

# Orthodontic Hyper Knowledge—A Review

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## Introduction

Orthodontic Hyper Knowledge (OHK) is a new software that claims to be 'a multimedia tutorial for use by: orthodontic residents, dental students, dental hygienists, dental nurses and orthodontists/general practitioners who are in charge of the training/direction of paraclinicals' OHK is written by C. D. Stephens, K. Takada, and Y. Kakiuchi with contributions from four others. It is published by Medigit Corporation, Japan, and currently costs US\$65.00

This package came as a single CD-ROM with a small pamphlet of simple instructions and table of contents. It is intended for use in a PC running Windows 95/98 or a Macintosh™ (Mac). The minimum system requirements are Pentium™ 166 MHz-based PC with 16 MB RAM or higher or Motorola 68040-based Mac with 16 MB RAM or higher. Having never used a multimedia interactive tutorial in orthodontics, I was intrigued to find out what it contains.

Nowadays, all computer programs come with their own tutorials. Even Microsoft® Windows 98 comes with its own tutorial—Starts Here™. This software is designed to help the uninitiated to get familiar with the layout and usage of Windows 98. It is a multimedia and highly interactive software and is used here as the benchmark for comparison in terms of usability.

## Start

The packaging of 'Orthodontic Hyper Knowledge' (OHK) CD-ROM was quite difficult to open, as it did not have a tab which often comes with packages such as these.

The six-page manual supplied with the CD-ROM gives a preface of the software and its intention. It also provides a brief description of the contents and a detailed table of contents with some pictures. However, inserted between pages one and two of the table of contents are the instructions on how to set up OHK.

The instructions on setting up are not clear: 'Boot up www browse by inserting the CR-ROM into CD-ROM drive, double click the "Open file" on the FILE MENU, and double click again "index.htm" file to start up program.'

I am sure it means you need to start up a World Wide Web (www) browser such as Internet Explorer or Netscape Navigator after inserting the CD-ROM. Then you should select 'file' in the menu bar and select 'open'. Open the 'Hyper Knowledge' (this was spelt incorrectly by the programmers) directory and double click on 'Index.htm' to open OHK.

This is one of the weaknesses of OHK—it does not employ one of Windows 98's features—auto load.

Another minor irritation is the recommendation that you use Netscape® Navigator™ 3.01 (Netscape) to ensure 'correct functioning'. However, since I only have Micro-

soft® Internet Explorer™ v 5.0 (IE5.0), I proceeded to use it, but did not encounter any problems. Some of the pictures did make use of the 'Macromedia® Shockwave™'; this is actually quite a nice feature—especially those in the radiograph section.

Once started, it almost immediately requested the installation of 'Japanese Text Display Support', downloadable from the www. I was not very happy about installing something from the web that may not be completely deleted from my computer. Furthermore, it was a very large file (2.7 MB) requiring at least 23 minutes to download, therefore, I did not install this additional software. I was quite pleased when it continued to work quite normally, though it left me wondering what I was missing.

The initial interface is similar to 'Windows 98 Starts Here™', but lacks the multimedia feel in the form of the music and speech. I felt that the use of the 'contents' sections on the left and bottom of the screen was quite clever. However, the rest of OHK opens just like a *book*, with occasional references to movies explaining certain concepts in orthodontics, such as tip, torque and in-out. For a Version 1.00, the effort is commendable, but it needs more panache to succeed as a piece of commercial software. Basically, it needs more interactivity, more 'multimedia'—movies, speech, colour, pictures. The text should be spread out a little more so as not to appear too wordy and to avoid reading like a *book*. People often buy the software to make it more exciting to study a subject they may consider dry—a good example is 'Windows 98 Starts Here™'.

## Text contents

### *An introduction to orthodontics*

The first section introduces the student to the basics of orthodontics. It gives an understanding of what is meant by orthodontics. There are explanations of some of the biological principles of orthodontic treatment. There is also an overall sequence of orthodontic treatment; however, this section left me thinking that orthodontic treatment only requires 10 appointments and that only one appointment is required to adjust the appliance! The section on informed consent for patients undergoing orthodontic treatment is quite comprehensive and is certainly up to date. A description of how the dental nurse and hygienist work with the orthodontist is also included.

### *Clinical orthodontic procedures*

The first section of this 'chapter' is concerned with the first visit—orthodontic consultation. I thought this section should have more details on an orthodontic assessment—for example, the recording of the patient's incisor, canine

and molar relationship, overjet, overbite, upper and lower labial inclination, and crowding, to mention a few. There is no introduction to these terminologies and concepts.

The next section deals with the accumulation of orthodontic records and contains sections on impression taking, photographs and radiographs. The feature on photographs is very detailed and is probably the best section in the entire software. The explanation given for impression taking and techniques is also well written.

The radiograph section utilizes 'Macromedia® Shockwave™' to display the different radiographic points and planes and the different analyses. Downs, Tweed, and McNamara are the three analyses described. This section is quite well written giving detailed explanations on how to do a cephalometric analysis.

The next section deals with removable appliances (RA). This is divided into removable appliances, active plates and myofunctionals. The RA section does not explain about the various components of a RA—base plate, cribs, springs, screws etc or about the concepts of designing a RA. There is, however, a small section dealing with the 'active plate'. This section compensates with an explanation on how to adjust and activate some components of a RA. The myofunctional section gives a simple account on the Frankel, Harvold, and Twin Block appliances. However, there is no detailed narrative of the different types of functional appliances but rather concentrates on the activator. This is a shame considering the increasing popularity of appliances like the Twin Block. In addition, there is no attempt to explain how these appliances work.

Section 2.4 is on fixed appliances. This is quite detailed in sections. It manages to deal with the palatal/lingual arch, but also suggests that the lingual arch is used as a retainer. There is also a good article on the quad helix appliance—there were references and expansion on certain topics of interest.

The tutorial then moved on to the 'straight edgewise appliance'—the explanation was clear, accurate, assisted by pictures showing step-by-step do-it-yourself orthodontics with a good explanation of the three orders built into the straight wire appliance (SWA). The explanation on banding and the errors involved is also clear and comprehensive. The section on bracket placement is quite detailed though it is repeated for both the extraction and non-extraction cases. There is also a small section on 'local fixed appliance'—sectional appliances.

The following section deals with headgear. This is current and very useful. However, one important aspect is missing in this section—there is no advice given on the dangers of headgear and there is no discussion on safety features available nowadays for headgear. The retainer section shows different types of retainers, but no practical details of retention regimes.

### *Patient handling*

The first two parts on dietary advice and emergency calls are quite comprehensive and useful. There are also sections

on risk management in the clinic and for the patient intra-orally. They have also touched on the importance of oral hygiene. This section is generally very useful and practical.

### *Glossary*

This section is not complete on its own; however, it does act as an index.

### *Orthodontic vocabulary*

This section could be amalgamated to the glossary section—isn't that what 'glossary' means? Admittedly, it complements the rather deficient 'glossary' section.

### *Exercise*

This is a self-test section; however, it does not grade you or make suggestions if you were unable to give the correct answer. Some of the answers could not be found in the main text. Furthermore, the questions were rather basic. It would seem as though these questions were aimed at dental auxiliaries, rather than qualified dental personnel.

### *References*

The main body of text should be referenced to this section.

### **Conclusions**

I would suggest that OHK is not recommended for 'orthodontic residents'; it is too simplistic and does not cover the breadth of sufficient details in orthodontics. It also fails to explain certain important concepts such as extraction patterns, proper clinical orthodontic assessment, cephalometric analysis, etc. It does, however, cover certain practical areas well—and would appear as though its target audience are dental auxiliaries, not dentists.

The package disappointingly contains too many spelling mistakes. In addition, OHK lacks the multimedia talents it claims it possesses and it is also crying out for more interactivity. The whole package feels rather poorly presented. It does not have any advantages over a book and yet there is no option to print out sections to allow the student to study certain topics further.

### **References**

Microsoft® Windows 98 Starts Here™ (1998)  
Microsoft® Press.