



“As a practicing Oral and Maxillofacial Surgeon, it is always my goal to help patients minimize pain and recover as quickly as possible after their surgical procedures. I had been searching for ways to help my patients improve their oral health and maintenance of dental implants. StellaLife is a natural solution that actually works. By combining a 200-year practice with modern technology, StellaLife products offer my patients pain relief and a faster recovery, while helping promote optimal oral health, the natural way. My patients are overwhelmingly grateful and satisfied with the result, and I see the benefits of these products on a daily basis. StellaLife is now a regular part of the treatment in my practice.”

- - **Dr. Walter Tatch, Oral and Maxillofacial Surgeon, IL**



“I performed a series of case reports to evaluate the effects of StellaLife's VEGA Oral Gel and Rinse as adjunctive therapy for postsurgical management after pocket reduction osseous surgery, connective tissue grafting, extraction and site preservation bone graft. I used a split mouth design, applying the VEGA Gel and Rinse only on one side and a standalone, or a combination of Peridex, PRGF, PRP, Emdogain and Periosciences on the other controlled side. Maximum pain level 5 and typically 3 was observed the first day on the VEGA treated side compared to 7, as anticipated, on the controlled side. Healing was faster on the VEGA treated side and took only 1 week; in comparison, it took 1 month to heal on the controlled side. My patients unanimously reported having less problems with the VEGA treated side, recovered more quickly when compared to the controlled side and on average required fewer narcotic pain medications. We have yet to uncover the limitations of this product.”

- - **Dr. Jason Stoner, Periodontist, OH**



“I have incorporated StellaLife Gel and Rinse as part of the maintenance after initial placement of braces. My patients report significantly less discomfort adapting to braces while their hygiene and plaque index have improved considerably. VEGA products are making a positive difference for my patients and practice.”

- - **Dr. Yan Kalika, Orthodontist, CA**



“StellaLife's VEGA Oral Care is the best product we have used for post-operative discomfort in the last 13 years.”

- - **Dr. William Carter, Periodontist, TN**



“StellaLife products have been invaluable in helping my patients have the best experience possible after a procedure. They routinely comment how applying the gel provides instant relief to discomfort in a surgical site. My observation is that patients using the whole recovery kit experience less pain, less swelling and bruising, and less discomfort.”

- - **Dr. David Scharf, Periodontist, NY**

**FRENECTOMY SURGERY:** “My daughter had a frenectomy surgery. Doctor told us to expect the pain for 3-4 days following the surgery. As a dental professional, I used StellaLife healing kit 3 days prior and after surgery in place of the Doctor's prescription. My daughter only took children's Ibuprofen 2 times the day of the surgery, and had no pain at all. She allowed me to stretch her tongue as prescribed by the Doctor and the healing site looks amazing. The Doctor was floored that my daughter had a play date the same day as the surgery, no issues with eating and pain especially on days 3 & 4. Thanks so much, this was amazing for my daughter.”

- - **Katrinna, RDH, AZ**

**SEVERE DRY MOUTH:** “VEGA products are helping our patients. We tried many products for a rheumatoid arthritis patient with a severe dry mouth, fissured tongue sticking to roof of his mouth and gum irritation, but only StellaLife made a big difference.”

- - **Lisa RDH, Dr. Chamberlain, FL**

# Clinicians' Feedback



"The StellaLife VEGA Oral Care products are indispensable adjunctive wound care products in our practice. They significantly improve wound healing and patient discomfort following standard and complex surgical procedures. In addition, they are our primary initial remedy for the treatment of various mucocutaneous disease conditions."

- - **Dr. Farhad Boltchi, Periodontist, TX**



"17 yr old patient with history of chronic multiple aphthous ulcers. Had him swish with 10 cc of VEGA rinse 3 times daily and use the gel directly on the ulcers. Saw him about 3 weeks later and he said he had not had any ulcers for 2 weeks. That's the longest period time in years without an ulcer! He has been using it now around 2-3 months. He is very pleased with Stellalife. I also used it on myself for an ulcer and busted lip. WOW was I impressed. It soothed the sores and it lasted all day. I used only the gel. The sores cleared up much faster than I expected. Very impressed."

- - **Dr. Jack Morrow, Pediatric Dentist, TX**



"The incorporation of StellaLife VEGA Oral Care has played a pivotal role in enriching the lives of our periodontal and dental implant patients. We have experienced a significant reduction in our patients' post-operative pain, discomfort, and swelling in conjunction with enhanced wound healing. We are excited to continue to learn all the unique benefits VEGA Oral Care has to offer."

- - **Dr. Jennifer Hirsch Doobrow, Periodontist, AL**



"Patients who previously had post op pain had little to no pain or discomfort when they used StellaLife VEGA Oral Care products. My patients, colleagues and I are pleased with results."

- - **Dr. Ravichandra Juluri, Periodontist, IL**



"I search out and find innovative, natural solutions to common ailments that mitigate the source of the problem with the least side effects. When one of my patient's daughter had her impacted third molars removed I prescribed VEGA Oral Care products. She had no bruising, minimal swelling and needed her pain meds only the first 24 hours. We were very pleased with her healing time and very impressed with the reduced need for narcotics."

- - **Dr. Jacqueline Russo, RN, DDS, FL**



"I am so pleased that StellaLife is a routine tool in our practice. With so much success in speeding healing and reducing post operative pain, we keep testing the limits of this product. "Let's try StellaLife" has become a routine refrain in our practice for any type of acute or chronic mouth soreness and our patients are rewarded with a solution that they, nor we, ever had in our practice. I have seldom seen a safe breakthrough product of this magnitude."

- - **Dr. Lee Sheldon, Periodontist, FL**

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"The greatest aspect of incorporating the StellaLife VEGA Oral Care program into my practice has been the significant improvements seen in the surgical wound healing those first few weeks. All my patients love the homeopathic plant-based products with the lack of altering taste and staining. The use of the StellaLife program increased post-surgical success rate and has been spectacular."

- - **Dr. Jeanne Salcetti, Periodontist, CO**



"We have incorporated StellaLife products as part of the post-operative healing phase for our surgical procedures. Our patients report significantly less discomfort and faster healing times after surgery. The overall response has been incredibly positive and patients have chosen to continue use even after primary healing. VEGA products are making a positive difference for our patients and practice, allowing for a reduction in overall medication usage."

- - **Dr. Kelly Misch & Dr. Amar Katranji, Periodontists, MI**



"I started recommending StellaLife for three reasons. One benefit to StellaLife is that it can reduce or eliminate the need for opioids. Opioids carry numerous side effects and risks that are avoided with this product. In addition, many of my patients prefer more natural therapies. They really appreciate the fact that our office is sensitive to their desire to find natural anti-infective or anti-inflammatory treatments. Finally, it works! I have received feedback from patients and family members that prefer StellaLife to conventional pain medication. Thank you for giving our patients this option."

- - **Dr. Ann Kania, Periodontist, CA**



"In order for us to even consider trying or recommending a new product to a patient or our clients, we need to have solid science that ensures the safety and efficacy to promote healing without side effects or in any way disrupting homeostasis. I personally love the StellaLife holistic and effective properties that promote healing and restore the environment to homeostasis. We now have many clients experiencing great to amazing feedback from their patients."

- - **Jan Lazarus, JP Institute, CA**



"I had a vision to provide my more natural-minded patients alternative options for pain relief and disease control that were just as effective and safe. When I was introduced to StellaLife, I knew I had found the product that I would feel comfortable recommending to my patients. Patients at our office love the natural, safe, yet amazingly effective ingredients that StellaLife offers. We hear all the time that the products taste great and work quickly."

- - **Dr. Allison Beehner, IL**



"StellaLife has become an essential tool within our arsenal of patient care products. From periodontal therapy to periodontal prevention to post-surgical wound management I have relied on StellaLife's line of holistic rinses and gels to help my patients achieve optimal health and healing. I recommend and use StellaLife for my family and patients."

- - **Dr. Jeff E Rubel, IA**



"StellaLife VEGA Oral Care has changed the way our patients heal! We can see in 2 weeks what we normally would see in 4 weeks! Patients are having no pain even with all-on-4 procedures. I am impressed with the healing and pain control."

- - **Dr. Ritt Kuhn, NC**

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# Clinicians' Feedback



"After using StellaLife products for 18 months, across the board it has been an amazing experience for our staff, myself and most important for our patients. The feedback from patients has been tremendous. The dramatic change we have seen has been very impressive. We now have patients asking us for more StellaLife. With all the opioids problems we are having, the use of StellaLife helped us to drastically reduce the use of narcotic pain medication due to minimizing the discomfort in our patients as well as accelerating wound healing."

- - **Dr. Michael A. Pikos, Oral and Maxillofacial Surgeon, Pikos Institute, FL**



"The adjunct of StellaLife products for rapid post-surgical recovery and maintenance of oral health has been amazing to see with my patients. I am always searching for ways to accelerate healing and get my patients back to normal life activities. StellaLife products which are made of homeopathic ingredients have helped my patients heal faster and significantly reduces redness, swelling, and discomfort after surgery. In a time when doctors are being scrutinized for over-prescribing medications such as opioids, we continue to innovate with solutions that are natural and have no negative effects. StellaLife products have made a difference in my practice and my patients appreciate how much we care for their well-being and oral health."

- - **Dr. William P. Lamas, Periodontist, FL**



"StellaLife is applied to the Aphthous ulcer (canker sore) area with a clean cotton swab five to seven times a day. This application can decrease pain intensity and reduce ulcer duration from 10 to 14 days down to just two to three days after onset."

— **Dr. Scott Froum, Editorial Director of Perio-Implant Advisory, NY**



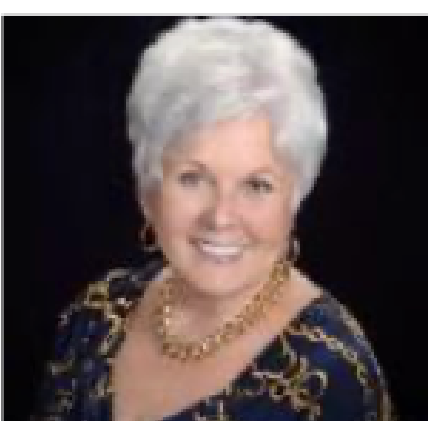
"We seek only the most advanced and clinically proven solutions to improve the well-being of our patients. When using the StellaLife, our patients heal faster after all procedures, and as a result, we prescribe less narcotic pain medication. StellaLife has also been helping our dry mouth, chronic ulcers, angular cheilitis, lichen planus patients and making a positive impact on our practice."

- - **Dr. Grace Vershinina, CA**



"Dental Hygiene Excellence (DHE) coaches are excited to have StellaLife, a wonderful product that can control pain and promote healing with no opioid use! We have been experiencing awesome results with StellaLife gel and rinse as a adjunctive therapeutic product for patients who have periodontal therapy or other pathologic conditions for faster healing and pain control. The dentists we work with are finding their patients are having incredible drug-free healing and comfort results after surgery. Our hope is that we can get this homeopathic product in more doctors' and patients' hands to experience the great results and help make a difference in the opioid abuse epidemic!"

- - **Patti DeMatteis, ASDH, RDH, OH**



"My younger sister Barbara suffered from the dry mouth after her open heart surgery three years ago. She tried many products but not until StellaLife did she find permanent relief from dry mouth. On a recent visit to visit me, I mentioned StellaLife. The company sent her products and for the first time in three years, she enjoys the relief of this long-term affliction. StellaLife is short of a miracle!"

- - **Linda Miles, CSP, CMC, FL**



"StellaLife VEGA Oral Care products have been a game changer for my practice. My team enjoys teaching our patients about the product because the results have been outstanding. Patients call us post procedure thanking us for the StellaLife products because it dramatically improved their post-operative recovery. StellaLife has allowed me to decrease the amount of opioids needed for my patients without compromising post-surgical comfort. Working with the StellaLife team has been pleasant. They helped with training my team and were knowledgeable about the products so that could be shared with our patients. They have 100% supported my implementation of StellaLife in my practice and have been an invaluable resource. I want to thank Dr. Walter Tatch, Gennady Sirota & Debbie Durako for their support."

- - **Dr. Lisa L. Miller, Oral and Maxillofacial Surgeon, AL**



## Vitamin D Deficiency & Early Implant Failure

### What Every Clinician Should Know



Richard J. Miron, DDS, MSc, PhD



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Mark Bishara, DDS

#### INTRODUCTION

Dental implants are generally considered a safe and highly predictable surgical procedure performed by many clinicians with the aim of replacing missing teeth. Yet, to this day, a number of implants placed in adequate bone volume are lost each year within a 2- to 8-week period following implant placement for unexplained reasons.

As society continues to consume lower-quality foods and rely more heavily on fast foods, a large percentage of today's population is increasingly demonstrating generic vitamin deficiency upon testing, owing to this lack of nutritional intake.

These deficiencies are even more pronounced in the aging population, where a greater percentage of dental implants are placed. Unfortunately, one of the most prominent deficiencies known to mankind is that of vitamin D, a fat-soluble vitamin critical for proper immune function as well as bone homeostasis.

#### VITAMIN D DEFICIENCY

Vitamin D deficiency is a worldwide public health problem that spans across all age groups from children to adults. Naturally, as we age, our ability to absorb vitamin D is also decreased. The major source of vitamin D is directly from sunlight exposure along with the very few foods that naturally contain sufficient doses. Unfortunately, direct sunlight has tremendously decreased in modern society with the increased number of desk-related jobs. Epidemiological studies have now shown that roughly 70% of society is deficient.<sup>1</sup>

Vitamin D deficiency is most known for its association in osteoporotic and menopausal women. Few realize, however, its drastic and substantial role in various other diseases. These include depression, dementia, Alzheimer's disease, asthma, cancer, cardiovascular disease, and diabetes, among others. Vitamin D is essential for gastrointestinal calcium absorption, mineralization of osteoid tissue, and maintenance of serum-ionized calcium levels.

It is also important for other physiological functions, such as muscle strength, neuromuscular coordination, hormone release, and immune cell function.<sup>2</sup> More recently, vitamin D deficiency has also been linked with up to a 300% increase in dental implant failure, and associations with other dental-related complications are increasing.<sup>3-12</sup> Optimizing vitamin D levels prior to surgery, therefore, becomes fundamental for maximizing wound healing, and this article aims to discuss the relevant research on the topic and its association with dental implant-related failures and bone grafting complications.

### Supplemental Recovery Program: The Science Behind Dental Healing

Owing to the impact of vitamin D deficiency-related complications and failures in dentistry, clinicians are advised to use vitamin D supplements when deficiency is observed. Typically, 5,000 IU/day is recommended by the AACE; however, an 8- to 12-week supplementation period is needed to reach adequate levels.

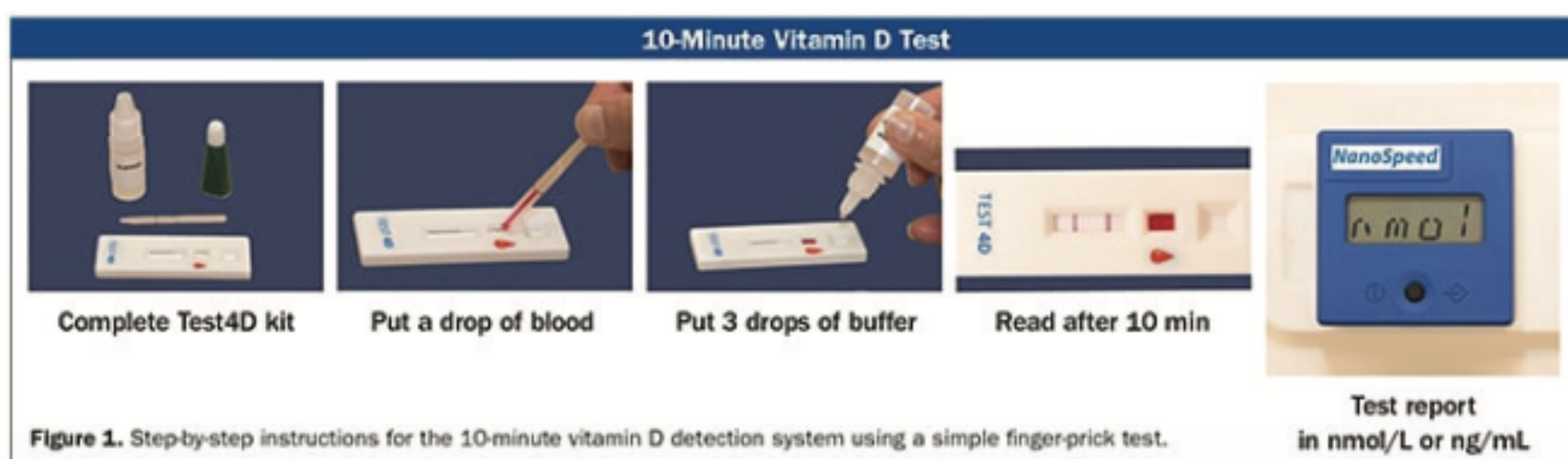


Figure 1. Step-by-step instructions for the 10-minute vitamin D detection system using a simple finger-prick test.



Figure 2. DentaMedica's 6-week recovery program aimed at optimizing vitamin D and antioxidant levels prior to implant placement.

# Vitamin D Deficiency & Early Implant Failure: What Every Clinician Should Know

## OPTIMIZING VITAMIN D LEVELS

Serum 25-hydroxy vitamin D (25-OH) is the reliable marker of vitamin D status, and a level below 20 ng/ml defines deficiency. Optimal levels above 30 ng/ml are required to maximize the bone health and non-skeletal benefits of vitamin D (Table 1). For individuals undergoing any type of dental-related procedures, levels between 40 and 60 ng/ml are generally recommended since it is known that levels may decrease substantially following a period of stress (simply, a dental surgical intervention). Unfortunately, foods do not contain sufficient levels.

Examples are cod liver oil (400 to 1,000 IU/teaspoon); fresh-caught salmon (600 to 1,000 IU/3.5 oz vitamin D3); tuna (236 IU/3.5 oz vitamin D3); egg yolk (20 IU/yolk vitamin D3 or D2); and fortified milk, cheese, or yogurt (100 IU/3 oz, usually vitamin D3). These are low levels considering deficiency should be treated with 4,000 to 6,000 IU/day for a 6- to 8-week period to restore levels to sufficient values. According to AACE and ACE guidelines, it is recommended that supplementation maintain levels above 30 ng/ml.<sup>13</sup> The Endocrine Society in the United States recommends achieving a concentration of more than 30 ng/ml (> 75 nmol/L) of serum 25-OH, considering the optimal range is 40 to 60 ng/ml (100 to 150 nmol/L).

The Endocrine Society also advocates an intake of 1,500 to 2,000 IU/day (37.5 to 50 µg) in adults, and that obese patients (BMI > 30 kg/m<sup>2</sup>) should take 3 times more than the normal adult daily vitamin dose.<sup>13</sup> Unfortunately, epidemiological studies across the United States have routinely shown that deficiencies of vitamin D are typically found in approximately 70% of the population, and this deficiency is only expected to increase as the population works more indoors. The following research articles focus on the link between these deficiencies and the associated risk for early dental implant failure.

## RELATED DENTAL COMPLICATIONS ASSOCIATED WITH VITAMIN D DEFICIENCY

Vitamin D plays an important role in supporting the immune system and the integration of various biomaterials. It is also relevant for decreasing general oxidative stress and minimizing additional inflammation caused by surgery. As expressed previously, vitamin D is also involved in biomaterial integration and other metabolic processes, such as bone remodeling. Therefore, some complications have been related to vitamin D deficiency in the dental field.

In 2009, a first animal study investigated the role of vitamin D in dental implant osseointegration.<sup>9</sup> Utilizing a rat model, implants were placed in both normal control and vitamin D-deficient animals and subjected to implant push-out tests, as well as histological analysis. The push-out tests revealed an approximate 66% decrease in value in the vitamin D-deficient group and also revealed significantly lower bone-to-implant contact as early as 14 days post-implant placement. It was concluded from this study that the effect of vitamin D deficiency was unexpectedly profound. It was further addressed that future clinical research would benefit patient care, owing to these observations.

Table 1. Vitamin D concentrations in humans in terms of deficient, optimal, and toxic levels.

Status	Serum Vitamin D 25-OH	Vitamin D Concentration
Severe Deficiency	< 10 ng/ml	< 25 nmol/L
Deficiency	< 20 ng/ml	< 50 nmol/L
Insufficiency	21 to 29 ng/ml	50 to 74 nmol/L
Sufficiency	30 to 100 ng/ml	75 to 250 nmol/L
Optimal	30 to 60 ng/ml	75 to 150 nmol/L
Toxic	> 150 ng/ml	> 375 nmol/L
Pre-surgery	40 to 60 ng/ml	100 to 150 nmol/L



## THE ROLE OF ANTIOXIDANTS IN WOUND HEALING

In addition to bone-related deficiencies, several additional factors can impair wound healing, such as infection found in periodontal disease, poor diet, aging, diabetes, alcohol overuse, smoking, stress, and impaired nutritional status.<sup>14-16</sup> In recent years, reactive oxygen species (ROS) have gained attention because of their central role to the progression of many inflammatory diseases.

<sup>17</sup> Excessive production of ROS or impaired ROS detoxification causes oxidative damage, which has been shown to be a main cause of non-healing chronic wounds and tissue degeneration.<sup>18,19</sup> To combat oxidative stress, all cells in the body require an intrinsic store of molecules known as "antioxidants," which prevent tissue damage.<sup>20</sup> When this balance is shifted, however, high levels and activity of ROS cause DNA damage, protein damage, and lipid peroxidation. This leads to impairments in wound healing and many long-term chronic degenerative diseases and whole-body tissue inflammation, which are linked to common diseases such as dementia and various cancers.

Unfortunately, a large percentage of the population today suffers from vitamin and mineral deficiencies directly linked to antioxidant levels (Table 3). As a result, it is clear that prior to any major surgery, vitamin recovery programs are indispensable to help restore the patient's levels prior to surgery to prevent failure and/or delayed wound healing. Furthermore, restoring patient antioxidant levels remains a relatively easy and inexpensive task. Vitamin C is, perhaps, one of the most well-known antioxidants and has a primary function as a

Table 3. Vitamin deficiency in the general US population.

Vitamin A	= 34% deficient
Vitamin C	= 25% deficient
Vitamin D	= 70% deficient
Vitamin E	= 60% deficient
Calcium	= 38% deficient
Magnesium	= 45% deficient

free radical scavenger and in the synthesis of collagen hydroxylation in humans.<sup>21</sup>

It also contributes to immune defense by supporting various cellular functions of both the innate and adaptive immune systems. Vitamin C deficiency results in impaired immunity and higher susceptibility to infections.<sup>22</sup> Vitamin C is found in many natural fruits and vegetables, yet the population remains relatively deficient, owing to the poor nutritional status encountered in many patients.

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