



D. Gerdolle

Indirect Bonded Restorations : From Scientific Evidence to Daily Clinical Practice

Two-Day Theoretical Course and Live Patient Treatment

Abstract

Adhesive dentistry has fundamentally transformed restorative dentistry, not only by improving the longevity and esthetics of indirect restorations, but more importantly by enabling a significantly more conservative preservation of dental tissues. This evolution is at the core of the **Bio-Emulation philosophy**, which is based on observing, preserving, and conserving natural tooth structures while reproducing their anatomical, optical, and biomechanical properties.

Recreating the complexity of an intact tooth remains a demanding challenge for both clinicians and technicians. Over the past years, this challenge has been addressed through a combination of **clinical research, laboratory investigations, and long-term clinical follow-ups**, forming the scientific foundation of the protocols presented in this course.

Regarding bonded indirect restorations, preparation and cementation protocols are now well standardized. The contemporary literature demonstrates **survival and success rates comparable to, or exceeding, those of conventional cemented restorations**, with documented follow-ups extending beyond 15 years. The clinical concepts and techniques presented in this course are **directly derived from multiple peer-reviewed publications and clinical studies authored and co-authored by David Gerdolle**, translating scientific evidence into daily clinical practice.

The aim of this two-day course is to focus on posterior teeth and complex restorative situations, including partial restorations and full-mouth rehabilitations, in cases of decay, fracture, or tooth wear. Particular emphasis is placed on the **fundamental biological and biomechanical principles** governing preparation design, tissue preservation, and adhesive cementation.

Special attention is devoted to:

- Isolation strategies,
- The use of magnification,
- Management of deep margins and dentin substrates,
- Adhesive bonding to different restorative materials,
- The integration of esthetics with occlusal and functional considerations.

Clinical situations are further explored through **microscopic and SEM-based observations**, allowing participants to better understand the phenomena occurring beyond macroscopic clinical perception.



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Learning Objectives

Participants will acquire clinically applicable knowledge and protocols based on published scientific work, including:

- Advanced isolation techniques for indirect restorations and adhesive cementation
- Bio-Emulation principles applied to biomechanics, crack management, and tooth preparation
- Immediate Dentin Sealing (IDS) and Deep Margin Elevation (DME): indications, limits, and protocols
- Impression techniques, both conventional and digital, validated through clinical studies
- Temporization strategies consistent with adhesive workflows
- Shade selection and optical integration
- Day-to-day, evidence-based adhesive cementation protocols (no-finishing concept, multi-luting concept)

Inlays and Onlays

Theory and Live Patient Program

Day 1

09:00–11:00 | Theoretical Session

Fundamentals of Posterior Tooth Preparation

- Biologically and biomechanically driven preparation concepts
- Preparation design according to Bio-Emulation principles
- Immediate Dentin Sealing: scientific rationale and clinical protocol
- Tooth build-up strategies
- Margin elevation: indications, limitations, and decision-making criteria

(All concepts are presented as they have been developed and validated in previously published clinical and experimental studies.)



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11:30–13:30 | Theoretical Session

Materials and Protocols for Posterior Bonded Restorations

- Selection of restorative materials based on biomechanical evidence
 - Conventional versus digital impression techniques: clinical indications
 - Temporization strategies
 - Interactive discussion and Q&A
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14 :30-15 :30 | Isolation Live Demo on Phantom Head

Isolation Strategy on Damaged and Prepared Teeth

- Solving inversion and clamp
 - Ligatures hacks
 - Deep magins
 - Nasty cavities
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16 :00–18:00 | Onlay Preparation Live Demo on Phantom Head

Adhesive Posterior Tooth Preparation

- Etiology analysis through occlusal and functional assessment
- Advanced isolation techniques to prevent tooth migration
- Immediate dentin sealing and margin elevation using direct composite
- Finishing and polishing protocols
- Digital impression under rubber dam
- Temporization consistent with adhesive principles



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Day 2

09:00–11:00 / coffee break / 11:30–13:30 | Theoretical Session

Dealing with Highly Damaged Teeth

- Cracked tooth management and non-vital tooth considerations
 - Substrate-specific bonding considerations
 - When should we go for crowns?
 - What about no-post & vertical finishing lines?
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15:00–18:00 | Onlay Luting Live Demo on Phantom Head

Adhesive Cementation of two adjacent Onlays

- Isolation for adhesive cementation
- Cementation of a composite onlay using pre-heated, viscous, light-cured luting composite
- Finishing and polishing
- Introduction to the “no-finishing concept” and the “multi-luting concept”
- Final discussion and Q&A