

PEER-REVIEWED CLINICAL STUDIES BY DATE

DATE	SUBJECT	COUNTRY	PUBLICATION	TITLE	AUTHORS
1997	Wand vs. Syringe, Pain	USA	NY State Dental Journal	"Computerized Local Anesthetic Delivery vs. Traditional Syringe Technique. Subjective Pain Response"	Hochman M, et al.
1998	Wand Technology	USA	Compendium	"Using a Precision-Metered Injection System to Minimize Dental Injection Anxiety"	Friedman M, Hochman M.
1999	Wand Efficacy	USA	Journal of Pediatric Dentistry	"Efficacy of a computerized local anesthesia device in pediatric dentistry"	Asarch T, et al.
			International Assoc. of Dental Research, Abstract		
2000	AMSA	USA		"Efficacy of computer-controlled local anesthesia during scaling and root planing"	Loomer P, Perry D.
2000	Birotational Insertion	USA	Quintessence International	"In vitro study of needle deflection: A linear insertion technique versus a bidirectional insertion technique"	Hochman M, Friedman M.
			International Assoc. of Dental Research, Abstract		
2000	ENDO	USA		"Efficacy of a computer-controlled injection system of local anesthesia in vivo"	Aboushala A, et al.
			Oral Surg, Oral Med, Oral Pathol, Oral Radiol, Endod		Saluom FS, Baumgartner JC, et al.
2000	ENDO	USA		"A clinical comparison of pain perception to the Wand and a traditional syringe"	
			Journal of Periodontology	"Histologic Response to Intraligament Injections Using a Computerized Local Anesthetic Delivery System. A Pilot Study in Mini-Swine"	Froum et al.
2000	Intraligamentary Injection	USA			
			Journal of Pediatric Dentistry	"The Wand vs. traditional injection: A comparison of pain related behaviors"	Gibson R, et al.
2000	PEDO	USA			
			Compendium	"Technology Forum - Advances in Local Anesthesia"	Friedman MJ, et al.
			Journal of the American Chamber of Commerce, Japan	"This Wand Hurt.....Really!"	Shatz M.
2000	Wand Technology	Japan			
			Nippon Dental Review	"The Advanced Computer Controlled Anesthesia Delivery System, The Wand"	Fukayama H.
2000	Wand Technology	Japan			
			Oral Surg, Oral Med, Oral Pathol, Oral Radiol, Endod	"Comparison of a controlled injection pressure system with a conventional technique"	Goodell GG, et al.
2000	Wand vs. Syringe, Pain	USA			
			Quintessence International	"An in vitro study of needle force penetration comparing a standard linear insertion to the new bidirectional rotation insertion technique"	Hochman M, Froedman M.
2001	Bi-rotational Technique	USA			
			Quintessence International	"An in vitro study of needle force penetration comparing a standard linear insertion to the new bidirectional rotation insertion technique"	Hochman M, Friedman M.
2001	Birotational Insertion Tech.	USA			
			Journal of Endodontics	"Measurement of intraosseous pressure generated by the Wand, high pressure periodontal ligament syringe, and the Stabident system"	Shepard PA, et al.
2001	Pain Perception	USA			
			Journal of General Dentistry	"Pain perception and utility: a comparison of the syringe and computerized local injection techniques"	Nicholson JW, et al.
2001	Pain Perception	USA			
			Journal of the Japan Dental Society of Anesthesiology	"The shape of local anesthetic injection syringes with less discomfort and anxiety. Evaluation of discomfort and anxiety caused by various types of local anesthetic injection syringes in high level trait-anxiety people"	Kudo M, et al.
2001	Pain, Anxiety, Wand HP	Japan			
			Journal of Pediatric Dentistry	"Comparison of a computerized anesthesia device with a traditional syringe in preschool children"	Allen KD, et al.
2002	PEDO	USA			
			Journal of Esthetic and Restorative Dentistry	"A Computer-Controlled Anesthetic Delivery System in a Periodontal Practice: Patient satisfaction and Acceptance"	Rosenberg ES.
2002	PERIO	USA			
			American Journal of Dentistry	"Influence of anesthetic flow rate delivered by the Wand Local Anesthetic System on pain response to palatal injections"	Primrosh R, Brooks R.
2002	Wand vs. Syringe, Pain	USA			
			Quintessence International	"Efficacy of anterior and middle superior alveolar (AMSA) anesthesia using a new injection system: the Wand"	Fukayama H, et al.
2003	AMSA	Japan			
			Quintessence International	"Efficacy of anterior and middle superior alveolar (AMSA) anesthesia using a new injection system: the Wand"	Fukayama H, et al.
2003	AMSA	Japan			
			Dermatology Nursing	"Patient satisfaction during the administration of local anesthesia using a computer controlled local anesthetic delivery system"	Anderson ZN, et al.
2003	Patient Satisfaction	USA			
			Journal of Clinical Pediatric Dentistry	"Assessing the pain reaction of children receiving periodontal ligament anesthesia using a computerized device (Wand)"	Ram D, Peretz B.
2003	PEDO	USA			
			Journal of Clinical Pediatric Dentistry	"Assessing the pain reaction of children receiving periodontal ligament anesthesia using a computerized device (Wand)"	Ram D, Peretz B.
2003	PEDO	Israel			
			American Journal of Dentistry	"Influence of site preparation methods on the pain reported during palatal infiltration using the Wand Local Anesthetic System"	Johnson J, Primrosh R;
2003	Wand vs. Syringe, Pain	USA			
			Journal of Periodontology	"Comparison of the Traditional Injection and a New Anesthesia Technique (The Wand®) for Non-surgical Periodontal Therapy"	Sculean A, et al.
2004	AMSA	USA			
			Oral Surg, Oral Med, Oral Pathol, Oral Radiol, Endod	"Injection pain and postinjection pain of the anterior middle superior alveolar injection administered with the Wand or conventional anterior middle superior alveolar injection administered with the Wand or conventional syringe"	Nusstein J, et al.
2004	AMSA	USA			
			Quintessence International	"Maxillary nerve block - A new approach using a computer-controlled anesthetic delivery system for maxillary sinus elevation procedure. A prospective study"	Shwartz-Arad D, et al.
2004	Oral Surgery	Israel			
			Oral Surg, Oral Med, Oral Pathol, Oral Radiol, Endod	"Injection pain and postinjection pain of the palatal-anterior superior alveolar injection, administered with the Wand Plus system comparing 2% lidocaine with 1:100,000 epinephrine to 3% mepivacaine"	Nusstein J, et al.
2004	P-ASA	USA			
			Journal of Pediatric Dentistry	"The wand versus traditional injection for mandibular nerve block in children and adolescents: perceived pain and time of onset"	Palm AM, et al.
2004	PEDO	Denmark			
			Journal of Pediatric Dentistry	"The Wand Versus Traditional Injection for Mandibular Nerve Block in Children and Adolescents: Perceived Pain and Time of Onset"	Palm AM, et al.
2004	PEDO, Mandibular Block	Denmark			
			IADR/AADR/CADR 82nd General Session, Abstract	"Evaluation of a new anesthesia technique for nonsurgical periodontal therapy"	Kasaj A, et al.
2004	PERIO, AMSA	USA			
			Journal of the American Dental Association	"Computer-controlled delivery versus syringe delivery of local anesthetic injections for therapeutic scaling and root planing"	Loomer P, Perry D.
2004	PERIO, AMSA	USA			
			Journal of Endodontics	Anesthetic effectiveness of the supplemental intraligamentary injection, administered with a computer-controlled supplemental intraligamentary injection, administered with a computer-controlled local anesthetic delivery system, in patients with irreversible pulpitis"	Nusstein J, et al.
2005	ENDO	USA			
			Quintessence International	"The wand in pulp therapy: an alternative to inferior alveolar nerve block"	Oztas N, et al.
2005	ENDO	Turkey			
			Journal of Anesthesia Progress	"Initial Injection Pressure for Dental Local Anesthesia: Effects on Pain and Anxiety"	Kudo M.
2005	Injection Pressure	Japan			
			European Journal of Oral Sciences	Computerized anesthesia delivery system vs. traditional syringe: comparing pain and pain-related behavior in children	Versloot J, et al.
2005	PEDO	Netherlands			
			Oral Surg, Oral Med, Oral Pathol, Oral Radiol, Endod	"Efficacy of articaine and lidocaine in a primary intraligamentary injection administered with a computer-controlled local anesthetic delivery system"	Berlin J, et al.
2005	PEDO, Intraligamentary	USA			
			Journal of Dentistry for Children	"Quality of Anesthesia for the Maxillary Primary Anterior Segment in Pediatric Patients: Comparison of the P-ASA Nerve Block Using ComuMed Delivery System vs Traditional Supraperiosteal Injections"	Klein U, et al.
2005	PEDO, P-ASA	USA			
			Quintessence International	"Interstitial Pressure Associated with Dental Injections: A Clinical Study"	Hochman M, et al.
2006	Injection Pressure	USA			
			International Association of Dental Research	"Sensation of Pain when using Computerized Injection Technique, the Wand™"	Jalevik B, et al.
2006	Pain Perception	Sweden			
			International Journal of Paediatric Dentistry	"Assessment of a palatal approach-anterior superior alveolar (P-ASA) nerve block with the Wand in pediatric dental patients"	Ram D, Kassirer J.
2006	PEDO	Israel			

2006	PEDO	Israel	Journal of Pediatric Dentistry	"Effectiveness of various modes of computerized delivery of local anesthesia in primary maxillary molars"	Ashkinazi M, et al.
2007	Mandibular Block	Canada	Quintessence International	"Aprospective clinical patient study evaluating the effect of increasing anesthetic volume on inferior alveolar nerve block success rate"	Camarda J, et al.
2007	PEDO	Turkey	International Journal of Paediatric Dentistry	"Is it the injection device or the anxiety experienced that causes pain during dental local anaesthesia?"	Kuscu OO, Akyuz S.
2008	Intraligamentary Injection	Italy	European Journal of Paediatric Dentistry	"Single tooth anesthesia: a new approach to the Paediatric patient, A clinical experimental study"	Gianetti, L, et al.
2009	Intraligamentary Injection	Italy	International Dentistry, South Africa	"Efficacy of the Computer-Controlled Injection System STA, the Ligamaject, and the dental syringe for intraligamentary anesthesia in restorative patients"	Ferrari M, et al.
2009	Wand vs. Syringe, Pain PROSTH	Turkey	Journal of Applied Science	"Comparison of the pain levels of computer-controlled and conventional anesthesia techniques in prosthodontic treatment"	Yenisey M.
2010	AMSA	USA	JADA	"A comparison of the anterior superior alveolar nerve block for anesthesia of maxillary anterior teeth"	Corbett I, Reader A, et al.
2010	PEDO	Israel	International Journal of Paediatric Dentistry	"Effect of computerized delivery intraligamentary injection in primary molars on their corresponding permanent tooth buds"	Ashkinazi M, et al.
2010	PEDO, AMSA	Saudi Arabia	Journal of Clinical Pediatric Dentistry	"A comparative study of children's pain reactions and perceptions to AMSA injection using CCLAD versus traditional injections"	Feda M, et al.
2015	PEDO	India	Journal of the Indian Society of Pedodontics & Preventative Dentistry	"Behavioral Response and Pain Perception to Computer-Controlled Local Anesthetic Delivery System and the Cartridge Syringe"	Yogesh Kuman, et al.
2015	PEDO	Saudi Arabia	Quintessence International	"The pain-related behavior and pain perception associated with computerized anesthesia in pulpotomies of mandibular primary molars; A randomized controlled trial"	Baglaf K, et al.
2015	PEDO, Special Needs	Sharjah, UAE	European Journal of Dentistry	"Effectiveness of audiovisual distraction eyewear and computerized delivery of anesthesia during pulp therapy of primary molars in phobic child patients"	Fakhruddin KS, et al.
2015	PEDO, Wand vs. Syringe	India	Journal of Clinical Pediatric Dentistry	"Pain Perception: Computerized versus Traditional Local Anesthesia in Pediatric Patients"	Mittal, M, et al.
2015	Wand vs. Syringe, Pain	India	Journal of Clinical Experimental Dentistry	"Cartridge syringe vs computer controlled local anesthetic delivery system: Pain related behaviour over two sequential visits - a randomized controlled trial"	Thoppe-Dhamodhara YK, et al.
2015	Wand vs. Syringe, Pain	India	Journal of the Indian Society of Pedodontics & Preventative Dentistry	"Behavioral response and pain perception to computer-controlled local anesthetic delivery system and the cartridge syringe"	Yogesh Kumar TD, et al.
2016	Injection Fear	Pakistan	Journal of Restorative Dentistry	"Evaluation of fear of injections and its association with avoidance of dental Treatment"	Siddiqui, TM et al.
2016	PEDO	Saudi Arabia	Quintessence International	"The effectiveness of computerized anesthesia in primary mandibular molar pulpotomy: A randomized controlled trial"	Almoudi NM, et al.
2017	Aspiration	Germany	Clinical Oral Investigation.	"Movement control during aspiration with different injection systems via video monitoring—an in vitro model"	Kammerer PW, et al.
2017	Inplantology	Italy	Oral and Implant Surgery	"Effectiveness of Computer-Assisted Anaesthetic Delivery System (STATM) in Dental Implant Surgery: A Prospective Study"	Grassi FR, et al.
2017	Patient Preference, Willing to Pay	Italy	Dental Anesthesiology	"Minimally-invasive dental anesthesia: Patients' preferences and analysis of the willingness-to-pay index"	Re D, et al.
2017	PEDO	Italy	European Journal of Paediatric Dentistry	"Comparison of single tooth anaesthesia by computer-controlled local anaesthetic delivery system (C-CLADS) with a supraperiosteal traditional syringe injection in paediatric dentistry"	Perugia C, et al.
2017	PEDO, Special Needs	Sharjah, UAE	European Journal of Dentistry	"Effectiveness of audiovisual distraction with computerized delivery of anesthesia during the placement of stainless steel crowns in children with Down Syndrome"	Fakhruddin KS, et al.
2017	PEDO, Special Needs	Sharjah, UAE	European Journal of Dentistry	"Effectiveness of behavioral modification techniques with visual distraction using intrasulcular local anesthesia in hearing disabled children during pulp therapy"	Fakhruddin KS, et al.
2017	Wand vs. Syringe, Pain	Italy	Pain Research and Management	"Pain Experience and Behavior Management in Pediatric Dentistry: A Comparison between Traditional Local Anesthesia and the Wand Computerized Delivery System"	Garret-Bernadin A. et al.
2018	PEDO, Intraligamentary	Saudi Arabia	Journal of Dental Anesthesia and Pain Medicine	"Computerized Intraligamentary anesthesia in children: A review of clinical considerations"	Baglaf K, et al.
2019	PEDO	India	Anesthesia Progress	"Comparison of Pain Perception Using Conventional Versus Computer-Controlled Intraligamentary Local Anesthetic Computer-Controlled Intraligamentary Local Anesthetic"	Mittal, M, et al.
2019	PEDO, P-ASA	Lebanon	Journal of Pediatric Dentistry	"Pain Perception and Effectiveness of Palatal Approach Anterior Superior Alveolar Block Anesthesia using Single Tooth Anesthesia in Children: A Randomized Controlled Trial"	Badr SBY, Bacho RH.
2021	Wand vs. Syringe	Switzerland	Heliyon	"Patient evaluations after local anesthesia with a computer-assisted method and a conventional syringe before and after reflection time: A prospective randomized controlled trial"	Flisfisch S, et al.
20017	PEDO, Oral Surgery	Italy	British Journal of Oral and Maxillofacial Surgery	"Dental anaesthesia for children—effects of a computer-controlled delivery system on pain and heart rate: a randomised clinical trial"	Pattini R, et al.