

Table 2. Descriptive Analysis of Open-close Velocity with Splint *in situ*

FIELD	N	MEAN	STD	SEM	MIN	MAX	SUM
Opmax	33	303.879	71.789	12.497	150.400	485.60	10028
Opave	33	140.057	26.253	4.570	78.800	202.30	4621.87
Clomax	33	339.145	80.181	13.958	176.000	502.40	11191.80
Cloave	33	162.891	29.816	5.190	103.100	219.00	5375.40
Termin	33	81.091	31.437	5.472	26.400	160.80	2676

Mean: mean velocity; STD: standard deviation; SEM: standard error of mean; MIN: minimum value of velocity; MAX: maximum value of velocity; SUM: summation of data

Table 3. Comparison of Mean Velocity between Male and Female Subjects without Splint (mm/sec)

	Male		Female		P value
	Mean	STD	Mean	STD	
Opmax	333.41	85.57	269.15	47.59	0.0116*
Opave	151.25	29.24	127.17	20.88	0.0314*
Clomax	370.20	85.53	368.80	71.58	0.9655
Cloave	186.22	33.99	172.47	22.09	0.2708
Termin	102.46	49.56	60.53	34.10	0.0266*

* $P < 0.05$ as analyzed by t-test.

and female subjects before and after occlusal splint insertion ($P > 0.05$).

In Table 5 it could be seen that the open-close velocity tended to decrease after splint insertion, but only the maximum closing velocity and average closing velocity decreased significantly ($P < 0.01$). Neither the opening phase velocity nor the maximal terminal velocity before tooth contact was affected by occlusal splint insertion ($P > 0.05$).

DISCUSSION

Different postures had been claimed to have some

Table 4. Comparison of Mean Velocity between Male and Female Subjects with Splint *in situ*

	Male		Female		P value
	Mean	STD	Mean	STD	
Opmax	322.10	70.14	255.28	53.05	0.0147*
Opave	146.85	24.81	121.94	21.86	0.3726
Clomax	336.09	82.00	347.28	76.89	0.4395
Cloave	160.79	31.52	168.49	25.49	0.2750
Termin	78.80	31.94	87.20	30.99	0.4973

* $P < 0.05$ as analyzed by t-test.

effects on the rest position evaluated by electromyography, i.e., myoelectrical activity,^{7,23,29,31} and bite force magnitude.⁴⁰ In turn, different rest positions would affect the muscle activity to meet the need of different demands due to antigravity effect. In a preliminary study, there was no difference of open-close velocity change at supine or at upright positions with or without a head support.⁴⁷ In this study we asked the subjects to sit upright without a head support so that the subject's head were at natural position in most previous studies.^{20,24,39}

We noted an unstable open-close motion velocity change and kinesiographic tracking during the first three motions after insertion of the splint. Similarly, an unstable initial velocity in the kinesiographic tracking

Table 5. Mean Velocity Difference Before and After Splint Insertion

	Baseline		Splint in Situ		Difference of means	P value
	Mean	STD	Mean	STD		
Opmax	315.88	81.69	303.87	71.78	12.01	0.1720
Opave	144.69	29.02	140.05	26.53	4.64	0.1456
Clomax	369.81	80.86	339.14	80.18	30.67	0.0022*
Cloave	182.47	31.48	162.89	29.81	19.58	0.0001*
Termin	91.03	49.15	81.09	31.47	9.94	0.2503

* $P < 0.01$ as analyzed by paired t-test, $n = 33$.