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Microtensile bond strength of two different adhesive systems to dentin (an *in vivo* and *in vitro* study). S. BELLI\*, N.ÜNLÜ, F. ÖZER, P.N.R.PEREIRA, F. TAY, D.H. PASHLEY (Univ. of Selçuk, Konya, Türkiye; Medical College of Georgia, Augusta GA)

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The purpose of this study was to evaluate the microtensile bond strengths of a resin-modified glass-ionomer system (Fuji Bond LC), and a self etching adhesiv resin system (Liner Bond 2V) *in vivo* and *in vitro*. *In vivo* sample preparation: 8 third molar nonfunctioning teeth scheduled for extraction were used. Standard MOD cavities were prepared and restored with the two adhesive systems followed by Clearfil AP-X resin composite. The teeth were extracted after 24 hours and 6 months. *In vitro* sample preparation: 8 extracted third molar teeth were used. Standard MOD cavities were prepared and treated as *in vivo* samples and stored in artificial saliva. All the samples were prepared for microtensile bond strength test using "nontrimming " technique. Microtensile bond strengths were determined after 24 hours and 6 months. The results were analyzed with Mann Whitney-U Test. The fracture sites and interfaces were observed using LM, SEM and TEM.

Groups		n	24 Hours Mean ± S.D.(MPa)	n	6 Months Mean ± S.D.(MPa)
Fuji Bond LC (FB LC)	<i>in vivo</i>	11	17.2 ± 80.7 <sup>a</sup>	11	21.5 ± 9.6 <sup>b</sup>
	<i>in vitro</i>	10	23.9 ± 7.4 <sup>b</sup>	10	26.4 ± 5.0 <sup>b</sup>
Liner Bond 2V (LB 2V)	<i>in vivo</i>	14	17.2 ± 4.2 <sup>a</sup>	14	37.1 ± 12.8 <sup>b</sup>
	<i>in vitro</i>	10	35.9 ± 8.2 <sup>c</sup>	10	25.4 ± 11.0 <sup>b</sup>

FB LC bond strength increased ( $p < 0.05$ ) 25% *in vivo* but only 1% *in vitro* (not sig.). LB 2V bond strength increased ( $p < 0.05$ ) 215% *in vivo* but fell 30% ( $p < 0.05$ ) *in vitro*. FB LC gave good bond strengths to dentin *in vivo* or *in vitro* over 6 months, while LB 2V performance was less consistent. Supported, in part, by grant DE 06427. sbelli@selcuk.edu.tr

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