8 MAR 2017

MEMORANDUM FOR SGDTG
ATTN: MAJ JONATHAN P. KRUZE

FROM: 59 MDW/SGVU

SUBJECT: Professional Presentation Approval

1. Your paper, entitled Treatment of White Spot Lesions with Icon (Resin Infiltration) presented at/published to HINMAN Dental Society, 33 Lenox Pointe NE, Atlanta, GA, 23-25 March 2017 in accordance with MDWI 41-108, has been approved and assigned local file #17121.

2. Pertinent biographic information (name of author(s), title, etc.) has been entered into our computer file. Please advise us (by phone or mail) that your presentation was given. At that time, we will need the date (month, day and year) along with the location of your presentation. It is important to update this information so that we can provide quality support for you, your department, and the Medical Center commander. This information is used to document the scholarly activities of our professional staff and students, which is an essential component of Wilford Hall Ambulatory Surgical Center (WHASC) internship and residency programs.

3. Please know that if you are a Graduate Health Sciences Education student and your department has told you they cannot fund your publication, the 59th Clinical Research Division may pay for your basic journal publishing charges (to include costs for tables and black and white photos). We cannot pay for reprints. If you are a 59 MDW staff member, we can forward your request for funds to the designated Wing POC at the Chief Scientist’s Office, Ms. Alice Houy, office phone: 210-292-8029; email address: alice.houy.civ@mail.mil.

4. Congratulations, and thank you for your efforts and time. Your contributions are vital to the medical mission. We look forward to assisting you in your future publication/presentation efforts.

[Signature]
LINDA STEEL-GOODWIN, Col, USAF, BSC
Director, Clinical Investigations & Research Support

Warrior Medics — Mission Ready — Patient Focused
INSTRUCTIONS

USE ONLY THE MOST CURRENT 59 MDW FORM 3039 LOCATED ON AF E-PUBLISHING

1. The author must complete page two of this form:
   a. In Section 2, add the funding source for your study [e.g., 59 MDW CRD Graduate Health Sciences Education (GHSE) (SG5 O&M); SG5 R&D; Tri-Service Nursing Research Program (TSNRP); Defense Medical Research & Development Program (DMRDP); NIH; Congressionally Directed Medical Research Program (CDMRP) ; Grants; etc.]
   b. In Section 2, there may be funding available for journal costs, if your department is not paying for figures, tables or photographs for your publication. Please state “YES” or “NO” in Section 2 of the form, if you need publication funding support.

2. Print your name, rank/grade, sign and date the form in the author's signature block or use an electronic signature.

3. Attach a copy of the 59 MDW IRB or IACUC approval letter for the research related study. If this is a technical publication/presentation, state the type (e.g. case report, QA/QI study, program evaluation study, informational report/briefing, etc.) in the "Protocol Title" box.

4. Attach a copy of your abstract, paper, poster and other supporting documentation.

5. Save and forward, via email, the processing form and all supporting documentation to your unit commander, program director or immediate supervisor for review/approval.

6. On page 2, have either your unit commander, program director or immediate supervisor:
   a. Print their name, rank/grade, title; sign and date the form in the approving authority's signature block or use an electronic signature.

7. Submit your completed form and all supporting documentation to the CRD for processing (59crdpubspres@us.af.mil). If you have any questions or concerns, please contact the 59 CRD/ Publications and Presentations Section at 292-7141 for assistance.

8. The 59 CRD/Publications and Presentations Section will route the request form to clinical investigations, 502 ISG/JAC (Ethics Review) and Public Affairs (59 MDWPA) for review and then forward you a final letter of approval or disapproval.

9. Once your manuscript, poster or presentation has been approved for a one-time public release, you may proceed with your publication or presentation submission activities, as stated on this form. Note: For each new release of medical research or technical information as a publication/presentation, a new 59 MDW Form 3039 must be submitted for review and approval.

10. If your manuscript is accepted for scientific publication, please contact the 59 CRD/Publications and Presentations Section at 292-7141. This information is reported to the 59 MDW/CRC. All medical research or technical information publications/presentations must be reported to the Defense Technical Information Center (DITC). See 59 MDW 41-108, Presentation and Publication of Medical and Technical Papers, for additional information.

NOTE: All abstracts, papers, posters, etc., should contain the following disclaimer statement:

"The views expressed are those of the [author(s)] [presenter(s)] and do not reflect the official views or policy of the Department of Defense or its Components"

NOTE: All abstracts, papers, posters, etc., should contain the following disclaimer statement for research involving humans:

"The voluntary, fully informed consent of the subjects used in this research was obtained as required by 32 CFR 219 and DODI 3216.02_AFI 40-402."

NOTE: All abstracts, papers, posters, etc., should contain the following disclaimer statement for research involving animals, as required by AFR 40-401_IP:

"The experiments reported herein were conducted according to the principles set forth in the National Institute of Health Publication No. 80-23, Guide for the Care and Use of Laboratory Animals and the Animal Welfare Act of 1966, as amended."
**PROTOCOL TITLE:** Treatment of White Spot lesions with Icon (Resin Infiltration)

**FUNDING RECEIVED FOR THIS STUDY?** ☑ YES ☐ NO

**DATE**
February 03, 2017

**59 MDW PRIMARY POINT OF CONTACT**
Col Amar Kosaraju, DMD, MSc, MS; amar.kosaraju.mil@mail.mil

**AUTHORSHIP AND CO-AUTHOR(S)**
- **a.** Primary/Corresponding Author: Kruze, Jonathan P. (Maj)
- **b.** Jessup, Jeffrey (Col)
- **c.** Kosaraju, Amar (Col)
- **d.**
- **e.**
- **f.**

**AUTHOR'S PRINTED NAME, RANK, GRADE**
- Jonathan P. Kruze, Maj

**APPROVING AUTHORITY'S PRINTED NAME, RANK, TITLE**
- Nancy Motyka, Col

---

**NOTE:** All publications/presentations are required to be placed in the Defense Technical Information Center (DTIC).
Dental product review using existing publicly available literature. Appropriate disclaimers included.
Treatment of White Spot lesions with Icon (Resin Infiltration)
The views expressed are those of the presenter and do not reflect official views or policy of the Department of Defense, or its Components or USUHS.
White Spot Lesions

- Until the advent of resin infiltration there has never been a satisfactory solution for treating these white spots
- Goal → Preservation of healthy tooth structure
- Esthetic results on smooth surfaces
- Caries arrest at an early stage
- Pain free method without anesthesia or invasive drilling
RESIN INFILTRATION
Treatment for White Spot Lesions

» Icon: Mechanism of Action

» Combines erosion of enamel with resin infiltration
» Modifies enamel optical properties
» Penetrates up to 450 μm to fill pores
» Resin Infiltrant (1.52) has refractive index (RI) similar to healthy enamel (1.65). Air (1.00)

» Difference in refractive indices between porosities filled with entrapped air and enamel is reduced, eliminating the diffuse light scattering and lesions regain translucency

Icon® - Arrest Early Caries and Remove White Spots ... in one visit!

Visit: www.Drilling-No-Thanks.com

DMG AMERICA
Icon Etch (15% HCL acid)

RD. Etch and let sit for 2 min. Can be etched for up to 3 times. Etch until lesion is least visible. Rinse for 30 seconds and dry.
Icon Dry (Ethyl Alcohol)

- Let set for 30 seconds then dry
Icon Infiltration

(Low viscosity resin)

- 3 min set then LC for 40 seconds
Clinical Photos

Before

After
Questionable indications and Contraindications

- **Enamel defect lesions, fluorosis and hypoplasia**
    - The fluorosis stain showed visually perceptual improvements. In the cases of hypoplasia stains were not completely blended. However, general clinical outcomes of these cases were considered successful and recovered the patients’ self-esteem.

- **Older white spot lesions > 2 years**
    - In the case of post-orthodontic WSL’s the infiltration treatment should be done as soon as possible after bracket removal, fearing that the lesion at that time is active and tends to progress and would eventually lose its surface integrity thus compromising the ability of the resin infiltrate to access a deeper lesion.

- **Surface cavitation**
Potential issues for Resin Infiltration

- Research
  - Studies show that sometimes it just doesn't work in all cases. 50% clinical success. Probably has to do with lesion depth and age of lesion
    - Kim et al (2011)
  - Color stability has been shown to be a potential pitfall
  - Unable to bleach after resin infiltration?
Final Take home message


▶ "Is a promising technique for enamel white discoloration camouflage. Previous studies have shown it is a feasible option for color masking of enamel whitish discolorations with favorable short term results. No strong evidence however exists to support the clinical recommendation of the technique. This is due simply to the lack of long-term randomized controlled trials, with a larger sample size and longer follow-up time."
Bibliography

QUESTIONS?