Clean Sulcus. Clear Scan.

Digital intraoral scanners capture only what is visible. When **loose retraction cord fibers remain in the sulcus**, they can interfere with optical scanning, creating **artifacts that obscure the true margin**. Clinical reviews caution that residual cord fibers may compromise digital impression accuracy, while clinical studies show that effective gingival displacement improves margin visibility in definitive digital scans. Research on intraoral scanning also identifies **foreign material as a recognized source of scan error**, reinforcing the need for a clean sulcular environment.

Loose fibers from traditional **cotton retraction cords** may also remain in the sulcus and act as **foreign material**, contributing to localized tissue irritation and inflammation. **Fiber-free retraction designs reduce the risk of detached filament retention**, supporting cleaner sulcular conditions before digital impression capture.

Clinical References

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