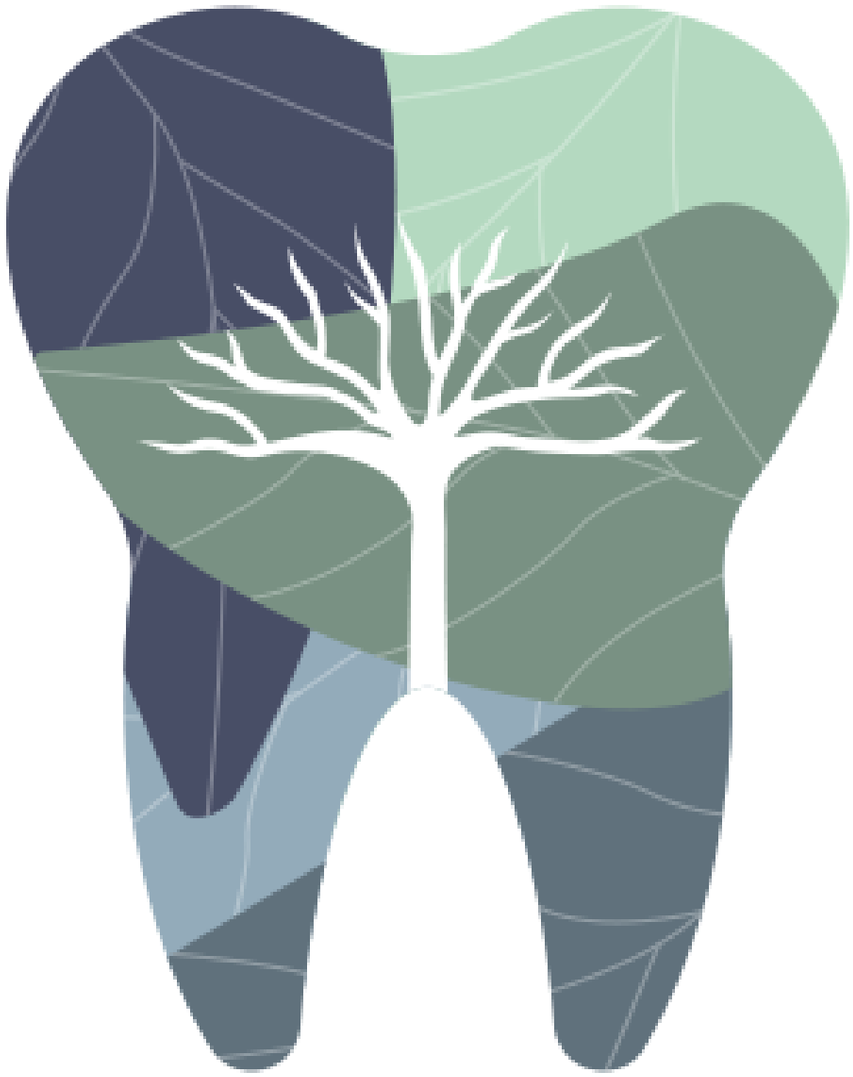
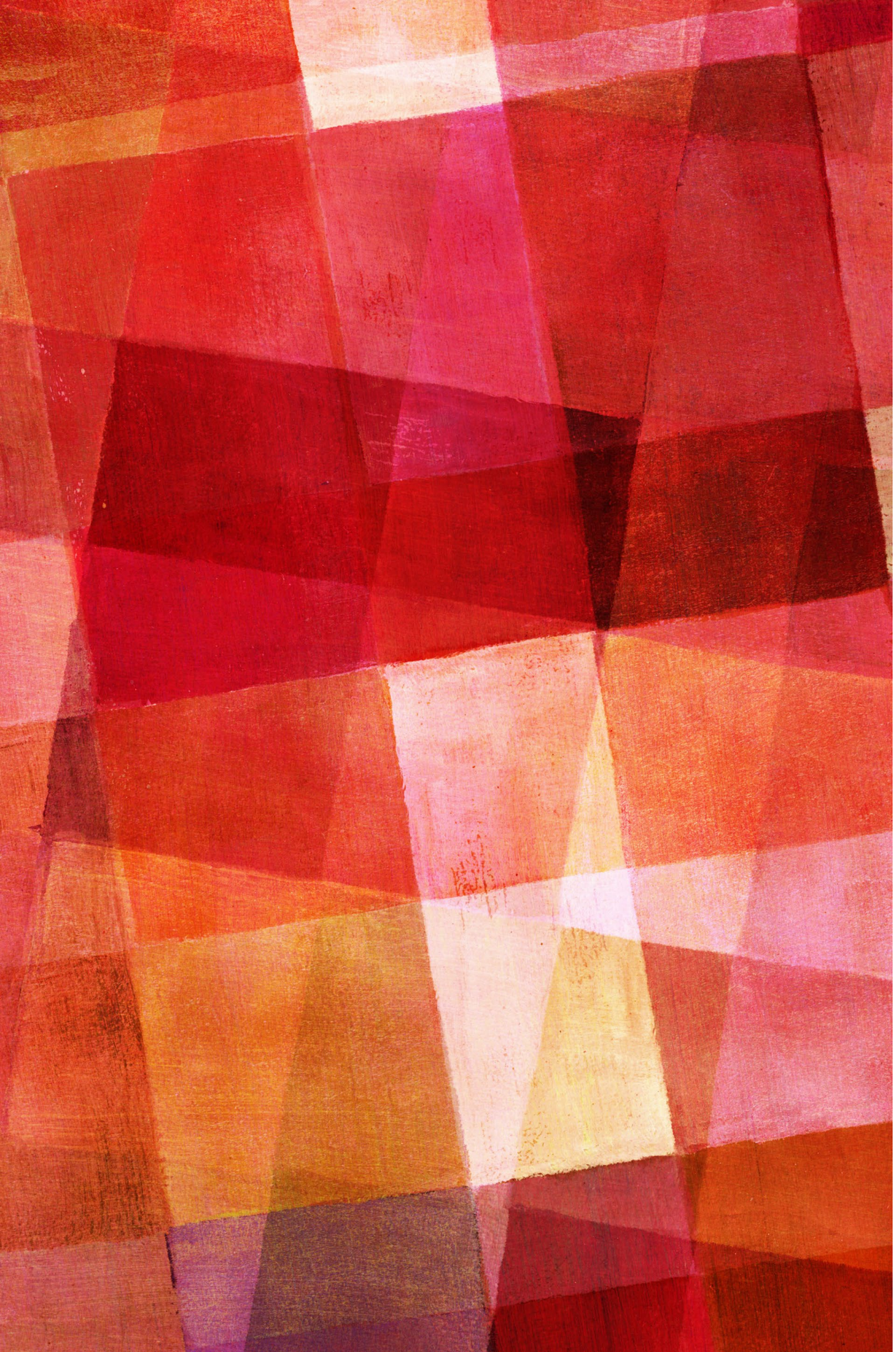


wellrooted

DENTISTRY

AT THE BIOMED CENTER

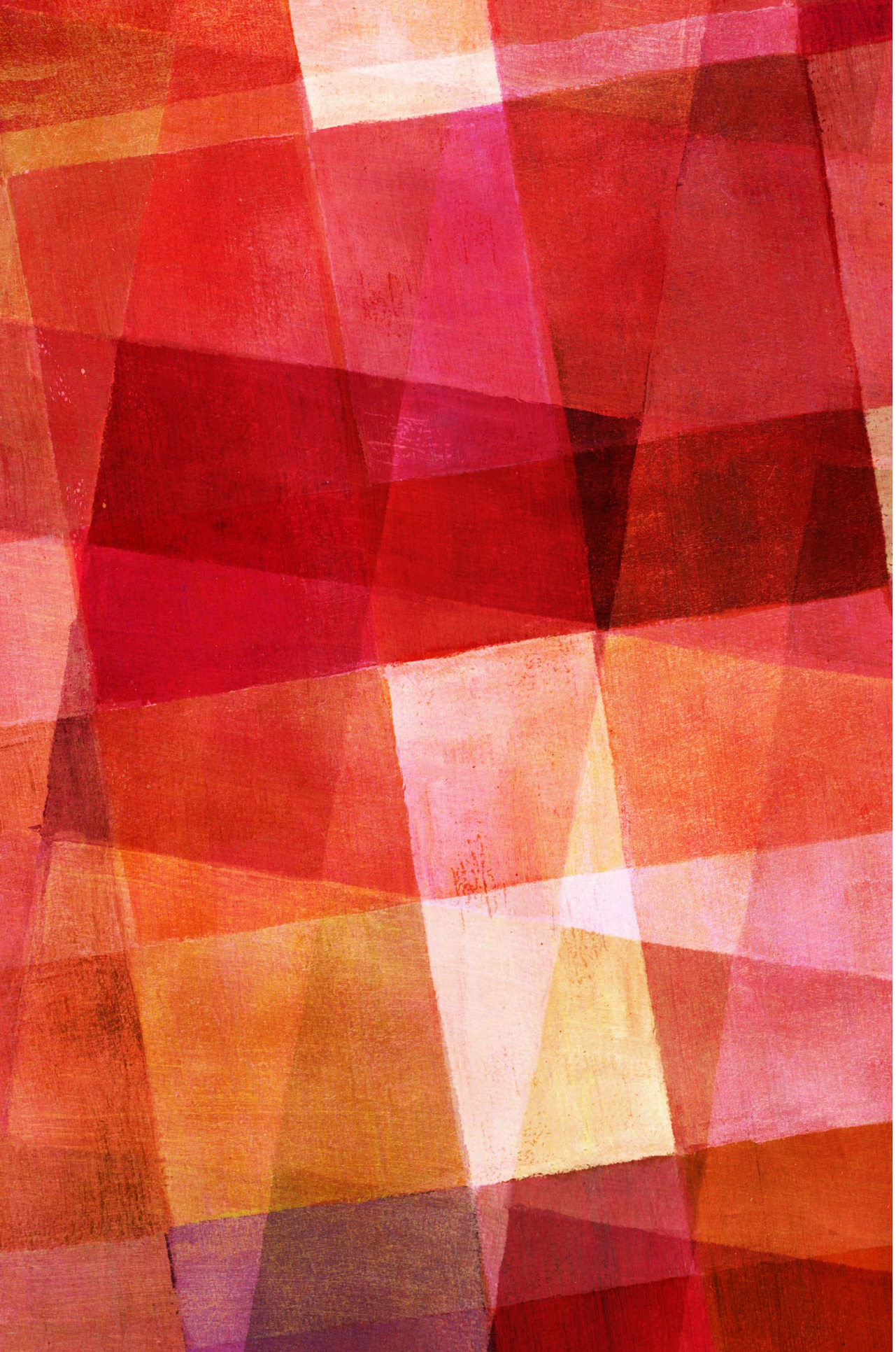


TALKING POINTS

- Intro
- Chronic Disease Root Cause
- What is biological dentistry
  - Top 5
- Chronic disease
- Wellrooted Dentistry
  - SMART
  - CBCT
  - Ozone
  - Salivary testing
  - PRF
- Fantastic 4
- Ingredients to Avoid
- Home care/Products
- Conclusion

SYLVIA ZANNIS, DDS

- Michigan State University; BS- Human Biology
- University of Michigan School of Dentistry; DDS
- Boston University; CAGS
- IAOMT (International Academy of Oral Medicine and Toxicology; Accreditation
- SDS (Swiss Dental Solutions); Advanced Implant Treatment Planning and Training
- American College of Integrative Medicine and Dentistry; ND June 2021 graduation



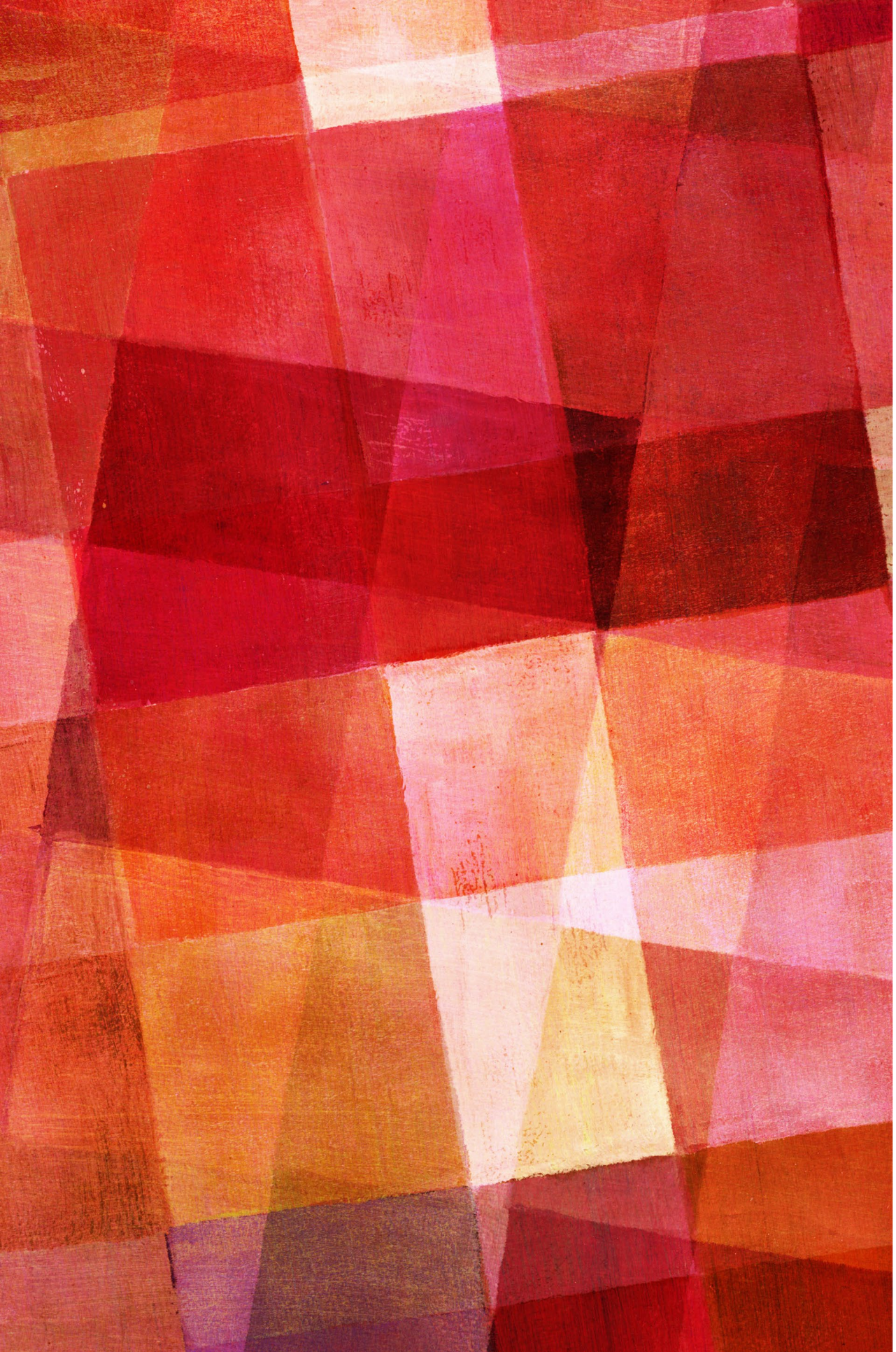
PATIENT STORY

ROOT CAUSE

1. Regulation Disturbance ** AIM TO TREAT
    - ➢ ex: inflammation, toxins, hyperacidity, nutrient deficiency, bacteria, allergens
2. Functional Disturbance
    - ➢ impaired cell division, inability to compensate, prolonged imbalance
3. Structure Disturbance
    - ➢ cavity, symptoms, tumor growth, pain, vessel wall occlusion
    - ➢ where allopathic medicine/dentistry treats

BIOLOGICAL DENTISTRY

- Proactive vs. Reactive
- Individualized
- Time Spent with Patients (2 hour new patient exam)
- Dental Materials Allergy Testing
- Salivary Testing
- Vitamin D Testing
- Procedural: Ozone, Laser, PRF, Ceramic composites
- CBCT evaluation with myself and oral radiologist
- Fluoride-Free
  - The impact of the exposure levels generated from all of these sources is often overlooked. Yet, this collective exposure can produce lifelong illnesses



TOP 5 REASONS PATIENTS SEEK A BIOLOGICAL PRACTICE

1. Mercury Filling Evaluation + SMART removal
2. Root Canal Evaluation
3. Ceramic Implants
4. Dental Material Testing
5. Root Cause/Unexplained Inflammation

SMART

INTERNATIONAL ACADEMY OF ORAL MEDICINE AND TOXICOLOGY (IAOMT)'s
SAFE MERCURY AMALGAM REMOVAL TECHNIQUE (SMART)
PATIENT-DENTIST CHECKLIST
Protocol Recommendations as of December 6, 2016
This checklist can be utilized by patients and dentists to ensure that both parties agree upon the procedures to be utilized during amalgam removal.

Today's Date: _____ Removal Date:_____

Patient Name:_____ Dentist Name: _____

PATIENT PROTECTION

☐ Slurry of charcoal, chlorella, or similar adsorbent for patient to rinse and swallow before the procedure

☐ Full body, impermeable barrier, as well as full head/face/neck barrier under/around the dam

☐ External air or oxygen delivered via a nasal mask for the patient OR via nasal cannula completely covered with an impermeable barrier

☐ Dental dam made with non-latex nitrile material placed and properly sealed in the patient's mouth

☐ Saliva ejector placed under the dental dam

☐ At source oral aerosol vacuum in close proximity to patient's mouth

☐ Clean Up device (not essential but preferred)

☐ Copious amounts of water to reduce heat and a conventional high speed evacuation device to capture mercury discharges

☐ Section amalgam into chunks and remove in as large of pieces as possible, using a small diameter carbide drill

☐ After removal, the patient's mouth should be thoroughly flushed with water and then rinsed out with a slurry of charcoal, chlorella or similar adsorbent

DENTIST/STAFF PROTECTION

☐ Protective gowns and covers for the dentist and dental personnel

☐ Non-latex nitrile gloves for the dentist and dental personnel

☐ Face shields and hair/head coverings for the dentist and dental personnel

☐ Either a properly-sealed, respiratory grade mask rated to capture mercury or a positive pressure, properly-sealed mask providing air or oxygen for the dentist and dental personnel

☐ During the opening and maintenance of suction traps in operatories or on the main suction unit, dental staff should utilize the appropriate personal protection equipment

OFFICE & ENVIRONMENTAL PROTECTION

☐ An amalgam separator that is properly installed, utilized, and maintained

☐ High-volume air filtration system (such as an at source oral aerosol vacuum)

☐ If possible, open windows to reduce the mercury concentration in the air

☐ Compliance with federal, state, and local regulations addressing the proper handling, cleaning, and/or disposal of mercury-contaminated components, clothing, equipment, surfaces of the room, and flooring in the dental office

Learn more at ***www.thesmartchoice.com*** *from the International Academy of Oral Medicine and Toxicology (IAOMT).*

TRADITIONAL X-RAYS

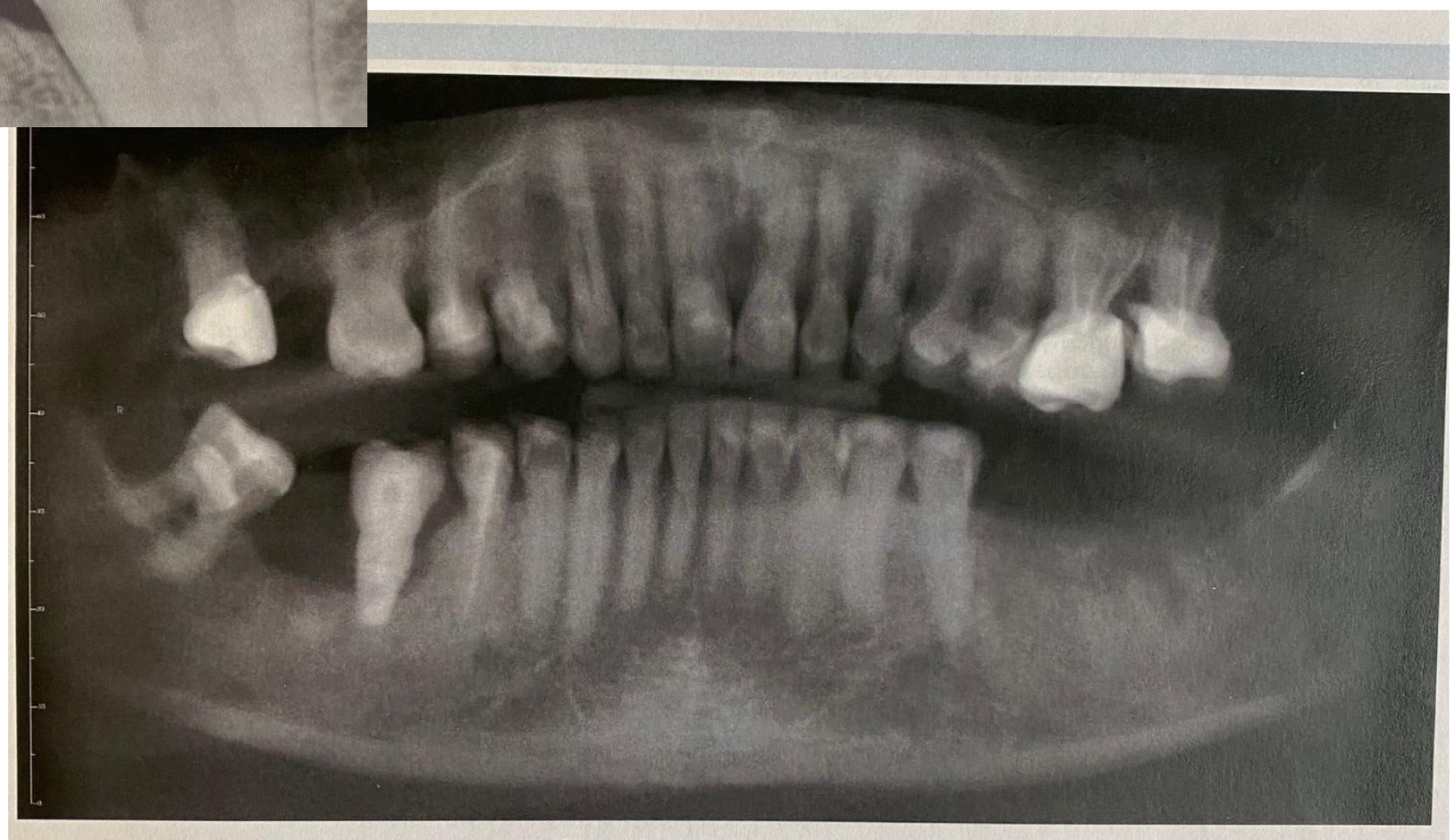


Figure 1 – Panoramic Reformat

CBCT/C ONE BEAM

X-RAY

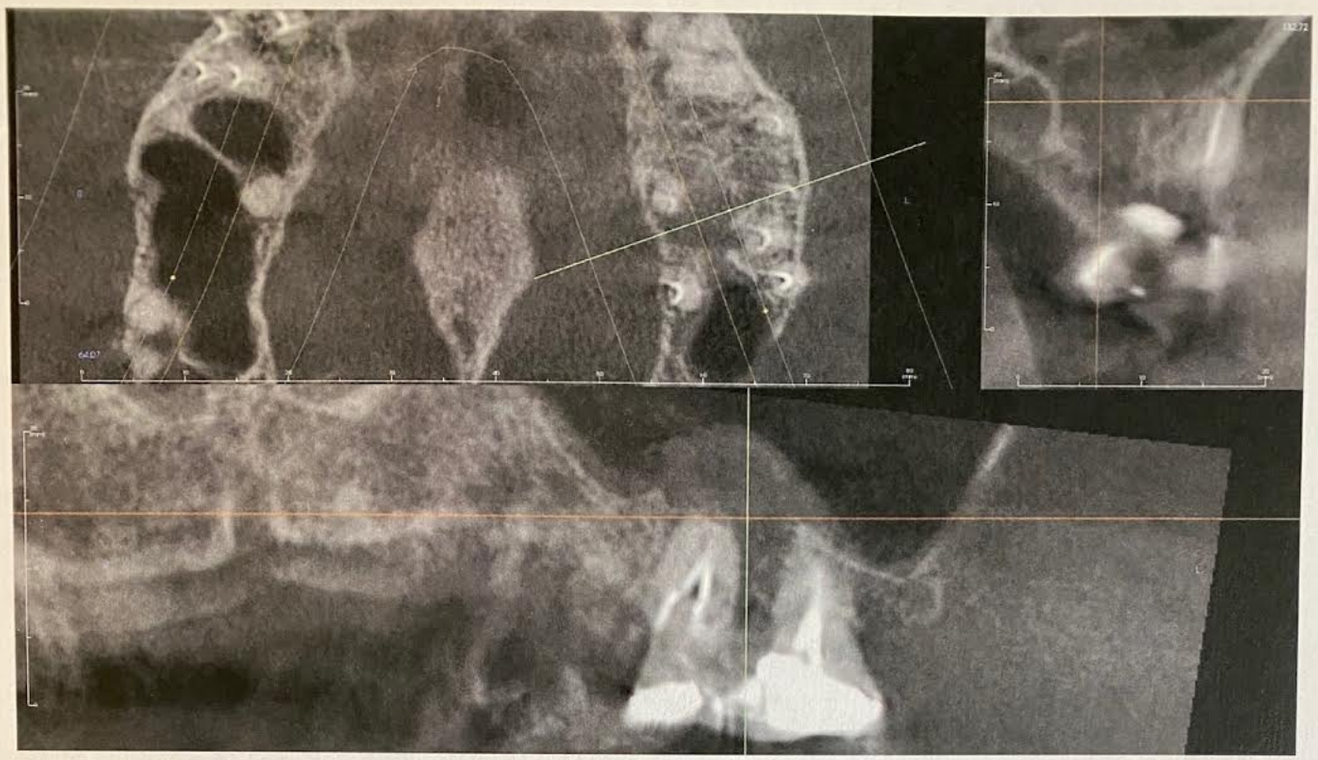


Figure 2 – Tooth #14 palatal hypodensity expanding the floor of the maxillary sinus and communicating through the alveolar crest

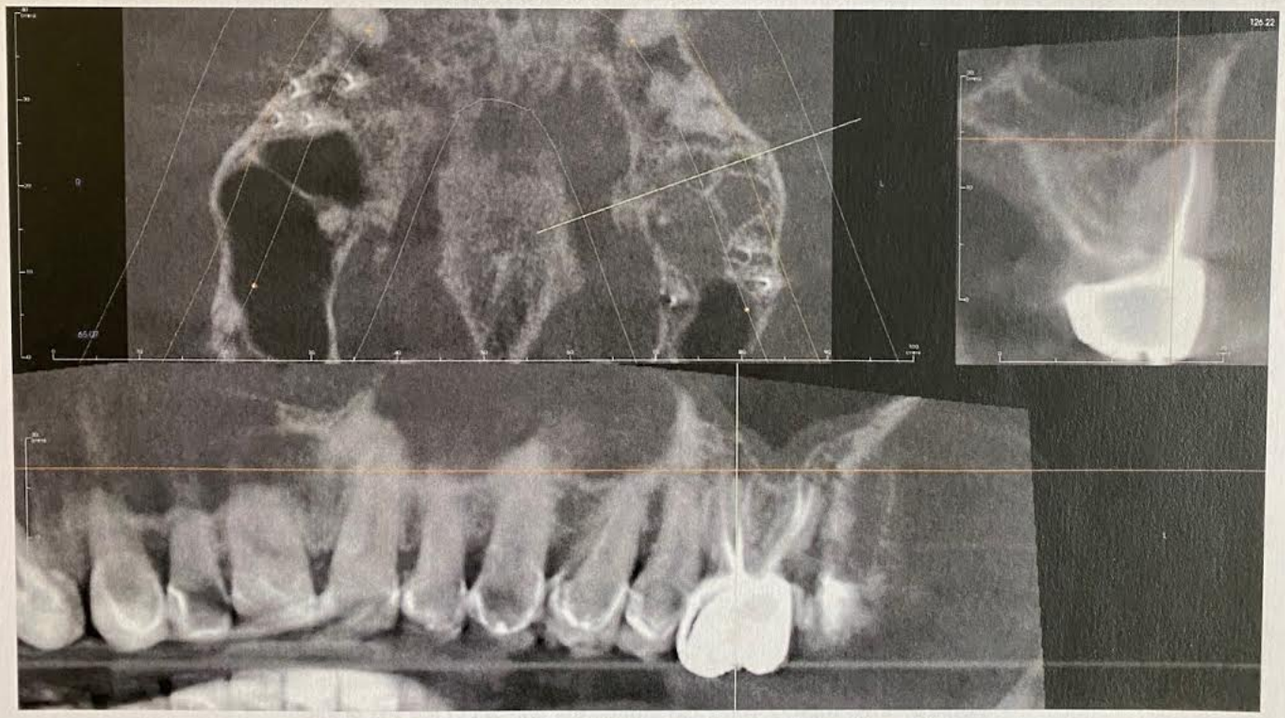
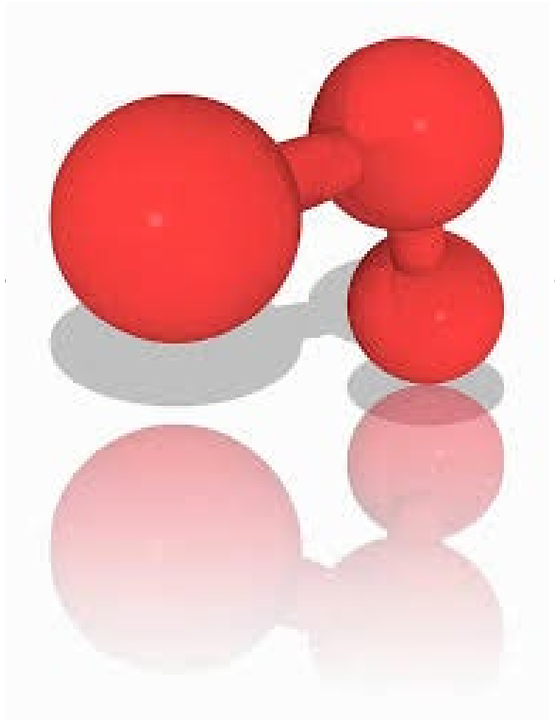


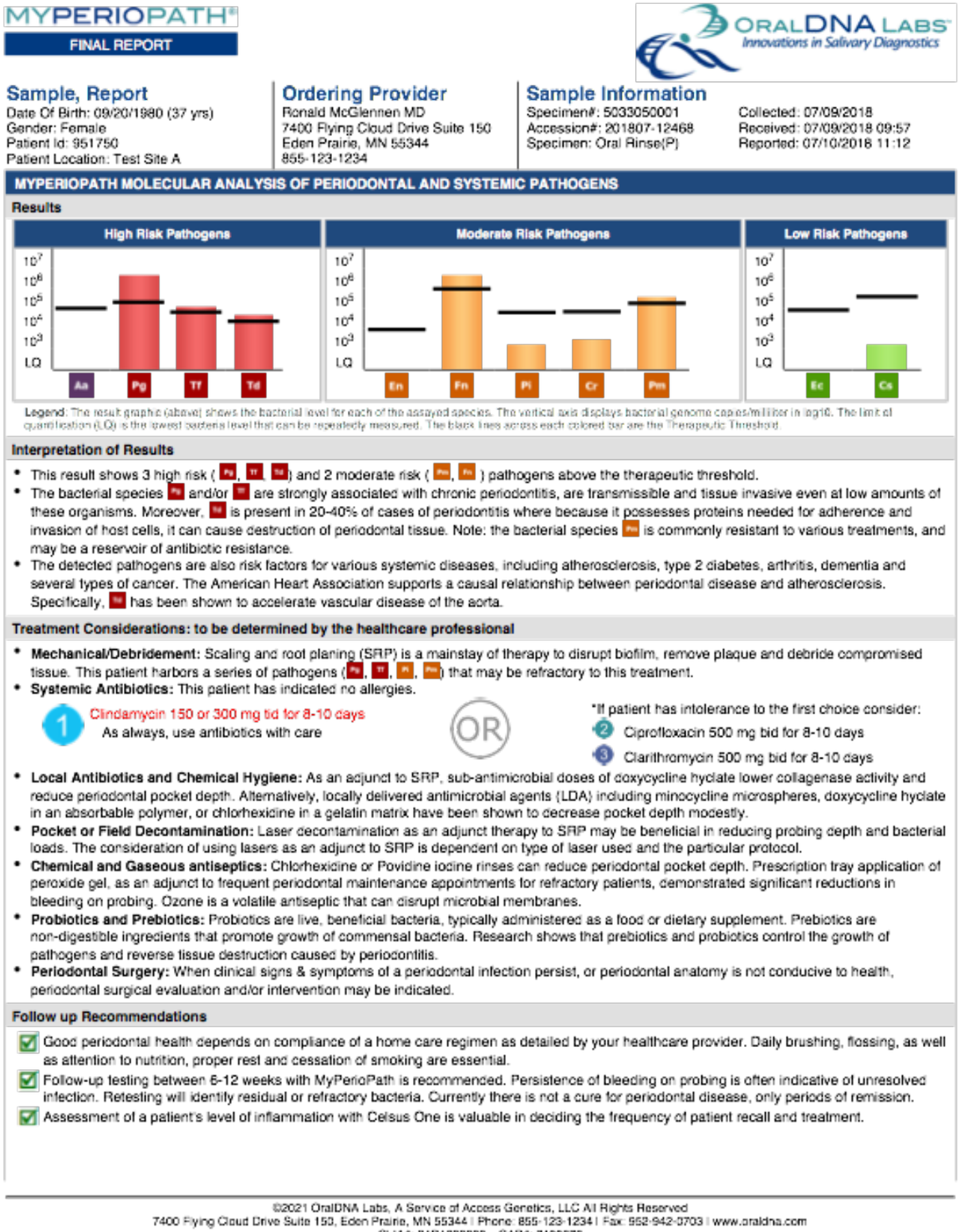
Figure 3 – Apical hypodensity at the mesiobuccal root of #14

OZONE



- Every patient. Every day.
- Ozone is oxygen with an extra atom
  - unstable, cumulative effect
- Antibacterial, antiviral and antifungal properties
- Ozone water, gas, oil
- Tooth sensitivity, small demineralized areas of enamel (small cavities), gum disease, cavitation in jaw bone , around root canals or during root canal procedure

SALIVARY TESTING



MYPERIOPATH®

FINAL REPORT

ORALDNA LABS
Innovations in Salivary Diagnostics

Sample, Report
Date Of Birth: 09/20/1980 (37 yrs)
Gender: Female
Patient Id: 951750
Patient Location: Test Site A

Ordering Provider
Ronald McGlennen MD
7400 Flying Cloud Drive Suite 150
Eden Prairie, MN 55344
855-123-1234

Sample Information
Specimen#: 5033050001
Accession#: 201807-12468
Specimen: Oral Rinse(P)
Collected: 07/09/2018
Received: 07/09/2018 09:57
Reported: 07/10/2018 11:12

MYPERIOPATH MOLECULAR ANALYSIS OF PERIODONTAL AND SYSTEMIC PATHOGENS

Results

High Risk Pathogens | Moderate Risk Pathogens | Low Risk Pathogens

Legend: The result graphic (above) shows the bacterial level for each of the assayed species. The vertical axis displays bacterial genome copies/milliliter in log10. The limit of quantitation (LQ) is the lowest bacterial level that can be repeatedly measured. The black lines across each colored bar are the Therapeutic Threshold.

Interpretation of Results

- This result shows 3 high risk (Pg, Tf, Td) and 2 moderate risk (Pm, Fn) pathogens above the therapeutic threshold.
- The bacterial species Pg and/or Tf are strongly associated with chronic periodontitis, are transmissible and tissue invasive even at low amounts of these organisms. Moreover, Td is present in 20-40% of cases of periodontitis where because it possesses proteins needed for adherence and invasion of host cells, it can cause destruction of periodontal tissue. Note: the bacterial species Pm is commonly resistant to various treatments, and may be a reservoir of antibiotic resistance.
- The detected pathogens are also risk factors for various systemic diseases, including atherosclerosis, type 2 diabetes, arthritis, dementia and several types of cancer. The American Heart Association supports a causal relationship between periodontal disease and atherosclerosis. Specifically, Td has been shown to accelerate vascular disease of the aorta.

Treatment Considerations: to be determined by the healthcare professional

- **Mechanical/Debridement:** Scaling and root planing (SRP) is a mainstay of therapy to disrupt biofilm, remove plaque and debride compromised tissue. This patient harbors a series of pathogens (Pg, Tf, Pi, Pm) that may be refractory to this treatment.
- **Systemic Antibiotics:** This patient has indicated no allergies.

1 Clindamycin 150 or 300 mg tid for 8-10 days
As always, use antibiotics with care

OR

*If patient has intolerance to the first choice consider:
2 Ciprofloxacin 500 mg bid for 8-10 days
3 Clarithromycin 500 mg bid for 8-10 days

- **Local Antibiotics and Chemical Hygiene:** As an adjunct to SRP, sub-antimicrobial doses of doxycycline hyclate lower collagenase activity and reduce periodontal pocket depth. Alternatively, locally delivered antimicrobial agents (LDA) including minocycline microspheres, doxycycline hyclate in an absorbable polymer, or chlorhexidine in a gelatin matrix have been shown to decrease pocket depth modestly.
- **Pocket or Field Decontamination:** Laser decontamination as an adjunct therapy to SRP may be beneficial in reducing probing depth and bacterial loads. The consideration of using lasers as an adjunct to SRP is dependent on type of laser used and the particular protocol.
- **Chemical and Gaseous antiseptics:** Chlorhexidine or Povidine iodine rinses can reduce periodontal pocket depth. Prescription tray application of peroxide gel, as an adjunct to frequent periodontal maintenance appointments for refractory patients, demonstrated significant reductions in bleeding on probing. Ozone is a volatile antiseptic that can disrupt microbial membranes.
- **Probiotics and Prebiotics:** Probiotics are live, beneficial bacteria, typically administered as a food or dietary supplement. Prebiotics are non-digestible ingredients that promote growth of commensal bacteria. Research shows that prebiotics and probiotics control the growth of pathogens and reverse tissue destruction caused by periodontitis.
- **Periodontal Surgery:** When clinical signs & symptoms of a periodontal infection persist, or periodontal anatomy is not conducive to health, periodontal surgical evaluation and/or intervention may be indicated.

Follow up Recommendations

- ☑ Good periodontal health depends on compliance of a home care regimen as detailed by your healthcare provider. Daily brushing, flossing, as well as attention to nutrition, proper rest and cessation of smoking are essential.
- ☑ Follow-up testing between 6-12 weeks with MyPerioPath is recommended. Persistence of bleeding on probing is often indicative of unresolved infection. Retesting will identify residual or refractory bacteria. Currently there is not a cure for periodontal disease, only periods of remission.
- ☑ Assessment of a patient's level of inflammation with Celsus One is valuable in deciding the frequency of patient recall and treatment.

7400 Flying Cloud Drive Suite 150, Eden Prairie, MN 55344 | Phone: 855-123-1234 | Fax: 952-942-0703 | www.oraldna.com
CLIA#: 24D1033939 CAP#: 7190878

- Type and concentration of disease-causing bacteria
- Classify high vs. low risk
- Determines treatment timing
- Highly personalized treatment approach
- Systemic way to track oral health

MYPERIOPATH®

FINAL REPORT

Sample, Report
(ID: 951750)
Date Of Birth: 09/20/1980
Gender: Female

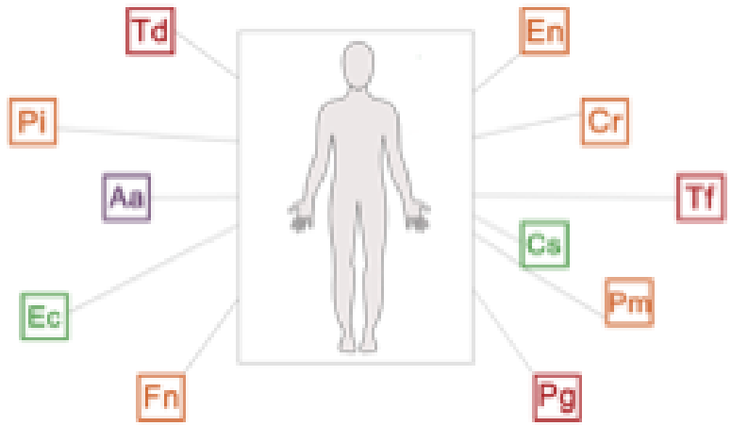
Sample Information
Specimen#: 5033050001
Accession#: 201807-12468
Specimen: Oral Rinse(P)
Collected: 07/08/2018

ORALDNA LABS
Innovations in Salivary Diagnostics

Clinical Considerations

Reason for Testing	Clinical	Diagnostic	Medical History
☑ Active Periodontal Disease	☑ Redness/Discoloration ☑ Inflammation/Redness ☑ Bleeding on Probing	☑ Type III Moderate Periodontitis ☑ Tooth Numbers 3 | 9 | 14 | 19 | 24 | 30 Pocket Depths(mm) 4 | 4 | 5 | 4 | 4 | 3	☑ Past History of Smoking ☑ Arthritis/Auto Immune Disease

Systemic Effects of Oral Pathogens



Cancer

Chronic gum disease, involving Aa, Pg, Td, Tf, & Fn is a risk factor for the development of certain cancers including ones involving the pancreas, esophagus, colon, lungs, and the head and neck. Additionally, untreated gum disease is a cause of ongoing inflammation, which may promote the advancing growth of tumors.

Cardiovascular Health

Select bacteria such as Aa, Td, Tf, Pg, Pi, & Fn can leak from blood vessels in the gums and travel to the heart, where cholesterol and other lipids deposit. These bacteria can incite inflammation in arteries, and if occluded, cause a heart attack. A goal of treatment is to minimize the levels of these bacteria as much and as long as possible.

Joint and Musculoskeletal Health

The periodontal bacteria Pg, Fn & Ec are a cause of arthritis. The oral inflammation caused by these bacteria also leads to total body inflammation which, combined with changes in a person's immunity, may result in chronic joint diseases like rheumatoid arthritis.

Dementia and Brain Health

Recent medical studies point to poor oral health, and high levels of the bacteria Pg, Cr, Ec in our gums, increasing the risk of developing dementias such as Alzheimer's.

Metabolic Health

Obesity, lack of exercise and chronic gum disease involving the bacteria Aa, Td, Tf, Pg, & Fn cause chronic inflammation. Inflammation can damage the pancreas where insulin is produced, possibly leading to diabetes. Also, diabetes worsens oral health by increasing the level of harmful bacteria in the gums.

Healthy Pregnancy

Bacteria associated with gum disease, especially Aa, Td, Pg, Fn, and Ec, are known to put a pregnancy at risk for pre-term birth, decreased birth weight and even blood infection in the placenta or newborn. Every pregnant woman should be tested for these harmful bacteria.

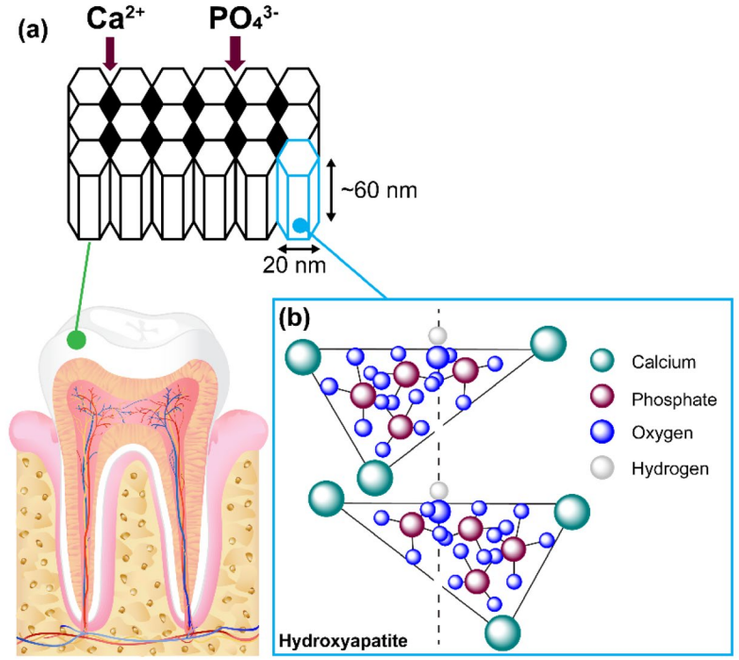
Methodology: Genomic DNA is extracted from the submitted sample and tested for 10 species specific bacteria (Aa: Aggregatibacter actinomycetemcomitans, Pg: Porphyromonas gingivalis, Tf: Tannerella forsythia, Td: Treponema denticola, En: Eubacterium nodatum, Fn: Fusobacterium nucleatum/periodontium, Pi: Prevotella intermedia, Cr: Campylobacter rectus, Pm: Peptostreptococcus (Micromonas) micros, Ec: Eikenella corrodens) and 1 genus of bacteria [Cs: Capnocytophaga species (gingivalis, ochracea, sputigena)] known to cause periodontal disease. The bacteria are assayed by real-time quantitative polymerase chain reaction (qPCR). Bacterial levels are reported in log 10 copies per mL of sample (e.g. 1x10^3 = 1000 bacteria copies per mL of collection). Cross-reactivity is possible with Leptotrichia buccalis, Fusobacterium nwaseaki, and Capnocytophaga granulosa. This test was developed, and its performance characteristics determined by OralDNA Labs pursuant to CLIA requirements. This test has not been cleared or approved by the U.S. Food and Drug Administration. The FDA has determined that such clearance or approval is not necessary.

PRF (PLATELET RICH FIBRIN)

- The gold standard for in vivo tissue healing and regeneration requires the mutual interaction between a scaffold (fibrin matrix), platelets, growth factors, leukocytes, and stem cells (Kawase, 2015).
- L-PRF, A-PRF, I-PRF
- Derived from patient's own blood
- Used as a membrane, cut into fragments, injected
- Healing and regeneration from within- stem cells and leukocytes, angiogenesis
- Reduces inflammation
  - Reduces pain post-op
- Decreases risk of post-op infection
- Chair-side
- Non-invasive

FANTASTIC 4

1. Vitamin C- the ultimate antioxidant
   - ➢ disease=oxidative stress
   - ➢ organic portion- collagen 33% + water 22%
2. Magnesium
   - ➢ ying/yang with Calcium
   - ➢ absorption of Calcium
   - ➢ minor ongoing deficiency of magnesium can lead to a significant amount of bone loss.
3. Vitamin D
   - ➢ regulates Calcium in blood and absorption
4. Vit K2/ mk7
   - ➢ promotes calcium accumulation in bones, while reducing its accumulation in soft tissues such as blood vessels.



INGREDIENTS TO AVOID

- Fluoride- IAOMT, fluoride action network
  - affects normal endocrine function and cognitive development in children
- Triclosan
  - FDA study conducted found a decrease in some thyroid hormones
- Sodium Lauryl Sulphate (SLS)
- Propylene Glycol
  - shelf life- CNS, liver and heart
- Artificial Sweeteners
- Diethanolamine (DEA)
- Parabens
  - hormone disruptors, mimics estrogen

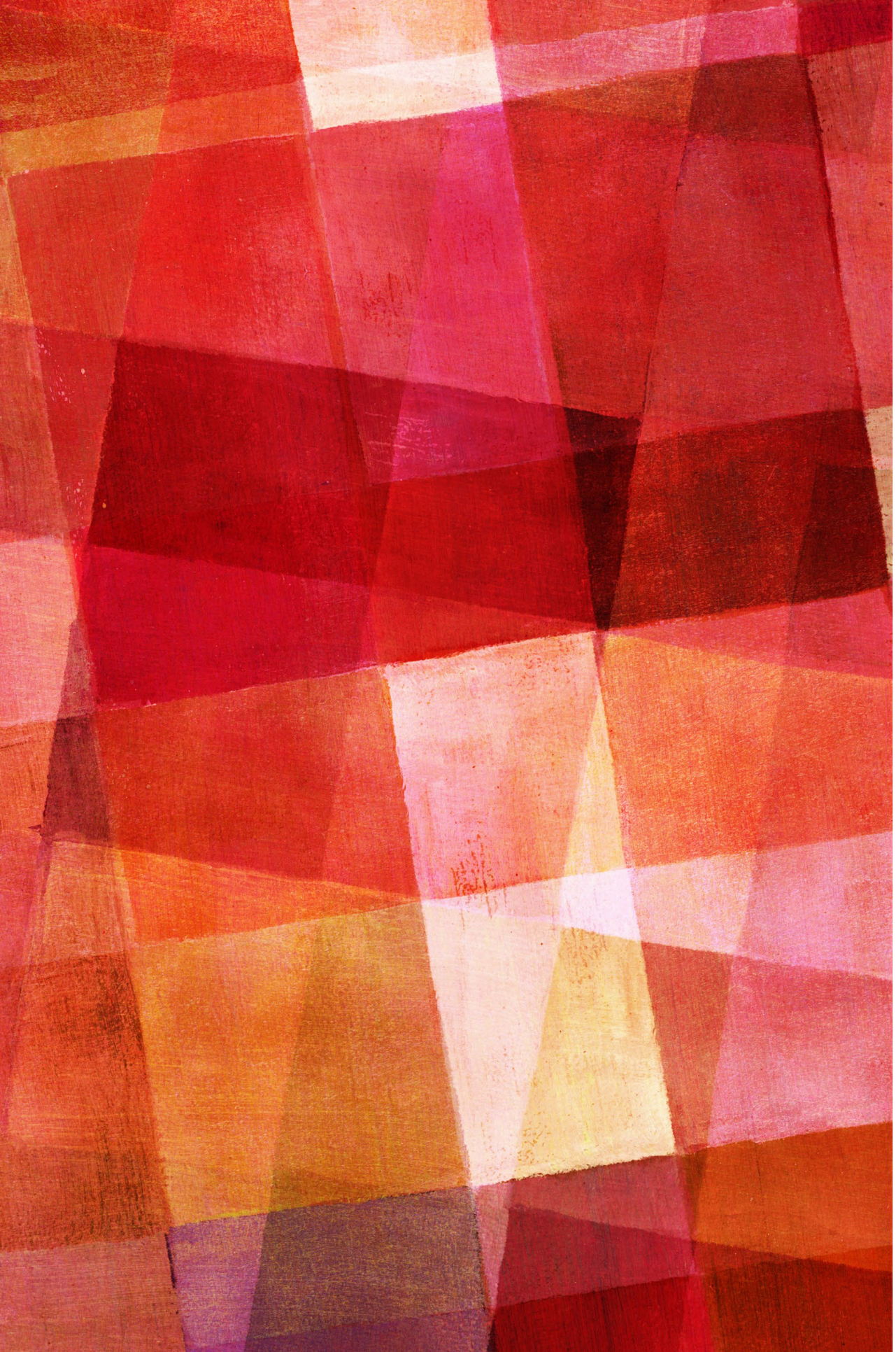
@ HOME CARE

- Electric tooth brush *proper use
  - Sonicare
- Mouthwash
  - Avoid alcohol
  - StellaLife
- Toothpaste
  - Boka, Risewell, Revitan
  - Hydroxyapatite
  - Once enamel is gone, you can’t get it back. You can increase the mineral content of the remaining enamel, which strengthens it, and that’s what remineralization does.
- Floss
  - Cocofloss
- Tongue Scraper
- Waterpik
- Nebulizer with H2O2
  - leaky gut

Amaechi, B.T., AbdulAzees, P.A., Alshareif, D.O. *et al.* Comparative efficacy of a hydroxyapatite and a fluoride toothpaste for prevention and re

WHAT IF I AM NOT CURRENTLY AT A BIOLOGICAL PRACTICE

- Respectful conversations
- It’s okay to ask questions!
- Fluoride-free polish and materials
- Ask about materials being used
- CBCT
- IAOMT.org



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- dental@biomedne.com