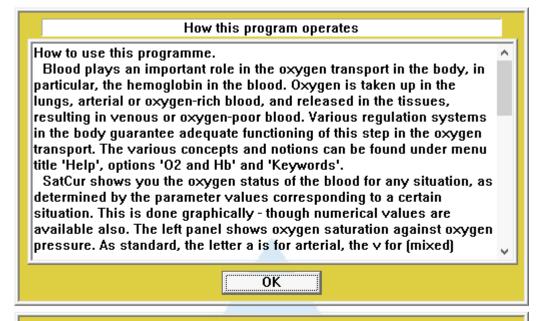
SatCur.pdf page 1/4

Adequate oxygen supply is vitally important for human beings and the program SatCur is developed to understand the role of blood therein. The introduction screen and its continuation are shown in Fig.1.



How this program operates

pressure. As standard, the letter a is for arterial, the v for (mixed) venous, and the A for Alveolar situation. For explanation of details, click the question mark button and then the quested location; also, a right mouseclick can do the job. The right panel shows the amount of bound oxygen per liter of blood, in terms of oxygen gas volume under standard conditions (STPD). Above are the options for showing curves, for an additional panel representing 'free' oxygen, not bound to hemoglobin, and for calculated values (#) momentarily.

The oxygen status of the blood depends on various conditions. The programme SatCur calculates the oxygen status for the various parameter values representing these conditions. You can change values through the menu 'Parameters', option 'Edit'. For clear organization, the parameters are ordered in five distinct groups, 'Outside world', 'Respiration', 'Transfer', 'Blood', and 'Metabolism'. NOT implemented in SatCur are the regulation mechanisms themselves; these would act through altering parameter values which, however, are under direct control of the user. Consequently, it is possible to choose parameter sets representing situations the body never would accept. For instance, very low environmental oxygen would result in increase in ventilation and cardiac output to sustain adequate organ tissue oxygenation, but since the automaticity of such regulations is disabled you will have to do that yourself.

SatCur is intended as a learning aid. Additionally, it can have its value for simulating patient situations, but exclusively if you are experienced enough to adequately handle the results. It cannot be guaranteed that the simulated situation represents an actual patient situation under all circumstances, even though utmost care is taken to simulate adequately. It is not allowed to use a SatCur result as decisive for patient treatment.

oĸ

Fig.1: Introduction screen of SatCur.

SatCur.pdf page 2/4

The program does not show the Introduction screen at startup but directly switches to a graphical representation of the oxygen status of blood of the type as shown in Fig.2.

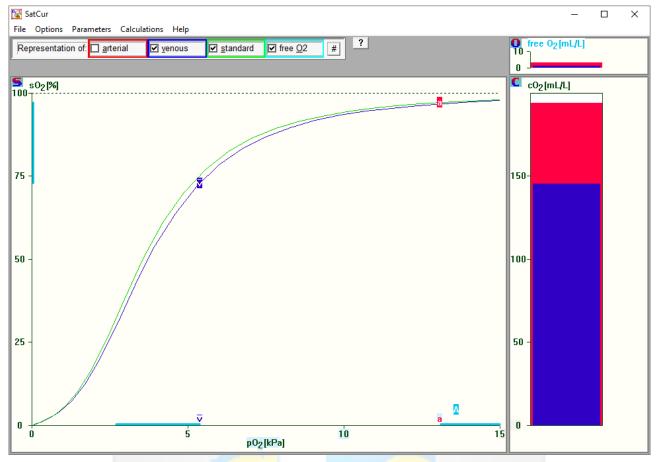


Fig.2: Graphical representation of blood oxygen status.

The graphical representation consists of two or three parts: the oxygen Saturation curve part , the oxygen Content part , and, optionally, the free Oxygen part . Since the red cell's hemoglobin plays a significant role, a separate introduction can be called through the menu entry 'O2 and Hb'; all menu entries are shown in Fig.3, the complete hemoglobin introduction is shown in Fig.4.

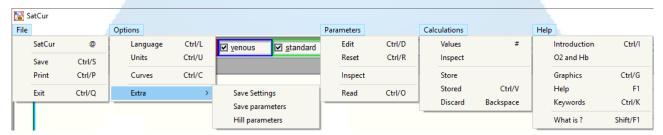


Fig.3: Menu options of SatCur.

The fully operational version of SatCur offers a vast variety of blood status values to be inspected and evaluated – not only of oxygen but also other parameters like acid-base status. In the DEMO version, these results are partly disabled as well as some other features of the program. However, both versions support the menu option 'Extra' – 'Hill parameters' where curves of type different from the standard Adult hemoglobin can be set. Preset are 'Human Foetal' and 'Rat'.

SatCur.pdf page 3/4

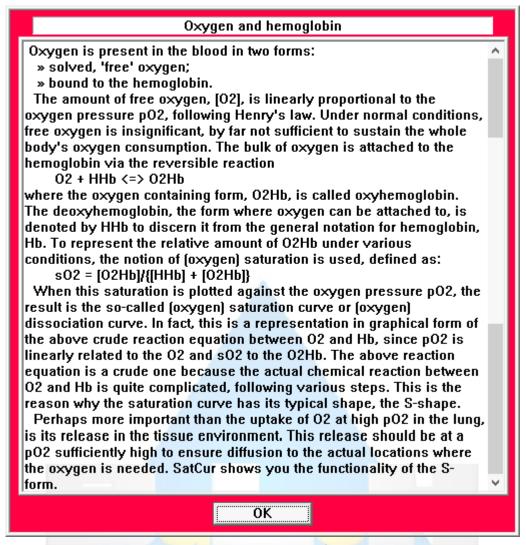


Fig.4: Introduction into the role of hemoglobin

The most important menu option is 'Parameters' - 'Edit'. Up to 18 determinants of blood oxygen status can be manipulated here, divided in 5 groups, as shown in Fig.5 where the first group is selected and from this the parameter 'Barometric Pressure'.

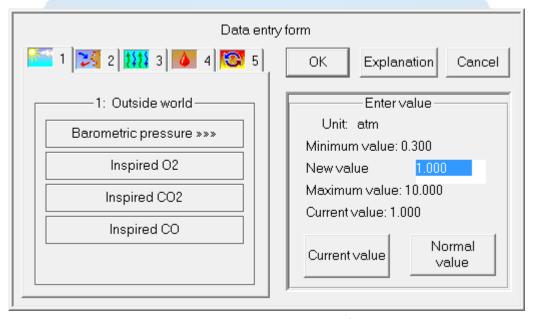


Fig.5: Form to set environmental determinants of blood oxygen status.

SatCur.pdf page 4/4

A lot of explanation is available in the Help of SatCur, also about mechanisms, but unfortunately only can be reached if de computer's operating system supports reading of old-type Microsoft.hlp files — usually, this is by a correctly installed tool WinHlp32.exe. An example is the 'Parameter Help' screen shown in Fig.6.

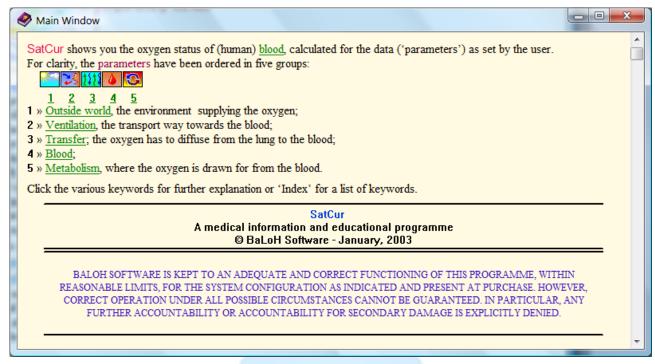


Fig.6: Help screen about the parameter choices.

To ameliorate problems with this type of help, the fully operational version of SatCur comes with a separate file to access help outside the program.

