A *web*-HUMAN Renal Physiology Experiment

Renal Response to an Induced Metabolic Alkalosis

We induce a metabolic alkalosis by infusing Na bicarbonate at 10 times its normal blood concentration and monitor the renal (& respiratory) compensatory responses.

Basic Procedure

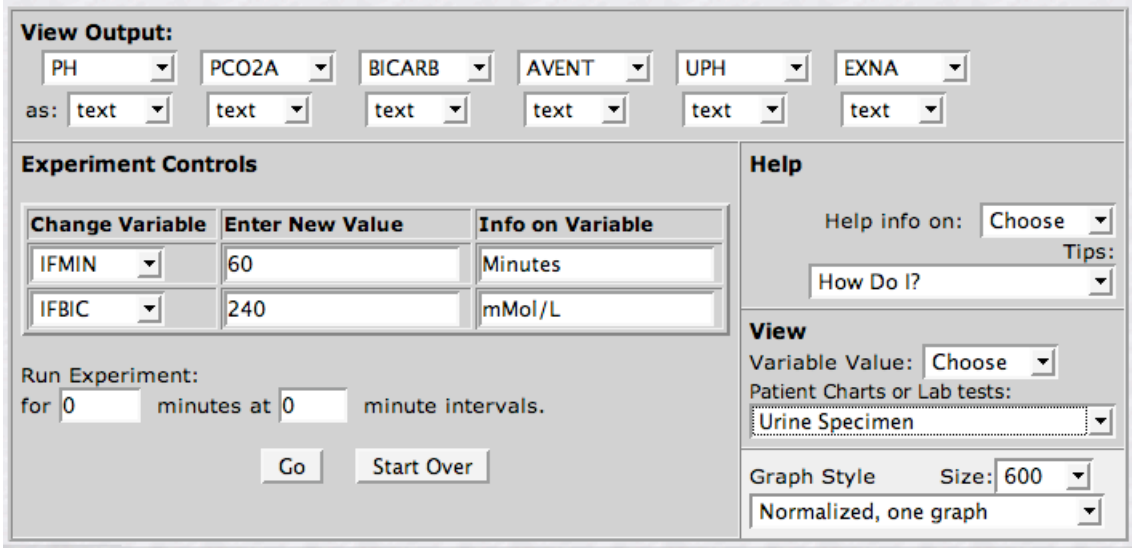
Always turn off your popup blocker before working in *web*-HUMAN!

Setting up the experiment – Part 1

1) Set the variables to be monitored in **View Output:** as shown (below, top row)

2) Collect a Urine Specimen- In the **View** section set Patient Charts .. to Urine Specimen.

3) Begin to set up the bicarbonate infusion – In **Experiment Controls** section
- Set the infusion time (IFMIN) to 60
- Set the bicarbonate of the infusate to 240 (10 times normal blood HCO3-)
- We will turn the infusion on later. [Try How do I?-> Infuse Electrolyes for more on infusing].



4) We will continue setting up the experiment on the next screen. To reach it, we run the experiment for zero time! Under Run Experiment:, we enter values as follows:
- we run for 0 minutes
- at 0 minute intervals between data read outs and then
- Press the <Go> button to run.

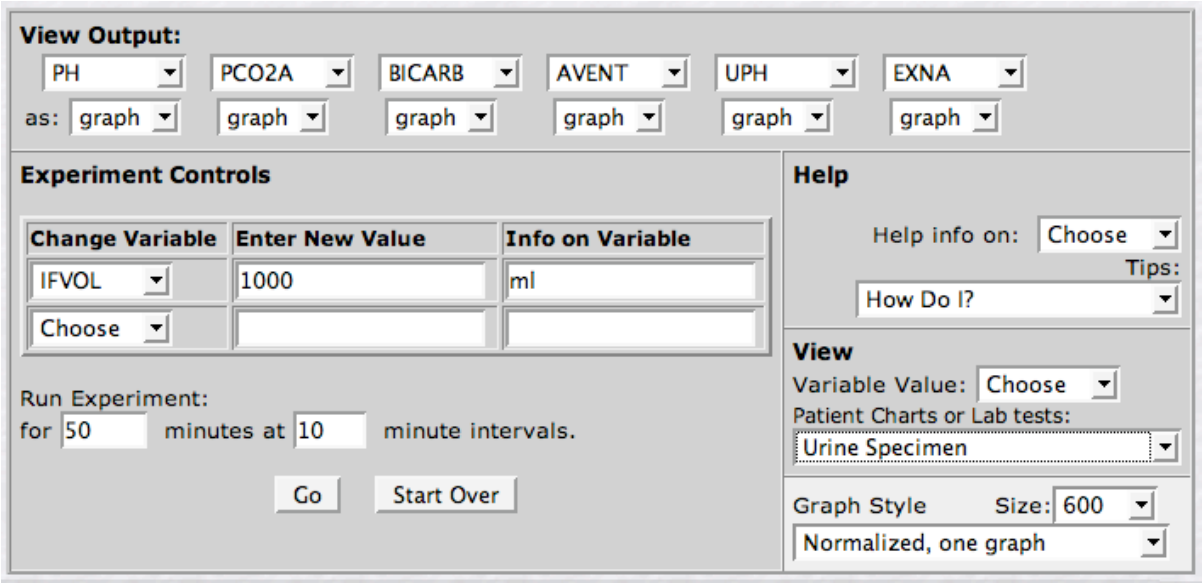
Your **Output from Web-HUMAN** appears. Note that your Tables now have in them the variables you selected (e.g. pH), that the model now has your 2 new infusion settings (e.g. infusion time span is now set from 10 to 60 min.) and that a baseline set of URINE SPECIMEN values have been returned.

Also note that you have a new experimental navigator ready for your final settings before executing the experiment. We will now enter those final settings.

Setting up the experiment – Part 2

1) Select the variables we wish to be *graphed* in the **View Output:** section (below, top row).
- under each variable of interest (e.g. PH) select the as: graph option.

2) Collect another Urine Specimen for comparison with the first- In the **View** section set Patient Charts .. to Urine Specimen .



3) Complete the set up of the bicarbonate infusion – In **Experiment Controls** section
- Set the infusion volume (IFVOL) to 1000 .

4) We are ready to infuse and run our experiment. To do so, Under Run Experiment:, we enter values as follows:
- we run for 50 minutes
- at 10 minute intervals between data read outs and then
- Press the <Go> button to run.

Voila! You see a graphic and a tabular output of your results.

5) We will discuss the graphic and tabular results. Re: table numbers note
Scientific notation in FORTRAN and HUMAN
scientific -1.0*10-1 = 0.1
in HUMAN -1.0*E-01 = 0.1