

Home Therapy System

1 WELCOME TO HTS!

This manual provides the essentials you need to successfully operate the Home Therapy System (HTS) and integrate this valuable service into your practice.

Section 1 describes the features of HTS and how to incorporate this program into your practice. Section 2 leads you step-by-step through HTS using your doctor's practice program. In Section 3 you will find a detailed description of the two therapy modes and seven procedures included in HTS. In Section 4 you will be shown how to install the special *Tools Disk* on your hard disk. You will also learn how to use the demo, performance, and printing features.

Use this checklist to ensure your success in learning HTS:

- Read this Doctor's Manual in its entirety.
- Learn HTS and load the special *Tools Disk* onto your computer using the step-by-step instructions in Sections 2 and 4 of this Doctor's Manual.
- Read the Patient's Manual in its entirety.

HTS is a sophisticated yet easy-to-use computer application that your patients can run on nearly any PC. HTS methodically administers therapy to your patients to improve and normalize oculomotor, accommodative, and vergence anomalies. Specifically, HTS administers therapy and tracks patient performance and progress for these seven procedures:

- Pursuits
- Saccadics
- Base-In Vergence
- Base-Out Vergence
- Auto Slide Vergence
- Jump Ductions
- Accommodative Rock.

Features of the HTS Computer Application

- HTS is portable and runs trouble-free on most desktop computers commonly found in patients' homes, offices, schools, and libraries. Doctors already using the HTS program are reporting significant numbers of referrals generated from patients using HTS on their computers at work, at school, or anywhere others can observe them. Their success will become your success!
- HTS encourages and motivates the patient by continuously evaluating progress and making the task more difficult whenever progress is achieved. This method ensures success!
- HTS addresses two major patient disincentives often associated with vision therapy. These are the perceptions that it is too expensive and that it will demand too much of their time.
- HTS includes two basic modes of therapy—Auto and Manual.
 1. The **Auto** mode is designed to be used as a stand-alone vision therapy program to correct most accommodative and vergence disorders.
 2. The **Manual** mode is designed to primarily supplement in-office vision therapy, by allowing you or your staff to assign the specific HTS procedures to be administered.
- HTS uses scientifically proven behavior modification (operant conditioning) to administer therapy.
- HTS provides medical proof that therapy has been performed and documents the level of success achieved by the patient.

The Exciting Advantages of Home-Based Therapy

The introduction of a PC-based vision therapy program is a significant breakthrough. HTS is an effective means for providing home vision therapy and for augmenting in-office therapy, addressing these challenges:

- The patient who cannot commit the time for an in-office vision therapy program.

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- The patient who cannot afford in-office vision therapy.
- The patient who needs more therapy than can be reasonably performed in-office.
- The patient who requires ongoing maintenance therapy after completing in-office therapy.

Previous home-based vision therapy programs have typically failed because:

- Monitoring the patient's compliance was impossible.
- Without an accurate record of performance, the therapy protocol could not be adjusted based upon progress.

HTS addresses all of these problems by providing proven self-motivating therapy that is affordable and can be easily monitored. The program notes when the patient performs therapy and provides a cumulative graph of all results. Implementing a home-based therapy program with HTS is easy and fast. HTS will be financially rewarding and generate new patients for your practice.

Incorporating HTS into Your Practice

Vision therapy can now become an integral part of every eye care practice. HTS makes it possible for you to assign and monitor home therapy for most accommodative and binocular problems traditionally handled in the office. If you've never provided vision therapy, HTS allows you the opportunity to introduce a new effective and profitable service to your practice. With HTS you can help your patients improve their quality of life by becoming more comfortable while doing near point work, increasing their pleasure of reading, and removing the significant discomfort of computer use.

In today's technologically oriented society, increasing numbers of people are experiencing near point visual stress. In fact, many studies indicate that as many 15% of the U.S. population—more than 40 million people—have measurable binocular and accommodative anomalies. And 80% of these individuals have simple convergence and accommodative problems that can be easily and successfully treated with HTS.

If you are not currently offering vision therapy you may wish to concentrate on two specific populations for HTS therapy:

1. *The Near Point Adult:* Computers are everywhere. Few jobs exist that don't require the use of a PC or computer terminal. These workers are the fastest growing segment of the population reporting eye strain related problems. Many of these individuals have simple undiagnosed binocular problems and are excellent candidates for the HTS program.
2. *Students of All Ages:* Learning involves extensive near point work. Students use calculators, PCs, are required to read many books, and more. Many under-performing students are having difficulty due to a near-avoidance syndrome associated with simple convergence and accommodative problems. The HTS program has been designed to address these problems.

Both of these groups respond very well to the HTS program. They like the convenience of using the software at home and find the cost of the therapy to not be prohibitive.

If you are already offering vision therapy, HTS can be used for all of your VT patients, including those participating in or performing in-office therapy. It's also an excellent tool for patients who need more therapy than can be reasonably provided solely by in-office visits, or who need maintenance therapy following in-office therapy.

Remember, HTS eliminates the two biggest reasons for patients avoiding vision therapy: they believe it's too expensive and/or takes up too much time. HTS solves both of these problems.

Incorporating HTS into your primary care practice is easy. Once a diagnosis is made, either you or one of your staff can introduce the patient to the benefits of HTS and explain how to use the program at home, at work, or at school—wherever they have access to a desktop computer.

Diagnosis & Prescription

The first thing you need to do is to make a diagnosis of an accommodative and/or vergence disorder as the cause of asthenopia. Next, make a decision as to whether the

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patient's problem can be handled with HTS. Lastly, educate your patients to the cause of their symptoms and how HTS can help them.

Most patients with convergence and associated accommodative problems can be successfully treated with HTS. Follow these simple steps to assure success:

Taking the Patient's History

Use these or similar questions to gather the patient's history, or you may choose to use the survey included at the end of this chapter:

- “How long can you read or work at a computer before becoming uncomfortable? After becoming uncomfortable, how do you feel? How do your eyes feel?” A patient should be able to read or view a CRT most of the day without fatigue. Asking for a specific time period establishes a benchmark. Any fatigue occurring after only two hours of near work most likely indicates a binocular problem. Remember, falling asleep and losses of concentration during near point tasks are symptoms of asthenopia.
- “Do you get headaches? What kind? Pounding or dull aching? When do you get headaches? Do you also get them on the weekend? Are the headaches associated with near work?” (Remember: Ocular headaches are non-vascular. Headaches occurring at the end of the day are associated with near point vision tasks.) Your job is to determine if the headaches are associated with near work tasks such as reading. Migraines and other headaches not associated with reading or CRT viewing are not going to be relieved with vision therapy. Sometimes it is difficult to differentiate a stress headache from an asthenopia-induced headache. The key difference is that stress headaches occur *after* the stress, even on weekends. Asthenopic headaches occur only during or shortly after the task.
- “Do you get carsick?” Patients who demonstrate car sickness often have a convergence insufficiency. Therefore, the doctor should note this symptom and observe if vision therapy eliminates this symptom. The exact cause for this relationship is unknown.
- “When you become carsick or uncomfortable, what do you do to relieve the discomfort? How do you deal with it?” Avoidance of near work is a common occurrence. Aspirin is usually effective with these patients in eliminating the

symptoms. However, the symptoms will reoccur when the near point task is performed again.

If a patient fits any of these profiles they are a perfect candidate for vision therapy and will usually respond well to the HTS program.

Taking Measurements

See if testing induces asthenopia similar to the patient's complaints. Note on the record where asthenopia begins during testing. Perform the following tests (total test time is about three minutes):

- Distance and near cover tests. (Use an accommodative target and use prolonged repeated occlusion to elicit a deviation.) Norm: DV 3E' < x < 3X, 3E' < x < 6X'
- Versions. (Rule out paresis or paralysis.)
- Near point of convergence test. (Repeat 3 or 4 times and note patient's reactions. Ask the patient if the test bothers them. If it does they are a good candidate for the HTS program. This is the most important test.) Norm: 3/5
- Divergence and convergence fusional amplitudes at near. (Ask the patient if this test bothers their eyes. Asthenopia induced by testing is a diagnostic symptom of a vergence anomaly and will almost always be eliminated by HTS program.) Norm: BO 16/24/16, BI 14/18/14.
- Positive and negative relative accommodation. Norm: +2.50 / -2.50.
- Appreciation of a random dot stereogram (RDS). (The program cannot be used by the patient if they cannot discern RDS. The patient must be bi-foveal. Patients with constant strabismus cannot see the RDS.)
- Additional tests if necessary, such as, amplitude of accommodation, accommodative facility with a ± 1.50 . Norm: 12cpm.

Determining the Need for Vision Therapy

An asthenopic history associated with asthenopia resulting from testing is a good prognosis for therapy with the HTS program. A patient who cannot read or work at a

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computer for more than two hours without complaints has asthenopia. Or, a patient who experiences discomfort from near testing similar to the asthenopia experienced during near work is a good candidate for the HTS program.

If you make a diagnosis of an accommodative and/or vergence anomaly as the cause of asthenopia, you must decide if the patient's problem can be corrected with HTS. *Most* binocular problems can be successfully handled with HTS. However, patients with the following conditions should *not* use HTS as the *only* mode of therapy:

- Patients with constant strabismus
- Amblyopic patients greater than 20/50
- Patients with large, intermittent deviations
- Patients with deep suppressions.

Explaining Therapy

Our experience has shown that brief explanations that are to the point are the most effective in convincing patients to begin vision therapy. Remind patients of their symptoms and that the discomfort they experience is not a “seeing” problem, thus glasses or glasses alone will not permanently relieve the symptoms. Show them how HTS will not create undue demands on their time. And most important, stress the benefits they will reap when the symptoms are relived, such as improved work productivity, better grades in school, and generally, improved day-to-day visual comfort.

Here are some guidelines for explaining asthenopia and corrective therapy to your patients:

- “You do not have a seeing problem, or your vision has been corrected to 20/20, which is normal. What you have is a muscle problem.”
- “When you don’t use your eye muscles properly, they fatigue. Our eyes were never intended to spend long periods of time looking at two dimensional reading material or computer screens. They were designed to be in a constant state of flux.”
- “The eyes have two muscle systems which must work together, just like a camera. One aims at a target and the other focuses on the target. When these two systems are not coordinated they fatigue, the result can be eye strain, headaches,

and blurred or double vision. To eliminate these symptoms, vision therapy brings these muscle systems, which are normally not under voluntary control, to voluntary control. Therapy re-educates the muscle systems to work more effectively.

“Here's an analogy: When a person learns to ride a bicycle, the learning process is mentally demanding and physically exhausting. It feels awkward trying to coordinate arms, legs, handlebars, and pedals while staying balanced! However, over time with patience and success, riding a bike becomes more and more natural. What was difficult becomes nearly automatic and you don't tire as easily. Through practice, you've learned new physical and mental skills; what was initially demanding is now easy and even fun! And once you've learned, you'll always know how to ride a bike. This is what vision therapy is about—automating the reflexes of focusing and eye teaming, so that it becomes natural and automatic.”

Assigning Therapy

Auto mode is the default setting on the patient's program. It may be modified by eliminating oculomotor, vergence, or accommodation. For most of your patients you should (1) demonstrate the HTS program in the office using the HTS Tools Demo program, (2) explain the therapy protocol, (3) schedule two to three follow-up appointments (schedule the first appointment *after* two weeks of therapy), and (4) hand them their HTS Patient's Package. It's that simple! Explanations of each of the procedures, including the default Auto mode therapy protocol, are included in Section 3.

When using HTS as an adjunct to in-office or maintenance therapy, or when dealing with unique problems, the Manual mode is used. Detailed step-by-step instructions for modifying the patient's program are included in Sections 2 and 4. There's a checklist form in Section 7 of this manual and in Section 1 of the Patient's Manual. It is used for assigning a special therapy protocol. Explanations of each of the procedures are included in Section 3.

Once a therapy mode has been chosen, provide the patient with a short demonstration on how to use HTS. An explanation of how to use the Demo program feature is included in Section 4. Be sure your patients understand what's expected of them in each procedure assigned. Instruct them to use HTS five days each week for about 20 minutes per session, completing each of the procedures exactly as assigned. Schedule

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an appointment for the patient to return to your office in two to three weeks for a progress check.

The progress checks should include a review of the patient's performance. Remind them to save their results on their *Patient's Data Disk* and bring the disk with them to your office so their performance can be evaluated. The performance module is one of the tools included with the special *Tools Disk*. Step-by-step instructions on how to evaluate performance are provided in Section 4. Cycle through each procedure and let the patient review their own performance. Motivation will be reinforced by the patient seeing their own performance improvement as well as by relief of their symptoms.

If your patient does not have a PC at home, encourage them to use the program at school, work, the library, or anywhere else they can access a computer.

Use this checklist to ensure your success in using HTS in your practice:

- Diagnose your patient.
- Assign a therapy protocol and provide HTS to the patient. (Modify the patient's program if needed.)
- Demo HTS for the patient in the office.
- Schedule follow-up appointments and remind the patient to bring their *Patient's Data Disk* with them.
- Evaluate the patient's performance.

Remember, the patient must go through three phases: improvement of function with asthenopia, elimination of asthenopia, and repetition to reinforce the reflex developed. Remind the patient that therapy will take approximately two or three months to complete. Once successfully completed, symptoms do not usually re-occur.

Fees for Service

Most doctors using HTS employ a two-pronged rate structure. When HTS is being used as a standalone VT program, the customary fee is approximately \$295 to \$350. This includes the cost of the program plus two or possibly three progress evaluations. When HTS is used as an adjunct to in-office therapy or as maintenance therapy, the fee is typically \$99 to \$150.

If accommodative rock is assigned, you must loan the patient a set of flippers. If you do not have flippers, a set of monocular flippers incorporating six powers is available from HTS, Inc.

Income Potential

Assume you prescribe the HTS program to only two patients per week at an average fee of \$325 per patient, your annual revenue will increase by \$28,600. The following example demonstrates increased earnings that are *below* those currently being realized by most doctors using the HTS program. It's clearly evident that the earning potential from HTS is significant:

Two (2) HTS Patient programs weekly @ \$325 each	\$650.00
Cost of product @ \$49.95 each	\$100.00
Total program including progress check (net income per week)	\$550.00
Total additional revenue increase per year	\$28,600

Third Party Billing

It's been our experience that the cost of HTS is reasonable enough that most patients don't need to look to third party coverage to afford the program. Avoiding third party billing issues may be beneficial. Patients who believe that fees might be reimbursable frequently refuse service if reimbursement is not included in their coverage.

Conversely, when properly informed, patients generally accept the concept of fee for service. When they are shown and understand the benefits of the HTS program, and the fees are perceived to be reasonable, then they are happy to pay for the improved visual comfort gained through the HTS program.

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Billing Codes

THERAPY

Vision Therapy / Orthoptics	92065
Intermediate Exam	92012
Orthoptic Equipment	99070

DIAGNOSIS

Accommodative Insufficiency	367.40
Amblyopia	368.00
Convergence Excess	378.84
Convergence Insufficiency	378.83
Divergence Excess	378.85
Esophoria	378.41
Esotropia	378.00
Exophoria	378.42
Exotropia	378.10
Oculomotor Syndrome	378.81

Progress evaluations should be billed as intermediate exams.

Post Therapy Goals

Pursuits

At speed level 4:
Percentage Correct > .80
Average Response Time
< .95 (using arrow keys)
< .80 (using joystick)

Saccades

Percentage Correct > .80
Average Response Time
< .95 (using arrow keys)
< .80 (using joystick)

Vergence Base In

Break > 13^Δ

Vergence Base Out

Break > 35^Δ

Auto Slide Vergence

Break BI > 13^Δ Recovery BI > 8^Δ
Break BO > 35^Δ Recovery BO > 25^Δ

Jump Ductions

Break BI > 13^Δ
Break BO > 35^Δ

Accommodative Rock

Average Cycles Per Minute > 13
Percent Correct Left and Right Eye > .80
(using a +2.00 / -5.00 flipper lens)

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**ASTHENOPIA SURVEY
FOR READING & COMPUTER VIEWING**

Your Name: _____

Today's Date: _____

Your Date of Birth: _____

FOR DOCTOR'S USE:

Pre-VT

Post-VT

Instructions: For each question circle the letter that most closely corresponds to your answer.

N = never, S = sometimes, O = often, F = frequently, A = always

1.	Do you suffer from blurred vision?	N S O F A
2.	Do you fall asleep while reading?	N S O F A
3.	Do you lose your concentration while reading?	N S O F A
4.	Does your vision seem worse at the end of the day than in the mornings?	N S O F A
5.	Do you experience double vision?	N S O F A
6.	Do you often close an eye when reading?	N S O F A
7.	Do your eyes feel tired at the end of the day?	N S O F A
8.	Do words seem to run together when reading?	N S O F A
9.	When reading do you ever find that you skip or repeat lines?	N S O F A
10.	When looking up from reading do objects appear momentarily blurred?	N S O F A
11.	Do you ever feel that both of your eyes are not working together?	N S O F A
12.	Does prolonged reading or close work give you headaches?	N S O F A
13.	Do you ever have car sickness?	N S O F A
14.	Is reading in a moving vehicle difficult?	N S O F A
15.	Do your eyes work equally well?	N S O F A
16.	Do you get tired when reading?	N S O F A
17.	After you have read awhile, does the print begin to appear blurry?	N S O F A
18.	Do you have eye strain?	N S O F A

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2 LEARNING HTS

System Requirements

Before starting make sure your computer is capable of running the program. It should be an IBM-compatible desktop PC with at least a 386 processor and have at least one floppy drive 3.5"/1.44MB. Your color monitor should display at least a VGA format. (HTS will *not* work on monochrome monitors.) If you're unsure of your PC's capabilities, check the user manuals that came with your system.

Included in your free Doctor's Start-Up Kit, you will find:

- One *HTS Installation Disk*—This installs the HTS Program to your hard drive. This is used to familiarize you and your staff with the HTS program. HTS on the doctor's practice program is nearly identical to the patient's program except that it will allow 35 sessions before ceasing to operate, and it contains example data.
- One *Doctor's Key Disk*—This disk contains your personal access code that allows the HTS Program to launch. It must be inserted in your floppy drive before you can run HTS.
- One *Tools Disk*—This provides tools that allow you to demonstrate the HTS program to your patients, configure and modify the *Patient's Key or Data Disk*, and view the performance data recorded on a *Patient's Data Disk*. **By installing and using these tools you avoid the risk of passing possible viruses.** These tools are explained in detail in Section 4.
- One pair of red/blue filtering glasses.
- One *Doctor's Manual*.

Included in the Patient's Kit you have received, you will find:

- One *HTS Installation Disk*—This installs the HTS Program to your patient's hard drive. . The patient's program allows 100 sessions before ceasing to operate
- One *Patient's Key Disk*—This disk contains your patient's personal access code that allows the HTS Program to launch. It must be inserted in their floppy drive before they can run HTS.
- One *Patient's Data Disk*—This disk is used to save the results of the patient's therapy sessions so the data can be brought into your office for your review.
- One pair of red/blue filtering glasses.
- One *Patient's Manual*.

NOTE: The *Doctor's Key Disk* will allow 35 sessions or runs before ceasing to operate. The *Patient's Key Disk* allows 100 sessions or runs before ceasing to operate. One session or run is counted each time you enter and then leave the HTS program, or when you enter and remain in HTS for two hours, whichever comes first.

Starting HTS

Load your HTS *Installation Disk* and then insert your *Doctor's Key Disk* into your floppy drive to launch the program and then run through the step-by-step instructions in this section. It will take only a few minutes, after which you will have a good understanding of how HTS works. Follow these simple steps for running HTS from the *Doctor's Key Disk*:

- Turn on your computer.
- From the following tables, find the operating system your computer is currently running and perform the instructions listed:

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Windows95

1. Insert the **HTS Installation Disk** into the floppy drive.
2. From the START menu select RUN...
3. In the RUN dialog OPEN box, type either A:Setup or B:Setup (depending upon which floppy drive you're using).
4. Click OK. This will begin the installation
5. Click on NEXT when prompted in each screen until the installation process is complete.
6. Click on FINISH when prompted on the final screen. If you wish, you may drag a shortcut icon to the desktop.
7. When installation is complete, a new group called HTS PROGRAM is added and accessed at the START button under PROGRAMS. *Remove the **HTS Installation Disk** from the floppy drive and store it in a safe place. You will not need this disk again unless you install HTS on another computer.*
8. Insert the **Doctor's Key Disk** into the floppy drive with the read/write protection tab *unlocked* (you cannot see through the moveable tab hole in the corner of the disk).
9. To run HTS, select START, then PROGRAMS, then HTS PROGRAM, then the HOME VISION THERAPY SYSTEM icon.
10. HTS (Doctor's Practice version) is now starting. Once it is running, go to **Configuring HTS** on page 2-8.
11. When you're finished running HTS, select EXIT HTS from the main menu screen. This will bring you back to Windows.
12. To run the HTS practice program again, insert the **Doctor's Key Disk** into the floppy drive and repeat step 9.

You may remove the HTS program from your hard drive by using the included uninstall utility. Select START, then PROGRAMS, then HTS PROGRAM, then the UNINSTALL icon and follow the prompts.

If you experience difficulty loading HTS into Windows95, you may load the program into DOS. From your desktop select START, then SHUT DOWN, then RESTART IN MS-DOS MODE and click OK. Insert the **Key Disk** into the floppy drive. Type A: (or B:) and press ENTER. Then type INSTALL C: and press ENTER. The program will install.

To run HTS from DOS, select START, then SHUT DOWN, then RESTART IN MS-DOS MODE and click OK. Insert the **Doctor's Key Disk** into the floppy drive, and at the C:\WINDOWS prompt type CD \HTS, then press ENTER. Then type RUN and press ENTER.

When you're finished running HTS, click on EXIT HTS, then at the DOS prompt (C:\HTS) type EXIT and press ENTER. This will return you to Windows.

If you do not want to install HTS to your hard drive, insert the **Doctor's Key Disk** into the floppy drive. From your desktop select START, then SHUT DOWN, then RESTART IN MS-DOS MODE and click OK. At the C:\WINDOWS prompt type A: (or B:) and press ENTER. Type RUN, press ENTER.

When you're finished running HTS, click on EXIT HTS, then at the DOS prompt (A: or B:) type EXIT and press ENTER. This will return you to Windows.

Note: The very first time you use HTS Program, you will be prompted to type in your name. This is the only opportunity you will have to type in your name, so it's important that you input it exactly as you want it to appear on the HTS screens.

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Windows 3.1x

1. Insert the **HTS Installation Disk** into the floppy drive.
2. In Program Manager, click on FILE, then from the pull-down menu select RUN...
3. In the RUN dialog box COMMAND LINE, type either A:Setup or B:Setup (depending upon which floppy drive you're using).
4. Click OK. This will begin the installation
5. Click on NEXT when prompted in each screen until the installation process is complete.
6. Click on FINISH when prompted on the final screen.
7. When the installation is complete, a new group called HTS PROGRAM will be created. *Remove the **HTS Installation Disk** from the floppy drive and store it in a safe place. You will not need this disk again unless you install HTS on another computer.*
8. Insert the **Doctor's Key Disk** into the floppy drive with the read/write protection tab *unlocked* (you cannot see through the moveable tab hole in the corner of the disk).
9. Open the HTS PROGRAM group and double click the HOME VISION THERAPY SYSTEM icon.
10. HTS (Doctor's Practice version) is now starting. Once it is running, go to **Configuring HTS** on page 2-6.
11. When you're finished running HTS, select EXIT HTS from the main menu screen. This will bring you back to Windows.
12. To run the HTS Program again, insert the **Doctor's Key Disk** into the floppy drive and repeat step 9.

You may remove the HTS program from your hard drive by using the included uninstall utility. Select START, then PROGRAMS, then HTS PROGRAM, then the UNINSTALL icon and follow the prompts.

If you experience difficulty loading HTS into Windows 3.1, you may load the program into DOS. From your Program Manager select FILE, then EXIT. Insert the **Key Disk** into the floppy drive. Type A: (or B:) and press ENTER. Then type INSTALL C: and press ENTER. The program will install.

To run HTS from DOS, start from your Program Manager select FILE, then EXIT. Insert the **Doctor's Key Disk** into the floppy drive, and at the C:\WINDOWS prompt type CD \HTS, then press ENTER. Then type RUN and press ENTER.

When you're finished running HTS, click on EXIT.

If you do not want to install HTS to your hard drive, insert the **Doctor's Key Disk** into the floppy drive, click FILE, select EXIT, then at the C:\WINDOWS prompt type A: (or B:) and press ENTER. Then type RUN and press ENTER.

When you're finished running HTS, click on EXIT.

Note: The very first time you use your HTS program, you will be prompted to type in your name. This is the only opportunity you will have to type in your name, so it's important that you input it exactly as you want it to appear on the HTS screens.

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DOS 3.21 or higher

1. Insert the **Doctor's Key Disk** into the floppy drive.
2. At the DOS prompt (C:\>) type either A: or B: (depending upon which floppy drive you're using).
3. Press ENTER.
4. Type INSTALL C: then press ENTER. The program will load.
5. To run the HTS program insert the **Doctor's Key Disk** into the floppy drive with the read/write protection tab *unlocked* (you cannot see through the moveable tab hole in the corner of the disk).
6. At the C:\ prompt type CD \HTS, then press ENTER. Then type RUN and press ENTER. HTS (Doctor's Practice version) is now starting. Once it is running, go to **Configuring HTS** on page 2-6.
7. When you're finished running HTS, select EXIT HTS from the main menu screen. This will bring you back to DOS.
8. To run the HTS Program again, insert the **Doctor's Key Disk** into the floppy drive repeat steps 2 through 5.

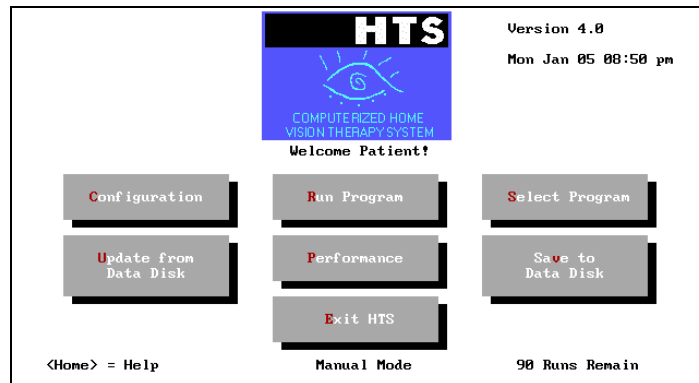
If you don't want to install HTS to your hard drive, insert the **Doctor's Key Disk** into floppy. At the C:\ prompt, type A: (or B) then press ENTER. Then type RUN and press ENTER.

When you're finished running HTS, select EXIT HTS from the main menu screen. This will bring you back to DOS.

Note: The very first time you run the HTS Program, you will be prompted to type in your name. This is the only opportunity you will have to type in your name, so it's important that you input it exactly as you want it to appear on the HTS screens.

Configuring HTS

The main menu screen looks like this:

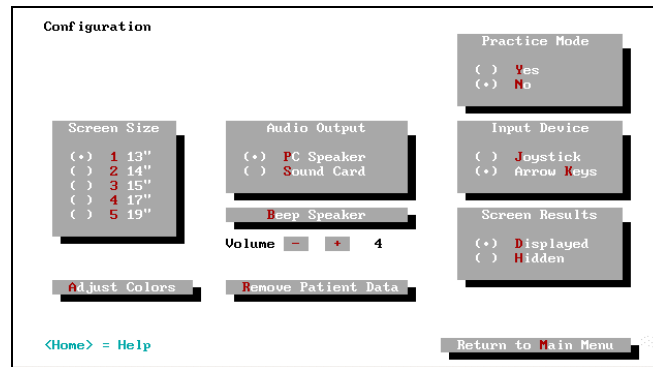


To make your selections, you may either use your mouse (if it is working) or type the red letter or number that corresponds to the item you want to select. For example, notice that in the word, **Configuration**, the **C** is red. For this screen, the key **C** is a hot key. Pressing it will immediately bring you to the **Configuration** screen. For now, we will only refer to the hot keys. If you have a mouse and the correct mouse driver loaded, you can, of course use it instead of the hot keys.

Also, if at any time you have questions about what you see on any screen, press the **HOME** key to bring up **Help**.

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To bring up the **Configuration** screen, type **C**. This is the screen you will see:

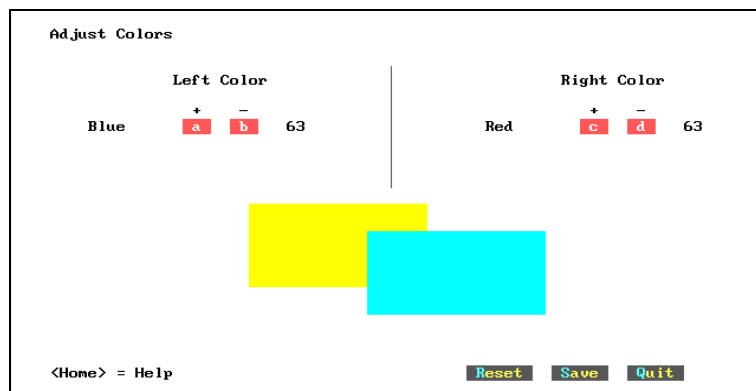


There are seven settings you can access on the Configuration screen. Generally, you will only need to set the configuration settings once.

- **Screen Size.** Type one of five hot keys (1 through 5) that corresponds to your monitor's size. The default is 13”.
- **Audio Output.** The default setting is for your computer's PC Speaker. Type **S** to use your sound card (if you have one). Type **B** to test the sound.
- **Volume.** Type + or - to increase or decrease the volume if you are using a sound card. The default volume is 2.
- **Practice Mode.** The patient may use this mode to practice using HTS up to five (5) times. This allows the patient opportunity to become comfortable with each procedure without any results being recorded. To turn the Practice Mode on, type **Y** for **Yes**. To turn the Practice Mode off, type **N** for **No**. Before beginning an actual procedure the Practice Mode must be turned *off* otherwise the results will not be recorded. When you exit HTS, the Practice Mode is automatically turned *off*, which is the default. **The practice program is disabled on the doctor's program.**

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- **Input Device.** Type **J** to use a Joystick, or **K** to use the arrow keys on your keyboard. The default is to use the arrow keys. When using a joystick, always allow the joystick to come back to the neutral position after a response.
- **Screen Results.** The default setting is for performance results to be hidden. If you want to see the results displayed on screen, type **D** for **Display**. Type **H** for **Hidden** to hide the results.
- **Adjust Colors.** While in the **Adjust Colors** screen, set your monitor's brightness to its maximum, and then adjust the contrast, and/or readjust the brightness, so that the background is jet black, but not so much that the red and blue objects become dim.



Normally, there will be no need to adjust the colors. This is *only* done if your patient has a problem perceiving the random dot stereograms. In this case, instruct your patient on how to adjust the monitor colors. Below are instructions you may give your patient which are also included in the Patient's Manual:

Some of the therapy procedures HTS will administer require red/blue glasses. *Only* if you have difficulty viewing the stereograms after you've adjusted brightness and contrast, then you'll need to adjust the colors on your computer's monitor to match the red and blue lenses of the glasses. Go into the **Configure** menu and type **A**. The **Adjust Colors** screen should now appear. Put on the red/blue glasses. If one of the squares appears significantly brighter than the other, then reduce its brightness by typing the letter under the minus sign (**b** reduces blue; **d** reduces red.) If you need to increase one of the colors, type the letter under the plus sign (**a** increases blue; **c**

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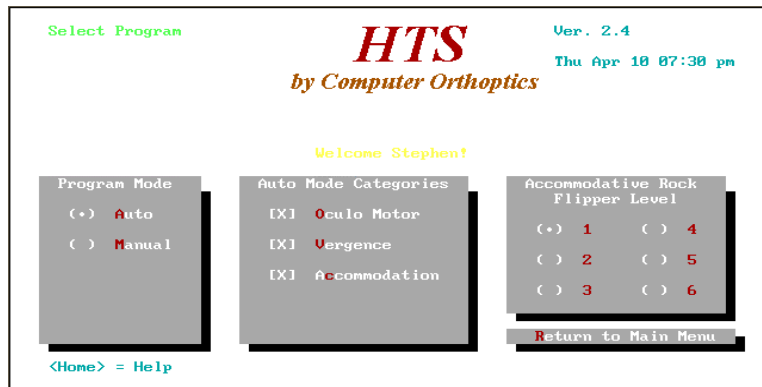
increases red.) When you are satisfied with the color settings, type **S** to **Save** and then **Q** to **Quit**.

Type **M** to return to the main menu screen when you have selected your Configuration settings.

Running a Procedure

You should now see the main menu screen.

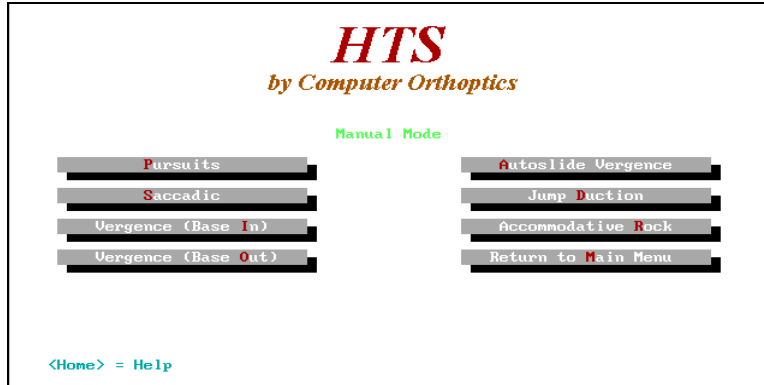
1. Type **S** to **Select Program**. This will bring up a prompt for a password. **Select Program** is password protected so the patient cannot modify the therapy protocol settings. Type in **2020** and press ENTER to continue. This will bring up the **Select Program** screen which looks like this:



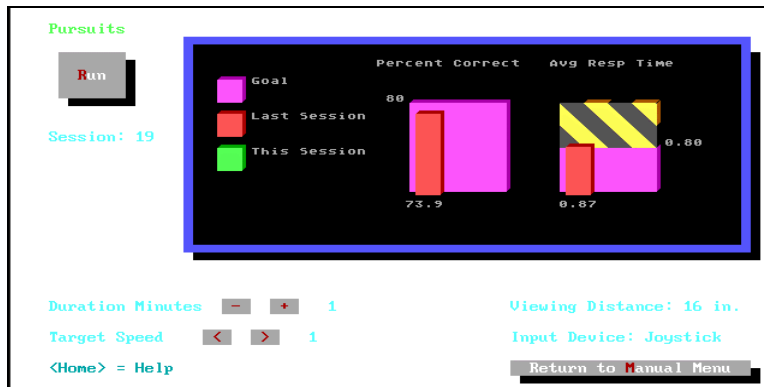
The symbol (*) indicates whether **Manual** or **Auto** mode is selected. The default setting is **Manual**. For now, leave it on **Manual**.

2. Type **R** to **Return** to the **Main Menu** screen.

3. At the main menu screen, type **R** to **Run Program**. This will bring you to the **Manual Mode** menu screen which looks like this:



4. From here you may examine each of the seven therapy procedures of the HTS program. For this example, we will start with **Pursuits**. Type **P** to bring up the **Pursuits** screen. Screens for each of the therapy procedures are very similar in appearance. This makes running the program easy and intuitive for the patient. The preview screen for **Pursuits** looks like this:



Notice the text in the lower right of the **Pursuits** screen. One states, *Viewing Distance: 16 in.* When running any procedure, you should position your eyes about 16 inches from your monitor screen.

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In the lower left of the **Pursuits** screen are *Duration Minutes* and *Target Speed*.
Duration Minutes. Type - or + to decrease or increase the duration of the Pursuits therapy procedure in one-minute increments. Set the *Duration Minutes* to 1 minute.

Target Speed. Type < or > to decrease or increase the speed of the target. Set *Target Speed* to 2.

5. Find the Arrow keys, position your fingers over them, or you may use the joystick. Type **R** to **Run** the Pursuits procedure. An E symbol will float around the screen and appear in one of four orientations. You are to press the arrow key that corresponds to the direction the "E" is pointing. Type **P** to **Pause**, then type P again to resume.

After one minute, you will find yourself back at the Pursuits preview screen and the results of your session are now graphed in the Pursuits preview screen. In this bar graph, the patient's goal for each session is indicated in purple; the results of the previous session are indicated in red; and the results of the just completed session are shown in green.

The steps for running each of the procedures are very similar as those you've just learned from running the Pursuits procedure. After reading Section 3, which describes each procedure in detail, use the *Doctor's Key Disk* to try all of the procedures to better understand what your patients will encounter.

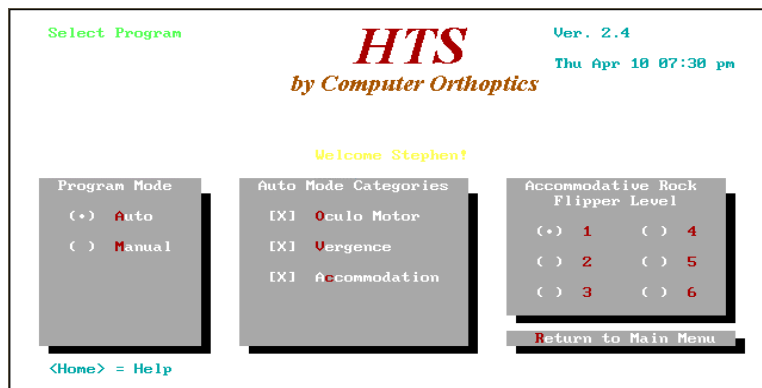
Modifying the Settings on the Patient's Key or Data Disk

In most instances you will assign Auto mode. This is the default setting for the *Patient's Key* or *Data Disk*. When assigning a specific therapy protocol using the Manual mode, or making changes to Auto mode, you will need to modify the settings on the *Patient's Key* or *Data Disk*. The parameters in the patients program are modified by using the Tools Disk programs as explained in Section 4. However, for the purpose of learning the HTS application, you will modify your doctor's practice program now.

Modifying Auto Mode

Auto mode may be modified by eliminating one or two of the three components: Oculomotor, Vergence, or Accommodation:

1. Return to the main menu and type **S** to **Select Program** screen (the password is **2020** to enter Select Program).
2. Type **A** for **Auto**. This is the screen you will see with Oculomotor, Vergence, and Accommodation all *enabled*. Disabling, or turning off, a task will eliminate it from the therapy protocol:



3. Typing the highlighted letter for **O**culomotor, **V**ergence, and **A**ccommodation will toggle the category *off*—[] or *on*—[X].

You may also change the duration of any procedure in the Auto mode by changing the duration in the Manual mode as follows:

1. At the **Select Program** screen, type **M** to turn on (●) **Manual** mode.
2. Then, type **R** to **Return to Main Menu**.
3. Select the desired procedure(s), change the time duration.
4. Return to the **Select Program** screen and type **A** to re-select **Auto**.

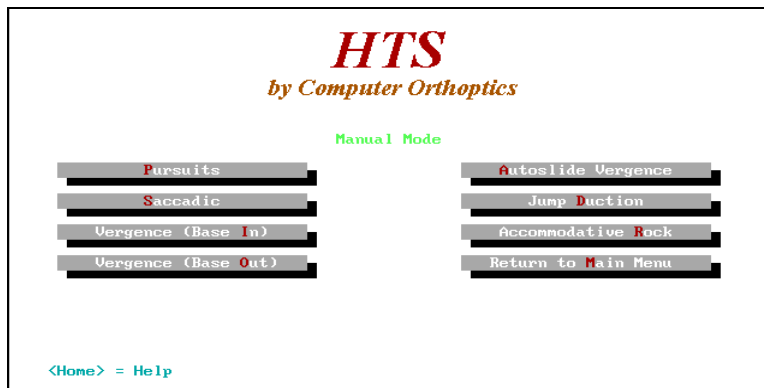
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5. Type **R** to **Return to Main Menu**.

The changes for each procedure you selected will be saved and used for the Auto mode. Be sure to instruct your patient to not exit a procedure before the assigned time has expired as doing so will prevent the results from being counted toward achieving criteria.

Modifying Manual Mode

Manual mode may be modified using the same steps as above. However, you do *not* re-set the mode from Manual to Auto after making changes. Be sure to explain the therapy protocol to the patient using the *HTS Patient Therapy Protocol* form included in Section 1 of the Patient's Manual (also included in Section 7 of this manual). Use the form to specify the procedures and durations for the protocol therapy you are assigning. You may mark the form in the Patient's Manual, or photocopy the form as needed. The Manual mode will bring up the following screen when the patient selects Run Program from the main menu:



Special Features

“Save to Data Disk” and “Update from Data Disk” will be discussed in Section 4, **Using the Tools Disk**.

Using HTS for In-Office Therapy

There may be instances where you'll want to use HTS for in-office therapy. Load the *Installation Disk* as outlined in this section. Each patient will need their own *Patient's Key Disk*. When patients are scheduled for therapy, insert their *Key Disk* and then launch the HTS program. Be very careful that you have inserted that specific patient's *Key Disk*.

Congratulations!

You have successfully learned how to use the HTS application and modify the *Patient's Key or Data Disk*. In Section 3 you will learn about the therapy modes and procedures in detail.