Introduction to SAS Programming an Analysis Data base using the CALIERIE Website Data

Duke Clinical Research Institute

FROM **THOUGHT LEADERSHIP**
TO **CLINICAL PRACTICE**

Outline - the VO2max Example (a SAS example)

- Finding the Variables the Analysis Database.
- Relational Databases
- Short & Fat (Person) vs. Long & Skinny (Person-Visit)
- Developing data sets at the level of Person-Visit
- Drawing simple Figures (Proc SGPLOT)
- Modeling in Proc Mixed (Mixed Models)
- Analysis of Level vs. Change scores
- Control for Baseline (if time allows)
- Control for Observed %CR.

Step 1: Finding variables.

- Go to calerie.duke.edu
- In the 'Quick Navigation' panel on the left, click on Database Documentation
  - Guide to using the Database (similar to this presentation)
  - Data Contents:
    - Evaluation schedule
    - Visit codes
    - Rawdata Contents: datasets and variables in raw database
    - Analysis Data Contents: datasets and variables in analysis database
    - Analysis Dataset Details: detailed derivations and value lists of analysis dataset variables

Step 1: (con'd) Develop Variable list.

- Assumed question:
  Does CR Impact VO2max? (*CR group*)
  1) Differentially Over time? (*CRxTime*)
  2) Differentially by Gender? (*Gender*)
  (Gender X CR) (Gender X CR X Time)

Variables:
VO2 (PVO2MEAS1, PVO2MEAS2)
Gender (FEMALE)
CR Group (TX)
Time (Visit)
ID (DEIDNUM)
%CR (PCTCR)

Build Data set - VO2max.

- Time varying – VO2max, %CR, time,
- Time Invariant – Female, CR group, Visit

- Aside. Take Care to note 'VISIT' so that variables merge correctly.
- Long& Skinny - Merge time Invariant first, time-varying second, Merge those 2 together.

Build Data set - VO2max.

- Time varying – VO2max, %CR, time,
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- Aside. Take Care to note 'VISIT' so that variables merge correctly.
- Long& Skinny - Merge time Invariant first, time-varying second, Merge those 2 together.

Build Data set - CHANGE in VO2max.

1) Tricky because you have to 1st build Short&Fat to calculate Change Scores.

ID	CRgroup	VO2max_0	VO2max_12	VO2_max_24
123				

- Create DELTA_CR_12_0 = VO2max_12-VO2max_0;

  DELTA_CR_24_0 = VO2max_24-VO2max_0;

2) From this, create the Long&Skinny file.

The SAS Program

- On the website.