

## **Influence on behaviour of children with hearing problems for managing the fear during dental treatment**

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### **Summary:**

Research on 100 children with hearing problems divided in 2 groups with the same number children.

On the children from the first group is used the method Tell-Show-Do. During researching the second group is used method for fear prevention and treatment by the bioback connection device.

Like an instrument for diagnosis of fear is used the project test DRAW A MAN.

The research results show the method Tell-Show-Do does not influence positive behaviour in children with hearing problems.

The influence method on the fear overcoming in situation of dental treatment by the bio back connection device is particularly effective in children with hearing problems. That gives us a reason to recommend it for the children's dental practice.

**Key words:** children with hearing problems, bioback connection, fear prevention and treatment device.

The successful children's dental treatment depends of their ability to overcome the difficulty of the situation. [5, 6, 7, 8] The basis of this overcoming is not the passive acceptance, but the active adaptation to this situation. That way the kids learn to manage the fear during the dental treatment.

Children with hearing problems have adaptation difficulty because of sensor-emotional loss [1]. In similar situations they may react with neurological depressions or fear reactions.

The possibility of appearance of similar reactions in kids with hearing difficulty can be reduced by emotional regulation of their behavior [2].

These mechanisms are the basis of successful solving of the problematic dental treatment of children with hearing difficulty [3].

In the scientific dental literature there is not a source inspecting this problem. The con-

sequence of that is the goal of this research.

### **Aim**

The aim is to found a special method for emotional regulation the behavior for managing the fear of kids with hearing problems during dental treatment

The children with injured analyzer learn very difficult because of the difficult receiving of back connection.

Because of this thesis our task for getting the goal is clear. The decision of this task is connected to the discovery of mechanism that makes "back connection" in children with injured hearing.

### **Material and method**

The research was made with 100 children with hearing problems. They were divided on two groups with the same number in each. In the first group we used the method tell-show-

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do [11, 12, and 13]. In the second group we used the method for prevention and treatment of fear with device for biological back connection made for kids with hearing problems. [9]

As an instrument for fear diagnosis from the dental treatment we used the project test-Draw a man! [15].

- in different stages of the dental treatment the kids have to draw a humane figure;
- the drawing has to be done on white piece of paper with the same size for each stage of treatment;
- the figure's height drawn in calm environment before the treatment is the basis and we compare with this height every other, done in every other stage on treatment [10,16].

For maintain neutrality and prevent fear during the treatment we used a biological back connection during the dental treatment of children with hearing problems [4, 15].

In the first group is used the method tell-show-do [11, 12, 13].

The first moment TELL includes explaining in writing about the instruments, the goal of the dental treatment, the nature of every manipulation, and the feeling during the treatment.

#### **The second element SHOW includes:**

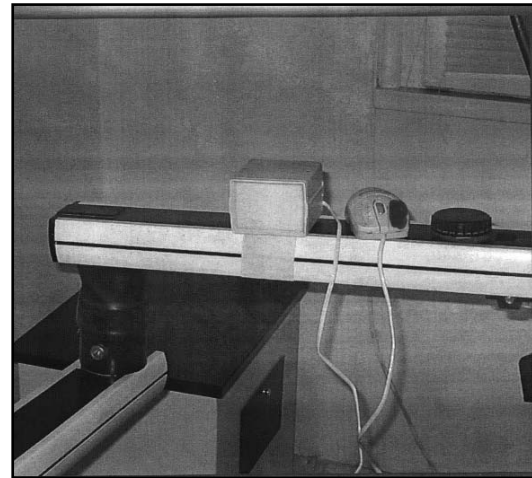
- demonstration of each manipulation
- explanation of each action, done by the dentist
- explanation about the sensations, which the child will feel on each stage of the treatment

**The third element-DO includes** the real treatment, with explanation what the dentist is doing.

In the second group children we used a prevented and treatment of fear during the dental procedures with device realizing bio back connection in children with hearing injury.

#### **This method includes:**

- previous explaining in writing about the device functioning
- device demonstration and demonstration of the functions (fig.3)
- mimic explanation of everything demon-



*Figura 3*

strated

- we have to give the child a chance to push the yellow button, which turns on yellow light for signaling fear from the dental manipulation

- the child turns on the red button for the red light which signalize the painful feeling

- we suggest the child an idea that the signaling will stop the manipulation because it shows the dentist what is the child's feeling

The research in both groups was made on three stages:

#### **First stage:**

- before to tell the kid about the dental treatment, in calm environment without any physical or emotional stimulations we tell him to draw a humane figure N1

- we measure the height of the figure and we accept it for basis, because we will compare with it all others figures from the next stages

#### **Second stage:**

- during the dental treatment the child draws picture N2

- measurement the height of the humane figure N1

- we compare the height of figure N2 with the height of figure N1

- the decreased height means fear during the dental treatment

#### **Third stage**

- on the first group during the dental treatment we use the method TELL-SHOW-DO

- during the treatment with the second group we influence with the device for bioback connection

- measurement of the height of figures N3, done during the treatment after the influence of the device

- comparison the height of figure N3 with the height of the basis

- the decreased height of N3 in comparison with the basis means that the child fears from the dental procedure.

- if the height of fig.N3 equals or is higher than the basis ,that means that the child does not fear the dental treatment

- for statistic processing of the material are used variation analysis and T-criterion comparing all means.

## Results and discussion

The research results on the behavior overcoming the fear of dental treatment of the children from the first group are noticed in table 1.

On the table we see that the project test in children influenced with the method TELL-SHOW-DO shows means of the height of the figures, done before and after the influence smaller than the means of the basis. (Figure 1.1, figure 1.2, figure 1.3).

This dependence shows fear and discom-



Figure 1.2

fort in children on the first and second stages of the dental procedures. This result is supported from statistic reliability ( $t_{1/2}=7,74$ ;  $p<0,001$ ;  $t_{1/3}=3.88$ ;  $p,0.001$ )

The additional comparison of the means of heights of the figures done during the treatment before and after the influence does not show considerable statistic differences ( $t_{2/3}=5,51$ ;  $p<0,001$ ), which is one more sign that shows the method Tell-Show-Do does not influence the fear and the discomfort in dental treatment of children with hearing difficulty (fig.1.2, fig.1.3)

The results of table 1 show the method TELL-SHOW-DO does not influence on managing the dental treatment situation of children with hearing difficulty.



Figure 1.1



Figure 1.3

	Height of the basis figure	Height of figure before influence	Height of figure after influence
N	50	50	50
x	18.9	10.8	15.5
G	7.66	4.37	6.34
T	$T \frac{1}{2} = 7.74$	$T \frac{2}{3} = 5.51$	$T \frac{1}{3} = 3.82$
p	$p < 0.001$	$p < 0.001$	$p < 0.001$

**Table 1**-Influencing the behaviour for managing the fear during the dental treatment with the method-TELL-SHOW-DO

The research results from the second group children influenced by the device for bioback connection in the dental treatment are noticed in table 2.

The means of figures height of these children, drawn during the treatment, before the influence are decreased from the means of the basis ( $t_{1/2} = 5.16$ ;  $p < 0.001$ ). That is a sure sign that the children do not fear in the second stage of the research.

Comparing the means of height of the figures drawn after the influence of the device for bioback connection, with the means of the height of the basis figures, there are not reliable differences ( $t_{1/3} = 1.00$ ;  $p < 0.001$ ). That proves the children do not fear during the dental treatment, after the influence of the fear prevention and treatment device. (fig.2.1, fig 2.3)

Supports on this thesis are the results from the comparison of means of the heights of figures drawn during the dental treatment before and after the influence. In this comparison is noticed a big reliability of the differences ( $t_{2/3} = 7.29$ ;  $p < 0.001$ ). This statistical analysis of the results shows considerable increase of



**Figure 2.2**

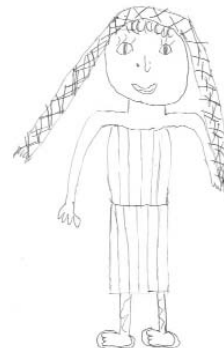
the figures height, drawn by the children in dental treatment situation after influence compared with the figures height before the influence (fig 2.2, fig.2.3)

That is one more proof for overcoming the dental treatment fear in kids who use the device for bioback connection.

The table 2 result analyses shows that the influence method for overcoming the dental treatment fear by bioback connection device is particularly effective in children with hearing



**Figure 2.1**



**Figure 2.3**

	Height of the basis figure	Height of figure before influence	Height of figure after influence
N	50	50	50
x	15.3	9.9	16.6
G	6.375	3.77	6.635
T	$T \frac{1}{2}=5.16$	$T \frac{2}{3}=7.29$	$T \frac{1}{3}=1.00$
p	$p<0.001$	$p<0.001$	$p>0.05$

**Table 2**-The affection on the behaviour for managing the fear from dental treatment with device for bioback connection

difficulty.

The loss in this communication is determined by the breaking of oneness between the thoughts and the speech and from the missing of known analyzer, like the hearing, which deprive the children of real notion for the world. These specialties of children with hearing difficulty let them feel the light influence from the device, and give them control feeling of the treatment, when they use mostly their ocular analyzer.

By yellow and red light signal buttons the children express their feelings and desires about the treatment. This possibility stimulates the coming of stress reducing mechanisms and pain increasing in situation of dental treatment.

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## Conclusions:

The result analysis of tabl.1 shows that the method Tell-Show –Do does not influence the overcoming dental fear behavior of children with hearing problems.

The research results shown in tabl.2 prove that the influencing behavior method for overcoming the dental fear by the bioback connection device is especially effective in children with hearing problems.

The convincing results about the positive influence of the method and the device for bioback connection in children with hearing problems in situation of dental treatment gives us a reason to recommend them in the dental practice with children.

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