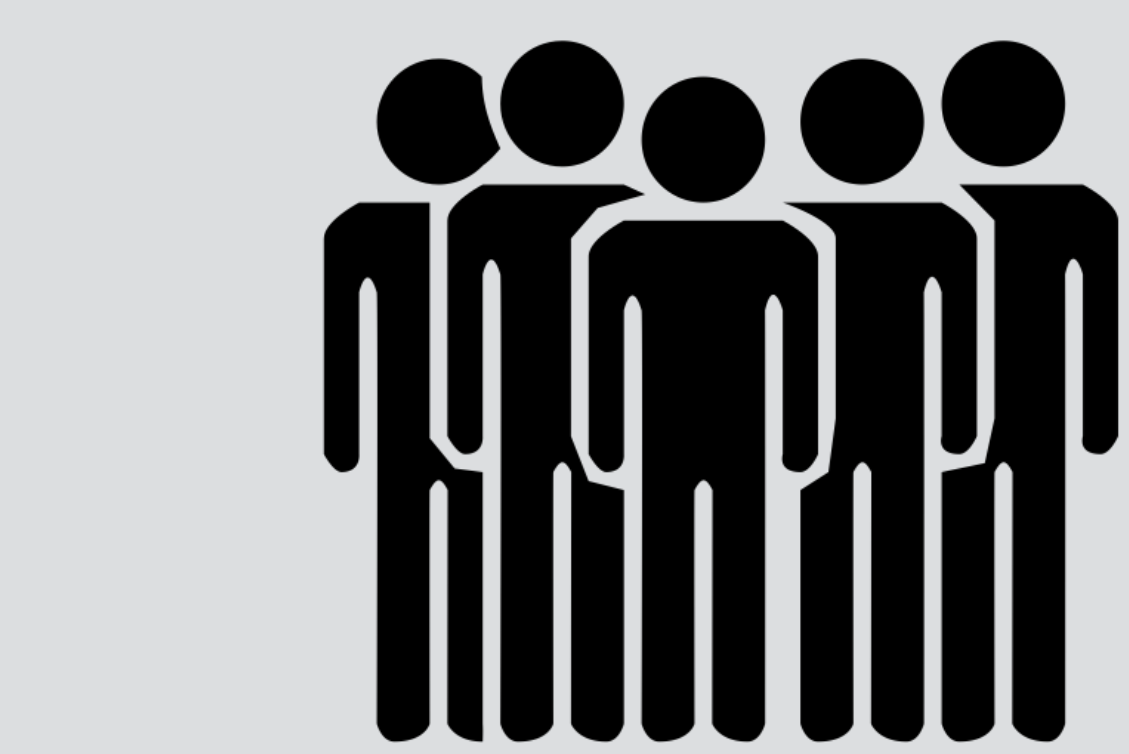


The aim of this ongoing study is to measure the effect of single dental implants placement with immediate loading on the thermal somatosensory profile.



n = 20

14 women (42.5 yrs.)

6 men (43.6 yrs.)



Repeated measures ANOVA
factors: site (2 levels), side (2 levels)
and time (5 levels)
($\alpha = 5\%$)

¹ Rolke R, et al. Quantitative sensory testing in the German Research Network on Neuropathic Pain (DFNS): standardized protocol and reference values. Pain. 2006;123:231-243.
Svensson P, et al. Guidelines and recommendations for assessment of somatosensory function in oro-facial pain conditions—a taskforce report. J Oral Rehabil 2011;38:366–394.

Thermal sensory profile after dental implant surgery: short-term follow-up

Objective

Methods

Variables

Thermal tests - Quantitative Sensory Testing (QST)¹

Cold Detection Threshold (CDT), Warm Detection Threshold (WDT), Thermal Sensory Limen (TSL)
Cold Pain Threshold (CPT), Heat Pain Threshold (HPT)

Intraoral - ipsilateral/contralateral attached gingiva buccal to the implant site

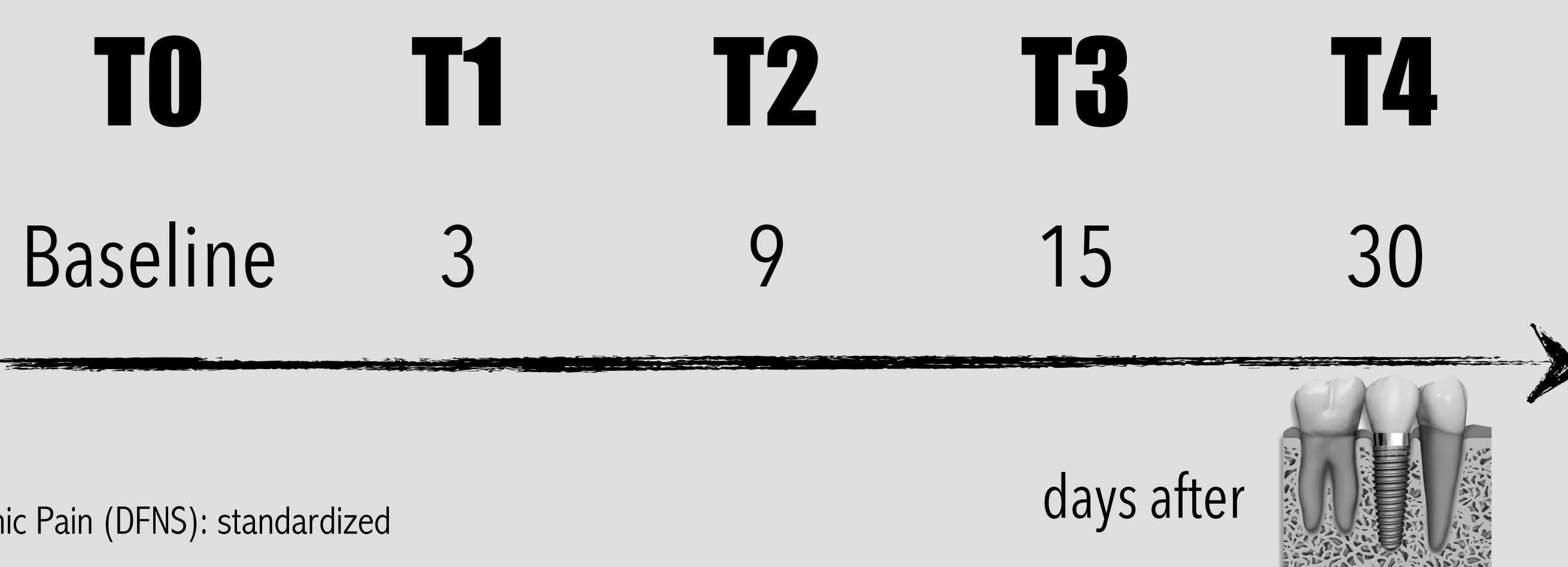


60% lower jaw
40% upper jaw

Extraoral - ipsilateral/contralateral entry zones of the corresponding innervation site

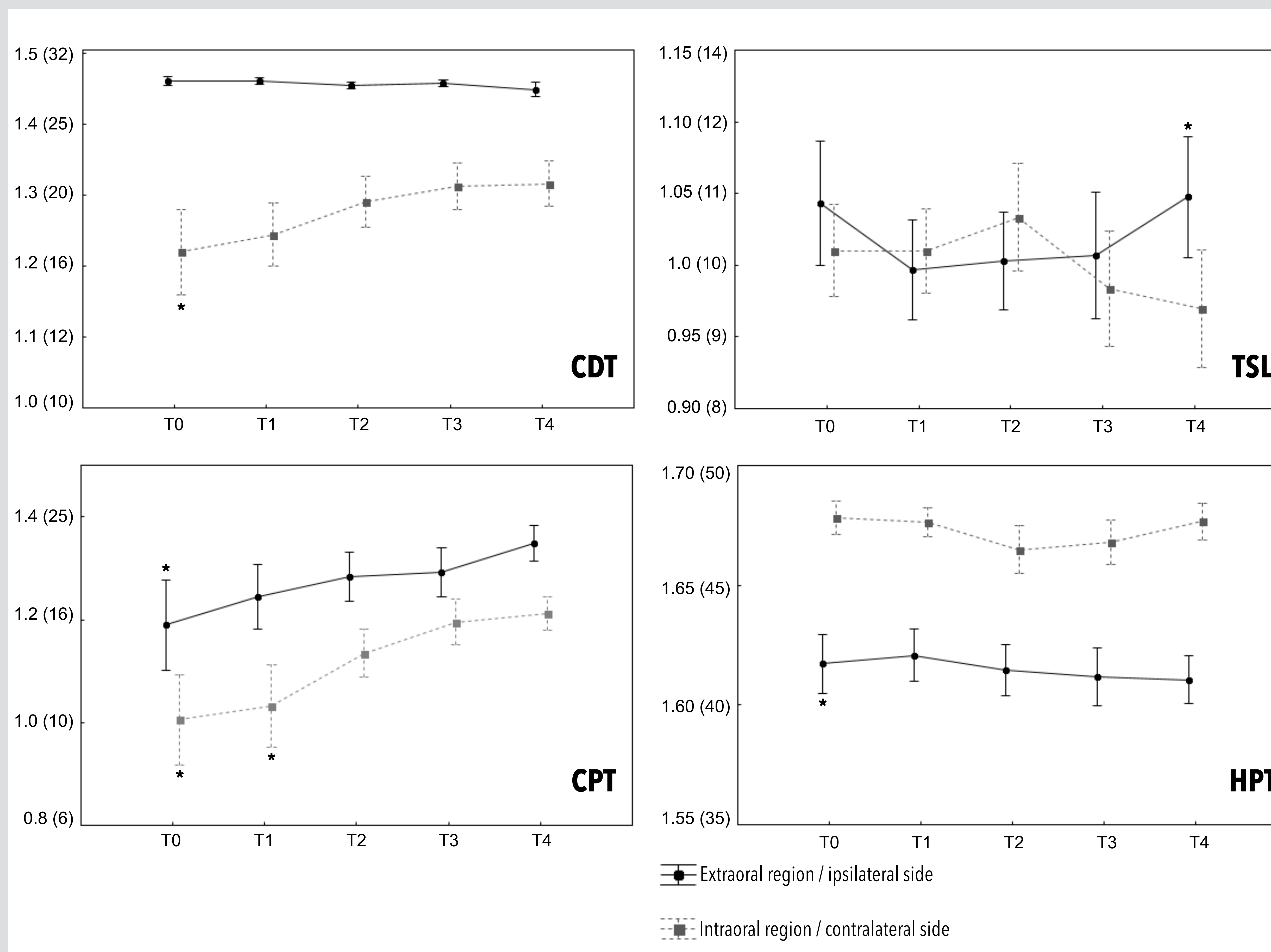


Assessment times



Results

Line charts of thermal QST parameters that showed significant interactions between site and time (CDT and CPT), side and time (TSL) and among site, side and time (HPT).



Error bars represent the standard error of the mean. Axis Y units are displaced as the \log_{10} data (raw values) in degree Celsius ($^{\circ}\text{C}$). **CDT** * indicates significant differences among T0 and T3-T4 only for the intraoral region ($p < 0.050$). Significant differences were also found between extraoral and intraoral sites considering all assessment times ($p < 0.001$). **TSL** * indicates significant differences between ipsilateral and contralateral sides only at T4 ($p = 0.032$). **CPT** * indicates that thresholds at T0 were significantly higher than T4 for the extraoral region and thresholds at T0 and T1 were significantly higher than T3 and T4 for the intraoral region. **HPT** * indicates that significant differences were found between extraoral and intraoral sites considering all assessment times and regardless of side.

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Mean and standard deviation (SD) of absolute thermal QST values for extraoral and intraoral sites throughout the assessment times.

QST	Baseline	3 days	9 days	15 days	30 days
Ipsilateral / Contralateral					
Extraoral					
CDT	28.9 (2.0) / 29.0 (1.6)	28.9 (1.6) / 29.0 (1.3)	28.3 (1.7) / 28.8 (1.7)	28.6 (1.6) / 28.8 (1.4)	28.4 (2.7) / 28.1 (2.6)
WDT	35.5 (1.8) / 35.3 (1.5)	35.6 (1.3) / 35.9 (2.5)	35.5 (1.5) / 36.2 (3.2)	35.8 (1.4) / 35.2 (1.0)	35.8 (1.8) / 35.8 (2.4)
TSL	6.2 (2.0) / 5.4 (1.6)	5.8 (2.4) / 5.7 (2.2)	6.0 (2.6) / 7.4 (4.3)	6.4 (2.7) / 5.9 (2.2)	7.1 (3.3) / 5.6 (2.5)
CPT	19.0 (8.9) / 18.5 (10.0)	20.0 (9.5) / 19.1 (9.5)	20.7 (7.7) / 19.5 (8.5)	20.6 (8.4) / 20.6 (7.9)	22.6 (6.5) / 22.5 (7.3)
HPT	42.2 (4.8) / 41.2 (5.6)	41.7 (4.8) / 42.3 (4.8)	41.2 (4.4) / 41.5 (5.0)	42.0 (4.9) / 40.47(5.5)	41.2 (4.5) / 40.7(4.3)
Intraoral					
CDT	18.7 (7.7) / 19.1 (6.9)	18.6 (7.0) / 19.9 (7.3)	20.6 (7.0) / 21.0 (5.7)	21.2 (5.5) / 22.1 (6.8)	22.5 (6.5) / 21.0 (6.1)
WDT	44.2 (5.2) / 44.5 (4.7)	44.7 (4.4) / 44.3 (4.9)	43.3 (5.3) / 45.2 (4.9)	43.2 (5.2) / 42.9 (5.9)	44.0 (5.7) / 43.2 (5.4)
TSL	24.3 (11.8) / 22.2 (10.7)	20.8 (11.0) / 21.3 (9.8)	20.1 (10.2) / 19.4 (8.4)	19.9 (9.3) / 19.3 (10.5)	21.4 (8.5) / 18.8 (8.5)
CPT	11.9 (7.8) / 13.1 (8.0)	12.9 (7.1) / 12.6 (8.0)	13.7 (6.2) / 14.8 (7.1)	14.9 (6.9) / 17.8 (6.8)	15.8 (6.3) / 16.7 (5.5)
HPT	47.4 (4.4) / 48.2 (2.9)	47.8 (3.3) / 47.3 (3.4)	47.0 (4.7) / 45.9 (4.7)	46.7 (4.6) / 46.8 (4.3)	47.9 (3.6) / 47.3 (3.7)

All values are presented in degree Celsius ($^{\circ}\text{C}$). There were main effects of site for all tests, i.e., the intraoral region was less sensitive than the extraoral region ($p < 0.0050$).

Conclusion

Thermal sensitivity related to the encoding of cold and cold pain sensation is significantly changed on the intra and extraoral regions at the short-time assessment in patients who underwent single dental implants placement.