

COMPUTERS AND THE ORTHODONTIST

This is the first of a regular series of articles on the use of computers in orthodontic practice; the series commences with material presented at the Mt. Lofty Conference of the South Australian Branch by William T. Weekes, B.D.Sc., M.D.Sc. (Adelaide).

Dentofacial Planner Plus (DFP) is a computerised cephalometric program that enables rapid and accurate analysis of a cephalogram to aid in treatment planning. In addition, a video image of a patient's profile can be linked to the digitised cephalogram. Manipulation of the tracing will produce corresponding changes in the video image. Simulations of orthodontic treatment or orthognathic surgery changes are therefore possible. This becomes a valuable aid in treatment planning, communication with the oral surgeon and patient education.

Cephalometric analysis is fast and simple. Many predefined analyses are provided and the facility to devise one's own custom analysis is present. The predefined analyses are based on reputable analyses published in the literature, and compare the measured value with a mean value that is age and gender related. Analysed information can be exported to a spreadsheet or statistical analysis package for research purposes.

Treatment simulations are performed by dragging skeletal and dental components with the mouse. The soft tissue profile is automatically modified and updated to reflect the underlying change in hard tissue structures. Cephalometric soft tissue changes are based on published retrospective studies of surgical and orthodontic soft tissue change, and on data derived from several retrospective studies employing Dentofacial Planner (Walker 1992).

The strengths of DFP are many. They include scientific accuracy of measurement, ease of use, total flexibility and ability to be customised. As well, DFP has the ability to superimpose serial radiographs or age standards on a variety of reference planes. Growth predictions can be made and treatment changes simulated. Measurement of standard/lateral and P-A cephalograms and submento-vertex radiographs and CR-CO conversions are all possible. Plotter output is spooled so that one can carry on working on the same or

another radiograph while an analysis is being plotted. Graphic output can be directed to a file for later incorporations into a word processor or desktop publishing package.

The limitations of DFP mainly relate to the limitations inherent in any system of radiograph measurement. The problems are not due to shortfalls in the program, rather, they are in the way the program is used by the practitioner. The growth predictions and treatment simulations are perhaps the least accurate aspect of the package. They are helpful tools, but must be used with caution. The video digitising package requires 386 and 486 computers and high resolution video monitors – more expense than many people may feel is justified. However, when compared to similar programs, DFP is as capable and the cost is lower.

Computer Hardware Recommended

Processor: 386 or 486

RAM: At least 4 Mb

Hard Disk: At least 200 Mb

Graphics

Adaptor: Trident 8900C Super VGA

Monitor: 1024x768 non-interlaced.

Frame

Grabber: Digital Vision
ComputerEyes/RT

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Please Note:

Dr Simon Freezer has suggested that members who have computerized cephalometric software may wish to join a "users group" which could establish a database of treated cases. Would those members interested in such a group please contact him by facsimile on (08) 326 6050; or by telephone on (08) 326 0255; or in writing to 287 Main South Road, Morphett Vale, South Australia 5162.