TOOTHBRUSHING TRAINING AND PREVENTIVE GUIDANCE WITH MOTIVATIONAL INTERVIEWING IN CHILDREN WITH CARIES

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This booklet is about caries prevention and treatment through motivational techniques and manual training of children and parents to care for their teeth.

By writing this booklet I wanted to share my experience in counseling parents and children and my knowledge of pedagogic, coaching, motivational interviewing and causal treatment of caries with the prevention assistants I work with. By working together, we lay the foundation for good oral care in young and / or anxious children. The book has grown gradually, and more and more chapters have been added.

I want to thank my colleagues for the many comments to make this booklet better and more applicable in practice.

I hope that the ideas from this booklet will inspire and increase job satisfaction.

I hope that through a carefully built relationship with the caregiver and positive step-by-step guidance, parents and children will experience more pleasure in carrying out the difficult task of brushing a child's teeth, even when they struggle.

I hope that through efficient and effective guidance many children will never experience what drilling a hole is, and that they will learn that caries can be stopped through the joint effort of parents, children and oral care providers.

I hope that through our loving guidance parents will discover their own powers to give children what they are entitled to: clean healthy teeth and healthy food, even when children sometimes do not want to cooperate.

By communicating an unambiguous message and focusing on the positive relationship with parents and children, we can realize our mission: to allow a healthy generation of children to grow up and to reduce the health differences between families.

Lina Jasulaityte, paediatric dentist, educator, coach

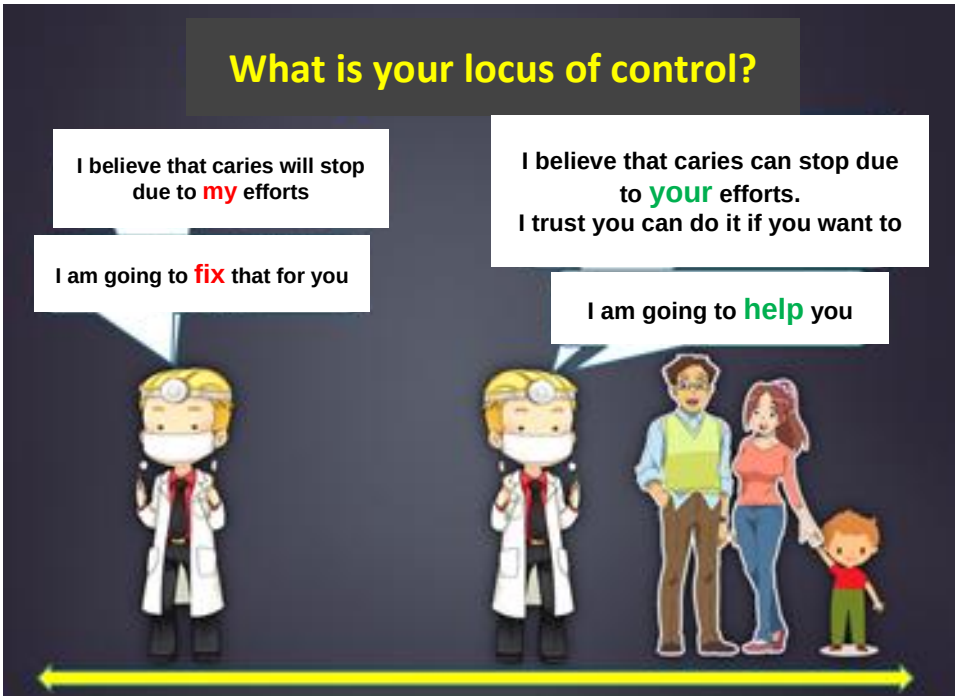
In accordance with Article 3 of the International Convention on the Rights of the Child, the oral health care provider has a legal duty to guard the best interests of the child

Content

Attachments

Locus of control and communication patterns

Your locus of control has a lot of influence on communication with the patient and the parents.



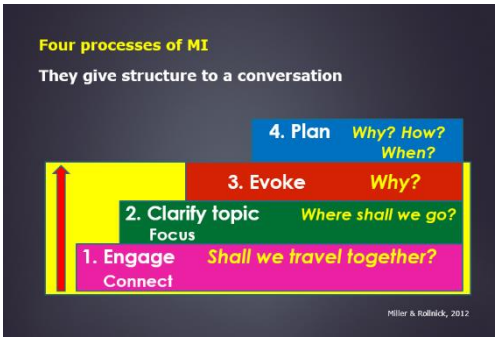
Parents can become more involved if you adapt our own language and communication patterns

Old patterns	**New patterns**
Oral care provider is active, parents are passive	**Parents are active participants in the care process**
"We will treat the child for you"	**"We will work together with you to stop the caries process"**
Control, judgement	**Evaluation, assessment**
Instruction, advice	**Training, setting your own goals**
Letting to get accustomed	**Practicing, training to get used to**
"I think it is best ....." *'That's because of....'* *'You must.....'*	**"What do you think of it yourself?"** **'How comes that.....?'** **"How do you think you can achieve this?"**

Intake or periodic recall oral examination at the dentist / dental hygienist with components of motivational interviewing

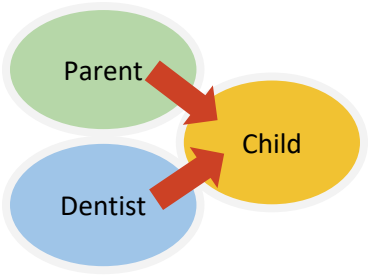
An example of recall oral examination and planning for a young child with dental caries (without acute pain or inflammation) is presented below. Take time for the recall appointment; ideal would be to plan 20 minutes for this. In addition to the oral examination, you can also make declaration for preventive instructions (this depends on the insurance system per country).

During the conversation you go through the four processes of motivational interviewing.



1. **Engaging**

- How is it going with the child and the parents in general?
- Ask, how are the teeth and what do parents and children do themselves to keep their teeth healthy? Give affirmation if they follow the preventive advice. Focus on positivity, what they already manage to do.
- Ask the child to climb onto the chair (take off shoes if necessary), press the buttons, lie down. You can use the knee-to-knee technique with a very young child.
- Ask if the child would like sunglasses and a mirror to see his/her teeth.
- Ask the parents if they would like to sit next to you on the assistant chair. This is very pleasant for the child. When the parent is sitting next to you, you are both looking in the same direction: at the child. This indicates non-verbally that the purpose of the visit is cooperation for the health of the child. Sitting at an angle, not directly opposite the dentist, is less confrontational to the parent during the conversation. During the oral inspection, the parents watch and are involved in the conversation about the health of their child (they do not get a chance to look absently at their mobile phone). The dentist (dental hygienist) demonstrates the findings of the examination and discusses them. The assistant records everything in the computer.



2. **Focusing**

- If the teeth are reasonably well brushed, give an affirmation for the effort made. Demonstrate what has been cleaned well.
- Show the locations where there is still plaque present, despite their efforts. Remove the plaque with a toothbrush; ask the parent to look with you in the mouth.

- If there is a possibility and the child can handle it, coloring plaque during recall is the best way to demonstrate plaque. The prevention assistant / prevention coach can possibly color the plaque before the appointment and, if necessary, give the parents a short training.

- Only when the teeth are clean, caries lesions are clearly visible. In a neutral way (without judgement) demonstrate the demineralization areas and cavities while the assistant is recording the findings. If present, demonstrate the bleeding, HSPM or MIH lesions, erosions, trauma, etc.

- Ask the parents / child what do they think of the findings (plaque, bleeding, demineralization, cavities)? Ask whether they know what caused these changes. Ask whether it is OK if you explain that.

- Ask whether they could tell you more about their brushing and eating habits. Continue to ask and reflect.

- Why was it easy to remove the plaque at certain locations? What makes it difficult at the other locations? What are the obstacles? How can difficult locations be cleaned more efficiently? Ask if you may give a suggestion. Give a short, focused advice (for example brushing the buccal surfaces while the child keeps the teeth closed and the lingual with mouth wide open. For more ideas see the exercises in appendix 1). Ask what the parents think about this suggestion.

3. <u>Evoking (eliciting motivation)</u>

- Investigate whether there is sufficient internal motivation to change something despite the difficulties (e.g. brushing habits and eating habits). What do parents hope for the future regarding their child's oral health? On a scale from 1 to 10, how important do they consider oral health? Why?

- Respond surprised that it is not 1 but higher (X). What makes it X? Listen to the reasons and summarize.

- Show the ambivalence (on one hand, the difficulties and obstacles, on the other hand, the reasons for good health).

- On a scale from 1 to 10, how high does the parent estimate their own willingness to change something? What makes it X? Listen to the reasons and summarize. What would they need to increase the motivation to make it X + 1? Ask how confident they are that they would actually succeed in making that change. Has anything worked out in the past? What was the feeling when they achieved that?

4. <u>Planning</u>

- If the parents are willing to make a change for better oral health, where would they like to start? What is feasible? What is their first step? When do they want to start the change and are they ready to come back several times for training and support? The assistant briefly notes all discussed matters in the computer. You can use a menu to make a choice where to start together (see also appendix 3).

- Plan the appointments: **two appointments with the same prevention assistant** are usually much more pleasant for all parties than one appointment because of the continuity and structure (ask parents what they think of it?); the third one is for evaluation with the dentist (dental hygienist). The series of 3 appointments can be briefly called: "The series of 3".

- For recall appointment interval you can calculate the points according to the NOCTP protocol. So, the child with high risk/red code will come 3 times each month. With lower risk/yellow code the appointments will be less frequent. When caries becomes arrested and the risk will become low the interval for recall will become even longer.

- If necessary, give the parents a nutrition diary to fill in at home.

- Discuss and write down the other clinical findings and, if necessary, make a treatment plan for them.

- Note: If this is a young child's first visit to the dentist and you want to make BWs, it is better to delay taking the BWs until the next evaluation / follow-up appointment unless the child is in pain. Make the first visit pleasant.

- In case of deep active lesions, it may sometimes be necessary to treat the cavities with SDF immediately after brushing and temporarily close them with Cavit ™ or GIC ("fire extinguishing").

- If the parents don't want to come back for brushing training, respect that. Then discuss whether they would be willing to come for recall in 1-3 months to monitor and evaluate the situation. Then try another MI interview. Guard the best interests of the child.

- **Summarize and ask if there is anything else the parents would like to discuss.**

In Appendix 3 you can find web links to several examples of motivational interviewing conversations

Steps during the first visit or recall. Caries risk assessment according to NOCTP (non-operative caries treatment programme):

1.Collect background information: medical, social ...
2. Build contact with the parents and the child (engaging)
3. Evaluate the oral situation
4. Are there any risk factors (parental involvement, motivation, diet, brushing quality, toothpaste)?
   No = 0 pt. Yes = 1 pt.
5. Are there active caries lesions present, including active demineralization?
   No = 0 pt. Yes = 1 pt.
6. Is there gingivitis present?
7. Check the child's age, cooperation, and abilities.
8. Are there molars erupting? No = 0 pt. Yes = 1 pt
9. Is there caries activity in the erupting molars (demineralization, cavities)?
   No = 0 pt. Yes = 1 pt.
10. **Motivational interviewing, planning, determining the recall interval based on the points**
    0 pt. = 6-12 months. 1 - 2 pt. = 3-6 months. 1-4 pt. = 1 - 3 months.

See more about scoring on https://www.gewoon-gaaf.nl/tools-voor-praktijken/stappenplan

"The Series of 3"

1. Brushing training by prevention assistant or dental hygienist
2. Evaluation and finetuning brushing technique + if necessary initial training for the child to cope with dentistry, with the same prevention assistant or dental hygienist
3. Evaluation and coping training for the child to learn to trust the dentist

A series of three appointments after the intake or recall appointment aiming to slow down the caries process

First appointment with prevention assistant or pediatric dental hygienist: brushing training 30 min.

Goals: 1. Achieve better brushing results by letting parents practice themselves under supervision.

2. Familiarize the child with dental practice.

3. Increase the self-confidence of parents and child by setting achievable (small) goals – they will manage, sometimes in small steps! **(Confidence + competence = success)**

Materials: Children's sunglasses, small mirror for the child to look, toothbrush, tray with the mirror and probe, a disposable cup, saliva ejector tip.

Principle: Each child has a right to have clean teeth, no matter how difficult this may be to achieve. Be creative and positive, have patience; slowly it will get better. Start with small steps.

Brushing teeth of a child can sometimes be very difficult, especially if the child is unwilling to cooperate. Reflect on that. No one has learned to skate well just by being told how to do it. No one goes to physical therapy or a gym just to be told what exercises to do, then come back 3 months later for evaluation. They practice with a coach. Together with the coach, the goals are being set, the possibilities and the obstacles are investigated, and solutions are sought. The coach provides support, motivates, guides, and helps.

People can only process a **limited amount of information** at a time. If they listen to you giving advice, instructions and at the same time think about important things at home, at school, at work, etc., they will have a hard time remembering your story. Translating the information into action or a movement will be even more difficult. If they fail, it might be demotivating. **Involve the parents, let them practice under supervision and find solutions themselves, then affirm the effort and the result.**

As with any sport, automatic movements block the learning of new movements. If you want people to change their brushing technique (for example brush not only the cusps but also at the gumline), they must do this very consciously and focus on that for a while to develop a new automatism. When tired, they can quickly revert to the old habits. **Let the parents practice themselves under supervision.** Let them feel and experience

themselves, ask them what they think of the newly learned technique.

Warn them that sometimes it can take time before it will become easy to brush in efficient way, especially if the child does not cooperate. And often it will be easy right away.

1. **Start the conversation with the parents following to the Motivational Interviewing structure**

- What do you already know and what are you doing to keep your teeth healthy?
- Last time we agreed that you would try to ……. *(Summarize what is already in the computer about the situation, the obstacles, the goals, and the motivation.)* How are you managing to achieve the agreed goals? – *(Give affirmation and reflect.)*
- Is it OK if we now start with training the child to become familiar with the chair and the equipment? A nice way to do it is when you sit on the dentist's chair and play the dentist. May I see how you brush his/her teeth? If you do not mind, I will give you some suggestions and ideas about efficient brushing at the same time.

2. **Ask the child to climb onto the chair. You may like to ask the child to take off the shoes * and let the child press the buttons to lie down.**

** This only applies to young children, up to 7-8 years old. By taking the shoes off, you can collect valuable information:*

- *about the child's cooperation,*
- *about the interaction between the child and the parent,*
- *you get a chance to compliment the child when he/she takes off the shoes itself,*
- *you can distract the child's attention to something simple if the child is anxious about the dentistry,*
- *Give the child enough time to do this themselves, do not rush, and ask the parents to help only if the child really refuses or is not capable to do it him/herself.*
- *If it still does not work, help take off the shoes yourself. Then you have already got an impression on cooperation. Explain that we want to take off the shoes to help the child relax in the chair and to protect the chair.*
- *The child is usually more relaxed without shoes!*

- *If the parents really do not want the child to take off their shoes, just leave them; DO NOT push them.*

- *If the child is very anxious and young and cannot manage to lie in the chair, use the **knee-to-knee technique**. Without shoes, the parent can hold the child's feet under the arms on both sides and hold the hands. Give your explanation and demonstration in this position and then switch roles for the brushing training.*



3. **Let the child choose sunglasses and hold a small mirror in their hands.** Let it look in the own mouth and give a compliment:
   - The goal is to make the child aware of his/her teeth.
   - If the child does not want to look, do not push. Looking for a few seconds is enough, next time maybe they will want more.



4. **Let the parents wash their hands and sit on the assistant's chair next to the treatment chair.**

5. **Look in the mouth together with the parents,** with or without a mirror, depending on the cooperation. **Evaluate globally the quality of brushing. Compliment the child** on the beautiful teeth. Have a look if there is at least some place properly brushed and affirm it to the parents: they have at least tried to brush, and it worked out well in that location. That provides a basis for further building.

6. **Ask the parents how often and where they brush the teeth of the child** (in the bathroom, in the kitchen, in the bedroom, etc.)**. Ask what goes well and what makes it difficult to brush** (Is the child easily distracted? Does not want to? Has gag reflex? Tired? Etc.…) **Do they brush electrically or manually? Is the child lying down, sitting, or standing? If they brush while the child is standing, do they stand in front of the child or behind the child?** Do not comment on this now, just give **affirmation/compliment if they brush with fluoride toothpaste twice a day, if they brush with the young child lying down on their lap or stand behind the child when brushing.** After the training you can ask them how they experienced brushing while the child is lying down.

7. Also, if necessary, do not forget to **'look behind the front door'** with respect. Often it is not a lack of technique, but the circumstances that prevent brushing. Continue to ask about the obstacles (for example, while asking further questions, you sometimes come across situations where the parents are

working in the evening or have to leave home very early in the morning; the child often sleeps at the place of the grandparents; the mother has little or no support or has to care for several children alone; the parent has rheumatism and the wrist hurts; someone in the family is ill or has just died; the mother is afraid that the husband or the neighbors will be upset when the child is crying while brushing or does not want to wake up the other children, etc. etc.) **Reflect and confirm** that you understand the difficult situation. **Ask how important they think oral health is. Ask what is possible in their situation;** what solutions can they think of themselves? What can be done differently than now? When, where and by whom is brushing possible? What is the **smallest achievable goal** they can set for themselves for improving self-care? Confirm their **efforts** ("It's hard, but you're doing your best to find a solution!", "It's hard and you're have no idea how to solve this. Do you need help?"). Provide information for social help if needed.

Take a look behind the front door: try to understand the patient's situation

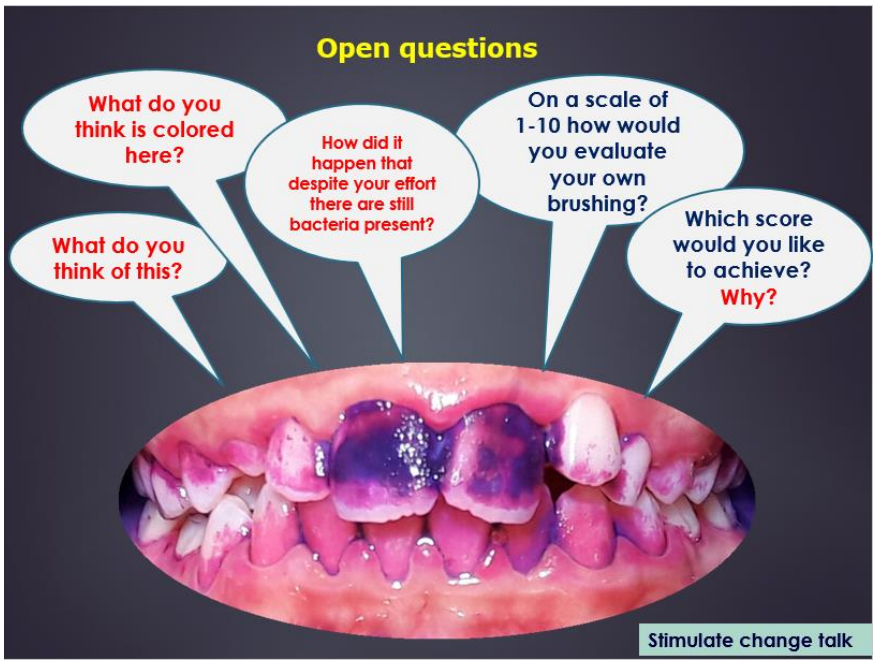
- **Low literacy** in the Netherlands 16-65 years old:
  - Difficulty with language: 53,1% women, 46,9% men

    54,4% native Dutch, 39,2% foreigners, 1st generation
- **Low Health Skills** in people with highest achieved education level:
  - Only primary school / pre-vocational secondary education 38%
  - VMBO-tl / havo / mbo 21,4%
  - VWO / HBO / university 9,7%
- **Poverty:** 264 000 children in the Netherlands lived below the low-income threshold in 2018 (1 in 10 households)
- **Psychiatric problems**
  - 800 000 18+ in treatment at psychiatric help organizations/GGZ
  - ??? never applied for treatment…

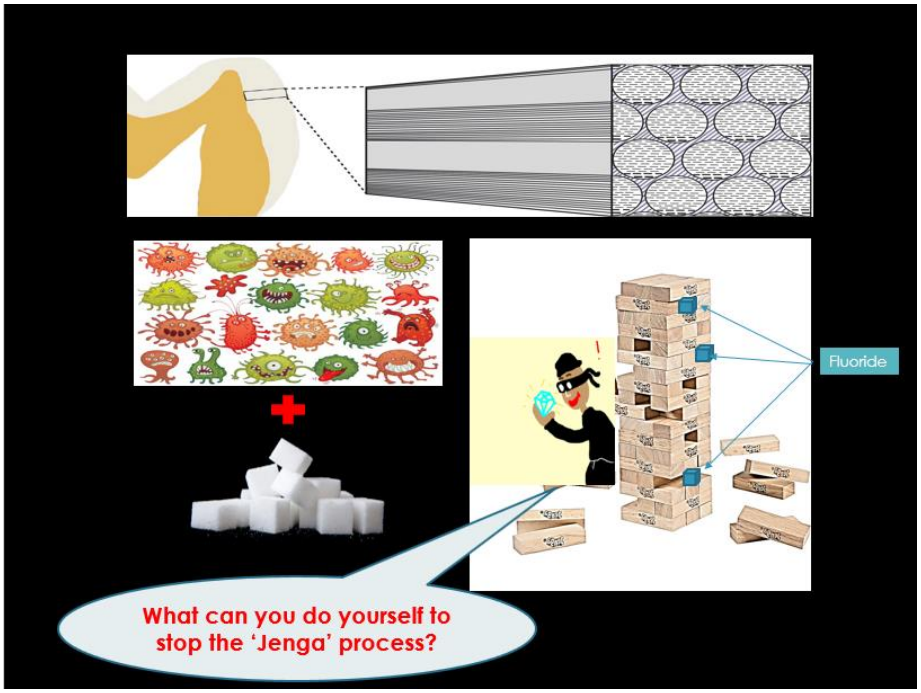
Sources: Court of Audit, 2016
CBS, 2018

8. **Now evaluate the brushing quality in detail. If possible, disclose the plaque with disclosing solution.** (A fearful child can possibly rinse afterwards with a cup.) Ask if they know what the purple color is and what they think of the result. On a scale form 1 to 10 how do they evaluate their own brushing, and which score would the like to achieve?

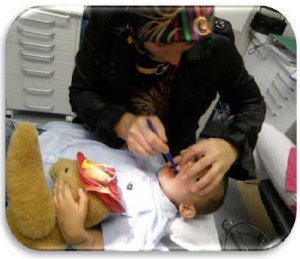
9. **Demonstrate to the parents the clean areas** *(if the child allows it – show it with a probe, e.g., no plaque on the probe along the gingival margin at the incisors).* **Demonstrate the plaqu**e to the parents in the locations where it is present (gently run along the buccal surfaces of the second primary molars above and along the lingual surfaces below with a probe and demonstrate the plaque and bleeding). Sometimes there is also a lot of plaque at the incisors. Ask if they know what causes the **bleeding**. If they do not know this yet, explain it *(the parents usually respond more to the bleeding than to the presence of demineralization)* and tell that the bleeding is easy to prevent if they want to.



Confirm that these are the **most difficult areas to brush for many people**, but it can be made easier with some tricks. Demonstrate **the demineralization areas** (initial white spot lesions that can still be prevented from developing into cavities) and the **cavities,** if they are already present. Ask them **what they think about this** and whether they know how cavities develop. You can use the **Jenga game as a metaphor for caries**: ***'The tooth is made up of many mineral towers, like Jenga. Each time the bacteria on the tooth get sugar, they steal 'building blocks' (minerals). If this process continues, after a while the tower will become weakened (demineralization) and eventually will collapse. This creates a cavity. Fluoride can help slow down this process. In some situations, the towers are initially weaker; then the process develops even faster, and more self-care is needed. If you manage to restore the balance yourself, the minerals will return and even the cavities can heal/become hard again and restoration might not always be necessary.'*** This explanation visualizes the process. It might be especially useful for people who think weak teeth is a family trait.



10. **Let the child choose a toothbrush and switch places with the parent.** Invite the parent to sit on the practitioner's chair and ask Mom or Dad to be the dentist today. You sit on the assistant's chair or stand next to it. Or change the role in the knie-to-knie position.
11. **Let the parents brush and observe** their motoric skills and technique. Investigate the obstacles. How does the child react during brushing? Are the parents cleaning in a chaotic way? Do they brush only on the occlusal surfaces and the cusps? Do they brush too hard? Too fast? Too deep in the mouth? Is the child gagging? Is the moving tong an obstacle? Is the child refusing to be brushed? Do they brush the buccal surfaces with their mouth wide open? Are the lips and cheeks very tight? Does the child bite very hard? Where is improvement needed?





12. **Affirm where they already brush well, for example, on the cusps. Show that if they only brush on the cusps, plaque remains at the gumline or in the fissures and that causes bleeding, demineralization and eventually cavities** (Do not say anything judgmental, just neutrally state the fact - you have observed that together). Look for solutions together.

13. **Ask if it is OK to give some suggestions now.** Tell them that to reach the difficult areas better, we advise to let young children at home **lie down on parent's lap and for the parents to use two hands for brushing.** Demonstrate how the brush is gently pushed through the cheek onto the teeth.

14. We advise to start with the **upper molars on the buccal surface** *(even for children with a gag reflex this is quite possible). Pay attention!* ***DO NOT use toothpaste for this exercise now:*** *toothpaste impedes*

visibility and does not help with brushing; toothpaste is only needed for fluoride and a great taste. **Show how to push the cheek and lip of the child aside with the finger, for better visibility during brushing, and how to brush the gum margins with a soft brush and little pressure.**

15. **Choose the necessary brushing exercises from Appendix 1. Focus** on the main points, do not overload with information. Next time you can continue to build up the skills. **Let the parent practice** with brushing away the plaque. Affirm their efforts and results.

    - ***Playing exercise for the child:*** when the child is young and anxious, let the child sit or climb off the chair, let the child remove the water from a cup with the small saliva ejector tip. Repeat this several times. Does the child now dare to put the ejector tip in the mouth?

16. Agree **achievable goals** of self-care with the parents and child for the next appointment.

17. When the parents have filled in the nutrition diary, it is now time to take it for assessment. Write down in the computer what was practiced, how did it go and what was agreed (the goals).

……..

This appointment can also take place in a specially designed room for brushing training, without a dental chair. Then you chose together a position that would be best applicable for this child.

Second appointment with the same prevention assistant or pediatric dental hygienist: 1 month * after the first training, 30 min.

* if the cavities are very deep and active, make the interval shorter.

Goals: 1. Evaluate and, if necessary, continue training with brushing.

2. Make the child even more familiar with the dental environment.

3. Increase the self-confidence of the parents and the child **(self-confidence + skills = success).**

4. If brushing goes well, you can start familiarizing the child with the dental equipment.

5. Discuss nutrition booklet.

Materials: Children's sunglasses, small mirror for the child to look, toothbrush, tray with the mirror, probe and tweezers, petroleum jelly, patient napkin, pellets to color plaque (preferably the blue, then you can distinguish between old and fresh plaque) polishing cup or brush, a disposable cup, saliva ejector tip.

1. Let the **parent (s) wash their hands** and let the child take off the shoes, climb on the chair, press the buttons if it wants to, let it choose sunglasses, and give a small mirror. Ask the **parent to sit on the assistant's** chair.
2. Ask the parents how they are achieving the **agreed goals**. How did the brushing go? What went well? What do they still experience as difficult?
3. Look in the mouth. It is **desirable to disclose** the plaque, except for the very young children with difficult cooperation. For them, the presence of plaque can be examined with a probe. If the child still finds the saliva ejector scary, they can rinse with water from a disposable cup and spit it out in another cup.
4. Demonstrate the locations that are clean. Confirm the effort, even if it is just a small area. Demonstrate the places where plaque is still present. If they did not brush at all, investigate the obstacles, and gently emphasize that the child has the right to have clean teeth. Look for a solution together.
5. If they have cleaned well at home, if necessary, you can start getting the child familiarized with the dental equipment.
6. If there are areas for improvement of brushing, **continue with the training** (see the **exercises in Appendix 1** and choose what is needed). Invite the **parent to sit on the practitioner's** chair and let them brush. Support, motivate, confirm, compliment and inspire. Do not let them give up too soon. You are the trainer!
7. If the child is very young and anxious, that is enough for today. You might choose to let the child play with the saliva ejector and water in a disposable cup again.
8. If the brushing went well, you may want to switch places with the parent again. Explain and try out a polishing cup on the finger and in the mouth. Use tell-show-do. Blow air on the hand and in the mouth. Practice with the saliva ejectors on the hand and in the mouth, first without rinsing, then with rinsing. See how far you can go and don't push the child too far. If a step is too difficult, go back to the previous one. **End with a positive experience.** If the child wants it, let it press the buttons of the chair.
9. Discuss the **nutrition** diary with the parents (see Appendix 2 for an example conversation). Agree **achievable goals** for the next appointment. Note down the agreed precise goals in the computer (for

example "agreed to reduce juice 5 -> 2 x day, starting tomorrow", "replace the milk in the bottle with water, diluting milk gradually", "learn to drink from a cup", etc.).

Third appointment at the dentist. Evaluation 1 month after the second training, 20 - 30 min.

1. **Ask, how is it going with implementation of agreed goals? What did they manage to achieve?**
   a. Confirm the effort made and the goals achieved.
   b. Ask about the possible obstacles if they did not manage to achieve the goals, but confirm the efforts.
2. **Evaluate the child's behavior** (you may ask the child to take off the shoes and climb onto the chair - see description of initial training by prevention assistant).
3. **Perform oral examination:** check for the presence of dental plaque, caries activity, gingivitis, and other findings. **Affirm the achieved results,** e.g., the arrested lesions and healthy gums. By pointing this out you will let them know that caries process and gum inflammation are stoppable with their efforts.
4. **Are the molars erupting?** Show them and explain the specific perpendicular brushing of the erupting molars according to the Nexø method. **Let them try it.** Examine the fissures. Important! Fissures for evaluation must be clean!
5. **If necessary, make the BW X-rays.** Now you have time for it and the child is already a bit used to the procedures in the mouth.
6. **Discuss all the findings with the parents.** Use the motivational interviewing techniques. What do the parents themselves think of the situation?
7. **Agree on new self-care goals.**
8. **If necessary, evaluate the acceptance of polishing and rinsing by the child.**
9. **In the presence of non-cavitated and/or cavitated caries lesions, select the necessary treatment per tooth. Follow the Clinical Practice Guidelines for youth, where the priority is given to causal treatment of caries:** Microsoft Word - 310187_MvJ23_Samenvatting_ENG (hetkimo.nl) **(KIMO, 2020). In case of cavitated caries lesions, start with the 5-step Non-Restorative Cavity Treatment method. If that is not sufficient, plan for minimally invasive interventions. Discuss the possible treatment options with the parents. Plan the following appointment or a series of appointments (see risk categories below or the NOCTP point structure on page 6):**

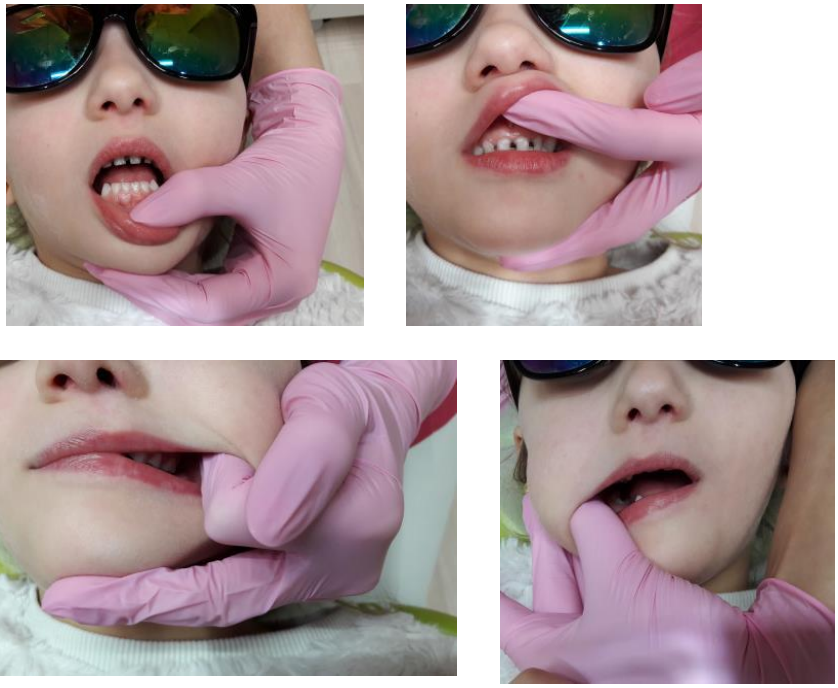
Category 1	No oral health problems, parents are motivated, diet and brushing habits are in accordance with the guidelines, no active caries lesions present/the existing lesions are arrested, hard and shiny, and have been followed for a longer period, no caries lesions on X-rays. *Plan next recall appointment in 6-12 months.*
Category 2	No active caries lesions present, or any existing lesions are inactive, hard, easily accessible for brushing and have been followed for a longer period. The process of behavior change has started, but oral care is not yet completely according to the guidelines. The child has general health problems or limitations that make it difficult to follow prevention advice. Permanent molars are in eruption stage. For the child older than 5 years it is impossible to make BWs. *Plan two appointments: 1. Interim evaluation and guidance appointment in 3-4 months with prevention assistant or pediatric dental hygienist.2. A recall with the dentist in 6 months.*
Category 3	Active non-cavitated and/or cavitated caries lesions are present in enamel and/or dentin, visible directly and/or on X-rays. HSPM molars are present. The permanent molars are in eruption stage and already have caries lesions or MIH lesions. The process of behavior change has already started, but brushing is often still not successful or the child does not cooperate well with brushing, the diet has not yet changed enough and contains many sugars, they did not manage yet to stop with baby bottle to bed or breastfeeding at night, no fluoride or insufficient fluoride in the toothpaste, parents too little motivated or have too big obstacles. The child has general health problems that make it difficult to follow advice. Making BW X-rays for a child with risk is still not possible. The child with caries lesions is not cooperative at the dentist. Try to increase motivation for self-care. Decide which lesions in the primary teeth you will treat according to the 5-step non-restorative cavity treatment method (NRCT). Which teeth have high risk of rapid caries progression, pain, and inflammation? Where is support with minimally invasive restorations needed (ART/SMART, Hall)? In the deeper lesions you may choose to apply SDF immediately and cover with a layer of GIC or temporarily with Cavit ™. Which permanent molars are you planning to monitor after instructing to brush perpendicularly according to the Nexø method? Where will you apply fluoride? Which molars will you seal and where are restorations needed? Make follow-up appointments for NRCT, preventive guidance and/or minimally invasive treatment. During each appointment, the situation is evaluated. It is usually not necessary to schedule the appointments more often than once a month. If the cooperation of the child is still insufficient but the cavities are easily accessible and/or still small, repeat the "Series of 3". If needed, you may choose to apply SDF to active dentine lesions in primary molars, even if the lesions are still small. If the cavities are large, deep, and active and they are difficult to reach for brushing, while the child's cooperation is still not sufficient, consider referral to pediatric dentist.
Category 4	In a child with many highly active deep cavitated lesions, where no positive changes in self-care have been possible to achieve after two 'Series of 3' (six appointments in a period of about 6 months), where the situation has even deteriorated, where caries process has become more active and lesions developed further, where appointments are regularly rescheduled or missed, we must be alert. Is there structural dental neglect present? Discuss the situation with the parents and, if necessary, consult with the child maltreatment officer in your practice. Which support does the family need? Consider involving an external professional, such as a youth health care specialist or a physician, to support the family. Each child has the right to have clean and healthy teeth. In case of unsuccessful attempts to improve the situation, consider a consultation or a report to Child Welfare services due to child neglect. Discuss this with a colleague and with the parents. Act according to legislation concerning Child Welfare in your country. Consider referring the child to pediatric dentist.

Attachments

Appendix 1. Brushing exercises, brushing positions and other brushing training suggestions

IN THIS APPENDIX SOME EXAMPLES OF EXERCISES AND SUGGESTIONS ARE PRESENTED. READ THEM CAREFULLY AND CHOOSE WHAT APPLIES TO THE PATIENT YOU ARE SEEING. FOCUS ON THE KEY POINTS AND BUILD IT UP SLOWLY. SOMETIMES YOU NEED SEVERAL APPOINTMENTS TO ACHIEVE A GOAL. Always ask for permission, if you want to give suggestions and advice, and ask for feedback on what the parents think of your advice.

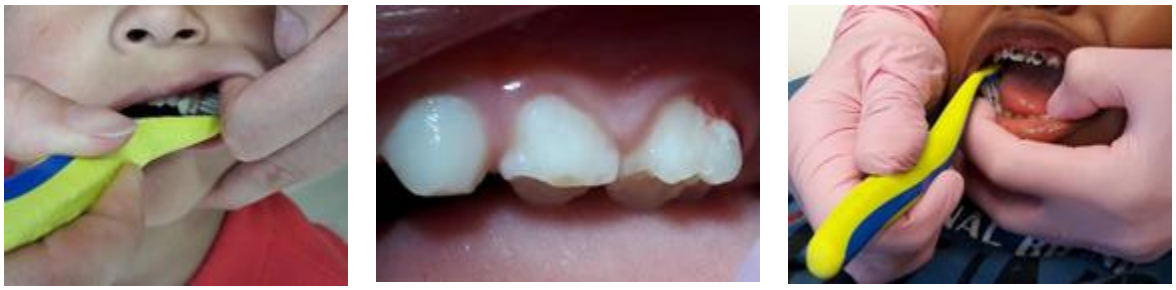
Preparatory exercise 1. **Demonstrate how the parents can use the index finger to hold the cheek aside at the area of the molars. Then demonstrate this with the lip at the front teeth and then at on other side near the molars. Let the parents practice it themselves.** Have them look deeper into the mouth. Make sure that they do not pinch on the cheek but put the finger behind the cheek. Affirm and explain that practicing with fingers in the mouth will help the child become more accustomed to stimuli in the mouth, which may help if **non-restorative or restorative treatment is needed in the future.** *(For children with multiple cavities, you can emphasize this exercise and* ***give homework: 2 times a day while lying with the hands on the stomach brush the child's teeth while the cheeks are well pushed aside with the fingers.*** *First with one finger, and if that goes well - with two fingers. Parents want to help the child to experience any treatment as more acceptable. They can practice for that.)*



Practice these four positions first without a brush, then with a brush.
Note how the lower jaw is supported with the fingers to prevent opening the mouth too far.

**** Additional preparatory exercise - only for young children with extreme cooperation problems or handicapped children.*** Demonstrate how the parents can gain more control by gently restraining the child's head between the abdomen, left forearm and hand (left-handed by right forearm and hand). Let the child calm down with a gentle hug. Speak calmly, let the parent speak calmly too. Let the parents try that. Have the parent push the lip to the side with the finger. Practice that with the lower lip, then the upper lip. Count to 3, then to 5. If successful, try to push the cheek to the side with the finger while keeping the head under control; all this without the brush. Compliment the child and give affirmation to the parent. Start with small steps; agree in advance how far you will count and then count out loud. The goal is to build this up to 10 counts. Ask if someone at home can help with holding the child's hands.

Exercise 2. **Place the toothbrush in the correct position at the two last molars** (brush on the edge of the gums) without moving, with **the cheek to the side. Ask the child to close the mouth.** Then open again, then close again. Demonstrate, that with the open mouth the brush cannot reach the outside surface completely, the cheek is in the way. **The brush can thoroughly clean two teeth at the same time.** Demonstrate the segments per quadrant where the brush should be placed; always two teeth, whereby the cheek or lip is pushed to the side. Let the parents practice that. Have the child open and then close again. Ask if the parents notice the difference. Emphasize how well the locations are visible when the cheeks/lips are pushed aside.

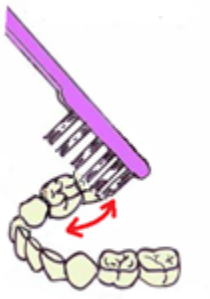


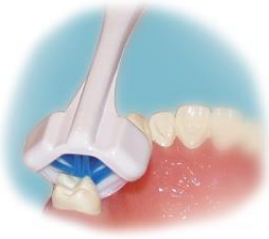
Brushing is precision work

Exercise 3. **Brushing the outside.** Let the child bite down. Push the lip or cheek aside. Position the brush correctly at the two upper molars and use short, gentle, scrubbing strokes. Count to 10. Go to the next two teeth and count to 10. Brush the entire upper jaw in this way. Finish the round with the lower jaw. Here the child can open a bit more, but not too far.

Exercise 4. **Brushing the inside.** Have the child open wide and ask the parent place the brush on the gumline of the **molars without moving:** on the upper teeth, then on the lower. Confirm the position, compliment if successful. Sometimes this can be very difficult due to gag. Have the parent practice this a few times until it works. Look for solutions together. Ask the parent to brush the inside. Counting to 10 per location is the ultimate goal, sometimes you need to build it up slowly. For example, start counting to 3 per location the first week, to 4 the second week, etc. Slowly relocate the brush to the new segment. Make sure that the brush is placed vertically at the front teeth and the gum line is reached. The front teeth are brushed one by one.

- Asking the child to move the tongue aside is counterproductive. Explain this to the parents. The child cannot consciously move the tongue aside.
- Opening very wide moves the tongue back and that usually helps (but not always).
- Sometimes the brush can be pushed slowly and gently under the tongue; the brush is then exactly on the gumline. Practice together and see if this is possible. It doesn't always work.
- For children with a **gag reflex** or for disabled children with spasticity, it is better to start with the front teeth and move slowly to the molars. Teach the child to breathe properly through the nose to suppress the gag reflex.
- For some children, brushing at an angle with the brush tip on the gum line per molar provides the solution (see the drawing below).



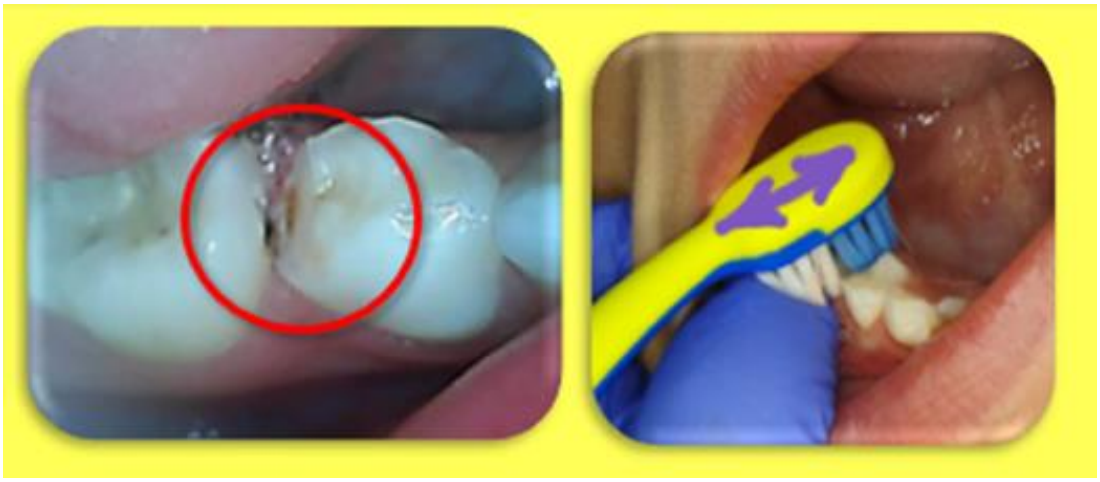


- For some disabled children, a "three-headed brush" (Superbrush) can provide the solution: https://www.plein.nl/dr-barmans-superbrush-kinderen

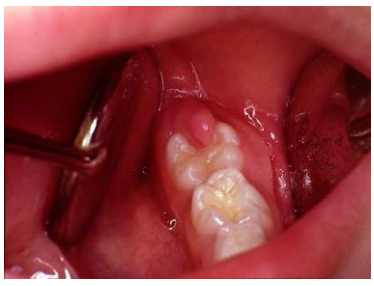
- In children who vomit easily, it is better to brush before eating to remove the plaque and later to rinse after eating.
- Some children may gag easily due to foaming toothpaste or they may not like the taste of the toothpaste. Then first can be brushed without toothpaste; only after that the toothpaste is applied on the teeth (toothpaste does not remove the plaque; toothpaste is only needed for fluoride and the good taste).

Exercise 5. **The top of the molars.** Counting to 10 per two teeth usually works without difficulty. This is an easy way to finish brushing.

Exercise 6. **An extra cleaning round for the cavities.** Often the cavities can be easily reached with a **regular brush.** The brush can be set with a 90 degrees angle on the molars, or else a **single-tufted brush** can be used. Careful brushing can help with arresting many cavities (sometimes a temporary remineralizing agent is needed: fluoride varnish, SDF and/or **toothpaste** with 1000 - 1450 ppm F, even for a young child, or otherwise agree on 3rd or 4th brushing moment per day). Demonstrate how the parents can clean the cavities, let them practice, and demonstrate how to rub a small amount of junior toothpaste into the cavities with the brush.



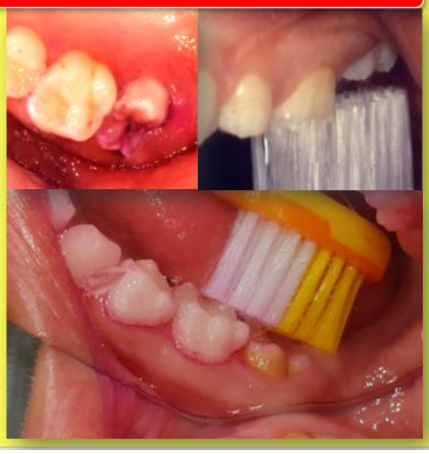
Exercise 7. **Brushing of the erupting molars.** Explain that during the eruption stage the fissures of the molars are very difficult to reach. Explain that the fissures are not yet mature and therefore caries can develop quickly in that area. The maturation process takes approximately 2 years. Demonstrate the perpendicular cleaning method according to Nexø. Then let the parent try it. Make sure that the brush is placed in the right location. To avoid a gag reflex, use short strokes and count to 10 per tooth. Using a single-tufted brush is also an option. An electric brush is temporarily NOT suitable for erupting molars. It is difficult to place properly, and it can irritate the operculum distally. This 'perpendicular' method is also suitable for the erupting primary molars.



Do you see new teeth coming through?

This is how you can prevent and even stop cavities in the fissures of the newly erupting molars

The toothbrush can NOT reach the new tooth



The toothbrush can reach the new tooth much easier

- Help your child to brush until the age of 10
- Use junior toothpaste with more fluoride

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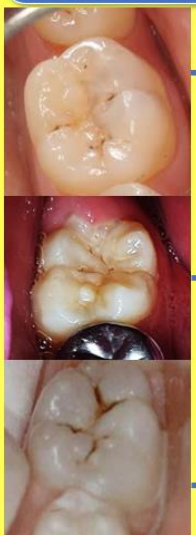
Cavities in the fissures can be prevented and stopped



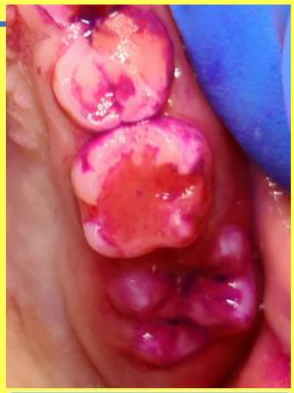
- Help your child with brushing until the age of 10
- Use junior toothpaste with 1450 ppm fluoride
- Limit sugar consumption
- You might need to come back after 3-4 months

↓

If that is not enough, we can apply varnish with high fluoride concentration or SDF

↓

If that is not enough, we will apply a protective layer (sealant)



Use disclosing tablets

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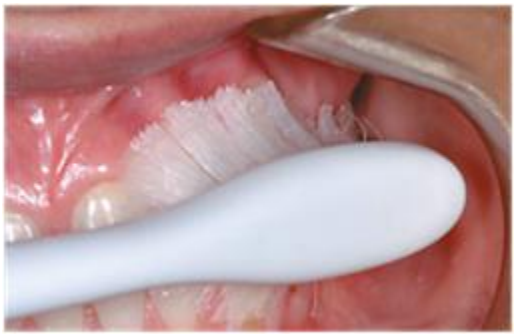
Exercise 8. **Gentle brushing.** Some parents brush too hard; that can be painful, and children refuse to be brushed. Brushing hard can damage both, soft and hard tissues. Hard brushing is not efficient (the tips of the bristles remove most of the plaque) and the brush wears out quickly. Therefore, let the parents practice soft brushing, for example by letting them feel on their own hand how gently they should brush. They must ensure that the bristles do not bend while brushing.



Exercise 9. **Brushing of the sensitive MIH molars.** MIH molars can sometimes be extremely sensitive, which makes brushing very difficult. MIH molar is very vulnerable, if unbrushed. Therefore, brush a MIH molar manually with a brush that has been warmed up under the tap water and first do it without toothpaste, just remove the plaque. Using toothpaste with a higher fluoride content is of course important, but it can be painful. After brushing, as described above, the toothpaste can be applied by first rubbing it on the front teeth with a warm toothbrush and then spreading it further in the mouth. This way, the toothpaste has already mixed with the saliva and has become warmer, making it feel less painful. Applying Tooth Mousse can also reduce sensitivity in the long run. Parents can order Tooth Mousse with various flavors on the internet (note: this is not suitable for children with a milk allergy).

Some parents are startled when their child starts crying or gagging while brushing. Brushing normally does not hurt, if done gently and if there is no open pulp, acute inflammation in the mouth, or a hypersensitive MIH molar. Crying can sometimes simply mean that the child does not want to brush, that it wants to have its way, or that it is tired. If the child is not used to brushing, it may feel a little uncomfortable. Children around the age of 2 years often want to do everything themselves, including brushing. That is normal (‘the terrible 2’s or 3’s’). Confirm that. That is no reason to give up and not to brush. Build up the brushing gradually. Encourage the parents to gently push the boundaries. Each child has the right to have clean teeth, even if they do not understand that and cannot brush properly themselves. After all, children need parents to learn healthy behavior.

Your role as a coach is to look for solutions together, to adjust and to motivate them to continue. Some parents give up very quickly. Encourage in a positive way to carry out the exercises that are necessary. For most parents this means brushing the entire teeth correctly (so to count to 10 per each segment, outside, inside, above!). For some children, with very poor cooperation and/or a gag reflex, you can agree to brush a bit at a time, counting out loud, and then take a break. Just like at the gym! Encourage the parents to go on. Confirm their efforts. Sometimes you may even need to support the hand of the parents in order not to stop too soon. Just like an athlete who must endure the last few meters to the finish, the parents need your support. End in a positive way. People feel satisfied when they know that they have achieved something and are able to do something good.

BRUSHING POSITIONS. **Choose a position which suits the parent best and practice it in the treatment room.**

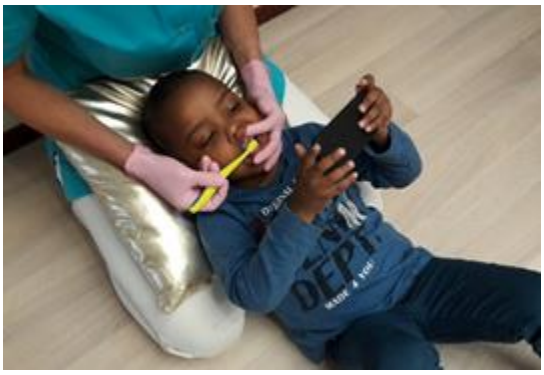
The brushing positions can be:

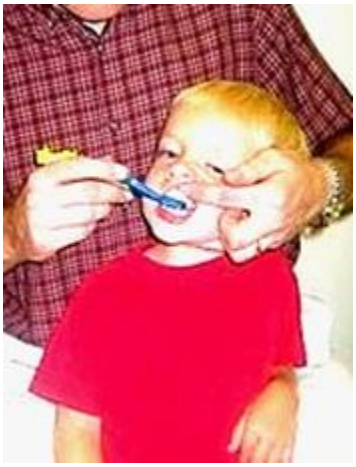
a. Lying with the head on your lap.

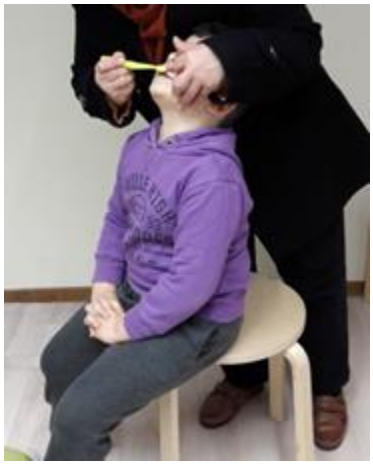
b. Parents seated in a regular chair, children between the legs, with their head on their lap (especially useful for very active small children).

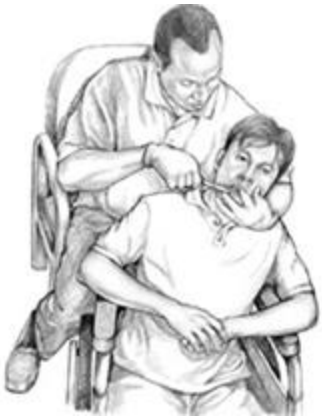
c. The child stands, the parent stands behind it, so that the child has support against the parent.

d. The child is seated, the parent stands behind it and the head rests against the parent.









HOW CAN YOU MAKE BRUSHING EVEN MORE FUN?

- A brushing calendar with stickers and an agreed reward can be recommended, especially for children who find toothbrushing difficult. Design a brushing calendar yourself or downloaded from Internet.
- Children may like to use apps. Distract the child with the phone or tablet.

18. Let the child brush for the parent, then change roles.

19. Watch toothbrushing videos together, for example Trammelant in Tandenland from GGD Amsterdam: https://trammelantintandenland.nl/?page=materiaal_filmpjes

THE TERRIBLE TWO'S. When the toddler was a baby, toothbrushing was easy and now suddenly the child no longer wants to let the parent to brush! Around the age of about 2 years, children discover their own identity and explore boundaries. Anticipate this and explain to the parents that there are many children who do not want to brush for a while. After some time, while the parent tries to make brushing as fun as possible, this often goes well again.

Useful links about parenting (in Dutch)

https://www.positiefopvoeden.nl/nl/home/

https://www.denhaag.nl/nl/in-de-stad/opgroeien-en-opvoeden.htm

https://oktamsterdam.nl/ouders/

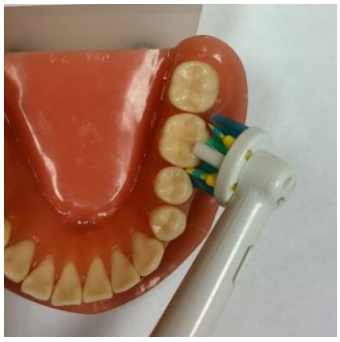
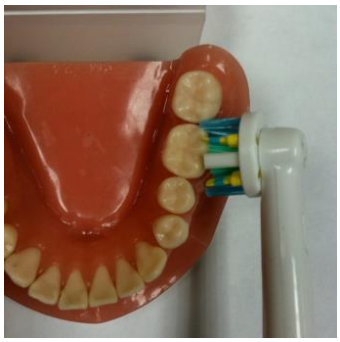
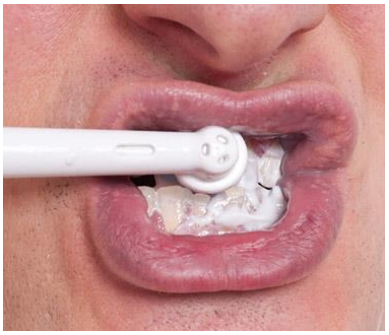
SUMMARY OF TOOTHBRUSHING

- For many children brushing exercises can be done in one appointment, with others more appointments are needed. Each time take another step further.
- Brush with both hands, keeping lips and cheeks well aside.
- Make sure the child bites down to brush the outside surfaces.
- Count to 10 per two teeth.
- Brush in this order: Outside - Inside – On the top.
- Ask the parents, how they experienced this method of brushing.
- For small children with cavities that may need restorative treatment give parents some homework: ask them to brush while the child is lying down on the lap of the parent with hands on the stomach. Teach the child to breathe properly through the nose.
- The child can first brush itself and then the parents or vice versa. The fine motoric skills of children are sufficiently developed to brush independently from the age of 10 ***(analogy: driving license from 18 years old, cleaning certificate from 10 years old. The latter can be obtained from the dental professional after a successful test).***

ELECTRIC BRUSHING. For many people, purchasing an electric brush is quite an investment. A regular brush can also be used very well. If together with the parents you decide to use electric brushing, let the parents first practice under supervision. The automatism of regular brushing hinders the new movement (analogy: if you have played tennis all your life and you suddenly start ping pong, you use your hand in a completely different way).

- An electric brush is only an improvement if it is **used properly**.
- For many people who start brushing electrically without instruction, the brushing quality may deteriorate (due to incorrect automatism).
- Electric brushing **cannot be used instead of helping the child**. Children can brush independently only from 10 years. At the age of 8-9 the children can brush themselves in the morning, and in the evening the parents clean the difficult places after the child has brushed itself.

- Electric brushing can be very helpful when **the parents have less developed fine motoric** skills.
- The brush must always run on a surface for **5 seconds per tooth**. The only movements made are towards mesial and distal (see images) on one tooth. If electric brush is moved back and forth like a regular brush to clean two or more teeth at the same time, it will not do its job properly: bacteria will remain, and the effort will be wasted.
- With electric brushing, use the **same order: outside** (starting at the last molar), **inside, on the top.**
- The brush should reach **the gumline**, so do not just put it on the cusps but take care to reach the outside and inside surfaces properly! Demonstrate this and let the parents practice.
- Many young children initially like electric brushing, but once the electric brush is used properly, they sometimes experience a **tickling in the nose and ears**, which they find annoying.
- **Preferably do NOT interchange electric brushing and regular brushing.** Choose one of these methods. With a normal toothbrush you must move, with the electric brush you keep still. By combining both methods, the development of automaticity is blocked, because you then also move the electric brush without thinking about it, resulting in a poor brushing quality.
    - *In the period of the eruption of the first permanent molars, first all teeth are brushed with electric brush, and next to that the **occlusal surface of the erupting molars** is brushed perpendicularly with an ordinary brush or with a single-tufted brush.*
- **Electric brushing can be very useful in children with less developed oral motor skills** (speech problems, passive chewing, drooling or keeping food in the mouth for a long time). It can provide the necessary massage of the soft tissues and stimulation of the mouth muscles. In these cases, working together with a speech therapist might be useful.


DISCUSSION OF FLUORIDE TOOTHPASTE ACCORDING TO PRINCIPLES OF MI

Fluoride in the toothpaste is very important to prevent and stabilize caries. See folder "Advice caries prevention of the Ivory Cross": https://www.ivorenkruis.nl/userfiles/File/IvK_Advies_Cari_spreventie.pdf

Ask the parents if they use fluoride toothpaste for the child.

- **If so, is the toothpaste age appropriate?**

In young children with very active caries, it may be necessary to use toothpaste with a higher fluoride content (1000 - 1450 ppm).

Demonstrate how much toothpaste to use (the size of a pea).

Demonstrate the toothpaste rubbing procedure on all cavities and enamel lesions.

- **If not, you can ask the parents the following questions, if applicable:**

- May I ask why you do not want to use fluoride?
- What do you know about the effect of fluoride?
- May I explain something to you about fluoride? - with permission you can explain it, otherwise not.
- I have noticed that your child's health is very important for you, but you are unsure about the possible harmful effects of fluoride.
- On a scale of 1 to 10, how important do you think it is that your child does not develop cavities? Why is that so important to you?
- You probably expect that I will give you a lecture on fluoride. But shall we choose an alternative strategy together?
- How do you feel about some extra brushing and cleaning between the teeth? And what do you think about limiting sugar to a minimum? Is that feasible? What is possible for you?
- **May I ask you one more question?** *At this point, you don't want to use fluoride toothpaste. Imagine your child developing multiple cavities in the future, what would you do? May we then discuss the use of fluoride toothpaste?* ***(Hypothetical question method). And leave it at that!***

DEALING WITH PARENTS WHO DO NOT SPEAK YOUR LANGUAGE

Ask the parents if they could take an interpreter with them. If that does not work, try to use **non-verbal** communication to transfer information: use plaque disclosing, show-do with brushing, encourage in a positive way. Remember, your voice and intonation will say a lot. People perceive about **7% of information verbally, 38% through intonation and 55% visually**. Let the parents practice with brushing under supervision.

Let the parents film your brushing instruction. They can look back again at home and possibly arrange someone to translate it.

MOTIVATING ADOLESCENTS ACCORDING TO PRINCIPLES OF MI

In adolescents, advice usually does not work or sometimes can even be counterproductive. They do not feel like receiving a lecture form a dentist. Therefore, it is best to have a conversation according to the motivational interviewing structure.

An **example** of conversation of a prevention assistant or dental hygienist with an adolescent is presented below.

- Hi ....., how nice that you came today. You do care about your oral health!
- Last time you discussed with the dentist that there are several initial caries lesions and that your gums are bleeding in many places.
- Probably now you expect that I will give you a lecture (and you do not like that). I am not going to do that.
- May I ask you, what are you doing already to keep your teeth healthy?
- Do you know how your cavities developed and why the gums are bleeding?
- What do you think of that?
- May I ask you, on a scale from 1 to 10, how important do you think your oral health is for you?
- Why is it so important?
- If you find it…..XX….. important, because ……., what can you do yourself to stop the cavities and bleeding of the gums? Is there anything else you may want / be able to do?
- I would like to use disclosing solution to see the plaque better, is that okay?

You let the patient lie on the dental chair, disclose the plaque and give a mirror.

- What do you think of the result? On a scale from 1 to 10, how do you evaluate your own brushing quality?
- What would you like to achieve?
- May I give you a few suggestions?

Now you can give brushing training and suggestions, preferably while standing in front of the mirror.

- What do you think of that?
- Do you want to learn something else? For example, how to clean better between the teeth? Shall I show you that or do you already know?

- Shall I now remove the calculus? You let the patient lie again.
- *(Shall I polish away the purple color?) - usually no polishing is required.*

- What shall we agree on?
- Shall we make an appointment in XX weeks to see how you are progressing?

On the website of Gewoon Gaaf there are a few videos where it is shown how to make contact with an adolescent.

https://www.youtube.com/watch?time_continue=3&v=uoLEXVVKMag&feature=emb_logo ,
https://www.youtube.com/watch?time_continue=1&v=g401Zcqu2CQ&feature=emb_logo

I ALWAYS FORGET TO BRUSH…

An alarm on the mobile or a sticker in a visible place on the bedroom door, in the kitchen or in the bathroom can remind one to take the brush and brush the teeth. Encourage the child to choose their own reminder. The purpose of the sticker is that children and parents are reminded to brush their teeth when they see the sticker. Brushing teeth at fixed times and places makes brushing a habit.

Appendix 2. Conversation example about dietary habits with motivational interviewing

- **You have filled out a nutrition diary. Thank you. Is it OK if we discuss now what your child eats and drinks?**
    - You have already marked the sugary foods. Review the diet with the parents. Summarize what you have noticed, neutrally and without judgment.
    - If the parents have not filled out the nutrition diary, you may ask:
        - What does your child eat and drink on an ordinary day? Can you tell us more about breakfast, lunch at school and eating/drinking after school?
        - For a young child: **Is your child still being bottle- / breastfed? What does your child drink during the day and at night? How often?**
- **In summary, your child eats and drinks …… times a day, of which…... times products with sugar. Is that right?**
- **What do you think about your child's diet and the number of sugar moments?**
- **Would you like / be able to change something? Have you tried this yet?**
    - **Ok, I understand that it is not easy to change things, because ……., but you already managed to change……..**
- **On a scale from 1 to 10, how important your child's oral health is for you? What makes it X and not lower?** *(listen to the reasons for change and summarize.)*
    - *You care about oral health; how important do you think your child should drink water (stop the bottle, etc.)*
    - *You find it difficult that your child wants to eat nothing else but a sweet sandwich / drink nothing else but juice and you are worried that he/she is not eating enough food, but on the other hand you care about health.*
    - *Show the ambivalence (on the one hand the difficulties and obstacles, on the other hand the motivation to change).*
- ***How confident are you that you will actually succeed in achieving…… (goal), on a scale from 1 to 10?*** *(You can now name the improvement in brushing quality as a success, confirm that and ask how it feels when something works out).* ***What do you need to increase that and make X + 1? How can we help you?***
- **When will you start making changes?**
- **What do you already know about sugar and dental caries? May I give you information about healthy food?**
    - Name them what is healthy to drink: water, tea without sugar or honey (unlimited) and milk. All other drinks contain sugar. Even if it says 0%, it usually contains a little fruit sugar. These drinks can be used to wean the consumption of sugary drinks. Water or tea can be made more attractive with a mint leave, pieces of cucumber, fruit or ice cubes.

- Sweet drinks, including juice, are not among the recommended foods in a healthy food pyramid. They belong to the group "sweets and treats".
- We recommend three meals a day and no more than three to four snacks. Water can be consumed without limits.
- Snacks are preferably without added sugar: fruit, vegetables, crackers, rice wafle, cheese, sausages, a slice of bread.
- Chose one fixed sweet moment a day, preferably immediately after a meal. That is much more than in Sweden, where children only get sweets once a week, known as *'Lördagsgodis'* tradition. Brushing after a sweet moment is the safest.
- Show some ideas for healthy drinks, the lunch box and snacks in the pictures.

- **What do we agree on?** *Summarize and write down the agreed goals in the computer.*

More information about healthy eating from pregnancy to 18+ can be found at:
https://www.voedingscentrum.nl/nl/zwanger-en-kind.aspx






Saving box for sweets can be used for children who are spoiled with lot of sweets by other family members or visitors.

Appendix 3. Summary of Motivational Interviewing (MI) and some suggestions

Various methods have been developed to help people to change their habits. MI is one of the best known and most researched method and has been scientifically proven to be effective when used according to MI fidelity.

MI is a **collaborative** guiding **style of conversation** that reinforces one's own motivation and willingness to change (Miller & Rollnick, 2012).

Your task is to create a trusting relationship with the parent / patient where thoughts of change can be safely initiated and reinforced. During each conversation the parent / patient wants to be seen, accepted and appreciated by you as a person.

The basic principles of MI are:

1. **WE CANNOT CHANGE PEOPLE. People can only change themselves if they want to.**
2. **PEOPLE ARE CONVINCED BY WHAT THEY HEAR THEMSELVES SAY.**

MI IS A COMBINATION OF ATTITUDE AND SKILLS.

MI has several dimensions.

The first dimension is YOUR OWN MINDSET / CORE VALUES / ATTITUDE: how do you look at people? Motivational interviewing does **NOT** work without the right attitude!

To develop the necessary attitude, ask yourself the following questions after each conversation:

- Have I sufficiently emphasized the cooperation of equal partners? Or did I act as an expert?
- Have I sufficiently respected the autonomy of the other person? Was I so eager to help that I was over-convincing and giving unsolicited advice? Did I tell the other person what to do? Or have I listened to how he / she wants to solve the situation and in which steps?
- Do I believe that this person self has motives, ideas, knowledge and powers to change, even if we have to investigate and talk about it together?
- Have I done enough to investigate and elicit these motives, ideas, and forces by applying the techniques of motivational interviewing?
- Am I able to empathize with this person's situation; have I understood the obstacles and have I clearly demonstrated my understanding? Am I empathetic enough?

The second dimension is the SKILLS AND TECHNIQUES OF MOTIVATIONAL INTERVIEWING.

You can train these skills and techniques daily. The best trainers are your patients and their parents.

The most important skill of the healthcare provider is:

- **The ability to listen**

> Listening is very simple, but simply listening is the hardest thing that there is.
>
> *Based on: "Playing football is very simple, but playing simple football is the hardest thing that there is." (Johan Cruyff).*

How we respond to the information we have heard is especially important. People feel heard and understood when they notice that we are trying to empathize with their situation as human beings. It is important that we briefly state what we have understood verbally and non-verbally.

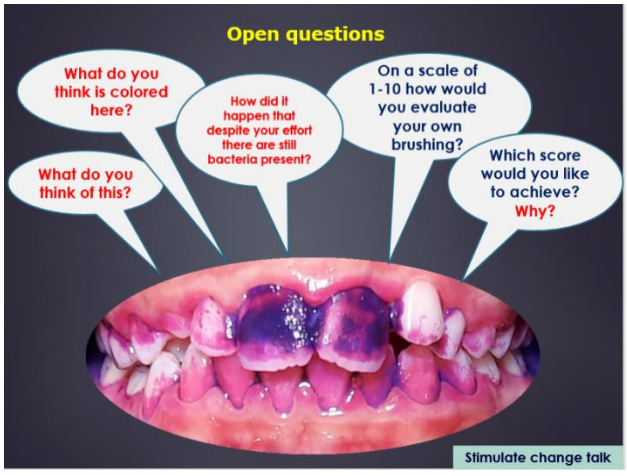
We can listen best when we are calm, not under pressure and not eager or too quick to find a solution. We put our knowledge aside until a later moment and do not offer any resistance. We point out: ***"I am here for you right now and do nothing but try to understand you."*** You are curious, calm and empathetic.

The basic techniques of MI are:

- **Asking open questions -** you give the other person space to tell their story
- **Reflective listening -** you try to understand the other person and you show it to that person
- **Affirmation -** you focus on the positive sides of the other person.
- **Summarize –** you repeat the important points of the conversation and show that you were listening
- **Provide information** with permission

By **asking open questions** you let the other person tell their story, their point of view. You never know which way the answer will go. This helps in finding motivation and planning. These questions start with "who", "what", "where", "why", "with what", "which" and "how"?

- What do you think of this?
- What is important for you?
- Why would starting to brush be important for you?
- How do you want to achieve that?



Reflective listening is MI's most important skill. It is useful to train yourself in this through specific practice.

You listen to what someone is saying to you and you try to guess the meaning. You not only repeat what is said, but you also try to look deeper, to the underlying emotion. Reflective listening focuses on the other person's point of view and not on your opinion. You try to stand in the other persons shoes.

- *Reflection is not a question, but a statement.*
- *It is like a short summary of what you have heard.*
- *Reflection is always neutral, your opinion does not matter.*
- *Your voice goes down at the end of the sentence* 
- *Reflection is a curious hypothesis.*
- *Reflection promotes self-investigation of the other person.*
- *Use phrases such as "It is ...", "It is as if ...", "You feel ...", "You think ...", "There is ...", "You ...".*
- *Simple reflection. The speaker's message is repeated and slightly rephrased.*
- *Complex reflection adds meaning; you try to identify the underlying emotion.*
- *With reflection you can consciously overestimate or underestimate the intensity of the speaker's underlying emotion to stimulate further clarification of thoughts and feelings of the other.*
- *With reflection you give direction to the conversation by responding or not to certain parts and by emphasizing something.*
- *You do not have to agree with what is being said, but you emphasize that you understand the other persons point of view.*
- *Double-sided reflection: you show both sides of the ambivalence. First, the sustain talk is reflected, then the change talk.*

Two examples of reflective listening are presented below.

- *I always give my child a treat when it asks for it.*
- ***You find it difficult to say 'No'.***
- *Yes.*
- ***You want to please your child.***
- *Yes.*
- ***In what other ways could you give your child attention? (Open question)***

- *I stop brushing when he starts crying.*
- ***You find it difficult to continue.***
- *Yes.*
- ***You are afraid that it hurts.***
- *No, not that I am afraid, but my husband doesn't want to hear any crying and tells me to stop.*
- ***You want to maintain peace and quiet at home ..... May I ask you, how important is your child's oral health for you?*** *(Scaling question)*
- *Very important, of course.*
- ***Why is it so important for you?*** *(Open question)*

Affirmation means looking at people through positive glasses.

- *You emphasize what is good, you recognize and acknowledge the other person's positive sides.*
- *You look for the strengths and possibilities of the other, what has been successful, what has been achieved earlier.*
- *Affirmation is your observation about the other person's qualities, and you share your observation with that person. It strengthens self-confidence.*
- *Affirmation is not the same as a compliment or praise. With a compliment or praise you are judging the other person: you decide what is worth a compliment and what is not. With compliment you indicate that you are above the other, instead of being equal.*
- *Avoid affirmations that start with "I", such as "I am proud of you."*
- *Always start affirmations with "You": 'You put a lot of effort", "You did your best", "You are a strong person".*
- *With affirmation you steer the conversation away from what someone cannot do and **you focus on the optimistic attitude: what someone can do**.*

Summarizing is the combination of different pieces of information from the conversation. You are showing that you have tried to understand and that you have listened.

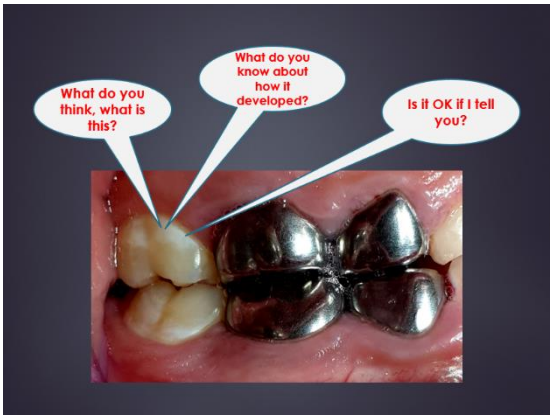
By placing different parts of the conversation next to each other, you can give a different meaning and you steer the conversation. It helps to get to the core of the conversation, and it provides an overview. You can also ask if you have missed something.

You only give information with permission.

You do not give unsolicited advice. You give no solutions and no explanation without permission.

If you want to give **advice**, use the **elicit - provide - elicit** (sandwich) technique. You provide information in small, manageable pieces.

- **Is it OK if I tell you something about fluoride?**
- Yes.
- **Now you provide the information.**
- **What do you think of this?**



"Unsolicited advice is the junk mail of life"

(Bernard Williams)

THE PITFALLS - What can hinder patient change?

- Your righting reflex, your noble wish to help and to fix the problems
- Your passion and enthusiasm – you are the one who is enthusiastic about change
- Your expertise – you know so much and you want to share it
- Your haste (you have little time, you understand the reasons and the need to change, but the other is not there yet)

MI works by resolving AMBIVALENCE.

Ambivalence is the simultaneous presence and expression of contradictory thoughts, feelings, attitudes, values. ("I want to change but life is in the way."). People often know why they would like to change, but they experience obstacles.

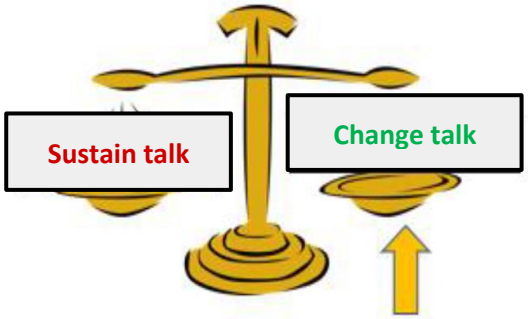
MI strengthens the intrinsic motivation by analyzing and resolving ambivalence.

When a **person in ambivalence** is approached by a **person with a strong righting reflex**, **RESISTANCE** arises. The person will then talk about the barriers and defend the motives for not changing. In these situations you hear: "***yes, but.***" According to the basic principles of MI, people are mainly convinced by what they hear themselves say. If they talk (or think) about the reasons for not changing, they will not change. Our task is to elicit change talk – **we need to stimulate people to talk about their own change as much as possible.**

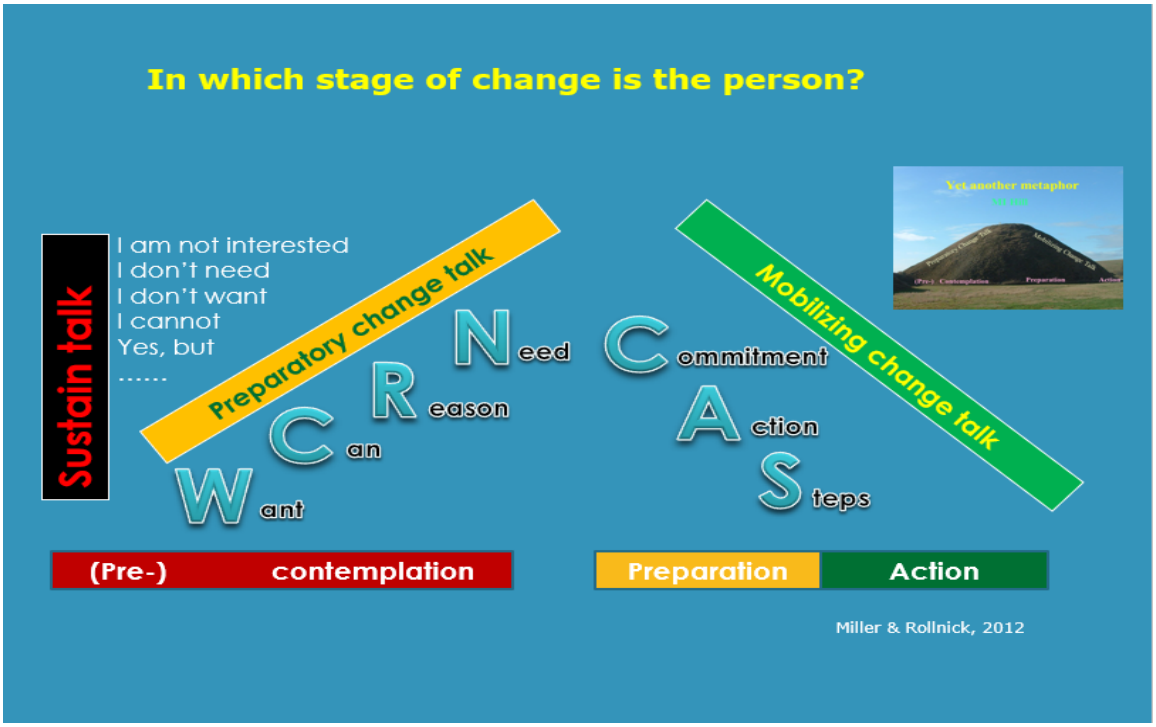
- *When you hear "**yes, but**", take a step back and **reflect** what the other person has just said*

Behavioral change

Miller & Rollnick, 2012



Your task during the conversation is to stimulate the patient's change talk as much as possible



During the conversation, you listen carefully and reflect on the words that express the thoughts of change. That is called change language. **Which words do you hear during the conversation?**

When you hear the words listed below, the person is not ready to change yet (**pre-contemplation phase**). You explain the situation in a neutral way and you provide, with permission, information about the associated risks. Sometimes you can ask a **hypothetical question** (see example).

- **I am not interested…**
- **I do not want… , don't need….**
- **I cannot…**
- **Yes but…**

An example of a hypothetical question:

- ***May I ask you one more question? At this moment you do not want to use fluoride toothpaste / you do not see any possibility to reduce sweet snacks or drinks. Suppose your child would develop more cavities in the future, what would you do then? May we discuss the possibility to use fluoride toothpaste / make some changes in diet then?***

  And leave it at this point! Do not try to push or convince!

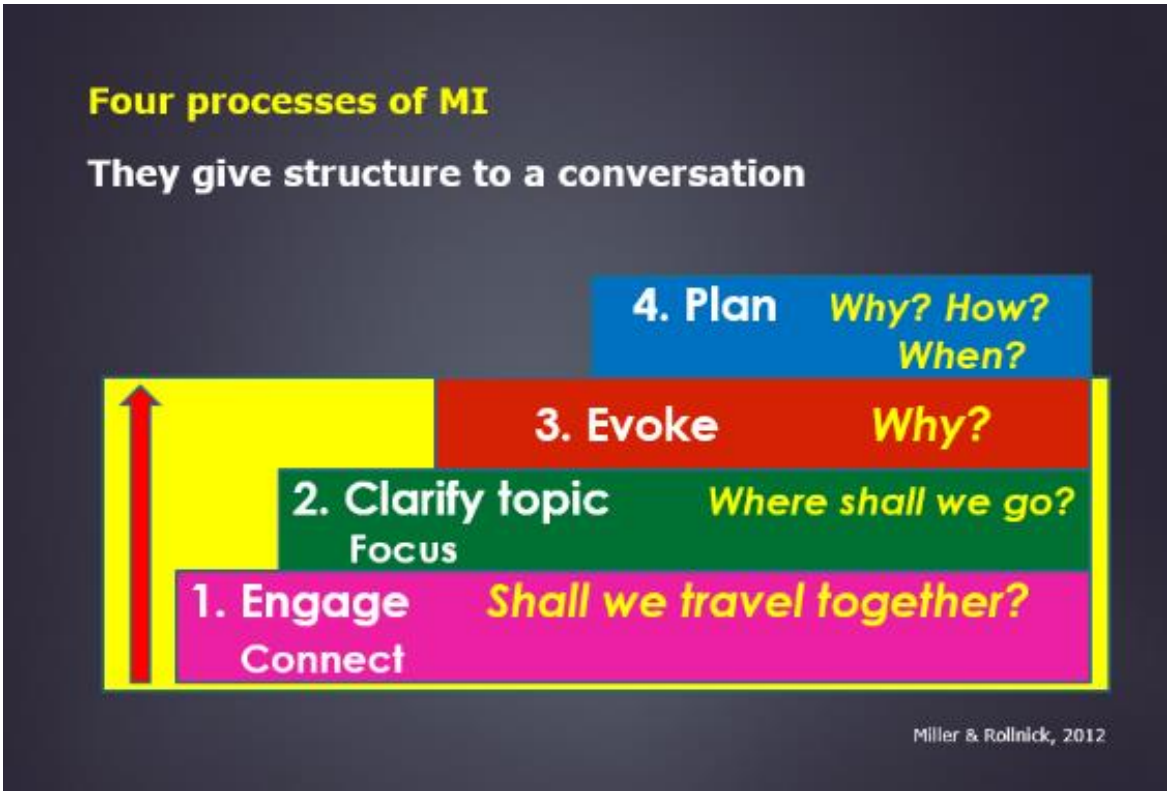
When you hear the words listed below, the person is preparing to change (**contemplation phase**). You try to strengthen this willingness by asking questions, reflecting, affirmations, summarizing, providing information and giving advice with permission.

- **I want… I would like to…….**
- **I can try…..**
- **Yes, it is important to …..**
- **I have to….**

When you hear the words listed below, the person is in the process of change (preparation and action phase), has ideas of his/her own and / or has already taken the first (small) steps. You support, ask questions, reflect, give affirmations, discuss the planning and goals and, with permission, provide information and advice.

- **Agreed, I am going to….**
- **I am going to buy an electric brush / floss / interdental brushes ...**
- **I already bought a new brush / floss / interdental brushes**

The **third dimension** of MI is the **FOUR PROCESSES OF CONVERSATION.**



During each conversation you go through all four processes. One of the pitfalls is that you go too fast with the planning and explanation without having built the foundation of engagement, focusing and evoking motivation. The duration of these processes varies with different people, on different days and during different appointments. When people feel comfortable, these processes run quite quickly.

Engaging already starts in the waiting room with a warm welcome. In the treatment room you continue to make contact by showing interest and listening, so that the child and the parents feel comfortable. Attention is focused on the human relationship. It is important that children and parents always come to the same team of dentists / dental hygienists and prevention assistant during the treatment process and evaluation.

Your **focus** goes from broad, focused on the person and his/her situation, to the goal of the appointment and how people experience it, and further to the oral situation and the findings present in the mouth. You determine together with the parent / patient what will the conversation be about. While looking into the mouth, the attention goes to the most important points; the findings are discussed with the parents and / or patient and you ask for their input (**"What do you think about this?", "What do you know about this?**). During the conversation, try to avoid a series of closed questions ~~(How many times a day do you brush? How often do you brush? How many times a day do you drink juice? How many times do you drink soda? Do you drink energy drink? How many times do you eat? Do you eat candy?~~) Avoid this. This feels like interrogation and breaks the engagement. We want to reinforce the autonomy of the people and make them think themselves. Better ask the following questions:

- **"What do you do to keep your teeth healthy? And what else?'**
- **"Tell me about brushing."**
- **"How do you ensure that the food and drink is healthy?"**
- **"May I ask a few questions about what you eat during the day?"**
- **"May I ask what you eat and drink?"**
- **'Did I miss something?'**

Even if you have a checklist to go through during the recall appointment, **try to collect the answers indirectly, rather than interrogating.** Or otherwise ask for permission to ask several questions.

During the appointment with a prevention assistant, the focus of the meeting is usually a specific problem, for example brushing, interdental cleaning, prevention of caries or periodontal diseases, removing of calculus or the diet. You can ask people what they want to focus on, you can give some suggestions or use a **menu card**. Make sure you do not give too much information in one session.

When the focus is clarified, you start to **evoke: elicit and increase motivation**. Your goal is to stimulate change talk. The more people themselves talk about their own change, the higher the chance that they will change. You do this by asking open questions, for example by asking about the values of the person:

- **"What's important to you?"**
- **"What does health mean to you?"**
- **"What do you hope / do you want for your child's oral health in the future?"**
- **"You want your child to be happy, what does it mean to you?"**
- **"How do you give attention / reward your children?"**
- **"You love your child very much, what does love for your child means to you? … .. Is oral health part of that? "**

A valuable tool for evocation are the **scaling questions**:

- **"May I ask you, how important is ... for you on a scale from 1 to 10?"**
- **"How important for you is that you can… ..? Rate with a number between 0 and 10. "**
- **"How sure are you that…... will succeed, on a scale of 1 to 10?"**

It does not matter which number the person has named; you ask then "**why is it … X… high and not lower**". That encourages people to talk about their reasons for the change.

You can then ask:

- **'What do you need to achieve X+1?'**

Only after you have elicited and heard enough change language can you start **setting concrete goals and planning together**.

An example of a menu to focus and choose goals together. One or more goals can be agreed at the same time, depending on the situation.

Information about Motivational Interviewing and examples

You **can record and analyze your own conversations** to improve your own skills in MI. **Or else ask a colleague to listen and analyze.**

Below are some useful links to help you master MI.

At BMJ Learning you can create an account and log in for free. There you can take a free course of about 1 hour with explanations and clear video examples from Stephen Rollnick:

https://learning.bmj.com/learning/home.html

After logging in, search for Motivational interviewing in brief consultations

On the website https://www.stephenrollnick.com/ you can find a lot of information, videos, and a course for healthcare providers. There are continuously new, useful free webinars added.

On de website 'Talking to change' (https://www.glennhinds.com/category/podcast/) you can listen to podcasts on various topics about MI. There are continuously new ones added.

Many sample videos can be found on the website of Matthew Allen, a dentist in the United States and MI trainer certified by MINT: http://mdavidmi.com/dental-motivationalinterviewing-mi-videos-all

MINT is the international organization of MI trainers; on the website you can find information on MI, current research, courses and find a certified MI trainer in your area or read how to become one yourself: https://motivationalinterviewing.org/

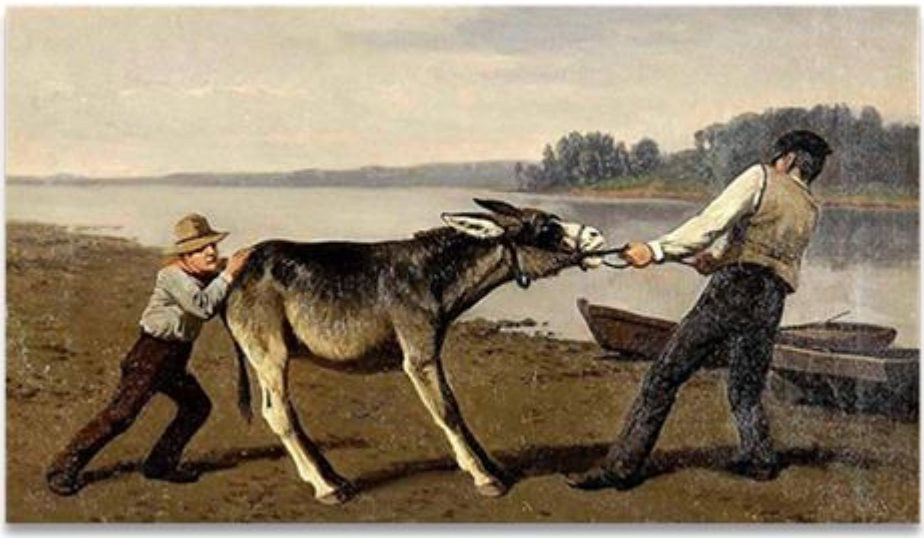
Some lectures and examples on video:

1. https://www.youtube.com/watch?v=_KNIPGV7Xyg&list=PLPKTVRQGwF8Xu3qezEYnnnrsiduKowKQo&index=4 : Brief explanation of the ORBS skills (Open questions / Reflect / Confirm / Summarize) during a motivational interview, with examples
2. https://www.youtube.com/watch?v=s3MCJZ7OGRk&list=PLPKTVRQGwF8Xu3qezEYnnnrsiduKowKQo&index=1&t=12s Introduction to MI by Dr. B. Matulich, member of MINT
3. https://www.youtube.com/watch?v=k4ZCfUTr4FM&list=PLPKTVRQGwF8Xu3qezEYnnnrsiduKowKQo&index=7 Five essential strategies in motivating people to change by Dr. M. Herie
4. https://www.youtube.com/watch?v=5L8vNQJDIP8&list=PLPKTVRQGwF8Xu3qezEYnnnrsiduKowKQo&index=16 building reflective listening skills
5. http://www.youtube.com/watch?v=3xrEaFPbYC8 bad example of the use of MI by a dentist
6. http://www.youtube.com/watch?v=f8QSA_5PEFM&feature=relmfu same as 5, but better now.
7. http://www.youtube.com/watch?v=dm-rJJPCuTE Motivational Interviewing: Evoking Commitment to Change the diet.

8. http://www.youtube.com/watch?v=URiKA7CKtfc The Effective Physician: Motivational Interviewing Demonstration.
9. http://www.youtube.com/watch?v=80XyNE89eCs The Ineffective Physician: Non-Motivational Approach
10. https://www.youtube.com/watch?v=Ow0lr63y4Mw Stop it!
11. https://www.youtube.com/watch?v=jQpmGOGHbQk Ideas about education about nutrition.
12. https://www.youtube.com/watch?v=RgVZZ3BRd_4 Four useful parenting ideas.
13. https://www.youtube.com/watch?v=asTijTSsCg0 Support in education at Youth Health Care
14. https://www.youtube.com/watch?v=AQKCh-mKlS8 About Safe Home
15. https://casaa.unm.edu/download/miti.pdf The Motivational Interviewing Treatment Integrity ", a scoring system to measure the fidelity and quality of motivational interviewing.

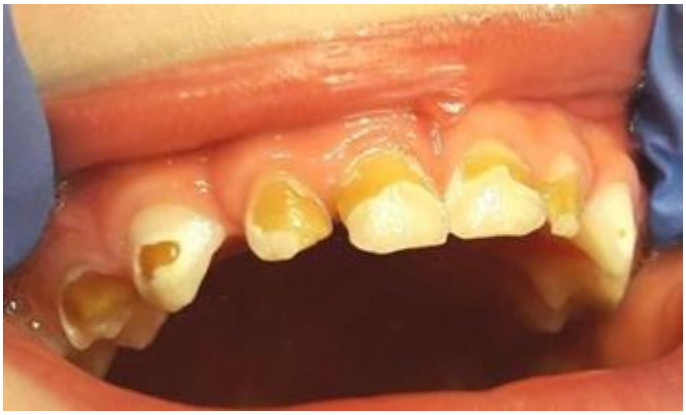
Reference books on MI:

1. Miller, W. R., & Rollnick, S. (2012). Motivational Interviewing, Helping People Change, 3rd ed. New York: Guilford Press. ISBN 978-1-60918-227-4
2. Rollnick, S., Miller, W. R., & Butler, C. C. (2007). Motivational Interviewing in Health Care: Helping Patients Change Behavior. New York: Guilford Press. ISBN 978-1-59385-613-7.
3. Rosengren D.B. (2009). Building Motivational Interviewing Skills: a practitioner workbook. New York: Guilford press. ISBN 978-1-60623-299-6 (Here you can download the full book Rosengren.indd (mednet.co.il))



Appendix 4. Case examples of minimally invasive dentistry based on MI

Jan - stabilized dentinal lesions in an anxious toddler



- Jan visited a dentist for the first time at the age of 2, together with his older sister.
- He did not want to be examined, but it was possible to check his teeth while Jan sat on his mother's lap.
- Active caries lesions extending into dentin on the buccal surfaces from 54 to 62 were detected.
- The mother was motivated, but brushing his teeth was extremely difficult.
- Jan received a bottle of milk to bed and lemonade and water during the day.
- For 2 years the mother and Jan received intensive guidance, like described in this book. First, they came every month, later with an interval of 2 months, and when the situation became more stable - every 3 months.
- Jan is now 4 years old. The result of the guidance is that the mother managed to keep sugar consumption to a minimum and brushing slowly became better.
- Jan is still afraid, but he now hesitantly climbs onto the chair and lies down.
- The dentin lesions are hard, shiny and easily accessible for cleaning (see photo above). Restorative treatment is not necessary. Perhaps in the future we can smoothen the cavity margins or build the teeth up with GIC up for aesthetics, if Jan would like that.

Bart - long-term guidance with ups and downs

I hope this case motivates healthcare providers not to give up if things do not always go the way we want.

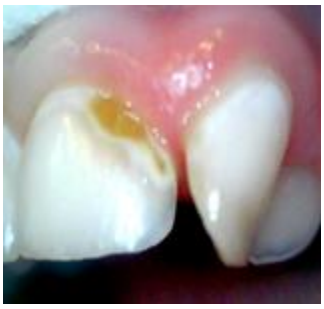
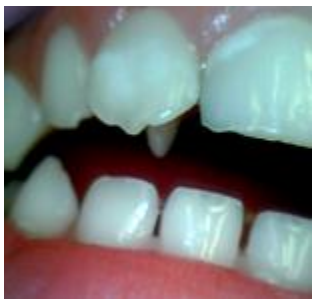
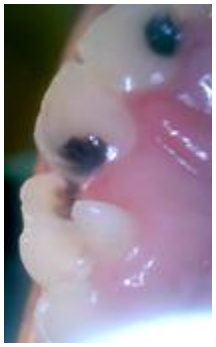
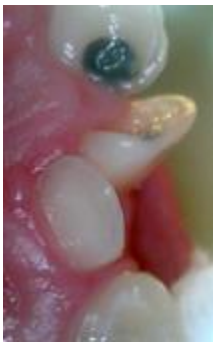
- Bart started going to the dentist at the age of 6 months, referred by youth health care as a part of 'Healthy teeth: all aboard!' study. He received a bottle of milk at night and brushing was difficult. He had surgery for cleft palate. His mother comes from Eastern Europe and she did not understand much of the language of the country she came to find work together with her husband. Communication was not easy.
- Caries activity has been noticed. Small active enamel lesions in the pits of 54 and 64 and enamel lesions in the upper incisors were present. Second molars were not yet erupted.

- The mother was motivated. She received preventive guidance and the brushing improved. This stopped caries activity, lesions became arrested.
- Around the age of 2 years, Bart's behavior changed: he no longer wanted to cooperate with brushing and caries activity increased again. Deep pits in the fissures of the first primary molars developed into active cavities into dentin. He was referred to a specialist pediatric dentist.

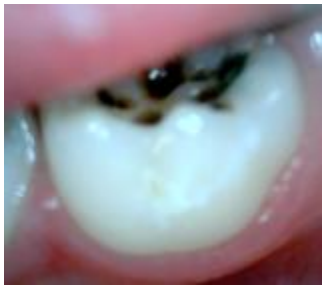
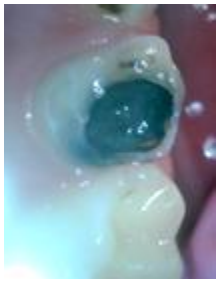
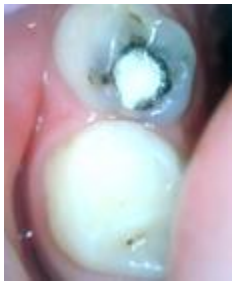
Learning moment!

At around 2 years old, children's behavior can change, anticipate this!

- It was exceedingly difficult to examine Bart in the knee-to-knee position and he did not cooperate with the mother brushing for him.
- Through motivational interviewing and manual training in three appointments, one each month, the mother learned how to cope with uncooperative toddler and to continue brushing.
- While brushing, Bart kept on biting on the brush very hard. In addition to brushing training, in agreement with the mother, we applied Silver Diamine Fluoride (SDF) to the active cavities of the molars and on the **front teeth (lingual only)** to stabilize the caries process. Because of the aesthetics, we did not use SDF buccally!

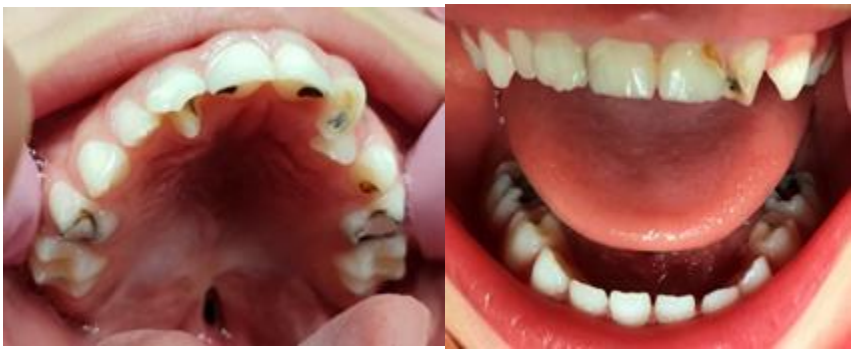





- The cavities have turned black due to the SDF application. That gave insufficient stabilization for the 54 and 64; but in the other lesions caries become arrested.

Photos April 2018: *The knee-to-knee procedure consisted of brushing the teeth with a regular toothbrush, applying Vaseline to the lips, rinsing the teeth with a wet gauze, drying with a dry gauze, applying SDF per quadrant, dry with gauze and immediately close the deep lesion in 54 and 64 with Cavit ™ with the finger; Tooth Mousse was applied to the other lesions with the finger. Procedure per quadrant took no longer than 30 seconds; Bart did not accept any longer procedure and was biting hard on the fingers. With some better cooperation GIC would have been a better restoration, but that was impossible at that time.*

During evaluation after 2 months. (June 2018) the situation looked stable. The oral hygiene was very good, despite the child's resistance during brushing by the mother. Sugar consumption was minimal. Cooperation at the dentist was still difficult.

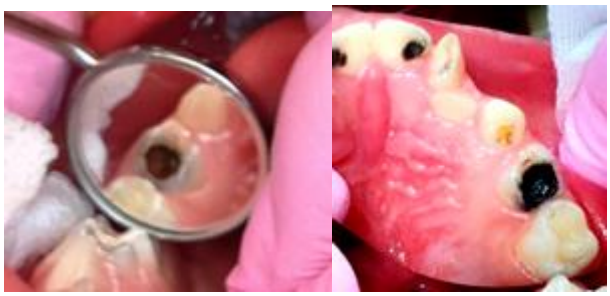


- During the summer vacation in 2018, Bart stayed with his grandparents abroad for 3 weeks, without the mother. Brushing did not work. He was spoiled by his grandparents with sweets and the situation worsened: Cavit™ had fallen out, cavities in the 54 and 85 had become active, the rest were arrested and hard. The cavity in the 54 was deep and in agreement with the mother we decided to treat the 54 and 64 with the SMART method (after brushing the cavities, rinsing and drying with cotton balls and applying SDF, applying conditioner, rinsing and drying with cotton balls, the cavities are closed with glass ionomer cement) to make brushing easier and to prevent pain and inflammation. Light-curing GIC cement was chosen due to an advantage of being instantly hardened and the procedure can be used on the other side right away. Thus, a child with very difficult cooperation is treated very quickly with one GIC capsule.

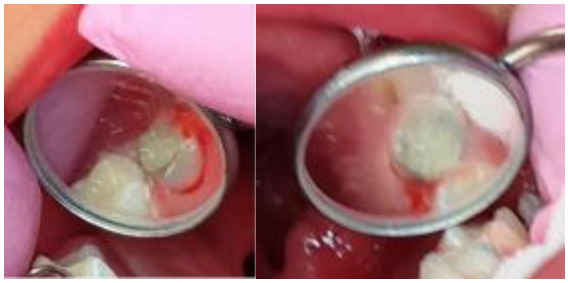
Learning moment!

Summer holidays can be a high-risk period - anticipate it!

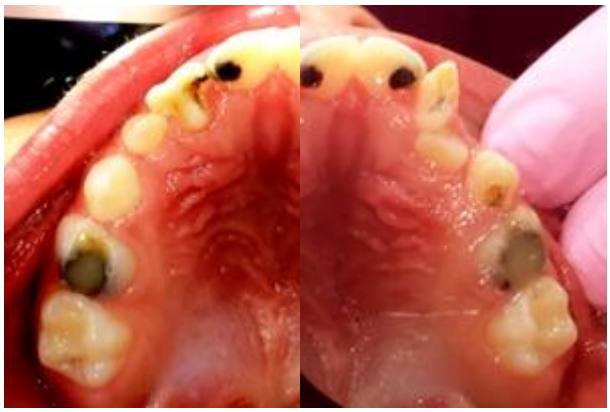
Situation at the end of August 2018



54 and 64 after the application of SDF

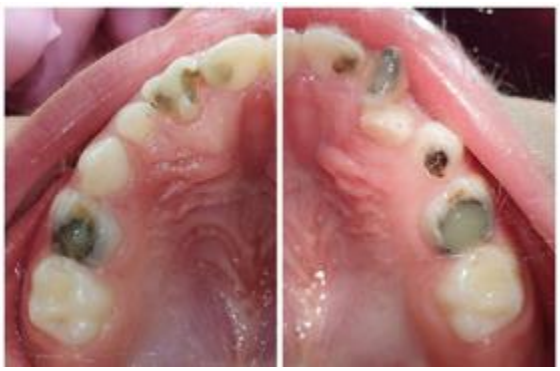


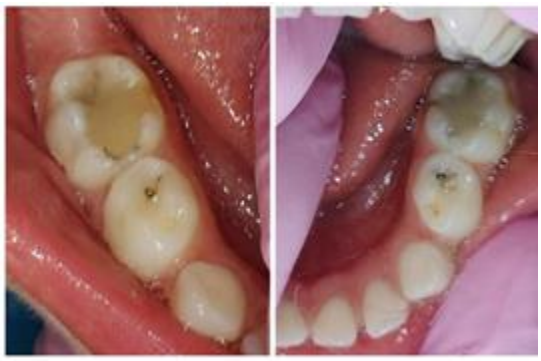
54 and 64 after application of RMGIC, end August 2018



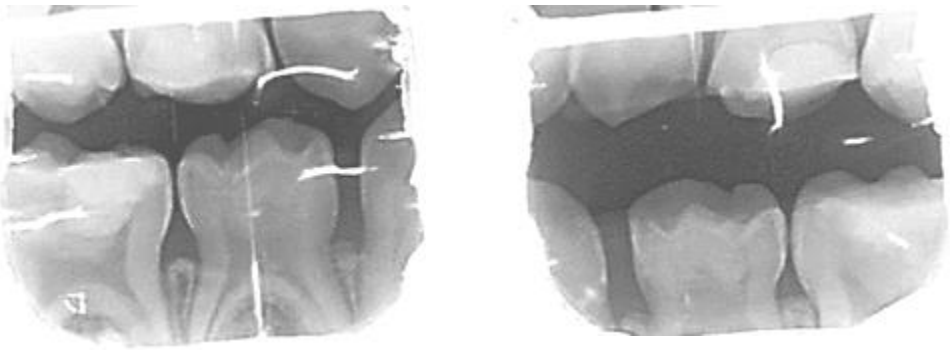
Evaluation of 54 and 64 in October 2018: SMART-restorations darkened by SDF,
the situation in the mouth is stable. Oral hygiene is good, sugar consumption is minimal.

- Bart came back every 3 months for evaluation. His cooperation improved. In the summer of 2019, the cavities in the 75 and 85 were restored with the ART method in the knee-to-knee position. This supports the mother in the difficult task of brushing and protects the molars during the summer holidays with his grandparents (photos September 2019).



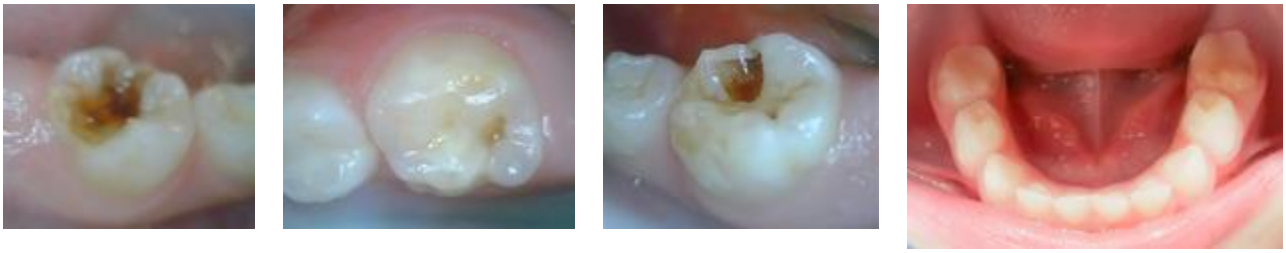


- January 2020: the situation is unchanged and stable, no active caries is present, brushing is going well. Bart turned 5 years old. Interval for evaluation (recall examination) has been extended to 6 months.



BW's January 2020

Maya – minimally invasive treatment of a girl with HSPM



- 2 years old during the intake.
- Referred to pediatric dentist due to hypomineralized second primary molars with breakdown and caries in 65, 75 and 85.
- Maya is very shy and anxious: oral examination only possible in knee-to-knee position
- Maya is of Scandinavian descent. Her parents are highly educated.
- Brushing was done by the parents twice a day, but brushing quality was insufficient. It was not possible for them to brush better; the girl was not cooperative with brushing and the parents were very careful and did not want to push.
- During conversations, the parents became motivated to brush better, and improvement of the quality was progressing in very small steps. We needed to have patience.
- Single-tufted toothbrush and junior toothpaste for the cavities were advised and parents used them carefully.
- Within a period of 1.5 years the cavities were fully stabilized, shiny and hard. Brushing at home became very good and junior toothpaste was no longer necessary.
- Maya firstly came every month, later every 2 months. and finally, every 3 months for evaluation.
- She was very shy and needed time to get comfortable in the dental chair.
- At the age of 3.5 she was relaxed with looking in the mouth with a mirror and probe, polishing and rinsing with the small and large saliva ejector.
- We restored her molars with the ART method in one appointment.
- The situation has remained unchanged and stable in subsequent years.