



AMERICAN
SPEECH-LANGUAGE-
HEARING
ASSOCIATION



2014 ASHA CONVENTION
SCIENCE. LEARNING. PRACTICE.
GENERATIONS OF DISCOVERY
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Online Management for Auditory Processing Disorders

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CEV

Relevant relationship

Ingrid Gielow



CTS Informática, Brazil

Financial - scientific coordinator of the Ear Mix software, developed in 2008, still receives royalty payments

Communicar, Brazil

Nonfinancial — project collaborator of www.afinandocerebro.com.br since 2012

Diana Faria



Communicar, Brazil

Financial — project coordinator

Nonfinancial - project coordinator of www.afinandocerebro.com.br, receiving no financial support

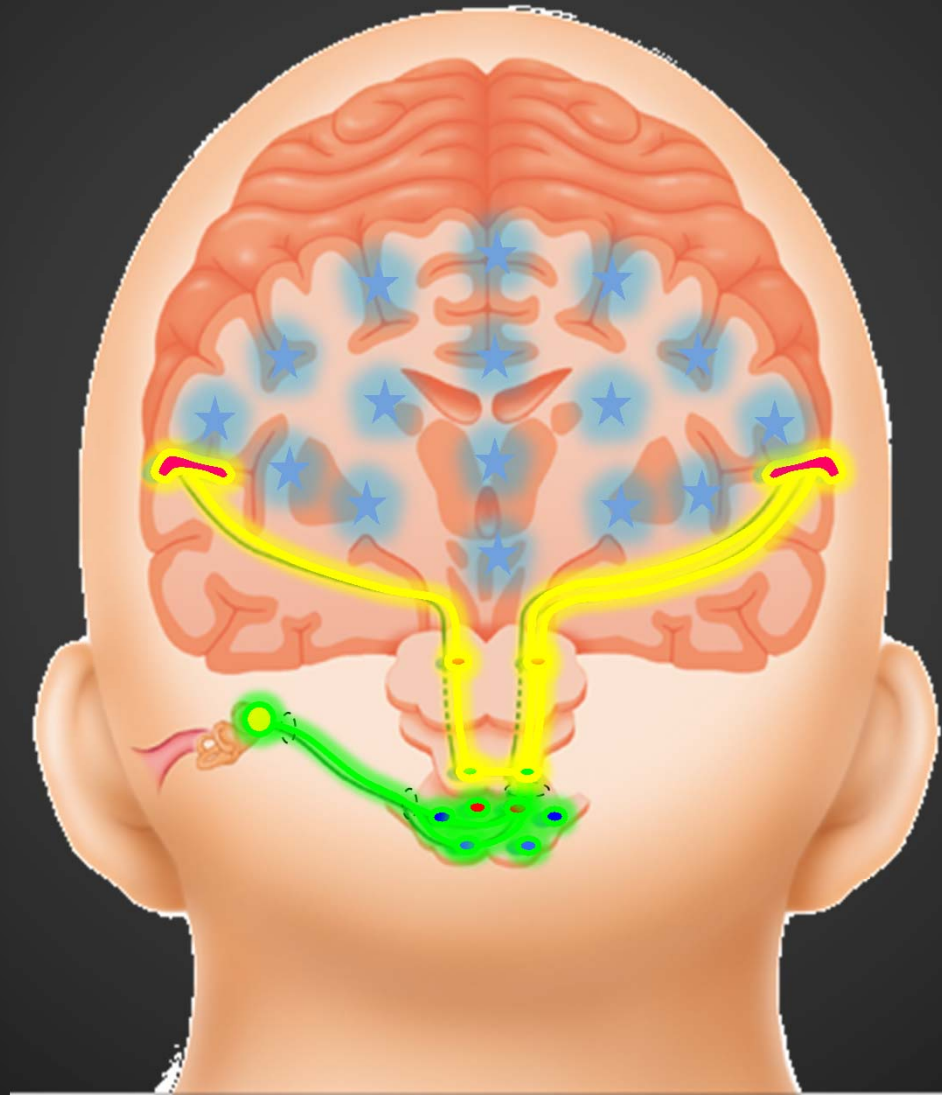
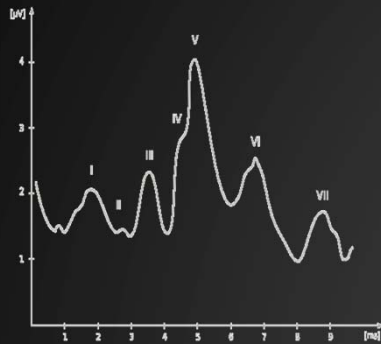
Disclosure statement

“Afinando o Cérebro” and “Tuning the brain” are private initiatives and we did not receive any financial support

But

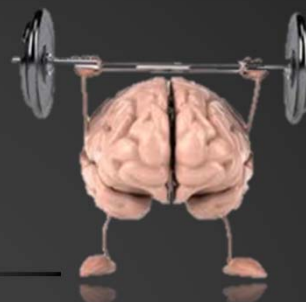
to develop and offer the strategies online, there is an operational cost with web designers, programmers and web hosting that is repassed to the final consumer, with no profits aims

Auditory Processing



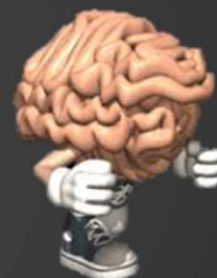
Auditory Processing Intervention

Auditory training



Abilities

Methalinguistic strategies



Language
Application

Methacognitive strategies



The
performance
analysis

Auditory Training



Concepts and Principles

intensive experiences

improve the auditory abilities
strengthen the processes and **skills**

develop **compensatory**
mechanisms in the brain.

Auditory Training

intensive
challenging
motivating



Chermak GD, Musiek FE. Auditory training principles and approaches for remediation and managing auditory processing disorders. *Seminars in Hearing*. 2002;23:297-308

Auditory Training

Optimizes the neural circuits

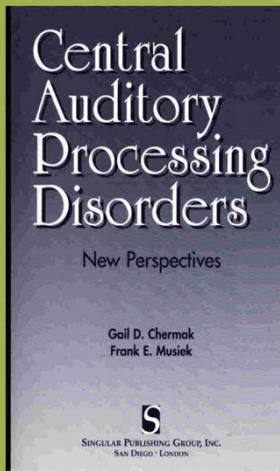
**INCREASE THE
NUMBER OF SYNAPTIC
CONNECTIONS**

**CHANGE IN NEURAL
TIMING**

Management of CAPD steps: auditory and language training reinforced by home stimulation

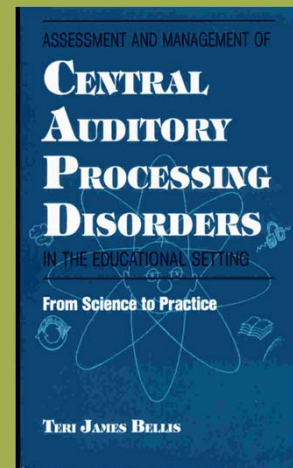


Theoretical support



Chermak, G.
& Musiek, F.
(2007)

Bellis, T.J.
(2003)



Ferre, J. (1997)

How to define a personalized, attractive and motivating rehabilitation program

Personalized



- Auditory skills
- Patient's interests, hobbies, context

Motivating

- Challenges
- Rewards
- Activates limbic system

How to create monotonic and dichotic auditory strategies



Audacity®

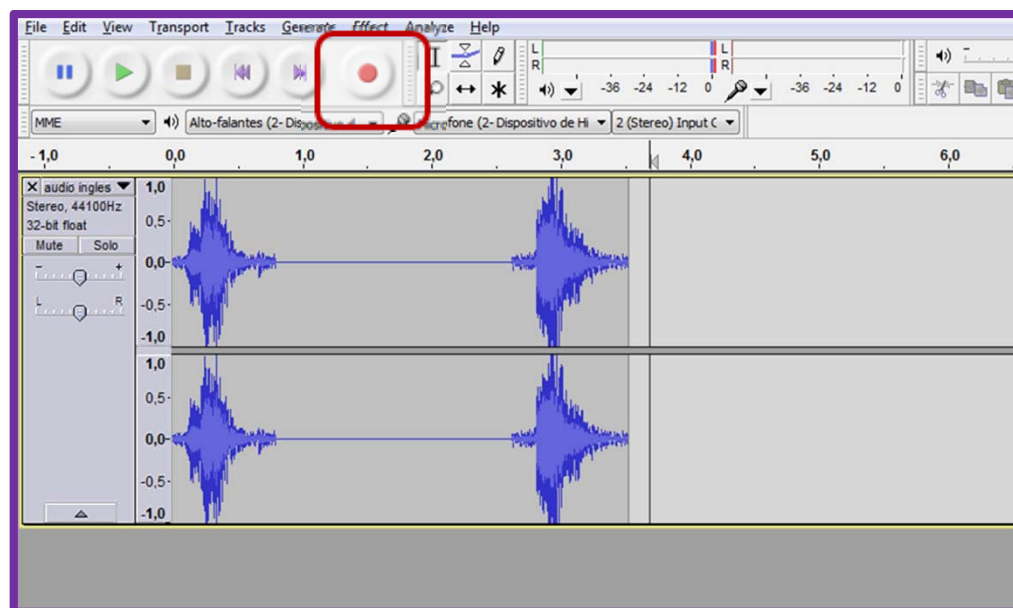
free, open source, cross-platform
software for recording and editing sounds
(<http://audacity.sourceforge.net/>)

Ear Mix

provided by CTS Informática
(www.ctsinfomatica.com.br)

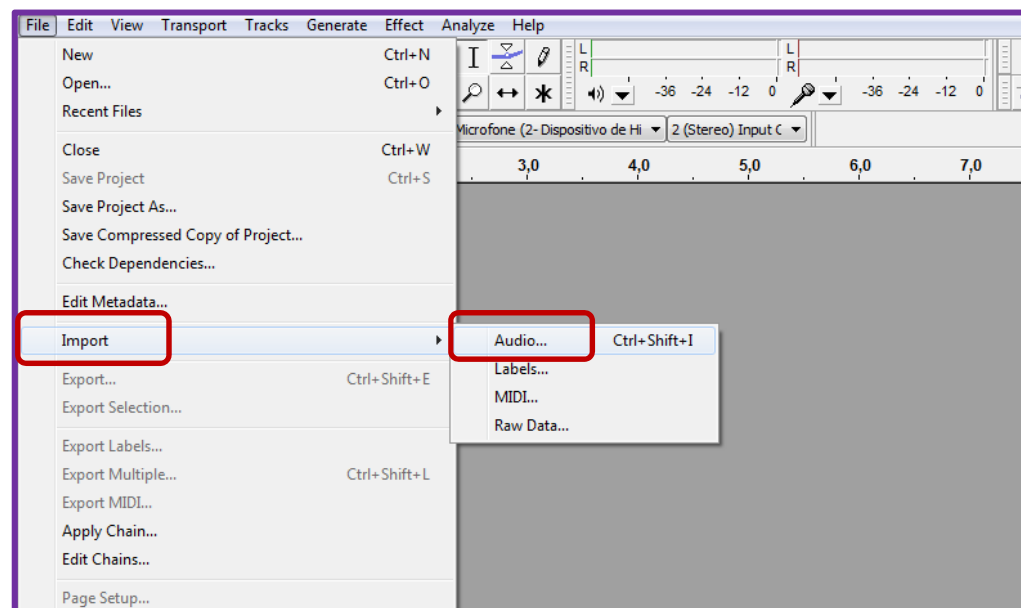
A

Record audio samples

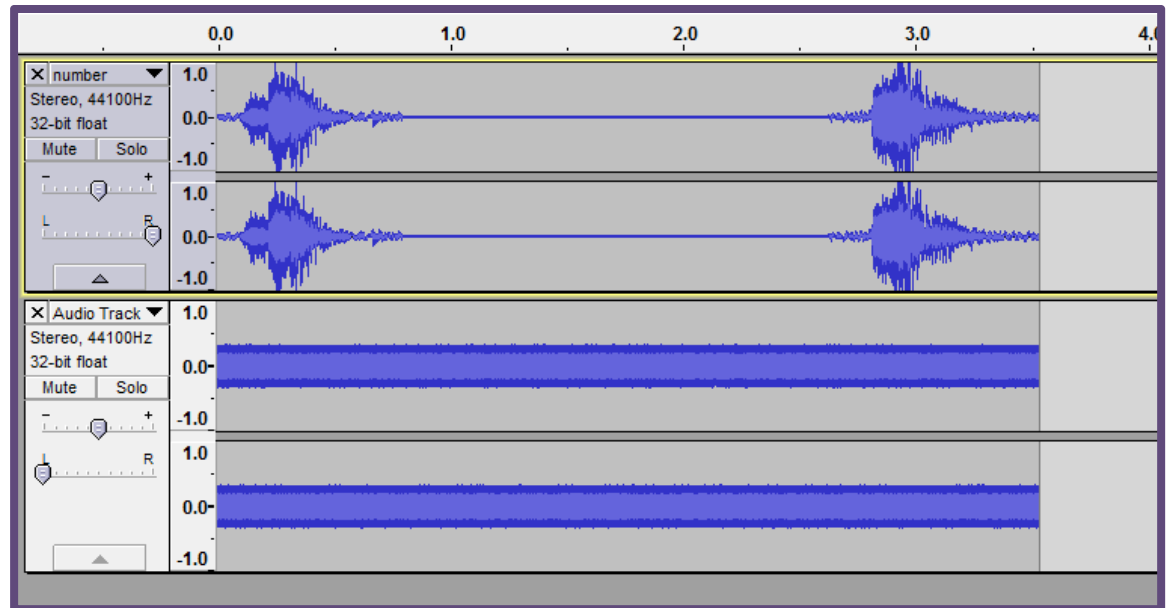
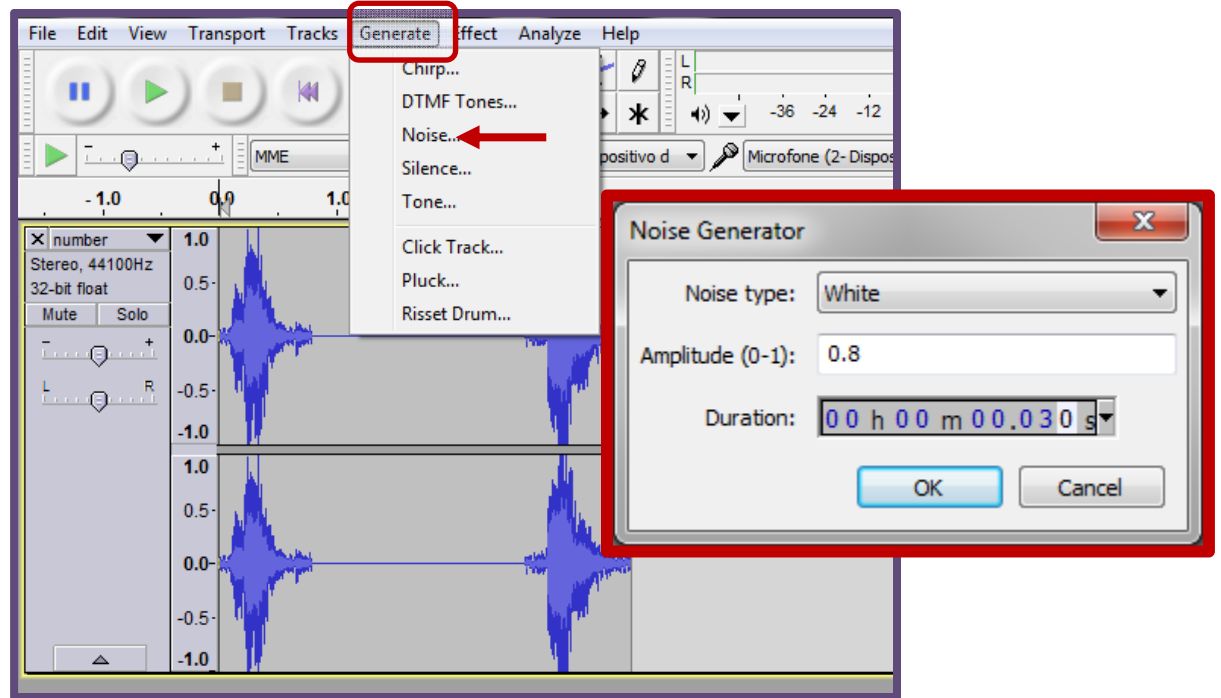


B₁

Import audio tracks from your files

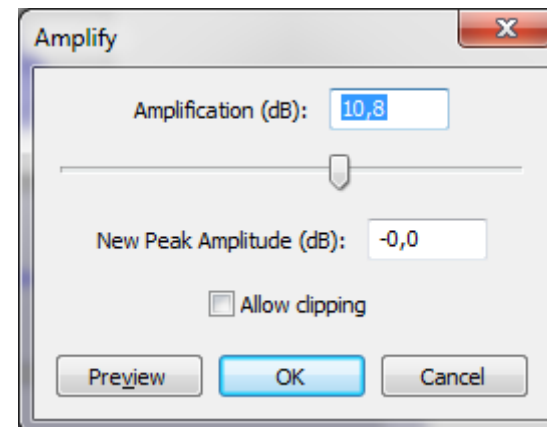
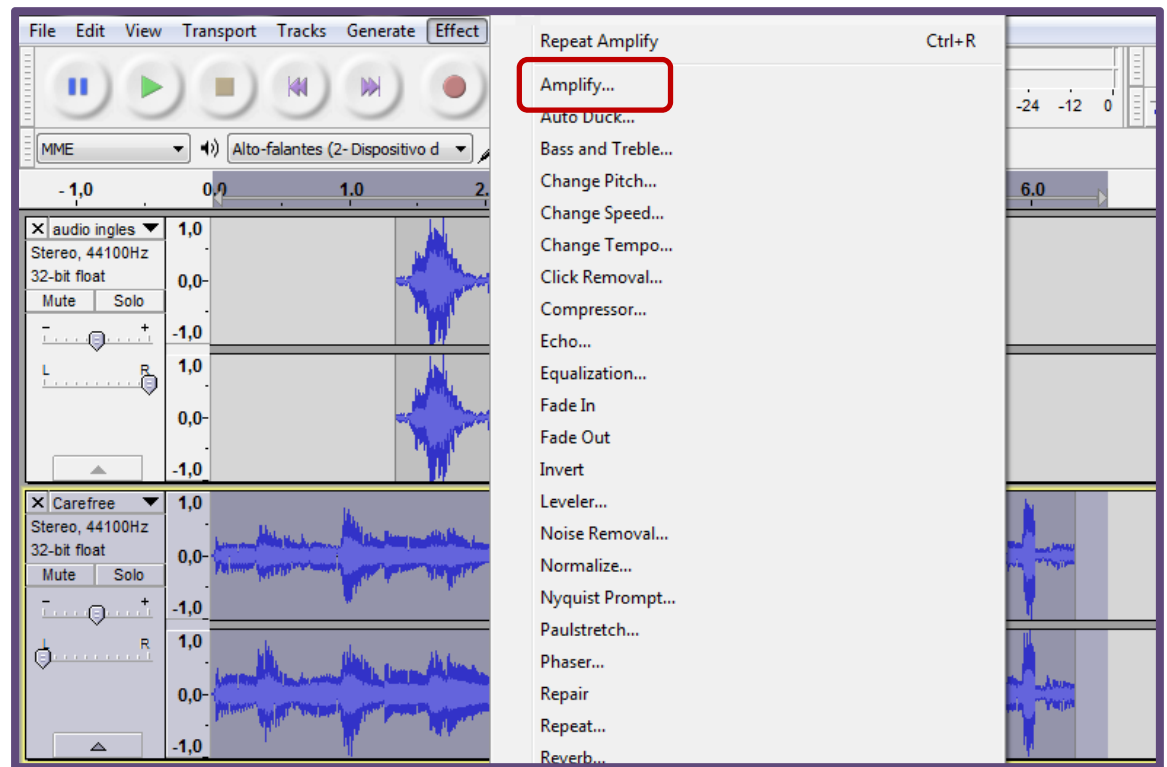


B 2 | Generate white noise



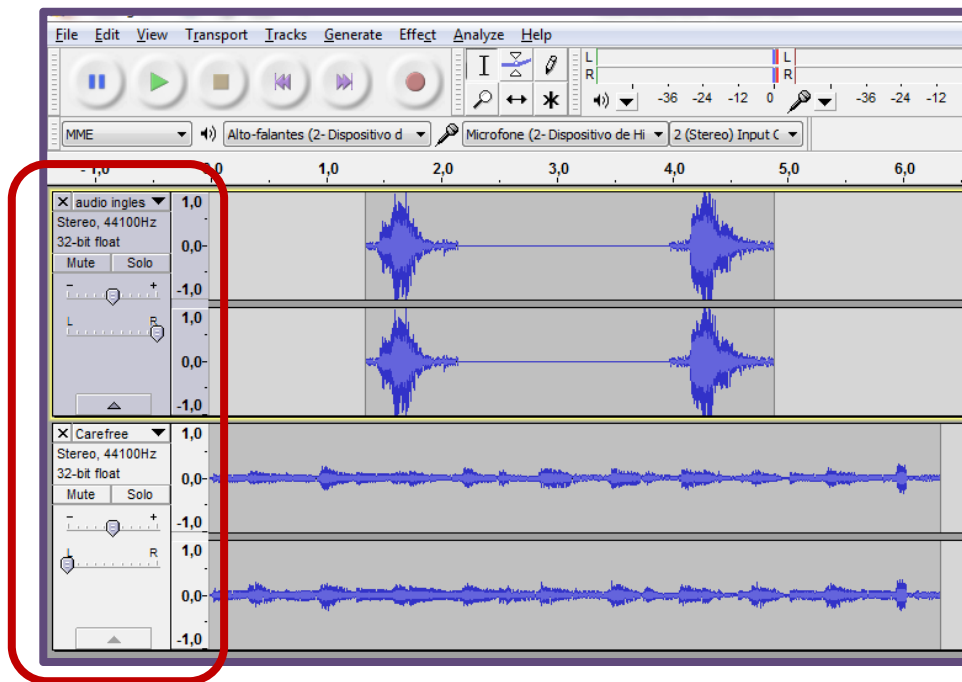
C

Insert Effects
such as
amplifying
the intensity
of a track



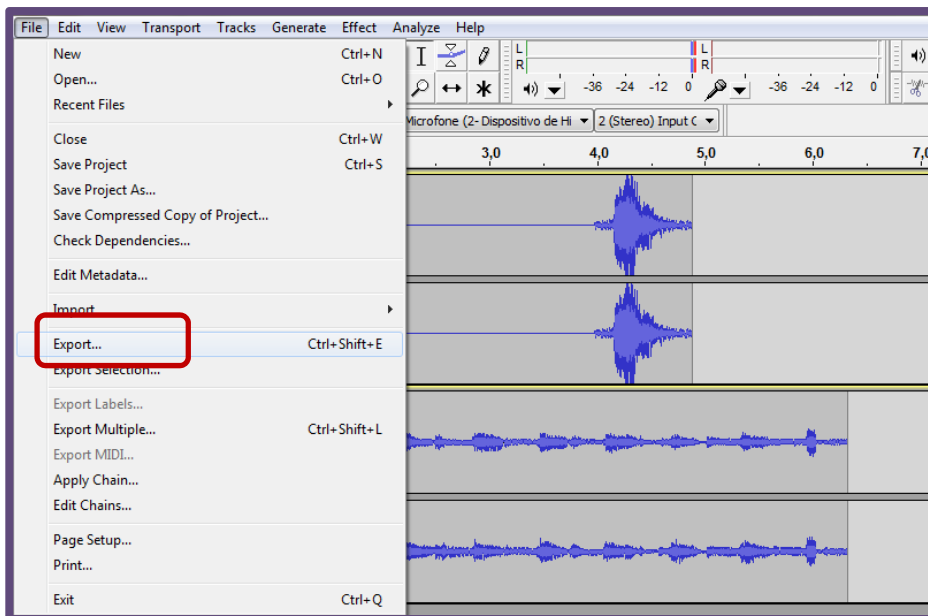
D

Select in which ear the audio will be presented



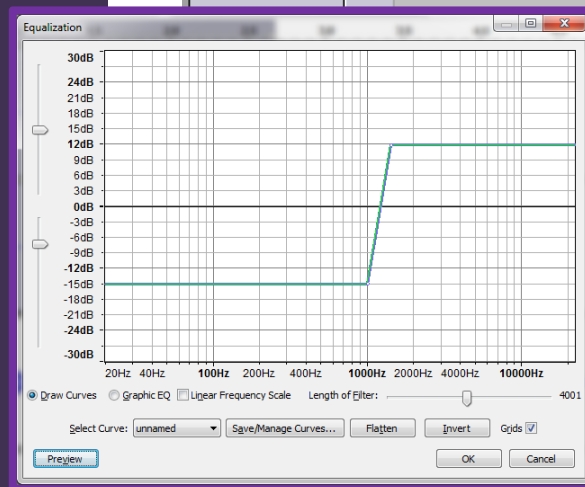
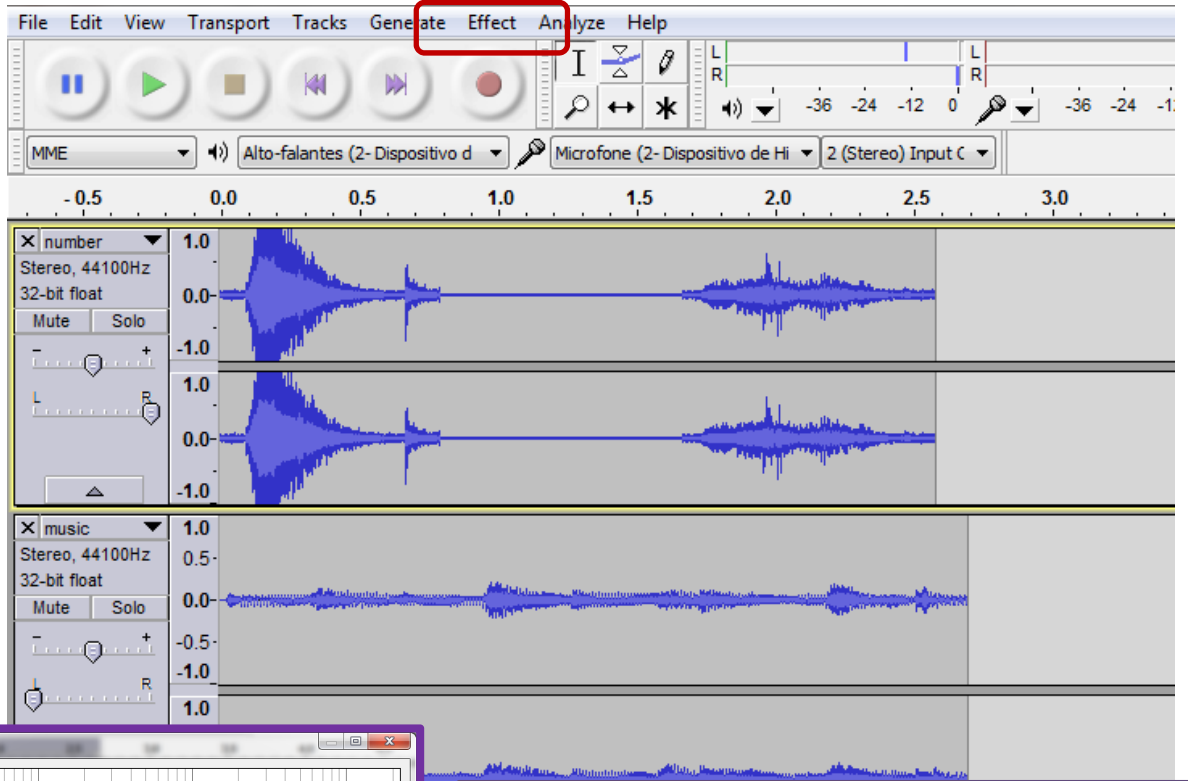
E

Save/Export or...

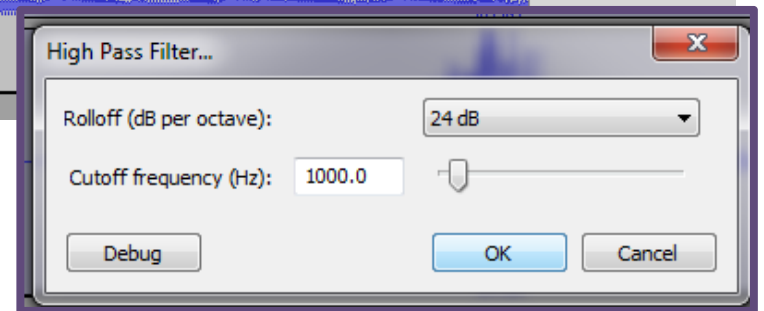


F

Insert other effects



Equalization




High Pass Filter

How to define a personalized, attractive and motivating rehabilitation program

Personalized

- Auditory skills 
- Patient's interests, hobbies, context

Motivating

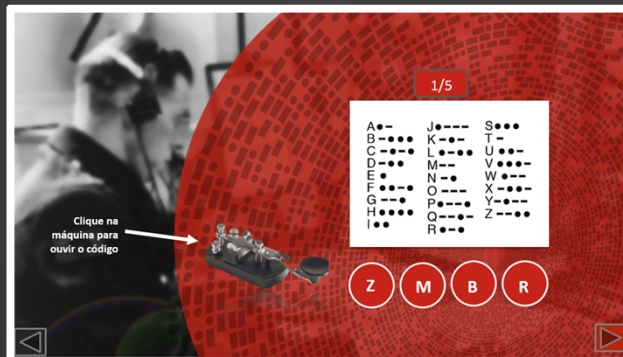
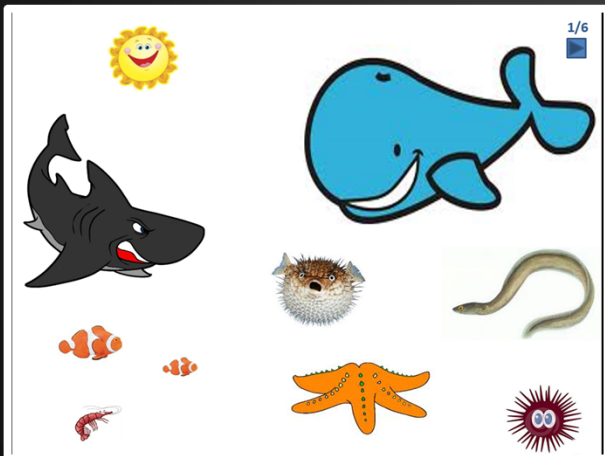
- Challenges 
- Rewards
- Activates limbic system

How to define a personalized, attractive and motivating rehabilitation program



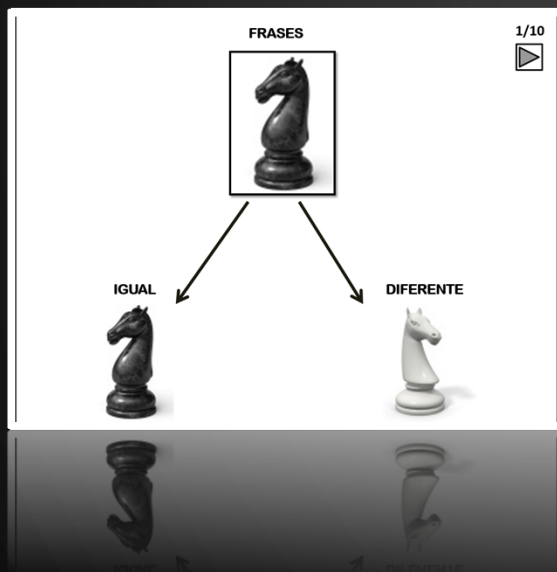
How to define a personalized, attractive and motivating rehabilitation program

More than 135 games



How to define a personalized, attractive and motivating rehabilitation program

More than 135 games





Left

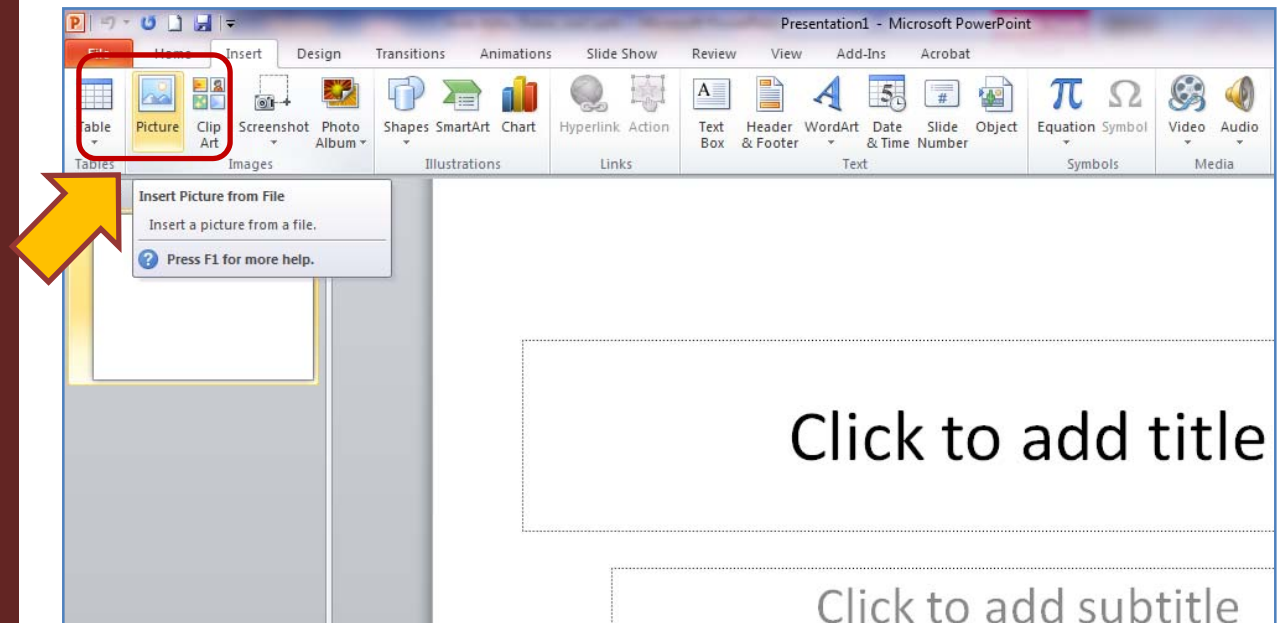
Right

Step-by-step

Demonstration of how to create
game-like strategies with
power-point resources and the
monotic and dichotic audio
created in the previous step

A

Insert
pictures
selected
from your
image bank



B

Insert the
audio
recordings

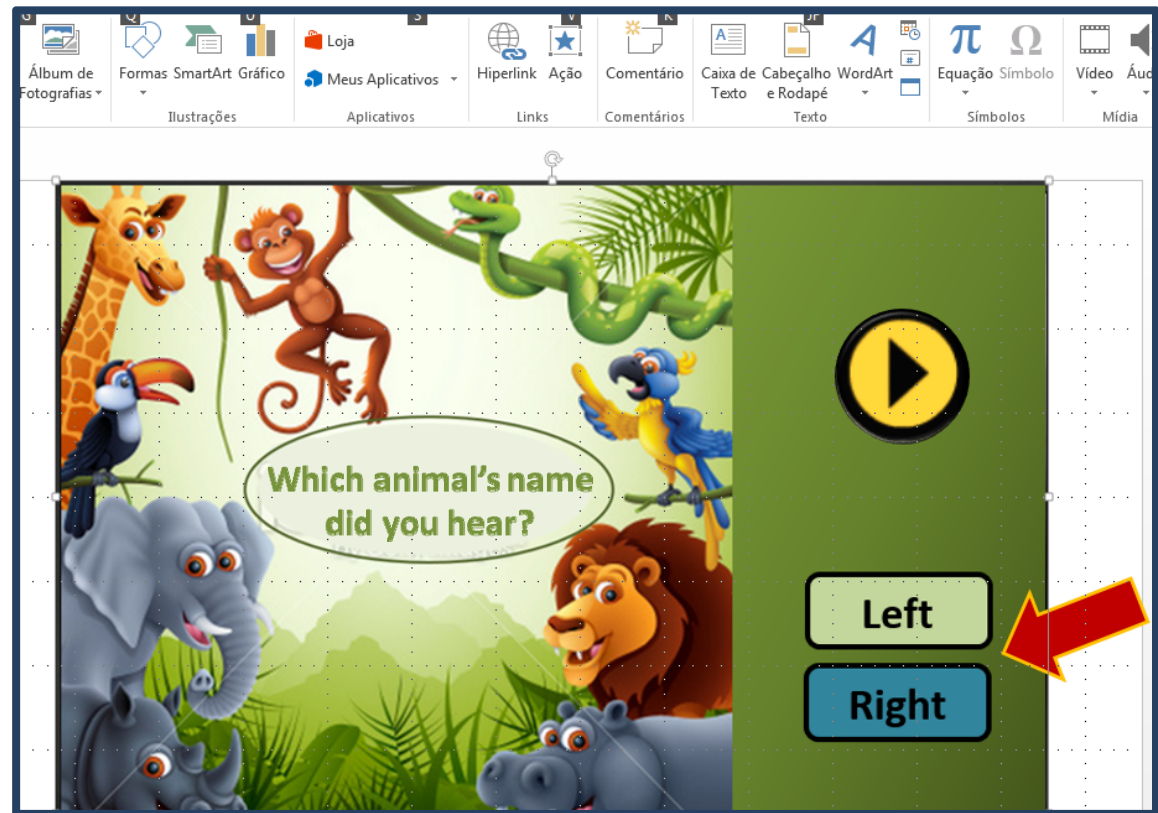
Click on the image that
will trigger the sound.
Click the ACTION
BUTTON and select
audios in your database
that you want to insert.



C

Defining feedback for the answers

Select the answers and insert sounds related to right or wrong answers



Contextualizing the instructions



Listen carefully
and identify
which animal on
the figure was
mentioned in the
audio

Left

Right

Click on the side
you heard the
animal's name

Click on the animal you heard the name

How to define a personalized, attractive and motivating rehabilitation program

Personalized

- Auditory skills ✓
- Patient's interests, hobbies, context ✓

Motivating

- Activates limbic system → Games: competition, goals, engagement
- Challenges ✓
- Rewards ✓

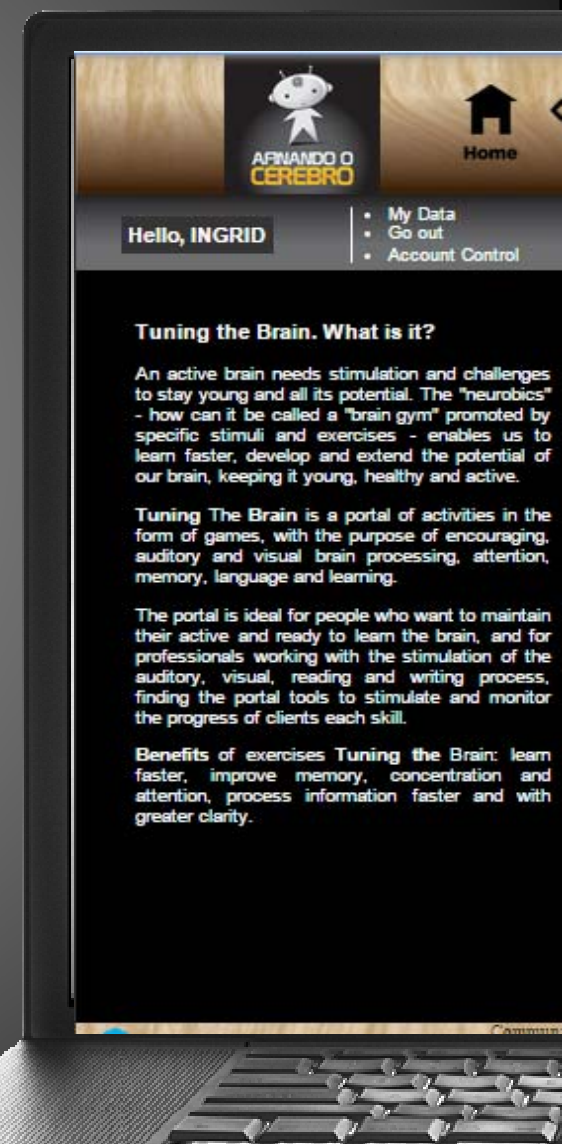
Online possibility to follow the patient's daily auditory training homework



The Brazilian online auditory training experience

www.afinanadoocerebro.com.br | www.tuningthebrain.com

- Allows the SLP to daily offer to the patient a specific stimulation for the development of the impaired hearing abilities
- Real-time monitoring of the results of each exercise



The Brazilian online auditory training experience

www.afinanadoocerebro.com.br | www.tuningthebrain.com

- Browser to easily choose the indicated strategies

Escolha um Usuário:
LUIS GUSTAVO SANTOS CC

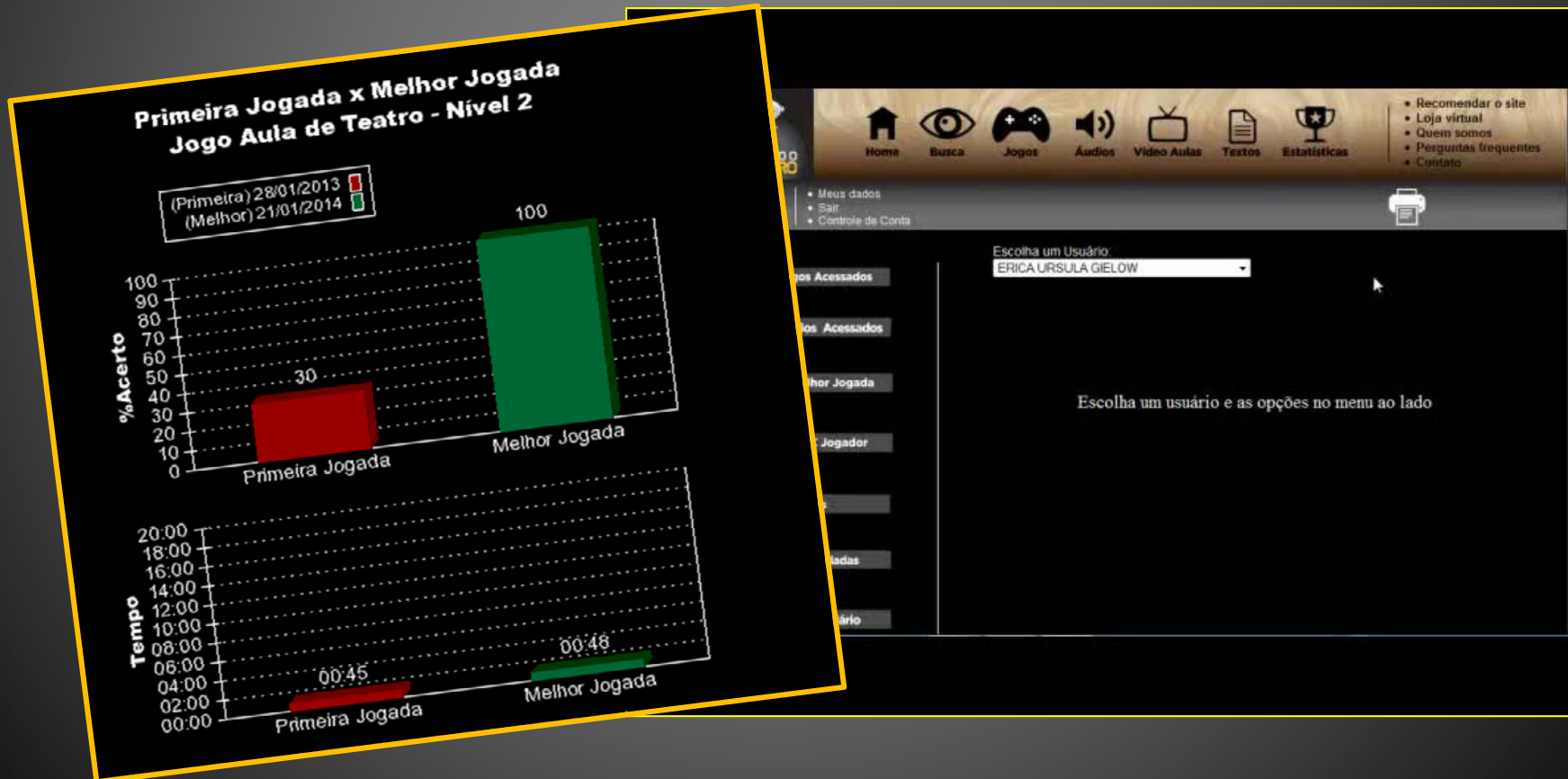
Jogo	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Aula de Teatro - Nível 2										X										X											
Aula de Teatro - Nível 1										X												X									
Buzinas - Nível 2																															
Buzinas - Nível 1																															
Casa Abandonada - Nível 1			X		X																	X									
Escrita Correta - Nível 1		X																				X									
Escrita Correta - Nível 2			X		X																										
Forte e Fraco - Nível 2																												X			
Forte e Fraco - Nível 1																															
Instrumentos - Nível 2																				X											
Instrumentos - Nível 1																															
Perguntas e Respostas - Nível 1			X		X																						X				
Preferências - Nível 2																												X			
Preferências - Nível 1		X	X		X																										
Restaurante - Nível 1																				X								X			
Semântica - Nível 1																															

- Remote daily follow up of the strategies accessed by the patient

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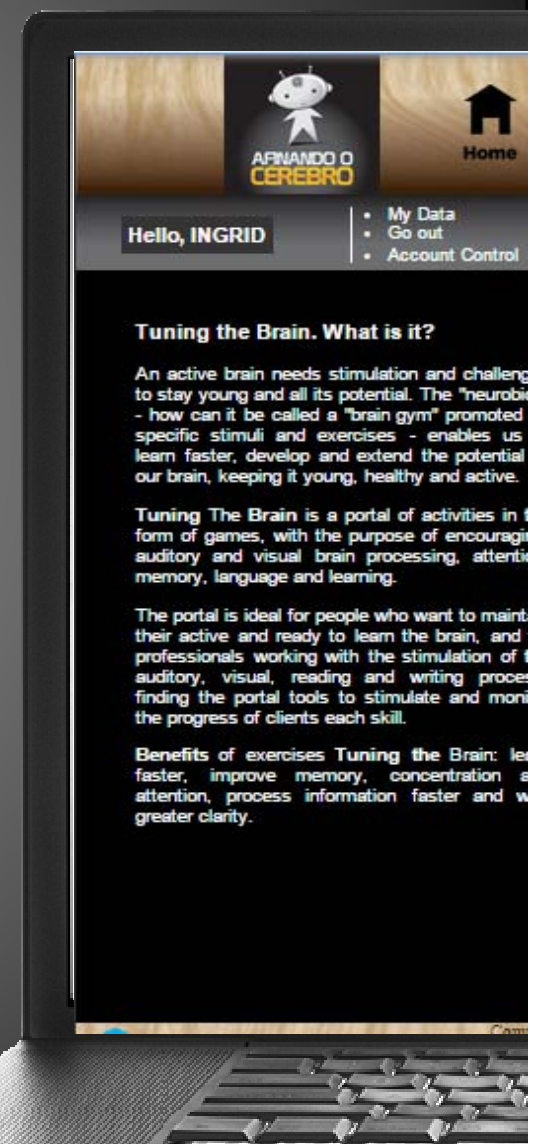
- Monitoring of the patient's progress in each and all activity



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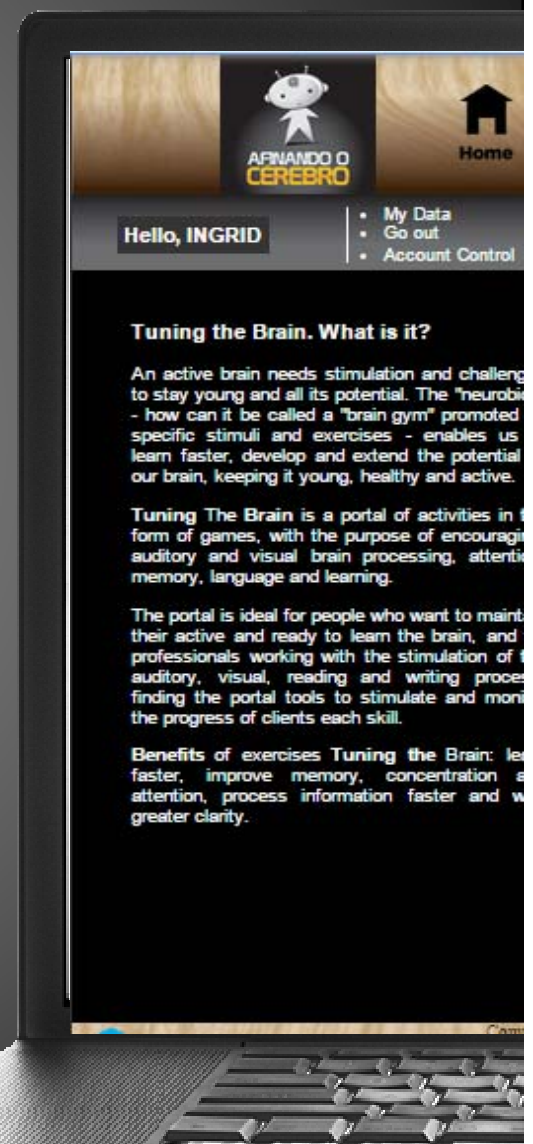
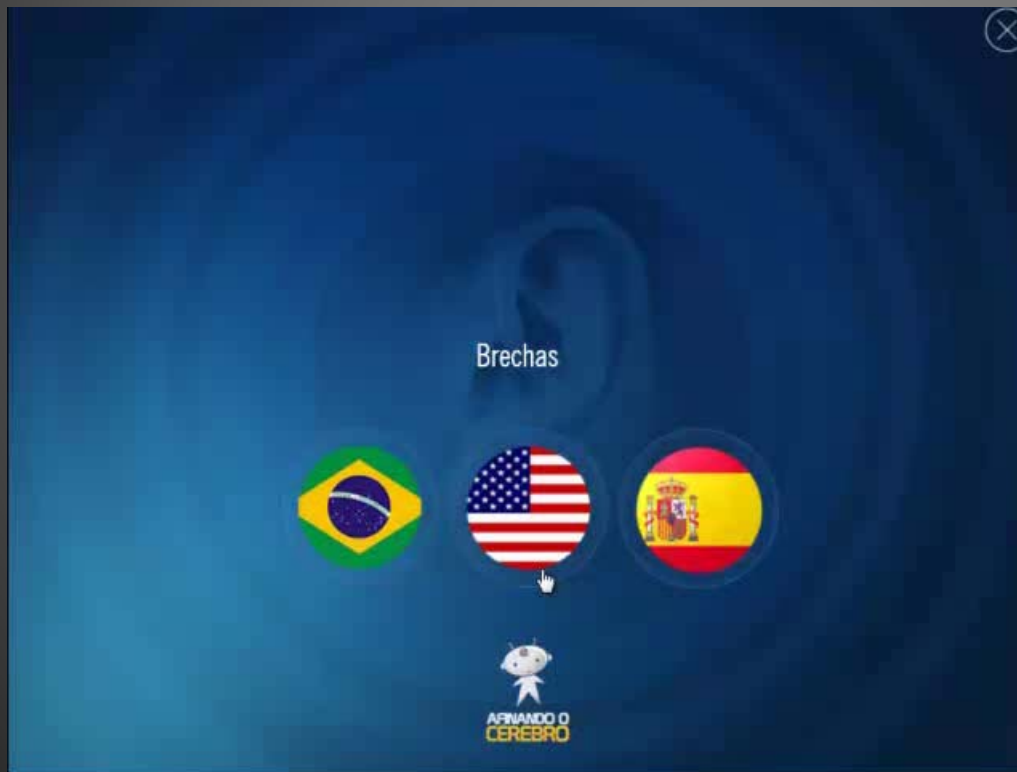
- Each month new activities are added
 - currently 36 games and 45 audios
- Over 5,000 users
- Currently 700 professionals registered and 2940 active patients



The Brazilian online auditory training experience

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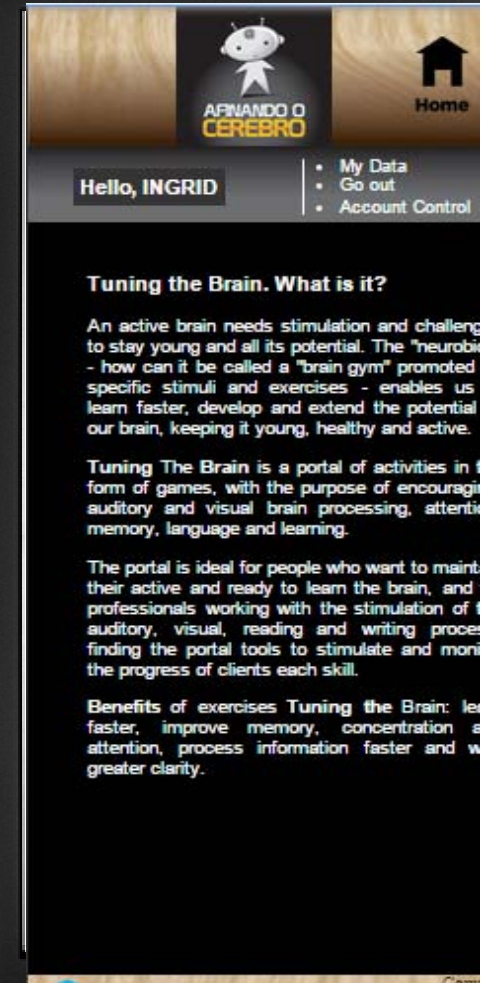
- Auditory skills training : temporal resolution



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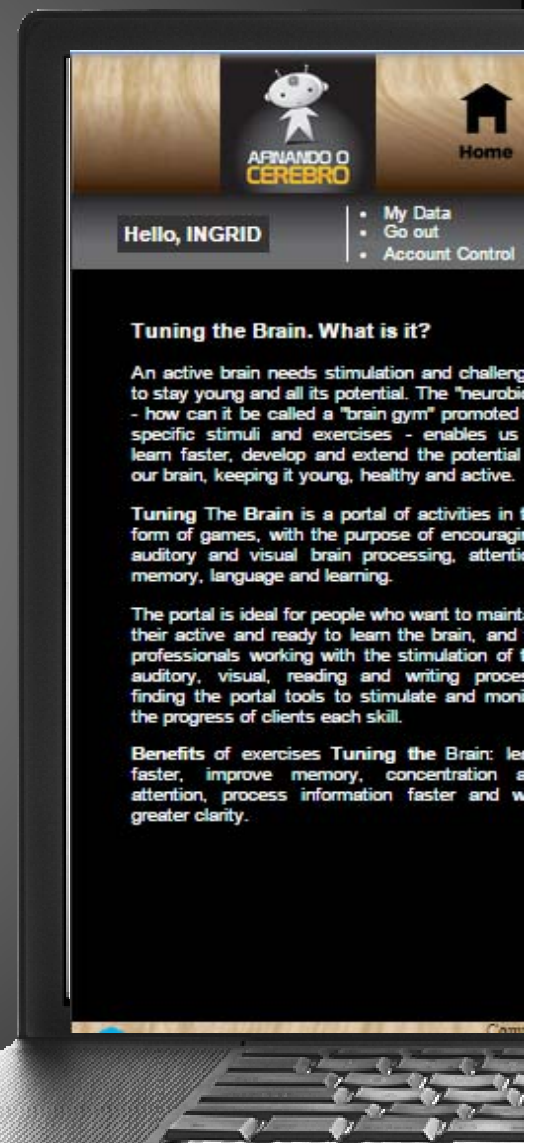
- Challenging listening



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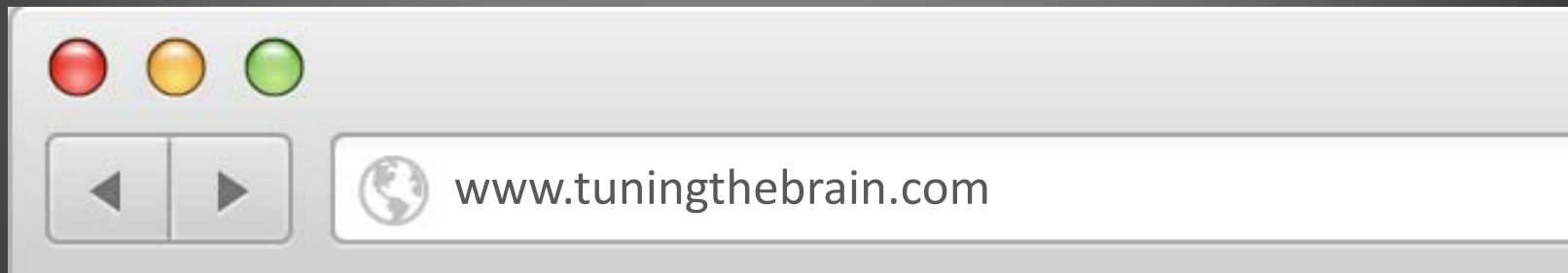
- Daily life challenges games



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- Get the pdf of this presentation and access the web portal





Auditory processing

↕

how we realize the world



Developing listening skills means increase our
possibilities of perception of the world



How we...

realize
understand
associate
interpret
learn
live

**Better processing
is to live better**



Thank you!
ingrid@aurivox.com.br

Questions?
Comments?
Suggestions?