	General study information					
#	First author	Year	Journal	Study type	Population	Description of recorder type
1	Abekura	2008	Int J Prosth	RCT	adults	portable EMG recorder
2	Ahlberg	2008	J Oral Rehabil	case-control	adults	single-use disposable EMG-device
3	Baad-Hansen	2007	J Oral Rehabil	RCT	adults	portable EMG device
4	Baba	2005	J Orofac Pain	cross-sectional	adults	portable EMG recording system

5	Čadová	2014	Russ J Biomech	algorithm development / cross-sectional	adults	two-channel electromyography recorder
6	Camara-Souza	2018	Clin Oral Invest	case-control	adults	portable electromyography and electrocardiography device
7	Carvalho Bortoletto	2016	J Phys Ther Sci	RCT	children	device for the evaluation of the electromyographic signals
8	Castro Mattia	2018	Int J Prosth	before-after interventional	adults	portable electromyographic device
9	Castroflorio	2014	J Oral Rehabil	diagnostic validity	adults	portable EMG/ECG recorder

10	Castroflorio	2015	J Oral Rehabil	diagnostic validity	adults	portable device allowing a simultaneous recording of EMG signals from both the masseter muscles as well as heart fre-quency.
11	Clark	1981	Behav Res & Therapy	before-after interventional	adults	portable electromyographic recording device
12	Clarke	1984	JOR (p 529-534)	cross-sectional	adults	microcomputer system
13	Clarke	1984	JOR (p 123-127)	cross-sectional	adults	microcomputer system

14	Conti	2014	OSOMOPOR	RCT	adults	portable single-channel EMG device
15	Deregibus	2014	Clin Oral Invest	reliability	adults	portable device
16	Gallo	1997	J Sleep Res	diagnostic validity	adults	microprocessor assisted portable one-channel EMG recorder
17	Gallo	1999	JDR	epidemiological	adults	miniaturized solid-state protable recorder

18	Haketa	2003	Int J Prosth	device development / cross-sectional	adults	EMG recording system
19	Hammoudi	2019	J Dent	cross-sectional	adults	portable single-channel EMG device
20	Harada	2006	J Oral Rehabil	RCT	adults	portable EMG recording unit

21	Ikeda	1996	JOP	algorithm development / cross-sectional	adults	portable multichannel analog tape recoder
22	Iwasaki	2015	Orthod Craniofac Res	case-control	adults	custom portable EMG recorder
23	Jadidi	2008	JOR	RCT	adults	portable EMG device

24	Jadidi	2013	Acta Odontol Scand	RCT	adults	portable EMG device
25	Jonsgar	2015	J Dent	case-control	adults	portable single-channel EMG device
26	Karakoulaki	2015	Int J Prosth	case-control	adults	miniature, disposable single-use EMG device

27	Kardachi	1977	J Periodontol	before-after interventional	adults	not described
28	Kato	2018	Arch Oral Biol	case-control	adults	recording hardware for surface EMG
29	Khawaja	2015	Orthod Craniofac Res	cross-sectional	adults	portable EMG recorder
30	Lee	2010	Am J Phys Med Rehabil	RCT	adults	portable EMG device

31	Maeda	2019	J Prosth Res	diagnostic validity	adults	ultraminiature wearable electromyogram system
32	Mainieri	2012	OSOMOPO R	diagnostic validity	adults	portable surface EMG device
33	Manfredini	2011	J Oral Rehabil	cross-sectional	adults	portable device
34	Manfredini	2016	J Oral Facial Pain Headache	cross-sectional	adults	portable device combining EMG and ECG recordings

35	Manfredini	2018	Progress in Orthodontics	before-after interventional	adults	portable home EMG/ECG recorder
36	Manfredini	2019	J Oral Facial Pain Headache	cross-sectional	adults	portable device
37	Matsuda	2016	Cranio	cross-sectional	adults	ultraminiature electromyogram system
38	Matsumoto	2015	JOR	RCT	adults	portable EMG recording unit

39	Minakuchi	2012	Sleep Breath	epidemiological	adults	small portable self-contained EMG detector/analyzer
40	Minakuchi	2014	J Prosth Res	case-control	adults	wireless, all-in-one type portable EMG device
41	Minakuchi	2016	Sleep Breath	cross-sectional	adults	EMG detector-containing device
42	Miyawaki	2003	Sleep	case-control	adults	portable telemeter EMG recording system

43	Miyawaki	2004	Am J Orthod Dentofacial Orthop	cross-sectional	adults	portable telemeter EMG recording system
44	Mizumori	2013	Int J Prosth	cross-sectional	adults	portable EMG and ECG telemetry system
45	Mohamed	1997	Cranio	RCT	adults	portable EMG unit
46	Mude	2017	J Prosth Res	case-control	adults	portable EMG device

47	Murakami	2014	J Stomat Occ Med	cross-sectional	adults	portable EMG recording unit
48	Nagamatsu-Sakaguchi	2017	Int J Prosth	cross-sectional	children	miniature single-use electronic device
49	Needham	2013	BDJ	before-after interventional	adults	device for the management of sleep bruxism
50	Nitschke	2011	Gerodontolog y	case-control	adults	self-developed miniaturised portable one- channel recorder

51	Ohlmann	2018	J Dent	case-control	Adults	portable EMG and ECG recorder
52	Ohlmann	2020	J Clin Med	cross-sectional	adults	portable EMG/ECG recorder
53	Ono	2008	Cranio	case-control	adults	portable surface EMG machine
54	Palinkas	2019	Arch Ital Biol	case-control	adults	portable electromyographic device

55	Po	2013	J Sleep Res	cross-sectional	adults	portable recorder
56	Raphael	2013	JOP	before-after interventional	adults	device that monitors individually biocalibrate EMG events
57	Rugh	1981	J Periodontol	before-after interventional	adults	portable EMG instrument

58	Rugh	1984	J Prosth Dent	controlled interventional	adults	portable electromyographic instruments
59	Rugh	1989	J Caraniomandib Disord Facial Oral Pain	controlled interventional	adults	ambulatory recorder
60	Saito-Murakami	2020	J Oral Rehabil	RCT	adults	hearing aid shaped one-channel portable EMG BF device

61	Sakagami	2002	Frontiers Med Biol Engng	device development / diagnostic validitiy / case-control	adults	portable bruxism monitoring and analysis device
62	Saueressig	2010	Int J Prosth	before-after interventional	adults	portable EMG device
63	Schmitter	2015	Sleep Med	case-control	adults	portable EMG device

64	Shedden Mora	2012	J Psychosom Res	case-control	adults	single-channel ambulatory recording devices
65	Shedden Mora	2013	Clin J Pain	RCT	adults	single-channel EMG ambulatory recording devices
66	Shimada	2019	J Dent	RCT	adults	portable EMG device

67	Shochat	2007	Oral Surg Oral Med Oral Pathol Oral Radiol Endod	diagnostic validity	adults	disposable small electronic electromyographic-based device
68	Stock	1983	Med & Biol Eng & Comput	device development / cross-sectional	not described	microprocessor to monitor bruxing activity
69	Stuginski-Barbosa	2015	Sleep Breath	diagnostic validity	adults	single-channel EMG

70	Suganuma	2007	J Prosth Dent	case-control	adults	portable surface EMG machine
71	Takaoka	2017	Clin Oral Invest	cross-sectional	adults	portable automatic sleep bruxism analyzer
72	Thymi	2019	J Dent	cross-sectional	adults	ambulatory single-channel EMG-recorder

73	Thymi	2020	BDJ Open	prospective cohort	adults	ambulatory, single-channel EMG device
74	Wei	2017	J Oral Rehabil	case-control	adults	portable EMG recorder
75	Yachida	2012	JDR	case-control	adults	portable single-channel EMG device

76	Yamaguchi	2012	J Oral Rehabil	cross-sectional	adults	ultraminiature cordless masseter EMG measurement system
77	Yamaguchi	2018	J Prosthodont Res	device development / case report	adult	data-logger-type ultraminiature EMG system
78	Zhou	2016	Int J Oral Sci	before-after interventional	adults	portable EMG recorder

Hardware

Name or decription of EMG device	Electrode type	Wireless electrode	Number of channels	Muscles
Muscle Tester ME3000P, Mega Electronics	Bipolar silver-silver chloride (Blue sensor, type-N-00S, Medicotest Herlev, Denmark)	no	3 (masseter, temporalis, ground)	temporalis and masseter L
BiteStrip (Scientific Laboratory Products Ltd., Tel Aviv, Israel)	not described	yes	1 (masseter)	masseter
no commercial name given (Medotech, Aarhus, Denmark)	Surface Ag/ AgCl electrodes with a diameter of 2.25 cm & eectrode gel	no	2 (purpose not specified)	masseter
portable EMG amplifier (6R21-KF, NEC Medical Systems), PCMCIA card-type analogue-to-digital (A/D) converter (NR-1000, KEYENCE), laptop PC (FMV-BIBLO NC313, Fujitsu), and external battery	not described	no	1	masseter R

portable wo-channel recorder developed at the Center of Dental Medicine of the University of Zürich (Zentrum für Zahnmedizin, ZZM, CH-8032 Zürich, Switzerland)	self-adhesive pre-gelled disposable Ag-AgCl rectangular surface electrodes (20×15 mm, type 9013S0212, Alpine Biomed ApS, Skovlunde, Denmark)	no	2 (masseter and reference)	masseter
Bruxoff (Spes Medica, Battipaglia, Italy)	not described	no	3 (2 for bilateral masseter, 1 for heart frequency)	masseter L & R
BiteStrip	not described	yes	1	temporalis L
BiteStrip (Scientific Laboratory Products)	not described	yes	1	masseter L
Bruxoff (Spes Medica, Battipaglia, Italy)	disposable bipolar concentric electrodes (Code; Spes Medica, Battipaglia, Italy) with a 16 mm radius and an AgCl detection site	no	3 (2 for bilateral masseter, 1 for heart frequency)	masseter L & R

Bruxoff (OT Bioelettronica, Torino, Italy)	disposable bipolar AgCl concentric electrodes (Code; Spes Medica, Battipaglia, Italy), with a 16 mm radius	no	3 (2 for bilateral masseter, 1 for heart frequency)	masseter & temporalis L&R
not described	not described	not described	not described	masseter
refers to other publication	refers to other publication	refers to other publication	3 (2 for masseter and temporalis, 1 reference upon neck)	masseter & temporalis
refers to other publication	refers to other publication	refers to other publication	3 (2 for masseter and temporalis, 1 reference upon neck)	masseter & temporalis

Grindcare (Medotech A/S, Herlev, Denmark)	single-electrode assembly, with 3 electrode contacts, attached to the skin with adhesive pad	no	1	temporalis
Bruxoff (Spes Medica, Battipaglia, Italy)	disposable bipolar concentric electrodes (Code®, Spes Medica, Battipaglia, Italy), with a radius of16 mm and with detection site made of AgCl	no	3 (2 for bilateral masseter, 1 for heart frequency)	masseter L & R
analog signal processing and amplification (5-70 x) circuitry, 8 bit single chip processor with 2 kB program memory and 64 kB RAM, contained in a 95 x 58 x 25 mm box	not described	not described	1	masseter R
refers to other publication	adhesive AgCl surface electrodes (type 13L20, Dantec A/S, DK-2740 Skovlunde, Denmark) were	no	2 (masseter and reference)	masseter contralateral to preferred sleeping side

portable EMG amplifier (6R21-KF, NEC Medical Systems), PCMCIA card-type analogue-to-digital (A/D) converter (NR-1000, KEYENCE), laptop PC (FMV-BIBLO NC313, Fujitsu), and external battery	disposable bipolar electrodes with an interelec- trode distance of 15 mm (Biorode X, NEC Medical Systems), secured with surgical tape and after scrubbing with isopropyl alcohol	no	2 (masseter & indifferent on forehead)	masseter R
GrindCare Measure3 (Medotech A/S, Herlve, Denmark)	not described	no	1	temporalis
Muscle Tester ME3000P, Mega Electronics, Kuopio, Finland	disposable Ag/AgCl surface electrodes (Blue sensor; Medicotest, Ølstykke, Denmark)	no	1	masseter R

TEAC HR-10J cassette data recorder	miniature bipolar surface electrodes	no	3 (masseter, respiratory, cardiac)	masseter
custom device, only brand of amplifier mentioned (DISA 15C 01; Disa Elektronik, Skovlunde, Denmark)	adherent pre- gelled disposable surface EMG electrodes (Alpine Biomed, Tonsbakken, Denmark)	no	3 (masseter, temporalis, ground)	masseter, temporalis
Grindcare (Medotech, Aarhus, Denmark)	10-mm electrodes integrated in head band	yes	1 (temporalis)	temporalis

Grindcare version 2 (Medotech, DK)	electrodes integrated in head band	yes	2 (temporalis)	temporalis
GrindCare Measure	not described	no	1	temporalis
BiteStrip (Scientific Laboratory Products, Israel)	not described	yes	1	masseter

refers to other publication	12 mm fluid-column Ag-AgCl E.C.G. electrodes	no		3 (2 for masseter and temporalis, 1 reference upon neck)	masseter & temporalis
analogue signal processing and differential amplification integrated hybrid circuit (NB-6201HS; Nabtesco Co., Kobe, Japan), which included a 10 Hz high-pass filter and 1000 Hz low-pass filter, and a two-channel digital recorder (ICR- PS004 M; Sanyo Electric Co.,	disposable silver/silver chloride surface electrodes (6×15 mm, Vitrode F-150S; Nihon Kohden Corp., Tokyo, Japan) with a center-to-center distance of 15 mm	no		1	masseter L
not described	surface electrodes with adhesive tape	no		2 (masseter & temporalis)	masseter & temporalis
Myomonitor EMG system (Delsys Inc, Boston, MA)	not described	no		4 (2 for bilateral masseter, 2 for bilateral temporalis)	masseter & temporalis L&R

FLA-500-SD (FLA, Furusawa Lab Appliance Co, Kawagoe, Japan)	reference electrode of the same size as that of the electrodes positioned at the middle position of the two measuring electrodes	yes	1	masseter
BiteStrip	not described	yes	1	masseter L
BTS PocketEMG (BTS Bioengineering, Milan, Italy)	bipolar surface electrodes (Duotrode; Myotronics Inc., Seattle, WA, USA)	no	4 (2 for bilateral masseter, 2 for bilateral temporalis)	masseter & temporalis L&R
Bruxoff (OT Bioelettronica)	refers to other publication	no	3 (2 for bilateral masseter, 1 for heart frequency)	masseter L & R

Bruxoff (OT Bioelettronica, Torino, Italy)	refers to other publication	no	3 (2 for bilateral masseter, 1 for heart frequency)	masseter L & R
Bruxoff (OT Bioelettronica)	refers to other publication	no	3 (2 for bilateral masseter, 1 for heart frequency)	masseter L & R
BMS (Harada Electronics Industry Ltd, Sapporo, Japan)	Bipolar 12-mm diameter disposable surface electrodes with adhesive gel pads (Harada Electronics Industry Ltd, Sapporo, Japan) were	yes	1	masseter R
Pro-Comp INFINITI (Thought Technology, Montreal, QC, Canada)	disposable Ag/AgCl surface elec- trodes (T3402M – Triode)	no	2 (masseter, cardiac)	masseter

BiteStrip (S.L.P. Ltd, Israel)	not described	yes		1	masseter L
BiteStrip (Up2dent, Germany)	not described	yes		1	masseter
BiteStrip (Up2dent, Germany)	not described	yes		1	masseter
PC Card Recorder DR-C2 (TEAC Instruments Corporation, Kawasaki, Japan)	disposable bipolar surface electrodes (12-mm diameter, blue sensor N-00-S, GE Market, Tokyo, Japan)	no		1	temporalis, on te side opposite to that on which contact with the pillow was more frequent

PC Card Recorder DR-C2 (TEAC Instruments Corporation, Kawasaki, Japan)	disposable bipolar surface electrodes (12-mm diameter)	no	1	temporalis
EMG-ECG Telemeter 00 (Harada Electronic Industry, Sapporo, Japan)	Disposable electrodes (Vitrode F, Nihon Kohden)	no	2 (masseter, cardiac)	masseter
AL-200 EMG integrator	The bipolar and gold-coated brass electrodes were circular (diameter of 5 mm), and the interelectrode distance was kept constant at 20 mm (center-to-center) by means of an epoxy casing which also contained the	no	1	masseter side not used for sleeping
Analog signal processing and differential amplification integrated hybrid circuit (NB-6201HS; Nabtesco Co., Kobe, Japan), inlcuding an analogue high-pass filter (10 Hz) and an analogue low-pass	disposable Ag/AgCl differential surface electrodes (Vitrode F-150S; Nihon Kohden Corp., Tokyo, Japan) whose size was modified to be 6x15 mm before use, with center-to-center distances of 15 mm.	no	1	masseter L

Moomin-Kei (Sleepwell, Osaka, Japan	disposable Ag/AgCl surface electrod	no	1	masseter
BiteStrip (SLP)	not described	yes	1	masseter
Grindcare (Medotech)	3 electrodes attached to the skin with adhesive pad	no	1	temporalis
refers to other publication	refers to other publication	refers to other publication	1	masseter

Bruxoff	not described	not descrbed	3 (2 for bilateral masseter, 1 for heart frequency)	masseter L & R
Bruxoff (Allder, Moncalieri (To), Italy)	not described	not described	not described	not described
EMG-021/025, KTR-2302B (Harada Electronic Industry, Sapporo, Japan)	not described	no	2 (bilateral masseter)	masseter L & R
BiteStrip (Scientific Laboratory Products)	not described	yes	1	masseter L

BSR release 2 (Zurich, Switzerland)	surface EMG electrodes (model 9013S0212; Alpine Biomed ApS, Skovlunde, Denmark; 20 9 15 mm)	no	2 (masseter and reference)	masseter muscle of the self-reported preferred chewing side, otherwise R
Grindcare (Medotech, Herlev, Denmark)	not described, but picture provided	no	1	temporalis
portable EMG instrument (BF-100, Self-Control Systems, San Diego, CA) andbattery operated chart recorder (Model 142, Linear Instruments Corporation, Rno, NV)	not described	not described	not described	masseter, side where fatigue was reported

refers to other publication	3 mm diameter gold electrodes	no	1 (masseter)	masseter R
refers to other publication	10 mm silver/silver/chloride recessed electodes	no	1 (masseter)	masseter
DL-3 (Vega systems)	not described	no	1	temporalis on habitual masticatio n site

Morita MFG	disposal electrodes (Duotrode®, Myotronics Inc., USA)	no	2 (bilateral temporalis)	temporalis L & R
BiteStrip (Scientific Laboratory Products)	not described	yes	1	masseter
Grindcare (Medotech, Herlev, Denmark)	not described	no	1	temporalis

basic PTA device with Loguva Brux™ Software (Haynl Elektronik GmbH, Schönebeck, Germany)	disposable silver-silver-chloride electrodes with standard 2 cm spacing (T3402 Triodes, Thought Technology Ltd, Montreal, Quebec, Canada)	no	1	masseter (L-R in predifined order)
Loguva Brux (Haynl Elektronik GmbH, Scho¨ nebeck, Germany)	not described, but refers to publication with description	refers to other publication	refers to other publication	not described, but refers to publication with description
GC4-DL Prototype device (Sunstar Suisse SA)	single-electrode assembly with three electrode contacts.	no	1	temporalis

BiteStrip (Scientific Laboratory Products, Ltd., Tel Aviv, Israel)	2 electromyographic electrodes	yes	1	masseter L & R
no commercial name given, thorough description of components	Silver e.e.g, electrodes filled with conducting paste	no	3 (2 for masseter and temporalis, 1 reference upon neck)	masseter & temporalis, side of least contact with pollow
GrindCare (Medotech A/S, Herlev, Denmark)	single-channel assembly, with three elec- trode contacts	no	1	temporalis

EMG-021/025, KTR-2302B (Harada Electronic Industry, Sapporo, Japan)	not described	no	2 (bilateral masseter)	masseter L & R
Grindcare 3.0 (Medotech, A/S)	not described	no	1	temporalis
Grindcare®, version 4-DL (Delta Danish Electronics, Light & Acoustics, Denmark)	not described	no	1	temporalis

GrindCare, version 3 + DL (Delta Danish Electronics, Light and Acoustics, Hørsholm, Denmark	not described	no	1	temporalis R
refers to other publication	adherent pre- gelled disposable surface EMG electrodes (Alpine Biomed, Tonsbakken, Denmark)	no	1	temporalis R
Grindcare 3 (Medotech, Herlev, Denmark)	single-electrode assembly, with 3 electrode contacts	no	1	temporalis

BMS TEL-EMG recorder (Harada Electronic Industry Ltd., Sapporo, Japan)	12-mm-diameter bipolar electrodes,	no	2	masseter & reference
FLA-500-SD (Furusawa Lab Appliance Co., Japan)	bipolar measuring electrodes	yes	1	masseter R
Grindcare 3 (Medotech, Herlev, Denmark)	single-electrode assembly, with 3 electrode contacts	no	1	temporalis

Picture of device	Use of additional instrumental methods to assess bruxism	Number of nights (not inlcuding the adaptation night)	Adaptation night before scoring	Setting	Participant instructions device and electrode handling
yes	no	3 x 1 according to interventional protocol	no	not described	not described
no	no	1	not described	home	not described
no	no	4w in a period of 7-8 weeks according to interventional protocol	yes	home	not described
no	no	5	yes	home	handling device and placement of electrodes

no	no	3	not described	not described	not described
no	electrocardiographic activity	1	yes	home	clear and detailed explanation regarding the device, according to the manufacturer guide
no	no	2 x 1 according to interventional protocol	no	not described	the caregiver was instructed on the location of the left temporal muscle and how to use the device according to the manufacturer's instructions
no	no	2 x 1 according to interventional protocol	no	home	not described
yes	electrocardiographic activity and polysomnography (for validation pruposes)	1	yes	home	not described

no	no	1	yes	home	not described
no	no	10-12 and 7-14 according to interventional protocol	no	home	Each subject was issued an EMG device, all the necessary equipment and instructed in the use of the device. The procedure of applying the electrodes was repeated several times by the patient under supervision to insure correct repeatable placement over the muscle.
no	no	10	no	not described	not described
no	no	7	no	not described	not described

no	no	5 + 10 + 5 according to interventional protocol	no	home	not described
yes	electrocardiographic activity	3 nights in 3 weeks	no	home	training in use of device and electrode placement, written instructions and a night-time telephone number to call in the event ofdifficulties
no	polysomnography (for validation pruposes)	1	no	not described	not described
no	no	7	no	home	not applicable

yes	no		5	yes	home	1 hour of instruction on how to set the EMG electrodes and operate the system
no	no		4	no	home	participants were instructed and carefully taught to use the device
no	no	10 x 3 nights according to interventional protocol		no	home	The subjects were instructed to place electrodes in the same sites with the same manner using an instruction brochure in which the step-by-step procedure was visually indicated. During the habituation period for three nights, the photographs were taken with an instant camera after the placement of electrodes. The EMG recording was commenced after the subject's skill for electrode

no	electrocardiographic activity	4	no	home	not described
yes	no	3	no	home	trained in how to use the portable recording equipment, how to start and stop the recorder, to remove the data storage chip at the end of a recording period and replace with a new one to begin the next recording period
yes	no	at least 5 nigths per week for 11 weeks, according to intervention protocol	not described	home	All patients received comprehensive training in the use of the device

no	no	at least 5 nigths per week for 11 weeks, according to intervention protocol	not described	home	All patients received in-depth instruction in how to operate the device and manage the data.
no	no	4	no	home	carefully taught how to manage the device & written instruction
no	no	1	no	home	written instructions

no	no	7	not described	not described	not described
refers to other publication	no	1	no	home	not applicable
yes	no	3	no	home	trained to use portable EMG recorders and surface electrodes
no	no	3	no	home	instructed and trained on the use of the portable EMG machine

yes	polysomnography (for validation pruposes)	1	yes	laboratoy	not described
no	polysomnography (for validation pruposes)	1	yes	laboratoy	not described
no	no	1	no	home	All subjects received precise instruc- tions on how to handle the device (namely on how to start the recording session when going to bed and how to stop it when waking up)
no	electrocardiographic activity	1	yes	home	not described

no	electrocardiographic activity	2 x 2 according to interventional protocol	no	home	not described
no	no	1	yes	home	refers to other publication
yes	no	1	yes	home	not described
no	no	6 x 2 nights according to interventional protocol	yes	home	These procedures were performed by the subject after careful instruction by the same operator (H.M.). The subjects were instructed to place electrodes in the same sites in the same manner using an instruction brochure in which the step-by- step procedure was visually indicated. The recording was commenced after the subject's skill for electrode application was confirmed.

no	no	6	no	home	explained the usage in their home environment by using a mirror and an instruction manual over 15 min by a pre-trained instructors
no	no	3	no	home	instructed on its usage using a mirror and an instruction manual over 15 min by 2 pre-calibrated instructors
no	no	3	no	home	individually instructed on the usage of device
no	audiovisual recordings	1	yes	home	not described

no	audiovisual recordings	1	yes	home	not described
yes	electrocardiographic activity	1	yes	home	provided instructions on the use of the telemetry system
no	no	2 x 7 according to interventional protocol	not described	home	not described
no	audio recordings, to exclude events not related to bruxism	1	yes	home	not applicable

no	no	1	not described	not described	The subjects were instructed to place an electrode on the left or right masseter muscle before bedtime
no	no	not described	not described	home	instructed in its usage in a home environment using a mirror and an instruction manual over 15 minutes by 2 trained instructors
yes	no	35	no	home	thorough verbal and written guidance in the use of the device
no	no	2	no	home	not applicable

no	electrocardiographic activity	> 5	no	home	not described
no	no	5	not described	not described	not described
yes	no	1	no	home	instructed in the use of this device until they were able to perform EMG measurements correctly
no	Polysomnography (for selecting participants)	3	no	not described	not described

no	no	1	yes	home	not described
yes	no	70	no	home	not described
no	no	10	no	home	Each subjct was instructed in the use of a portable EMG instrument, a battery operated cart recorder and was asked to record unilateral masseter EMG activiy

no	no	minimally 10 nights, exact number not described	not described	home	subjects were taught to apply the electrodes and record their nightly EMG readings
no	no	4 x 7-14 according to interventional protocol	not described	home	each patient practiced electrode placement until correct placement was achieved
refers to other publication	PSG-video recording to detect motion artefacts in 4 out of 20 participants	1 + 2 + 1 during 3 weeks, according to interventional protocol	not described	not described	not described

yes	no	3	no	home	They received brief instruction about how to use the device, and instructed to place the electrodes to the both sides of the temple over the temporalis muscles.
yes	no	2 x 1	no	home	not described
no	no	1	no	home	I nstructed on how to use the device by means of a pictorial representation and a live demonstration

no	no	3	no	home	instructed by the study investigators to use the devices
no	no	3	no	home	Participants were precisely instructed to use the devices
no	no	2w + 2w according to interventional protocol	no	home	not described

no	polysomnography (for validation pruposes)	1	no	laboratoy	not described
no	no	not described	not described	home	not described
no	polysomnography (for validation pruposes)	5	no	home	All participants were properly instructed and trained in the use of the EMG device.

yes	no	1	no	home	Subjects were shown how to use this device
no	no	3	no	home	An illustrated manual was enclosed to demonstrate proper measurement technique by the subjects.
no	no	4	no	home	Participants received instruction and training by the examiner in the use of the GC, and written instructions were provided for consultation at home.

no	no	3 x 3 within 1 year	no	home	refers to other publication
no	no	3	no	home	trained to prepare skin, position electrodes, operate the device
no	no	4	no	home	careful instruction and training by the examiners in the use of EMG device

yes	polysomnography (for validation pruposes)	1	no	laboratoy	not applicable
yes	surface electromyography (for validation pruposes)	1	no	home	The skin surface is cleaned with alcohol gauze, and then the device is attached to the skin surface with dedicated double-sided adhesive tape. During nocturnal use, stronger fixation by adhesive tape over the body of device is recommended. If patients need some camouflage for daytime use, the device can be covered with gauze as if it is covering a wound on the face.
no	no	3 x 5 according to interventional protocol	no	home	not described

Planning

Participant instructions device set-up	Electrode placement
not described	not described
not described	not described
not described	not described
At the beginning of each recording night, the subjects performed 3 brief (2 seconds' duration) maximum voluntary contractions (MVC) in maxi- mum intercuspation. Upon waking in the morning, the subjects were asked to record additional information in a sleep diary.	participant

In the beginning of each recording the subject performs a set of maximal contractions either in intercuspal position or better on a cotton roll	not described
Before sleep, participants activated the Bruxoff by performing three instances ofmaximum vol-untary clenching (MVC), lasting 3 s each, with 10 s of rest between each MVC.	participant
not described	caregiver
not described	not described
subjects were asked to perform three maximum voluntary clenching (MVC) on teeth lasting 3 s each and separated by 10 s of rest	not described

The recording procedure provided that five tapping movements before sleep and after getting up in the morning were performed, to easily recognise the beginning and the end of the recordings. After the five tapping movements at the beginning of the recording session, the subjects performed three maximum voluntary clenching (MVC) on teeth. The clenches should last 3 s each and be separated by a 10-s rest.	not described
not described	participant
not described	not described
not described	not described

participants were requested to relax their jaw muscles for 10s, then to clench their teeth around 60% of the MVC for 10s	not described
At the beginning of the recording, the subjects were asked to perform three maximum voluntary clenching (MVC) lasting 3 s each and separated by 10 s ofrest.	participant
not described	not described
we connected the EMG recorder to a personal computer and recorded the EMG signal during a series of 6 maximum clenches. The subject clenched max- imally for 3 sec and repeated the clench 5 times with 15-second intervals of rest… The recording protocol also included the registration of the maximum voluntary contraction force and several artifact situa- tions that could disturb the EMG recording during sleep. These two registrations were performed just once, i.e., on the evening before the first recording night... the subject simulated 3X a sequence of situations that could occur during sleep and dis-	examiner

Immediately after commencement of the EMG recording, subjects were asked to clench their teeth at MVC	participant
not described	participant
instructed to perform maximal clenching for 3 s at five times. They were also instructed to perform the maximal clenching when they awoke	participant

The 100% MVC for each subject was recorded at the beginning of each night using three brief (2-second) MVC efforts.	not described
not described	participant
The patients were asked to clench their teeth as hard as possible for 2–5 s to establish the maximum voluntary contraction (MVC). Then the patients performed grimaces and swallowing movements for 2–5 s. Finally, the threshold value for the intensity of the electrical stimulus was adjusted. The patients performed the set-up procedure every night to record the personal parameters in the device.	participant

Patients were asked to clench their teeth as hard as possible for 2–5 s in order to establish the maximum voluntary contraction (MVC). Then the patients performed grimaces and swallowing movements for 2–5s.	participant
not described	participant
Patients had to make four to five maximum voluntary clenches to assess the individual bruxing threshold	participant

not described	not described
subjects were instructed to perform maximal voluntary clenching (MVC) three times for 2 s at in- tervals of 2 s	investigator in hospital
not described	participant
The subjects were asked to clench as hard as they could, and the EMG activity was recorded for 3 secs. This clench procedure was repeated three times.	participant

Before sleeping and after getting up, maximum voluntary contraction (MVC), tapping, grinding, maximum voluntary mouth- opening, swallowing, cough, and gum chewing on the free side, right side and left side were recorded as calibration movements.	not described
the patient was asked to clench down with maximum force on a wooden stick 3 times within a 20-second period	not described
At the beginning of each recording session, the subjects performed three swallowing movements	examiner
not described	not described

not described	not described
refers to other publication	refers to other publication
MVC and swallowing and tapping were recorded as calibration movements before sleeping on their back	not described
Subjects were instructed to perform maximal clenching for 3 s for three times after the commence- ment of recording.	participant

not described	participant
not described	participant
not described	participant
baseline values recorded prior to sleeping in the supine position for the following mea- surements: maximum voluntary clenching of the teeth for 1 second, tooth tapping, coughing, lateral and vertical head movements, and sali- va swallowing. All of these activities were repeated 3 times.	not described

not described	not described
not described	participant
not described	participant
each subject was instructed to perform maximum voluntary clenching for three times for 2 s at intervals of 2 s in the beginning of recording	examiner

they were instructed to con- duct maximal tooth clenching for 3 times for 3 s each before bedtime	participant
not described	participant
not described	participant
the subject was asked to clench maximally 5· for 3 s with 15 s rest intervals on the force transducer placed ipsilaterally to the electrodes while recording the EMG signal. Then the force transducer was removed and subjects clenched again 5· in maximum intercuspa- tion. Finally, five clenches were repeated again on the force transducer.	investigator in clinic

not described	not described
not described	not described
not described	participant
not described	not described

participants were asked to clench their teeth as hard as possible, three times for 2–3 s each, with 15-s pauses in between clenching efforts. These tasks were completed within a 6-min time-frame	not described
Setup of the threshold level is done every time the device is mounted before sleep (60%MVC)	participant
not described	participant

not described	participant
not described	participant
For calibrating EMG signal levels, a maximum voluntary contraction (100% MVC) lasting 3 seconds was repeated three times with a 30-seconds interval between the tasks at the beginning and end of each recording.	not described

not described	participant
The patient clenched down with maxi- mum force on a wood stick three times within a 20-second period	not described
biting with approximately 60% ofmaximum voluntary biting force.	participant

not described	participant
not described	refers to other publication
not described	participant

the patient is instructed to perform 2 to 3 maximal voluntary clenches to determine the individual bruxing threshold (Fig.	not described
not described	not described
To determine the individual con- traction parameters, every night, participants were requested to relax their jaw muscles for 10 s, then to clench their teeth around 60 % of the maximum voluntary contraction for 10 s.	participant

not described	participant
Subjects were asked to clench their teeth as hard as possible once for approximately 10 s every night before the recording to establish the personal maximum voluntary contraction (MVC).	participant
not described	participant

Participants were required to perform three MVCs in the first 30 min of each recording in order to enable subsequent scoring of bruxism episodes. A sticker reminding participants of this necessity was placed on all EMG devices.	participant
not described	participant
Participants were asked to relax their jaw muscles for 10 sec. Then they made a grimace for 10 sec, then clenched their teeth around 60% of the maximum voluntary contraction for 10 sec. All partici- pants received .	participant

not described	examiner
Prior to recording data during the targeted period, recording data during some calibration movements such as maximum clenching, tapping, swallowing and coughing is performed	participant
patients were asked to relax their jaw-closing muscle for 10 s. Then, they clenched their teeth at maximal voluntary clenching (MVC) for 10 s, and 60% ofMVC was pre-set for the threshold of starting the EMG recording.	not described

How are failures dealt with	Amplification factor
not described	amplified signal, factor not described
not described	not described
The EMG data were sent by e-mail to the research team every morning in order to further analyse and store the data and to eliminate possible problems with the device. All data were checked for problems and errors due to bad recordings. If a problem was found, the patient was contacted in order to solve the problem and ask them to add one night to the phase in order to get sufficient data in each phase.	amplified signal, factor not described
Every signal that was judged to be an artifact was excluded from the further analysis. Additional EMG measurements of unsuccessful recordings due to unacceptable noise levels.	amplified signal, factor not described

not described	amplified signal, factor not described
not described	not described
not described	not described
not described	not described
not described	4300x

not described	4300x
not described	not described
not described	refers to other publication
not described	refers to other publication

reduction of recording night and exclusion of participants from analysis	not described
not described	4300x
data around bad-impedance measurements were excluded from analysis	refers to other publication
Recordings during which either sleep had been severely disturbed by negative events or electrode discon- nection had occurred were discarded. In such cases, the recording was repeated on an equivalent day of the week.	3590x

additional instructions on electrode settings because of unsuccessful recordings caused by an unacceptable noise level of recorded EMG signals. Artifacts were manually cleaned from the signal.	amplified signal, factor not described
recordings were discarded ("error-free recordings were required")	not described
raw EMG data was carefully examined and the data related to the artifacts were excluded	not described

not described	amplified signal, factor not described
not described	5000x
In case of poor connectivity between the electrode and skin during sleep, the EMG recordings with errors were identified and labelled by the software and that data was not used for further analysis.	not described

Grimaces, swallowing and artifacts due to bad connections between the electrodes and the skin were intended not to be included in the analysis	not described
only error-free recordings used	not described
repetition of procedure	amplified signal, factor not described

subjects repeated the experiment because of mechanical difficulties with electrode retention and amplifiers problems during te first attempt	refers to other publication
not described	refers to other publication
noisy signals were identified and excluded	5000x
If the electrodes became detached during the recording, EMG data were recorded for an additional night.	amplified signal, factor not described

not described	250x
not described	not described
excluded from analysis	amplified signal, factor not described
not described	refers to other publication

not described	refers to other publication
not described	refers to other publication
not described	500x
When technical problems were detected or reported, adequate instruction was provided and additional recordings were performed …. the second-night data were used when technical errors were detected in the first night.	not described

not described	amplified signal, factor not described
not described	amplified signal, factor not described
not described	not described
not described	not described

not described	not described
EMG activities with disturbed ECG signals were assumed to be body movements and were excluded from the analysis	not described
not described	2000 x
recordings with high baseline noise were excluded from analyses	not described

not described	not described
excluded from analysis	amplified signal, factor not described
not described	not described
Recordings were discarded in case either of severe sleep disturbance or of electrode loosening, as detected by impedance measurements. In such cases, the recording was repeated.	refers to other publication

not described	not described
not described	not described
not described	not described
not described	not described

Raw EMG data were first evaluated for noise signal artefacts using software (Adobe Audition Version 3; Adobe Systems Inc., San Jose, CA, USA)	8692x
not described	not described
not described	not described

not described	not described
not described	refers to other publication
The EMG data for three out of the 20 subjects could not be included in the analysis as the electrode detached during the sleep recording…. If any distinctive artefacts were observed, those signals were manually excluded before analysis.	not described

When a single episode of bruxism last more than 30 min, it was considered as an artifact and discarded from the data.	50000x
not described	not described
excluded from analysis	not described

excluded from analysis	amplified signal, factor not described
excluded from analysis	refers to other publication
excluded from analysis	not described

not described	not described
not described	250x plus further amplification
not described	800x

not described	not described
additional recordings and exclusion if failure persisted	not described
excluded from analysis based on quality criteria	800x

excluded from analysis based on quality criteria	refers to other publication
not described	5000x
excluded from analysis	800x

not described	500x
it was shown that the baseline was not significantly disturbed and that stable signals with a relatively good S/N ratio were provided during the whole measurement time	256x
not described	800x

Signal recor

Impedance measurement	Bandpass settings
not described	not described
not described	not described
not described	20 - 500 Hz
not described	not described

not described	50 - 500 Hz
not described	not described
not described	not described
not described	not described
not described	10 - 400 Hz

not described	10 - 400 Hz
not described	not described
refers to other publication	refers to other publication
refers to other publication	refers to other publication

not described	not described
not described	10 - 400 Hz
skin < 2 kΩ	not described
skin < 2 kΩ	50 - 500 Hz

not described	not described
not described	not described
not described	not described

not described	not described
amplifier 250 MΩ	20 - 1000 Hz
skin < 10 kΩ	20 - 600 Hz

skin < 10 kΩ	20 - 600 Hz
not described	not described
not described	not described

refers to other publication	refers to other publication
not described	10 - 1000 Hz
amplifier 250 MΩ	20 - 1000 Hz
not described	not described

not described	5 - 500 Hz
not described	not described
not described	not described
not described	refers to other publication

not described	refers to other publication
not described	refers to other publication
not described	not described
not described	not described

not described	not described
not described	not described
not described	not described
not described	not described

not described	not described
not described	not described
> 2 MΩ	100 - 310 Hz
not described	10 - 1000 Hz

not described	not described
not described	not described
not described	not described
refers to other publication	refers to other publication

not described	not described
not described	not described
not described	not described
not described	not described

not described	70 - 500 Hz
not described	250 - 600 Hz
not described	not described

not described	not described
refers to other publication	refers to other publication
not described	5.3 - 450 Hz

not described	100 - 200 Hz
not described	not described
not described	not described

not described	10 - 500 Hz
not described	refers to other publication
not described	not described

not described	not described
amplifier 10 kΩ	100 - 500 Hz
not described	250 - 610 HZ

not described	not described
skin < 10 kΩ	not described
not described	250 - 610 Hz

not described	refers to other publication
amplifier 250 MΩ	20 - 1000 Hz
not described	250 - 610 Hz

not described	10 - 500 Hz
not described	20 - ? Hz
not described	251 - 610 Hz

ding/acquisition

Notch filter	A/D resolution
not described	not described
not described	not described
not described	not described
not described	not described

not described	not described
not described	not described
not described	not described
not described	not described
not described	8 bit

not described	8 bit
not described	not described
not described	refers to other publication
not described	refers to other publication

not described	not described
not described	8 bit
not described	8 bit
not described	8 bit

not described	14 bit
not described	not described
not described	not described

not described	not described
not described	not described
not described	not described

not described	not described
not described	not described
not described	not described

not described	not described
60 Hz (during analysis)	refers to other publication
not described	not described
not described	not described

not described	12 bit
not described	not described
not described	16 bit
refers to other publication	refers to other publication

refers to other publication	refers to other publication
not described	refers to other publication
not described	not described
not described	not described

not described	not described
not described	not described
not described	not described
not described	not described

not described	not described
not described	not described
60 Hz	not described
60 Hz (during analysis)	not described

not described	not described
not described	not described
not described	not described
not described	refers to other publication

not described	not described
not described	not described
not described	not described
not described	not described

not described	10 bit
not described	10 bit
not described	not described

not described	not described
refers to other publication	not described
50 Hz	not described

not described	not described
not described	not described
not described	not described

50 Hz	not described
refers to other publication	not described
not described	not described

not described	not described
not described	8 bit
not described	not described

not described	not described
not described	not described
not described	not described

not described	not described
not described	not described
not described	not described

not described	8 bit
not described	12 bit
not described	not described

Sampling rate/frequency	Device output
1000 Hz	Averaged values of rectified EMG data for every second
not described	Scored activity
2000 Hz	rectified signal: EMG area under the curve (AUC) and root mean square value for each time interval of 500ms
200 Hz	Raw EMG signal

2000 Hz	Raw EMG signal
not described	not described
not described	Scored activity
not described	Scored activity
800 Hz	Raw EMG signal

800 Hz	Raw EMG signal
not described	Scored activity
refers to other publication	Scored activity
refers to other publication	Scored activity

not described	Scored activity
800 Hz	Raw EMG signal
1000 Hz	rectified and averaged signal, with 1ms-3s integration time
1000 Hz	rectified signal, integration time 0.5sec

200 Hz	all activity > 5 µV was recorded for 10.24 seconds and saved as a 2.048-byte text file
not described	not described
1000 Hz	Raw EMG signal

not described	Raw EMG signal
2000 Hz	Raw EMG signal
2000 Hz	rectified EMG signal

2001 Hz	rectified EMG signal
not described	Scored activity
not described	Scored activity

not described	Scored activity
refers to other publication	Raw EMG signal
2000 Hz	Raw EMG signal
1024 Hz	Raw EMG signal

not described	Raw EMG signal
not described	Scored activity
1000 Hz	Raw EMG signal
refers to other publication	refers to other publication

refers to other publication	refers to other publication
refers to other publication	Scored activity
1000 Hz	Raw EMG signal
2048 Hz	Raw EMG signal

not described	Scored activity
not described	Scored activity
not described	Scored activity
1000 Hz	Raw EMG signal

1001 Hz	Raw EMG signal
1002 Hz	Raw EMG signal
not described	integrated and cumulative EMG activity (μV.s) divided by the duration of sleep (min)
22.050 Hz	Raw EMG signal

128 Hz	not described
not described	Scored activity
not described	Scored activity
refers to other publication	Raw EMG signal

not described	not described
not described	not described
not described	not described
not described	scored activity

2000 Hz	Raw EMG signal
2000 Hz	Scored activity
not described	Raw EMG signal

not described	Scored activity
refers to other publication	Scored activity
16 Hz	rectified and RMS transformed EMG signal

not described	Scored activity
not described	Scored activity
not described	Scored activity

10 Hz	Raw EMG signal
refers to other publication	Raw EMG signal
not described	Raw EMG signal

not described	Scored activity
4000 Hz	Scored activity
not described	Scored activity

not described	not described
not described	Scored activity
not described	Raw EMG signal

not described	Raw EMG signal
not described	Raw EMG signal
not described	Scored activity

1000 Hz	Raw EMG signal
1000 Hz	Raw EMG signal
not described	Scored activity

Signal a

Definition of analysis time	EMG scoring software	Rectification	Smoothing
30 minutes after going to bed until the moment they got up	not described	yes	not described
not described	built-in	not described	not described
first and last 15 mins of recording excluded from analysis	customized software (Medotech, Aarhus, Denmark) for further analysis and storing of data & Jaws version 1.51 software (Aalborg University, Aalborg, Denmark) for EMG scoring	yes	root mean square
based on subject's reporting in a diary	semi-automated custom software	yes	performed, but method not described

not described	custom algorithm (M Matlab R20 11b, The Ma thWorks, N atick, MA, US SA) and	not described	integrated signal, method not described
not described	Bruxmeter software (version 1.1.0.3, OT Bioelettronica, Torino, Italy)	not described	not described
not described	built-in	not described	not described
5 hours	built-in	not described	not described
based on PSG	Bruxmeter software (OT Bioelettronica, Torino, Italy) and manual scoring	not described	not described

Five tapping movements before sleep and after getting up in the morning were performed, to easily recognise the beginning and the end of the recordings	Bruxmeter software (OT Bioelettronica, Torino, Italy)	not described	not described
not described	built-in	not described	not described
the firs brux was related to the moment of retiring	built-in	not described	not described
not described	built-in	not described	not described

not described	built-in (signal recognition algorithm)	not described	not described
not described	Bruxmeter software (OT Bioelettronica, Torino, Italy)	not described	not described
not described	not described	yes	averaged signal
Sleeping and awakening times were recorded. Night-time awake periods- i.e. times of total awakening during the night- did not have to be reported, but were spontaneously noted by some subjects.	custom program	yes	integrated signal, intergration time 0.5 sec

based on participant's reporting in a diary	semi-automated custom software	yes	performed, but method not described
not described	not described	not described	not described
They were also instructed to perform the maximal clenching when they awoke, which was recognized as the end of data recording. The duration of sleep was defined between 20 min after the first	custom program	not described	averaged signal

not described	semi-automated or fully automated custom computer program	not described	root mean square conversion
not described	computer software (MatLab 7.9 R2009b; MathWorks)	not described	root mean square conversion in 128 ms time-windows
not described	not described	yes	not described

not described	not described	yes	not described
not described	built-in softeware and Grindcare Manager (Medotech A/S, DK) for transfer of data to a PC	not described	not described
5 hours	built-in	not described	not described

not described	built-in	not described	not described
onset f sleep 10 min after last microphone signal	not described	yes	root mean square conversion with integration time of 10 ms
not described	custom software program (MATLAB, The MathWorks Inc., Natick, MA)	not described	not described
not described	Myomonitor software	not described	root mean square conversion in .125 sec segments, and .0625 sec overlap of time segments

based on PSG	not described	not described	converted to absolute values and smoothed by a width of 101 points (.1s)
5 hours	built-in	not described	not described
Data analysis was based on a 5-h span, starting approximately 1 h after the subjects went to bed and turned on the device and ending approximately 1 h before the subjects woke up.	SmartAnalyzer (BTS Bioengineering?, Milan, Italy)	yes	root mean square
not described	refers to other publication	not described	not described

not described	refers to other publication	not described	not described
not described	refers to other publication	not described	not described
based on actigraphy	Chart 5 (AD Instruments Pty Ltd, Bella Vista, NSW, Australia)	not described	converted to absolute value and smoothed with a width of 15 sampling points
The beginning of the sleep period was defined at 20 min after the first maximal clenching session or subsequent stable EMG signals and heart rate were observed. The time when EMG signals and heart	Biograph infiniti version 5.1.2 (Thought Technology, Montreal, QC, Canada)	not described	averaged at 16 Hz

4.5 hours (starting 30 min after placing the device)	built-in	not described	not described
4.5 hours (starting 30 min after placing the device)	built-in	not described	not described
not described	built-in	not described	not described
first and last hours of data were excluded from the analysis	Bruxism analyzing software (MTS50011, Medical Try System, Tokyo, Japan).	yes	averaged with moving interval of 1 ms and window time of 19 ms

first and last hours of data were excluded from the analysis	Bruxism analyzing software (MTS50011, Medical Try System, Tokyo, Japan).	yes	averaged with moving interval of 1 ms and window time of 19 ms
not described	not described	yes	integrated signal, method not described
not described	built-in	yes	integrated signal, intergration epoch was the entire duration of sleep
not described	sound-editing software (Sound Engine, Coderium Co., Ltd., Sapporo, Japan)	not described	not described

not described	not described	not described	not described
4.5h, starting 30 min after contact with skin	built-in	not described	not described
not described	built-in	not described	not described
Signal analysis was limited to self-reported sleep duration. In case of awakening, the EMG signal was discarded 5 min before until 5 min after self-reported wake inter- vals.	refers to other publication	refers to other publication	refers to other publication

not described	Bruxmeter® (OT Biolettonica; Torino, Italy).	not described	not described
not described	not described	not described	not described
not described	not described	not described	not described
5 hours	built-in	not described	not described

not described	MatLab version 8.0 (MathWorks, Natick, MA, USA)	not described	root mean square amplitude values calculated over 125 ms contiguous rectangular win- dows
not described	built-in (signal recognition algorithm)	not described	root mean square
not described	not applicable (recordings were hand scored)	not described	not described

not described	built-in	not described	not described
not described	built-in	yes	refers to other publication
5 hours, with 3 MVCs at the start and end	custom program	yes	root mean square

not described	built-in	yes	not described
5 hours	built-in	not described	not described
not described	built-in	not described	not described

based on subject's reporting in a diary plus first 15 and last 5 min of recorded data	custom program (LabVIEW 9.0, National Instruments Corpo- ration, Austin, Texas, USA)	not described	root mean square with average factor of 100 ms
refers to other publication	custom program (LabVIEW 9.0, National Instruments Cor- poration, Austin, TX)	not described	refers to other publication
not described	custom made Matlab algorithm	not described	not described

30 minutes following activation	built-in	not described	not described
not described	built-in	not described	not described
not described	built-in	not described	not described

not described	not described	not described	not described
not described	built-in (signal recognition algorithm) and Grindcare Manager 3.0 software	not described	not described
not described	MATLAB and Statistics Toolbox Release 2015b (The MathWorks, Inc., Natick, Massachusetts, USA)	not described	not described

not described	refers to other publication	not described	not described
diary of start and stop times of recording periods	newly developed algorithm d (MATLAB, MathWorks, Natick, MA)	not described	not described
not described	built-in (signal recognition algorithm)	not described	not described

based on PSG	not described	not described	not described
not described	not described	not described	not described
not described	built-in (signal recognition algorithm)	not described	not described

analysis

Additional filtering	Threshold for EMG scoring
not described	not applicable
not described	30% MVC
not described	3%, 10% and 20% MVC
not described	20% MVC

not described	5% MVC
not described	10% MVC
not described	30% MVC
not described	30% MVC
not described	10% MVC

not described	10% MVC
not described	100 µV
not described	not described
not described	not described

not described	20% of 60% MVC
not described	10% MVC
not described	20% of highest occuring bursts
not described	The threshold was set to the maximum amplitude of the signals of the simulated artifacts.

not described	20% & 50% MVC
not described	not described
not described	10% MVC

not described	10% MVC (selected among 3%, 10% and 20%)
low-level noise	5–9, 10–24, 25–49, 50–79 and ≥80% T_{20N} in each 128ms time-window of the recording
not described	not applicable

not described	not applicable
not described	20% MVC
not described	30% MVC

not described	not described
500 Hz low-pass filter and 60 Hz notch filter	20% MVC
not described	4 magnitude thresholds (10, 25, 50 & 20% of 20N bite force) and 6 duration points (1, 2, 5, 10, 15 and 20s)
not described	10% and 20% MVC

high pass filtered at 20 Hz	> 2x baseline amplitude, and among those 5%, 10%, and 20% MVC
not described	30% MVC
not described	three swallowing movements to set the cut-off values (average RMS muscle activity of the three attempts)
not described	refers to other publication

not described	10% MVC
not described	10% MVC
high pass filtered at 20 Hz	> 2x baseline EMG activity during resting, 10% MVC & 20% MVC
not described	10% MVC

not described	not described
not described	30% MVC
not described	not described
not described	10% MVC

not described	10% MVC
not described	> 3x resting state standard deviations
not described	1 µV
low-pass filter of 200 Hz, notch filter 60 Hz and down-samples to 100 Hz	2x baseline noise level during resting conditions

not described	30% MVC
not described	30% MVC
not described	not described
refers to other publication	refers to other publication

not described	10% MVC
not described	not described
not described	20% MVC
not described	30% MVC

not described	.625 Hz peak frequency and 2% relative power (of spectogram acquired after fast-Fourier transformation of the demodulated EMG signal)
not described	20% of 60% MVC
not described	20 µV

not described	20 µV
refers to other publication	20 µV
not described	20% MVC

not described	not described
not described	30% MVC
not described	20% of 60% MVC

not described	10 µV
not described	10 µV
not described	refers to other publication

not described	30% MVC
not described	Whenever the fourth least significant bit of the analogue-to-digital convertor was active, a bruxing episode was occurring, .
not described	20% of 60% MVC

not described	not described
not described	10% MVC, 20% MVC and signal recognition algorithm analysis
not described	> 3x amplitude of background noise

not described	20% MVC
not described	4x standard deviation of background EMG activity
not described	20% of 60% MVC

not described	2x baseline activity
not described	20% MVC
not described	20% of 60% MVC

Definition of event	Use of RMMA term as outcome variable
integrated EMG values of each analyzed period	no
Continuously throughout the recording period the device registers the electromyographic masseter events that are at or above threshold for more than 0.25 s. A single registered count is limited to 1 s. A longer event (exceeding 0.25 s following to the event already counted) is registered as an additional event	no
not described	no
Every EMG elevation above 20% MVC level was identified as a potential event. Interval and duration criteria were used to further condition these events as follows: (1) two consecutive events with an interval of less than 2 seconds were linked; and (2) events with a duration shorter than 2 seconds were excluded. The remaining events were displayed on the computer screen with original raw signals, and the scorer cleaned any artifact signals manually. Finally, the interval and duration criteria were applied to the remaining events again.	no

threshold for the signal = 5 % of maximal voluntary contraction, pause time = 5 s, minimal duration of the activity = 0.5 s, maximal voluntary contraction = 0.054 mV (measured as an average from four consecutive clenches three seconds long with 15 s intervals).	no
A true SB episode was considered when masseter electromyography values were greater than 10% of MVC, immediately preceded (1–5 s) by a heart rate increase of 20% with respect to the mean heart rate	no
Contractions above 30% of the maximum voluntary contraction	no
Contractions exceeding 30% of the maximum muscle voluntary clenching are considered an SB episode	no
The software is able to classify a SB episode if the sEMG burst is greater than 10% MVC and if it immediately follows (1–5 s interval) a heart rate increase of 20% with respect to the baseline	yes

Masseter EMG bursts with duration exceeding 0.25 s were selected for oromotor activity scoring. Mean masseter EMG amplitude at least 10% of maximum voluntary clenching activity, preceded (1-5 s interval) by an approximately 20% increase of heart rate (beginning 1s before RMMA onset).	no
A 100µv, 300hZ signal maintained for 1s will provide a readout of 1 'EMG unit'	no
not described	no
not described	no

The determination of the number of events was done based on the algorithm, which considered an event to be when the EMG activity exceeded the previously adjusted signal level at rest plus 20% of the maximum EMG level during the 60% (MVC) contraction.	no
A SB episode is scored when the EMG burst is > 10% MVC, laststt > .25s, and if it immediately follows (1-5s interval) a heart rate increase of 20% with respect to the baseline. oromotor episodes separated by 3 s intervals were recognized as RMMA if they corresponded to one of the three following patterns: phasic (three or more EMG bursts each lasting 0.25–2 s), tonic (one EMG burst >2 s), or mixed (both burst types) episodes.	yes
A bruxism episode was defined as a supra-threshold signal portion delimited by a quiescent interval of a minimum of 3 s from the next supra-threshold signal period. A bruxism episode could contain sub-threshold signal portions provided that they were shorter than 3 s. Episodes of isolated bursts of less than 0.25 s were scored as myoclonus	no
A contraction episode was defined as a signal portion above a threshold Ao which could contain sub-threshold signal portions shorter than a stand-by time to of 5 sec. In other words, the beginning of the contraction episode corresponded to a positive crossing of the threshold value and its end to the following first negative threshold crossing, followed by a sub-threshold signal portion longer than t0. Thus, a contraction episode could contain sub-threshold portions, provided that they were shorter than t0	no

Every EMG elevation above 20% MVC level was identified as a potential event. Interval and duration criteria were used to further condition these events as follows: (1) two consecutive events with an interval of less than 2 seconds were linked; and (2) events with a duration shorter than 2 seconds were excluded. the re- maining events were displayed on the computer screen with original raw signals, and the scorer cleaned any artifact signals manually. Finally, the in- terval and duration criteria were applied to the remaining events again. A separate count of all bruxism events with a threshold above the 50% MVC level was also collected, but the minimum interval and duration criteria were not used for these data.	no
not described	no
(i) EMG evaluations above 10% MVC; (ii) two consecutive events with an interval of <5 s were linked; and (iii) events with duration shorter than 3 s were excluded	no

10% MVC + <5 sec between events (offset to next onset) + > 3 sec in length (onset to offset) + > 5% bpm heart reate change during EMG event	no
Individual-specific EMG vs. bite-force data from repeated standardized laboratory tasks were used to normalize and calibrate each subject's ambulatory EMG data. Overall mean masseter and temporalis muscle activities required to produce a threshold bite-force of 20 N (T_{20N}, mV) were estimated based on laboratory experimental tasks. The T_{20N} threshold was used to score EMG activity during sleep:Software automati- cally processed data in each 128 ms time-win- dow using subject- and muscle-specific threshold intervals: 5–9, 10–24, 25–49, 50–79 and ≥80% T20N. The number of windows meeting each inclusion criteria was added, and DF for each of the threshold intervals was calculated according to the equation: DF= (#windows)128ms/total recording time. (DF= duty factor, or the amound of time each muscle was activated at specific magnitudes during a given time, %)	no
Signal recognition algorithm (SRA) The method was a stochastic signal processing, where the patient should first perform the set-up procedure to establish the individual parameters. The device monitored the frequency content, when the patients were asked to grind his ⁄her teeth during the set-up procedure. When these patterns were determined, they were collected in a table and stored in a memory, which was accessible for the microprocessor. To determine an EMG event associated with bruxism, a correlation was ascertained between the frequency content of the EMG signal from the continuous meas- urements and the recorded EMG signals, which was already stored in the table. The EMG activity was recognized during sleep when the window frequencies matched the frequencies content of the EMG signals from the stored table.	no

The online analysis of the EMG activity was based on a signal recognition algorithm (SRA) of the fre-quency domain specifically associated with the tooth- grinding/tooth-clenching EMG activity determined in the set-up procedure	no
Grinds: EMG activity with duration of more than 0.1 s with amplitude higher than 20% of the maximum EMG level during setup. Each grind is defined to last for one second. Bursts: EMG activity with duration of more than 0.25 s, with amplitude three times larger than the background level. A phasic burst is defined by EMG activity of 0.25 s to two seconds duration. A tonic burst is defined as EMG activity lasting more than two seconds. Only bursts that are part of an episode are counted. Episodes: Three different types of episodes can be defined: Phasic, tonic or mixed. A phasic episode is defined by at least three phasic bursts separated by two inter-burst intervals (at least 3 s each). A tonic episode is defined as one or more tonic bursts also separated by two inter-burst intervals. A mixed episode is a combination of phasic and tonic bursts. Intensity: Intensity is the total area under the EMG curve, for all bursts being part of an episode, summed up over one night, measured in mV ? s (seconds).	no
SB episodes were recorded as those that exceeded 30% of maximum voluntary clenching and lasted over 0.25 seconds.	no

not described	no
refers to Velly et al. 1992	no
Duty factor is the percentage of time when a respective muscle has been active above a certain threshold out a total given time (duration of muscle activity/ duration of recording period × 100 %). For each muscle type and subject, DF was determined for 4 magnitude and 6 duration thresholds in two different time periods (awake and sleep) and across 3 days. The combination of duty factors allowed estimating “Masticatory Muscle Activity” as outcome variable with mutually exclusive values	no
The segment of time over which the root mean square value was computed was 0.125 sec, and the overlap of time segments was 0.0625 sec. From these data, the number of bruxism events per hour was calculated using the criteria of Haketa et al. (2003): (1) a root mean square EMG amplitude above the 20% MVC level, (2) events with duration longer than 2 secs, and (3) the interval between each separate event were longer than 2 secs. The data were also analyzed using 10% MVC as the threshold for a bruxism event.	no

Bursts of more than two times the baseline amplitude and with a duration of 0.25 s or more and with an interval of 0.08 s or more to the adjacent burst were selected (named EMG-burst-all). Furthermore, from EMG-burst- all, bursts with a more than 5%MVC value (EMG-burst-5%), bursts with more than a 10%MVC value (EMG-burst-10%) and waves with more than a 20%MVC value (EMG-burst-20%) were selected for analyses. By an episode unit, clusters of bursts that corresponded to the following three criteria were selected as episodes (EMG- episodes): (1) a phasic episode consisting of three or more phasic bursts that lasted 0.25 to 2.0 s, (2) a tonic episode consisting of one or more tonic burst (s) longer than 2.0 s and (3) a mixed episode consisting of a phasic episode and a tonic episode.	no
contractions that exceed 30% of the maximum voluntary clenching muscle activity was considered to be an SB episode	no
The software was set to automatically detect any EMG event with a higher amplitude with respect to the RMS recorded with swallowing movements	no
Refers to Castoflorio et al. 2014, Farina et al. 2001, and Castroflorio et al. 2005	no

both the SB events (i.e., masseter contractions exceeding the 10% of maximum voluntary contraction [MVC] amplitude and preceded by a 20% increase in hearth rate) and the overthreshold masseter contractions not preceded by the hearth rate increase were recorded. The latter were here called sleep-time masticatory muscle activity (sMMA)events.	no
SB events (ie, masseter contractions exceeding 10% of the maximum voluntary contraction [MVC] amplitude and preceded by a 20% increase in heart rate). In addition, all suprathreshold masseter contractions that were not preceded by a heart rate increase were also scored (sMMA).	no
RMMA was defined as three or more consecutive bursts of masseter EMG activity. For the present study, in order to perform rhythm analysis more clearly, the authors selected the RMMA episodes that consisted of five or more consec- utive phasic bursts, each lasting for 0.25–2.0 s, but not separated by an interval of 3 s or more. Then the first burst of the episode was excluded from further analysis in this study because the state of a pair of interval and duration phase of the burst was needed.	yes
(i) EMG elevations above 10% MVC; (ii) two consecutive events with an interval of <5s were linked; and (iii) events with a duration shorter than 3 s were excluded	no

not described	no
SB events that exceed the continuous 30% maximum voluntary clenching and last more than 0.25 s	no
not described	no
EMG bursts with amplitudes that were more than 10% of the amplitude during maximum voluntary clenching of the teeth were selected.5 The phasic type of bruxism episode corresponded to at least 3 bursts of 0.25- to 2.0-seconds duration with less than 3.0-seconds separation, and the tonic type of bruxism episode corresponded to a single burst lasting more than 2.0 seconds. The mixed type of bruxism episode consisted of both phasic and tonic types. Phasic and mixed types of bruxism episodes were selected as RMMA episodes. The RMMA episodes were confirmed from audio-video data.	yes

The phasic type of bruxism episode consisted of at least 3 EMG bursts of 0.25 to 2.0 seconds duration with less than 3.0 seconds sepa- ration, and the tonic type, to a single burst lasting more than 2.0 seconds. The mixed bruxism episode consisted of both phasic and tonic types. Phasic and mixed types of bruxism episodes were selected as RMMA episodes. The tonic episodes were selected as clench- ing episodes. RMMA and clenching episodes were confirmed from audiovisual data. A single EMG burst without any more bursts within 3 seconds was selected as a short-burst episode, often corresponding to saliva swallowing. The remaining EMG bursts with less than 3.0 seconds separation were selected as other EMG episodes.	yes
EMG activity that exceeded the mean of the resting state with three standard deviations and lasted more than 0.25 seconds was defined as an EMG burst. Multiple EMG bursts lasting more than 3 seconds were con- sidered to be an SB event	no
Ali myoelectrical currents, exceeding a threshold leve! of one microvolt, were amplified 2000 times and stored cumulative!y	no
Lavigne 1996 criteria	no

event was defined as ≥ 30 % MVC, ≥ 3 s in duration and ≥ 5 s interval for counting	no
This device counts the number of masseter muscle hyperactivities as the number of SB events that exceed the continuous 30% maximum voluntary clenching	no
not described	no
Activity periods (AP) were determined as signal portions above an artefact cut-off threshold A0 that could contain subthreshold signal portions shorter than a standby time t0 of 5 s.	no

a sleep bruxism episode if the surface EMG burst (bilaterally from the masseter) is greater than 10% of maximum voluntary clenching and if it immediately follows (1–5 s interval) an increase in heart rate of 20% with respect to the baseline	no
not described	no
Bruxism bursts were defined as EMG potentials with an amplitude of at least 20% of maximum voluntary contractions. Bruxism episodes were phasic, tonic or mixed (both phasic and tonic) episodes. Phasic episodes corresponded to at least three EMG bursts of 0.25 to 2.0 seconds in dura- tion, separated by two interburst intervals. Tonic episodes corresponded to EMG bursts lasting more than 2.0 seconds.	no
contractions that exceeded 30% of the maximum voluntary clenching muscle activity	no

The spectrogram of the demodulated EMG activity enve- lope was then used to score RMMA episodes. An RMMA episode was defined as a portion of the spectrogram above two predefined frequency and power thresholds. An episode had to last more than 1.5 s and had to contain at least three bursts. The algorithm allowed automatic detection of onset and cessation of rhythmic contraction episodes based on thresholds for peak frequency and relative power, set at 0.625 Hz and 2%, respectively. These settings were calcu-lated using receiving operating characteristics curves to discard possible movement artefacts due to a variety of oral behaviours, including swallowing (Farella et al., 2009). When two RMMA episodes were separated by <2 s, they were merged into one episode.	yes
When the amplitude of the EMG signal has been above the threshold for more than 100 ms, an event is recorded. An event can represent a voltage that exceeds threshold for up to 1 second; longer continuing events are counted as additional events.	no
A bruxism event was defined as. Burst of masseter EMG activity exceeding the presen threshold and lasting for more than 1 second.	no

Surface EMG activity above 20 µV	no
Surface EMG activity above 20 µV	no
each burst with duration between 0.25 and 2.0 seconds with >20% MVC activity was regarded as an individual event regardless of the interburst interval time	no

After amplification and rectification, it goes through the leaky integration circuit with the time constant of 0.1 s, and then it is compared with the threshold level. The threshold level is manually changeable, and when the processed signal gets higher than the threshold level, the digital circuit records the beginning time. When it gets lower than the threshold level, the device records the ending time. The period between the beginning and the ending time is recorded as a lasting time of each bruxism activity. If the lasting time is less than 1 s, the data is discarded and not recorded. The total of electromyographic potentials during the beginning and ending time is also recorded.	no
The BiteStrip detects a bruxism episode when the EMG masseter contraction exceeds 30% of the maximum occlusal force	no
The GrindCare device has a threshold for starting to measure EMG activity, which is 20% of the 60%MVC. The burst-detection criterion used by the GrindCare devicewas EMG activity with a duration of>0.25 s. A phasic burstwas defined as anEMG activity of0.25–2-s duration. A tonic burst was defined as an EMG activity lasting >2s.	no

An EMG burst was defined as a supra-threshold EMG signal of 0.25 to 2.0 s duration according to Lavigne et al 1996. A rhythmic NMMA episode corresponds to at least three EMG bursts separated by two interburst intervals. Two NMMA episodes had to be separated by more than 3.0 s. We chose not to include tonic EMG episodes (EMG bursts lasting more than 2.0 s) since they only represent a minor part of NMMA.	no
A burst was defined as a supra-threshold EMG signal (above 10 mV) of 0.25- to 2.0-second duration according to Lavigne et al.	no
EMG events detected by GC4-β using a built-in algorithm, which is characterized by a comparison of EMG amplitude to the estimated background level (moving average) and applying the rules for detection of RMMA activity as described by Lavigne and collaborators	yes

electromyographic masseter events that are at or above threshold for more than 0.25 second. A single count is limited to 1 second, thus an event longer than 1 second is counted as an additional event, as long as the additional time following the event already counted exceeds 0.25 second.	no
Whenever the fourth least significant bit of the analogue-to-digital convertor was active, a bruxing episode was occurring, and if the duration was equal to or greater than 2 s the event was stored in r.a.m, for later transfer to cassette tape. The cassette tape was eventually used to obtain a hard-copy printout of all bruxing episodes.	no
One EMG event is recorded in the log file when the amplitude ofthe EMG signal exceeds the threshold for more than 100 ms for up to 1s.Longerlasting EMGeventsare countedas additional events.	no

Lavigne 1996 criteria	no
When the EMG signal amplitude crossed the threshold level and the window frequencies of the obtained EMG activity matched the frequencies of the EMG signals from the stored table, an EMG event was recognized and recorded. This process was repeated at a pace of approximately once per second as long as the EMG activity was above the threshold. For example, continuous grinding that lasted for 5 s was counted as five events.	no
EMG events were scored using a ‘moving average’ (MA) algorithm, which uses a dynamic method to score events when the EMG signal exceeds the amplitude of the background noise with 3 or more times, for a duration of≥ 0.25 s	no

refers to Lavigne et al. 1996	no
The threshold for a sustained clench was based on predeinfed tasks that were perforemd in the laboratory. The normalized RMS vale of the background EMG activity during the predifined tasks was calulated for defining standard deviation (σ) thersholds. The amplitude thershold was set to 4σ. A sustained clench episode was defined as a signal whose square wave occurred for longer than 0.5 seconds. The start and stop times of each identified epoch of clenching behavior were logged to reference with the raw EMG signals, and subject-specific laboratory calibrations of temporalis muscle activity (µV) per N of bite-force were used to estimate magnitude of clenching load for each epoch.	no
The algorithm counts an event when the EMG activity exceeds the signal level at rest, plus 20% of the maximum EMG level during the 60% contraction.	no

oromotor episodes (OME) separated by 3-s intervals were recognised as RMMA if they corresponded to one of the three following patterns: phasic (three or more masseter-temporalis EMG bursts, each lasting 0.25–2.0 s), tonic (one masseter-temporalis EMG burst >2.0 s) or mixed (both masseter-temporalis burst types) episodes	yes
Refers to Thorpy et al. 1997 and Lavigne et al. 2001	yes
analysed for events of EMG activity using a Signal Recognition Algorithm described by Jadidi et al	no

Outcomes

Diagnosis of "sleep bruxer" through cut-off criteria	Frequency1	Frequency2	Frequency3	Frequency 4	Frequency 5
no					
0 –no bruxism: (comparable to a sleep laboratory bruxism count of up to 39 over 5 h), 1 – mild: (40–74 counts), 2 – moderate: (75–124 counts) and 3 – severe: (>125 counts).	score based on events/recording				
no	events/h				
no					

no	activity/h				
> 2 episodes/h	episodes/h				
A score is given: 0 = less than 30 events, 1 = 31 to 60 events, 2 = 61 to 100 events, and 3 = more than 100 events	score based on events/recording				
0 = no bruxism [≤ 39 episodes]; 1 = mild brux- ism [40 to 74 episodes]; 2 = moderate bruxism [75 to 124 episodes]; 3 = severe bruxism [≥ 125 episodes]; and E = error message	score based on events/recording				
no	episodes/h	episodes/night			

> 4 episodes/h	episodes/h				
no	activity/h				
no	events/night				
no	events/night				

no	EMG events/h				
no	episodes/h	episodes/night			
no	number of episodes (for reliability analysis)				
no	episodes/h	episodes/night			

no	events/h	events/night			
no	EMG grinds/h	EMG grinds total n	EMG episodes/h	EMG episodes total n	EMG bursts/h
no	events/h				

no	events/h				
no					
no	Signal recognition algorithm (SRA) events				

no	Signal recognition algorithm (SRA) events				
no	episodes/h	episodes total n	grinds/h	grinds total n	bursts/h
Based on number of events in a 5h period (0 = less than 30 events, 1 = 31 to 60 events, 2 = 61 to 100 events, and 3 = more than 100 events)	score based on events/recording				

no	number of bruxing units				
no					
no					
no	events/h				

5.5 EMG-episode/ h, 32.2 EMG-burst-all/h and 26.4 EMG-burst-5%/h	episodes/h	bursts/h			
0 = no bruxism, ≤ 39 episodes; 1 = mild bruxism, 40-74 episodes; 2 = moderate bruxism, 75-124 episodes; and 3 = severe bruxism, ≥ 125 episodes	score based on events/recording				
no	events/recording				
> 4 episodes/h	episodes/h				

no	episodes/h	phasic sleep-time masticatory muscle activity/h	tonic sleep-time masticatory muscle activity/h	mixed sleep-time masticatory muscle activity/h	sleep-time masticatory muscle activity otal number
no	SB episodes/h	phasic sMMA events/h	tonic sMMA events/h	mixed sMMA events/h	total sMMA events/night
no					
no	events/h				

This device indicates the total number of SB events on a four-grade scale: L, 1, 2, and 3 (less than 30 events, 30–59 events, 60–99 events, and more than 100 events per 4.5 h, respectively).	score based on events/recording				
Subjects were classified as normal control (NC) when SB scores indicated only 0 or 1 during the 3 nights, or as severe SB for scores 2 or 3. Those subjects whose scores fluctuated from 0 to 3 during the 3 nights were omitted from further analysis.	score based on events/recording				
SB frequency score in four grades (0, 1, 2, and 3)	score based on events/recording				
no	episodes/h				

no	RMMA episodes/h	short-burst episode/h	clenching episode/h	other EMG episodes/h	
no	events/h	events/night	bursts/event		
no					
> 4 episodes/h	phasic episodes/h	tonic episodes/h	mixed episodes/h		

≥ 2 episodes/h	events/h	events/night			
scores 0-2: nonsevere SB group, score 3: severe SB group	score based on events/recording				
no	number of clenching/grinding episodes/week				
no	activity periods/h	activity periods/night			

> 2 episodes/h for moderate and > 4 episodes/h for intense	episodes/h				
> 2 episodes/h for moderate and > 4 episodes/h for severe	episodes/h				
Lavigne 1996 criteria	episodes/h	episodes/night	burst/episode	bruxisms/h	
0 = no bruxism (≤ 39 episodes), 1 = mild bruxism (40-74 episodes), 2 = moderate bruxism (75-124 episodes), 3 = severe bruxism (≥ 125 episodes), and E = error message	score based on events/recording				

no	RMMA episode frequency (Hz)	episodes/night			
no	events/min				
no	mean number of events				

no	EMG units				
no	µV/sec				
no	events/recording				

no	episodes/h					
(SB episodes per minute): 0 = no bruxism (up to 39 episodes), 1 = mild bruxism (40 to 74 episodes), 2 = moderate bruxism (75 to 124 episodes), 3 = severe bruxism (µ ≥ 125 episodes)	score based on events/recording					
≥ 2 episodes/h	episodes/h	bursts/h				

no	rhythmic NMMA episodes/h	EMG bursts/h	burst/episode		
no	bursts/h				
no	events/h				

no	events/recording				
no	number of episodes				
18 EMG/h or higher in T2 (3 consecutive nights) and 19 EMG/h or higher in T3 (5 consecutive nights)	events/h	total number of events	coefficient ofvariation from the multiple night record-ings (CV SD/mean)		

Lavigne 1996 criteria	episodes/h	episodes/night	burst/episode	bruxisms/h	
> 25 events/h	events/h				
no	events/recording	events/h	coefficient of variation (CV=SD / mean)		

no	episodes/h				
no	clench episodes/h	clench episodes number			
no	events/h	number of events	night-to-night variability (CV=SD/mean)		

no	episodes/h	episodes/night			
no	bursts/h				
no	events/h				

Frequency 6	Duration1	Duration2	Duration3	Duration4	Duration5	Intensity1	Intensity2	Intensity3
						integrated EMG values/h (µV*s)		
	EMG duration/h					EMG AUC/h		
	total duration of muscle activity/h, averaged across the 5-nght study period							

	duration of activity (s)					mean amplitude of contraction episode (%MVC)	max amplitude of contraction episode (%MVC)	integral under the signal curve of contraction episode (%MVC) (%MVC*s)

	duration of events	total no secs bruxing/ni ght				intensity of bruxing as a factor of force and duration		

	duration of episodes	intervals between episodes				mean amplitdes of episodes	maximum amplitudes of episodes	integral (= muscle work, %MVC)

	event duration/h	event duration/night	event duration					
EMG bursts total n	EMG burst duration					intensity		
	% event duration/night					total EMG activity		

	mean EMG duration/event					mean peak EMG level (%MVC)		
	DF= duty factor, or the amound of time each muscle was activated at specific magnitudes during a given time, %							

bursts total n						mean burst duration		

	cummulative duration of each episode	cummulative duration of episodes/h						
	DF for duration of muscle activity threshold					DF for magnitude of muscle activity threshold		

	total MMA duration (sec)/recording	total MMA duration (sec)/hour				integrated EMG signal (μV x s)/recording	integrated EMG signal (μV x s)/hour	

	coefficient of variation of interval duration	coefficient of variation of burst duration	coefficient of variation of cycle time	interval duration	burst duration	n-IEMG (integral values noralized by individual MVC)	n-RMS (root mean square normalized by individual MVC)	
	% event duration/night					total EMG activity		

	episode duration							

	event duration							
						cumulative EMG activity (µV.s) divided by the duration of sleep (min)		

	activity periods duration					mean amplitudes (%MVC)	max amplitudes (%MVC)	time integral (%MVC)

	pooled RMMA episodes duration							
	mean duration of events							

	total bruxism time/h	bruxism lasting time						
	burst duration					intensity		

	rhytmic NMMA episode duration/h	EMG bursts duration/h						
	durations of bursts/h							

	duration (not futher specified)					severity (not further specified)		

	bruxism time index (% time bruxing/total sleep time)							
	mean clench duration	clench-rlated temporalis duty factor (sum of clench episode durations / total recording time)				mean clench bte-force		

						intensity of the EMG (area under EMG curve)		

common mode rejection ratio of 100 dB

common mode rejection ratio of 100 dB

common mode rejection ratio of 100 dB