INSTRUCTIONS FOR USING THE GLI TLCO EXCEL SHEET CALCULATOR
Update (July/17/2017)

What the software does:
1. The software works on Microsoft Excel 10 for Windows
2. Reads the input spreadsheet (Sheet2)
3. Calculates predicted values, their lower limits of normal (5th centiles), Z-Scores, Percent Predicted and Percentile of the following outcomes: TLCO, KCO and VA in SI units
4. Displays the data in the output spreadsheet (Sheet3)

You will first need to enable macros for excel in the following manner:
1. Select the file/option button
2. Click on Excel Options
3. Go to the Trust Center
4. Click on Trust Center Settings
5. Go to Macro Settings
6. Click on Enable all Macros

Then you will have to format the input sheet as follows:
1) Fill out the appropriate columns using a new row for each subject.
   • If there is any columns that does not pertain to a certain subject leave that cell blank
2) To run the program once all the data has been entered press ctrl-F
3) If you wish to reset the program press ctrl-R

The following characteristics apply to the input:

<table>
<thead>
<tr>
<th>Variables</th>
<th>Units</th>
<th>Example</th>
<th>Limits</th>
<th>Valid Age Range (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>-</td>
<td>4, 7AB, ABOH</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sex</td>
<td>Integer or string</td>
<td>1, Male 2, Female</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Age</td>
<td>Years</td>
<td>45.57</td>
<td>3.0 – 95.0</td>
<td>-</td>
</tr>
<tr>
<td>Height</td>
<td>Cm</td>
<td>175.1</td>
<td>50-250</td>
<td>-</td>
</tr>
<tr>
<td>TLCO</td>
<td>mmol-min⁻¹-kPa⁻¹</td>
<td>8.1</td>
<td>1-25</td>
<td>4 – 80</td>
</tr>
<tr>
<td>VA</td>
<td>L</td>
<td>4.8</td>
<td>0-15</td>
<td>4 – 80</td>
</tr>
<tr>
<td>KCO</td>
<td>mmol-min⁻¹-kPa⁻¹</td>
<td>1.7</td>
<td>0-10</td>
<td>4 - 80</td>
</tr>
</tbody>
</table>

- If Sex is string it must be specific as upper M, Male, F or Female
  o lower case male, female will not produce correct values
- TLCO and KCO are in SI units. To convert TLCO from traditional units

TLCO SI units (mmol·min⁻¹·kPa⁻¹) = TLCO Traditional units (mL·min⁻¹·mmHg⁻¹)/2.986421

- TLCO should be adjusted for the inspiratory oxygen partial pressure at standard barometric pressure (Pb, 101.3 kPa)

If you have any questions you may contact Sanja Stanojevic at: sanja.stanojevic@sickkids.ca
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For SI units (mmol; kPa): \( T_{\text{L,CO}} [P_{\text{B,adjusted}}] = T_{\text{L,CO}}^* (0.505 + 0.00488 \cdot P_{\text{B}}) \)

- If a fixed dead space volume is used, TLCO must also be corrected for dead space

\[
T_{\text{L,CO}}^* = T_{\text{L,CO}} \cdot \left( \frac{V_I - V_{D,\text{equip}} - V_{D,\text{an,fixed}}}{V_I - V_{D,\text{equip}} - V_{D,\text{an,fixed}}} \right)
\]

Figure 1: Example TLCO Calculator input (Sheet 2)

Figure 2: Example TLCO Calculator Output (Sheet 3)

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