

The Garrison Gazette

INSIGHTS,
INNOVATIONS &
YOUR MONTHLY
DENTAL DIGEST

Beyond the Light: A Game-Changer in Dental Restoration Technology

Imagine sitting in a dental chair, hoping your restoration will last. What if the success of your dental procedure hinges on something as seemingly simple as a curing light? Dental professionals are increasingly recognizing a critical yet often overlooked aspect of dental care: the crucial role of light curing in long-term restoration success.

The Silent Problem in Dental Procedures

Dr. Gordon Christensen, a leading clinical educator, boldly states that "adequate light curing" is one of the most neglected areas in restorative dentistry. Most dentists are unaware that over half of dental procedures rely on precise light curing—and that improper curing can lead to significant long-term issues. Consider these startling statistics. Annual restoration failure rates range from 3.6% to 11.4%. More than 50% of dental restorations are replacements. Common failure causes include composite fracture and secondary caries. These aren't just numbers—they represent patient discomfort, additional dental visits, and unexpected expenses.

Inadequate light curing doesn't just affect the immediate restoration—it impacts the entire patient experience. Emergency return visits create stress for both patients and practice staff. Unexpected complications lead to additional chair time and revenue loss. Patient trust can be eroded by repeated interventions.

What makes a restoration vulnerable? The answer lies in the light curing process. Under-cured composites are significantly more susceptible to fractures under lower forces, weaker bonding, increased risk of microleakage, higher potential for secondary caries, and post-operative sensitivity.

Technique Matters: It's More Than Just Turning on a Light

Dr. Christensen has always emphasized that dental procedures are fundamentally about patient care, not just technical precision.

Inadequate light curing creates ripple effects that extend far beyond the immediate restorations. Successful light curing requires more than simply activating the curing light. The process demands careful attention to multiple technical factors. As the distance between the curing light and the restoration increases, light intensity dramatically decreases. Every millimeter of additional distance can reduce intensity by approximately 10%. Maintaining consistent, close proximity during the curing process is essential. But is that realistic in today's busy dental operatory?

Proper Maintenance: A startling study revealed that 74% of curing lights have some degree of tip damage or debris. Only one in four curing units produce output within manufacturer specifications. Regular testing and maintenance are crucial for consistent performance. Recommended maintenance practices include regularly inspecting curing light tips for damage, performing routine output testing, replacing or servicing equipment showing signs of degradation, using proper infection control barriers, and understanding manufacturer specifications and testing requirements.

The Bottom Line

As Dr. Gordon Christensen continues to teach and inspire dental professionals worldwide, his message remains clear: light curing is far more than a simple procedural step. It is a critical process that determines the longevity, strength, and ultimate success of dental restorations. By understanding the nuances of light curing, investing in quality equipment, and maintaining rigorous techniques, dental professionals can significantly improve patient outcomes and practice efficiency. By addressing critical issues and reducing potential complications, smart technology can significantly improve clinical outcomes.

Innovation isn't just about new technology – it's about solving real-world challenges and improving patient care.

Download our comprehensive guide on light curing here:

<https://www.garrisondental.com/confidence-every-cure-looptm>



Common Band Mistakes That Can Compromise Your Class II Restorations

Matrix band placement is crucial for achieving predictable Class II composite restorations with proper contacts and contours. Here are key mistakes to avoid based on clinical evidence:

1. Improper Band Height Selection

- Using bands that are too tall or short for the cavity preparation
- Not accounting for subgingival margins when selecting band height
- Failing to match anatomical tooth height

2. Insufficient Band Burnishing

- Not pre-contouring the matrix band to match tooth anatomy
- Leaving gaps between the band and tooth structure that can lead to overhangs

3. Inadequate Ring Placement

- Positioning the ring too coronally or apically
- Not seating the ring tines properly at the gingival margin
- Using worn rings that have lost their spring force

4. Poor Wedge Management

- Inserting wedges after ring placement instead of before
- Using wedges that are too small to achieve proper separation when using a Tofflemire band
- Not placing wedges from the most accessible direction

5. Matrix Band Distortion

- Over-tightening the Tofflemire band, causing deformation
- Not checking for band buckling before placement
- Using damaged or previously used bands

6. Inadequate Separation

- Not achieving sufficient tooth separation before restoration
- Failing to use separation rings in conjunction with wedges
- Overlooking the need for pre-separation in tight contacts

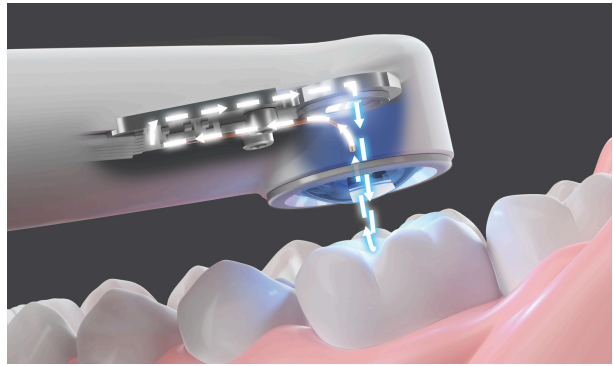
Clinical Recommendations

- Carefully assess cavity preparation dimensions
- Use appropriate sectional matrix systems
- Ensure proper band adaptation before placement
- Verify contact tightness before curing
- Consider using contact matrices with built-in anatomical contours

References:

- Garrison Dental Solutions Clinical Guidelines
- Journal of Operative Dentistry
- American Journal of Dentistry





The Importance of Predictable Outcomes, Quality Materials, and Emerging Technologies in a Rapidly Changing Dental Landscape

With dental practice ownership turnover accelerating and dentists facing mounting pressures from staffing and insurance challenges, DSOs are uniquely positioned to implement innovative solutions that enhance operational efficiency. For example, an 18-office DSO performing 10,800 Class II restorations annually, a mere 4-minute reduction in procedure time could recover 720 chair hours and save \$432,000 in operational costs. What could you do with 720 hours of chair time back?

The Quad matrix ring system emerges as a transformative solution for standardizing Class II restorations. Dr. Matthew Burton, DDS in IL reported a remarkable 40% reduction in procedural time after working through his initial learning curve. Distinguished by its innovative design, the Quad System integrates asymmetrical soft-tip rings and split wedges into a unified system, particularly excelling in complex and back-to-back restorations. When paired with AI technology's diagnostic capabilities, this standardized approach can boost workflow efficiency while maintaining consistent, high-quality patient care. AI integration enhances early detection and validation of conditions from routine cavities to serious periodontal disease, while preserving dentists' ultimate authority over diagnoses and treatment decisions. The Quad System, designed for practitioners proficient with sectional matrix systems, represents a significant advancement in achieving predictable outcomes and optimizing operational performance.

Discover, Learn, Apply.

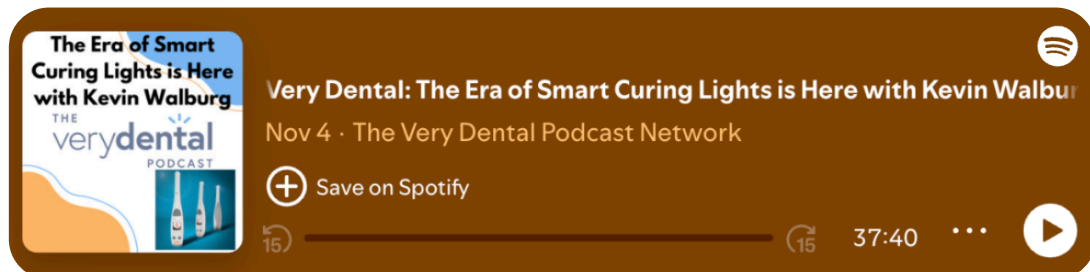
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<https://www.garrisondental.com/quad-matrix-systemtm>

Learn more about Loop Curing Light:

<https://www.garrisondental.com/confidence-every-cure-looptm>

Listen to the Loop Curing Light Podcast:





Tips & Tricks: Tutorial Links

Garrison CE calendar of events
https://www.garrisondental.com/learning_

Meet our Special Markets DSO Team



Bonnie Wilson
bwilson@garrisondental.com
781-913-1356



Peter Wilkinson
pwilkinson@garrisondental.com
208-890-5042

Garrison	888.437.0032
www.garrisondental.com	150 Dewitt Ln, Spring Lake, MI 49456