SOFTWARELÖSUNGEN AUS EINER HAND

■ In einer Zeit, in der digitale Technologien die Zahnmedizin revolutionieren, stellt Dampsoft innovative Softwarelösungen vor, die gezielt auf die spezifischen Anforderungen von Zahnarztpraxen zugeschnitten sind. Auf der IDS können Besucher erleben, wie modernes, digitales Praxismanagement dabei hilft, sich auf das Wesentliche zu konzentrieren: die Patienten.

In Zahnarztpraxen laufen zahlreiche Prozesse parallel ab: Termine müssen koordiniert, Patientendaten verwaltet und Abrechnungen fristgerecht übermittelt werden. Eine durchdachte digitale Ausstattung ist daher unerlässlich. Sie gewährleistet einen ressourcenschonenden Workflow und schafft Raum, um mehr Zeit den Patienten zu widmen. Durch den Einsatz innovativer Softwarelösungen kann der Praxisalltag spürbar effizienter gestaltet und der Verwaltungsaufwand minimiert werden.

Die Praxisverwaltungssoftware bildet das Herzstück der digitalen Ausstattung. Hier laufen sämtliche Prozesse zusammen. Mit den Lösungen von Dampsoft sorgen Zahnärzte für einen reibungslosen Ablauf, der das Team entlastet. Von der Einzelpraxis bis zum MVZ – Dampsoft hat die optimale Lösung, denn die Software und Services können individuell an die Größe und Bedürfnisse jeder Praxis angepasst werden.

Dampsoft präsentiert auf der IDS die neuesten Innovationen für das digitale Praxismanagement der Zukunft:

- DS4 – eine cloudfähige, webbasierte Praxisverwaltungssoftware. Dank intelligenter Funktionen und Automatisierungen wird der Arbeitsalltag erheblich erleichtert.
- DS-Win – die marktführende Software für die Praxisverwaltung, die sich flexibel an unterschiedliche Anforderungen und Lebensphasen anpasst. Das modulare Baukastensystem ermöglicht individuelle Lösungen für jede Situation.
- Athena – eine smarte Assistenz für digitale Anamnese, Beratung und Patientenaufklärung. Durch die Digitalisierung dieser Aufgaben werden Zeit und Ressourcen gespart sowie das Praxisteam entlastet.
- e-connect – der TI-Konnektor in der Cloud ist der Schlüssel zu einer sicheren, digitalen Vernetzung im Gesundheitswesen und ein unverzichtbares Element der zahnmedizinischen Versorgung der Zukunft.

Gesundheit und Effizienz gehen Hand in Hand. Die Softwarelösungen von Dampsoft unterstützen Praxen nicht nur, sondern optimieren diese auch nachhaltig.

Exklusive Messeangebote und Gewinnspiel

Die Messebesucher der IDS erhalten eine gute Gelegenheit, die Experten von Dampsoft persönlich zu treffen, um Fragen zu stellen und maßgeschneiderte Lösungen zu den besten Konditionen des Jahres zu finden. Zudem wird ein Gewinnspiel angeboten, bei dem Sofortgewinne wie iPads oder weitere praktische Geschenke für die Praxis ausgelost werden. Als Hauptpreise winken eine PVS und die Athena-App. ◂◂

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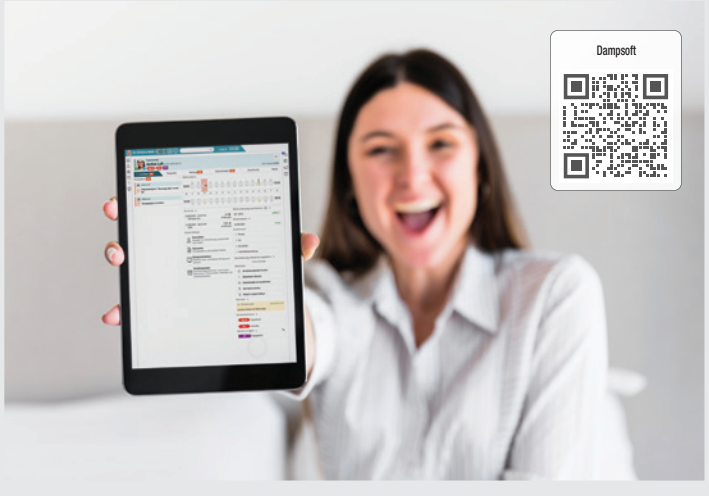


THE ROLE OF AI AND INTUITIVE MATERIALS IN RESTORATIVE DENTISTRY

■ *Artificial intelligence (AI) is poised to play a transformative role in restorative therapy at multiple levels—from caries diagnostics and material development to achieving optimal aesthetic outcomes. Some of these advancements are already tangible and being integrated into clinical practice.*

AI is becoming increasingly embedded in daily life, particularly excelling in image recognition and analysis. It can easily differentiate between everyday objects and human faces and conduct a broad range of evaluations. In dentistry, its capabilities are especially pronounced in digital radiography.

For instance, in histopathological imaging, AI can now distinguish cell nuclei and contours—often as accurately as, and significantly faster than, a trained pathologist. While the pathologist remains essential for intricate assessments beyond the machine's capabilities, AI's ability to classify skin lesion images is already surpassing that of dermatologists in speed. Additionally, it can segment organs in abdominal or thoracic CT scans, helping clinicians streamline their workflows.

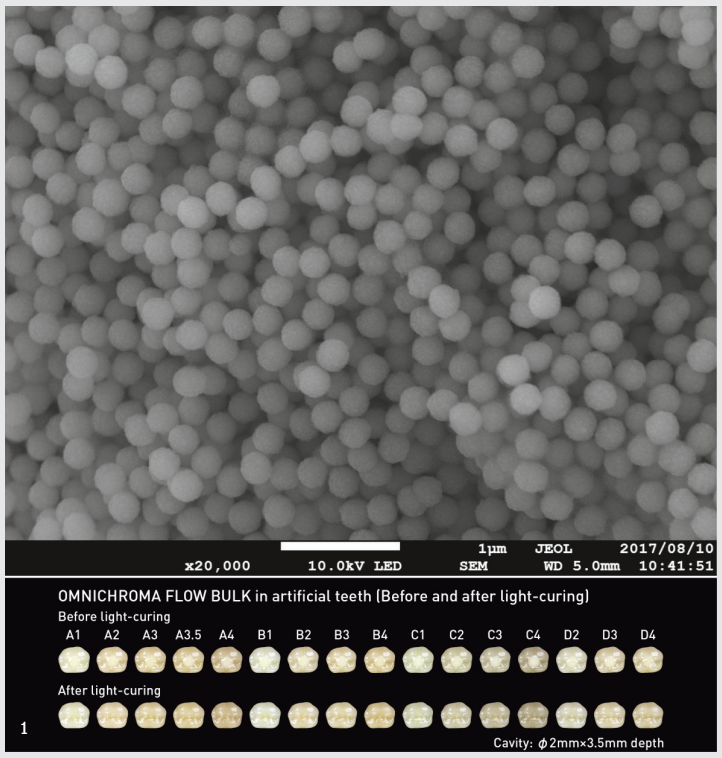
Diagnostics, prognosis and treatment decisions

A few years ago, a research group led by Prof. Falk Schwendicke, who at the time was the head of the Department of Oral Diagnostics, Digital Health and Health Services Research at Charité—Universitätsmedizin Berlin in Germany, began exploring AI's potential in dentistry, drawing inspiration from its applications in dermatology and ophthalmology. The team sought to answer a fundamental question: could AI recognise oral tissue structures, filling materials, prosthetic restorations and implants?

The result of this research was dentalXrai Pro, an AI-driven software designed to analyse dental radiographs with high precision. Developed as part of a research initiative launched in 2017 at Charité, the software enables AI to detect early caries on bitewing radiographs more accurately than human clinicians. It also performs preliminary classifications on panoramic radiographs, visualising them in a traditional dental diagram. By leveraging AI to enhance diagnostic accuracy and streamline patient communication, dentalXrai Pro represents a significant step forward in digital dentistry.

Today, Prof. Schwendicke serves as the director and chair of the Department of Conservative Dentistry and Periodontology at LMU Munich in Germany, where he continues to explore the intersection of AI, digital health, and dental research.

These advancements hint at AI's broader potential in dentistry—where analysed images could be integrated with other clinical data to identify patterns, enabling more precise diagnoses and predictive insights.



1

AI in material development

Beyond diagnostics, AI's ability to recognise patterns and structures is proving invaluable in materials science, particularly in the development of restorative materials such as composites and adhesives.

Traditionally, predicting the physical properties of theoretical materials requires solving complex mathematical equations or employing numerical methods to approximate solutions. However, conventional simulation techniques become impractically slow at higher levels of complexity.

AI and neural networks designed for materials simulation offer a compelling alternative. These technologies can calculate localised stresses in complex materials thousands of times faster than traditional computing methods. In the future, AI could accelerate the development of dental materials—including composites, adhesives, ceramics and alloys—enhancing their durability and performance.

AI and natural intuition

AI operates based on the data it is trained on. For radiographic analysis software to function effectively, it must first be fed with vast datasets of images. Once trained, it can identify structures in new radiographs with remarkable accuracy. In this way, AI mirrors natural intelligence.

Humans, however, possess an additional layer of intuitive reasoning. This intuition allows clinicians to reach conclusions seemingly without deliberate analysis—whether it's a gut feeling about a diagnosis, an instinctive recognition of subtle colour variations, or a sense of temperature changes indicating patient distress.

Intuitive materials: From structure to colour

Some advanced filling materials exhibit a similarly intuitive quality. These materials can automatically adapt to their surroundings, mimicking the shade of adjacent teeth without requiring extensive manual colour matching.

This 'direct implementation' occurs at the microstructural level (Fig. 1), where the material itself creates the desired colour effect. A prime example is Omnichroma and its bulk-fill variant, Omnichroma Flow BULK (Tokuyama Dental; Fig. 2), which utilise a single base shade to seamlessly match all colours from A1 to D4.

As AI continues to reshape dentistry, its integration with innovative materials will further enhance restorative techniques, improving both clinical efficiency and patient outcomes. ◂◂

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2

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