

Risks Factors of Tooth Wear in Permanent Dentition: A Scoping Review

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J. O, contributed to conceptualization, methodology, data curation, formal analysis, and writing original draft; C. G, contributed to data curation, formal analysis, and reviewed the manuscript; A. D, contributed to data curation, formal analysis, and reviewed the manuscript; A. V, contributed to formal analysis and reviewed the manuscript; S. V, contributed to conceptualization, validation, data curation, and reviewed the manuscript; A. M, contributed to

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Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Abstract

Background: Tooth wear (TW) prevalence is high and increasing and has important consequences on the patient's quality of life. Knowledge of risk factors is crucial to promote diagnosis, prevention strategies, and timely interceptive treatment. Many studies have identified TW risk factors.

Objective: This scoping review aims to map and describe suspected available factors associated with TW in permanent dentition based on quantitative measurement.

Methods: The scoping review was conducted using the PRISMA extension of the Scoping Reviews checklist. The search was conducted in Octobre 2022 from the Medline[®] (PubMed[®] interface) and Scopus[®] databases. Two independent reviewers selected and characterized the studies.

Results: 2702 articles were identified for assessment of titles and abstracts, and 273 articles were included in the review. The results show a need to standardize TW measurement indices and the study design. The included studies highlighted various factors, classified into nine domains: sociodemographic factors, medical history, drinking habits, eating habits, oral hygiene habits, dental factors, bruxism and temporomandibular disorders (TMD), behavioral factors, and stress. Results related to chemical TW (erosion) risk factors underline the importance of eating disorders, gastroesophageal reflux, and lifestyle, particularly drinking and

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eating behaviors, which supports developing public health information campaigns and interventions. Besides chemical, this review identifies evidence of several mechanical TW risk factors, such as toothbrushing and bruxism; the influence of this last factor needs to be further explored.

Conclusions: TW management and prevention require a multidisciplinary approach. Dentists are in the first line to detect associated diseases such as reflux or eating disorders. Consequently, practitioners' information and guideline diffusion should be promoted, and a TW risk factors checklist (the ToWeR checklist) is proposed to help diagnostic approaches.

Keywords: abrasion, attrition, bruxism, diet, erosion, gastroesophageal reflux.

Introduction

Tooth wear (TW) is the loss of dental hard tissues from the surface by means other than dental caries, trauma, or developmental disorders. It has different types: attrition (wear process by direct tooth-to-tooth contact), erosion (dissolution of dental hard tissue caused by non-bacteriogenic acids), abrasion (caused by the sliding or rubbing of abrasive external objects against the tooth surfaces), and abfraction (caused by tensile stress generated from non-axial cyclic occlusal forces) (1). TW prevalence has been high and increasing, particularly in young patients (2-4). An earlier study reported that TW affects 68.8% of the population between 16 and 97 years old in the United States, with 9.6% showing extreme TW (5). In the Netherlands, moderate and severe TW affected 86% of the adult population (6).

In severe TW cases, patients can suffer from dental pain and psycho-social handicap due to impaired aesthetics, masticatory dysfunction, temporomandibular joint disorders, masticatory muscles, and orofacial pain (7, 8), with a significant impact on the oral health-related quality of life (9), requiring complex rehabilitation (10-14). TW is a multifactorial phenomenon, which can be physiological or pathological (15), and knowledge of risk factors is crucial to promote diagnosis, prevention strategies, and timely interceptive treatment. Moreover, knowledge of TW risk factors and proper clinical screening could detect associated pathologies.

Many studies on the prevalence and related risk factors identified extrinsic or intrinsic, chemical or mechanical, biological, behavioral, or environmental (16). However, to the best of our knowledge, no review in the literature synthesizes the results of different studies. Therefore, the objective of this scoping review was to map and describe factors suspected to be associated with TW in permanent dentition based on quantitative measurement of TW. The secondary objective of this study was to introduce a TW risk factor checklist for use in clinical practice.

Method

Study design

The scoping review was conducted using the PRISMA-ScR checklist (Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for scoping reviews checklist) (17) (Appendix 1).

Eligibility criteria

Epidemiological studies, systematic review and meta-analysis on risk factors of tooth wear in permanent dentition were considered in this review. Reviews, case reports, correspondence, editorials, animal studies, anthropological studies, *in vitro* and *in situ* studies, letters, posters, conference abstracts, personal opinions, comments, and resumes were excluded, as well as studies on dental materials and treatments.

Information sources

The search was conducted in October 2022 from two databases: Medline® (PubMed® interface) and Scopus®. MeSH terms and synonyms related to TW, risk factors and permanent dentition were considered (Figure 1).

Search strategy

The search query was developed based on TW risk factors in adult (permanent) dentition. The search strategy was adapted to fit each database (Figure 1). The search was limited to publication date and language to ensure publications are from January 1, 2000, in English or French. The reference lists of all identified articles were also screened to identify additional studies for inclusion.

Selection of source of evidence

After excluding duplicate references, two independent investigators (J.O. and C.G.) selected publications according to the eligibility criteria. The titles and abstracts of the identified articles

were assessed. Data extraction differences were discussed and resolved by consensus; otherwise, a third examiner (A.M.) intervened in deciding whether to include or exclude the paper. The full texts of all articles identified for possible inclusion were retrieved and screened by two of the authors (J.O. and A.D.).

Data charting process

For each study, the following data items were extracted (Appendix 2):

- Paper identification: first author name, title, journal and year of publication
- Information about the study: number of participants (n) and power sample size calculation, age of participants, calibration and number of examiners, TW measurement indexes, studied factors.

Moreover, the significance of outcomes was considered when identified factors significantly promote or decrease TW by univariate and/or multivariate statistical analysis (Appendix 2).

Results

Selection of sources of evidence

The literature search resulted in 3270 manuscripts (Figure 2) and 2702 after removing duplicates. After title and abstract screening, 523 studies were considered for the full-text review. After full-text reading, 250 studies that did not meet the eligibility criteria were excluded. Consequently, 273 studies were included, comprising 246 cross-sectional studies, 17 longitudinal studies, 10 systematic reviews and 8 meta-analyses. Appendix 1 presents the following data for each of the included studies: (1) authors; (2) titles; (3) journals; (4) years; (5) number of participants and power sample size calculation; (6) age of participants; (7) calibration and the number of examiners; (8) TW measurement indices; and (9) studied factors.

Characteristics of sources of evidence

In total, 183 studies mentioned that the examiners were calibrated before clinical evaluation, and 35 different TW measurement indices were used. The most commonly used indices were the BEWE index (62 studies) (18), the TWI index (53 studies) (19), and a modified version of TWI (18 studies) (20). However, 25 studies did not indicate the type of index used.

Synthesis of results

The geographic distribution of TW studies showed that most studies were conducted in Brazil and Europe (Figure 3). The factors evaluated in the selected studies are presented in Table 1 and classified into nine domains: sociodemographic factors, medical history, drinking habits, eating habits, oral hygiene habits, dental factors, bruxism and temporomandibular disorder (TMD), behavioral factors, and stress. Figure 4 shows that the most studied factors were related to sociodemographic factors (188 studies), medical history (183 studies), drinking (154 studies), and eating habits (141 studies).

1. Socio-demographic factors

Among all factors associated with TW, the socio-demographic factors were the most frequently studied in this scoping review (68.9% of included studies, n=188) (2-5, 20-149) (150-198). Sex and age represented 58.6% and 46.9% of studies in this category (Table 1). In particular, age was reported as a statistically significant TW risk factor in 57 out of 128 included articles, and the chance of wearing facets increased with age (Table 1, Appendix 1). However, it must be noted that 109 of 273 studies focused only on young patients (under 20 years old) (Appendix 2), while reported risk factors are not different regarding adolescents and regarding adults (197). Sex was reported as a statistically significant TW risk factor in 50 out of 160 included articles, most of which showed that males are more affected by TW than women (Table 1, Appendix 2). The type of work seems to significantly influence TW in 12 of 31 studies and education in 12

of 39 studies. Exposure to acidic chemicals and extremely high noise levels seem to be associated with erosion and tooth abrasion, respectively (83, 88, 94). Managers have shown a significantly higher TW prevalence (38), and unemployed people have significantly higher occlusal wear (40). A high level of education was negatively correlated with severe tooth wear, whereas children with a father with lower education were reported to exhibit a high risk of TW (2, 199).

2. Medical history – Medical condition

Medical history was the second most frequently studied factor (67% of included studies; n=183) (2, 3, 5, 22-24, 26-35, 38, 40, 42-44, 47, 49-51, 53, 56-58, 60-64, 68-70, 74, 75, 77, 78, 80, 81, 83, 85, 87, 90-92, 94-96, 98, 101, 102, 104-108, 110, 111, 113, 114, 119-130, 132, 136-138, 140-144, 147, 148, 200-238) (151, 153, 154, 239-241), (155, 156, 242, 243) (157, 159, 161, 163, 167, 168, 170, 173, 174, 177-179, 181, 182, 186, 189-191, 195, 197, 198, 244-257), and 27 studies were exclusively dedicated to this topic. The influence of the presence of GORD, stomach upset, or heartburn was the most studied factor from this category, with 35.2% of studies included in this scoping review (96 out of 273). This factor significantly influenced TW in 30 of 96 studies, and a study showed that patients with GOR had poorer salivary buffering capacity (221). Saliva composition and oral dryness symptoms were studied in 49 studies, but only nine significantly influence TW (Table 1, Appendix 2); for example, a study of 1944 participants highlighted hyposalivation as a severe erosive tooth wear risk factor (29).

Weight or obesity showed a statistically significant association with TW in eight out of 29 studies, notably in children, as demonstrated in a recent study of 370 young Indian patients (77). Eating disorders, including a range of psychological conditions that cause unhealthy eating habits, particularly anorexia nervosa, bulimia nervosa, binge eating disorder, pica disorder, rumination disorder, and avoidant/restrictive food intake disorder, were statistically significant TW risk factors in many studies (60.9% of 23 studies). However, most articles did

not specify the eating disorder types studied, while anorexia nervosa and bulimia nervosa were specifically evaluated in ten papers. Three studies analyzed the relationship between TW and sleep apnea. TW severity was significantly associated with the apnea-hypopnea index severity in patients treated with an occlusal splint in one study (56). Moreover, medications such as aspirin or diazepam was significantly associated with developing TW in 9 out of 40 studies. Similarly, vitamin C intake was correlated with TW in seven of the 28 studies (Table 1, Appendix 2). Asthma significantly influences dental wear in seven out of 14 (201), and one study attributed this influence to cortisol inhaler side effects, which reduce saliva pH (70). Drug consumption was identified as a risk factor for TW in 4 out of 10 studies (Table 1, Appendix 2). Nixon et al. attributed this effect to bruxism and xerostomia induced by drugs, such as ecstasy, amphetamines, or cocaine (224). Finally, one study showed that esomeprazole-based medications might be useful in counteracting GORD-related dental erosions progression (237).

3. Drinking habits

3.1 *Drinks-beverages*

Studies on drinking habits were more in the literature, with 56.4% of articles included in this review (Table 1, Appendix 2) (2-5, 22, 24-27, 29-34, 37, 38, 40, 43, 44, 47-49, 51, 53, 54, 57, 60, 61, 66, 68, 70-75, 77-80, 83-85, 87, 90, 91, 94-98, 100, 101, 104, 106-114, 118-127, 129, 130, 132, 136, 138, 139, 142-144, 147, 148, 200, 201, 204-207, 212, 214, 217, 218, 222, 224, 229-232, 235, 258-264) (151) (153-155, 159, 160, 163, 166-168, 170, 174-176, 178-181, 183, 184, 186, 188, 189, 191, 196-198, 240, 244, 245, 250, 265-269).

The influence of acidic beverages like soft or carbonated drinks on TW was found in 42.1% of studies; a statistically significant association was found in 32.2% of studies related to this topic (Table 1)(22, 270). In a study of 3586 American adults, the daily frequency of soft drink consumption was the only factor associated with moderate-to-severe tooth wear compared to

socio-demographic factors, acid reflux medication, fruits, fruit juices, and alcoholic drink consumption (259). This was corroborated by 23 studies on children (Appendix 2). Moreover, a study of 1528 children from South Brazil also found that daily soft drinks consumption was associated with dental erosion (32).

The consumption of fruit juices was a statistically significant TW risk factor in 26% of related studies (Table 1). However, studies reporting more details on the type of fruit juice (citrus, apple, or grapefruit) do not specifically highlight one type of fruit juice. Energy drinks and sports beverages were associated with erosive TW (ETW) in 17 of 43 (39.5%) studies. Regarding tea and coffee consumption, 6 studies on 30 (20%) and 5 studies on 18 (27.8%) showed a significant association with TW, respectively (Table 1). In addition, 53.9% of studies (n =26) showed a significant association between alcohol and TW, making this factor the most significant (Appendix 2). However, one study showed that patients who drank more than 7 alcoholic beverages per week had less TW (125, 271).

Finally, milk consumption showed a significant negative association with the progression of erosive wear in five studies on 26 (19.2%) (Appendix 2). Only one study on 14-year-old-school showed a positive correlation between milk and ETW. However, the authors reported that it could be related to the high consumption of beverages (258). The intake of milk and milk-based products has been reported to prevent ETW, especially in replacing sweet-carbonated drinks (69).

3.2 Drinking behavior

The influence of various drinking behaviors on TW, like straw use or drink retention in the mouth before swallowing, was studied in 12.6% of included studies (n=34) (26, 28, 30, 60, 74, 77, 100, 105, 108, 110, 118, 121, 127, 142, 147, 205, 217, 225) (173, 184, 194, 244, 250). Two out of 10 studies related to straw use showed that it decreased the prevalence of erosion (77, 217). Conversely, drink retention in the mouth significantly increased TW prevalence in 4 out

of 11 studies. Moreover, drinking before going to sleep or between meals was reported to promote TW in 5 out of 11 and 2 out of 3 studies, respectively (Table 1, Appendix 2)(28). However, two out of 6 showed that drinking acidic beverages with meals increased TW compared to drinking these beverages between meals, while the 4 other studies showed no influence (225, 259).

4. Eating habits

4.1 Diet

Dietary habits were also found in the literature, and in 51.7% of articles included (2, 4, 24-27, 30, 32, 34, 37-39, 43, 44, 47-51, 53, 54, 57, 60, 61, 68-72, 74, 83-85, 87, 89, 91, 92, 94-97, 101, 104, 106-114, 116, 118-120, 122, 124, 127, 129, 130, 132, 136, 141, 143, 144, 147, 148, 200, 201, 204-207, 212, 216-218, 222, 224-226, 229, 235, 258-261, 264) (155, 160, 161, 164, 166, 170, 174-176, 178, 180, 181, 186, 188-191, 193-198, 240, 244, 245, 268, 272-274).

Citrus fruit consumption was reported to increase TW significantly in 19 of 52 studies. Frequent consumption of acidic candies was shown to be a risk indicator for developing erosive lesions in five out of 20 studies (Table 1, Appendix 2). Conversely, the use of vinegar in dietary habits and ketchup or tomato sauce consumption was reported as a statistically significant risk factor for TW in four out of 19 and five out of 16 included articles, respectively (Table 1, Appendix 2). Vegetable consumption showed a significant association with TW in 6 out of 16 studies. This association was shown in a study of 207 individuals who followed a vegetarian diet and showed significantly more ETW than omnivores (27, 116). Moreover, six out of 23 studies showed that chewing-gum consumption increased the risk of TW.

Finally, only two studies of 24 found an association between yogurt and dairy products consumption and wear lesions, whereas El Aidi et al. and Sezer et al. showed that erosive tooth

wear was negatively associated with yogurt products (60) (194) (2 out of 24 studies) (Table 1, Appendix 2).

4.2 Eating behaviors

Unlike drinking, eating behaviors have rarely been studied (n=6 studies)(2, 28, 58, 113). Food intake at night and eating frequency showed a positive association with TW in one of two and two of 4 studies, respectively (Table 1, Appendix 2). Moreover, eating acidic food more than six times per day was significantly associated with severe TW in a study of 2924 participants in six Arab countries (2), which confirmed the results of Sayed et al. (124).

5. Oral hygiene habits

The influence of oral hygiene habits on TW was studied in 38.5% of included studies (2, 5, 20, 24, 26, 30-32, 37, 38, 40, 43, 44, 47, 48, 50, 51, 60, 63, 65, 66, 68, 70-72, 79, 81, 83, 85, 88, 90, 94, 95, 97, 98, 100, 101, 104, 106-108, 110, 111, 113-115, 118-120, 122, 124, 127, 129, 130, 132, 134-136, 138, 142-144, 146-148, 200, 204, 207, 214, 217, 224, 225, 229, 230, 234, 275, 276) (150, 152, 159, 160, 166, 167, 170, 173-175, 179, 183-185, 188, 191, 194-196, 198, 268), particularly toothbrushing frequency (15.8% of studies in this category) was reported to be significantly associated with TW in 11 studies out of 43 (Table 1). For example, in a study of 2160 Chinese adults, a daily brushing frequency of \geq twice a day significantly increased the likelihood of wear lesions (79). Similarly, brushing duration (3 to 5 minutes) showed a significant association with TW in four out of 11 studies (127). The type of toothbrush (type of bristles) and toothbrushing (manual or electric) were also found to be TW risk factors in ten out of 32 studies (Table 1).

Brushing technique (high pressure, horizontal movement) was associated with TW in six of 27 studies. In a study of 488 participants, TWI scores were significantly higher in subjects who brushed horizontally than vertically (115). In addition, abrasive toothpaste promoted TW in

four of the 17 studies (Table 1, Appendix 2). Finally, tooth brushing directly after eating was associated with TW in three out of 11, while the five studies on brushing after acid intake did not show an association.

6. Dental factors

Dental factors in 23.4% of included studies (5, 24, 26, 31, 35, 40, 48, 49, 52, 54, 55, 58, 60, 62, 65, 79-81, 90, 99, 101, 103, 109, 118, 122, 123, 128, 130, 134, 136, 137, 139, 148, 149, 206, 214, 230, 234, 260, 277-282) (152, 156, 167, 171, 172, 174-176, 178, 179, 185, 190, 194, 195, 283, 284) showed caries was significantly associated with TW in three out of 16 studies. Five of 9 showed that a low number of teeth on the arches was significantly associated with high occlusal wear. The occlusion type seems to significantly influence TW in four out of ten studies. In a study of patients from general practices in the United States, a class II malocclusion promoted TW, while posterior or anterior open bites decreased TW in children and adolescents but not in adults (52).

7. Bruxism – Temporo-Mandibular-Disorders (TMDs)

Bruxism and TMD concerned 23.4% of included studies in this review (23, 24, 26, 29-33, 40, 49, 53, 60, 62, 64, 67, 70, 79, 81, 90, 92, 101, 104, 105, 117, 121, 125, 130, 134, 143, 147, 216, 226, 264, 277, 281, 285, 286) (151, 162, 169, 171, 172, 174, 175, 186, 193, 194, 240, 244, 252, 268, 287-289). Bruxism and tooth grinding/clenching were the most studied factors in this category (52 out of 64 studies) and showed a significant association with TW in 18 studies (34.6% of studies). A study including 2529 subjects showed that self-reported bruxism was a considerable risk factor for high occlusal wear in men (40).

8. Behavior factors

The relationships between sports or extensive training and TW were analyzed in 18 studies (30, 33, 34, 44, 49, 62-64, 71, 72, 74, 81, 90, 105, 118, 123, 124, 127, 129, 130, 142-144, 147, 206,

212, 214, 217, 219, 229, 230, 264) (173, 174, 179, 184, 189, 194, 195, 290), four of which showed a significant association with TW (33, 63, 64). Four studies showed that regular swimming in chlorinated pools was correlated with TW (Table 1, Appendix 2). Finally, oral parafunctional habits, such as nail, pencil, and object biting, have rarely been studied (200). One study in China showed that toothpicks and biting hard objects might be considered risk factors for TW .

9. Stress

Stress/psychological stress was studied in four articles but was not shown to be a risk factor for TW(45, 93, 124) (240).

Discussion

TW is a multifactorial phenomenon, and knowledge of its risk factors is crucial to prevent and intercept this pathology. This scoping review of TW risk factors in permanent dentition showed that various factors and age ranges characterized many studies. The results show a lack of standardization of the TW measurement indexes (35 different indexes were reported) for data analysis and interpretation. Among these indexes, the most frequently used ones were the BEWE index (22,7% of studies) (18), the TWI index (19.4% of studies) (19) and a modified version of TWI (6.6%) (20).

Moreover, many studies did not report how these indexes were standardized, which constitutes a risk of bias (Appendix 2). Other risks of bias include the sample size, which is sometimes very small and in most of the cases not supported by a power calculation, and the type of statistical tests used in analyzing data, which does not always include a multivariate analysis to take into account the confounding factors (43.96% of studies did not report a multivariate analysis). Consequently, the research quality should be improved. The factors analyzed in the 273 included studies were divided into nine categories, presented in decreasing order in terms

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of their representativeness in this review: sociodemographic factors, medical history, drinking habits, eating habits, oral hygiene, dental factors, behavioral factors, bruxism, and stress. Most factors can be classified into two main groups: mechanical and chemical. Indeed, TW can be engendered by a mechanical effect related to abrasion, attrition, or abfraction of tooth tissues or a chemical effect related to the acidic environment and erosion of tooth tissues. Chemical factors were the most studied and included drinking and eating habits, medical history, and behavioral factors. Drinking habits, such as soft drinks, fruit juice, energy drinks and particularly alcoholic drink consumption, were shown to significantly affect TW in many studies within the limitations of the published articles included in this scoping review. This could be explained by the low pH of the beverages. Regarding alcohol consumption and low alcohol pH (291), Kranzler et al. (292) reported that oral hygiene in alcoholic patients is often deficient, promoting an acidic environment. Interestingly, tea (pH 3-10 depending on the type of tea) and coffee (pH 4,5-5) have also been TW risk factors in some studies. One explanation could be that caffeine, a well-known stimulant, increases muscle activity and bruxism, resulting in attrition (24). Citrus fruit consumption was shown to be a significant ETW risk factor due to its acidity (pH 0-2), while yogurt products were reported to be protective, probably due to their low acidity (pH 4.5 – 6.8) coupled with a high calcium and phosphate content, which could promote remineralization (60).

The most important risk factors considered in the medical history category were eating disorders and GORD. Gastric acids are reported to ascend to the oral cavity in GORD (293), and eating disorders are associated with vomiting. Dry mouth and diminished saliva production, for example, due to medications or radiotherapy, reduce the capacity to clear and neutralize acids in the mouth, contributing to erosive lesions in some individuals (294). Some medications can also exhibit a low pH, such as aspirin (acetylsalicylic acid) (147) and cortisol inhalers used

in asthma treatment (132). Swimming has been reported in two studies as a risk factor, one explanation being that the pH of swimming pool water is low.

Mechanical factors have been less explored than chemical causes and mainly include oral hygiene habits and bruxism/tooth grinding/clenching. It was demonstrated that the presence of TW was associated with the use of a toothbrush with hard fibers or a horizontal brushing technique. In contrast, an electric toothbrush was reported as a risk factor in two studies, although the phenomenon was not explained (130, 132).

Surprisingly, the association between bruxism and TW, particularly attrition, was not often analyzed in included studies (52 studies, corresponding to 19% of included studies). Eighteen studies reported a significant association between TW and self-reported bruxism. However, these studies' limitations were the diagnostic criteria used for bruxism. These criteria are limited to patient self-reports, which cannot define bruxism. If polysomnography or electromyography cannot be used to confirm the diagnosis in large-sample studies, a clinical examination should be performed to reduce the risk of bias (295).

Moreover, a distinction could also be made between sleep and awake bruxism, which can both lead to TW. The presence of TW is considered a diagnostic criterion for sleep bruxism by the American Academy of Sleep Medicine, consistent with the report of tooth grinding during sleep (264). Since bruxism and TW are suspected to be associated with sleep apnea (56, 296), mechanical TW diagnosis should lead the dentists or other related specialists to question patients about sleep disorders and should help detect them. However, further research is required in this regard.

Indeed, TW is a multifactorial and complex phenomenon, in which some risk factors can be confounding, promoting the use of multivariate analyses. For example, between BMI and overweight /obesity were shown to be significantly associated to Apnea Hypopnea Index (AHI) (240) and to the consumption of soft drinks, respectively (154).

The analysis of the significant association between different TW risk factors could constitute an interesting research perspective.

Implication for clinical practice and public health

The analysis of TW chemical risk factors regarding lifestyle, particularly drinking and eating behaviors, highlights the need to develop awareness campaigns and interventions. However, whenever TW chemical risk factors are studied, the research design should also include mechanical risk factors, particularly bruxism. Indeed, patient awareness and early bruxism treatment, including occlusal nightguard and maxillofacial physiotherapy, may significantly reduce TW.

By diagnosing and analyzing TW etiology, dentists are the first line to help diagnose associated diseases, such as reflux or eating disorders. Therefore, practitioner information and guideline diffusion are crucial and should be promoted. The ToWeR (Tooth Wear Risk factor) checklist is proposed to help them in the diagnostic and management of TW risk factors. It summarizes the main health and lifestyle risk factors identified in this scoping review (Figure 5). In that objective, it was decided to include only factors 1) analyzed in a minimum of 10 included studies and 2) shown, after statistical analysis, to be positively associated with TW in a minimum of 15% of these studies. Risk factors in bold were found to be significantly associated with TW in more than 30% of the included studies on this factor. Socio-demographic and dental factors were not included since they cannot be modified by patient information and care. The ToWeR checklist can be used to monitor the evolution of risk factors at every recall visit and raise the awareness of the adult or adolescent patient. However, it does not constitute an exhaustive document about TW risk factors and further research is needed to validate this tool or to make it evolve.

Finally, research results should encourage specialists in public health to develop appropriate policies and therapeutic education programs. Indeed, TW is an important dental problem with

consequences for patient well-being and quality of life. Since it is partly related to lifestyle evolution, it represents an important issue for future generations.

Conclusion

This scoping review maps an important amount of heterogenous studies analyzing a large variety of factors suspected to be associated with TW. Chemical factors were the most studied and included drinking and eating habits, medical history, and behavioral factors, while the association between bruxism and TW was not often analyzed in included studies.

Further research is needed to confirm the association between TW and the many factors identified in this review, and more particularly longitudinal studies are required to assess if those factors are real risk factors for TW incidence. This will need to involve multidisciplinary research teams in health care in order to define the role of the dentists in the diagnostic and prevention of TW and related disorders.

In that objective, research quality about TW risk factors should be improved by: (1) promoting large sample sizes as a function of power calculation, (2) standardizing the use of one TW measurement index, (3) improving bruxism diagnosis, (4) using appropriate statistical analysis tests and methods for the important confounding factors and TW causes.

Captions

Figure 1: Electronic databases and search strategy

Figure 2: Flow diagram for study selection according to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines

Figure 3: Geographic map indicates the distribution of TW studies in different countries

Figure 4: Percentage of studies dedicated to each domain of factors suspected to influence TW, respectively

Figure 5: The ToWeR (Tooth Wear Risk factor) checklist. This checklist summarizes the main health and lifestyle risk factors identified in this scoping review, that is, factors 1) analyzed in a minimum of 10 included studies and 2) shown, after statistical analysis, to be positively associated with TW in a minimum of 15% of these studies. Risk factors in bold were found to be significantly associated with TW in more than 30% of the included studies on this factor. Socio-demographic and dental factors were not included since they cannot be modified by patient information and care.

Table 1: List of factors suspected to influence TW in included studies, ranked by domain and number of studies (n) included

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Table 1

	Number of studies (n)	n/n tot (%)
1. Socio-demographic factors	188	68.9
Gender - Sex	160	58.6
Age	128	46.9
Education - Parent's education - Father's education - Mother's education - Family - Parents' birthplace	39	14.3
Work - Type of work- Work in factory - Working exposure (acid) - Worker exposed - Smelter workers - Working environment - Occupation - Position - Employment - Unemployment - Length of employment - Working years - Profession - Parent's employment	31	11.4
Country - Location - Area of residence -District - Village - Site - Civil state- Migrants	28	10.3
Socio-economic status - Economic classification - Socio-economic class - Social	26	9.5
Household income - Family income - Poverty income ratio - Income - Financial class	19	7
Ethnicity - Race - Skin color - Ethnic group - Origin - Native	16	5.9
School - School type - Type of school - Location of school	12	4.4
Marital status	5	1.8
Rural area - Urban area - Rural/Urban resident - Environment - Apartment size	4	1.5
Dental insurance coverage	3	1.1
2. Medical history - Medical condition	183	67
Gastro-Oesophageal-Reflux - Gastric reflux - Reflux - Acid reflux - Sour in mouth- Stomach Upset - Heartburn	96	35.2
Saliva - pH saliva - Saliva flow rate - Buffering capacity - Saliva viscosity - Oral pH - Salivary consistency- Salivary gland disorder – Hyposalivation - Sjögren's Syndrome – Xerostomia – Oral dryness – Dry mouth	49	17.9
Vomiting - Regurgitation - Vomit - Repeated vomiting	40	14.7
Medication - Acid reflux medication - Aspirin - Sleeping medication/Antidepressant - Medicaments - Esomeprazole – Sedatives – Diazepam - Soporifics	40	14.7
Weight - Obesity - BMI- Waist and hip ratio - Body shape/weight - Overweight - Morbid obesity	29	10.6
Vitamin C - Vitamin C tablets - Vitamin - Effervescent vitamin C - Vitamin D intake - Multivitamins	28	10.3
Bulimia - Anorexia - Eating disorders - Anorexia nervosa – Purging bulimia	23	8.4
Smoking - Tobacco - Plain Tobacco	20	7.3
General Health - Anamnesis	16	5.9
Asthma	14	5.1
Drugs - Cocaine - Amphetamine - Snuff - Cannabis - Ecstasy - Heroin	10	3.7
Dementia - Psychiatric disorder – Illnesses- Psychological disease	8	2.9
Allergies - Eczema	5	1.8
Indigestion – Digestion problems	5	1.8

Hypertension - Blood pressure - Cardiovascular disorder	5	1.8
Systemic disease – Systemic health	5	1.8
Diabetes	4	1.5
Alcoholism	4	1.5
X-rays irradiation - Radiations - Radiotherapy	3	1.1
Respiratory disorders - Pneumonia	3	1.1
Oesophageal symptoms - Oesophagitis	3	1.1
Height	3	1.1
Iron supplements	3	1.1
Apnea - Sleep - Apnea	3	1.1
Bariatric surgery	3	1.1
Triglycerides - Cholesterol - Fats	2	0.7
Calcium intake	2	0.7
Pregnancies	2	0.7
Ear infection - Hearing problems	2	0.7
Nervous system disorder - Neurological disease	2	0.7
Cerebral palsy	2	0.7
Mouth breathing	1	0.4
T score for BMD femur - T score BMD spine - Z score for BMD femur - Z score BMD spine	1	0.4
Celiac disease	1	0.4
Parkinson's disease	1	0.4
Phosphate - Phosphorus intake	1	0.4
Inattention	1	0.4
Halitosis	1	0.4
Copper intake	1	0.4
HIV	1	0.4
Thyroid	1	0.4
Hormone	1	0.4
Liver	1	0.4
Amylase (saliva)	1	0.4
Urea (saliva)	1	0.4
Albumin (saliva)	1	0.4
Serum	1	0.4
Zinc intake	1	0.4
Potassium (saliva)	1	0.4
Sodium (saliva)	1	0.4
Total protein (saliva)	1	0.4
Hemodialysis	1	0.4
Mild cognitive impairment	1	0.4
Hay fever	1	0.4
Epilepsy	1	0.4
Hiatus Hernia	1	0.4
Urogenital disorder	1	0.4

Rheumatic fever	1	0.4
Snoring	1	0.4
Migraines	1	0.4
Immune system disease	1	0.4
Hyperactivity	1	0.4
Infections	1	0.4
Eye dryness	1	0.4
Chest pain	1	0.4
Proton pump inhibitors	1	0.4

3. Drinking habits

154

56.4

3.1 Drinks - Beverages

Soft drinks -Diet Soft drinks— Carbonated beverages - Fizzy drinks - Diet fizzy drinks - Cola - Carbonated drinks - Carbonated soft drinks- Appy fizz	115	42.1
Juices - Fresh juices - Fruit juices - natural fruit juice - Powdered juice - Concentrated juice - Artificial fruit juice- Nectare	71	26
Citrus juice (Orange, lemon, grapefruit, orange squash)	17	6.2
Apple juice	8	2.9
Grape juice	2	0.7
Isotonic beverage - Sport drinks - Isotonic drinks - Red-bull - energy drinks - High energy drink	43	15.8
Tea - Sweetened tea -Herbal tea - Lemon tea- Karkade - Plain tea - Red tea - Fruit tea	30	11
Milk - Milk products - Butter milk	26	9.5
Alcoholic drinks - Alcohol - Alcohol consumption - Alcoholic drinks - Alcoholic mixed drinks	26	9.5
Acidic drink - Acidic beverages in general – Erosive beverages	25	9.2
Coffee - Sweetened coffee - Coffee with milk	18	6.6
Water - Tape water - Mineral water - Carbonated water - Still water - Pure water	17	6.2
Wine - Winemakers	11	4
Iced tea – Still drinks – Non-carbonated drinks	9	3.3
Beer - Ginger beer	8	2.9
Vegetable juice – Tomato juice	6	2.2
Lemonade - fruit lemonade - Lemonade squash	6	2.2
Spirits	4	1.5
Cider - Apple cider	4	1.5
Vinegar drinks	3	1.1
Flavoured milk - Sour milk - Soured milk - Sweetened milk	2	0.7
Low calories drinks	1	0.4

3.2 Drinking behavior

34

12.6

Drinking before sleep - Night drink - Drink at bedtime - Drink at night	11	4
Holding drinks in mouth, Retention in mouth - Retained drink in mouth	11	4
Straw use	10	3.7
Drinking during meals	6	2.2
Swish before swallow - Swishing	5	1.8

Swallowing - Direct swallow	4	1.5
Drink after sport	3	1.1
Drinking between meals	3	1.1
Glass	2	0.7
Drinking before breakfast	2	0.7
Bottle use	1	0.4
Temperature of drink	1	0.4
Drinks frequency	1	0.4

4. Eating habits

141

51.7

4.1 Food - Diet - Dietary habit

Fruits - Fresh fruits - Sweet fruits - Sour fruits - Canned fruit - Acidic fruits	71	26
Citrus fruit (Lemon - Grapefruit - Oranges - Clementine- Tangerines)	52	19
Apples	13	4.8
Bananas - Pineapple - Mango	8	2.9
Grapes	3	1.1
Tinned fruit	2	0.7
Rhubarb	1	0.4
Yoghurt - Yoghurt products - Fruit yoghurt – Dairy products - Cheese	36	13.2
Acidic food- Acidic taste - Sour food	31	11.4
Chewing-gum - Sugar free gum	23	8.4
Sweets - Acidic sweets - Acidic candies - Citrus-flavored sweets - Sour sweet - Sour candy - Lemon sour candy – Candy	20	7
Vinegar - Vinegar dressing- French dressing – Sour taste - Marinades	19	7
Ketchup - Sauce - Tomato sauce - Sweet/Sour sauce - Tartar sauce - Acidic sauce - Mustard – Mayonnaise - Mazza	16	5.9
Vegetables - Sour vegetables - Legumes – Grains - Vegetarian diet - Vegetarian	16	5.9
Pickles - pickles onions	14	5.1
Salt & Vinegar chips - Salt/Vinegar crisps - Crisps or savoury snacks - Snacks - Sour snacks	11	4
Biscuits - Biscuits unsweetened - Biscuits sweetened - Cookies - Chocolate - Caramels - Cake - Desserts	10	3.7
Salad lemon - Salad dressing - Salad creams	8	2.9
Spicy food- Spicy curried food	8	2.9
Hard foods	6	2.2
Baobab - Berries - Tubers	4	1.5
Carbohydrate - Beans/ Pasta	4	1.5
Ice cream - Ice lolly - Popsicle	3	1.1
Peppermint - Mint	3	1.1
Omnivores - Non vegetarian - Lacto-ovo-vegetarian - Special diet	2	0.4
Tamarind - Sambar	2	0.7
Jam - Meat	2	0.7
Lemon salt – Salt lemon-blend	2	0.7

Sauerkraut	2	0.7
Sugar/Flour - Sugar sweetened food	1	0.4
Food rich in calcium/phosphate minerals	1	0.4
Olives	1	0.4
Toast/sweet sandwiches	1	0.4
Honey	1	0.4
Stoneground bread	1	0.4
Rasam	1	0.4
Jelly	1	0.4
Relish	1	0.4
Fizzy pop	1	0.4
Curds	1	0.4

4.2 Eating behavior

Eating occasion - Meal per day - Food frequency	4	1.5
Food taken at night - Night foods	2	0.7
Sucking fruits	2	0.7
Snacking between meals	1	0.4

5. Oral hygiene habits

105

38.5

Toothbrushing frequency - Brushing frequency	43	15.8
Brushing - Toothbrushing	33	12.1
Toothbrush - Brush bristles hardness - stiff-bristled brush - Toothbrush bristle - manual toothbrush - Electric toothbrush - Toothbrush texture - Replacing toothbrush	32	11.7
Brushing technique - Horizontal brushing - Toothbrushing technique - Brushing method - Toothbrushing pressure - Brushing movement - Horizontal technique - Vertical technique	27	9.9
Toothpaste - Type of toothpaste - Tooth gel - Abrasive dentifrice	17	6.2
Topical fluoride - Fluoridation- Fluoride consumption – Fluoride toothpaste – Fluoride vanishes, gel – Fluoride mouth rinse	14	5.1
Duration of brushing - Toothbrushing duration - Time of brushing	11	4.1
Brushing after eating - Brush after dinner - Brush after breakfast - Brushing after meal	11	4
Mouthwash - Mouth rinse	9	3.3
Brushing teeth after soft drinks - Brushing after acidic foods	5	1.8
Toothbrushing post-vomiting	2	0.7
Dental floss	2	0.7
Brushing before breakfast	1	0.4
Brushing last thing at night	1	0.4

6. Dental factors

64

23.4

Dental history

Caries - Caries experience - Dental caries - Decayed - Decay - DMF index	16	5.9
Time of last dental visit - Last dental visit - Dental control - Visiting dentist	10	3.7

Number of teeth - Loss of occlusal contacts - Loss teeth - Missing permanent teeth	9	3.3
Orthodontic treatment	8	2.9
Plaque - Dental plaque - Dental biofilm – Poor oral hygiene	6	2.2
Composition of enamel pellicle - Enamel bioplates - Content in enamel (Ca, Mg)	4	1.5
Periodontal bone loss - Periodontitis	3	1.1
Gingival recession - Gingivitis	2	0.7
Tooth whitening	2	0.7
Dental calculus - Calculus	1	0.4
Filled tooth	1	0.4
Teeth/Gum soreness	1	0.4
Dental problems	1	0.4

Anatomical factors

Occlusion – Malocclusion	10	3.7
Unilateral chewing- Mastication - Chewing side	7	2.6
Bite force - Occlusal force - Occlusal stress in maximum intercuspation position	6	2.2
Guidance - Canine guidance - Right canine guidance - Left canine guidance - Protrusive guidance	5	1.8
Angle class	4	1.5
Overbite - Deepbite	3	1.1
Type of dentition	2	0.7
Open bite	2	0.7
Anterior contact	2	0.7
Protrusive interferences - Laterality interference	1	0.4
Group function	1	0.4
Edge to edge	1	0.4
Cusp-to-cusp relation	1	0.4
Crowding	1	0.4
Tooth misalignment	1	0.4
Sharp teeth	1	0.4
Tooth position	1	0.4
Overjet	1	0.4
Cross-bite	1	0.4
Facial type	1	0.4

7. Bruxism – Temporomandibular Disorders

Bruxism - Sleep bruxism- Tooth grinding - Clenching - Self-reported grinding	52	19
Tenderness in Temporomandibular Jaw (TMJ) or masticatory muscles - Fatigue masticatory muscles - Muscles pain – Jaw soreness – Masseter muscle activity	9	3.3
Occlusal splint - Mouth guard - Bite guard	7	2.6
TMD pain - TMJ disorder - Musculoskeletal disorder	7	2.6
Temporal headache - Headache	6	2.2
Clicking sound during opening mouth - clicking joint	3	1.1
Facial pain	2	0.7

Limitation mouth opening	1	0.4
8. Behavior factors	37	13.6
Sport		
Swimming - Swimming pool - Swim in chlorinated pool – Chloride	18	6.6
Sports activity - Physical activity - Sport - Exercise - Competitive sport - Outdoor sport - Running - Training - Cycling	18	6.6
Time during training - Time expended during competition	1	0.4
TV/Computer - Computing	3	1.1
Oral parafunctional habits		
Fingernails - Nail biting - Biting objects - Biting pencil – Grinding substances - Toothpick use – Oral piercings	11	4
Cheek habits	1	0.4
Use teeth as tools	1	0.4
Chewing sticks	1	0.4
Finger/Thumb sucking	1	0.4
Pacifier use	1	0.4
9. Stress	5	1.8

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	Reported on page #
TITLE			
Title	1	Identify the report as a scoping review.	1
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	1
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	1-2
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	2
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	4
Information sources	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	4
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	4-5
Selection of sources of evidence	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	5
Data charting process	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	5
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	5
Critical appraisal of individual	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	/
Sources evidence Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	5
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	5-6
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	6
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	/
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	Appendix 2

Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	6-13
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups	13
Limitations	20	Discuss the limitations of the scoping review process.	13-15
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	13-15
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	/

Appendix 1: Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

	First authors	Titles	Journals	Year	Power sample size calculation/ Number of participants (n)	Age of participants	Calibration/ Number of examiners	Tooth wear measurement index	Studied factors
1	Ab Halim, N.	General and erosive tooth wear of 16-year-old adolescents in Kuantan, Malaysia: prevalence and association with dental caries.	BMC Oral Health	2018	Y 598	16	Y 1	TWI (Smith and Knight), BEWE	Gender, ethnic group, parents' education level, household income.
2	Abanto, J.	Associated factors to erosive tooth wear and its impact on quality of life in children with cerebral palsy.	Spec Care Dentist	2014	Y 60	6 to 14	Y 1	Modified O'Brien Index	Age, gender, dental caries, cerebral palsy, frequency of soft drink intake between meals , frequency of juice intake between meals, daily intake of powdered juice , daily of juice in box, reported gastroesophageal reflux , family income.
3	Abdullah, N. F.	Knowledge, attitude, and practice of tooth wear among adults in Bertam, Penang.	Int J Prosthodont	2016	Y 349	18 to 65	NS NS	NS	Frequent consumption of carbonated beverages, frequent intake of acidic food, frequent intake of sour fruit, biting fingernails, bruxism, brushing with pressure, toothbrush, saliva, smoking, milk, using soft-bristled toothbrush, food rich in calcium/phosphate minerals.
4	Abe, S.	Tooth wear in young subjects: a discriminator between sleep bruxers and controls?	Eur Arch Paediatr Dent	2009	NS 130	19 to 44	Y 3	Johansson et al.	Gender, age, bruxism, anamnesis.
5	Abu-Ghazaleh, S. B.	The prevalence and associated risk factors for tooth wear and dental erosion in 15- to 16-year-old schoolchildren in Amman, Jordan.	Scientific World Journal	2013	Y 1602	15 and 16	Y 1	Modified Tooth Wear Index (Bardsley et al)	Gender, oranges , apples, canned fruit, yoghurt, ketchup , salad lemon, vinegar, tomato sauce, pickles, cheese, salt and vinegar chips, spicy food, lemon salt, olives , fresh juice, concentrated juice, fizzy drinks, diet fizzy drinks, red bull, tap water, flavored milk, milk, sweetened tea, herbal tea, coffee (sweetened) , lemonade, lemon with honey, plaque, bruxism, TMJ, nail biting, brushing, toothpaste, mouthwash, general health, asthma, stomach upset, indigestion, acidic taste, chewing gum, vegetarian, vitamin C tablets, dental visit last year.
6	Aguiar, Y. P.	Association between dental erosion and diet in Brazilian adolescents aged from 15 to 19: a population-based study.	J Dent	2014	Y 675	15 to 19	Y 2	O'Sullivan Index	Gender, age, family income, ethnicity, fruits, soft drink, diet/light soft drink, yogurt, artificial fruit juice, isotonic beverage, natural fruit juice, ice tea, energy drink, milk, flavored milk, coffee, coffee with milk, pickles, mustard, ketchup, vinegar.
7	Ahmed, H.	Factors associated with Non-Carious Cervical Lesions (NCCLs) in teeth.	JCPSP	2009	Y 95	40 to 59	NS NS	TWI (Smith and Knight)	Gender, age, toothbrush, toothpaste, handedness brushing, type of brush, brushing technique, angle classification, guidance, bruxism.
8	Aidi, H. E.	Factors associated with the incidence of erosive wear in upper incisors and lower first molars: a multifactorial approach.	Br Dent J	2011	Y 572	10 to 12	NS NS	Lussi et al.	Diet, acidic whey-based drinks, carbonated soft drink, fruit lemonade, lemonade squash, energy/sport drink, alcoholic mixed drink , <i>milk products</i> , <i>yoghurt products</i> , sour vegetables, chewing gum, direct swallow, straw, bite force, anterior contact, tooth grinding , vitamin.
9	Akinola, M. A.	Gastroesophageal reflux disease: prevalence and Extraesophageal manifestations among undergraduate students in Southwest Nigeria	BMC Gastroenterol	2020	Y 668	15-18, 19-22 and 23	Y NS	TWI (Smith and Knight)	GERD.

10	Al-Dlaigan, Y. H.	Dental erosion in a group of British 14-year-old school children. Part II: Influence of dietary intake.	Int J Paediatr Dent	2001	NS 418	14	Y NS	TWI (Smith and Knight)	Apples (consumption & frequency), oranges (consumption & frequency), bananas (consumption & frequency), grapes, salad dressing, vinegar (consumption & frequency), tomato ketchup (consumption & frequency), pickles, yoghurt (consumption & frequency), vitamin C tablets (consumption & frequency), orange squash drinks, apple juice (consumption & frequency), orange juice, cola drinks (consumption & frequency), fizzy drinks (consumption & frequency), sport drinks (consumption & frequency), milk (consumption & frequency), tea (consumption & frequency), coffee frequency, chocolate, spirits (consumption & frequency), wine frequency, beer (consumption & frequency), cider.
11	Al-Dlaigan, Y. H.	Vegetarian children and dental erosion.	Br Dent J	2001	NS 418	14	Y 1	TWI (Smith and Knight)	Gender, vegetarian, fizzy drinks, bananas, grapes, yoghurt, vinegar, salad dressing, vitamin-C tablets, wine, oranges, sport drinks, coffee, pickles, beer, cider, spirits.
12	Al-Dlaigan, Y. H.	Is there a relationship between asthma and dental erosion? A case control study.	Community Dent Oral Epidemiol	2002	NS 60	11 to 18	Y 1	TWI (Smith and Knight)	Asthma, indigestion, vomiting, heartburn, stomach problems, hay fever, eczema, epilepsy, allergies, migraines, hearing problem, medication, orange squash, apple juice, orange juice, cola, sport drinks, apples, oranges, bananas, grapes, salad dressing, vinegar, tomato ketchup, yoghurt, vitamin C tablets, saliva, soft drinks, carbonated beverage, fresh fruits.
13	Al-Dlaigan, Y. H.	Dental erosion in a group of British 14-year-old, school children. Part III: Influence of oral hygiene practises	J Public Health Dent	2002	Y 418	14	Y 1	TWI (Smith and Knight)	Brushing teeth last thing at night, type of toothbrush, time of brushing, teeth, brushing teeth after meals, circular movements, anything to clean between the teeth, type of toothpaste, brushing teeth three times a day, brushing teeth once a day, attending a dentist every six months, replacing toothbrush every 3 months.
14	Al-Hammadi, S.	The prevalence of tooth wear among a group of yemeni adults	Journal of Oral Research	2020	Y 600	20-50	Y 1	TWI (Smith and Knight)	Age, gender, location, educational achievement primary, frequency of acidic drinks and foods consumption, khat chewing, pipe smoking, cigarette smoking, masticatory muscle tenderness, masticatory muscle pain.
15	Al-Khalifa, K. S.	The Prevalence of Tooth Wear in an Adult Population from the Eastern Province of Saudi Arabia	Clin Cosmet Investig Dent	2020	Y 340	18-40	Y 2	TWI (Smith and Knight), BEWE	Age, gender, education, occupation, frequency of brushing, type of toothbrush, fluoride toothpaste, fluoride aids, number of dental visits.
16	Allred, R.	Tooth Wear in Patients Undergoing Sleep Studies: A Blinded Observational Study	Med J (Ft Sam Houst Tex)	2021	NS 107	Mean 36	NS 1	TWI (Smith and Knight)	Apnea, BMI, cigarettes, vaping, chewing tobacco, beer, wine, liquor, coffee, diet soda, non-diet soda, sweet tea, unsweet tea, juice, energy drinks, caffeine pills, candy, sugary foods, acidic fruits, GERD, acid reflux, anxiety, post-traumatic stress disorder, headaches, TMD.
17	Al-Majed, I.	Risk factors for dental erosion in 5–6-year-old and 12–14-year-old boys in Saudi Arabia.	Community Dent Oral Epidemiol	2002	Y 354	5 to 15	Y 1	NS	Drinks taken at night, frequency of night drink, frequency of food taken at night, frequency of brushing, duration of drinks in mouth, frequency of vomiting, illnesses related, family income, father's education, erosive potential of food taken at night.
18	Al-Zwaylif, L. H.	Type and timing of dietary acid intake and tooth wear among American adults.	J Public Health Dent	2018	NS 3586	Over 18	Y 2	TWI (Smith and Knight)	Fruits, fruit juices, alcoholic drinks, soft drinks, fruits from meals, fruits from snacks, fruit juices from meals, fruit juices from snacks, alcoholic drinks from meals, alcoholic drinks from snacks, soft drinks from meals, soft drinks from snacks.
19	Alaraudanjoki, V.	Influence of intrinsic factors on erosive tooth wear in a large-scale epidemiological study.	Int Dent J	2016	NS 1944	Adults	Y 7	BEWE	Gender, GERD symptoms, onset of GERD symptoms, alcoholism, heavy alcohol consumer, pregnancies, sleep bruxism, saliva, juices or soft drinks for quenching thirst, juices or soft drinks during meals, soft drinks.

20	Ali, A. S. T.	Association Between Cervical Abrasion, Oral Hygiene Practices and Buccolingual Dimension of Tooth Surfaces: A Cross-Sectional Study	J Pharm Bioallied Sci	2022	Y 366	Above 20	Y 1	NS	Age, Gender , soft toothbrush, horizontal method of cleaning , fluoride toothpaste, frequency of cleaning, time of brushing, frequency of changing toothbrush, use of other oral hygiene aid.
21	Alvarez Loureiro, L.	Erosive tooth wear among 12-year-old schoolchildren: a population-based cross-sectional study in Montevideo, Uruguay.	Braz Dent J	2015	Y 1136	12	Y 2	BEWE	Gender, socioeconomic status , mother' education level, school, soft drinks, yoghurt, drink of the end of sports, swish before swallow , how to drink, bruxism, brushing frequency , swimming, respiratory disorders, Gastro-esophageal disorders.
22	Alvarez-Arenal, A.	The role of occlusal factors in the presence of noncarious cervical lesions in young people: A case-control study.	Nutrients	2019	Y 140	18 to 29	Y NS	TWI (Smith and Knight)	Age , chewing side, angle's malocclusion classification, overbite, overjet, crossbite, protrusive guidance, right canine guidance, left canine guidance, protrusive interferences , right laterality interferences, left laterality interferences, laterality interferences in non-working side, laterality interferences in working side, bruxism , frequency of brushing, brush bristles hardness, brushing technique, soft drinks, acidic/ citrus fruits, vomiting/ gastroesophageal reflux.
23	Alves, L. S.	Dental erosion among 12-year-old schoolchildren: a population-based cross-sectional study in South Brazil.	J Oral Sci	2015	Y 1528	12	Y 1	BEWE	Gender , socioeconomic status, school, soft drinks , orange, lemon , Gastro-oesophageal disorders, asthma, weight status; brushing frequency, bruxism.
24	Alves Mdo, S. D	Tooth wear in patients submitted to bariatric surgery.	Acta Odontol Scand	2012	NS 125	Adults	Y NS	BEWE	Bariatric surgery , obesity, reflux, vomiting.
25	Alwaheidi, H. A. A.	The interrelationship between xerogenic medication use, subjective oral dryness, and tooth wear	J Dent	2021	NS 3578	Above 18	Y 2	Modified version of TWI (Smith and Knight)	Sex, age, race/ethnicity , education, power income ratio, dental insurance coverage , soft drinks intake, GERD medication, xerogenic medication use, amount of saliva in mouth, mouth feels dry when eating.
26	Amato, M.	Tooth wear Is frequent in adult patients with celiac disease.	Niger J Clin Pract	2017	NS 65	Over 18	NS 2	TWI (Smith and Knight)	Celiac disease.
27	Anderson, S.	Evidence That Daily Vinegar Ingestion May Contribute to Erosive Tooth Wear in Adults	J Med Food	2021	NS 22	Adults	NS NS	BEWE	Vinegar .
28	Antunes, L. A.	Sports drink consumption and dental erosion among amateur runners.	Pediatr Dent	2017	Y 108	Adults	Y NS	Eccles et al.	Sex, age, running frequency , number of years of sports activity, time during training, time expended during competition , sports drinks, work in factory, swim in chlorinated pool, acidic drinks, brushing after eating, stiff-bristled brush, toothpaste, vomiting, regurgitation, GERD , bulimia, anorexia, xerostomia, radiotherapy, hemodialysis,
29	Arnadottir, I. B.	Dental erosion in Icelandic teenagers in relation to dietary and lifestyle factors.	J Dent	2003	NS 278	Mean 18	Y 2	Lussi et al.	Male , gastric reflux, sports activity, water following sport, carbonated drink following sport, soft drinks following sport, fruit juice following sport, recall of soft drinks between meals, recall of soft drinks with meals, biting nail/cheek habits, sugar-free gum, asthma.
30	Ashour, A. A.	Association between gastric reflux, obesity, and erosive tooth wear among psychiatric patients	Medicine (United States)	2022	NS 223	19-30, 31-63	Y 1	NS	Age, gender, BMI, consumption of soft drinks , type of psychiatric illness , citrus fruit consumption, chronic vomiting or bulimia , consumption of vitamin C, gastric reflux , smoking.
31	Atalay, C.	Evaluation of tooth wear and associated risk factors: A matched case-Control study.	Niger J Clin Pract	2018	Y 50	18 to 65	Y 2	TWI (Smith and Knight)	Tooth brushing frequency , brushing technique, brushing immediately after acidic foods, toothbrush, citrus fruits, soft drinks, fruit juice, sport drinks, citrus-flavored sweets/gum, saliva , acidic foods .

32	Awad, M. A.	Prevalence, severity, and explanatory factors of tooth wear in Arab populations.	J Dent	2019	Y 2924	18 to 35	Y NS	BEWE	Sex, age , country, education , frequency of tooth brushing , GERD, eating fruits, fruit and vegetables juice, soft drinks , cheese, eating occasions , isotonic drinks.
33	Aznar, F. D.	Dental wear and tooth loss in morbid obese patients after bariatric surgery.	Arq Bras Cir Dig	2019	Y 100	Adult	Y 1	Index IDD	Morbid obesity, morbid obesity operated with surgery, age , gender, race, education, financial class, hypertension, diabetes, triglycerides, cholesterol, smoking, alcoholism, age, BMI, waist and hip ratio, loss teeth .
34	Bachanek, T.	Prevalence of dental erosion among 18-year-old adolescents in the borderland districts of Lviv (Ukraine) and Lublin (Poland).	Ann Agric Environ Med	2018	NS 254	18	Y NS	BEWE	District, gender , rural area, urban area.
35	Bairappan, S.	Impact of asthma and its medication on salivary characteristics and oral health in adolescents: A cross-sectional comparative study	Spec Care Dentist	2020	Y 50	12-15	Y NS	NS	Asthma .
36	Bandodkar, S.	A study to evaluate psychological and occlusal parameters in bruxism	Journal of Oral Biology and Craniofacial Research	2022	Y 60	Under 30	NS NS	Attrition index (Ekfledt et al.)	Bruxism .
37	Bardolia, P.	Prevalence and risk indicators of erosion in thirteen- to fourteen-year-olds on the Isle of Man.	Caries Res	2010	Y 629	13-14	Y 4	Bardsley et al.	Gender , age, fizzy drinks, flavoured water, fruit juice, milk, water, fruit, yoghurt, ice cream, chewing gum, toothbrushing, fizzy drinks frequency .
38	Bardsley, P. F.	Epidemiological studies of tooth wear and dental erosion in 14-year-old children in North-West England. Part 1.	Br Dent J	2004	Y 2385	14	Y 1	Modified version of TWI (Smith and Knight)	Gender, fluoridation, fluoridation brushing .
39	Bartlett, D. W.	The association of tooth wear, diet and dietary habits in adults aged 18-30 years old.	J Dent	2011	NS 1010	18 to 30	Y 3	TWI (Smith and Knight)	Carbonated drinks, apples, orange juice , grapefruit, lemon juice, lemons, fruit juice , orangeade, pickles, heartburn , beer, wine, spirits, drinking from a glass, swilling .
40	Bartlett, D. W.	Prevalence of tooth wear on buccal and lingual surfaces and possible risk factors in young European adults.	J Dent	2013	NS 3187	18 to 35	Y 10	BEWE	Age, gender, country, area of residence, education, occupation/socio-economic class , brushing frequency, toothbrush, brushing movement, brush before breakfast, brush after breakfast, interval breakfast to brushing, brush after lunch, brush after dinner, soporifics/ antidepressants , chewing-gum, heart burn/ reflux, vomiting, fresh fruit; fruit/veg juice , isotonic/energy drinks, soft drinks.
41	Basha, S.	Association between soft drink consumption, gastric reflux, dental erosion, and obesity among special care children.	Spec Care Dentist	2020	NS 350	6-12 13-16	Y 1	NS	Age , gender, socioeconomic status, BMI, consumption of soft drinks , intellectual disability, autistic disorder, cerebral palsy, Down's syndrome, deafness, or blindness or both, others with syndromes involving multiple disabilities, citrus fruit consumption, chronic vomiting and bulimia, gastric reflux .
42	Berbesque, J. C.	Sex differences in Hadza dental wear patterns: a preliminary report.	Hum Nat	2012	Y 126	Over 15	NS NS	Modified TWI (Smith & Knight)	Age, sex , honey, baobab, berries, meat, tubers .
43	Bernhardt, O.	Risk factors for high occlusal wear scores in a population-based sample: results of the Study of Health in Pomerania.	Int J Prosthodont	2004	Y 2529	20-79	Y 8	Attrition index (Ekfledt et al.)	Age, gender , open bite, cross-bite, edge-to-edge , angle class, cusp-to-cusp relation , angle class, loss of natural occlusal support areas , tenderness in TMJ or masticatory muscles, bruxism , marital status, unemployment , soft drink, fruit juice, heartburn, toothbrushing frequency, crowding.
44	Borcic, J.	The prevalence of non-carious cervical lesions in permanent dentition.	J Oral Rehabil	2004	NS 1002	10 to 65	NS 1	TWI (Smith and Knight)	Age.

45	Brandt, L. M. T.	Relationship between Risk Behavior for Eating Disorders and Dental Caries and Dental Erosion.	ScientificWorldJournal	2017	Y 850	15-18	Y 2	O'Sullivan et al.	Age, family income, eating disorder, BMI.
46	Brusius, C. D.*	Dental erosion among South Brazilian adolescents: A 2.5-year longitudinal study.	Community Dent Oral Epidemiol	2018	Y 801	12	Y 1	BEWE	Gender , socio-economic status, school, dietary habits, soft drinks frequency, juice frequency, orange frequency, lemon frequency, gastro-oesophageal disorders, asthma, brushing frequency.
47	Buchhardt, J.	The Influence of Steroid Hormones on Tooth Wear in Children and in Adolescents	J Clin Med	2022	NS 984	10 and 18	NS NS	Wetselaar et al.	Gender, age, BMI , High SES, orthodontic treatment, testosterone , oestradiol, SHBG (hormone), FT (hormone) .
48	Buczowska-Radlinska, J.	Prevalence of dental erosion in adolescent competitive swimmers exposed to gas-chlorinated swimming pool water.	Clin Oral Investig	2013	NS 62	14 to 16	NS NS	Lussi index	Swimming, dietary acids, gender, acidic medicines, brushing.
49	Caglar, E.	Dental erosion among children in an Istanbul public school.	J Dent Child (Chic)	2005	NS 85	11	NS 1	O'Sullivan et al.	Medical history (asthma, gastric diseases), dental history (caries, orthodontic treatments), brushing, fruit, fruit yogurt, swimming, orange juice, carbonated beverages.
50	Cavalcanti, A. L.	Risk behaviors for eating disorders among Brazilian female adolescents	Open Dentistry Journal	2020	Y 200	15-18	Y 2	O'Sullivan et al.	Eating disorder.
51	Carpenter, G.	Composition of enamel pellicle from dental erosion patients.	Caries Res	2014	NS 60	18 to 65	Y 1	BEWE	Composition of enamel pellicle , saliva, orange/tangerines/clementines, grapefruit, rhubarb, lemons, orange juice/ grapefruit juice, lemon juice, other fruit juice/juice cocktails, carbonated/fizzy drinks, sports drinks/lucozade, beer/lager/cider, white wine/red wine, vinegar, french dressing, salt/vinegar crisps, acidic sweets.
52	Carvalho, A. L.	Prevalence of bruxism and emotional stress and the association between them in Brazilian police officers.	Braz Oral Res	2008	NS 394	Mean 35.5	NS NS	Johanson et al.	Stress, type of work.
53	Chadwick, R. G.*	Maxillary incisor palatal erosion: no correlation with dietary variables?	J Clin Pediatr Dent	2005	NS 251	11 to 13	NS 2	Oilo et al.	Fluoride toothpaste, fluoride mouthrinse toothbrushing, fizzy water , hiatus hernia, achlorhydia, eating disorder, asthma, medication, eating, method of drinking, bedtime, special diet, fruit juice, flavoured fizzy drinks, sports drinks, herbal teas, alcohol, salad creams, dressings or vinegar, yoghurts, fruits.
54	Chan, A. S.	A systematic review of dietary acids and habits on dental erosion in adolescents	Int J Paediatr Dent	2020	/	/	Systematic review	/	Dietary acids and habits.
55	Chaturvedi, P.	Assessment of tooth wear among glass factory workers: Who 2013 oral health survey.	JCDR	2015	NS 936	20 to 69	Y NS	Eccles	Age, gender.
56	Chellappa, L. R.	Prevalence and dependency of tobacco use among tribal gypsies in Thoothukudi district - A cross sectional study	J Family Med Prim Care	2021	NS 164	1-80	NS 1	NS	Tobacco.
57	Chikte, U. M.	Patterns of tooth surface loss among winemakers.	Sadj	2005	NS 36	26 to 53	NS NS	Eccles	Winemakers, gender, fruit, citrus fruit, brushing, smoking.

58	Chu, C. H.	Dental Erosion and Caries Status of Chinese University Students	Oral Health Prev Dent	2015	NS 600	18 to 21	Y 3	BEWE	Fluoride toothpaste, fluoride mouthwash, sour snacks, fruit juice, carbonated beverages, sports drinks, brushing, dental problems, gender, tooth misalignment.
59	Chujedong, P.	Associated factors of tooth wear in southern Thailand.	J Oral Rehabil	2002	NS 506	Mean 32	Y NS	TWI (Smith and Knight)	Sex, age, occupation, systemic diseases, medication, number of teeth, clicking sound during mouth opening, sour in the mouth, facial pain and tenderness, bruxism, chewing habit, brushing, tooth position, sports, fruit juice, carbonate, hard food, alcohol, sour food, sour fruit.
60	Correa, M. C.	Salivary parameters and teeth erosions in patients with gastroesophageal reflux disease.	Arq Gastroenterol	2012	NS 60	17 to 60	NS NS	Eccles	Gender, age, GERD, diet, medication, oral hygiene, saliva.
61	Correr, G. M.	Influence of diet and salivary characteristics on the prevalence of dental erosion among 12-year-old schoolchildren.	J Dent Child (Chic)	2009	NS 389	12	Y 2	O'Sullivan	Gender, diet, hygiene habits, acidic beverages, soft drinks, candies, acidic fruits, fruits, acidic drugs.
62	Cunha-Cruz, J.	Tooth wear: Prevalence and associated factors in general practice patients.	Community Dent Oral Epidemiol	2010	NS 1295	18 to 93	Y NS	NS	Age, gender, race/ethnicity, angle's malocclusion, open bite, orthodontic treatment, occlusal splint, periodontal bone loss, missing permanent teeth.
63	Deery, C.	The prevalence of dental erosion in a United States and a United Kingdom sample of adolescents.	Pediatr Dent	2000	NS 129	11 to 13	Y 2	O'Brien Index	Sex, site, carbonated drinks, fruit, still drinks, fresh fruit, spicy foods, heartburn, regurgitation, vomit, stomachache, sour taste, teeth grinding.
64	Delwel, S.	Oral function of older people with mild cognitive impairment or dementia.	J Oral Rehabil	2018	Y 348	Mean 83	NS 1	Wetselaar et al.	Dementia, Mild cognitive impairment.
65	de Queiroz Gonçalves, P. H. P.	Dental erosion' prevalence and its relation to isotonic drinks in athletes: a systematic review and meta-analysis	Sport Sciences for Health	2020	/	/	Systematic review – Meta-analysis	/	Isotonic drinks in athletes.
66	Di Fede, O.	Oral manifestations in patients with gastro-oesophageal reflux disease: a single-center case-control study.	J Oral Pathol Med	2008	NS 200	19 to 78	Y 1	TWI (Smith and Knight)	GERD.
67	Diraçoğlu, D.	Relationship between maximal bite force and tooth wear in bruxist and non-bruxist individuals.	Archive of Oral biology	2011	NS 29	Mean 35.2	NS 1	Bartlett	Bruxism, maximal bite force.
68	Dugmore, C. R.*	Asthma and tooth erosion. Is there an association?	Int J Paediatr Dent	2003	NS 1753	12 and 14	Y 1	O'Brien Index	Asthma, medications.
69	Dugmore, C. R.*	A multifactorial analysis of factors associated with dental erosion.	Br Dent J	2004	NS 1149	12 and 14	Y 1	TWI (Smith and Knight)	Age, apples, oranges, grapefruit, tomato sauce, chocolate, sweets, chips with vinegar, decay, calculus, fruit other than apple and citrus, fruit juice, fizzy pop, orthodontic anomaly.
70	Dugmore, C. R.	The prevalence of tooth erosion in 12-year-old children.	Br Dent J	2004	NS 1753	12	Y 1	O'Brien Index	Gender, ethnic group, deprivation, caries experience.
71	Duran-Cantolla, J.	Frequency of obstructive sleep apnea syndrome in dental patients with tooth wear.	J Clin Sleep Med	2015	NS 30	Mean 58.5	NS NS	NS	Obstructive Sleep Apnea Syndrome, BMI, Age, Gender.
72	Dynesen, A. W.	Salivary changes and dental erosion in bulimia nervosa.	Oral Surg Oral Med Oral Pathol Oral Radiol Endod	2008	NS 20	18-33	NS NS	Larsen et al.	Saliva flow rate, bulimia, vomiting, acidic drinks. Fruits, cakes, sweets, desserts, medication, age.

73	Eklfeldt, A.	Dental status and oral function in an adult group of subjects with thalidomide embryopathy - A clinical and questionnaire study.	Acta Odontologica Scandinavica	2009	NS 31	45-49	NS NS	Eklfeldt et al.	Gender, tobacco, use of teeth as tools, regurgitation, age, occupation, education, oral parafunctions, dietary habits, vomiting.
74	El Aidi, H.*	Dynamics of tooth erosion in adolescents: a 3-year longitudinal study.	J Dent	2010	Y 656	10 to 12	Y 2	Lussi et al.	Age, socio-economic status, gender.
75	El Aidi, H.*	Multifactorial analysis of factors associated with the incidence and progression of erosive tooth wear.	Caries Res	2011	Y 656	10 to 12	Y 2	Lussi et al.	Diet, acidic whey-based drinks, carbonated soft drink, ice tea, fruit lemonade, lemonade squash, fruit juice, mineral water, tap water, tea, alcoholic mixed drink , yoghurt drink/breakfast drink, <i>milk products</i> , <i>yoghurt products</i> , acidic fruit, sweet fruit, sour vegetables , pickled vegetables, cheese, sweet sandwich spreads, spreads/salads, sour candy, ice lolly, chewing gum, red sauces, white/yellow sauces, saliva, swishing, swallow, straw, tooth brushing, plaque, bite force, canine guidance, anterior contact, tooth grinding , gender, socio-economic status, tooth brush, vitamin, energy/sports drink.
76	Ellis, A. W.	Dental erosion as an indicator of gastroesophageal reflux disease	Gen Dent	2022	Y 80	18-85	NS NS	BEWE	Age , race, sex, obstructive sleep apnea, GERD , BMI.
77	El Karim, I. A.	Dental erosion among 12-14 year old school children in Khartoum: a pilot study.	Community Dent Health	2007	NS 157	12-14	Y 1	TWI (Smith and Knight)	Oral hygiene habits, vomiting, GORD, dietary habits, acidic food, citrus fruit juice, carbonated drinks , herbal drinks (hibiscus), citrus fruit, yoghurt, cheese, Baobab and Tamarind (traditional food), school type , gender.
78	Emodi-Perlman, A.	Prevalence of psychologic, dental, and temporomandibular signs and symptoms among chronic eating disorders patients: A comparative control study.	Journal of Oraofacial Pain	2008	NS 79	18 to 35	NS 2	Johansson et al.	Eating disorders , Bulimia nervosa, anorexia nervosa, eating disorder not otherwise specified, limitation of mouth opening, chewing gum, Oral habits (biting nails, biting hard foreign bodies, bruxism).
79	Entezami, S.	Tooth wear and socioeconomic status in childhood and adulthood: Findings from a systematic review and meta-analysis of observational studies	J Dent	2021	/	/	Systematic review – Meta-analysis	/	Socioeconomic status.
80	Evaristo-Chiyong, T.	Factors related to the presence of dental erosion and abrasion in Peruvian adults	Journal of Oral Research	2021	Y 153	18-65	NS 2	BEWE	Gender, age , saliva pH, saliva flow rate, industrial beverages, non-industrial beverages, coffee-like beverages, alcoholic drinks, nausea and vomiting, regurgitation (reflux), asthma , oral habits , type of bristles, amount of toothpaste, toothbrushing frequency, force applied while brushing.
81	Farahmand, F.	Gastroesophageal reflux disease and tooth erosion: A cross-sectional observational study.	Gut and liver	2013	NS 112	3 to 12	NS NS	Aine Erosion Index	GERD.
82	Fathima, F.	Association of occlusal wear facets in patients with temporomandibular disorders	Bioinformation	2020	NS 98	26-40	Y 1	TWI (Smith and Knight)	Temporo-mandibular-disorder.
83	Flueraşu, M. I.	The correlation between sleep bruxism, salivary cortisol, and psychological status in young, Caucasian healthy adults	Cranio	2021	NS 60	Mean 23.1	NS NS	NS	Bruxism.
84	Frese, C.	Effect of endurance training on dental erosion, caries, and saliva.	Scand J M	2015	NS 35	Over 18	Y 2	BEWE	Gender, age, socio-economic status, height, body weight, oral hygiene regime, running, swimming, cycling, sports activity , beverage, saliva.

85	Friedman Rubin, P.	Potential orofacial hazards of resistance training: A controlled comparative study.	The Journal of Craniomandibular & Sleep Practice	2017	NS 99	Over 18	Y 1	Lobbezoo et al.	Age, sports activity, weight, training , bruxism.
86	Fukayo, S.	Different dental caries patterns among smelter workers with dental erosion.	J Occup Health	2001	NS 350	Over 29	Y 2	Eccles et al.	Smelter workers, age, brushing, dental plaque, dental calculus, gingivitis, periodontitis.
87	George, R.	Dental erosion and dentinal sensitivity amongst professional wine tasters in South East Queensland, Australia.	Scientific World Journal	2014	NS 25	22 to 66	Y NS	TWI (Smith and Knight)	Wine , brushing, age .
88	Gillborg, S.	Tooth wear in Swedish adults-A cross-sectional study	J Oral Rehabil	2020	Y 1000	20-89	Y 8	BEWE	Age, gender , toothbrushing, acidic drinks, fruit .
89	Giraudeau, N	The contribution of teledentistry in detecting tooth erosion in patients with eating disorders	Digit Health	2021	Y 50	Over 16	Y 1	BEWE	Age, gender, education, employment, restrictive anorexia nervosa, purging-type anorexia nervosa, bulimia with vomiting, bulimia with other compensatory behaviors, hyperphagia bulimia, drugs, antidepressants, vomiting, dry mouth, citrus consumption, acidic food
90	Goller Bulut, D.	Ultrasonographic evaluation of jaw elevator muscles in young adults with bruxism and with and without attrition-type tooth wear: A pilot study.	The Journal of Craniomandibular & Sleep Practice	2018	NS 60	Mean 46.7	Y 2	TWI (Smith and Knight)	Gender, age, bruxism .
91	Goller Bulut, D.	Ultrasonographic evaluation of jaw elevator muscles in young adults with bruxism and with and without attrition-type tooth wear: A pilot study	Cranio	2020	NS 60	Mean 46.7 (group 1)	Y 1	TWI (Smith and Knight)	Age, gender, masseter muscle thickness , temporal muscle thickness .
92	Gonzalez-Aragon Pineda, A. E.	Relationship between erosive tooth wear and beverage consumption among a group of schoolchildren in Mexico City.	Clin Oral Investig	2019	Y 512	11 to 14	Y 1	BEWE	Beverages, pure water, natural fruit juices (pure or with water), <i>milk</i> , hot beverages (coffee or infusions), soft drinks (sweet carbonated drinks , fruit-based drinks, sports drinks, energy drinks), demographic information (sex and age), habits related to the consumption of drinks, food (citrus fruits, yogurt, caramels, and chewing gum), dental hygiene, vitamin C chewable tablets, gastroesophageal reflux, vomiting, saliva.
93	Gonzalez-Aragon Pineda, A. E.	Prevalence of erosive tooth wear and associated factors in a group of Mexican adolescents.	J Am Dent Assoc	2016	Y 417	14 to 19	Y 1	Lussi Index	Fruit juice, nectar or juice concentrate, sweet carbonated drinks , sport drinks, water, carbonated water, energy drinks, milk, tea, tooth brushing, xerostomia , medication, vitamin C, age .
94	Gonzalez-Aragon Pineda, A. E.*	Prevalence, Incidence, and Progression of Erosive Tooth Wear and Their Respective Risk Factors Among Schoolchildren in Mexico City	Pediatr Dent	2020	NS 424	11-14	Y 1	BEWE	Citrus fruits, acidic beverages , condiments/dressings, caramels, dairy products, keeping acidic drinks in the mouth, consumption of sweet carbonated drinks or fruits juice before going to bed, sucking lemon, frequent consumption of medications, consumption of vitamin C chewable tablets, effervescent tablet consumption, gastroesophageal reflux, frequent vomiting, saliva flow rate, stimulated saliva, saliva buffer capacity, poor oral hygiene, toothbrushing frequency, amount of time before brushing after meals, malocclusion requiring treatment.
95	Goswami, U.	Asthma, long-term asthma control medication and tooth wear in American adolescents and young adults	J Asthma	2021	NS 2186	13-29	Y 2	TWI (Smith and Knight)	Sex, age, race/ ethnicity, education, poverty income, dental insurance, GERD medication , asthma diagnosis , soft drinks.
96	Gurgel, C. V.	Risk factors for dental erosion in a group of 12- and 16-year-old Brazilian schoolchildren.	Int J Paediatr Dent	2011	NS 414	12 and 16	Y 2	O Brien Index	Disease, diabetes, asthma, gastric disorders, vomit, medicaments, vitamin C tablets, fruit juice, carbonated drink, sport drink, milk, coffee, tea, water, yogurt, fruits, vinegar, ketchup, sweets, acidic drink bedtime, hold drink, swimming.

97	Hamasha, A. A.	Risk indicators associated with dental erosion among Jordanian school children aged 12-14 years of age.	Int J Paediatr Dent	2014	NS 3812	12-14	Y 1	TWI (Smith and Knight)	Medical condition, asthma, corticosteroid inhaler, heart burn, indigestion, acid taste in the mouth, oral dryness, eye dryness, vomiting, ear infection, headaches, stomach disease, neurological and psychological disease; vitamin C, iron tonics (syrup), antacid drugs, clenching or grinding day/night, pain or fatigue of the jaw muscles, use of mouth guard, toothpaste, tooth gel, mouth wash, professionally applied fluoride, home-applied fluoride, brushing, vomiting, carbonated drink, fruit juice, usual drinking method, vegetarian, drinking habits, drinking habits at bedtime, orange, lemon, apple, tinned fruit, curry spicy food, yogurt, tomato, ketchup, mayonnaise, natural fruit juice, diluted fruit juice, carbonated drinks, sports drinks, coffee with sugar, herbal tea, red tea with sugar, milk, vinegar, sour candies, pickles, cheese.
98	Harlukowicz, K.	Prevalence and determinants of extrinsic origin dental erosion among children and adolescents from Wrocław.	Dent Med. Probl.	2017	NS 240	12 to 18	NS NS	Lussi et al., Sullivan et al., BEWE;	Age, gender, toothbrushing, orange juice, apple juice, vegetables juices, cola, energy/sport beverages, carbonated and non-carbonated beverages, vitamin C, cocoa, milk, yogurt, herbal tea, oranges, apples, bananas, ketchup, mustard, vinegar dressing, sauerkraut, pickles, chewing gum, acidic vegetables, swimming.
99	Hasheminejad, N.	The association between beverage consumption pattern and dental problems in Iranian adolescents: a cross sectional study	BMC Oral Health	2020	NS 600	12	Y 1	TWI (Smith and Knight)	Plaque, milk beverages, milk derivatives, yoghurt drinks, tea beverages, sweetened soft beverages, natural fruit juice, other hot beverages, gender, toothbrush.
100	Hasheminejad, N.	Meal patterns and the quality of breakfast and snacks in relation to adolescents' dental health in southeast of Iran	Nutr Health	2022	NS 600	12	Y 1	TWI (Smith and Knight)	Sex, breakfast quality, snack quality, snack frequency.
101	Hasselkvist, A.	Association between soft drink consumption, oral health, and some lifestyle factors in Swedish adolescents.	Acta Odontologica Scandinavica	2014	NS 197	13-14, 18-19	Y 1	Johansson et al.	Gender, carbonated soft drink, sweets, chips/cheese doodles, soured milk, sweetened milk, juice/ fruit drinks, TV/Computer, physical activity, toothbrushing, parents' birthplace, fresh fruit; syrup-regular, breakfast meals, mouth breathing, GOR, BMI.
102	Hasselkvist, A.	Dental erosion and soft drink consumption in Swedish children and adolescents and the development of a simplified erosion partial recording system.	Swed Dent J	2010	NS 1580	5-6, 13-14, 18-19	Y 1	Johansson et al.	Age, gender, drinking habits, carbonated soft drinks, juices, still drinks, sport drinks.
103	Hasselkvist, A.*	A 4-year prospective longitudinal study of progression of dental erosion associated to lifestyle in 13-14 year-old Swedish adolescents.	J Dent	2016	Y 227	13-14	Y 1	Johansson et al. And Simplified Erosion Partial Recording System	Age, gender, oral hygiene, GOR, intake medicines, general health, retaining acidic soft drinks in the mouth, physical activity, screen-viewing habits, body height/weight, born outside, dietary, water, acidic soft drinks, milk, yogurt, sour milk, tea, coffee, sweets, sour sweets, chewing gum, ice cream, popsicle, biscuits, snacks, cheese, dried and fresh fruits, still drinks, sport drinks, juice, alcoholic beverages (wine, beer, cider, alcopop), dry mouth.
104	Hasselkvist, A.*	Prevalence and progression of erosive tooth wear among children and adolescents in a Swedish county, as diagnosed by general practitioners during routine dental practice	Heliyon	2021	NS 2363	7-19	Y NS	Johansson et al.	Gender, age.
105	Hermont, A. P.	Tooth erosion and eating disorders: a systematic review and meta-analysis.	PLoS One	2014	/	/	Systematic review/	/	Eating disorder.

							Meta-analysis		
106	Hermont, A. P.	Acidic food choice among adolescents with bulimic symptomatology: a major risk factor for erosive tooth wear?	Eat Weight Disord	2021	Y 62	15-18	Y 1	O'Sullivan index	Vomiting, citrus fruits , non-citric fruits, ketchup, diet soda , sugared soda, yogurt, Fruit drink mix, citric fruit juice, non-citric fruit juice.
107	Holbrook, W. P.	The Basic Erosive Wear Examination (BEWE) applied retrospectively to two studies.	Clin Oral Investig	2014	NS 2251	6, 12, 15	NS NS	BEWE Lussi index	GOR, acidic drinks, saliva, gender , age, country districts .
108	Huew, R.	Dental erosion and its association with diet in Libyan schoolchildren.	Eur Arch Paediatr Dent	2011	Y 3014	12	Y 1	TWI (Smith and Knight)	Dietary intake, carbonated drinks, sports drinks, squashes, fruit-based sugary drinks , natural unsweetened fruit juices, sugar-free carbonated drinks, carbonated water, milk, flavoured milk, sugared tea with milk , tap or bottled water, fruit .
109	Huew, R.	Dental erosion among 12-year-old Libyan schoolchildren.	Community Dent Health	2012	Y 791	12	Y 1	TWI (Smith and Knight)	Gender , socioeconomic status, mother's education, father's education.
110	Isaksson, H.	Prevalence of dental erosion and association with lifestyle factors in Swedish 20-year-olds.	Acta Odontol Scand	2014	NS 494	20	NS 1	Hasselkvist et al, Eccles and Johansson et al.	Saliva, BMI, soft drinks , fruit juice (sweetened), fruit juice, fruit, main meals, chewing gum, physical activity, water, sport drinks, toothbrushing, gastric reflux, perceived healthy, medication, caries .
111	Janson, G.	Tooth-wear patterns in subjects with Class II Division 1 malocclusion and normal occlusion.	Am J Orthod Dentofacial Orthop	2010	NS 310	Mean G1 : 13.51 G2 :13.44 G3 : 13.17	Y 1	TWI (Smith and Knight) modified	Occlusion.
112	Jastaniyah, N.	The relationship between overweight/obesity and dental erosion among a group of Saudi children and adolescents.	Indian J Dent Res	2019	Y 370	4-18	Y 1	Smith and Knight modified by O'Brien	Overweight , BMI, age, gender, Mother educational level, father educational level, socioeconomic status, carbonated drinks , noncarbonated drinks, frequency of night drink intake, <i>straw</i> , low-calorie drinks.
113	Jász, M.	Dental Erosion and Its Relation to Potential Influencing Factors among 12-year-old Hungarian Schoolchildren	Oral Health Prev Dent	2022	NS 579	12	Y 1	BEWE	Location , gender, carbonated soft drinks, education level of the mother , toothbrushing, fresh fruits, tea with sugar, non-carbonated fruit juices, sweets/candys.
114	Jensdottir, T.	Relationship between dental erosion, soft drink consumption, and gastroesophageal reflux among Icelanders.	Clin Oral Investig	2004	NS 80	19 to 22	NS 2	Lussi et al.	GERD, soft drinks, carbonated beverages , milk-based beverages, pure fruit juices, juices from concentrate, energy or sport drinks, age, gender, Coca-Cola consumption .
115	Jiang, H.	The prevalence of and risk factors for non-carious cervical lesions in adults in Hubei Province, China.	Communiy Dent Health	2011	Y 2160	35 to 74	Y 4	TWI (Smith and Knight)	Location , gender, age , ethnic, education, toothbrushing, family income , soft drinks, fruit juices, mastication, bruxism .
116	Johansson, A. K.	Eating disorders and oral health: A matched case-control study.	European Journal of oral Sciences	2012	NS 54	10 to 50	Y 1	Johansson et al.	Eating disorder .
117	Jokstad, A.	Wear of teeth due to occupational exposure to airborne olivine dust.	Acta Odontol Scand	2005	NS 191	18 to 33, 34 to 44, over 44	NS NS	Hugoson et al.	Number of remaining teeth, occluding pairs, clenching habits, carbonated soft drinks, gastro-oesophageal reflux, airborne olivine exposure, age .
118	Jonsgar, C.	Sleep bruxism in individuals with and without attrition-type tooth wear: An exploratory matched case-control electromyographic study	J Dent	2015	Y 16	19.9 to 28.5	Y 5	Carlsson et al.	Sleep bruxism, saliva, dietary habits, general and oral health, headache, facial pain, muscles pain, dryness mouth.

119	Jordão, H. W. T.	The association between erosive tooth wear and gastro-oesophageal reflux-related symptoms and disease: A systematic review and meta-analysis	J Dent	2020	/	/	Systematic review – Meta-analysis	/	Gastro-oesophageal reflux.
120	Kamal, Y.	Obesity and tooth wear among American adults: the role of sugar-sweetened acidic drinks	Clin Oral Investig	2020	Y 3541	12-19	Y 2	Modified index of TWI (Smith and Knight)	Sugar-sweetened acidic drinks , sugar-sweetened non-acidic drinks, non-sugar-sweetened acidic drinks, non-sugar-sweetened non-acidic drinks , BMI
121	Kanaan, M.	Non-biological and Biological Risk Indicators for Tooth Wear Outcomes in Adults	Caries Res	2022	Y 570	Over 18	Y 2	BEWE	Age, gender , region of residence, education completed, patient's occupation , toothbrushing, toothbrush, toothpaste, medical condition, medication, DPSI, use of rigid occlusal splint, acidic beverage consumption frequency, acidic beverage consumption method.
122	Kanaan, M.	Tooth wear and oral-health-related quality of life in dentate adults	J Dent	2022	Y 570	Over 18	Y 2	BEWE	Gender, grinding or clenching teeth, age, secondary education level, oral health, medical conditions (eating disorders, gastroesophageal reflux disease, chronic alcoholism, obesity, medications, acidic beverages).
123	Kapagiannidou, D.	Association between polysomnographic parameters of sleep bruxism and attrition-type tooth wear	J Oral Rehabil	2021	NS 63	Over 18	NS 1	Lobbezoo et al.	Bruxism, gender, age.
124	Karki, S.	Different risk factors for erosive tooth wear in rural and urban nepal: A national study	International Journal of Environmental Research and Public Health	2021	Y 1137	5-6, 12 and 15	Y 2	BEWE	Location, age , gender, school type , ethnic group, fizzy drinks consumption, fruits consumption, toothbrushing frequency, use of toothpaste, use of charcoal , use of miswak, BMI, waist-hip ratio , waist-height ratio.
125	Kataoka, K.	Association Between Self-Reported Bruxism and Malocclusion in University Students: A Cross-Sectional Study.	J Epidemiol	2015	NS 1503	18-19	NS 5	TWI (Smith and Knight)	Bruxism, malocclusion, BMI, gender, orthodontic treatment, oral habits, temporal headache, biting fingernail/pens/pencils, biting mucosa of cheeks/lips, and gum chewing.
126	Khayat, N.	The Prevalence of Temporomandibular Disorders and Dental Attrition Levels in Patients with Posterior Crossbite and/or Deep Bite: A Preliminary Prospective Study	Pain Research and Management	2021	NS 310	11-49	Y 1	Lobbezoo et al.	Age, temporomandibular disorders, disc displacement, mixed temporomandibular disorders, deep bite .
127	Kim, H. D.	Associations between occupational health behaviors and occupational dental erosion.	J Public Health Dent	2003	Y 943	15 to 63	NS 1	Modified ten Cate's criteria	Age, Workers (acid exposure), wearing masks, gargling, length of employment, gender.
128	Kim, H. D.	Occupational exposure to acidic chemicals and occupational dental erosion.	J Public Health Dent	2006	Y 951	18 to 65	Y 3	Modified ten Cate's criteria	Workers (acid exposure) , age, gender, length of employment, income, work type, factory size, position, wear mask , brushing, vomiting, smoking status, alcohol consumption, acid food preference, gastritis history.
129	Kirthiga, M.	Dental Erosion and its Associated Factors In 11-16-Year-Old School Children.	J Clin Pediatr Dent	2015	NS 2000	11 to 16	Y 1	O'Sullivan index	Age, gender, school type , candy, jelly, appy fizz, lemon soda, fanta, coke, mazza, fruits (orange, lemon, or grapes), night foods.
130	Kitagawa, K.	Effect of masseter muscle activity during wakefulness and sleep on tooth wear	Journal of Prosthodontic Research	2022	Y 15	Mean 71.69	NS 1	TWI (Smith and Knight)	Age, number of remaining teeth, masseter muscle activity, bruxism.
131	Kitasako, Y.	Age-specific prevalence of erosive tooth wear by acidic diet and gastroesophageal reflux in Japan.	J Dent	2015	NS 1108	15 to 89	Y 2	TWI (Smith and Knight) and Fares et al.	Gastro-oesophageal reflux, acidic drinks (carbonated drink, fruit juice), vinegar drinks, acidic fruits (apple, orange, grapefruit, lemon) , systemic disease, eating disorders, age.

132	Kitasako, Y.	Multifactorial logistic regression analysis of factors associated with the incidence of erosive tooth wear among adults at different ages in Tokyo.	Clin Oral Investig	2017	NS 1108	15 to 89	Y 2	TWI (Smith and Knight) and Fares et al.	Age, dietary habit, grapefruit, orange fruit, apple, foods in sweetened vinegar, carbonated drinks, sports drinks, energy drinks, vinegar drink, citrus juice , drink at bedtime, acidic drinks per day , health condition, repeated vomiting, heartburn, gastroesophageal reflux , oral health condition, frequent oral dryness, oral hygiene, texture type of toothbrush , brushing pressure.
133	Kitasako, Y.	Erosive Tooth Wear Among Different Tooth Types and Surfaces in Japanese Adults 15 to 89 Years Old.	Oral Health Prev Dent	2017	NS 1108	15 to 89	Y 2	TWI (Smith and Knight) and Fares et al.	Age.
134	Kitasako, Y.	The prevalence of non-carious cervical lesions (NCCLs) with or without erosive etiological factors among adults of different ages in Tokyo.	Clinical Oral Investigations	2021	NS 1108	15 to 89	Y 2	TWI (Smith and Knight) and Fares et al.	Carbonated soft drinks, citrus juice, orange fruit, tooth brushing pressure , bruxism,
135	Korkmaz, E.	Cross-Sectional Analysis of Prevalence and Aetiological Factors of Dental Erosion in Turkish Children Aged 7-14 Years	Oral Health Prev Dent	2020	Y 473	7-14	Y 1	O'Sullivan index	Sex, age , socioeconomic status, education level of father, education level of mother, systemic disease, BMI , duration of gestation, birth weight, swimming in the pool, regular sporting habits, drinks with straw, drinks slowly with glass , drinks quickly, keeping drinks in the mouth, beverage consumption with meals, beverage consumption between mealtimes , beverage consumption before bedtime, irregular consumption, fruit consumption (bite), fruit consumption (suck) , previous dentist visits, visiting dentists regularly, frequency of toothbrushing, technique of toothbrushing, timing of toothbrushing, toothbrush replacement, mouthwash use, dental floss use .
136	Kosalram, K.	An investigation of risk factors associated with tooth surface loss: a pilot study.	J Oral Rehabil	2014	NS 80	25 to 85	NS 2	Wetselaar's index	Cardiovascular disorders, drug use, gastrointestinal disorders, musculoskeletal disorders , medications, nervous system disorders, urogenital disorders, respiratory disorders, immune system disorders, thyroid, blood pressure, smoking, operations, diabetes, rheumatic fever, liver, infections, allergies, Coffee, soft drinks, sweets, hard foods, water, acidic food, tea, alcohol, lemons, health, finances, daily hassles total score , environment, practical, social, family, work, saliva.
137	Kovacevic, M.	Tooth abrasion in workers exposed to noise in the Montenegrin textile industry.	Ind Health	2006	NS 225	Mean G1 : 33,1 G2 : 42,5	NS 1	Grippio et al.	Worker exposed, gender , demographic factor, socioeconomic factor, tooth brushing habits, career length, marital status, apartment size, number of apartment dwellers, bathroom in the apartment, family income.
138	Kumar, S.	Prevalence and risk factors for dental erosion among 11- to 14-year-old school children in South India.	J Oral Sci	2013	Y 605	11 to 14	Y 1	O'Sullivan index	Location of school, gender, socio-economic status , type of diet, type of school, brushing , fruits, biscuits, lemon , jam, sweets, soft drinks carbonated , non-carbonated soft drinks, <i>straw</i> , direct swallow, both ways, snacks with soft drinks, medical diseases, medicine consumption, vitamin C, sports.
139	Kunzel, W.	Dental erosion in Cuban children associated with excessive consumption of oranges.	Eur J Oral Sci	2000	Y 1010	12	Y 1	Modified index of TWI (Smith and Knight)/ Eccles et al./ Lussi et al.	Location, gender , vegetables, pineapple, oranges, grapefruit, citrus.
140	Lai, Z. Y.	Prevalence of non-carious cervical lesions and associated risk indicators in middle-aged and elderly populations in Southern China.	Chin J Dent Res	2015	Y 768	35 to 74	Y 1	TWI (Smith and Knight)	Age, gender, location of residence, marriage, education level, monthly income, occupation , brushing, toothpicks, tooth brushing method , dental floss, bruxism , chewing on one side, biting hard objects , fruit,

									carbohydrate and vinegar beverages , recurrence of gastric acid, xerostomia, experience of visiting dentists.
141	Lechien, J. R.	Laryngopharyngeal reflux, gastroesophageal reflux and dental disorders: A systematic review	PLoS One	2020	/	/	Systematic review and Meta-analysis	/	Gastroesophageal reflux disease, laryngopharyngeal reflux.
142	Li, H.	Dietary factors associated with dental erosion: a meta-analysis.	PLoS One	2012	/	/	Meta-analysis	/	Soft drinks, sport drinks, juice, vitamin C, milk, yoghurt.
143	Li, Y.	Association between gastro-oesophageal reflux disease and dental erosion in children: A systematic review and meta-analysis	J Dent	2022	/	/	Systematic review and Meta-analysis	/	Gastro-oesophageal reflux disease.
144	Li, W.	Prevalence of dental erosion among people with gastroesophageal reflux disease in China.	J Prosthet Dent	2017	NS 51	18 to 70	Y 1	TWI (Smith and Knight)	GERD, sex, age, education, grains and legumes, milk per day, yoghurt, carbonated beverages , smoking.
145	Lim, S. N.	Prevalence and risk factors of erosive tooth wear among young adults in the Singapore military	Clinical Oral Investigations	2022	Y 1296	18-25	Y 1	BEWE	Gender, age, education , combat fitness, GERD , caries susceptibility , TMD symptoms , brush frequency, brush hardness , acidic food , acidic drinks , hard food, rinsing after meal habits, nightguard wear.
146	Liu, B.	Tooth wear in aging people: an investigation of the prevalence and the influential factors of incisal/occlusal tooth wear in northwest China.	BMC Oral Health	2014	NS 704	40 to 50	Y 1	TWI (Smith and Knight)	Bruxism, hard or acidic foods , parafunctional activity, working environment (acid gas), clicking of the temporomandibular joint, stiffness or fatigue of the masticatory muscles, acid reflux.
147	Liu, J. W.	The Prevalence of Erosive Tooth Wear and Related Risk Factors in 6- to 12-Year-Old Students	Oral Health Prev Dent	2021	NS 1469	6-12	Y 3	BEWE	Age , gender , family-social factors , nationality , oral hygiene habits , frequency of eating acid flavouring , frequency of eating sauerkraut , frequency of drinking soft drinks , unilateral mastication , bruxism , brush teeth immediately after acidic diet .
148	Lurie, O.	Bruxism in military pilots and non-pilots: tooth wear and psychological stress.	Aviat Space Environ Med	2007	NS 57	Mean 25,8	NS 2	Modified from Magnusson et al.	Psychological stress, work (military pilots).
149	Lussi, A.*	Progression of and risk factors for dental erosion and wedge-shaped defects over a 6-year period.	Caries Res	2000	NS 204	26 to 30, 46 to 50	Y 2	Lussi et al.	Age, fruits, citrus fruits, fruit juice, apple juice, vegetables, yoghurt, toothpaste, toothbrushing , hardness of toothbrush bristles, drug usage, gastric regurgitation, X-ray irradiation, salivary gland disorders, environmental acid exposure , hypersensitivity of the teeth, saliva.
150	Lussi, A.*	Erosive tooth wear and wedge-shaped defects in 1996 and 2006: cross-sectional surveys of Swiss army recruits.	Swiss Dent J	2015	NS 417	18 to 25	Y 2	Lussi et al.	Age, education, general medical problems (reflux), medication, oral hygiene habits, erosive beverages (including alcohol) , foodstuffs , brushing , brush immediately after eating .
151	Machado, C. A. L.	The impact of erosive tooth wear related to masticatory quality in an indigenous Brazilian population: A cross-sectional study	Int Orthod	2022	NS 197	12-60	NS NS	BEWE	Age , sex, masticatory function, meats, fruits, vegetables , soft drinks, fruit juice, orange , banana , apple , lemon , energy drinks, sweets.
152	Mafla, A. C.	Prevalence and Extrinsic Risk Factors for Dental Erosion in Adolescents.	J Clin Pediatr Dent	2017	Y 384	10 to 15	Y 2	O'Sullivan index	Age , sex, socio-economic status , fruit juices and frequency , artificial fruit juices and frequency, carbonated drinks and frequency, beverages and frequency , salt-lemon-blend and frequency, snacks with artificial lemon taste and frequency , sour candies and frequency, alcohol and frequency , medication intake , asthma treatment.

153	Maharani, D. A.	Dental Caries and the Erosive Tooth Wear Status of 12-Year-Old Children in Jakarta, Indonesia.	Int J Environ Res Public Health	2019	Y 696	12	Y 1	BEWE	Age, gender , place of birth, frequency of soft drinks , frequency of citrus tea/drinks containing lemon, frequency of fruit juice, frequency of chewing gum , frequency of vitamin C supplement drink, frequency of tooth brushing, caregiver, education of father , education of mother , parent dental knowledge.
154	Manarte, P.	Dental erosion in alcoholic patients under addiction rehabilitation therapy.	Med Oral Patol Oral Cir Bucal.	2009	NS 50	24 to 67	Y 1	Eccles et al.	Gender, age , civil state , academic education , employment status , daily alcohol intake , years of alcohol daily consumption , heroin, cocaine, smoking habits , drink before breakfast , drink before sleeping, vomits, gastroesophageal reflux , brushes teeth , mouthwash .
155	Manevski, J.	Dental aspects of purging bulimia	Vojnosanitetski Pregled	2020	NS 60	18-35	NS NS	BEWE	Purging bulimia .
156	Mangueira, D. F.	Association between socioeconomic factors and dental erosion in Brazilian schoolchildren.	American Association of Public Health Dentistry	2009	Y 983	6 to 12	Y 1	O'Sullivan index	Family income, parental educational status, type of school, gender, age, type of dentition.
157	Margaritis, V.	Multicenter study to develop and validate a risk assessment tool as part of composite scoring system for erosive tooth wear	Clin Oral Investig	2021	NS 121	15-21	Y NS	BEWE	Soft drinks, energy drink , juices consumption , erosive drink kept in the mouth , erosive drink for quenching thirst between meals, unstimulated saliva secretion, stimulated saliva secretion .
158	Marro, F.	Erosive tooth Wear in special Olympic athletes with intellectual disabilities.	BMC Oral Health	2019	NS 232	9 to 62	Y 3	BEWE	Athletes with Down syndrome , athletes with intellectual disable.
159	Marro, F.	The Influence of Behavioural and Sociodemographic Risk Indicators on Erosive Tooth Wear in Flemish Adolescents, Belgium.	Caries Res	2018	NS 613	13 to 17	Y 3	BEWE	Education , gender, socio-economic status, use toothpaste, use mouthwash, use manual toothbrush, use electric toothbrush, brushing frequency, brushing duration, drinking soft drinks and fruit juices before brushing, drinking soft drinks and fruit juices just after brushing, eating cookies or chocolate or candies just after brushing, frequency soft drinks , drinking time of soft drinks, use straw for soft drinks, holding liquid (soft drinks), fruit juices frequency, drinking time of fruit juices, use straw for fruit juices, holding liquid (fruit juices), chewing gum , sugar-free chewing gum .
160	Marro, F.*	Associated risk factors with quantitative erosive tooth wear progression	J Dent	2022	Y 70	15	Y 2	BEWE	Gender, parental education, reflux or vomiting, dietary acidic intake, age.
161	Massignan, C.	Socio-economic characteristics, acid drinking patterns and gastric alterations associated with erosive tooth wear in children: a cross-sectional study	Eur Arch Paediatr Dent	2020	Y 1085	8-10	Y 4	O'Sullivan index	Gender, age, head of the household education , sports drinks , acid juice/soda, chewing gum, vomiting, gastric upsets, vomiting after overeating, DMFT, DAI index.
162	Mathew, T.	Relationship between sports drinks and dental erosion in 304 university athletes in Columbus, Ohio, USA.	Caries Res	2002	NS 304	18 to 28	Y 1	Lussi index	Age, sex, race , Sports, dental history, gastric disorders, sports drinks (frequency, quantity), cola drinks, soft drinks, fruit juices, lemonade, coffee, plain tea, lemon tea, wine, beer, alcoholic drinks, apple cider, citrus fruits, tomatoes, hard cheese, curried foods, spicy foods, vinegar, pickles salad with dressing, yogurt, peppermint, sweet and sour sauce, tartar sauce, sour candy, meals per day, snacking/drinking between meals, eating disorders, medications, iron supplement , vitamin C, multivitamins, chest pain, acidic taste, dry mouth, health problems , heartburn, regurgitation, vomiting, sharp teeth, diet: strict vegetarian, lacto-ovo-vegetarian, nonvegetarian, swimming, toothbrushing, toothpaste, tooth whitening , clenching and grinding habit, orthodontic treatment.

163	McGuire, J.	Erosive tooth wear among children in the United States: relationship to race/ethnicity and obesity.	Int J Paediatr Dent	2009	NS 1962	13 to 19	Y NS	TWI (Smith and Knight)	Gender, age, race/ethnicity , income, dental coverage, BMI, last dental visit .
164	Medeiros, T. L. M.	Prevalence and risk indicators of non-carious cervical lesions in male footballers	BMC Oral Health	2020	NS 45	18-49	Y 1	Mockers and modified by Viera et al.	Education level, years of a sports activity, daily training time , occupation, toothpaste , brushing immediately after meals, dry mouth, gastroesophageal reflux, medication, lemon water intake while fasting , parafunctional habits, previous orthodontic treatment , malocclusion, bite alteration.
165	Methuen, M.	Prevalence of erosive tooth wear and associated dietary factors among a group of Finnish adolescents	Caries Res	2022	NS 328	15-17	Y 1-2	BEWE	Gender , location, erosive drinks, fruits or berries, erosive products .
166	Mijuskovic, M.	Tooth wear and gingival recession in 210 orthodontically treated patients: a retrospective cohort study.	Eur J Orthod	2018	NS 210	Mean 13,8	Y 2	Carlsson et al.	Age, gender, time point (gingival recession) , angle class I, angle class II, angle class III .
167	Milosevic, A.	Epidemiological studies of tooth wear and dental erosion in 14-year-old children in North West England. Part 2: The association of diet and habits.	Br Dent J	2004	Y 2385	14	Y 1	Modified version of TWI (Smith and Knight)	District, clenching/ grinding, fizzy drink, Stomach upsets/ vomiting, sport drinks, fresh oranges, apples, grapefruit, tinned fruit, yoghurt, tomato ketchup, brown/other sauce, salad dressing, vinegar, baked beans/pasta shapes, pickled onions, other pickles, relishes, stoneground bread, cheese, salt and vinegar crisps, curry/spicy food, low calorie fizzy drinks, sports/ high energy drink, mineral water, still water, tea or coffee, beer/lager/cider, alcopop, spirit, squash, natural juice, alcohol, wine, milk, diluted fruit juice/squash, fizzy mineral water, herbal/lemon tea, normal tea, brushing, general health, medication, exposure to stomach acid, satisfaction body shape/weight.
168	Moazzez, R.	The association of acidic reflux above the upper oesophageal sphincter with palatal tooth wear.	Caries Res	2005	NS 31	Mean 43,2	NS 1	Modified version of TWI (Smith and Knight)	Acidic reflux.
169	Moazzez, R.	Dental erosion, gastro-oesophageal reflux disease and saliva: how are they related?	J Dent	2004	NS 104	18 to 75	Y 1	Modified version of TWI (Smith and Knight)	Gastroesophageal reflux , saliva.
170	Moazzez, R.	Oral pH and drinking habit during ingestion of a carbonated drink in a group of adolescents with dental erosion.	J Dent	2000	NS 11	10 to 16	NS NS	TWI (Smith and Knight)	Oral pH, carbonated drinks (method and speed) , fruit, fruit juice, orange cordial or squash, sport drink, acidic crisps .
171	Mohamed, R. N.	Dental Erosion Prevalence and Its Association With Obesity Among Children With and Without Special Healthcare Needs	Oral Health Prev Dent	2021	Y 1200	6-16	Y 1	NS	Age, gender, BMI, consumption of soft drinks , citrus fruit consumption, chronic vomiting or bulimia , consumption of vitamin C, gastric reflux , type of disability.
172	Morita, K.	Association between salivary alpha-amylase and subjective and objective oral parafunctions in community-dwelling elderly individuals	J Dent Sci	2020	NS 319	Over 65	NS NS	TWI (Smith and Knight)	Saliva alpha-amylase .
173	Mota-Veloso, I.	Effects of attention deficit hyperactivity disorder signs and socio-economic status on sleep bruxism and tooth wear among schoolchildren: structural equation modelling approach.	Int J Paediatr Dent	2017	Y 851	6 to 12	Y 2	TWI (Smith and Knight)	Sex, age, bruxism , bequivalized monthly household income, mother's schooling, father's schooling , hyperactivity reported by parents, hyperactivity reported by teachers, inattention reported by parents, inattention reported by teachers, ever finger/thumb sucking, bit nails/objects, used pacifier, used bottle, currently use medication.

174	Mulic, A.	Dental erosive wear among Norwegian wine tasters.	Acta Odontol Scand	2011	NS 18	24 to 56	Y 4	Visual Erosion Dental Examination (Mulic et al.)	Wine tasters (frequency of wine tasting, number of years in the occupation, number of wine tasting sessions, oral hygiene habits after wine tasting), gastro-esophageal reflux, medication, orange/apple/grapefruit juices, carbonated beverages, oranges, grapefruit, apples, toothbrushing (duration, frequency), fluoride consumption, time of last dental visit.
175	Mulic, A.	Dental erosive wear and salivary flow rate in physically active young adults.	BMC Oral Health	2012	Y 220	18 to 32	Y 1	Visual Erosion Dental Examination (Mulic et al.)	Gastro-esophageal reflux, medication, orange/apple/grapefruit juices, carbonated beverages, oranges, grapefruit, apples, toothbrushing (duration, frequency), fluoride consumption, time of last dental visit, saliva, gender, age.
176	Mulic, A.	Protein profiles of individuals with erosive tooth wear	Pesquisa Brasileira em Odontopediatria e Clinica Integrada	2020	NS 267	18	Y 1	VEDE system	Sex, protein profiling in saliva.
177	Muller-Bolla, M.	Dental erosion in French adolescents.	BMC Oral Health	2015	Y 339	14	Y 1	BEWE	Socio-economic category, area of residence, sex, dental biofilm, carious lesions, fluoride toothpaste, dentist control, acidic beverage, energy/sports drinks, acidic sweets, acid fresh fruits, retained drink in the mouth after drinking, vitamin C.
178	Mwangi, C. W.	Relationship between malocclusion, orthodontic treatment, and tooth wear.	Am J Orthod Dentofacial Orthop	2009	NS 307	30-31	Y 1	Hooper index	Sex , orthodontic treatment, acidic drinks, acidic food.
179	Nagarajappa, R.	Tooth wear among tobacco chewers in the rural population of Davangere, India.	Oral Health Prev Dent	2012	NS 208	35 to 44	Y 1	TWI (Smith and Knight)	Tobacco, plain tobacco, pan masala with tobacco
180	Nahas Pires Correa, M. S.	Prevalence and associated factors of dental erosion in children and adolescents of a private dental practice.	Int J Paediatr Dent	2011	NS 232	2 to 20	NS NS	Modified version of O'Brien index	Age, gender , type of dentition, soft drink, frequency of soft drink , type of soft drink, temperature of soft drink, juice, frequency of juice, sports drink, milk , tea, usual drinking method (swallows, straw), citrus fruits, frequency of citrus fruit , acidic sauces/dressings, acidic candies, frequency of acidic candy , vomiting, gastroesophageal disorders, type of toothbrush, toothbrushing, mouth rinse, tooth grinding.
181	Nasir, E. F.	Dental Erosion Among Secondary Schoolchildren: Sudan	Scientific Journal of King Faisal University	2021	Y 483	Mean 12.4	NS 1	TWI (Smith and Knight)	Soft drink, hibiscus drink, tooth brushing frequency , gender, class, type of water, topical fluoride, non-bacterial acids.
182	Nayak, S. S.	Dental erosion among 12-year-old school children in Belgaum city a cross sectional study.	Pak Peds Journal	2009	NS 220	12	Y 2	Modified version of TWI (Smith and Knight)	Gender, brushing, citrus fruits, curds, pickle, ketchup, lemon, vinegar, Tamarind, Sambar , Rasam, spicy curried food, fruit juice , fruit drinks, squash, lemon juice , milk, tea, carbonated/ non-carbonated beverages, coffee, butter milk , regurgitation, vomiting.
183	Nijakowski, K.	Regular Physical Activity and Dental Erosion: A Systematic Review	Applied Sciences (Switzerland)	2022	/	/	Systematic review.	/	Physical activity.
184	Nijakowski, K.	Regular Physical Activity as a Potential Risk Factor for Erosive Lesions in Adolescents	Int J Environ Res Public Health	2020	NS 155	15 -18	NS NS	BEWE	Sports activity, isotonic drinks , fruit juices, carbonated drinks, tendency to hold the drink in the mouth, brushing method, gastric disorders, gender , special diet.
185	Nixon, P. J.	Tooth surface loss: does recreational drug use contribute?	Clin Oral Investig	2002	NS 13	18 to 23	Y 1	TWI (Smith and Knight)	Frequency of acidic fruit, frequency of fizzy drink, known bruxism, xerostomia, regurgitation, competitive sport, tobacco, alcohol, cannabis, amphetamines, ecstasy, cocaine.
186	Nota, A.	Correlation between Bruxism and Gastroesophageal Reflux Disorder and Their Effects on Tooth Wear. A Systematic Review	J Clin Med	2022	/	/	Systematic review	/	Bruxism, gastroesophageal reflux.

187	O'Toole, S.	Timing of dietary acid intake and erosive tooth wear: A case-control study.	J Dent	2017	Y 600	18 to 66	Y 1	BEWE	Total acid intake , fruit with meals, fruit between meals , fruit with meals, acidic drinks between meals , acidic drinks with meals , brush within 10 min of acid intake, duration of fruit , duration of acidic drink , alternate drinking habits , gender , age .
188	O'Toole, S.*	Randomised Controlled Clinical Trial Investigating the Impact of Implementation Planning on Behaviour Related to The Diet.	Sci Rep	2018	NS 60	25 to 70	Y 1	BEWE	Acidic diet, eating disorder, age, gastro-esophageal reflux, xerostomia, bruxism, requiring antibiotic pre-medication prior to dental treatment, current pregnancy.
189	Offen, E.	Do oral piercings cause problems in the mouth?	Evid Based Dent	2022	/	/	Systematic review	/	Oral piercings.
190	Oginni, A. O.	Non-cariou cervical lesions in a Nigerian population: abrasion or abfraction?	Int Dent J	2003	NS 106	20 to 80	NS NS	TWI (Smith and Knight)	Brushing technique, toothbrush, frequency of brushing.
191	Okunseri, C.	Erosive tooth wear and consumption of beverages among children in the United States.	Caries Res	2011	NS 1314	13 to 19	Y NS	Modified version of TWI (Smith and Knight)	Age , gender , race/ ethnicity , apple juice, fruit drinks, grape juice, milk, orange/grapefruit juice, other juice, soft drinks, tomato/vegetable juice.
192	Okunseri, C.	The relationship between consumption of beverages and tooth wear among adults in the United States.	J Public Health Dent	2015	NS 3773	Over 20	Y NS	Modified version of TWI (Smith and Knight)	Age , gender , race/ ethnicity , education , annual family income, apple juice, fruit drinks, grape juice, milk, orange/ grapefruit juice, other juice, soft drinks, tomato/vegetable juice.
193	Olaide Savage, Kofoworola	A national survey of tooth wear on facial and oral surfaces and risk factors in young Nigerian adults.	European journal of dentistry	2018	NS 1349	18 to 35	Y NS	BEWE	Geopolitical zones of country , age , gender , area of residence, education , occupation , brushing frequency , manual toothbrush, electric toothbrush, chewing stick, brush movement (various motion, horizontal, vertical, circular), brush after breakfast , brush before breakfast, brush after lunch, brush after dinner, snoring, sleeping medication/antidepressant, smoking , chew-gum, fresh fruits, fruit/vegetable juice, isotonic/energy drinks, soft drinks, dairy products, acidic foods.
194	Olley, R. C.	The relationship between incisal/occlusal wear, dentine hypersensitivity and time after the last acid exposure in vivo.	J Dent	2015	NS 350	19 to 34	Y 1	BEWE	Acidic beverages .
195	Oltramari-Navarro, P. V.	Tooth-wear patterns in adolescents with normal occlusion and Class II Division 2 malocclusion.	Am J Orthod Dentofacial Orthop	2010	NS 165	Mean G1 : 13,9 G2 : 14,3	Y NS	Modified version of TWI (Smith and Knight)	Normal occlusion , Malocclusion: class II
196	Otsu, M.	Factors affecting the dental erosion severity of patients with eating disorders.	BioPsychoSocial Medicine	2014	NS 79	17 to 47	NS 2	NS	Age, vomiting (Anorexia nervosa, bulimia nervosa), <i>water consumption before vomiting</i> , post-vomiting oral hygiene: <i>oral rinsing post-vomiting</i> , toothbrushing post-vomiting , acidic foods , acidic beverages, citrus fruit, sugar-sweetened food (candy, gum) , eating disorder duration.
197	Özgül, M.	Relationship between handedness and toothbrush-related cervical dental abrasion in left- and right-handed individuals.	Journal of Dental Sciences	2010	NS 488	Mean 33,7	Y 1	TWI (Smith and Knight)	Gender , age, daily tooth-brushing, toothbrushing technique (Horizontal method) , toothbrushing frequency, duration toothbrushing .
198	Paszynska, E.	Parotid salivary parameters in bulimic patients a controlled clinical trial.	Psychiatr Pol	2015	NS 95	Mean G1 : 21,2 G2 : 27,4 G3 : 25,5	NS NS	TWI (Smith and Knight)	Vomiting (Bulimia nervosa) , fluoxetine medication.

199	Paszynska, E.	Risk of Dental Caries and Erosive Tooth Wear in 117 Children and Adolescents' Anorexia Nervosa Population-A Case-Control Study	Front Psychiatry	2022	NS 117	12-18	Y 2	BEWE	Anorexia nervosa, anorexia nervosa with purging episodes.
200	Pedrao, A. M. N.	Erosive Tooth Wear and Dietary Patterns: A Clinical Study.	Oral Health Prev Dent	2018	NS 207	35 to 74	Y 2	BEWE	Vegetarian, laco-ovo vegetarians, omnivores, sex, age.
201	Penoni, D. C.	Factors Associated with Noncarious Cervical Lesions in Different Age Ranges: A Cross-sectional Study	European Journal of Dentistry	2021	NS 501	Over 15	Y 13	NS	Age, sex, acidic diet intake, number of teeth, harmful toothbrushing habits.
202	Pergamalian, A.	The association between wear facets, bruxism, and severity of facial pain in patients with temporomandibular disorders.	J Prosthet Dent	2003	NS 84	Mean 29,1	Y NS	Johannson et al.	Age, gender, bruxism.
203	Picos, A.	Factors associated with dental erosions in gastroesophageal reflux disease: a cross-sectional study in patients with heartburn	Med Pharm Rep	2020	NS 263	Over 20	Y NS	BEWE	Age, sex, intrinsic factors (GERD), acidic drinks, citric fruits, bruxism, salivary buffering capacity, salivary pH.
204	Polat, Zülfikar	Evaluation of the relationship between dental erosion and scintigraphically detected gastroesophageal reflux in patients with cerebral palsy.	Turk J Med Sci	2013	NS 37	Mean 12,1	NS 1	O'Sullivan	Gastroesophageal reflux (GERD).
205	Provatenou, E.	Erosive Tooth Wear and Related Risk Factors in 8- and 14-Year-Old Greek Children	Caries Research	2016	Y 329 263	8 and 14	Y 2	BEWE	Gender, caries-free, decayed missing filled surface index, toothbrushing, toothbrushing frequency, pool swimming, awareness of tooth grinding, preference for sour taste (lemon or vinegar), lemon-flavored sour candy, lemon-flavored sour candy frequency, fruit juice, fruit juice frequency, soft drink frequency, soft drink prolonged retention in mouth.
206	Przybyszewska-Pardak, S.	Assessment of dental condition in young polish adults using the BEWE index	Family Medicine and Primary Care Review	2020	NS 260	17-19.1	Y 1	BEWE	Gender.
207	Quintella, M. C. M.	Relationship between bariatric surgery and dental erosion: a systematic review	Surg Obes Relat Dis	2020	/	/	Systematic review.	/	Bariatric surgery.
208	Racki, D. N. D. O.	Is Toothbrush Bristle Stiffness Associated with Erosive Tooth Wear in Adolescents? Findings from a Population-Based Cross-Sectional Study	Caries Research	2021	Y 1197	15-19	Y 2	BEWE	Sex, age, socioeconomic status, toothbrush bristle stiffness, toothbrushing frequency, toothbrushing after meals, soft drink consumption, citric fruit consumption
209	Rafeek, R. N.	Tooth surface loss in adult subjects attending a university dental clinic in Trinidad.	Int Dent J	2006	NS 155	16 to 73	NS NS	Kelly et al.	Age, toothbrushing frequency, vomiting, gastric reflux, parafunction, citrus fruit, fruit juices, soft drinks, sports drinks, alcohol, yoghurt, chewing gum, dinner mints, effervescent vitamin C, vegetarian diet.
210	Raj, A.	Evaluation of Dental Status in Relation to Excessive Horizontal and Vertical Overlap in North Indian Population	J Pharm Bioallied Sci	2021	NS 600	13-50	NS NS	NS	Occlusion.
211	Ramsay, D. S.	Tooth wear and the role of salivary measures in general practice patients.	Clin Oral Investig	2015	Y 1323	16 to 97	Y NS	NS	Gender, age, salivary consistency, resting salivary flow, stimulated salivary flow, resting salivary pH, stimulated salivary pH, salivary buffering

									capacity, milk, coffee, acidic beverage, alcohol, chew tobacco use, toothbrushing frequency, medications affecting saliva, dry mouth, number of teeth present.
212	Ramirez, V.	Relationship between intrinsic and extrinsic factors with Erosive Tooth Wear in adults: a cross-sectional study	Braz Oral Res	2022	Y 553	18-46	Y 2	BEWE	Age , sex, low educational level, medium educational level, sport practice, aerobic sports, watersport, walking/skating, no exercise, tobacco smoking, smokes at least once a day, alcohol drinking currently , diabetes, arterial hypertension, obesity, pneumonia, asthma, depression, cancer, hiatal hernia, GERD, gastric ulcer, chronic gastritis, esophagitis, difficulty to swallow , sensation of acidity, reflux feeling, nausea/vomiting, indigestion or discomfort, nighttime cough, rejection of food, eating large quantities of food, obsession with the physical, anorexia , bulimia, vitamin C , vitamin C once a day, aspirin, once a day, water, sparkling water, fruit/artificial juices, soft drink, black tea, green tea, coffee, mate/herbal infusion, wine, fruits, chocolates, dairy products.
213	Ratnayake, N.	Risk indicators for tooth wear in Sri Lankan adolescents.	Caries Res	2010	Y 1200	17	Y 1	Modified version of TWI (Smith and Knight)	Father's occupation, mother's education , use of mouth washes, chewing vitamin C tables, oranges, apples, sauce, coca cola, ginger beer , natural fruit juices, method of drinking fruit juice, straw, glass.
214	Rauber, B. F.	Predictors of dental erosions in patients evaluated with upper digestive endoscopy: a cross-sectional study	Odontology	2020	Y 235	Over 18	Y 1	BEWE	Sex, age, BMI, dental prosthesis, preserved teeth, heartburn, regurgitation score, reflux esophagitis, GERD, hiatal hernia, antidepressants, proton pump inhibitors, chocolate intake.
215	Rodriguez, J. M.	In vivo measurements of tooth wear over 12 months.	Caries Res	2012	NS 63	Mean 39,1	NS NS	TWI (Smith and Knight)	Heartburn, regurgitation, vomiting , acid taste in mouth, soft drink, holding/swirling drinks in mouth, method of drinking soft drinks, alcohol consumption, history of eating disorder, clenching, grinding, TMJ disorder-related symptoms, age, gender, parafunction.
216	Roesch-Ramos, L.	Dental erosion, an extrasophageal manifestation of gastroesophageal reflux disease. The experience of a center for digestive physiology in Southeastern Mexico.	Rev Esp Enferm Dig	2014	NS 60	Mean 50.92	NS NS	Erosion Index of Eccles	Esophagitis, age, gender, carbohydrates , fats, spicy food , citrus, coffee , alcohol, smoking, acid reflux, non-acid reflux, DMF index, halitosis , good oral hygiene, poor oral hygiene.
217	Rusyan, E.	The association between erosive tooth wear and diet, hygiene habits and health awareness in adolescents aged 15 in Poland	Eur Arch Paediatr Dent	2022	NS 2639	15	Y 18	BEWE	Place of residence, gender , education level of the mother, education level of the father, working status of the mother, working status of the father, systemic health, toothbrush type, time between meal and toothbrushing, fluoride rinse or gel, fruits, fruit juices, fruit teas, isotonic drinks, carbonated drinks, energy drinks, marinades.
218	Saerah, N. B.	Associated factors of tooth wear among Malaysian 16-year-olds: a case-control study in Kota Bharu, Kelantan.	Community Dent Health	2012	NS 576	16	Y 1	TWI (Smith and Knight)	Gender, monthly household income, carbonated sport drinks, years of drinking orange juices, hydration of saliva in seconds, viscosity of saliva, pH of saliva, Caries experience, pool swimming.
219	Samman, M.	Dental Erosion: Effect of Diet Drink Consumption on Permanent Dentition	JDR Clin Trans Res	2022	Y 2368	21-60	NS NS	TWI (Smith and Knight)	Gender, age, race/ethnicity , education, marital status, ratio of family income to poverty, beverage consumption.
220	Sanhoury, N. M.	Tooth surface loss, prevalence, and associated risk factors among 12-14 years school children in Khartoum State, Sudan.	Community Dent Health	2010	NS 1138	12 to 14	Y 2	Modified version of TWI (Smith and Knight)	Brushing after vomiting, swimming, vomiting, mouth dryness, grapefruit, mango, karkade, gongolaise, gender, school, grapefruit juice.

221	Sawhani, K.*	Factors influencing the progression of noncarious cervical lesions: A 5-year prospective clinical evaluation.	J Prosthet Dent	2016	NS 29	Mean 60,3	NS 2	NS	NS	Acidic foods, acidic beverages, acidic sauces, gastric reflux, dry mouth, hyposalivation medicine, brush more than 1x/day, medium or hard brush, brus rigorously, horizontal brushing, grind or nail bite, absolute occlusal stress in maximum intercuspation position (MIP), relative occlusal force in MIP , relative occlusal force in protrusion, relative occlusal force on working side, relative occlusal force on nonworking side.
222	Sayed, M. E.	Tooth Wear Patterns among Khat and Shammah Users in Jazan City, Kingdom of Saudi Arabia: A Cross-sectional Survey.	J Contemp Dent Pract	2017	NS 236	Mean 42,68	Y 2	Johansson et al.	Oral habits , gender, acidic drink, acidic food, fruits, grains, vegetables, systemic disease , brushing times per day , brushing technique , toothbrush , parafunctional habits, stress, acid reflux, age , drink frequency , food frequency , grains frequency .	
223	Schierz, O.	Association between anterior tooth wear and temporomandibular disorder pain in a German population.	J Prosthet Dent	2007	Y 646	35 to 44	Y 3	NS	TMD pain, bruxism.	
224	Schlenz, M. A.*	Intraoral scanner-based monitoring of tooth wear in young adults: 12-month results	Clin Oral Investig	2022	NS 109	Mean 21.0	Y 1	NS	Sex, nightguard, consumption of chewing gum, acidic food, acidic drinks.	
225	Sehgal, H. S.	Tooth wear in patients treated with HIV anti-retroviral therapy.	BMC Oral Health	2019	NS 93	20 to 90	NS 1	Eckfeldt et al.	HIV, smoking, TMJ Disorder, Bite guard therapy, clenching day , clenching night, psychiatric disorder, anti-retroviral therapy, sex , Jaw soreness, Headaches, Teeth/gum soreness, alcoholic beverage per week .	
226	Seong, J.	Clinical enamel surface changes following an intra-oral acidic challenge.	J Dent	2015	NS 20	Over 18	Y 4	NS	Acidic soft drink.	
227	Serra-Negra, J. M.	Tooth wear and sleep quality: A study of police officers and non-police officers.	Cranio	2018	NS 144 142	18 to 71	Y 1	Johansson et al.	Age , gender, marital status, profession , general health, suffering from illness, psychological counseling, consumes alcoholic beverages.	
228	Sezer, B.	Relationship between erosive tooth wear and possible etiological factors among dental students	Clin Oral Investig	2022	NS 126	21-34	Y 2	BEWE	Age , gender , mother's educational status, father's educational status , acidic foods , dairy products (yoghurt/cheese) , fruit juice , acidic drinks, carbonated drinks, drinking with straw, sport drinks, tea/coffee, milk , alcohol , swimming in pools , toothbrushing, usage of fluoride-containing toothpaste , type of toothbrush , usage of electrical toothbrush, bruxism, dental visits , DFMT.	
229	Shah, P.	The prevalence of cervical tooth wear in patients with bruxism and other causes of wear.	J Prosthodont	2009	NS 119	Mean 48.7	Y 2	TWI (Smith and Knight)	Bruxism , carbonated drinks, acidic food , acidic drink , parafunction .	
230	Shrestha, D.	Prevalence and Associated Risk Factors of Tooth Wear.	JNMA J Nepal Med Assoc	2018	Y 364	15 to 75	NS NS	BEWE	Age , duration of brushing , method of brushing , swishing of soft drink , tobacco chewing , gender, dietary habits, frequency of taking sour food, frequency of taking soft drinks, frequency of taking hard food, vomiting, reflux , parafunctional habit.	
231	Sierpinska, T.	Copper deficit as a potential pathogenic factor of reduced bone mineral density and severe tooth wear.	Osteoporos Int	2014	NS 50	Mean 47,5	NS NS	TWI (Smith and Knight)	Age, gender, number of teeth, height, wright, BMI, BMD (Bone mineral density) femur, T-score for BMD femur, Z-score for BMD femur, BMD spine , T-score for BMD spine , Z-score for BMD spine , Calcium intake, zinc intake , copper intake, phosphorus intake, vitamin D intake, enamel bioplates , saliva, serum.	
232	Sierpinska, T.	Enamel mineral content in patients with severe tooth wear.	IJOPRD	2013	NS 50	Mean 49,5	NS NS	TWI (Smith and Knight)	Content of Zn in enamel bioplates , content of Cu in enamel bioplates , content of Ca in enamel bioplates, content of Mg in enamel bioplates.	

233	Silva, M. A.	Gastroesophageal reflux disease: New oral findings.	Oral Surg Oral Med Oral Pathol Oral Radiol Endod	2001	NS 31	Mean 37,1	Y 1	Eccles et al.	GERD.
234	Silva, M. R. G.	Is the consumption of beverages and food associated to dental erosion? A cross-sectional study in Portuguese athletes	Science and Sports	2021	NS 110	13 to 62	Y 1	BEWE	Gender, age, race, sport practice, duration of training, swimmers who consume energy drinks, athletes who do not consume energy drinks , years of swimming practice, energy drinks, number of daily meals, acidic taste, dry mouth, heartburn, regurgitation, vomiting, sharp teeth, type of diet, frequency of daily tooth brushing , toothpaste brand, tooth whitening, bruxism, orthodontic treatment , cola, other sodas, fruit juice, lemonade, coffee, plain tea, lemon tea, ice tea, red wine , green wine, beer, other alcoholic drinks, citrus food, tomatoes, cheese, curry food, spicy food, vinegar, pickles, salad with dressing, yoghurts, peppermint, sweet and sour sauce, tartar sauce, sour candy, number of daily meals, snacks/ drinks between meals, non-vegetarian diet, iron supplement, vitamin C, multivitamins.
235	Skalsky Jarkander, M.	Dental erosion, prevalence and risk factors among a group of adolescents in Stockholm County	Eur Arch Paediatr Dent	2018	Y 1071	15 to 17	Y 2	Johansson et al.	Coca-cola or other soft drinks , juice or sport drinks, juice at breakfast, juice or sport drink as thirst quencher after exercise, fruit, apple , citrus fruits, computing, exercise frequency, reflux , intake of fluoride tablets, tooth brushing frequency, tooth brushing before or after breakfast, chewing-gum, mouthwash (with or without fluoride), age, gender .
236	Smith, W. A.	The prevalence and severity of non-carious cervical lesions in a group of patients attending a university hospital in Trinidad.	J Oral Rehabil	2008	NS 156	16 to 73	Y 2	NS	Age , gender, gastric reflux, heartburn, headaches, bruxism, clinking joint, occlusal splint, tooth brushing, toothbrush type, swimming , lived near a beach, outdoor sports, vegetarian food, citrus fruits, soft drinks, alcohol, yoghurt, effervescent vitamin C, chewing-gum, frequency of intake of citrus fruits, frequency soft drinks, sport drinks frequency, alcohol frequency, effervescent vitamin C frequency, guidance , group function, canine guidance .
237	Smits, K. P. J.	Vegetarian diet and its possible influence on dental health: A systematic literature review	Community Dent Oral Epidemiol	2020	/	/	Systematic review.	/	Vegetarian diet.
238	Soares, L. G.	Prevalence of bruxism in undergraduate students.	Cranio	2017	Y 253	18 to 30	Y 1	Johansson et al.	Age, sex.
239	Souza, G. L. N.	Association of facial type with possible bruxism and its related clinical features in adolescents: A cross-sectional study	Int Orthod	2020	Y 448	12-19	Y 1	NS	Facial type.
240	Stangvaltaite- Mouhat, L.	Erosive Tooth Wear among Adults in Lithuania: A Cross-Sectional National Oral Health Study	Caries Res	2020	Y 1397	35 to 74	Y 1	NS	Age, gender , education, residency, fluoride level in drinking water, toothbrushing frequency, using fluoridated toothpaste, fruits, juice, soft drinks, oral health, general health, reflux, dry mouth.
241	Struzycza, I.	Prevalence of erosive lesions with respect to risk factors in a young adult population in Poland-a cross-sectional study.	Clin Oral Investig	2017	Y 1869	18	Y 2	BEWE	Gender, place of residence (city, village), gastroesophageal reflux, eating disorder , allergy, asthma , fruit, fruit juices, fruit teas, isotonic drinks , carbonated beverages, energizing drinks, pickles, acidic solids and liquids, toothbrush used, asthma .
242	Suyama, Y.	Dental erosion in workers exposed to sulfuric acid in lead storage battery manufacturing facility.	Bull Tokyo Dent Coll	2010	NS 40	Mean 42,4	NS NS	Occupation dental health by Japan Dental Association	Sulfuric acid gases exposition, working years .

243	Tahmassebi, J. F.	Impact of soft drinks to health and economy: a critical review	Eur Arch Paediatr Dent	2020	/	/	Systematic review.	/	Soft drinks.
244	Takehara, J.	Correlations of noncarious cervical lesions and occlusal factors determined by using pressure-detecting sheet.	J Dent	2008	NS 159	Mean 36,2	NS 1	TWI (Smith and Knight)	Age , frequency of toothbrushing, hardness of bristles, toothbrushing strike, toothbrushing pressure , bruxism, occlusal force , occlusal contact area , occlusal pressure .
245	Truin, G. J.	Caries trends 1996-2002 among 6- and 12-year-old children and erosive wear prevalence among 12-year-old children in The Hague.	Caries Res	2005	NS 832	6 and 12	NS 2	Van Rijkom et al.	Socio-economic status, gender , frequency of toothbrushing, fluoride gel of varnishes.
246	Tschammler, C.	Erosive tooth wear and caries experience in children and adolescents with obesity.	J Dent	2019	Y 223	4 to 17	Y 1	BEWE	Caries, weight , background , native, migrant, frequency of erosive beverages , toothbrushing, toothbrush , age, snacks, BMI, snacks.
247	Tsiggos, N.	Association between self-reported bruxism activity and occurrence of dental attrition, abfraction, and occlusal pits on natural teeth.	J Prosthet Dent	2008	NS 102	Mean 44,6	Y 2 <i>Ex vivo</i>	Johansson et al.	Bruxism .
248	Uhlen, M. M.	Self-induced vomiting and dental erosion--a clinical study.	BMC Oral Health	2014	NS 72	Mean 27,7	Y 1	Visual Erosion Dental Examination (VEDE)	Eating disorder , self-induced vomiting, daily intake of acidic beverages.
249	Vainionpaa, R.	Erosive tooth wear and use of psychoactive substances among Finnish prisoners.	BMC Oral Health	2019	NS 100	Mean 34,6	Y 1	BEWE	Alcohol, smoking, snuff, drogues, decayed, filled tooth , missing teeth, age, DMFT.
250	van Rijkom, H. M.	Prevalence, distribution, and background variables of smooth-bordered tooth wear in teenagers in the hague, the Netherlands.	Caries Res	2002	NS 345 400	10 to 13 15 to 16	Y 2	Lussi et al.	Gender, vomiting, acidic fruits, acidic drinks , dairy drinks, toothbrushing frequency, bristle hardness, brushing immediately after meals, swishing carbonated drinks .
251	Van't Spijker, A.	Occlusal wear and occlusal condition in a convenience sample of young adults.	J Dent	2015	NS 28	24,7	NS NS <i>Ex vivo</i>	NS	Canine Angle class II, <i>anterior guidance</i> , <i>horizontal overbite</i> , self-reported grinding.
252	Vargas-Ferreira, F.	Prevalence of tooth erosion and associated factors in 11-14-year-old Brazilian schoolchildren.	J Public Health Dent	2011	Y 944	11 to 14	Y 2	Peres et al.	Gender, ethnics, age , household income (BMW), mother's schooling, father's schooling, GERD, consumption of acid drinks, dental caries, enamel hypoplasia .
253	Venugopal, A.	Occurrence of tooth wear in controlled and uncontrolled diabetic patients - An observational study.	Journal of Advanced Pharmacy Education and Research	2017	NS 50	20 to 90	NS NS	NS	Random blood sugar (RBS) level, age, uncontrolled diabetic, gender.
254	Vered, Y.	Dental erosive wear assessment among adolescents and adults utilizing the basic erosive wear examination (BEWE) scoring system.	Clin Oral Investig	2014	Y 245 255	15 to 60	Y 15	BEWE	Gender, age , origin, education, employment, lifetime parotid gland inflammation, lifetime exposure to radiation (head, neck tumors), frequency of reflux, vomiting, exposure to acidic vapors at the workplace, frequency of consumption of sedatives, sleeping, antiallergy, drugs, acidic foods .
255	Verhoeff, M. C.	Parkinson's disease, temporomandibular disorder pain and bruxism and its clinical consequences: a protocol of a single-centre observational outpatient study	BMJ Open	2022	Y NS	Over 18	NS NS	Wetselaar's index	Composition of saliva, Parkinson's disease.

256	Vieira Pedrosa, B. R.	Prevalence of Erosive Tooth Wear and Related Risk Factors in Adolescents: An Integrative Review	J Dent Child (Chic)	2020	/	/	Systematic review.	/	Lifestyle, diet, sociodemographic, economic factor, gender, acidic foods, beverages, GERD.
257	Wan Nik, W. N.	Gastro-oesophageal reflux disease symptoms and tooth wear in patients with Sjogren's syndrome.	Caries Res	2011	Y 33	20	NS NS	Modified version of TWI (Smith and Knight)	Sjögren's Syndrome, GORD.
258	Wang, G. R.	Relationship between dental erosion and respiratory symptoms in patients with gastro-oesophageal reflux disease.	J Dent	2010	NS 88	20 to 73	Y 1	Modified version of TWI (Smith and Knight)	GERD with respiratory symptoms , medical history, dietary history, dental history, oesophageal symptoms, GERD, oral hygiene habits.
259	Wang, P.	The prevalence of dental erosion and associated risk factors in 12-13-year-old school children in Southern China.	BMC Public Health	2010	Y 774	12 to 13	Y 2	O'Sullivan	Gender, age, socio-economic status, occupation and education levels of parents , oral hygiene habits, frequencies of ingesting beverage types , acidic drink intake, special drinking habits, general health, vitamin C supplements, frequency of swimming.
260	Wei, Z.	Prevalence and Indicators of Tooth Wear among Chinese Adults.	PLoS One	2016	Y 720	36 to 74	Y 2	BEWE	Gender, age, frequency of acidic drinks and foods, drinking before sleep , holding drinks in mouth, <i>drinking water during meals</i> , frequency of tea consumption, frequency of swimming in summer, <i>taking vitamin C, taking aspirin</i> , Gastroesophageal reflux disease, gastricism, clenching teeth automatically, bruxism, unilateral chewing, frequency of tooth brushing, frequency of changing toothbrushes, social-economic class , duration of tooth brushing, toothbrush bristle , horizontal brushing.
261	Westergaard, J.	Occupational exposure to airborne proteolytic enzymes and lifestyle risk factors for dental erosion--a cross-sectional study.	Occup Med (Lond)	2001	NS 425	18 to 67	Y 2	Larsen et al.	Exposed to proteolytic enzymes, exposed to acids , grinding substances, exposed to organic solvents , sugar/flour, wine, lemon tea , fruit intake, soda pop intake, abrasive dentifrice , digestion problems, tablets containing acetylsalicylic acid, age, gender .
262	Wiegand, A.	Occupational dental erosion from exposure to acids: a review.	Occup Med (Lond)	2007	/	/	Systematic review.	/	Exposure acids.
263	Wild, Y. K.	Gastroesophageal reflux is not associated with dental erosion in children.	Gastroenterology	2011	Y 59	9 to 17	NS 1	Simplified Tooth Wear Index	GER, sport drinks , drinking, water from bottle, milk temperature , eating mints, eating chocolate, citrus, or sour candies .
264	Wilder-Smith, C. H.*	Longitudinal study of gastroesophageal reflux and erosive tooth wear.	BMC Gastroenterol	2017	NS 72	Mean 33.8	Y NS	BEWE	pH, reflux episodes, acidic reflux episodes, proximal reflux, esomeprazole treatment.
265	Wilder-Smith, C. H.*	Quantification of dental erosions in patients with GERD using optical coherence tomography before and after double-blind, randomized treatment with esomeprazole or placebo.	Am J Gastroenterol	2009	NS 30	18	NS 1	Lussi et al.	<i>Esomeprazole treatment for GERD</i> .
266	Yadav, N. S.	Alliance of oral hygiene practices and abrasion among urban and rural residents of Central India.	J Contemp Dent Pract	2012	NS 1045	18 to 59	Y 1	Modified version of TWI (Smith and Knight)	Age, rural/urban resident, material used , frequency of brushing, type of toothbrush, duration of brushing , gender, toothbrush/finger.
267	Yang, C.	Dental Erosion in Obese Patients before and after Bariatric Surgery: A Cross-Sectional Study	J Clin Med	2021	Y 62		NS NS	BEWE	Bariatric surgery.

268	Yanushevich, O. O.	Prevalence and Risk of Dental Erosion in Patients with Gastroesophageal Reflux Disease: A Meta-Analysis	Dent J (Basel)	2022	/	/	Meta-Analysis	/	Gastroesophageal reflux disease.
269	Yu, T.	Prevalence and Associated Factors of Tooth Wear in Shanghai	Chin J Dent Res	2021	Y 1806	12, 15 and over 18	Y 1	BEWE	Age, frequency of toothbrushing, frequency of consumption of carbonated drinks, GERD, frequency of changing toothbrush, methods of toothbrushing, alcoholic drinks consumption, pickled vegetables consumption, type of toothbrush, xerostomia, hard food consumption.
270	Zhang, J.	The prevalence and risk indicators of tooth wear in 12- and 15-year-old adolescents in Central China.	BMC Oral Health	2015	Y 720	12 and 15	Y 2	BEWE	Gender, age, social-economic class, frequency of brushing, duration of brushing , toothbrush bristle, toothbrushing method, fluoride toothpaste, accumulated use time, toothbrush, frequency of changing toothbrush, fruit juices/soft drinks/acid food, taking drinks before sleep, holding drinks in mouth , drinking with straw, drinking immediately after sport , dry mouth, frequency of tea consumption, eating hard food , vitamin C supplements, taking aspirin , taking amphetamine, taking diazepam, reflux , vomiting, eating disorder, gastro esophageal reflux disease, gastricism, xerostomia, frequency of swimming in summer , clenching teeth automatically, sleep bruxism, chewing habits.
271	Zhang, Q.	Occlusal tooth wear in Chinese adults with shortened dental arches.	J Oral Rehabil	2014	Y 150	Mean 58.2	Y 1	Modified version of TWI (Smith and Knight)	Shortened dental arches, age , gender, place of residence, posterior occluding pairs.
272	Zhang, S.	Dental caries and erosion status of 12-year-old Hong Kong children.	BMC Public Health	2014	Y 600	12	Y 3	BEWE	Gender, place of birth, frequency of soft drinks, frequency of citric tea/ drinks, frequency of fruit juice, frequency of chewing gum , frequency of vitamin C supplement drinks, frequency of toothbrushing , caretaker, education of father, education of mother, parent's dental knowledge, caries experience.
273	Zwier, N.	Saliva parameters and erosive wear in adolescents.	Caries Res	2013	NS 88	49	NS NS	Lussi modified by Van Rijkom	pH, buffer capacity, flow (ml/min) , albumin, amylase, CA-6, Total protein, calcium, phosphate, urea, sodium, chloride , potassium.

Appendix Table 2: Studies included in this scoping review (n=273): First authors, titles, journals, year, number of participants (n) and power sample size calculation, age of participants (year), tooth wear (TW) measurement index used, factors studied and risk of bias. The factors shown to be positively associated with TW after statistical analysis are in bold. The factors shown to be negatively associated with TW are in italic.

NS: not specified. Y: Yes.

* Indicates longitudinal studies.

Appendix 1 – Electronic databases and search strategy

Pubmed (28/10/2022) #1 AND #2 AND #3

#1	#2	#3
<p>Tooth wear OR Dental wear OR Tooth abrasion OR Tooth erosion OR Tooth attrition OR Dental abrasion OR Dental erosion OR Dental attrition OR Occlusal wear OR Occlusion wear OR Molar wear OR Premolar wear OR Canine wear OR Incisive wear OR Erosive tooth wear OR Anterior tooth wear OR Posterior tooth wear OR Enamel wear" OR Dentin wear OR Tooth Wear[MeSH Terms] OR Tooth Wear/etiology[MeSH Terms]</p>	<p>Risk factor OR Risk factors OR Cause OR Causes OR Risk OR Risks OR Causality OR Origin OR Reason OR Bruxism OR GERD OR Gastroesophageal reflux OR Soft drink OR Energy drinks OR Fruit juice OR Bulimia OR Anorexia OR Dietary OR Acidity OR Acidic OR Alcoholism OR Drugs OR Brushing OR Toothpaste OR Swimming pool OR Risk[MeSH Terms] OR Risk Assessment[MeSH Terms] OR Carbonated Beverages[MeSH Terms] OR Causality[MeSH Terms]</p>	<p>NOT Temporary dentition NOT Primary tooth NOT Primary teeth NOT Implant NOT Periodontal NOT Periodontitis NOT Dental material NOT Dental materials NOT Restoration NOT Rehabilitation</p>

Scopus (28/10/2022) #1 AND #2 AND NOT #3

#1	#2	#3
<p>TITLE-ABS-KEY (tooth wear) OR TITLE-ABS-KEY (dental wear) OR TITLE-ABS-KEY (tooth abrasion) OR TITLE-ABS-KEY (tooth erosion) OR TITLE-ABS-KEY (tooth attrition) OR TITLE-ABS-KEY (dental abrasion) OR TITLE-ABS-KEY (dental erosion) OR TITLE-ABS-KEY (dental attrition) OR TITLE-ABS-KEY (Occlusal wear) OR TITLE-ABS-KEY (Occlusion wear) OR TITLE-ABS-KEY (Molar wear) OR TITLE-ABS-KEY (Premolar wear) OR TITLE-ABS-KEY (Canine wear) OR TITLE-ABS-KEY (Incisive wear) OR TITLE-ABS-KEY (Erosive tooth wear) OR TITLE-ABS-KEY (ETW) OR TITLE-ABS-KEY (Anterior tooth wear) OR TITLE-ABS-KEY (Posterior tooth wear) OR TITLE-ABS-KEY (enamel wear) OR TITLE-ABS-KEY (dentin wear)</p>	<p>TITLE-ABS-KEY (risk factor) OR TITLE-ABS-KEY (cause) OR TITLE-ABS-KEY (risk) OR TITLE-ABS-KEY (causality) OR TITLE-ABS-KEY (origin) OR TITLE-ABS-KEY (reason) OR TITLE-ABS-KEY (bruxism) OR TITLE-ABS-KEY (GERD) OR TITLE-ABS-KEY (gastroesophageal reflux) OR TITLE-ABS-KEY (soft drink) OR TITLE-ABS-KEY (energy drinks) OR TITLE-ABS-KEY (fruit juice) OR TITLE-ABS-KEY (bulimia) OR TITLE-ABS-KEY (anorexia) OR TITLE-ABS-KEY (dietary) OR TITLE-ABS-KEY (acidity) OR TITLE-ABS-KEY (acidic) OR TITLE-ABS-KEY (drugs) OR TITLE-ABS-KEY (brushing assessment)</p>	<p>TITLE-ABS-KEY (In vitro) OR TITLE-ABS-KEY (case report) OR TITLE-ABS-KEY (animal)</p>

Identification

Records identified through database searching
(n=3270)

Screening

Records screened after duplicates removed
(n=2702)

Eligibility

Full-text articles assessed for eligibility
(n=523)

Included

Studies included in synthesis
(n=273)

Records excluded
based on title & abstract
(n=2179)

Full-text articles excluded, with reasons
(n=250)

- Not about tooth wear
- Type of study
- Not about permanent dentition
- No use of a quantitative tooth wear measurement





