Fick cardiac output calculations

Measurements of O2 consumption (VdotO2) and mixed pulmonary arterial (CvbarO2) and venous (CaO2) values yield the ability to calculate lung flow (Qdot) and cardiac output.

$$\dot{V}_{O_2} = \dot{Q} \, (Ca_{O_2} - C\bar{v}_{O_2})$$

$$\dot{Q} = \frac{\dot{V}_{O_2}}{Ca_{O_2} - C\bar{v}_{O_2}}$$

Case data retrieval

Case data is retrieved from experiments stored in the HUMAN data base. Log in for personalized features, select 'Get a saved experiment' and locate the folder RespPhysFall08 , open it and then, as/if directed to, open the indicated file.

Procedure

1) Run #1 – Determine by calculation (Fick equation) the value of the cardiac output in HUMAN at *rest*.

2) Run #2 –Run the model Fick- Case 1
      - run the model as set up
      - calculate the cardiac output at 20 min.

3) Run #3 - Retrieve Fick- Case 1
      - run the model as set up
      - calculate the cardiac output at 20 min.

Present each experimental run, your calculations and any other relevant aspects of the case to the class.