

Polishing Instruments for New Monolithic Materials (Continued from page 1)

CR Survey Results (Respondents n=922, randomized from CR subscribers)

Summary of survey on what clinicians are doing clinically to finish and polish zirconia and lithium disilicate.

- 63% of dentists would accept 2–3 minutes to finish and polish; 19% prefer 1 minute or less
- Kits indicated for porcelain are currently the most-used option
- 30% of clinicians use personally-selected instruments instead of a kit
- 56% of clinicians using kits are satisfied with those indicated for zirconia and/or lithium disilicate



Assortment of polishing instruments

Comparison of Products Available

CR has tested the performance and efficiency of multiple representative brands of intraoral and extraoral finishing/polishing kits on the following ceramic materials: BruxZir (full-zirconia, from Glidewell Laboratories), Lava Plus (full-zirconia, from 3M ESPE), Lava Ultimate (resin-nano ceramic, from 3M ESPE), and IPS e.max CAD (lithium disilicate, from Ivoclar Vivadent). Samples were initially adjusted using fine round end taper diamond bur (from Microcopy) to simulate clinical adjustment. Each step was allotted 1 minute. Surface roughness was measured with optical profilometer. An overall grade was not given because not every kit was indicated for all four ceramic materials tested.

Type	Product (Company)	# of Steps		Pieces in Kit	Price	Instrument Durability	Surface Finish Rating				CR Comments and Key Features
		Finish*	Polish				BruxZir	Lava Plus	IPS e.max	Lava Ultimate	
Extraoral	CoreMaster (Shofu)	1‡	0	2	\$43.10	Excellent	Exc-Good	Good	Exc-Good	Good	Low price
	Dialite LD extraoral (Brasseler USA)	1	2	9†	\$387.70	Excellent	Exc-Good	Excellent	Excellent	Excellent	Well-established brand
	Dialite ZR extraoral (Brasseler USA)	1	2	9†	\$387.70	Excellent	Good	Exc-Good	Excellent	Excellent	Well-established brand
	Luster for e.max extraoral (Meisinger)	1	2	5†	\$186.25	Good	Excellent	Excellent	Excellent	Excellent	CR Choice
	Luster for zirconia extraoral (Meisinger)	1	2	6†	\$186.25	Excellent	Excellent	Excellent	Excellent	Excellent	CR Choice
	Pre-market: APPS Outside (Cosmedent)	1	2	8	\$129.95	Excellent	Good	Good	Excellent	Excellent	Pre-market
Intraoral	BruxZir Adjustment and Polishing Kit (Glidewell Labs)	1	3	6†	\$69.00	Exc-Good	Good-Fair	Good-Fair	Exc-Good	Excellent	Includes finishing burs
	BruxZir Adjustment and Polishing Set (Axis Dental)	1	2	5†	\$135.80	Good	Good	Good	Exc-Good	Excellent	Includes finishing burs
	Dialite HP intraoral (Brasseler USA)	1	2	9†	\$150.40	Good	Excellent	Exc-Good	Excellent	Excellent	Well-established brand
	Dialite LD intraoral (Brasseler USA)	3	2	13†	\$193.15	Excellent	Exc-Good	Excellent	Excellent	Excellent	Well-established brand
	Dialite ZR intraoral (Brasseler USA)	3	2	13†	\$193.15	Excellent	Good	Exc-Good	Excellent	Excellent	Well-established brand
	LD/ZR Cut, Finish & Polish (Komet USA)	1	2	7†	\$115.00	Exc-Good	Exc-Good	Exc-Good	Excellent	Excellent	Includes finishing burs
	Luster for e.max intraoral (Meisinger)	1	2	7†	\$138.50	Good	Excellent	Excellent	Excellent	Excellent	CR Choice
	Luster for zirconia intraoral (Meisinger)	1	2	7†	\$138.50	Excellent	Excellent	Excellent	Excellent	Excellent	CR Choice
	OptraFine (Ivoclar Vivadent)	1	2	19	\$150.00	Exc-Good	Excellent	Excellent	Excellent	Excellent	CR Choice, inc. paste
	Pre-market: APPS Inside (Cosmedent)	1	2	8†	\$69.95	Excellent	Good	Good	Excellent	Excellent	Pre-market

* Instruments indicated for restoration adjustment/reduction ‡ CoreMaster Coarse also available. Test results were obtained using both types sequentially. † Plus autoclavable bur block
All instruments in kits are autoclavable

Polishing Pastes

- CR ultra-microscopic research indicates restoration polish lasts longer when a polishing paste is used as the final step in a polishing sequence.
- Seven popular polishing pastes were evaluated on the four ceramic materials tested.
- Polishing pastes used were: Diashine (Fine, Fine Soft, Coarse Soft, and Intraoral, from VH Technologies), Zircon-Brite (Dental Ventures of America), Diamante (Olivier Tric), and OptraFine HP Polishing Paste (Ivoclar Vivadent).
- All pastes tested increased surface smoothness and improved surface finish beyond that reached by the kits alone (some by more than 50%).



Avoid over polishing of zirconia which often creates iridescent or pearl-like appearance that many clinicians dislike

Clinical Tips

- **Extraoral finishing and polishing** should be accomplished first, minimizing intraoral finishing and polishing after cementation.
- **If zirconia surface becomes excessively iridescent (pearl-like)**, return to previous step (slightly coarser grit). Lithium disilicate (IPS e.max) and resin-nano ceramic (Lava Ultimate) do not have this issue.
- **Don't skip steps in kits.** Use each instrument until a uniform appearance is achieved.

CR Conclusions: After making routine chairside adjustments to ceramic restorations, clinicians should carefully polish the adjusted areas. Wisely choosing effective instruments and using polishing paste can result in an excellent polish in a reasonable amount of time. Kits specifically indicated for zirconia and/or lithium disilicate are not necessarily better than those kits indicated for porcelain, and can be more expensive. Kits with superior polish on all materials tested earned a CR Choice: Luster (Meisinger) and OptraFine (Ivoclar Vivadent).