Corrected Calcium line.
14. Press **Evaluate**.
15. Enter Kelly Erickson as the name of the patient and press **OK**.
16. The program shows you that the corrected calcium level has a Result of 8.5 mg/dl. Note that it shows you the date and result of the most recent albumen and calcium values stored in the Lab Book so you know how fresh the information is.

Welford Chart Notes for Windows 32-Bit

Formula Evaluates to:
FORMULA:
NAME: Corrected Calcium
FORMULA: 4 - Albumen * 0.8 + Calcium
COMMENT:
TEST: LASTALBUMEN Result: 2.8 gm/dL on 5-24-2015
TEST: LASTCALCIUM Result: 7.5 mg/dl on 5-24-2015
RESULT: 8.5 mg/dl

OK

FORMULA @FUNCTIONS

You can use @functions to access the result of a Formula inside the Writer or inside your Templates. Let's see how this is done:

1. Press Write\New Note\Note.
2. Enter Kelly Erickson as the name of the patient and press **OK**.
3. Inside your note, type "@FormulaCorrected_Calcium". (Note that you must replace any spaces in the name of the Formula with the "_" character). You'll see that it is replaced with the Result of 8.5 mg/dl, as calculated above.
4. If you want to see all of the information upon which the calculation is based, then instead type "@FullFormulaCorrected_Calcium". That is replaced with all of the information displayed above under "EVALUATING A FORMULA".
5. If there are certain formulas that you like to access frequently in the Writer, you may wish to create a Contraction which stands for the formula @function so you can just type a few letters instead of the entire name of the Formula. For example, you could have "fcc" stand for "@FullFormulaCorrected_Calcium". Then simply type "fcc" in your note in order to see the results of the full formula for Corrected Calcium.

SEND US YOUR TIPS

If you have tips, shortcuts, questions, or suggestions for future newsletter topics, please send them to us at:

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