Future Plans for web-HUMAN
June 21, 2004

Many thanks to all at HAPS’04 for the interchange we had on how to make web-HUMAN a still more useful teaching tool in your classrooms.

In response to your suggestions we (Leo and I) plan to look into improvements in three areas next.

1) Use of and Access to Patients  – In all three HPAS workshops I have held one or more of you who have had past experience with and/or now still use Patients. My sense is that all these experiences were with Dr. Randall’s microcomputer versions of HUMAN.

Actions:
a) I have begun to review the web-HUMAN patients and compare them to those in Dr. Randall’s micro versions. I have the hope (with Dr. Randall’s permission) of posting on the web site 1) the full instructor’s manual version of how each patient’s pathology was created, 2) how it might be relieved (“treated”) and 3) the more extended patient histories provided by Dr. Randall.

b) Patients are now already available in web-Human but you each need to write me to obtain how to see them in an unrestricted form. Leo Geoffrion & I have begun to discuss mechanisms (logins perhaps) whereby that information would be available to selected individuals on the web site itself (i.e. instructors but not students).

c) People have again requested the ability to create their own patients as was possible in the micro-versions. This involves storing the parameters you have personally set up either on our server or on your local machine. I will discuss this with Leo.

2) More Graphics  – As one of you said “you are a physiologist and love numbers but I’m an anatomist and would love more graphic outputs rather than web-HUMAN’s primarily tabular outputs.” And, of course, some student’s relate more rapidly to graphic patterns than to numerical tabular patterns and trends.

Actions:
I have discussed this with Leo and he seems to feel that at some sacrifice of speed two side-by-side plots of 2 variables each is possible. That’s double our current graphic output (and 2/3 of the entire tabular output). The working on this is projected to be several weeks in the future.

How does a choice of one or two graphs, each of two variables, sound to you?

3) Ability to “simplify” experiments for teaching purposes  – As we discussed. web-HUMAN is by design a comprehensive and integrated model. (Indeed that was its initial revolutionary promise as a teaching tool and where its real power still lies). That is, when one perturbs the respiratory system HUMAN is designed to also undergo appropriate cardiovascular, renal, blood gas and other corrections.

This does present problems if one wishes to use it to demonstrate an isolated effect in one system (a common teaching need). Thus, if I change respiratory anatomic dead space (DSPCEB Basic Dead Space 150. ml) and wish to demonstrate that while lung
ventilation (VENT) stays the same alveolar ventilation (AVENT) drops I am faced with the problem that all the model’s systems, not just the respiratory system, will react. Indeed at certain higher dead space volumes the model will expire due to the resultant hypoxia and its various consequences.

Actions:
The way around these problems, in some cases, is to:
- limit the student’s view of the other systems via selecting Tables that do not contain distracters (e.g. cardiovascular, renal, volume or blood gas variables)
- run your experiment for as short a time period as possible so that the ability of the other systems to react is short-circuited.

Examples of the employment of these strategies can be seen on the Help page’s samples from courses
- in Mammalian Physiology under Respiratory – Acid-Base and Renal – Basic Quantitative Renal Calculations and
- in Comparative Physiology under Respiratory Dead Space Ventilation.

I plan to soon organize the web site to make these (and others) apparent as a “short term- isolated experiment category” and to add/design several other such teaching exercises.

Do you have any further suggestions for specific topics for such experiments?

Great to have met you all! HAPS is the only classroom where I start with a group of students who already know the answers(!); the experience is unique.

Roy