

Table of contents

1	Introduction	1	4	Prevalence	31
1.1	First clinical mention of MIH	2	4.1	International data	32
1.2	Determination of terms	2	4.2	Studies in Germany	32
1.3	Medieval finds	3	4.3	Practical relevance	35
1.4	Outlook	4	4.4	References	35
1.5	References	5			
2	Clinical presentation and morphological features	7	5	Etiology	37
2.1	Teeth	8	5.1	Prenatal factors	38
2.2	Color	8	5.2	Perinatal factors	39
2.3	Localization	8	5.3	Postnatal factors	39
2.4	Characteristics	8	5.4	Conclusion	41
2.5	Hypersensitivity	14	5.5	References	42
2.6	Deviations from the classical definition	15	6	Diagnostics and classification options	45
2.7	References	17	6.1	Diagnostics	46
3	Structural properties of hypomineralized enamel	19	6.2	Classifications	50
3.1	Tooth enamel	20	6.3	Conclusion	55
3.2	Amelogenesis	20	6.4	References	57
3.3	Calcification of the permanent tooth germs	21	7	Differential diagnoses	59
3.4	Disturbances in amelogenesis	21	7.1	Development defects of the enamel	60
3.5	Hypomineralized enamel	23	7.2	Differential diagnostics	62
3.6	Clinical implications and conclusion	28	7.3	Conclusion	69
3.7	References	29	7.4	References	69

8 Therapy concepts 71

- 8.1 First approaches 72
- 8.2 The European Academy of Paediatric Dentistry (EAPD): Best Clinical Practice Guidance 72
- 8.3 Würzburg concept 74
- 8.4 EAPD: Best clinical practice guidance – update 2021 76
- 8.5 Conclusion 78
- 8.6 References 79

9 Pain management 81

- 9.1 Pain perception in children 82
- 9.2 Pain originating from MIH 82
- 9.3 Child-friendly treatment 83
- 9.4 Pain control 83
- 9.5 Conclusions 88
- 9.6 References 89

10 Prophylaxis and desensitization 91

- 10.1 General recommendations for prophylaxis 92
- 10.2 Remineralization and therapy of hypersensitivity 93
- 10.3 New therapeutic approaches for hypersensitivity 96
- 10.4 Conclusion 96
- 10.5 References 97

11 Fissure sealing 99

- 11.1 Indications 101
- 11.2 Materials 101
- 11.3 Clinical procedure 102
- 11.4 Clinical effectiveness 104
- 11.5 Sealing as a therapeutic option for hypersensitivities 104
- 11.6 Conclusion 105
- 11.7 References 105

12 Direct restorations 107

- 12.1 Special features of MIH-affected enamel relevant for restorative therapy 108
- 12.2 Temporary restoration with glass-ionomer cements 110
- 12.3 Definitive restorations with composite 113
- 12.4 Repair 117
- 12.5 Conclusion 117
- 12.6 References 117

13 Indirect restorations 119

- 13.1 Prefabricated crowns as an interim solution 120
- 13.2 Tooth-colored zirconia crowns 124
- 13.3 Indirect restoration options 127
- 13.4 Conclusion 137
- 13.5 References 138

14 Extraction 141

- 14.1 Indications 142
- 14.2 Time of extraction 143
- 14.3 Consequences of an extraction that is too early or too late 146
- 14.4 Balancing and compensatory extraction 146
- 14.5 Prognosis of extraction in MIH-affected teeth 147
- 14.6 References 149

15 Treatment options for hypomineralized incisors 151

- 15.1 Bleaching 152
- 15.2 Microabrasion 154
- 15.3 Infiltration 154
- 15.4 Composite restorations and veneers 157
- 15.5 Conclusion 162
- 15.6 References 162

16 MIH and caries 165

- 16.1 Caries 166
- 16.2 Caries experience in children with MIH 167
- 16.3 Treatment needs in children with MIH 167
- 16.4 MIH as a caries risk factor 167
- 16.5 References 169

17 Hypomineralized primary molars 171

- 17.1 Definition 172
- 17.2 Prevalence 172
- 17.3 Etiology 172
- 17.4 Diagnostics 174
- 17.5 Clinical appearance 175
- 17.6 Further characteristics of the enamel of hypomineralized primary molars 176
- 17.7 Therapy options 176
- 17.8 HSPM and MIH 179
- 17.9 Conclusion 179
- 17.10 References 179