

# Operating Instructions "Brain-Fit easy+"



1. General information and functions:.....	3
Introduction to the lateral order threshold training: .....	3
Average training phase:.....	4
Shortened training of the lateral order threshold: .....	4
Where to use the Brain Fit:.....	4
2. Safety and maintenance instructions:.....	4
3. Functions and Indicators of the Brain Fit.....	5
4. Batteries .....	6
5. How to use the Brain Fit:.....	6
6. Operation mode.....	7
7. Basic Settings: .....	7
8. The training:.....	10



**Please read the instructions carefully and completely before using the Brain Fit.**

The Brain Fit was devised and developed in Germany. At this stage the display only shows in the German language and the English translations are detailed in these instructions.

English Edition

Feb. 2004

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# 1. General information and functions:

Although there is a great debate about the possible dangers of loud music, computers, computer games, video-games and TV overwhelm, today these things are part of the child's world.

Interestingly some of the games were not only shown to have negative but also positive influences. Children playing a lot of electronic games often have a higher visual lateral order threshold than their average age peers. Unfortunately these games emphasise only the visual side. This early visual development can result in a delayed auditory development.

AUDIVA paves a new way emphasising the auditory stimulation.

Besides this, the demand for low reaction times in complex situations - as in most computer- and videogames can cause stress. They also reduce the ability to concentrate for a longer time on one thing only. This can result in problems with concentration, and even be related to motoric hyperactivity. Learners with such deficits will have more difficulties being creative.

The Brain Fit does not ask for immediate reactions but for well-planned responses. The learner should only concentrate on the Brain Fit task, avoiding any other distracting stimuli.

That way improved and sustainable powers of concentration and faster processing of stimuli will be trained. Scientific studies (e.g. E.Pöppel, Grenzen des Bewusstseins) have shown that auditory processing problems often reduce the capacity and speed of processing which can result in delayed lateral order threshold.

By definition the lateral order threshold is the smallest possible separation in time between two stimuli that is necessary to decide which of the two stimuli (the one on the left or the one on the right side) was first. The goal of the training is to reduce this time. To do this, the ability to detect short auditory/visual stimuli, recall from short-term memory and the left-right differentiation will be trained. To prevent a visual dominance the auditory stimuli is presented a short time before the visual stimuli. (There are devices on the market that present auditory and visual stimuli simultaneously. This increases the possibility that the already trained visual system continues to dominate and the auditory system is not trained).

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## Introduction to the lateral order threshold training:

First you have to determine the present lateral order threshold. Where a doctor or specialist has already tested this, you can immediately start with the normal or shortened training described below.

If the lateral order threshold score is unknown, we suggest you use a special lateral order threshold testing device. However, you can also use the Brain Fit to do this as follows :

- Use the Mode button (see section 6: Operation Modes) to choose the auditory mode.
- Use the Set button (see section 7 : Basic Settings) to choose :
- 'approxim.ein' (English: approximation on),
- 'startwert 500ms' (English: start score 500ms),
- 'Anzeige OS in ms' (English: display lateral order threshold in ms)
- 'Bestätigung optisch' (English: visual confirmation).

The training will start with 500ms and uses this time for 10 attempts. When the person being tested gives at least 8 correct answers, the next value will be 250ms, after 8 correct answers it will decrease to 125ms etc...

The display always shows the correct value in ms. When less than 8 answers are correct, a middle value will be given, e.g. 375ms after less than 8 correct answers at 250ms. In this way the Brain Fit will get close to the lateral order threshold of the trainee.

For training you should turn 'approximat. aus' (English: approximation off) and chose a start time near to the last answered correctly. To motivate the participant, the start time should be set above the lateral order threshold score to ensure correct answers to begin with.

If the start value is too high you can end the training with the 'Set' button, adjust the value and start a new with 'Mode'.

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### **Average training phase:**

First the auditory mode ('auditiv') and then the visual mode ('visuell') are trained. When both of them have comparable scores, the auditory/visual lateral order threshold will be trained in changing modes ('im Wechsel'). This trains the attention to auditory *and* visual stimuli. Keep training until the times reduce again.

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### **Shortened training of the lateral order threshold:**

To limit the time of training (e.g. because of a short attention span) the auditory sense should be trained through the visual one. The Brain Fit will support this through special training, which provides the auditory stimuli about 40ms earlier than the visual ones. Here you use the mode 'kombiniert' (English: combined). This always gives the auditory stimuli a bit earlier. For Example, you could train 5 days a week with this mode and check at day 6 with the mode 'auditiv' if the same value can be achieved with auditory stimuli only.

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### **Where to use the Brain Fit:**

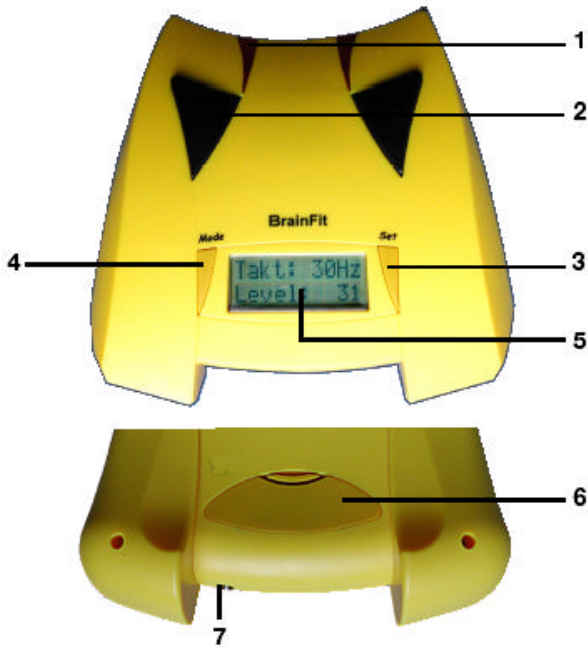
The AUDIVA Brain Fit is made for personal use in brain training. The following safety instructions must be read. Any use other than as directed will result in loss of guarantee and exclusion of liability.

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## **2. Safety and maintenance instructions:**

- Make sure you adhere to these safety instructions.
- Use and store the device out of the reach of little children. It contains small parts which could be swallowed by them.
- Patients suffering epilepsy should only use the Brain Fit with the approval of their GP.
- During training concentration is needed. Do not use when there are other distractions.
- The Brain Fit should not be used in a wet environment (e.g. rain) or in temperatures below 0 degrees C or above 45 degrees C.
- Use the Brain Fit only in its original state (do not open it to look inside).
- To clean, wipe with a clean dry or damp cloth. Stubborn dirt can be carefully removed with cleaning fluids but do not use abrasive cleaning products.
- Prevent any fluids from seeping into the device. Should any fluid get into the Brain Fit, take out the batteries and consult our Customer Service.
- Keep the packaging materials (plastic bags, foils and strings) and batteries out of the reach of young children.

### 3. Functions and Indicators of the Brain Fit



1. Indicator lamp left/right
2. Answering button (black) left/right
3. Set-button (settings)
4. Mode button
5. Display
6. Battery case
7. Headphone socket.

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## 4. Batteries

*Caution! Observe battery regulations!*

*Defective or used batteries must not be thrown out with normal household waste.*

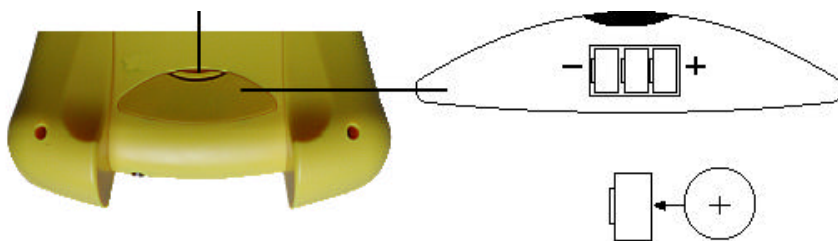
*Dispose of these batteries at industrial collection points or the local hazardous waste collection point for your country.*

### 4.1. Putting in the batteries:

- The Brain Fit needs 3 button cell batteries type LR 44.
- Open the battery case.
- Install the batteries according to the instructions on the case and check for + and - signs.
- Close the battery case.

### 4.2. Changing the batteries:

- When the display fades or has low-contrast, change the batteries as described above.
- Use only button cell type batteries LR 44.



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## 5. How to use the Brain Fit:

Put the jack plug of the headphones supplied into the headphone socket in the front of the case. Ensure that the headphone pads are placed over the correct ear (R over right).

### 5.1. Switching on/off:

#### Switching on:

- Press either black Answering button, the Brain Fit will switch on and a new training session will begin.
- Or press the Mode button, select the required playing mode (see section 6 "Operation Mode" below), confirm by pressing the Set button and a new training session will begin.
- Or press the Set button. You are strongly recommended to read section 7 "Basic Settings" below before using this method of switching on.

#### Switching off

- The device will automatically switch off 60 seconds after a button is last pressed.

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## 6. Operation mode

The Brain Fit allows you to choose one of the four operation modes:

**Auditiv:**        **the stimuli will only be auditory.**

**Visuell:**        **the stimuli will only be visual.**

**Im Wechsel:**   **the stimuli will be auditory or visual in randomly changing order.**

**Kombiniert:**   **stimuli will be given visual and auditory (auditory one 40ms before the visual).**

- Select using the MODE button.
- Confirm with the SET button.

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## 7. Basic Settings:

Basic Settings allows you to choose different evaluation and display parameters.

To access the menu, press the SET button. Repeated pressings of the SET button step you through the menu.

Use the black ANSWER buttons to select the display parameters required at each menu step.

The detailed procedure for selecting the settings is given below.

In summary the menu is :

**Approxim.**        **Sets the calculation to adjust the time between stimuli during the play.**  
**Choose Ein (On) or Aus (Off).**

**Startwert**        **Sets the starting value for the time between stimuli.**

**Lautstaerke**     **Sets the volume for the auditory stimuli.**

**Anzeige**         **Sets the display in ms or Hz. Or to have no display.**

**Bestatigen**     **Sets how the display will confirm a correct answer.**

**Animation**      **Sets a display message of encouragement when a play level is achieved.**

**Fertig**            **End of menu. Selection of evaluation and display parameters complete.**

Press SET button once:

### Menu: Approxim.

Use the black Answer buttons to select one of the two choices:

- Ein (On):                                There will be 10 pairs of stimuli per level.  
If 8 out of the 10 were correct, the time between the stimuli will be reduced by half. If less than 8 answers were correct, the time between the stimuli will be increased to midway between the actual and last time. This approximates to the player's achievable time between stimuli.
- Aus (Off):                                New calculation of the time between stimuli after evaluation of each answer.  
Correct answer: time between stimuli decreases by at least 5% (min. 1ms).  
Wrong answer: time between stimuli increases by 20% (min. 1ms).

Press SET button once:

### Menu: Startwert (start value)

The start value determines the time between the 2 impulses of a stimuli pair at the beginning of the training. This can be adjusted each day before training starts. This is a more detailed setting of Approxim. so the choice made above will dictate the option offered for selection now.

- If Approxim. Ein (On) chosen above: You can select a start value of 125, 250 or 500ms  
Adjust using the black Answer buttons.

- If Approxim. Aus (Off) chosen above: You can select a start value from 50-900ms in 50ms steps. Adjust using the black Answer buttons.

Note: The maximum value that can be displayed during training is 999ms.

Press SET button once:

### Menu: Lautstärke 1-7 (volume)

Allows adjustment of the volume to the headphones from 1-7. Each change with a black Answer button will be followed by a test stimulus in the chosen volume.

Press SET button once:

### Menu: Anzeige (display)

The display shows the way in which the actual stimuli difference is measured. Use the black ANSWER buttons to select one of the following options:

- Anzeige OS in ms: Shows the time between stimuli in ms (standard).
- Anzeige Takt in Hz: Can use for Auditory Mode to show time between stimuli in Hertz.
- Anzeige aus: No display of time between stimuli.

Hint: We suggest you to use the display 'Anzeige OS in ms', as this is the most detailed one for the lateral order threshold score - as usually measured - in ms.

Press SET button once:

### Menu: Bestätigen (confirmation)

You can choose the way the Brain Fit confirms a correct answer.

- Bestätigen optisch: A correct answer will be followed by blinking of both lights if the black Answer button is kept depressed.
- Bestätigen Aus : No confirmation displayed, but Brain Fit will still record your answers.
- Bestätigen OK !: For a correct answer the display shows OK !

Press SET button once:

### Menu: Animation

When you chose the settings "Approxim. EIN" and "Anzeige OS in ms" or "Anzeige Takt in Hz", some messages of encouragement will be displayed when each level is achieved:

- Level 1: under 500ms 'Weiter so' (keep going)
- Level 2: under 125ms 'Gut' (good)
- Level 3: under 62ms 'Sehr gut' (very good)
- Level 4: under 31ms 'Super'
- Level 5: under 15ms 'Genial' (genius)
- Level 6: under 7ms 'Superman'
- Level 7: under 3ms 'Hyperman'
- Level 8: under 2ms 'Zauberer' (magician)

After each level a double tone will sound and the lights will flash. Then the display will show 'Aufpassen' (attention) followed by the next stimulus pair.

Press SET button once:

### Menu: Fertig (finished)

When the display shows Fertig, you can save the previous adjustments by pressing one of the black Answer buttons and then the training will start. Instead of the confirmation by pressing an Answer button, the device

can automatically save your adjustments when you do not press any buttons for about 1s after the display shows Fertig.

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## 8. The training:

The selection of the Mode (Section 6) will determine if the stimulus is visual, auditory or both. As an example with Mode 'visual':

- After the start both lights of the stimuli pair will show. The sequence is random.
- The task is now to press the black Answering button on the side of the first light to flash (e.g. left light- left button).

**To answer you can take your time because the device does not measure reaction time but that the answer is correct.**

- Press the correct, black Answer button and keep it pressed for a few seconds. Depending on the setting selected in Basic Settings (section 7 : Bestatigen), the Brain Fit will evaluate and confirm a correct answer by flashing both lights, or the display will show OK !, or there will be no indication at all. Simultaneously a calculation is made (see section 7 : Approxim.) and the new stimulus pair will be shown 50ms after releasing the black Answer button.
- When a level is achieved, if selected, a message of encouragement (see section 7 : Animation) will be displayed and the next level will start automatically. This will continue until the trainee reaches their best result, measured and displayed according to the selections made in the Basic Settings (see section 7).
- After each pressing of the black Answer button the next stimuli pair will follow in 50ms..
- If there is an interruption during the training, it is possible to repeat the last stimuli pair. This prevents recording wrong answers. To repeat the last stimuli pair, press both of the black Answer buttons at the same time and proceed to answer as before.
- After achieving level 8, the training is successfully finished and a New Start will follow.
- At other times to go to New Start, press the Mode button followed by the Set button, or the Set button followed by the Mode button, or wait for 60s and allow the Brain Fit to switch off and then restart by pressing a black Answer button. Training can then begin.

### Training monitor:

If the Set and Mode buttons are pressed at the same time when the Brain Fit is switched on, the display will show the number of training runs and the total time spent on these training runs in minutes. Pressing Set and Mode buttons at the same time again, the counter will reset to zero and the display will confirm with "Rücksetzen". Then the Brain Fit will switch off. To start a new training run without resetting the counter to zero, press any button or wait until the Brain Fit automatically switches off and then restart.





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