**Objectives:** The aims of this study were as follows: (1) to review the learning impact of The Oral Cavity: Portal to Health and Disease (TOC), a massive open online course in oral medicine developed by Penn Dental Medicine using the Coursera platform; and (2) to analyze course enrollment to determine worldwide interest in accessible, high-quality oral medicine education.

**Methods:** The authors analyzed Coursera learner statistics to critically evaluate learner traits and course engagement for TOC, which launched on September 17, 2017, and covers topics relevant to oral medicine and the interprofessional relationship between dentistry and medicine.

**Results:** To date, TOC has garnered 16,653 visitors, 4,318 of whom have enrolled and demonstrate approximately steady continued monthly and daily engagement. Most learners are between 25 and 34 years of age, and 54% are female, reflecting interest in acquiring oral medicine–related knowledge in this demographic. TOC includes more participants than Coursera averages who have obtained professional and doctoral degrees. TOC participants also include more individuals who are unemployed, employed part time, and self-employed, demonstrating a broad range of participants. Some participants have successfully applied to and enrolled in dental schools and oral medicine residency programs, including at the University of Pennsylvania. Enrollees are from 6 continents, with higher proportions of learners than other courses on the platform being from Africa and Asia. The countries with the highest proportions of participants include the United States, India, Egypt, the United Kingdom, and Brazil, demonstrating a geographically wide interest among these participants. One hundred twenty-six learners have rated the course with 4.9 of 5 stars; 95% of participants have given the course a "thumbs up"; and many submit positive reviews, including one individual who remarked, "It is a great course for dental students who want to know how systemic diseases or conditions may affect in [sic] the Oral Cavity."

**Conclusions:** Coursera is a worldwide technology platform that hosts free courses spanning various levels and disciplines. TOC presents an opportunity to learn oral medicine and interprofessional health care concepts for individuals with interests in dental, medical, and allied health professions. High learner engagement with wide global distribution demonstrates interest in oral medicine–related education worldwide.

## OPTIMIZING OVERNIGHT ORAL APPLIANCE FOR SUSTAINED-RELEASE VARNISH DELIVERY SYSTEM OF SIROLIMUS

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**Objectives:** Intraoral trays can be used to deliver treatment materials and medications for dental or mucosal conditions. Maintaining appropriate salivary levels of the active ingredient is challenging when using local application. We have previously analyzed salivary levels and local effects of slow-release varnishes (with clotrimazole or sirolimus as the active ingredient) during the daytime. The aims of the present study were as follows: (1) to optimize overnight appliances for slow-release medications by measuring saliva and blood levels and (2) to evaluate the safety of overnight use.

**Methods:** An acrylic tray containing 0.5 mg of sirolimus in a sustained-release varnish was applied to 6 anterior teeth for 12 hours in 10 healthy volunteers. Whole unstimulated saliva was collected 1, 2, 10, and 12 hours after application, and a blood sample was taken after 12 hours. Drug levels were analyzed. Results from slow- and fast-release formulations, varnish application position on the tray (buccal, palatal, or lingual), and tray placement (mandibular vs maxillary) were compared. The volunteers evaluated the varnish and tray. The study was approved the hospital ethics committee.

**Results:** Salivary sirolimus was undetected with use of the slow formulation. The faster formulation produced salivary concentrations of 0.3-45 ng/mL. The highest salivary levels were observed with a mandibular tray with lingual varnish application (up to 178 ng/mL). The sialometry of all participants was within normal range (0.2-2 mL/min), and the highest drug levels were found when salivary flow was lowest. The medication was undetected in the blood. No local reactions or side effects were reported.

**Conclusions:** Salivary concentrations of medications delivered using an oral tray can be affected by the release rate of formulation and, more important, by the position of the tray and the varnish within it and salivary flow rate. Overnight oral trays can be used to deliver medications especially when 24-hour drug exposure is desired. Further studies regarding local factors affecting drug release and salivary levels are required.

## THALIDOMIDE THERAPY FOR REFRACTORY MUCOSAL DISEASE: BENEFIT AND RISKS OVER 10 YEARS

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**Background:** The immunomodulatory and antiangiogenic effects of thalidomide have been demonstrated in a number of refractory ulcerative oromucosal conditions, including recurrent aphthous stomatitis (RAS), Behçet disease, erythema multiforme (EM), erosive lichen planus, and orofacial granulomatosis (OFG). Thalidomide acts by modulating the inflammatory cascade, interacting with various cytokines, including tumor necrosis factor-$\alpha$, interleukin 10, and cyclooxygenase 2. Despite its efficacy, thalidomide is associated with a number of risks, including peripheral neuropathy, thromboembolic disease, and embryofetal toxicity, which limit its clinical use.

**Methods:** A retrospective review of the clinical database of the Oral Medicine Department at the Royal National ENT and Eastman Dental Hospitals, UCLH, London, UK, was undertaken to identify patients prescribed thalidomide between 2009 and 2019.

**Results:** Sixteen patients (9 men and 7 women) with a mean age of 46 years (range, 20-66 years) were identified in this cohort. Clinical diagnoses included RAS (n = 10), human immunodeficiency virus (HIV)-related oral ulceration (n = 3), EM (n = 2), and OFG (n = 1). All patients, with the exception of HIV-related cases, had proved refractory to systemic corticosteroids and/or immunosuppressive therapy. Patients were treated for a mean of 50 months (range, 1-120 months) with doses ranging