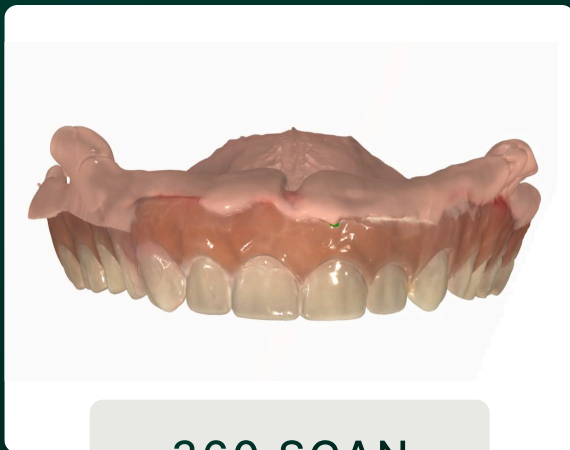


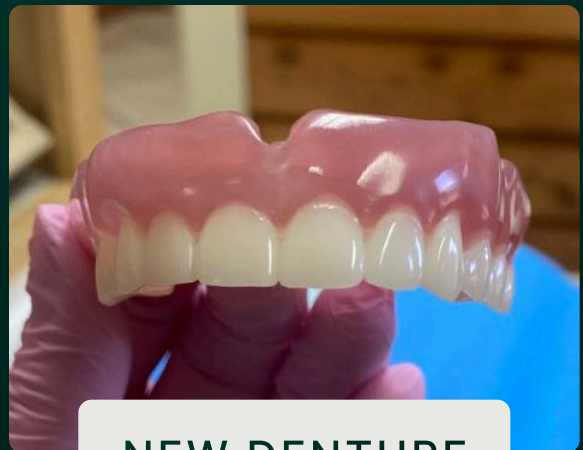
CASE STUDY

How 360° Scans Power Digital Dentures

Dr. Robert Lee



360 SCAN



NEW DENTURE

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The fabrication of dentures has traditionally been one of the most time-consuming processes in the dental practice. This workflow has been defined by unstable, unpredictable methods like messy impressions, bite blocks, wax setups and numerous resets, which translates to more appointments to arrive at the desired outcome, more costs on materials, and loss of that most valuable commodity of all—chair time.

What once required multiple impressions and appointments can now be streamlined into a far simpler process—allowing dentists to deliver a denture in as few as two visits in most cases. Whether reproducing an existing appliance, digitally fabricating a new denture from a reline, or delivering a new denture at the time of extraction, the workflow is faster, more efficient, and more predictable.

But digital denture workflows have faced notable skepticism from some clinicians. One of the earliest—and still most persistent—concerns

is the ability to capture an accurate intraoral scan of the edentulous arch. This barrier continues to slow adoption, as clinicians question whether digital methods can reliably replicate traditional results. The difficulty stems largely from the absence of well-defined anatomical landmarks along the arch, making consistent and precise data capture more complex than in dentate cases.

The 360-degree scan directly overcomes this concern by capturing the full contours and anatomy of the edentulous ridge using impression material. This impression is then scanned extraorally, effectively creating a “reverse model” that can be used as the foundation for a precise digital workflow. The result is a significant gain in clinical efficiency. For many patients with existing dentures—who comprise many of the cases in my practice—a simple extraoral scan is often all that’s needed. From there, the process moves quickly: scan, design, and at the next appointment, the patient receives their new denture.

CASE DESCRIPTION

This case reflects one of the most common denture scenarios we see: a patient coming in with an existing appliance that needs repair or adjustment. Instead of trying to extend the life of the current denture, a 360-degree scan makes it easy to move straight into a full replacement—often the better option for both the patient and the practice. With today’s digital workflows, that process can be completed in just two appointments, cutting down on visits and making the experience smoother for everyone involved.

PATIENT PRESENTATION

The patient, a 65-year-old female, first presented to our practice in 2019 for extraction of her remaining maxillary teeth due to severe decay, with plans for a full denture. An alveoplasty was performed to remove residual bone and establish the proper ridge contour and plane for a well-fitting, aesthetic prosthesis. She also received a removable partial denture in conjunction with the complete upper denture.

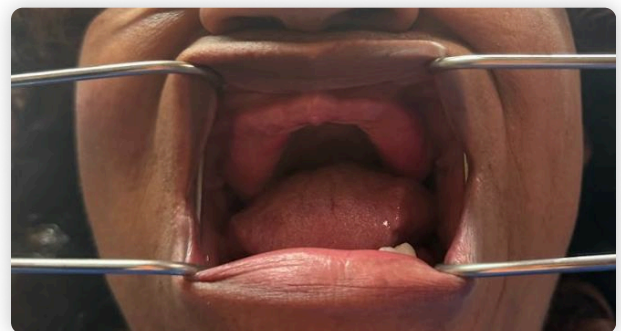
Over time, the patient's original denture suffered wear that led to fit and comfort issues, including localized sore spots, prompting the patient to return for adjustments. Rather than repairing the existing prosthesis, we recommended a full replacement—a low-cost, higher-quality solution. She was thrilled to learn she could receive a new denture in just two appointments.



The patient, who received her original denture from our practice six years prior, presented with a chief complaint that her denture had become loose-fitting and uncomfortable over time.



The fit issues were a result of gradual wear to the base of the patient's denture, which had begun to compromise the function of the appliance.



The patient's maxilla was edentulated during her initial visit to our practice in 2019, when severe caries required extraction of her remaining teeth. An alveoplasty was also performed to contour the ridge and establish proper function and aesthetics for the denture.



The original denture shown here was fabricated using a traditional analog process, and the patient was pleased to learn that, rather than undergoing repairs, it could be quickly and affordably replaced through a fully digital workflow—in just two appointments.



Note the wear in the gingival areas of the patient's existing prosthesis, which compromised retention and comfort—making replacement a far better option than adjustment or repair.



The intaglio surface of the denture showed substantial wear, buildup, and biofilm—further supporting a new denture as the superior solution.

APPOINTMENT #1: EVALUATIONS AND SCANS

The digital denture workflow has transformed how we handle removable cases. It allows us to make any necessary modifications, place a wash impression, and capture the ideal design with an extraoral scan. Compared to traditional analog methods—often requiring multiple visits, extended chair time, wax resets, and shipping delays—this approach is far more efficient. As a result, we're able to treat more patients in less time, and both our team and patients strongly prefer the experience.

At the center of this process is the 360-degree scan, which captures all necessary adjustments to optimize function—including fit, VDO, bite, midline, lip support, and phonetics. In this case, we refined the borders and overall fit, then created a wash impression using tray adhesive and light-body PVS. The wash impression is essential to the accuracy of this process because it communicates the precise gingival architecture of the edentulous arch to the lab.

We performed the extraoral scan using the Dandy Vision intraoral scanner, following a slow, steady sweeping motion. The 360° scan protocol is completed in three phases, capturing the intaglio, cameo, and occlusal surfaces, along with the full denture border.

Once the scanning was complete, the case was submitted to the lab with a single click, and the patient was scheduled to return for delivery of her new appliance. She was able to continue wearing her existing denture while the new prosthesis was fabricated—another key advantage of the two-appointment digital workflow.



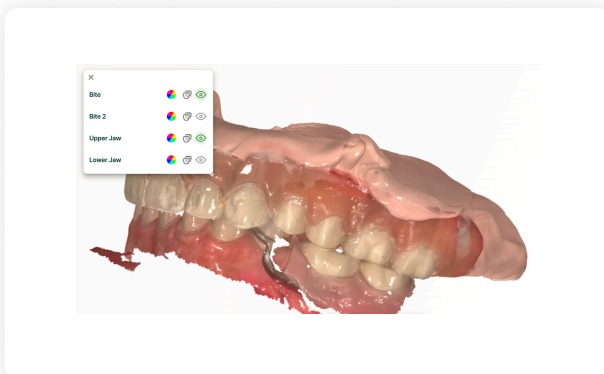
Adjustments were made to the patient's existing denture to establish proper fit, retention and function, and a wash impression was taken after placing tray adhesive and light body VPS material in the intaglio surface of the prosthesis.



After taking care to capture an accurate wash impression, the patient's denture was removed for a 360-degree extraoral scan, which served as the foundation for an accurate, well-fitting copy denture.



The 360-degree scan was captured using a smooth, controlled motion with the Dandy Vision scanner to ensure continuous data acquisition and avoid any gaps in the digital impression. By accurately transferring the information needed for a retentive, functional, and aesthetic prosthesis, this extraoral scan is a critical component of the two-appointment digital denture workflow.



The opposing arch and bite were also scanned to verify proper occlusion for the new denture. NOTE: For cases where the patient doesn't have an existing denture or teeth to establish a bite, an occlusal rim is provided by the lab to capture the jaw relationship, necessitating one additional appointment.

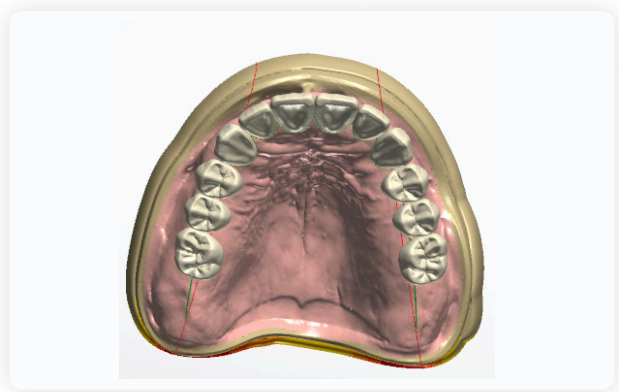
APPOINTMENT #2: DELIVERY OF THE FINAL DENTURE

Upon receiving the scans, the lab designed an updated prosthesis, and Dandy offers the option to review the denture in a 3D preview, request refinements, and finalize the design prior to fabrication. In this case, we elected to proceed directly to fabrication of the final restoration.

We selected the Signature Acrylic Denture, which combines the precision and efficiency of digital design with the familiar feel and aesthetics of traditional acrylic. This is achieved through an innovative process in which 3D-printed molds are produced for fabrication of the prosthesis, delivering the material characteristics of a conventional acrylic denture.

When the patient returned for delivery, her new denture fit beautifully. She immediately loved how it felt and was thrilled with both the aesthetics and comfort.

It's worth noting that in the rare event the final denture needs any adjustments, the new denture effectively serves as a try-in, and any modifications can be made without any additional costs for the refabricated denture when prescribing this service through Dandy's dental lab. Further, the finalized design is stored digitally for future use, making any potential replacements simple in the event of damage or loss—all backed by a 10-year warranty.



After receiving the digital case submission, the lab created the design for the new prosthesis based on the 360-degree extraoral scan and Rx instructions provided by the doctor.



The patient's new denture was a reproduction of the patient's existing denture but also incorporated necessary changes to the intaglio surface, borders, bite and other characteristics captured in the 360-degree scan.



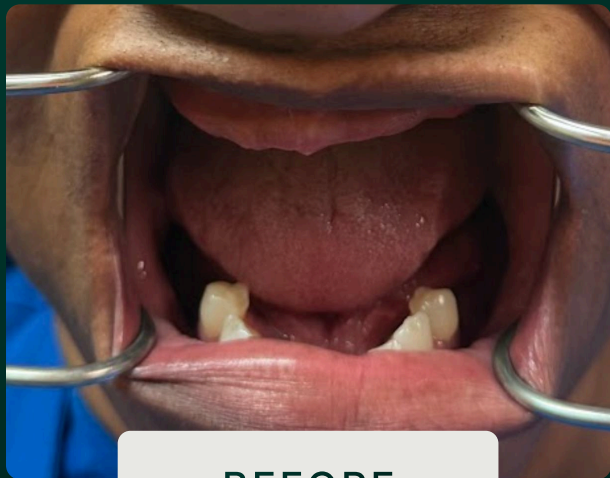
Explaining the efficiency of this two-appointment digital workflow is a key part of case presentation in our practice—especially given how dramatically it improves both the dentist and patient experience.



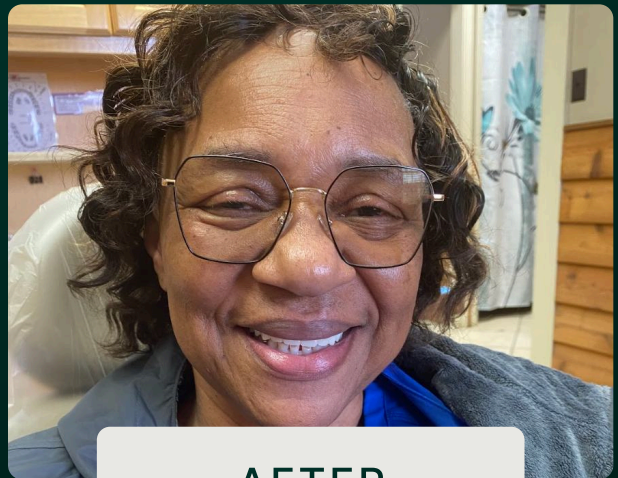
The patient's new prosthesis established a precise fit and excellent retention upon seating, completing a convenient 2-appointment process for replacing her previous denture.



The patient was extremely happy with her new denture, which restored the comfort and function that had significantly declined with her original appliance.



BEFORE



AFTER

DANDY'S TECHNOLOGY

Dandy's intraoral scanning technology has transformed how I treat edentulous patients. For copy, reline, or immediate dentures, most cases can be completed predictably in just two appointments, with my staff handling most of the scanning. The Chairside software provides detailed, interactive guidance for each scan and ensures accurate digital impressions before the case is submitted to the lab. This streamlined workflow saves our practice valuable time and consistently surprises patients with how quickly and easily they can receive a new denture.

CONCLUSION AND BEST PRACTICES

The 360-degree extraoral scan is a straightforward technique that dramatically improves efficiency compared to the analog processes that are quickly becoming a thing of the past. Dentures that once required messy, time-consuming relines, repairs, or reproductions can now be replaced quickly and affordably through a streamlined digital workflow built around a single scan—benefiting patients, dentists, and staff alike.

ABOUT THE AUTHOR

Dr. Robert E. Lee

Dr. Robert E. Lee is an experienced general practitioner with decades of clinical experience and a strong focus on efficient, patient-centered care. Dr. Lee received his DMD from the Medical College of Georgia at Georgia Regents University, has completed advanced training in implantology and is an active member of the Georgia Dental Association and the American Dental Association. He is particularly passionate about leveraging digital technology to improve accuracy, reduce chair time, and enhance the patient experience. Dr. Lee loves interacting with people, especially his senior patients, learning from their life experiences and applying that knowledge to his own life.

