HeadApp

NEUROvitalis

Digital Cognitive
Rehabilitation Therapy

Prevention and Therapy
in Geriatrics

Training Progress and Outcome of Therapy

How HeadApp / NEUROvitalis documents the progress of the therapy
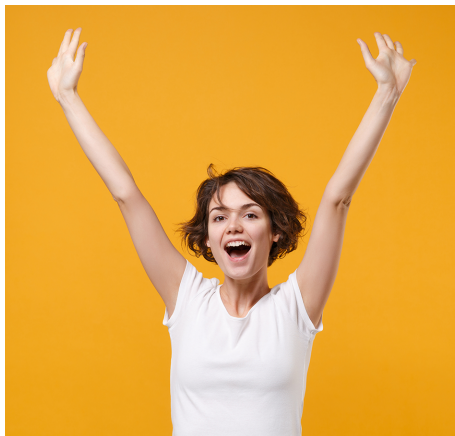and proves the outcome through the training:

Progress

Then program **documents every step in the training** completely automatically. For each client it is saved, when and how often they exercised and what the results of the individual tasks were.

This data is also collected when the patient works in home training and is available everywhere.

In this way it is achieved that the patient continues on a new training day where he finished his task on the last day. The patient does not have to solve a task twice and is neither overburdened nor under-challenged.
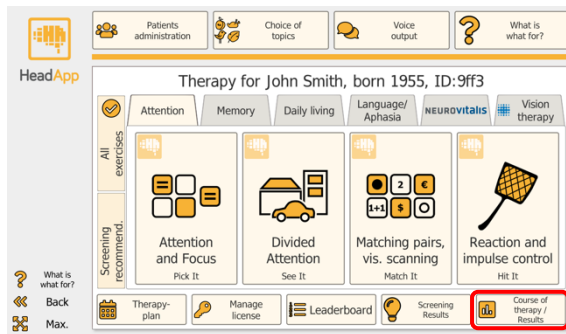

Outcome

The **outcome** of the training is measured with the **integrated screening**. A status is determined before the training, after a training period the status is checked again.
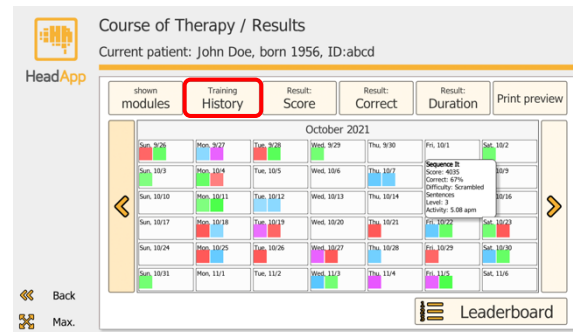
Screening contains different tasks and challenges than training, so screening results do not show any learning effects, but a real improvement in performance.

The second option to measure the outcome is to use the integrated **IADL questionnaire**.
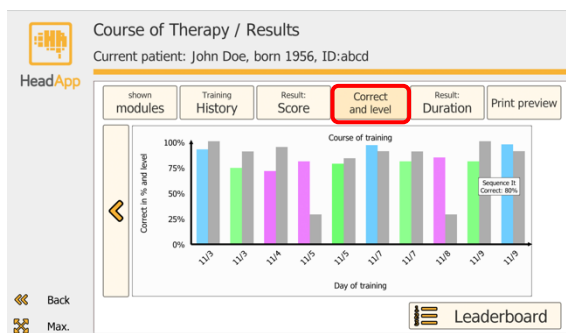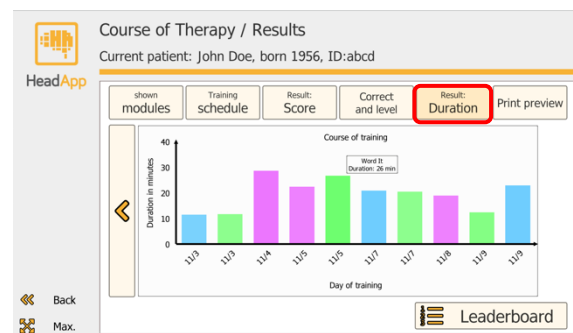
Training Progress

All training data is automatically collected and saved for each patient. The data from training at the facility and at home are merged.
Results are displayed by clicking the "**Results**" button.

After clicking "Results" a **history** is shown in a calendar view. Each color box is a training session. Every color stand for a defined training task.
Hovering a box with the mouse cursor shows an info about the training.
Click the box to show more details.

Clicking then button "**Correct and level**" shows a bar graph.
The color bars hold the information about the training module used and the performance of the client (correct solutions in %).
The gray bars show the difficulty of the task used.

Clicking then button "**Duration**" shows a second bar graph.
These bars holding the information of training duration (minutes) for every session.

All data can be printed and exported as CSV file (for use in a statistical evaluation).

Outcome of Therapy

Option 1: Screening with pre- and post- tests

When the therapist uses the screening as pre- test, he gets valuable information about the deficits of the patient. The screening suggests, which therapy modules to use.

On a second point in time (after some weeks of therapy) the screening can be used again (in a parallel version). Now the outcome of therapy is shown.

Example printout:

NEUROvitalis Screening results for Steve Thomson, born 1955

Screening module	Result	Date	Assessment	Percentile rank
Word Pairs 1 Verbal Short-term Memory	memory capacity short	9/22/2021	impaired	3%
		11/10/2021	lower average	8%
	eye-hand speed	9/22/2021	lower average	13%
		11/10/2021	normal	25%
Pathfinder Test Visual-spatial Attn.	dilligence	9/22/2021	normal	17%
		11/10/2021	normal	23%
	laterality	9/22/2021	lower average	13%
		11/10/2021	normal	16%
Image Builder Spatial Cognition	solution speed	9/22/2021	strongly impaired	1%
		11/10/2021	impaired	4%
Number Sort Working Memory	memorized numbers	9/22/2021	lower average	8%
		11/10/2021	lower average	10%
Wordfinding Speech	word finding	9/22/2021	lower average	11%
		11/10/2021	normal	18%
Tower of London Planning	problem solving	9/22/2021	lower average	8%
		11/10/2021	lower average	12%
Word Pairs 2 Verb. Medium-term Memory	memory capacity medium	9/22/2021	impaired	6%
		11/10/2021	lower average	10%

Annotations on figure:
- Test result one → (points to Word Pairs 1, 9/22/2021 bar)
- Test result two → (points to Word Pairs 1, 11/10/2021 bar)
- Test date one → 9/22/2021 (eye-hand speed)
- Test date two → 11/10/2021 (eye-hand speed)

The picture shows, that the client reaches a higher percentile rank (good outcome) after six weeks of therapy.

Option 2: IADL questionnaire

The **Lawton Instrumental Activities of Daily Living (IADL) Scale** is part of HeadApp's client administration.

This IADL scale is an appropriate instrument to assess independent living skills (Lawton & Brody, 1969).
The instrument is most useful for identifying how a person is functioning at the present time, and to identify **improvement or deterioration over time**. There are eight domains of function measured with the Lawton IADL scale.
Clients are scored according to their highest level of functioning in every category.
A summary score ranges from 0 (low function, dependent) to 8 (high function, independent).