

## Renal Vignettes – acid base balance

### Primary Respiratory Acidosis

HUMAN vignettes are brief, highly targeted exercises aimed at reinforcing single basic physiological points. A fuller more open ended exercise in acid-base balance can be found in the Acid-Base Balance exercise link on this same page.

A respiratory acidosis may be induced in HUMAN by controlling atmospheric % CO<sub>2</sub> inspired as follows:

a) Set tables under View Output: for acid-base output (and possible use in plotting on a Davenport diagram)

PH, PCO<sub>2A</sub>, BICARB, AVENT, FCO<sub>2AT</sub>, UPH (note: look each of these up in Help info on:) In Patient Charts .. on each run ask for a Kidney Summary.

Now execute a baseline run running for 0 min. w/ 0 min. between printouts.

b) Increase the level of atmospheric % CO<sub>2</sub> (note: look FCO<sub>2AT</sub> up in Help info on: )

1) Use FCO<sub>2AT</sub> = 0.05 (the normal level is, of course, 0 ).

c) run for 7D (days) at 12H (hour) intervals.

d) Characterize acid-base status at 0, 12H & 7D (by a Davenport plot if appropriate), identify the primary acid base problem and characterize the degree of early (12H) and late (7D) compensation.

The screenshot shows the HUMAN software interface with the following sections:

- View Output:** A row of dropdown menus for variables: PH, PCO<sub>2A</sub>, BICARB, AVENT, FCO<sub>2AT</sub>, and UPH. Below this is a row of dropdown menus for units: text, text, text, text, text, and text.
- Experiment Controls:** A table with three columns: Change Variable, Enter New Value, and Info on Variable.

Change Variable	Enter New Value	Info on Variable
FCO <sub>2AT</sub>	0.05	0.0
Choose		
- Run Experiment:** A section with input fields for "for 7D minutes at 12h minute intervals." and buttons for "Go" and "Start Over".
- Help:** A section with "Help info on:" (Choose), "Tips:" (How Do I?), "View" (Choose), "Variable Value:" (Choose), "Patient Charts or Lab tests:" (Kidney Summary), "Graph Style" (Normalized, one graph), and "Size:" (600).

Initial setup – 2nd screen