HASOMED
RehaCom®

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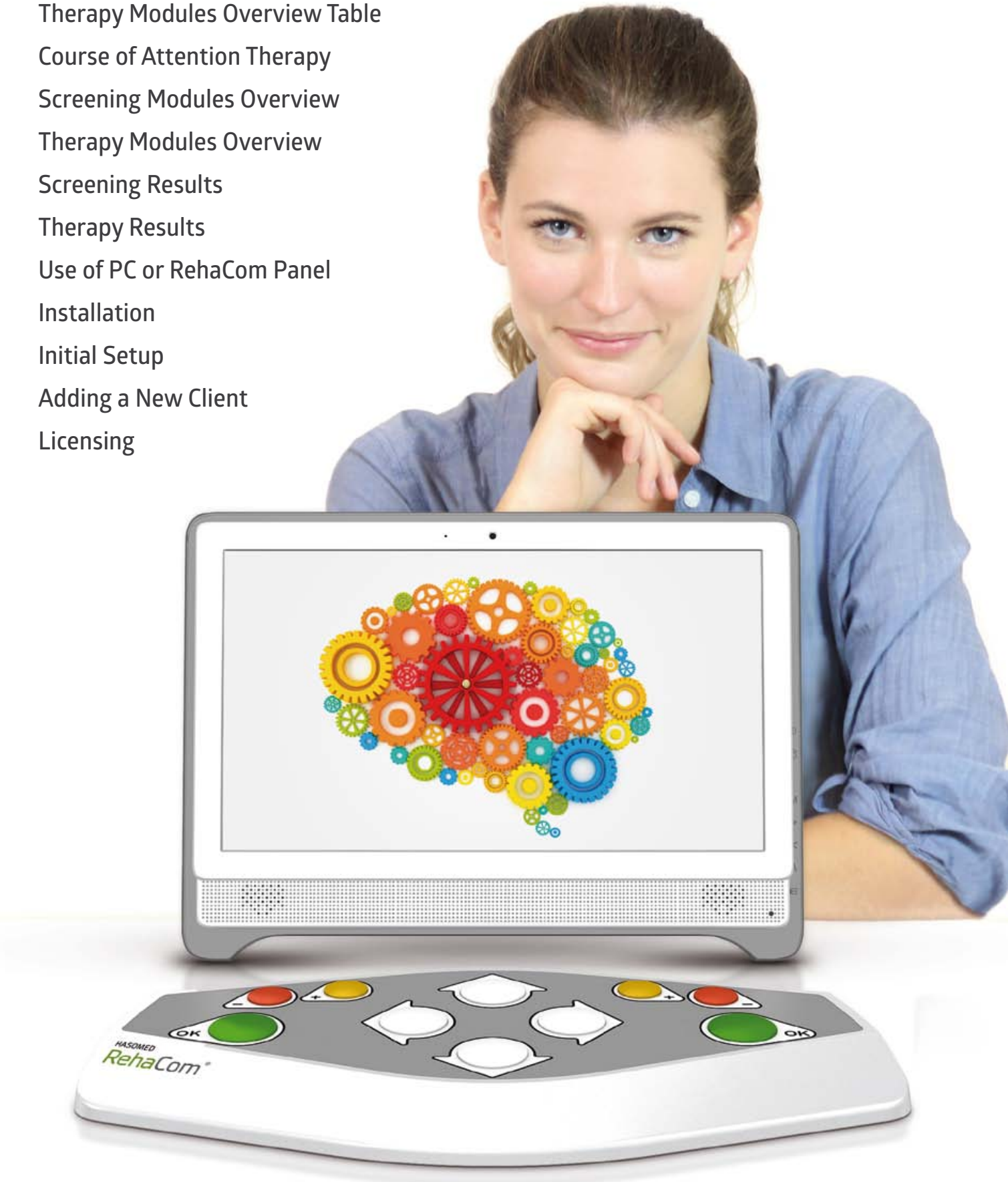

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RehaCom® Therapy Modules

Overview Table

Group	Sub-Group	Training Modules	Neurological Rehab	Geriatrics	Psychiatry	Pediatrics	Neurodegenerative diseases
Attention	Alertness	Alertness Training	●	●		●	●
		Reaction Behaviour	▲	▲	▲		▲
		Responsiveness	●	●			●
	Vigilance	Vigilance	▲			▲	▲
	Visual-Spatial Attention (spatial-perceptive)	Spatial Operations	●	●			●
	Visual-Spatial Attention (spatial-cognitive)	Two-Dimensional Operations	▲	▲	▲		▲
		Spatial Operations 3D	■	■	■		■
	Visual-Spatial (spatial-constructive)	Visuo-Constructive Ability	■	■	■		■
	Selective Attention	Attention and Concentration	●	●	●	●	●
	Divided Attention	Divided Attention	▲	▲	▲	■	▲
		Divided Attention 2	■	■	■	■	■
Memory		Working Memory	▲	▲	▲	▲	▲
		Topological Memory	▲	▲	▲	▲	▲
		Physiognomic Memory	▲	▲	▲		▲
		Memory for Words	●	●	●	●	●
		Figural Memory	●	●	●	●	●
		Verbal Memory	■	■		■	■
Executive Functions		Shopping	■	■	■	■	■
		Plan a HoliDay	■	■	■		■
		Logical Reasoning	▲		▲	▲	▲
		Calculation	■	■	■	■	■
Visual Field		Saccadic Training	●	●	●	●	●
		Exploration	▲	▲	▲	▲	▲
		Overview and Reading	■	■	■	■	■
		Restitution Training	▲	▲	▲		▲
Visuo-Motor abilities		Visuo motor coordination	▲	▲		▲	▲

● Severe to intermediate leveled deficits ▲ Intermediate to mild leveled deficits ■ Mild leveled deficits

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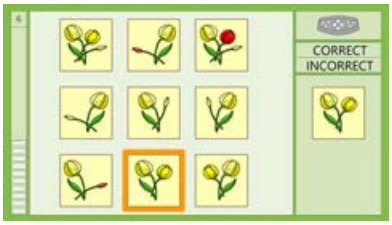
RehaCom® Therapy Modules

Course of Attention Therapy

Most therapists start with attention therapy using RehaCom module "Attention and Concentration".

start here



Attention and Concentration

Start each new patient at Attn.&Con., level 1. If after a few rounds, the level seems to be too easy, please press the ESC button, change the "Current Level of Difficulty" to level 6, and then proceed with the training.

If Attention and Concentration is too difficult, then continue with Alertness Therapy.

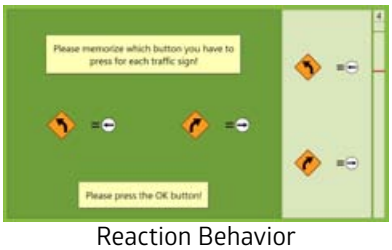
easier

harder

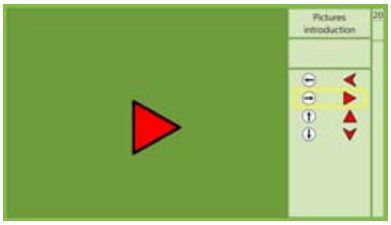
harder

If Attention and Concentration is not challenging enough, then continue with Spatial Attention or Divided Attention.

Alertness



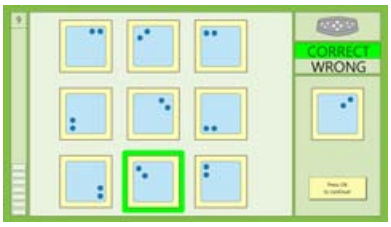
Reaction Behavior



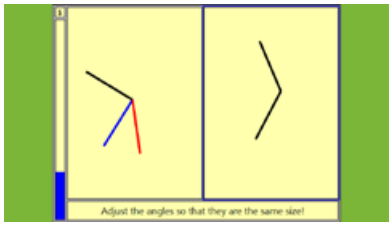
Responsiveness

Vigilance

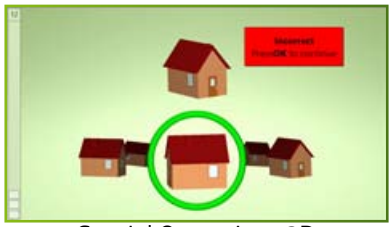
Spatial Attention



Two-dimentional Operations



Spatial Operations



Spatial Operations 3D

Divided Attention

Divided Attention

Divided Attention 2

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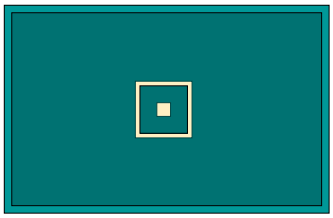
RehaCom® Screening Modules

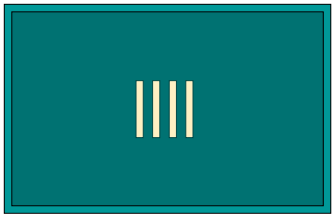
Screening Overview

Alertness



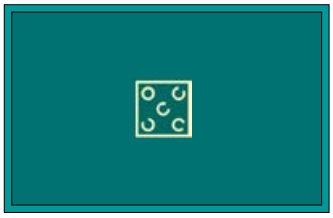
Measurement of Tonic Alertness (without warning sound, A) and Phasic Alertness (with warning sound, B) in an ABBA setup, 80 stimuli in total.

Selective Attention



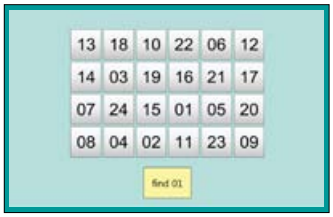
Examines the ability to react in an appropriate way under time pressure, and simultaneously control behavioural impulses. It is essential to suppress a triggered reaction by an external stimulus.

Divided Attention



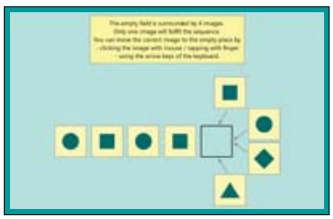
Divided visual and auditive attention, stimuli presented simultaneously. One trial contains 80 visual stimuli, with 15% relevant stimuli, as well as 160 auditive stimuli, with 10% relevant stimuli.

Spatial Numbers Search



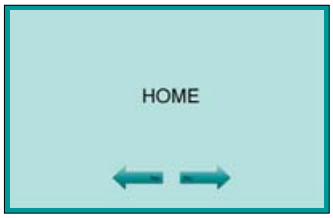
Measures basal cognitive performance, selective attention, and visual scanning. The test can also be used to screen the visual neglect. Derived from "Digits-Connection-Test" developed by Oswald and Roth (1987).

Logical Reasoning



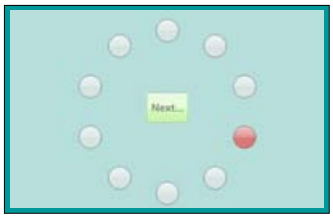
Measures the ability to identify regularities, to continue series, and to draw logical conclusions (figural convergent thinking). It examines the ability to complete logical sequences.

Memory for Words



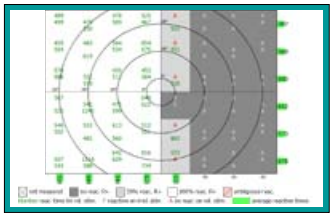
This screening module is used to investigate verbal learning ability according to the paradigm of the recurring figures. The patient has to read and store real words which are difficult to visualize.

Working Memory



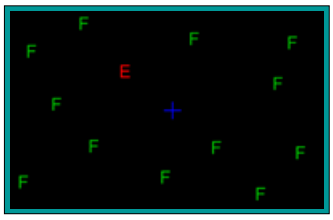
Measures visual-spatial memory span. It is also used for testing the implicit visual-memory learning and the working memory.

Visual Field



Measures the visual field, fixation accuracy, and sustained attention. Can be used in facilities where a perimeter is not available.

Visual Scanning



Measures the patient's performance in exploring his visual field. Two parameters are measured: parallel search ("at a glance") and serial search ("in a structured way").

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RehaCom® Therapy Modules

Key

Patient's Disease Symbols

TBI

Stroke

Psychology

Geriatrics

Parkinsons

Multiple Sclerosis

Pediatry / ADHD

Severeness of Cognitive Deficits

Severe

Moderate

Mild

These are only suggestions, the choice of therapy modules is in responsibility of therapists.

Lesion's Symbols ⇨ RehaCom Modules

Lesions in left hemisphere:
⇨ Reaction Behavior
⇨ Responsiveness
⇨ Attention and Concentration
⇨ Vigilance
⇨ Memory of Words
⇨ Verbal Memory

Lesions in right hemisphere:
⇨ Two-dimentional Operations
⇨ Spatial Operations 2D 3D
⇨ Divided Attention 1+2
⇨ Figural Memory
⇨ Topological Memory
⇨ Physiognomic Memory

Lesions in frontal lobe:
⇨ Logical Reasoning
⇨ Shopping
⇨ Plan a Vacation

Lesions in brain stem:
⇨ Reaction Behaviour
⇨ Vigilance

Lesions in parietal or occipital lobe:
⇨ Saccadic Training
⇨ Overview and Reading

The modules are listed in suggested order of completion, based on the severity of damage, with first modules attending to the heaviest damage and continuing to the lightest thereafter.

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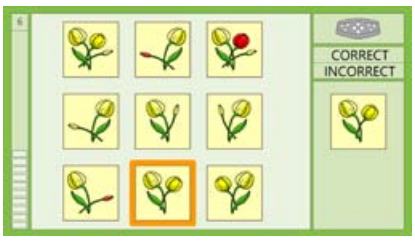
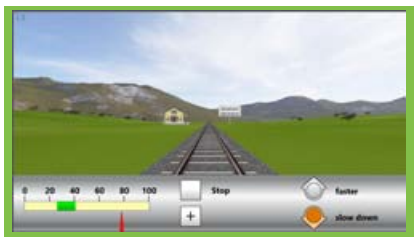
RehaCom® Therapy Modules

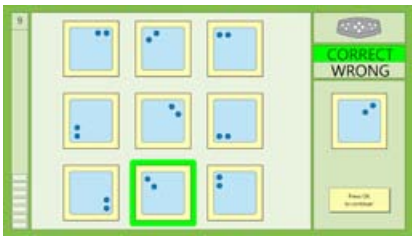
Attention



Attention and Concentration
Selective attention, visual scanning, focusing, shifting, neglect

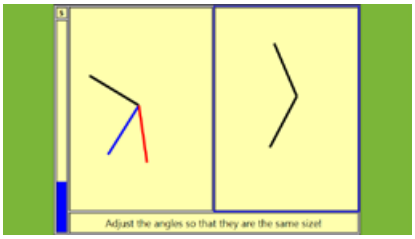


Divided Attention
Train driving, up to 6 attention levels, visual stimuli



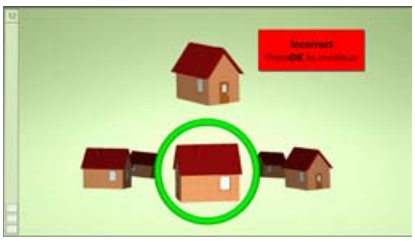
Spatial Operations
Mental rotation, visual scanning, focusing, shifting, neglect

Divided Attention 2
Car driving, up to 8 attention levels, visual and acoustic stim.

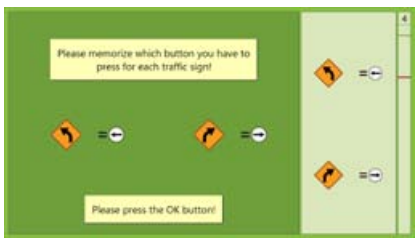


Spatial Operations
Estimate Positions, Angles, Sizes, and Fractions.

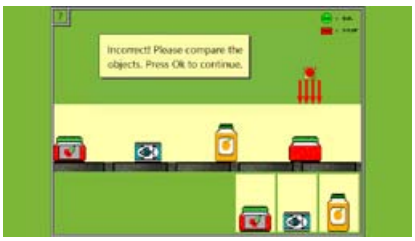
Alertness training
Alertness, ability to anticipate and react to a trigger stimulus.



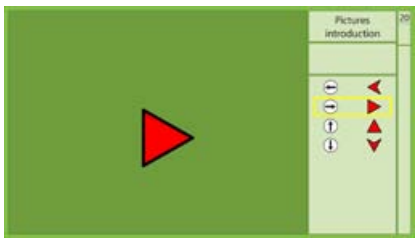
Spatial Operations 3D
Rotate and compare 3D objects, focus and sustained attention



Reaction Behaviour
Alertness, traffic signs, impulse control, load-carrying capacity



Vigilance
Sustained attention, assembly-line work, tracking and targeting



Responsiveness
Simple discrimination, initiation, inhibition, and differential responding

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RehaCom® Therapy Modules

Memory

Working Memory

Short-term and selective memory, mental manipulation

Figural Memory

Figural content, picture-word association, captions, aphasia

Topological Memory

Picture cards are turned over, memorize position and content

Memory for Words

Memorize up to 10 words in three degrees of complexity

Physiognomic Memory

Memorize faces, names, occupations, phone numbers

Verbal Memory

Short stories are presented, multiple choice questions

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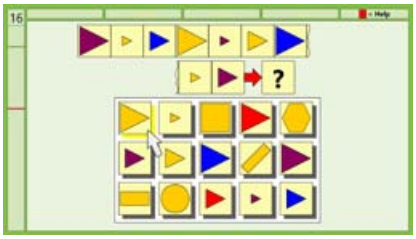
RehaCom® Therapy Modules

Executive Functions



Logical Reasoning
Conclusive thinking and problem solving, series completion

Plan a Vacation
Priorities, shortest ways, and schedule optimization

Shopping
Virtual supermarket / hardware store, shopping list, money

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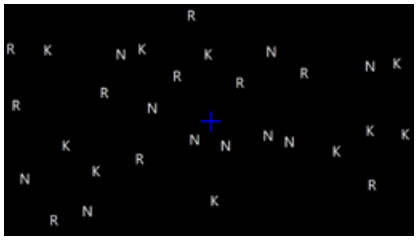
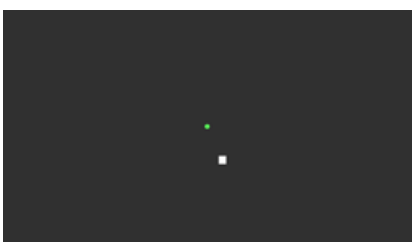
RehaCom® Therapy Modules

Visual Field

Saccadic Training
Eye movement training, hemianopia, neglect



Overview and Reading
Parallel and sequential search on homonymous visual field losses



Restoration Training
Stimulates the re-organization of damaged, but not destroyed, neuronal structures through intense stimulation.

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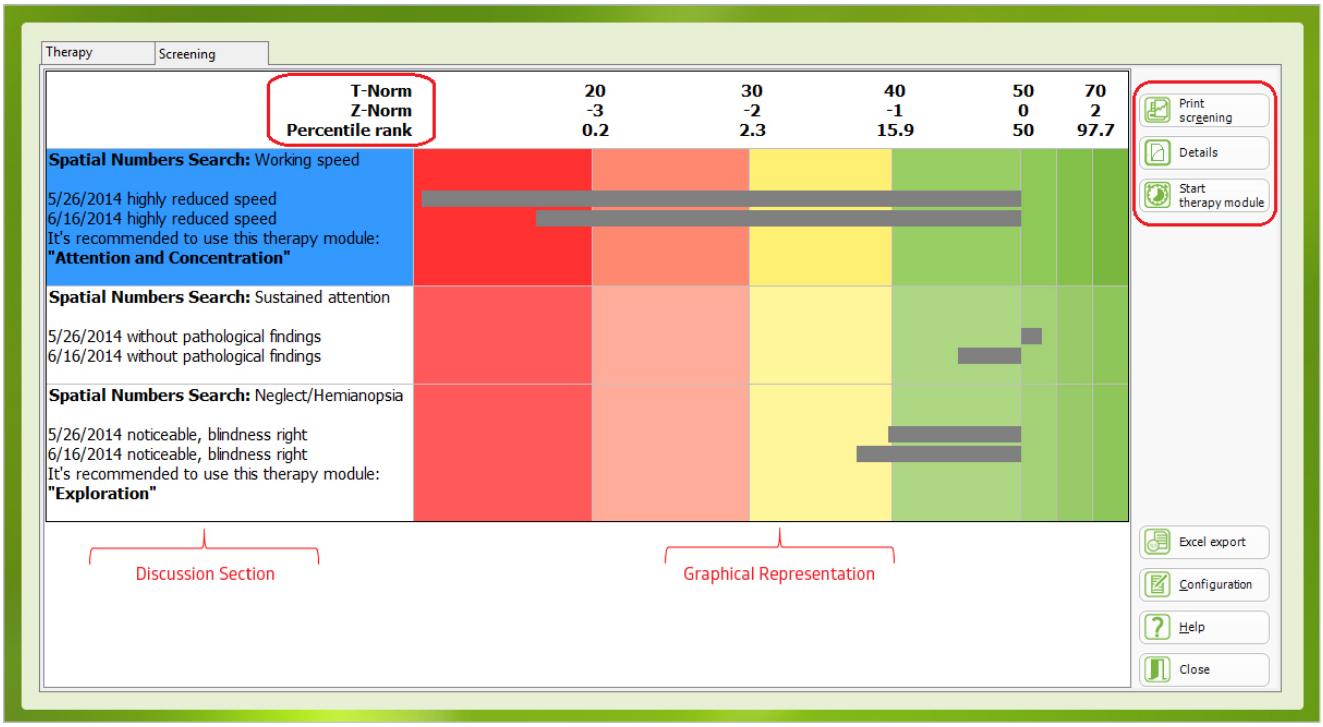
RehaCom® Quick Start Guide

Screening Results



Viewing Screening Results

To view the results of screening tests, begin from the *"Start"* page. Select the client whose results you would like to review, then click the *"Results"* button and the *"Screening"* tab.

Discussion Section

Screening results are summarized to the left of the graph. The screening module and test are shown, along with the screening date and a summary of results. The recommended therapy module for this screening result is shown at the bottom.

Graphical Representation

A graph of the screening results is shown on the right. Statistical T-Norm, Z-Norm and Percentile Rank are shown across the top, with the 50/0/50 column representing the average performance of a sample group of healthy people. The patient's screening results are shown as grey bars which begin at the 50/0/50 column (average) and stretch either to the right (above average) or to the left (below average). A longer bar represents a greater deviation from the norm. The background colors indicate the extent of the performance deficit, with the red area representing more than 3 standard deviations below the norm.

The *"Print Screening"* button converts the displayed results into a PDF file that can be printed or saved.

The *"Details"* button displays a more detailed analysis of the screening results. Additional information on screening details is available in the User's Manual for each module.

The *"Start Therapy Module"* button starts the therapy module indicated by the screening results.

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RehaCom® Quick Start Guide

Therapy Results

Viewing Therapy Results

Therapists can view training results either (1) during the training, via the therapist menu; (2) at the close of the training session - the results window opens automatically; OR (3) at a later date via the *"Results"* button.

Select a patient training module to view from the list on the left. The results for the selected module are shown in the middle. The analysis graphic consists of 3 tabs: (a) Results (b) Level Progression (c) Table and Chart.

(a) The *"Results"* tab provides information about the training progress, performance deficits, and capacities. The upper graphic shows the level of difficulty reached at the end of each session. The table next to it provides details about the currently selected session (indicated in red in the graph). To select a different session, click that session's bar in the graph. The *"More Details"* button displays additional graphics and details about individual tasks within a session. You can customize the information display using the buttons below each graph.

(b) The *"Level Progression"* tab displays the training progress over multiple sessions. A higher bar indicates better performance. For children under 14, *"smileys"* are used instead of bars. To print this chart, click the *"Print Level Progr"* button.

(c) The "Table and Chart" tab displays a summary of the most important therapy results for the currently selected session.

The buttons on the right have the following functions:

"Print All", *"Print 1 Session"* or *"Print All Sessions"* create a PDF file that can be stored or printed to document patient progress.

"Medical Report" creates a complete documentation letter, which can be customized using the *"Configuration"* button.

"Parameter" displays parameter adjustments used in the particular task. The parameters can be viewed, but not changed.

"Excel Export" exports all results data for the current client to an Excel file.

"Performance Report" generates a brief summary of the client's treatment data. This provides proof of treatment for insurance, continuation of care, etc.

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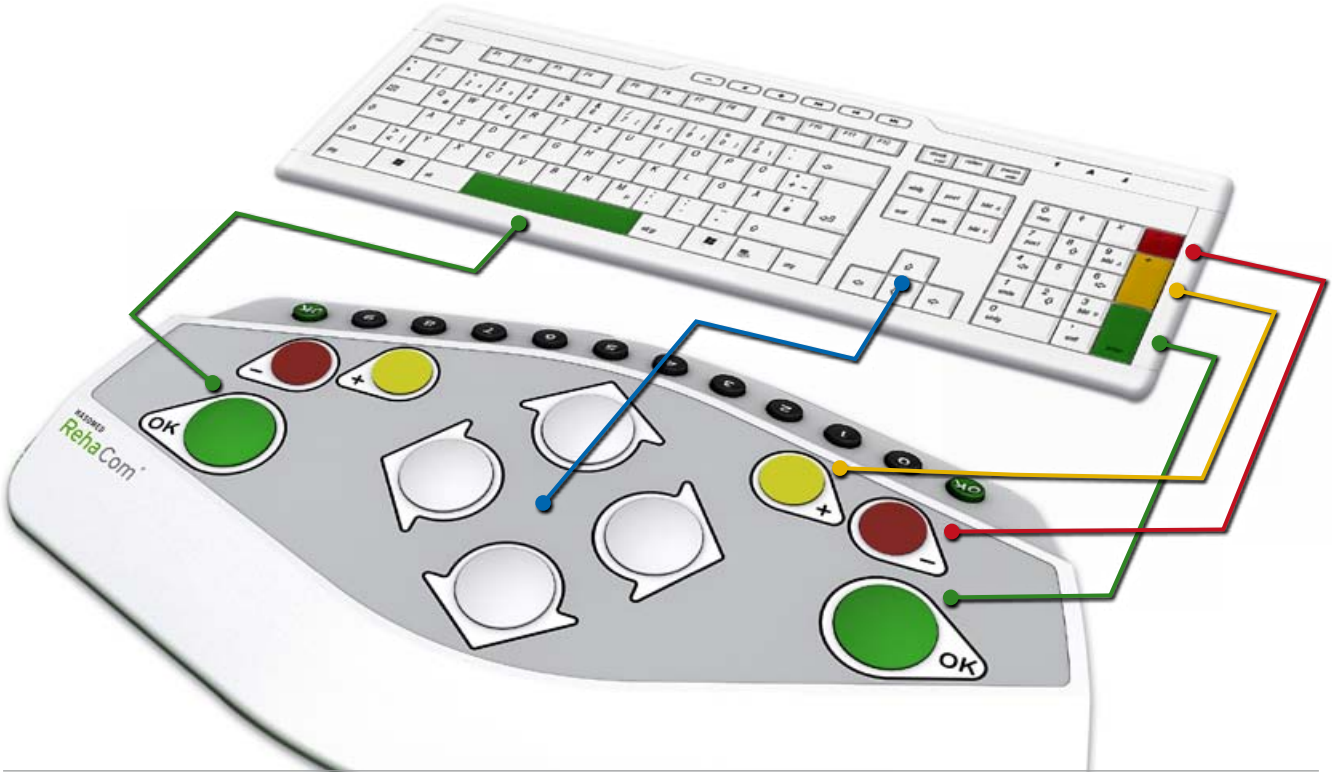
RehaCom® Quick Start Guide

Use of PC or RehaCom Panel



The RehaCom Panel was specially developed for the ease and convenience of patients. Large buttons allow the patient to select or steer, and two large *"OK"* buttons are used to confirm the patient's decisions. The RehaCom therapy software is optimized to be operated by the RehaCom Panel.

If a RehaCom Panel is not available, a normal PC Keyboard* can be used with the following mapping. The set of corresponding self-adhesive stickers to mark your PC Keyboard is available.

Keyboard Mapping:

RehaCom Panel	PC Keyboard
"OK" buttons	left = space bar ; right = return ; mouse click
"Arrow" buttons	cursor keys
red *"Minus"* buttons	minus-key in the numeric keypad*
yellow *"Plus"* buttons	plus-key in the numeric keypad*
number *"0...9"* buttons	number keys

*Some RehaCom modules require use of the plus *"+"* and minus *"-"* keys.
To avoid *"Shift +"* keystrokes, a full keyboard with numeric keypad is recommended.

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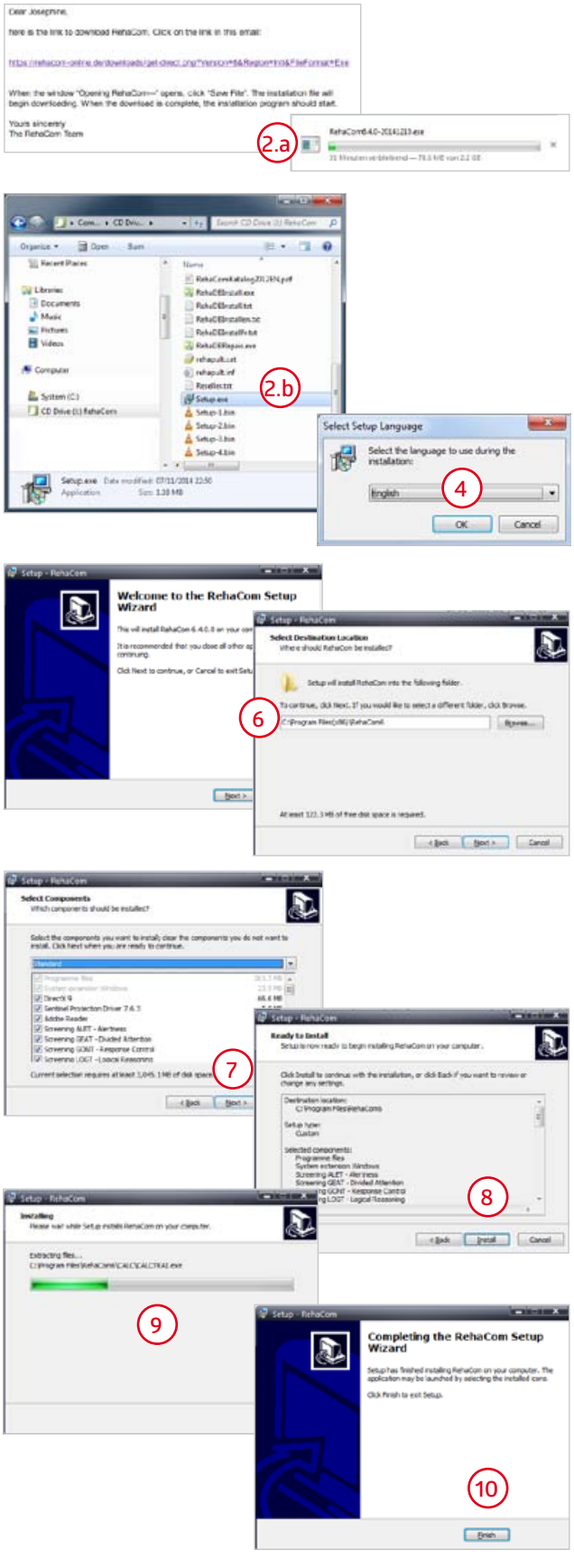
Installation



To install RehaCom you will need:
· Windows Laptop or Desktop Computer · 4 GB RAM
· Graphic card DirectX 10.1 suitable · Soundcard
· 100 GB Hard Drive · DVD drive · Printer
To install software, you must be logged into your computer with "Administrator" access.

1. RehaCom software can be downloaded from the RehaCom website or installed from a DVD. The download is 1.2 GB, and may take an hour or more, depending on your internet connection. If you have a slow connection, consider downloading during off-hours OR requesting a DVD.

2. a) For a download, you will receive an email from RehaCom with a link to the download site. Click on the link in the email. When the window *"Opening RehaCom---"* opens, click *"Save File"*. The installation file will begin downloading. When the download is complete, the installation program should start. If the install program does not start, open your computer's "Downloads" folder (This PC/Downloads), and double-click on the file *"RehaCom ---.exe"* to start the installion of the program.

b) If installing from a DVD, insert the DVD into your computer's DVD Drive. A window labeled *"DVD Drive 'RehaCom---"* should open. If not, click the Windows *"Start"* button, then *"This PC"* (or *"Computer"*) and double-click on *"DVD Drive"*. From the DVD Drive window, double-click the file *"Setup"* to start the installation program.

3. A *"User Account Control"* window will open and ask you to allow changes to the computer. Click *"Yes"*.

4. A *"Select Setup Language"* will open. Choose the language you would like to use during the installation.

5. The *"RehaCom Setup Wizard"* opens. Follow the instructions and click *"Next"* to continue.

6. Select the destination where RehaCom will be installed. You can select the default folder (a) or browse (b) for a different location. After selecting a destination, click *"Next"* (c).

7. Select the RehaCom components to install. By default, all components are selected. You can deselect specific components. Click *"Next"* to continue.

8. RehaCom is now ready to install! Check your selections, then click *"Install"*.

9. RehaCom will now install on your PC. This may take a few minutes. Do not use the computer or shut it down until the installation is complete.

10. When the installation is completed, click *"Finish"* to exit the setup. A RehaCom Icon is now installed on your desktop and in your Windows *"Start"* menu.

11. For setup instructions, see the Quick Start Guide *"Initial Setup"*.

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RehaCom® Quick Start Guide

Initial Setup

Note: Before starting RehaCom you will need to install the software on your PC. See the Quick Start Guide "Installation" for instructions.

1. During installation, a RehaCom icon was added to your computer's desktop and another to the Windows *"Start"* Menu. Double-click either icon to start RehaCom. The initial startup will take a few seconds. After that you will see the "Start" screen (left).

2. Notice that the *"Current Therapist"* is *"Administrator"*. This is the person who has unlimited access to view and make changes within the program. The default password for the administrator is *"RehaCom"*. You will be asked for the password when logging in. We highly recommend changing the administrator password now. To do this, click the *"Therapist"* button. The *"List of Therapists"* window will open. Click the "Edit" button to open the *"Therapist Edit"* window. At the bottom of the window, enter a new password, re-enter the password, then click *"OK"*. This will return you to the *"List of Therapists"* window.

3. Therapists can only view clients who are assigned to them, so before adding clients, you should add a new therapist. From the *"List of Therapists"* window, click *"New"* to open the *"New Therapist"* window. Enter data for the new therapist. The green highlighted areas are required fields. Each therapist will need a password when logging into RehaCom. We highly recommend that each therapist use a unique password. The other fields are optional. When you are finished entering data, click *"OK"*. The new therapist will now appear in the *"List of Therapists"*. Click "*Cancel"* to return to the start screen.

4. To start using RehaCom, you will need to add a new client. This is similar to adding a new therapist, but additional information is required. For detailed instructions, see the Quick Start Guide *"Adding a New Client"*.

5. After adding a client, you can use the *"Therapy"* and *"Screening"* tabs to assign modules to the client. For more information on modules, see *"Screening and Training Modules"* in the information packet. When a module is selected, a window may appear asking you about licensing. For more information see the Quick Start Guide *"Licensing"*.

6. To begin a therapy session, from the *"Start"* screen, select the *"Current Therapist"*, *"Current Client"*, and the module(s) you would like to assign. Click *"Start"* to begin the session.

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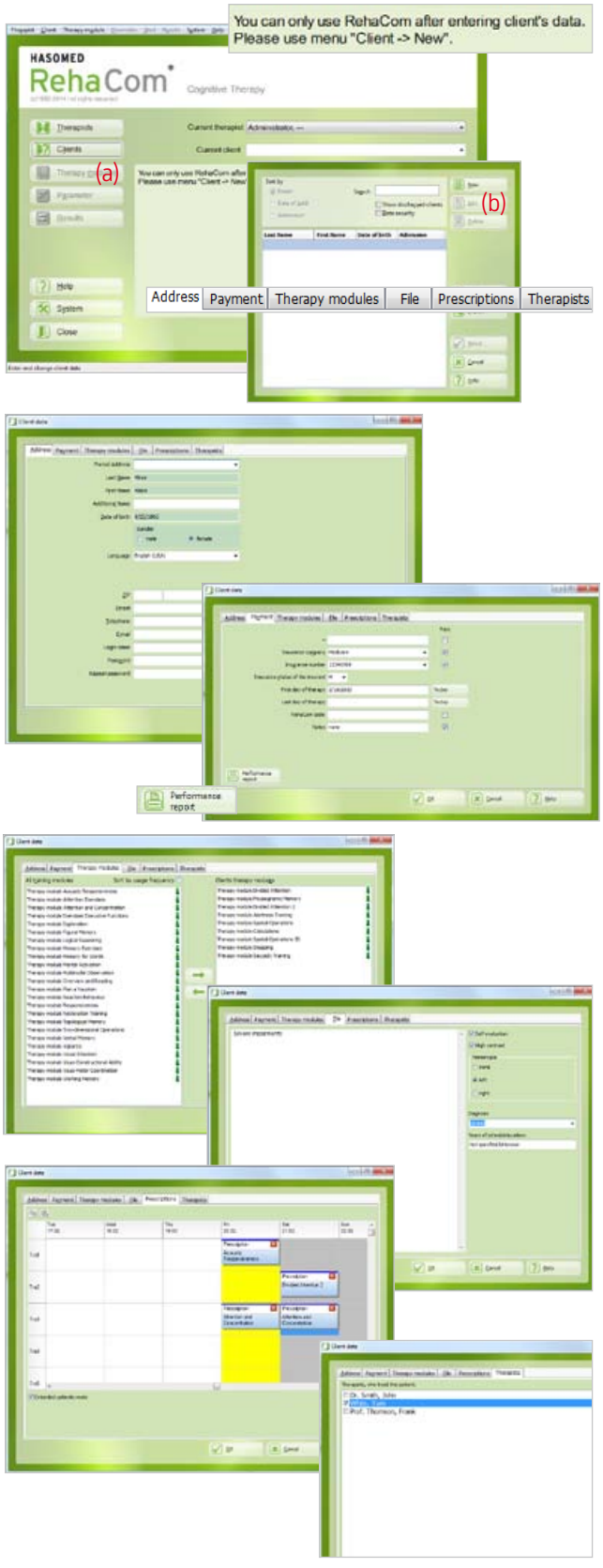
Adding a New Client



Note: Before Using RehaCom, you will need to add at least one therapist and one client. We recommend adding a therapist before proceeding with these instructions. See instructions for adding a new therapist in the Quick Start Guide "Initial Setup".

1. To Add a New Client, starting on the *"start"* page, click the *"Client"* button (a) then click *"New"* (b).

2. Enter the client details on the *"Address"* tab. The green highlighted areas are required fields, and are needed to start the training. Date of Birth is needed to determine age-related norms, such as reaction times. The other fields are optional, but may be needed to use some RehaCom modules.

3. Click on the *"Payments"* tab and enter the Client's insurance information (optional). This information appears on the RehaCom *"Performance Report"*, which can be used as documentation for insurance. Check or uncheck the boxes below *"Print"* to select the data that will appear in the Performance Report.

4. Click on the *"Therapy Modules"* tab. On the left you will see a list of all available therapy modules. To select a therapy module for the client, click on the module and then click the right "→" arrow. The selected therapy module will appear in the "Client Therapy Modules" list. You can remove modules from the client's list by using the left "←" arrow. Continue until all desired modules have been added to the Client Therapy list. When a module is selected, a window may appear asking you about licensing. For more information see the Quick Start Guide *"Licensing"*.

5. Click on the *"File"* tab to enter additional information about the patient. If the check box *"Self Evaluation"* is selected, RehaCom will ask the patient about his/her condition before and after each training. This helps document short- and long-term changes in the patient's condition. The *"High Contrast"* option is recommended for patients with any kind of visual disturbance. Under *"Hemianopia"*, select the client's affected side (if any). The RehaCom screen will then display important items on the client's functional side.

6. Use the *"Prescriptions"* tab (optional) to define therapy prescriptions for clients that train at home. For more information on prescriptions, see *"How to Create and Edit Prescriptions"* in the User Manual.

7. Click on the "Therapists" tab and select the therapist(s) that will be working with this client. Only therapists selected here can perform training and access results for this client.

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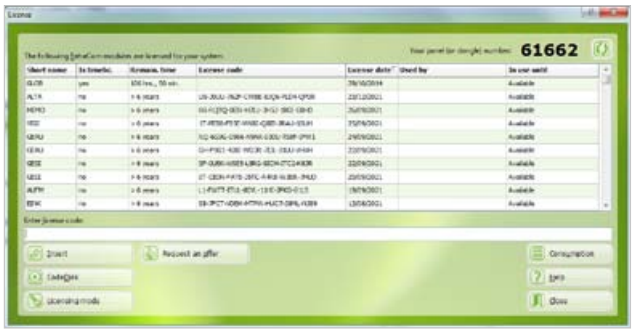
Licensing



RehaCom modules are enabled via licensing codes, which are valid for a specified period of time. The licenses must be up-to-date for the software to operate.

Requesting License Codes

1. When your license is expired (or about to expire), RehaCom displays a *"Licensing Error"* message or similar warning. When this occurs, click on the button to open the *"License"* window. Alternatively, from the "*Start"* Screen, you can click on *"System"* and then *"License"* to open the 'License" window.

2. The *"License"* window displays a list of modules, their licenses, and expiration dates. To request new codes, click the *"Request an Offer"* button. From the *"Ask for a Quote--"* window, you can:

a) call RehaCom at the phone number shown OR
b) fill in the form, click *"Print Fax"*, and fax the printout to RehaCom (fax# is on the printout) OR
c) fill in the form, click *"Send Email"* and follow the instructions for sending an email request.
Note: The options *"Online Subscription"* and *"Buy Online"* are not currently available.

Installing New License Codes

1. New license codes are delivered via email or on a CD.
a) If delivered by email, click on the email attachment and follow the instructions to download the licensing codes file. When the download is complete, open your computer's *"Downloads"* folder (This PC/Downloads). Locate the file and move it to an appropriate location in your computer's *"Documents"* folder.
b) If delivered on a CD, insert the CD into your computer's CD Drive

2. If you are using a RehaCom Panel or dongle, make sure it is plugged in to your computer.

3. Start the RehaCom software. From the *"Start"* screen, click *"System"* and then *"License"*. When the *"License"* window opens, click *"CodeDisk"*. A browsing window will open. Navigate to the folder where you stored the license codes file (under *"Documents"* or on the CD Drive), select the codes file and click *"Open"*.

4. The license codes should load automatically. Check the *"Valid Until"* column in the *"License"* window, to verify that the licensing dates have been updated.

5. If you have any problem installing new licenses, call or email RehaCom.

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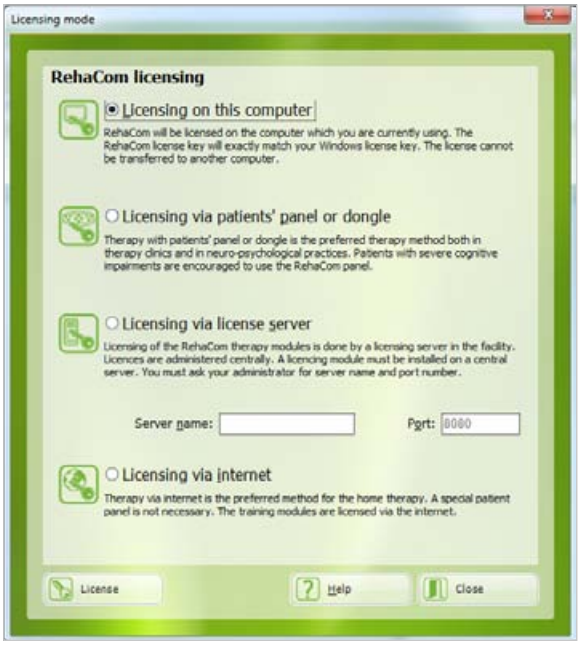
Licensing



Licensing Modes

RehaCom modules can be licensed in 4 different *"modes"*. In some circumstances, you may need to change the licensing mode. To view and/or change the licensing mode, begin at the *"Start"* screen. Click *"System"* and then *"License Mode"* to open the *"Licensing Mode"* window.

Select from one of the 4 licensing modes as follows:

a) *"Licensing on this Computer"* is used to license RehaCom on a single laptop or desktop computer without a RehaCom Keyboard or Dongle. This license is valid ONLY for computer where it is installed.

b) *"Licensing via Patient's Panel or Dongle"* is used to license a RehaCom Keyboard or Dongle, which can then be used with multiple computers*. The module license is installed on the computer and is only valid if the panel/dongle is connected to the computer.

c) *"Licensing via License Server"* is used to license RehaCom via a network server. In this mode, the license is installed on the server, which allows the software to be used on any laptop or desktop computer* connected to the network.

d) *"Licensing via internet"* for Home training.

If you have any problems regarding licensing modes, call or email RehaCom.

**A copy of RehaCom software (un-licensed) must be installed onto each computer.*

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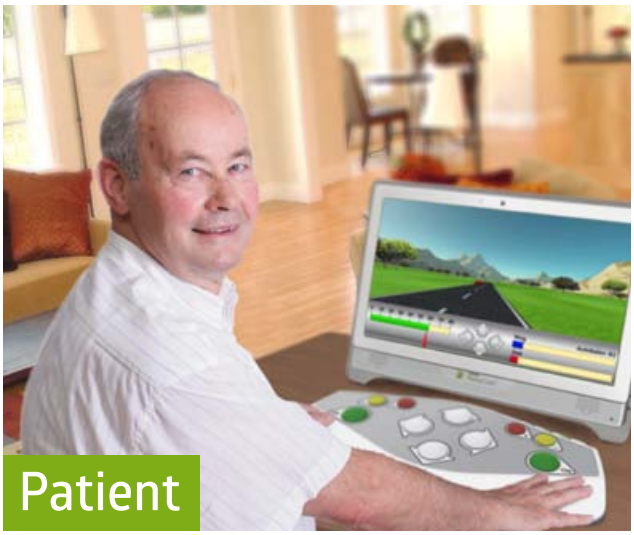
RehaCom® Therapy Modules

User Experiences



Patient

Report by Mr. B., 1+Year RehaCom User

Mr. B, 58, suffered a stroke in March 2009, while working in the office of his sign company. He was rushed to the local hospital, and admitted into the intensive stroke unit. After 4 weeks he began inpatient treatment at a neurorehab centre.

Initial screening indicated deficits in Attention/Concentration and Visual Field. A therapy plan was developed, including training with specific RehaCom therapy modules, thirty minutes per day, four times a week. Mr. B commented,"I feel like cells in the affected area of my brain are starting to reconnect". After 5 months, Mr. B returned home, and the RehaCom tool went with him. "It's like physical exercise –you have to do it regularly or you become unfit. It's the same with the brain - even more so once you have had a stroke. 'Use it or lose it', as they say."

Mr. B now trains daily at home with RehaCom. His therapist reviews his progress remotely, and updates his therapy regimen every 2 weeks. His concentration and attention have improved dramatically, and he can now watch TV and even read books. When asked if he would recommend RehaCom to others, he smiles: "Absolutely! Without question. I have tried several brain-training products, but none with this advanced capability, which matched to my particular weaknesses".

Reflecting back, Mr. B says, "At first I was depressed when I started working with RehaCom - I couldn't complete even the lowest level exercises. But then I started flying through the difficulty levels, and I became more and more enthusiastic. I think the depression at first was just a natural consequence of RehaCom forcing me to recognize my limits."

Therapist

Report by C. Wartenberg., 12-Year RehaCom User
Magdeburg Neurological Rehabilitiation Center

Our center offers a wide range of inpatient and outpatient therapies for neurological rehabilitation. Upon intake, cognitive deficits are assessed and a cognitive rehab therapy plan is developed. Most of the patients show deficits in attention, concentration, memory, visual neglect, executive functions, spatial and visual perception, and other visual field deficits. All of these can be trained using the RehaCom software.

The clinic has 7 therapy computers, plus a projector for visual field training. After an introduction, patients work independently with RehaCom. Training can be customized to the specific deficits and abilities of any patient, and the software tracks performance for each task, adjusting the level of difficulty accordingly. The therapist monitors the training, and can work with multiple patients at once, concentrating on those who need the most support. Training results are saved automatically and reviewed afterwards.

For patients with more severe impairments, we provide individual training. With an experienced therapist, the RehaCom software can be used to train numerous, very basic cognitive functions.

Our RehaCom database is stored on a network server, so patients can work at any therapy station in the clinic. Patient data and training results are instantly available, and each training session begins where the last one left off. The new training results are then stored in the centralized database.

I have worked with RehaCom now for 12 years, and during that time I have watched the system development. The company has always been open to suggestions, and looking for ways to improve the software. Patients with cognitive disorders are a difficult clientele, but of all systems I know, RehaCom is the most customizable to our patients needs.

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Notes