

Implant care in medically compromised patients



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Compromised patients and dental implants: Where evidence, integrity and human-centered care meet

Clinical complexity is the new normal

As populations age and chronic diseases become more prevalent, dental professionals are more frequently treating patients with complex medical histories such as cardiovascular disease, diabetes, cancer, osteoporosis, dementia or combinations of each.

For these patients, oral rehabilitation is not elective; it directly affects nutrition, communication, social participation, and ultimately their overall health and quality of life. At the same time, this growing complexity places a significant cognitive and emotional burden on practitioners, who must make challenging clinical decisions under time pressure and increasing professional demands.

No "average" compromised patient

Medically compromised patients are highly heterogeneous. They differ in systemic conditions, disease control, medication profiles, bone biology, healing capacity and risk tolerance. Oversimplifying this diversity through generalized success claims or messaging does not reflect clinical reality and increases the risk of misdiagnosis. Integrity in clinical communication is therefore not an abstract ideal; it is necessary discipline and a practical safeguard against potential misinterpretation and unintended consequences.

What the evidence really shows

Decades of research demonstrate that implant therapy can be successful in many compromised patients when appropriate case selection, careful planning, and biologically respectful protocols are applied.

At the same time, the evidence is clear: success is never guaranteed. Recognizing limitations is not a weakness of science, but a prerequisite for responsible clinical decision making.

Reducing risk through biology and evidence

This places a clear responsibility on manufacturers and scientific partners. In complex patient populations, clinicians must be able to rely on solutions supported by transparent, long-term evidence and independent validation. Premium systems are defined not by claims of universality, but by robust data and openness about both strengths and limitations. Evidence also supports the importance of gentle, biologically respectful surgical protocols, minimizing trauma and preserving tissue vitality, particularly in patients with compromised healing capacity. Real-world evidence enhances controlled trials by reflecting everyday clinical practice and supporting decisions grounded in data rather than assumptions.



Implant therapy in compromised patients is possible, but never unconditional. Evidence informs decisions; clinical judgment protects patients.

In this issue: Translating evidence into daily practice

This edition of the Science Newsletter is dedicated to how evidence, judgment, and communication converge in the care of compromised patients:

An interview with Dr. Pedro Peña explores implant therapy in medically compromised patients from the perspective of private practice, addressing decision making under uncertainty, risk mitigation, and when restraint is the most responsible option (page 8)

A documented clinical case of a patient with a bleeding disorder illustrates how medical collaboration, planning, and surgical discipline translate evidence into safe outcomes (page 16).

A concise summary of recent studies reviews current evidence on implant therapy in compromised populations, emphasizing where data supports treatment, and where caution remains essential (page 20).

An infographic based on a real-world study of TiUltra surface implants visualizes outcomes across compromised subpopulations, demonstrating how large-scale, clinical data can inform everyday clinical decisions without oversimplification (page 14).

An interview with Dr. Julie Schlosser focuses on patient communication, highlighting how transparency, expectation management, and trust are as critical as surgical expertise when treating medically fragile individuals (page 24).

Evidence informs. Judgment decides

No dataset, however large, can replace professional judgment. Evidence informs treatment; it does not dictate it. Final responsibility always rests with the healthcare provider and should be guided by the patient's medical history, preferences, and overall well-being.

In some situations, the most responsible decision may result in refraining from implant therapy altogether. Supporting clinicians with rigorous science, honest communication, and realistic expectations, while acknowledging the realistic challenges of clinical practice is central to patient outcomes. Ultimately, responsible progress in implant dentistry requires integrity over certainty or preference.

Ethics, evidence, and responsibility

A commitment to ethics in implant dentistry is inseparable from how evidence is generated and communicated. At Nobel Biocare, this means investing in large and real-world studies, designed to reflect everyday clinical conditions rather than idealized scenarios. Such studies acknowledge biological variability, clinician judgment, and the realities of complex patient care, providing data that supports safe decision making rather than absolute claims.

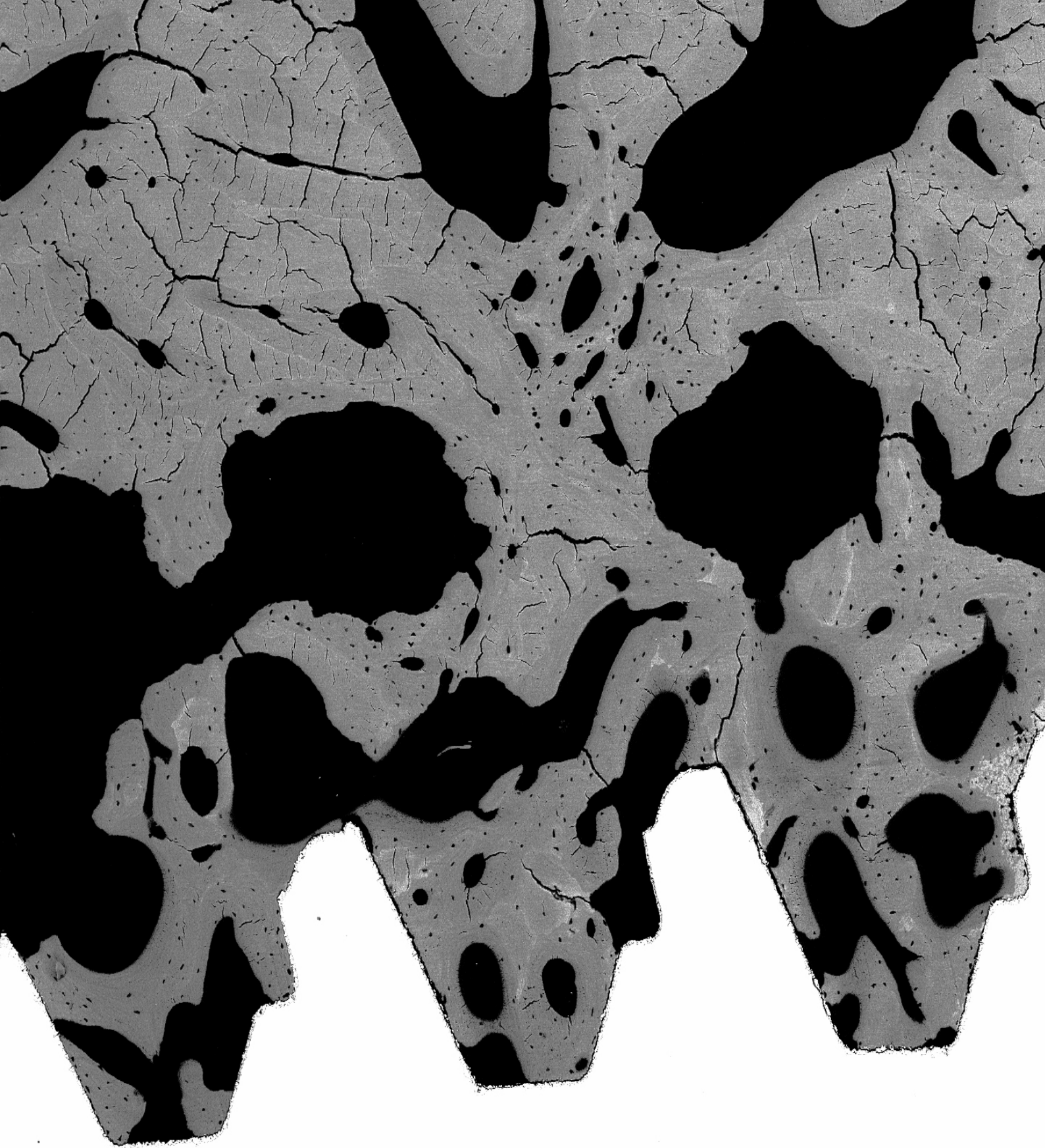
This approach stands in stark contrast to practices sometimes encountered in the field. I have seen clinicians approached by marketing brochures from other market leaders claiming exaggerated surgical outcomes supported by a single small study of fewer than twenty patients. Presenting such data as definitive is not only scientifically misleading; it places an unfair burden on clinicians, creates unrealistic expectations, and risks clinical decisions being driven by marketing rather than medicine.

In my view, this is where ethics must draw a clear line. Responsible innovation does not amplify the most favorable numbers, but it contextualizes them. It respects uncertainty, scale, and limitations, and recognizes that protecting patients ultimately begins with protecting clinicians from claims that oversimplify the complex biological realities of human beings.



Dr. Sam Shamardi

Medical Director Regenerative Solutions,
Nobel Biocare



Backscatter scanning electron image of the tissue around an anodized surface implant. The implant is in white, mineralized tissue is grey, and black indicates soft tissue.

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Dental implants in compromised patients: A private practice perspective



Dr. Pedro Peña
Spain

Dental implants are a reliable and well-documented treatment option. Long-term survival rates are high when patients are properly selected and when treatment is followed by adequate maintenance.

However, the reality of daily private practice is that we are no longer treating ideal patients.

Today, most implant candidates are older, polymedicated, systemically compromised, and often affected by chronic inflammation. This reality requires a different approach to indication, execution, and long-term responsibility.

What do I mean by compromised patient?

A compromised patient is any patient who differs from a healthy one.

A young individual with good bone volume, healthy soft tissues, no systemic disease, no medication, and no harmful habits is the exception, not the rule.

Once a patient has diabetes, cardiovascular disease, takes anticoagulants, smokes, or has a history of periodontitis, that patient is compromised. The degree of compromise varies, but it must always be considered during treatment planning.

Why the setting matters

In hospital or university environments, decisions are shared. Multidisciplinary teams are available, and institutional structures provide both clinical and legal support.

In private practice, this is fundamentally different. You work alone or with a small team. If complications occur, you should be able to manage them by yourself.

For this reason, implant indications in private practice must be stricter.

Informing the patient about risk does not remove the clinician's responsibility.

Patients I do not treat with implants

There are patients whom I do not treat with implants in my office. These include:

- Patients with recent myocardial infarction or cerebrovascular accident (within 6 months).
- Patients with active cancer undergoing chemotherapy or radiotherapy
- Patients with head and neck cancer treated with radiotherapy to the maxillofacial region
- Patients with severe, non-modifiable bleeding disorders
- Patients with significant immunosuppression (Active HIV; Low CD4; High dose Immunosuppression drugs; Pre-transplant)
- Patients with uncontrolled psychiatric disease affecting compliance
- Patients with active drug or alcohol abuse

These patients should be treated in specialized centers or not treated with implants at all.

Head and neck radiotherapy

Radiotherapy to the jaws changes everything and creates permanent damage.

Bone vascularity is reduced, healing capacity is impaired, and the risk of osteoradionecrosis is real and lifelong.¹

Current oncology guidelines identify radiation doses of 50 Gy or more to the jaw as a significant risk factor for osteoradionecrosis, especially when combined with dental surgery or smoking. For this reason, I do not place implants in irradiated jaws in private practice. This aligns with international recommendations and oncologic dental guidelines.

For structured decision making in post-oncologic patients, I refer to the Sapienza Head and Neck Unit decisional protocol, which provides a risk-based framework for implant rehabilitation after cancer treatment. This protocol is supported by a seven-year retrospective clinical study and is useful to understand when treatment may be possible and when it should be avoided.²

Patients who can be treated with control

Diabetes

Diabetes is extremely common and often undiagnosed. DM has a strong correlation with Implant inflammation and has a 50% higher risk of developing peri-implantitis. Furthermore, osseointegration rates drop to 80-90%. Many patients are pre-diabetic without knowing it. Blood glucose measured on one day is not sufficient. What matters is long-term metabolic control.³

Glycated hemoglobin, HbA1c, reflects glycemic control over the previous three months. Values below 7% (53 mmol/mol) are generally associated with acceptable healing and implant stability, while higher values are associated with increased inflammatory complications and impaired tissue response. This is supported by multiple clinical studies and reviews.

In my practice, diabetes is not contraindication, but it is a modifier. These patients require strict glycemic and hygiene control, conservative surgery, and closer maintenance.

Anticoagulated patients

Many dentists are afraid of anticoagulants. For simple implant surgery, anticoagulation is usually not a major problem. For extensive surgery with large flaps, grafts, sinus lifts, or zygomatic implants, bleeding risk increases significantly.

Dental guidelines generally agree that for minor oral surgery, anticoagulant and direct oral anticoagulants and antiplatelet therapy should not be discontinued (skip one dose is enough) and that bleeding can be controlled with local measures like suturing, local compression, tranexamic acid or collagen matrix.

For complex surgery, coordination with the physician is mandatory with special attention to dual and triple therapy treatments.

The key is to match surgical complexity to the patient's medical status.

Bisphosphonates (BPh) and antiresorptive drugs

Bisphosphonates suppress osteoclast activity. This reduces bone turnover and can impair healing after surgery. In the jaw, this can lead to medication related osteonecrosis.⁴ Today, the use of bisphosphonates to prevent pathological fractures in patients with osteoporosis is widespread.

Early in my career, I treated several patients on BPh, applying blood tests (CTX > 200pg/ml) and all recommended precautions (oral intake only for less than 3 years, drug holidays, non-smokers with good oral hygiene). Despite this, I encountered severe complications, including implant loss, non-healing bone and necrosis.

Because of this experience, I no longer place implants in patients taking BPh (oral or IV) in private practice. This is a personal clinical decision. The literature shows that risk is not zero and that consequences can be severe. In my view, this risk is unacceptable outside a hospital environment.



Periodontitis, inflammation, and early bone loss

Peri-implantitis is not an isolated disease. It is part of an inflammatory process driven by bacteria and modified by systemic conditions such as diabetes, smoking, and immune dysregulation.

One of the most important predictors of future peri-implantitis is early marginal bone loss.⁵ Prospective cohort studies show that bone loss greater than 0.5 mm during the first year significantly increases the risk of peri-implantitis and implant loss over time, especially in patients who smoke or have a history of periodontitis.

Early bone loss is a warning sign. It is not normal remodeling. When I see it, I change the patient's risk profile immediately and increase maintenance and monitoring.

Implant failure risk factors

CHEMOTHERAPY or OTHER MEDICAL THERAPY

- For bone metastases
- Adjuvant chemotherapy
- Osteometabolic drug therapy
- No chemotherapy or other drug therapy

RADIOTHERAPY (dose at the implant zone)

- Dose ≥ 66 gy
- 50 gy $\geq$ dose < 66 gy
- Dose < 50 gy
- No radiotherapy

BONE TISSUE

- No bone present/jaw plates present
- Partially present or unfavorable systematic/local conditions
- Present
- Reconstructed bone

SOFT TISSUE

- Low tongue mobility
- Deficiency/absence of keratinized gingiva in future implant insertion zone
- Sufficient keratinized gingiva in future implant insertion zone
- Normal tongue mobility

Table 1. Implant failure risk assessment table

LEGEND

- High risk of implant failure
- Moderate risk of implant failure
- Low risk of implant failure

Implant surface considerations in compromised patients

In compromised patients, early marginal bone loss should be expected rather than considered exceptional. When bone resorption occurs, the implant surface becomes exposed, and the biological behavior of that exposed surface becomes clinically relevant.

Peri-implant disease follows a sequence. Bone resorption leads to surface exposure. Surface exposure facilitates bacterial colonization. Bacterial colonization drives inflammation. In compromised patients, this process is often accelerated.

For this reason, implant surface characteristics matter.

The TiUltra™ surface combines a moderately rough apical surface to support osseointegration with a smoother, minimally rough coronal portion at the crestal level. When early bone loss exposes the coronal implant surface, this exposed area behaves closer to a smooth surface than to a highly rough one.

A smoother exposed surface is less prone to bacterial adhesion and easier to manage during maintenance or anti-infective treatment than a rough surface. When treatment is required, mechanical and chemical decontamination are generally more effective on smoother titanium surfaces.

The implant surface does not cause inflammation, but once it is exposed, it can influence disease progression. In compromised patients, where inflammation is often amplified by systemic or local factors, limiting bacterial colonization at the surface level becomes particularly relevant.

TiUltra™ does not eliminate biological risk and does not replace proper patient selection or maintenance. However, in situations where early bone loss occurs, a smoother coronal surface may offer a more manageable biological situation over time.



Smoking

Smoking is a behavioral factor that significantly increases failure rates independently and synergistically even when metabolic conditions are well managed. Combined with diabetes or poor hygiene, the risk increases dramatically. Smoking reduces vascularization, impairs immune response, and worsens inflammation.⁶ When combined with other conditions, it triples the overall implant failure risk.

For this reason, I require smoking cessation prior to implantation, and do not place implants in smokers. This decision is based more on clinical experience than on literature. Even when studies show mixed results, my outcomes are consistently better when smoking patients are excluded.

Elderly patients

Age itself is not a risk factor. Loss of dexterity, attention, and ability to maintain hygiene is. I have patients I treated 30 years ago. Today, they cannot clean their implants properly. In these cases, frequent recalls, sometimes every one or two months, are essential. Maintenance is part of the treatment, not an afterthought.

In some patients, removable implant supported prostheses are better than fixed ones. They are easier to clean and easier for caregivers to maintain. In several cases, due to cognitive decline or reduced manual dexterity in elderly patients, or following the loss of an implant, I have converted fixed prostheses into overdentures to facilitate hygiene and long-term maintenance.

Clinical responsibility

Every implant placed in a compromised patient carries an added risk. Some of these risks can be controlled. Others cannot. The role of the clinician is to recognize the difference and adapt the treatment plan accordingly. When in doubt, simpler treatments, fewer implants, and proper prosthesis design for easier maintenance usually lead to better long-term outcomes. Complications are rarely caused by one factor alone. They are the result of accumulated risks that were ignored early.

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3. Monje A, Catena A, Borgnakke WS. Association between diabetes mellitus/hyperglycaemia and peri-implant diseases: Systematic review and meta-analysis. *J Clin Periodontol.* 2017;44(6):636-648.
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Large-scale real-world evidence: TiUltra™ surface implants in 1000 consecutive patients

Clinical relevance

**High and predictable
implant survival**
in real-world practice

**Healthy peri-implant
soft tissue outcomes,**
even in challenging patients

Broad applicability
across indications and
compromised conditions

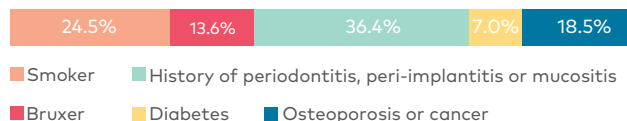


Presented by Prof. Daniele de Santis at EAO 2025

De Santis D, Roig Cayón M, Fabbri G, et al. Osseointegration and soft tissue response to gradually anodized surface implants: Real-world data from a 1000-patient study including clinically compromised subpopulations. Volume36, IssueS29 32nd Annual Scientific Meeting of the EAO Sep 18th – 20th 2025

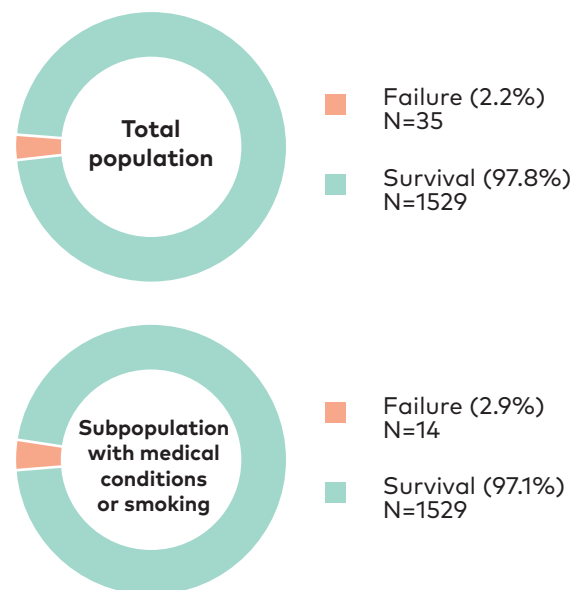
The results

- Of the 1564 implants placed in 1026 patients, 35 failures occurred during the 0-42.8 months of follow-up.
- Of the 1026 enrolled patients, 330 had at least one pre-existing condition.



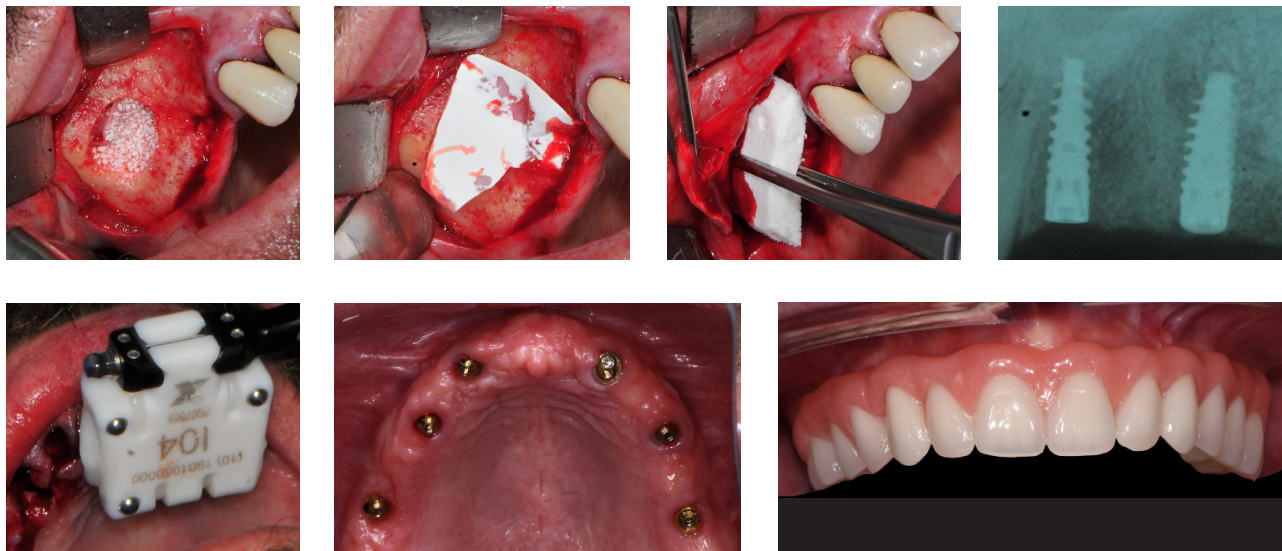
- Only a slight increase observed in failure rates of subpopulations, compared to the general population.
- Soft tissue health scores distribution between the general and the more challenging subpopulations were comparable, with no severe inflammation at the 1-year post-FPD at any implant site.

Implant failures from 0 to 42.8 months



Study design





Images courtesy of Prof. Daniele De Santis, Azienda Ospedaliera Universitaria Integrata Verona

A 53-year-old male smoker patient with alveolar ridge atrophy and hopeless dentition in the maxilla underwent GBR and soft tissue regeneration. Subsequently, five NobelActive® TiUltra™ implants were placed using static guide. The remaining dentition served to plan the placement of the sixth implant, which took place the same day using dynamic navigation. Final prosthesis delivery took place 20.4 months after implant placement.

Authors' conclusion

"TiUltra™ surface promotes successful early osseointegration and healthy peri-implant tissue response supporting its applicability in everyday practice. Comparable results between patients with comorbidities suggest predictability of clinical outcomes even under challenging conditions."

More to explore



Download
the EAO
poster



Video interview with
Prof. De Santis, Italy



nobelbiocare.com/surface

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**Nobel
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Immediate full-arch implant rehabilitation in a bleeding compromised patient



Dr. Avinash Bidra,
USA



Dr. Mikhail Babayan,
USA

Managing implant therapy in medically compromised patients with bleeding disorders presents a significant clinical challenge. This clinical case, reported by Drs. Bidra and Babayan, describes a full-arch implant rehabilitation performed in a patient with coagulopathy related to long term oral anticoagulant therapy.¹

The patient had a documented history of sublingual hematoma following dental extractions, indicating a high risk of bleeding complications. Implant surgery in such cases typically requires careful coordination with the patient's physician, conservative surgical planning, and meticulous intraoperative hemostatic control.

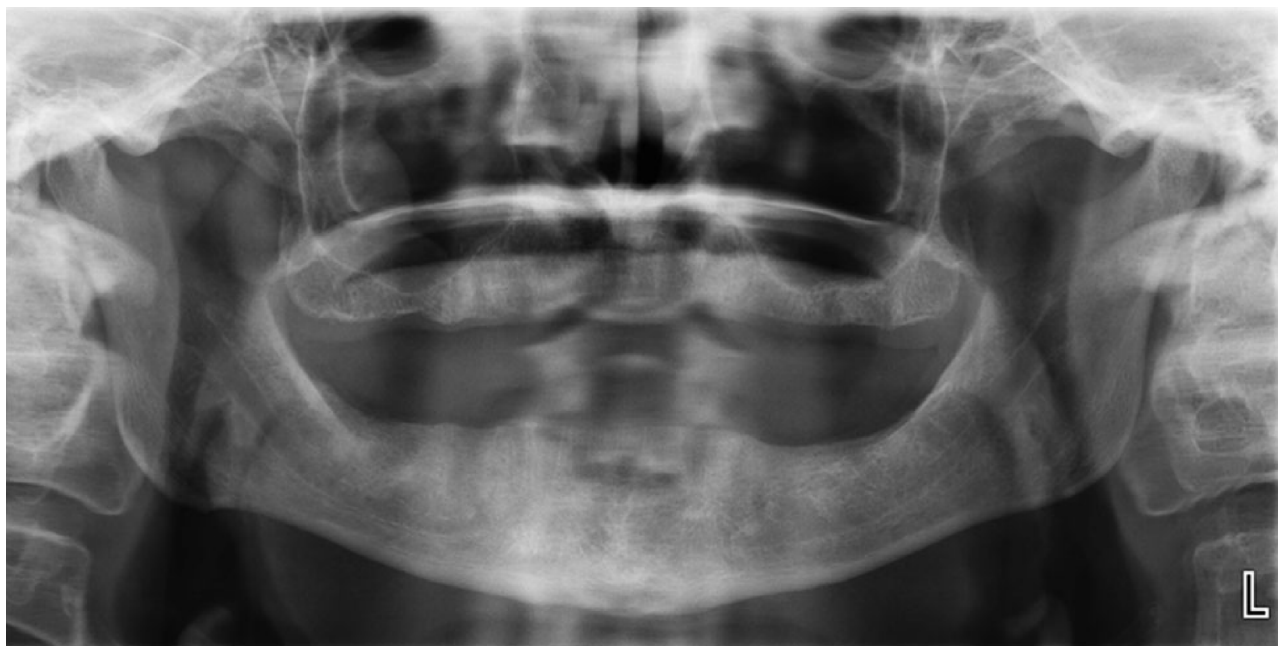
To address these challenges, treatment was performed using the Nobel Biocare N1™ implant system, selected for its abbreviated drilling protocol and the use of the OsseoShaper™. Unlike conventional osteotomy preparation involving multiple sequential drills, this protocol reduces the number of drilling steps and incorporates bone shaping to expand the osteotomy, aiming to limit surgical trauma and shorten procedure time.

The surgery was carried out in an outpatient setting. All implants achieved high primary stability, with insertion torques ranging from 45 to 70 Ncm, allowing for immediate loading with complete arch prostheses. Standard local hemostatic measures (including compression, suturing, suction, chilled saline irrigation, and vasoconstrictor containing local anesthesia) were applied, resulting in effective bleeding control throughout the procedure.

Postoperative healing was uneventful. All 10 implants remained in function with stable bone levels, despite the patient's compromised bleeding status. The authors highlight that the reduced surgical time and controlled intraoperative bleeding were key advantages in this medically complex case.

Clinical takeaway

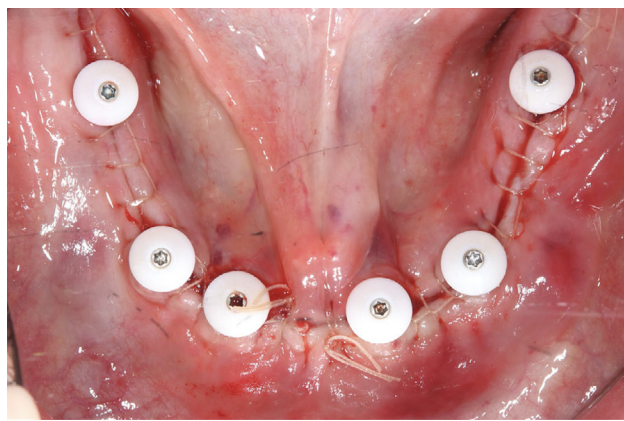
This case illustrates how a simplified site preparation protocol, combined with thorough diagnosis, medical consultation, and conservative surgical management, may support implant rehabilitation in patients at increased risk of bleeding complications. While based on a single clinical report, the approach demonstrates a potential strategy for minimizing surgical burden in anticoagulated patients.



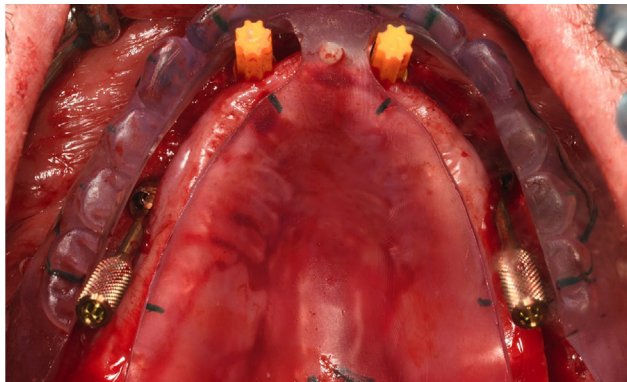
Pre-treatment panoramic radiograph at initial presentation indicating favorable bone volume



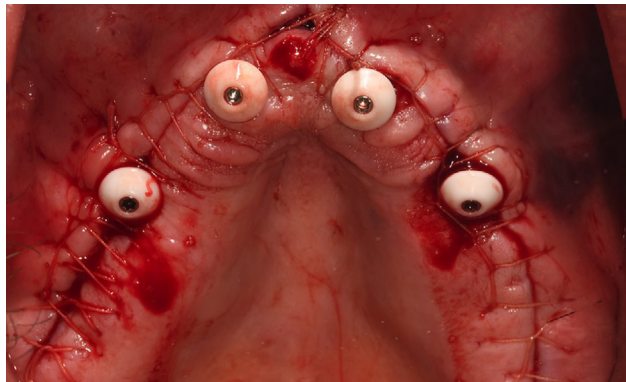
Placement of six Nobel Biocare N1™ implants with Multi-unit Abutments in the mandible. Notice the bleeding under control (left).



Placement of white healing caps over the Multi-unit Abutments and primary closure of the flaps with adequate hemostasis (right)



Placement of four Nobel Biocare N1™ implants using the All-on-4® treatment concept (left). Notice the bleeding under control.



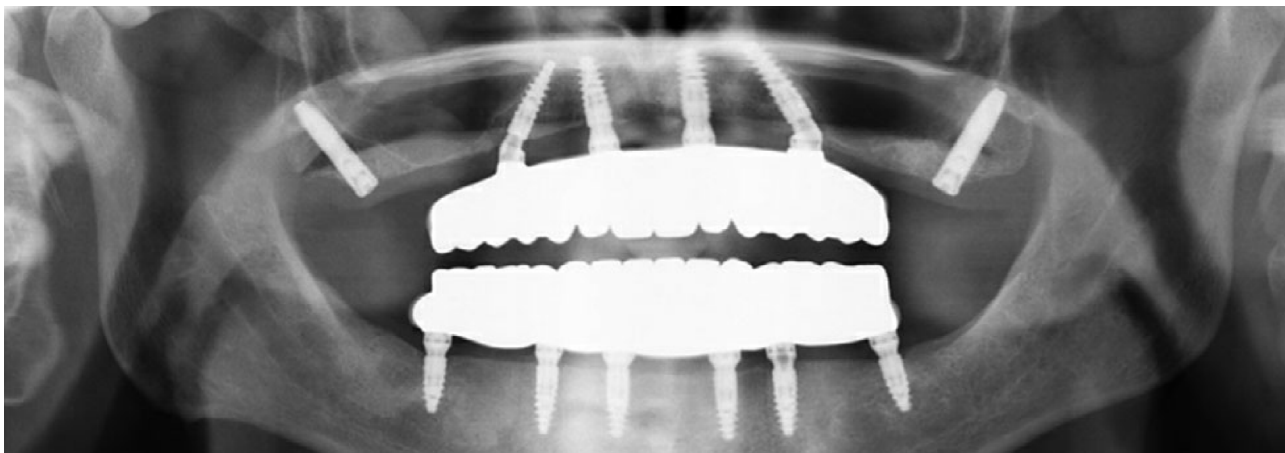
Placement of white healing caps over the Multi-unit Abutments and primary closure of the flaps with adequate hemostasis (right)



Insertion of definitive maxillary complete arch zirconia prosthesis (left)



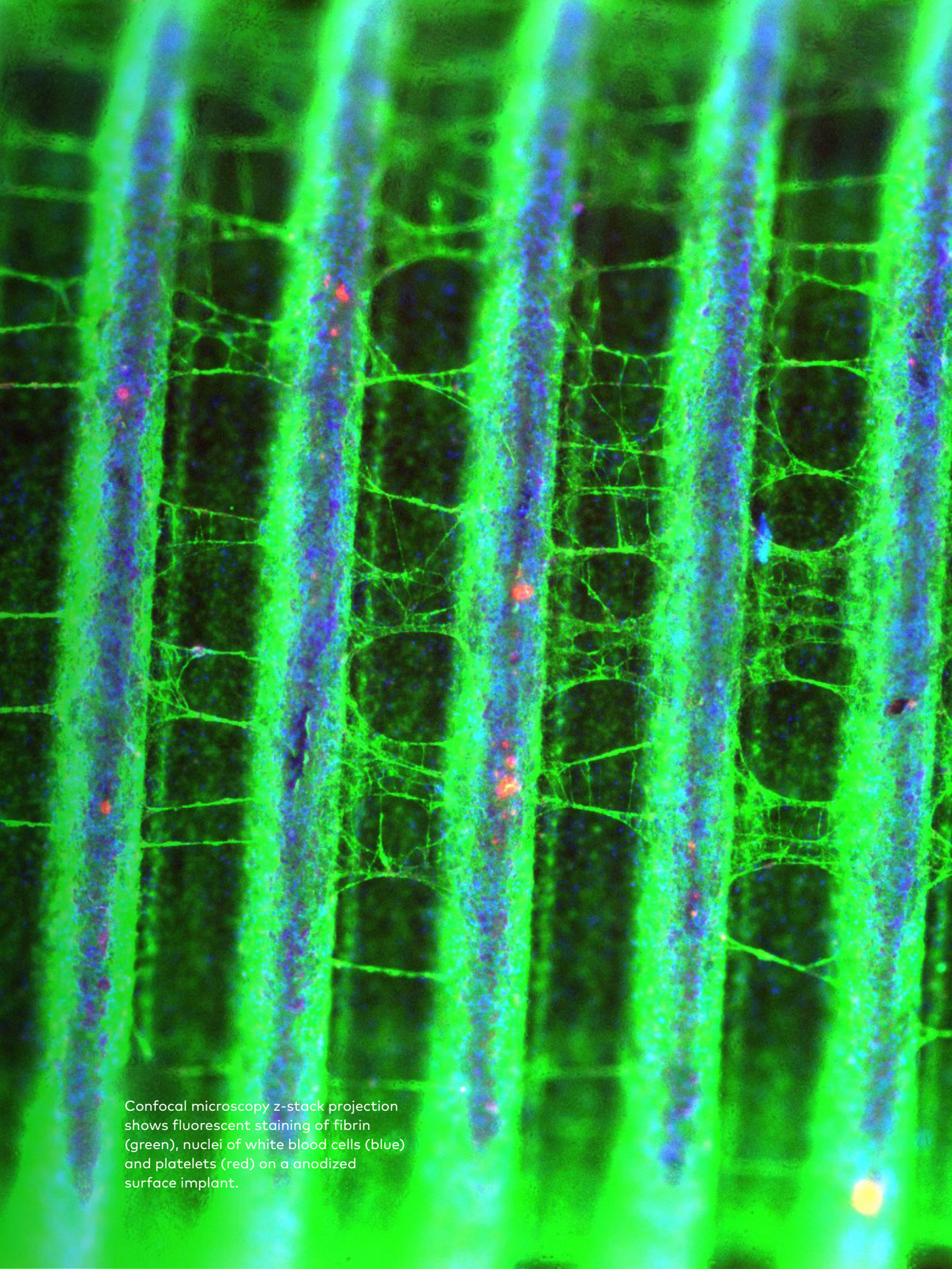
Insertion of definitive mandibular complete arch zirconia prosthesis (right)



Post-treatment panoramic radiograph showing maxillary and mandibular zirconia prosthesis supported by 10 Nobel Biocare N1™ implants. Two bilateral pterygoid implants placed as reserve implants in the maxilla.

Reference

1. Babayan M, Bidra AS. Management of bleeding during dental implant surgery using a novel implant with an abbreviated drilling protocol: A clinical report. J Prosthodont. 2024;33(3):206-211



Confocal microscopy z-stack projection shows fluorescent staining of fibrin (green), nuclei of white blood cells (blue) and platelets (red) on an anodized surface implant.

Implant therapy in compromised patients: A summary of current evidence



Dr. Marjan Gilani,
Switzerland

Implant therapy in medically compromised patients demands evidence-based risk assessment. This curated selection of recent systematic reviews and clinical studies highlights how cancer therapies, metabolic disease, medication use, periodontal history, and aging influence implant survival and peri-implant health, supporting more predictable treatment planning in complex cases.

1. Fan S, Diaz L, Sáenz-Ravello G, et al.
Comprehensive update on implants in patients with head and neck cancer (2021-2024): Systematic review and meta-analysis of the impact of radiotherapy and chemotherapy on implant survival.

Clin Oral Implants Res. 2025 Sep;36(9):1035-1052.

This systematic review and meta-analysis provides an updated evaluation of dental implant outcomes in patients with head and neck cancer treated with radiotherapy and/or chemotherapy, incorporating evidence published between 2021 and 2024. Data from nine retrospective clinical studies including 3,357 implants were analyzed. Implant survival was significantly lower in irradiated compared with non-irradiated patients (85.6% vs. 90.0%), with radiotherapy and radiochemotherapy identified as independent risk factors for implant failure. Implants placed in grafted bone showed a markedly higher failure risk than those in native bone, and higher radiation doses were associated with increased peri-implant bone loss. These findings underscore the need for careful treatment planning in this population.

2. Fiorillo L, Cicciù M, Tözüm TF, et al.

Impact of bisphosphonate drugs on dental implant healing and peri-implant hard and soft tissues: a systematic review.

BMC Oral Health. 2022 17;22(1):291.

This systematic review evaluated the impact of bisphosphonate therapy on dental implant healing and peri-implant hard and soft tissues. Across nine clinical studies, bisphosphonate use was not an absolute contraindication to implant therapy when appropriate patient selection, pharmacological prophylaxis, and minimally invasive protocols were applied. Implant survival and marginal bone loss were generally comparable to controls. Higher complication risk was associated with specific drugs (e.g., risedronate) and comorbidities such as smoking or diabetes. Overall, implant therapy was considered feasible with careful risk management.

3. Ayele S, Sharo N, Chrcanovic BR.

Marginal bone loss around dental implants: comparison between diabetic and non-diabetic patients-a retrospective clinical study.

Clin Oral Investig. 2023;27(6):2833-41

This retrospective clinical study compared marginal bone loss (MBL) around dental implants in diabetic and non-diabetic patients over long-term follow-up. Diabetic patients exhibited significantly greater MBL than non-diabetics, with the highest bone loss observed in type 1 diabetes, followed by type 2 diabetes. Diabetes, implant location in the maxilla, smoking, and bruxism were all independent predictors of increased MBL over time. Clinical relevance: Awareness of the possible influence of diabetes on the long-term outcomes of dental implant treatment is important, in order to be able to minimize the possibility of a high MBL with time, which can eventually lead to the loss of the implant.

4. Cosola S, Butera A, Hailu Zergaw A, et al.

Glycemic Control and Implant Stability in Patients with Type II Diabetes: Narrative Review.

Healthcare (Basel). 2025 20;13(5):449.

This narrative review evaluates the effect of glycemic control on dental implant stability and long-term outcomes in patients with type 2 diabetes mellitus (T2DM). Eighteen relevant publications were analyzed, focusing on osseointegration, implant survival, marginal bone loss, and peri-implant diseases. The poorly controlled hyperglycemia negatively affects bone metabolism, delays osseointegration, increases marginal bone loss, and raises the risk of peri-implantitis and implant failure. In contrast, patients with well-controlled T2DM show implant survival and clinical outcomes comparable to non-diabetic individuals. Overall, effective glycemic control emerges as a critical determinant for predictable implant success in diabetic patients.

5. Serroni M, Borgnakke WS, Romano L, et al.

History of periodontitis as a risk factor for implant failure and incidence of peri-implantitis: A systematic review, meta-analysis, and trial sequential analysis of prospective cohort studies.

Clin Implant Dent Relat Res. 2024 Jun;26(3):482-508.

This systematic review and meta-analysis evaluated whether a history of periodontitis represents a risk factor for implant failure and peri-implant disease based exclusively on prospective cohort studies. Twelve cohorts including 1,464 patients and 4,425 implants with follow-up of up to 20 years were analyzed. Patients with a history of periodontitis showed a significantly higher risk of implant failure across short- and long-term follow-up (up to 10 years), as well as a markedly increased incidence of peri-implantitis and greater marginal bone loss. Trial sequential analysis supported the robustness of the association for implant failure. These findings indicate that a history of periodontitis is a relevant risk factor for compromised implant outcomes.

6. Annunziata M, Cecoro G, Guida A, et al.

Effectiveness of implant therapy in patients with and without a history of periodontitis: A systematic review with meta-analysis of prospective cohort studies.

J Periodontol Res. 2025 Jun;60(6):524-543.

This systematic review and meta-analysis evaluated the effectiveness of dental implant therapy in patients with and without a history of periodontitis using evidence from prospective cohort studies. Fourteen studies encompassing 1,612 patients and 4,389 implants with at least 36 months of follow-up were included. Compared with periodontally healthy patients, individuals with a history of periodontitis showed a significantly higher risk of implant loss, greater peri-implant marginal bone loss, and an increased incidence of peri-implantitis, while rates of peri-implant mucositis were comparable. The risk of implant loss was particularly pronounced at long-term follow-up and in patients with severe or rapidly progressive periodontitis.



7. Abou-Ayash S, Bjelopavlovic M, Molinero-Mourelle P, et al.

Implant survival in patient populations with a mean age of 65-75 years compared to older cohorts: A systematic review and meta-analysis.

Clin Oral Implants Res. 2025 Sep;36(9):1053-1074.

This 2025 systematic review and meta analysis evaluated dental implant survival in older adults, comparing patients aged 65–75 years with those over 75 years. Twenty seven studies including 3,892 implants were analyzed. Five year implant survival was high in both groups and significantly higher in patients >75 years (96.8%) than in those aged 65–75 years (92.1%). Implant success rates and peri-implant bone level changes were comparable between age groups, despite higher plaque and bleeding on probing in the oldest patients. Splinted implants in overdentures showed significantly lower failure rates than single attachment designs. Overall, advanced age alone was not a risk factor for implant failure.

8. Müller F, Srinivasan M, Krause KH, et al.

Periodontitis and peri-implantitis in elderly people experiencing institutional and hospital confinement.

Periodontol 2000. 2022;90(1):138-145.

This narrative review examines periodontitis and peri-implant diseases in elderly individuals, particularly those experiencing institutional or hospital confinement. Aging related factors such as reduced manual dexterity, cognitive impairment, immunosenescence, multimorbidity, and polypharmacy increase the risk of biofilm accumulation, periodontal inflammation, and peri-implant mucositis. Although implant survival in older adults is generally comparable to younger cohorts, peri-implant tissues show stronger inflammatory responses in the absence of adequate oral hygiene. Maintenance and professional oral care are critical but often difficult to implement in dependent elderly populations. Periodontal and peri-implant diseases in old age represent a growing public health concern closely linked to general health and quality of life.



"Medically compromised patients push us to think beyond technique."



Dr. Julie Schlosser,
Denmark

Dr. Schlosser, how do you navigate discussions with medically compromised patients when their expectations exceed biological or systemic limits?

In my experience, these conversations must begin with respect, not correction.

Most patients come to us with hope, sometimes with a dream of "getting their smile back" or regaining function and confidence. Before discussing limitations, I believe it is essential to acknowledge that hope. If we dismiss it too quickly, we risk losing trust before the real conversation begins.

So I start by listening. I try to understand what the patient truly wants: function, esthetics, confidence, or relief from a long history of dental problems. Often, expectations run deeper than the technical outcome itself. Only then do I move to biology. Biology, unlike trends or preferences, does not negotiate. Systemic conditions, healing capacity, medication, or local tissue limitations set real boundaries. My responsibility is not to promise what is theoretically possible, but to recommend what is biologically sustainable.

I often explain it this way: "We are not only planning for the next six months, but for the next ten or fifteen years." That perspective usually reframes the discussion, from an ideal outcome to a stable, safe, long-term solution. I avoid saying "you cannot have this," and instead focus on "this is what your biology allows us to do safely."

When patients understand that recommendations are grounded in biology, risk management, and long-term prognosis, most appreciate the honesty. Ultimately, our role is to align expectations with biology, not bend biology to expectations.

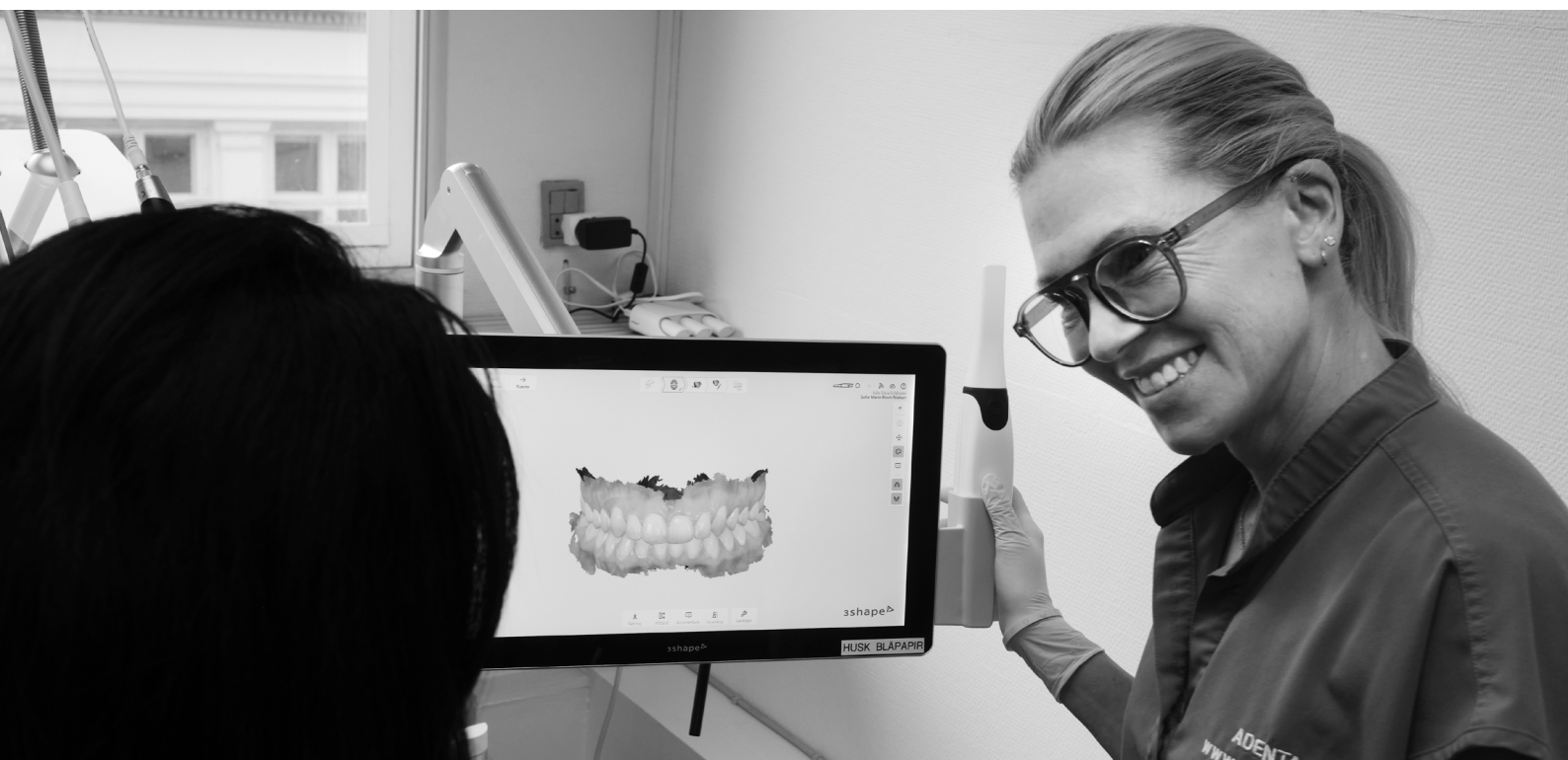
How do you clearly explain risks and complications to non-medical patients or caregivers, especially in dementia, cancer, or systemic disease?

When I speak about risk, I try to replace medical language with everyday understanding. Most patients do not need statistics. They need clarity. I often begin with visualization. I use mock-ups because showing what we can potentially achieve creates hope and a shared reference point. Once the goal is visible, it becomes easier to explain what may limit it.

From there, I use analogies that fit the person in front of me. With a car enthusiast, I compare implant treatment in a medically compromised patient to installing a high-performance engine in a weakened chassis. The parts may be excellent, but the foundation determines longevity. For others, I use daily-life examples. I often explain that neglecting implant hygiene is like ignoring basic personal hygiene. That comparison shifts responsibility from something technical to something human.

In complex cases, such as dementia or systemic disease, I involve caregivers early. I recall an elderly patient whose family hoped for a full fixed reconstruction. Instead of focusing on what was technically possible, we discussed what would be manageable five years from now: who would clean, who would monitor inflammation, who would notice early complications. The conversation shifted from ambition to sustainability.

I often say, "The surgery is one day. The maintenance is every day." That perspective helps people understand that risk is not about fear, but about biology and long-term responsibility. When patients understand healing and maintenance, they do not feel limited. They feel informed. And informed patients make safer decisions.



Have you ever felt more worried about complications than the patient, and how do you manage that tension in treatment decisions?

Yes, quite often. Patients understandably focus on the desired outcome. As clinicians, we are trained to anticipate what could go wrong.

That difference in perspective can create tension.

When I feel more concerned than the patient, I take it as a signal – not to withdraw from treatment, but to slow the process down. I revisit the biological fundamentals and ask a simple question: Is this sustainable long term, given the patient's systemic condition and ability to maintain it? If the honest answer is no, I share that concern openly.

Which communication strategies work best when caring for medically complex patients, including those with cognitive impairment or serious illness?

With experience, I have learned that communication requires the same level of analysis as treatment planning.

We spend significant time interpreting CBCTs and dental scans, carefully assessing bone quality, anatomical limitations, and risk factors. Over the years, I have come to believe we must analyze our patients with the same attention.

Not only their anatomy, but their capacity. Not only their diagnosis, but their support system. At times, we are among the first healthcare professionals to notice subtle cognitive changes in long-term patients. This can be delicate, as patients often lack insight into these changes. In such situations, conversations must be handled with great respect and sensitivity.

It helps tremendously when a spouse or close family member is part of the practice. This allows gentle, open questions in a natural setting, with focus on support, daily routines, and long-term sustainability rather than deficits.

In vulnerable cases, communication should be slower, clearer, and more structured. I avoid abstract promises and focus on practical realities: Who will maintain hygiene? Who will monitor healing? Who will attend recalls?

When we evaluate the human context as carefully as the radiographic one, we make safer, more responsible decisions. Effective communication is not about persuasion; it is about alignment between biology, capacity, and care.



What causes communication breakdowns between clinicians, patients, and caregivers in complex or compromised cases?

In compromised cases, communication rarely breaks down due to lack of information. It breaks down because of lack of structure.

When treatment is complex, assumptions become dangerous. Different caregivers attend different appointments. Messages are interpreted differently. Expectations shift over time. Preparation and protocol make a significant difference.

I find it helpful to establish continuity early. Whenever possible, the same caregiver should attend each visit. This creates consistency and reduces fragmented understanding. Complex decisions require stable communication channels.

I also rely on structured summaries. At the end of consultations, I often say, "So what we have agreed on today is..." That simple sentence helps ensure alignment. Before concluding, I ask, "Are there any important points we have not discussed?" This often reveals concerns that would otherwise remain unspoken.

Finally, financial clarity is essential. Regardless of medical complexity, uncertainty about cost can undermine trust. Discussing fees transparently before treatment begins prevents unnecessary tension.

In complex cases, clear protocols, continuity, and deliberate summaries are not administrative details. They are clinical tools. When structure supports the conversation, trust becomes more stable, and so does the treatment plan. And it makes my life easier.



Do structured communication tools like checklists help reduce clinical risk in medically compromised patients?

Yes, without a doubt. In medically compromised patients, complexity increases risk. Structure reduces it.

Checklists and protocols are safeguards. They ensure key questions are not missed, medication histories are reviewed carefully, and systemic conditions are assessed consistently.

However, structure alone is not enough. What truly reduces risk is the team behind it. Over the years, I have come to appreciate how much my team contributes to patient safety. They help structure my day, prepare documentation, verify medical information, and maintain continuity. This allows me to be fully present in the consultation.

When I am not distracted by logistics, I can focus on listening. And in compromised cases, listening is often as important as planning. Structured tools create cognitive space. They ensure biology, systemic risk, and practical capacity are assessed systematically, not intuitively.

In that sense, protocols do not replace clinical judgment. They protect it.

What advice would you give dentists who feel uncertain about treating medically compromised patients?

Respect biology and build structure around it.

Uncertainty is not a weakness. It is often a sign of responsibility. Medically compromised patients challenge us because they force us to think beyond technique. They require consideration of systemic health, healing capacity, long term maintenance, caregiver support, and ethical responsibility.

My advice is simple: Do not rush to prove that you can perform the procedure. Ask whether you should, and under what conditions. Slow the decision making process. Use structured protocols. Involve your team. Align expectations carefully. Document clearly.

And never hesitate to choose the more conservative path when biology demands it.

Over time, I have learned that predictable implant outcomes are not created by ambition alone, but by discipline.

When decisions are grounded in biology, supported by protocol, and reinforced through transparent communication, complexity becomes manageable. Not easy, but manageable. And that is enough [smile].



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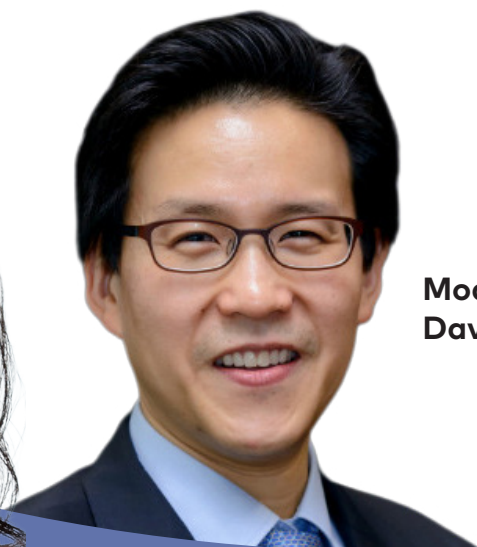
Challenging TMD myths with evidence based care

Temporomandibular disorders demystified: An evidence based clinical approach

This webinar by Dr. Roxanne Bavarian from Harvard School of Dental Medicine, hosted by the Foundation for Oral Rehabilitation, challenges long-standing myths in the diagnosis and management of temporomandibular disorders. The session highlights accurate diagnosis through validated clinical criteria rather than routine use of advanced imaging, and stresses the importance of detailed pain history, behavioral assessment, and hands-on examination. Dr. Bavarian promotes conservative, multimodal treatment strategies, clarifies when imaging is truly indicated, and demonstrates how evidence-based approaches improve patient outcomes while reducing unnecessary interventions.



Scan and access
the full recording.



Moderated by Prof.
David Kim, USA

Dr. Roxanne
Bavarian, USA



The next edition of Nobel Biocare
Science Newsletter (Volume 3, Issue 1,
2026) will turn its attention to prosthetic
solutions, particularly Procera, highlighting
evidence-based restorative concepts and
their role in achieving precision, longevity,
and functional success.

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