

# LMActivator

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difference

## Orthodontic appliances



# Silicone activator and aligner



- LM-Activator™ is an anatomically designed activator and aligner for orthodontic treatment. It aligns teeth and activates mandibular growth (i.e. brings the mandible forward for Class II correction) and can simultaneously increase the dental arch length to correct or avoid crowding.
- LM-Activator is ideally used in early mixed dentition for guiding erupting teeth
- LM-Activator supports healthy growth of teeth and jaws in a gentle way.

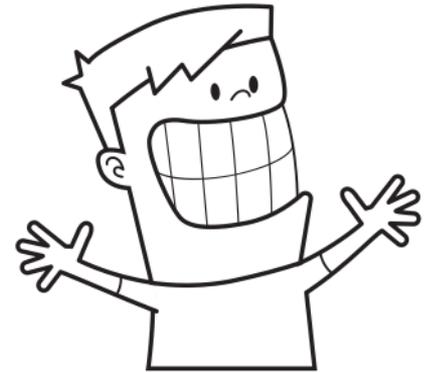
*“We can control the occlusion in a three dimensional way with LM-Activator. We are able to control overbite, overjet, the lateral contacts of the lower and upper arch and to modify the sagittal growth.”*

*Adjunct Professor Gioacchino Pellegrino, University of Naples Federico II, Italy*

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# Case P1: Child 8 years. Before and after 15 days in treatment.



Single tooth anterior crossbite

Pellegrino Giacchino, Management of eruption problems with preformed silicone orthodontic devices. Poster presented at: 21. Jahrestagung der Deutsche Gesellschaft für Kinderzahnheilkunde 25.9.-27.9.2014; Freiburg, Germany.

# Proven results with LM-Activator



- LM-Activator effectively corrects different malocclusions; overjet, overbite, deepbite, open bite, crowding, class II, and dental anterior crossbite i.e. inverted incisors. Sagittal and vertical relationships can be corrected simultaneously.



# Proven results with LM-Activator



- LM-Activator is removable and mainly used during the night.
- Patient friendly material:
  - Soft and flexible medical grade silicone
  - Biocompatible (ISO 10993, permanent contact)
  - Additive free: Does not contain PVC, coloring agents, phthalates, softeners, latex, bisphenol-A or fragrance agents
  - Can be sterilized by autoclaving and disinfected by boiling



*“When I saw the results of LM-Activator, I was surprised.  
I recommend my colleagues to try LM-Activator and see the results themselves.”*

*Professor Juha Varrelä, University of Turku, Finland*

# Case 1: Before and after 1 year in treatment Boy 8 years 7 months



Angle Class II, OJ:6 mm,  
OB: 4 mm,  
Palatal impingement

# Case 1: Before and after 1 year in treatment



Deep bite with palatal impingement

# Case 1: Before and after 21 months in treatment

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Deep bite with palatal impingement

# Case 1: Before and after 21 months in treatment

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21  
months



Angle Class II  
OJ:6 mm, OB: 4 mm

# Benefits of LM-Activator



- With LM-Activator, alignment, leveling and anteroposterior correction can be done at the same time without separate phases.
- Treatment can be started immediately and treatment complexity for both the clinician and the patient is reduced.
- The smooth and flexible silicone and anatomical shape with round edges makes LM-Activator feel comfortable for the patient and it is additive free.
- It is removable and used when sleeping, which offers many benefits for the patient.
- A large assortment of models makes it possible to select the appropriate LM-Activator for the patient.

# Benefits of LM-Activator



*“There are many advantages, one of them is that it will stop the development of the malocclusions very early, thereby preventing the malocclusion to become very severe.*

*To use LM-Activator is easier for the child. The treatment is easier, the treatment is more simple and the outcome of the treatment will be more natural.*

*Professor Juha Varrelä, DDS, PhD, Specialist in Orthodontics,  
Dean of the Institute of Dentistry at the University of Turku,  
Finland*



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# Early treatment

# Why treat early?



## The developed deciduous occlusion provides a good prediction for how the occlusions will develop in the future:

- A distal step of 1 mm or more invariably leads to a Class II molar relationship in the permanent dentition [Föhlich 1961, Fröhlich 1962, Arya, Bishara 1988, Moyers].
- A flush terminal plane leads to Class II in about 40% of patients [Arya, Bishara 1988]. A flush terminal plane combined with a Class II canine relationship seems to indicate a higher risk of distal occlusion [Varrela].
- Lingually inclined upper deciduous incisors that are covered by the lower lip are likely to develop into Class II, div 2 in the permanent dentition [Leighton 1969].
- Patients with Class II Div 1 in the permanent dentition typically have a history of excessive upper lip protrusion and mandibular facial convexity already in the mixed dentition. [Bishara 1997]
- Class II occlusal relations (distal step, Class II deciduous canine relationship, excessive overjet) in the deciduous dentition) persist into the mixed dentition. [Baccetti 1997]

# Why treat early?



**Lack of adequate space in the deciduous dentition is a reliable indicator of treatment need** [Leighton 1969, Leighton 1971, Leighton 1977]:

<b>Interdental spacing in deciduous dentition</b>	<b>Chance of crowding in permanent dentition</b>
Crowded	100%
0 mm (no spacing)	66%
3 mm or less	50%
3-5 mm	20%
6 mm or more	0%

Table adapted from McNamara JA. Jr, Brudon WL. Orthodontics and dentofacial orthopedics. Chapter 3: Dentitional development, Ann Arbor (Mich): Needham Press; 2001.

# Why treat early?



## Malocclusions tend to become more severe as the dentition develops:

- Incidence of mandibular incisor crowding increases from 14% at the age of 6 years to 51% at 14 years of age <sup>[10]</sup>.
- Overbite and overjet typically increase by 1-2 mm when the permanent incisors erupt <sup>[7, 8, 11-14]</sup>. Later on they tend to decrease less than 1 mm <sup>[11, 14]</sup>.
- Incisor crowding or malalignment that is present when all permanent incisors have erupted, will probably remain or become more severe by the time all permanent teeth have erupted. <sup>[5, 15]</sup>
- If Class II div 1 is present at age 6, mandibular growth deficiency occurs between age 6 and 15. <sup>[Buschang]</sup>

# Why treat early?



## **Malocclusions tend to become more severe as the dentition develops:**

- The prevalence of enlarged overjet, deep bite, class II and bilateral crossbite increases from age 6 to 10.<sup>[Glas]</sup>

## **Excess overjet increase the risk of incisor trauma:**

- Children with an overjet larger than 3 mm are approximately twice as much at risk of injury to anterior teeth than children with an overjet smaller than 3 mm.<sup>[Nguyen]</sup>
- Overjet-related risk of incisor trauma may be reduced, if treatment is started before the permanent maxillary incisors have erupted. <sup>[Koroluk, Turpin]</sup>
- Untreated excess overjet may increase the risk of incisor trauma by up to 400%. <sup>[Norton, Schatz, Harrison]</sup>

# Why treat early?



## Stability

- If orthodontic treatment takes place before the apical portions of teeth are fully developed, the risk of relapse may be reduced. It has been postulated that orthodontic movement of an erupting tooth prevents relapse, because the supporting tissues are in a stage of proliferation and new fibres will be formed as the root develops. These new fibres will assist in maintaining the new tooth position. [Thilander 2000, Reitan 1960, Reitan 1967]

## Cooperation

- Compliance with wearing removable appliances is dependent on several factors. Cooperation may be better before adolescence and it has been suggested that treatment should begin after the age of 6 and be completed before the onset of puberty. [Tung, Southard]

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# LM-Activator

# LMActivator

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Low short



Low long



High short



High long



## LMActivator

Used by hundreds of thousands of patients around the world | Clinically and scientifically proven | Evidence from cohort controlled and RCT research results

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### LM-Activator Low Short

Model with a shorter molar section for patients whose second molars have not yet erupted. Delivered in a yellow box.

Size	Narrow
10	94010LS
15	94015LS
20	94020LS
25	94025LS
30	94030LS
35	94035LS
40	94040LS
45	94045LS
50	94050LS
55	94055LS
60	94060LS
65	94065LS
70	94070LS



### LM-Activator Low Long

Model with a longer molar section for patients whose second molars have erupted. Delivered in a blue box.

Size	Narrow
40	94040L
45	94045L
50	94050L
55	94055L
60	94060L
65	94065L
70	94070L



### LM-Activator High Short

Model with a shorter molar section for patients whose second molars have not yet erupted. Delivered in an orange box. The High-model of LM-Activator is thicker in the region of second premolars and molars. It is specifically designed for treating skeletal and dentoalveolar open bite cases.

Size	Narrow
20	94020HS
25	94025HS
30	94030HS
35	94035HS
40	94040HS
45	94045HS
50	94050HS
55	94055HS
60	94060HS
65	94065HS
70	94070HS



### LM-Activator High Long

Model with a longer molar section for patients whose second molars have erupted. Delivered in a green box. The High-model of LM-Activator is thicker in the region of second premolars and molars. It is specifically designed for treating skeletal and dentoalveolar open bite cases.

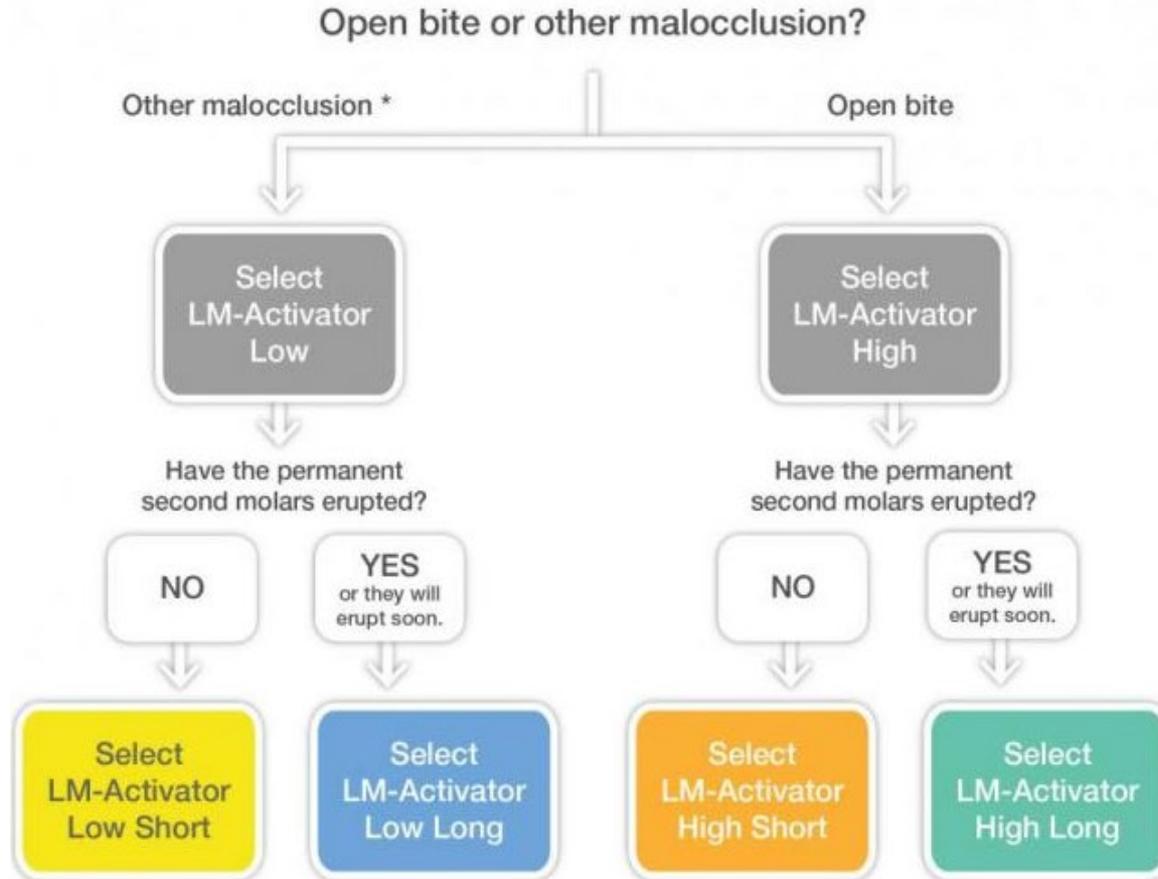
Size	Narrow
45	94045H
50	94050H
55	94055H
60	94060H
65	94065H
70	94070H

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# LM-Activator

Selecting model



\* Class II, deep bite, excessive overjet or overbite, crowding, anterior crossbite or buccal crossbite.

# Product versions



LM-Activator 2 is the new generation of LM-Activator.

## **Reinforced -**

a product version with incisal reinforcement, especially for deep bite



Arch width:

**Narrow** - for patients with a regular arch width, same as LM-Activator.

**Wide** - for patients with a wider arch form

# LMActivator

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Low short



Low long



High short



High long



## LMActivator 2

New features: Incisal reinforcement for deep bite | Narrow and wide versions for different arch forms | Highest surface quality (A-1, SPI AR-106)



LM-Activator 2 Low Short

Model with a shorter molar section for patients whose second molars have not yet erupted. Delivered in a yellow box.

Size	Narrow	Narrow Reinforced	Wide	Wide Reinforced
35	94235LSN	94235LSNR	94235LSW	94235LSWR
40	94240LSN	94240LSNR	94240LSW	94240LSWR
45	94245LSN	94245LSNR	94245LSW	94245LSWR
50	94250LSN	94250LSNR	94250LSW	94250LSWR
55	94255LSN	94255LSNR	94255LSW	94255LSWR
60	94260LSN	94260LSNR	94260LSW	94260LSWR
65	94265LSN	94265LSNR	94265LSW	94265LSWR
70	94270LSN	94270LSNR	94270LSW	94270LSWR



LM-Activator 2 Low Long

Model with a longer molar section for patients whose second molars have erupted. Delivered in a blue box.



Reinforcement with hard incisal surfaces.

Size	Narrow	Narrow Reinforced	Wide	Wide Reinforced
35	94235LLN	94235LLNR	94235LLW	94235LLWR
40	94240LLN	94240LLNR	94240LLW	94240LLWR
45	94245LLN	94245LLNR	94245LLW	94245LLWR
50	94250LLN	94250LLNR	94250LLW	94250LLWR
55	94255LLN	94255LLNR	94255LLW	94255LLWR
60	94260LLN	94260LLNR	94260LLW	94260LLWR
65	94265LLN	94265LLNR	94265LLW	94265LLWR
70	94270LLN	94270LLNR	94270LLW	94270LLWR



LM-Activator 2 High Short

Model with a shorter molar section for patients whose second molars have not yet erupted. Delivered in an orange box. The High-model of LM-Activator is thicker in the region of second premolars and molars. It is specifically designed for treating skeletal and dentoalveolar open bite cases.

Size	Narrow	Narrow Reinforced	Wide	Wide Reinforced
35	94235HSN	94235HSNR	94235HSW	94235HSWR
40	94240HSN	94240HSNR	94240HSW	94240HSWR
45	94245HSN	94245HSNR	94245HSW	94245HSWR
50	94250HSN	94250HSNR	94250HSW	94250HSWR
55	94255HSN	94255HSNR	94255HSW	94255HSWR
60	94260HSN	94260HSNR	94260HSW	94260HSWR
65	94265HSN	94265HSNR	94265HSW	94265HSWR
70	94270HSN	94270HSNR	94270HSW	94270HSWR



LM-Activator 2 High Long

Model with a longer molar section for patients whose second molars have erupted. Delivered in a green box. The High-model of LM-Activator is thicker in the region of second premolars and molars. It is specifically designed for treating skeletal and dentoalveolar open bite cases.

Size	Narrow	Narrow Reinforced	Wide	Wide Reinforced
35	94235HLN	94235HLNR	94235HLW	94235HLWR
40	94240HLN	94240HLNR	94240HLW	94240HLWR
45	94245HLN	94245HLNR	94245HLW	94245HLWR
50	94250HLN	94250HLNR	94250HLW	94250HLWR
55	94255HLN	94255HLNR	94255HLW	94255HLWR
60	94260HLN	94260HLNR	94260HLW	94260HLWR
65	94265HLN	94265HLNR	94265HLW	94265HLWR
70	94270HLN	94270HLNR	94270HLW	94270HLWR

# LMActivator 2



## Patient friendly material

- Soft and flexible medical grade silicone
- Biocompatible (ISO 10993, permanent contact)
- Does not contain PVC, coloring agents, phthalates, softeners, latex, bisphenol-A or fragrance agents
- Can be sterilized by autoclaving and disinfected by boiling

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# LM-Activator

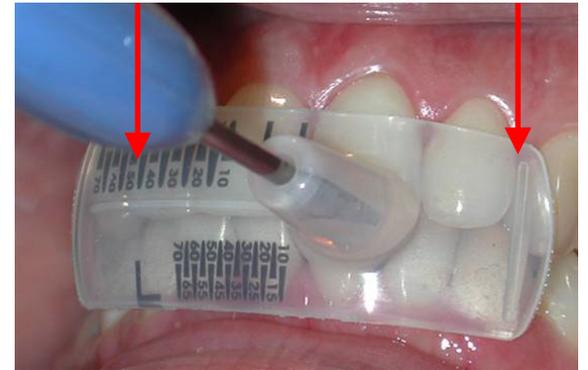
## Selecting size

# LM-OrthoSizer

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- A measure for aiding the selection of the appropriate size
- Measures the distance across the upper incisors
- Indicates the corresponding size
- In case of crowding or diastemas, consider a larger or smaller appliance
- Fit LM-Activator on the patient and double check that the teeth sit properly in the slots
- LM-OrthoSizer will be updated for LM-Activator 2



# Selecting size

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Place the elevated marker between the left maxillary lateral incisor and canine.

Read the scale between the right maxillary lateral incisor and canine (i.e. at the mesial surface of the canine).



# Fitting

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## No risk of crowding

- Choose the size that matches the dentition. The canine rests at the bottom of its slot and LM-Activator places no distalizing force on the canine.



## Crowding

- Select a size that is somewhat larger than the dentition. LM-Activator guides the canine towards the bottom of its slot and applies a force that distalizes the canine.



## Too large size

- The canine is guided against a ridge between two slots and the appliance does not guide teeth properly. Select a smaller size.



# Treatment Protocol – Clinical experience



## INDICATIONS

		Deciduous dentition	Early mixed dentition	Late mixed dentition	Early permanent dentition
Excess overjet, excess overbite, deep bite	Severe		Recommended	Can be considered	
	Moderate		Recommended	Recommended	Can be considered
	Mild		Recommended	Recommended	Recommended
Anterior crowding (incisors and canines)	Severe		Recommended	Can be considered	
	Moderate		Recommended	Recommended	Can be considered
	Mild		Recommended	Recommended	Recommended
Dentoalveolar anterior crossbite of 1-2 teeth	Severe		Recommended		
	Moderate		Recommended		
	Mild		Recommended		
Rotated anterior teeth	Severe		Recommended		
	Moderate		Recommended	Can be considered	
	Mild		Recommended	Recommended	Can be considered
Class II	Severe		Recommended	Can be considered	
	Moderate		Recommended	Recommended	Can be considered
	Mild		Recommended	Recommended	Recommended
Scissorsbite / Complete mandibular posterior lingual crossbite (i.e. mandibular posterior teeth completely on the lingual side of the maxillary posterior teeth)	Severe	Recommended			
	Moderate	Recommended			
	Mild	Recommended			
Gummy Smile (Treatment start before the eruption of permanent maxillary central incisors)	Severe		Recommended		
	Moderate		Recommended		
	Mild		Recommended		
Open bite (High-model of LM-Activator)	Severe		Recommended	Can be considered	
	Moderate		Recommended	Recommended	Can be considered
	Mild		Recommended	Recommended	Recommended

### Contraindications:

- Skeletal Class III
- Midline discrepancy >3 mm
- Very narrow upper arch\*
- Palatally impacted teeth\*
- Severely rotated posterior teeth\*
- Fully erupted anterior teeth that require torquing\*
- Teeth requiring intrusion

\*May be treated with combination treatment (LM-Activator together with other appliances such as quad helix.)

# Patient co-operation and motivation



LM-Activator clinic  
marketing brochure  
M1061EN



Instructions for patients  
in English  
LM 94533 15 pcs

Brochure for the clinic with general information about LM-Activator and the use, e.g. to parents

Instructions on how to use LM-Activator for the patient/child. Including a calendar card for following the use.

The background features several bottles of LM Activator in various colors: orange, yellow, light green, and blue. The foreground is filled with several clear plastic cups, some of which have the LM Activator logo embossed on them. The overall scene is brightly lit with a soft, blue-tinted light.

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**LMActivator**  
**Thank you!**