

From: Christopher H. Fox
Sent: Tue, 14 Sep 2021 20:33:15 +0000
To: Horsford, Jonathan (NIH/NIDCR) [E]
Cc: D'Souza, Rena (NIH/NIDCR) [E]; Makyba Charles-Ayinde
Subject: IADR Response to WHO
Attachments: IADR Response to WHO Draft Strategy on Oral Health FINAL.pdf

Jonathan,
Attached is the IADR response sent to WHO.
Chris

Christopher H. Fox, DMD, DMSc, Chief Executive Officer
International Association for Dental Research | www.iadr.org
American Association for Dental, Oral, and Craniofacial Research | www.aadocr.org
1619 Duke Street, Alexandria, VA 22314-3406, USA
T: + (b) (6) | F: + (b) (6) | E: (b) (6)
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AADOCR/CADR Annual Meeting & Exhibition	March 23-26 2022	Atlanta, GA, USA
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2023		
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IADR/LAR General Session & Exhibition	June 21-24, 2023	Bogotá, COLOMBIA

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IADR

International Association
for Dental Research

September 10, 2021

Benoit Varenne, DDS, MPH, PhD.

Dental Officer, Oral Health Program Noncommunicable Diseases Dept,
Division of UHC/Communicable and Noncommunicable Diseases,
World Health Organization
20, Avenue Appia, CH-1211
Geneva 27

Re: Draft Global Strategy on Tackling Oral Diseases.

via email: (b) (6)

The International Association for Dental Research (IADR), which represents over 10,000 researchers around the world with a mission to drive dental, oral and craniofacial research for health and well-being worldwide, appreciates the opportunity to share our thoughts on the Draft Global Strategy on Tackling Oral Diseases being developed by the World Health Organization (WHO). IADR applauds the WHO on both the approval of the Oral Health Resolution during the World Health Assembly 74 (WHA74) as well as the development of this draft global strategy on tackling oral diseases. We also support the development of the global strategy to inform the development of a framework for tracking progress with clear measurable targets. To respond to this request for comments, IADR engaged its Science Information Committee and its Board of Directors.

Paragraph 9 of the Commercial Determinants and Risk Factors of Oral Health section of the draft report, addresses human papilloma virus as a risk factor for oropharyngeal cancers. This is true, as studies have shown that the incidence of HPV-related oropharyngeal cancers is rapidly increasing and currently exceeds (United States¹¹) or is predicted to exceed that of HPV-related cervical cancer¹². Unfortunately, there is no further mention of preventing HPV-related oropharyngeal cancers in the document. Strategic Objective 2: Oral Health Promotion and Oral Disease Prevention, Paragraph 28 should include national HPV vaccination programs for girls and boys to reduce oropharyngeal cancers as well as screening programs to mitigate outcomes.

A public health approach to disease prevention and health promotion has emerged as the dominant strategy for combating noncommunicable diseases worldwide¹ and therefore is also applicable to oral diseases. The WHO Global Oral Health Programme has adopted this approach as the best means of promoting oral health and reducing inequalities within and between countries². In paragraph 12 of the Oral Health Promotion and Oral Disease Prevention section of the draft report it is called to attention that essential prevention methods, such as community-based methods, topical fluoride applications or the use of fluoridated toothpaste, frequently are not available or affordable for people. In an effort to set measurable targets for Member States, IADR would support the explicit definition of the community-based methods that are most effective for the prevention of oral diseases as well as the most economical mechanisms. Community water fluoridation is a safe and effective, evidence-based intervention for the prevention of dental caries. Studies have shown that community water fluoridation

+1.703.548.0066
+1.703.548.1883
1619 Duke Street
Alexandria, VA 22314 3406, USA
www.iadr.org

is the simplest way to maintain a constant low dose of fluoride in the oral cavity, through drinking fluoridated water or ingesting meals prepared with fluoridated water^{3,4}. Additionally, a systematic review by the US Community Preventive Services Task Force (CPSTF) found that water fluoridation is cost saving and is a safe and effective way to prevent and control dental caries⁵. Additionally, the United Kingdom's National Institute for Health Research, Cochrane Oral Health Group, and the National Health and Medical Research Council, Australia have all conducted scientific reviews by expert panels and concluded that community water fluoridation is a safe and effective way to promote good oral health and prevent decay¹³⁻¹⁵. The WHO has previously recommended a concentration of 0.5 to 1.5 mg/L of to achieve caries prevention while minimizing the risk of dental fluorosis¹⁶. Countries have decided on the concentration of water fluoride appropriate for their context. Therefore, IADR supports the inclusion of community water fluoridation within the draft strategy as a recommendation of a measurable target for the prevention of oral diseases.

The Minamata Convention on Mercury is a multilateral, legally-binding, environmental agreement that addresses specific human activities which are contributing to widespread mercury pollution. This agreement includes an approach to phase down the use of dental amalgam for the treatment of dental caries. With 133 Parties to the Minamata Convention, including middle- and lower-income countries (LMICs), it is imperative that the draft resolution contain a specific paragraph within the Strategic Objectives section that specifically addresses the use of dental amalgam. IADR supports the inclusion of language that is supportive of the phase down of dental amalgam within Strategic Objective 3. This language should call for further research into dental amalgam alternatives and include guidance to setting national objectives and a timeline that is targeted at caries prevention and health promotion. Additionally, in resource limited settings, a premature phase out approach in lieu of a country specific and nationally contextual phase down approach may serve to widen oral health inequalities⁶.

In Guiding Principles 2 and 3, the global strategy addresses the need for the integration of oral health in primary health care and a new oral health workforce model that is responsive to population needs. It is important to note, that in several countries, for instance Mexico, primary health care is mainly provided by nurses^{8,9}. However, during basic training in nursing schools, educational preparation to address oral health needs is limited across nursing career curricula¹⁰. Consequently, it will be challenging for those countries to successfully incorporate oral health into primary health care practices. Therefore, the main activities of primary care that may be mainly aimed at the mother-child binomial, will continue to lack oral health promotion and education, which is essential during child development. IADR supports inclusion within the global strategy, a call for the integration of oral health prevention and the basic description of oral health problems during the life course within the nursing career curriculum.

As part of the Strategic Objectives, the draft report outlines the oral health research agenda. It identifies the need to create a research agenda that is oriented towards public health programs, population-based interventions, learning health systems, workforce models, digital technologies, the public health aspects of oral diseases and conditions, and economic analyses to identify cost-effective interventions. However, paragraph 32 in Strategic Objective 5 incorrectly states that “the historical oral health research agenda [that] has focused heavily on dental technology and problem description, rather than problem-solving.” This is simply not true and belies the very definition of research. Our current preventive approaches have been built on decades of research into the basic biologic mechanisms of oral diseases. Rather than discard any current research agenda, IADR supports a clear call for the *enhancement* of the research agenda with an emphasis on the expansion of the current research interest in dental technologies to include a more public health lens. There is the capacity to continue to investigate appropriate dental technologies for treatment and prevention whilst addressing all the other components and foundational

biologic aspects of oral disease. As others have said, our research agenda must span from the molecular to the societal. With emerging technologies such as artificial intelligence, augmented reality, regenerative dentistry, and CRISPR, added to the lessons learned from the COVID-19 pandemic that inspired the increased need for teledentistry, we would be remiss to neglect this important aspect of the oral health research agenda.

Noma (*Cancrum oris*) is highlighted in several sections of the draft global strategy including references in the Oral Disease Burden, Commercial Determinants and Risk Factors of Oral Health as well as outlined as one of the roles of the WHO to consider the classification of noma within the road map for neglected tropical diseases 2021-2030. IADR applauds the WHO for their acknowledgement of the impacts of noma as well as the identification of noma as a marker of extreme poverty exacerbated by socioeconomic disparities. IADR supports the inclusion of noma in the oral disease research agenda as it continues to be poorly understood^{17,18} and would therefore benefit exponentially from a research agenda that is inclusive of studies ranging from the foundational biologic aspects of the disease to population-based research.

Orofacial cleft (OFC) is one of the most common congenital malformations and includes 3 subgroups: cleft lip (CL), cleft palate (CP), and cleft lip and palate (CLP). The causes of OFC are complex, including genetic predisposition and environmental risk factors. The average prevalence of cleft lip with or without cleft palate was 7.75 per 10,000 live births in the United States and 7.94 per 10,000 live births internationally⁷. It is most prevalent in Asian regions with 19.05 per 10,000 live births in Japan being the highest rate globally⁷. It is therefore important the special emphasis be placed on research associated with the fundamental aspects of OFC. IADR supports the inclusion of OFC in Strategic Objective 5 with a clear call for the incorporation of OFC in the research agenda and specific measurable targets for Member States to assess their progress towards this objective.

IADR appreciates the opportunity to provide comments on the Global Strategy on Oral Health being developed by the WHO. IADR stands ready to work with the WHO and the Division of UHC/Communicable and Noncommunicable Diseases to further define the global strategy. If you have any further questions, please contact Dr. Makyba Charles-Ayinde, Director of Science Policy, at

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Sincerely,

(b) (6)

Christopher H. Fox, DMD, DMSc
Chief Executive Officer

(b) (6)

Eric C. Reynolds, AO, FICD, FTSE, FRACDS
President, IADR

¹Global strategy for the prevention and control of noncommunicable diseases. Geneva: World Health Organization; 2000.

²Petersen PE. (2003). The World Oral Health Report 2003. Continuous improvement of oral health in the 21st century the approach of the WHO Global Oral Health Programme. *Community Dentistry and Oral Epidemiology* 31 Suppl 1:3-24.

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From: Allie May
Sent: Thu, 2 Sep 2021 15:25:22 +0000
To: Horsford, Jonathan (NIH/NIDCR) [E]
Subject: Claim Continuing Education Credit for the NTP NASEM Review: What It Means and What's Next for Fluoride Science webinar

Dear Dr. HORSFORD,

We hope you enjoyed the NTP NASEM Review: What It Means and What's Next for Fluoride Science webinar.

To receive continuing education credit for this webinar, please complete the required [assessment](#). Continuing education letters will be sent to attendees that complete the survey in 2-3 business days. IADR/AADOCR Staff will be in contact to provide you with the appropriate documentation. If you have any additional questions, please contact registration@iadr.org.

Thank you,

Allie May, Registration Coordinator

International Association for Dental Research
American Association for Dental, Oral, and Craniofacial Research
1619 Duke Street, Alexandria, VA 22314-3406, USA

T: + (b) (6) | F: + (b) (6) | E: (b) (6)

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2023

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IADR/LAR General Session & Exhibition | June 21-24, 2023 | Bogotá, Colombia

From: Christopher H. Fox
Sent: Tue, 31 Aug 2021 13:39:56 +0000
To: Horsford, Jonathan (NIH/NIDCR) [E]
Cc: Stredrick, Denise (NIH/NIDCR) [E]; Makyba Charles-Ayinde
Subject: RE: Two requests
Attachments: draft-discussion-paper--annex-3-(global-strategy-on-oral-health)-.pdf

Dear Jonathan,

No problem. See attached the WHO Draft Global Oral Health Strategy. To me, "Strategic Objective 5: Oral Health Research Agenda" on page 6 of the PDF is problematic, as it maligns the current oral health research agenda as "focused too heavily on dental technology and problem description, rather than problem solving."

Strategic Objective 5: Oral Health Research Agenda - Create and continuously update a new research agenda focused on public health aspects of oral health and innovation for better impact on oral health

32. Strategic objective 5 strives to move beyond the historical oral health research agenda that has focused heavily on dental technology and problem description, rather than problem-solving. The new oral health research agenda should be oriented towards public health programmes, population-based interventions, learning health systems, workforce models, digital technologies, and the public health aspects of oral diseases and conditions, such as primary health care interventions, minimally invasive interventions, alternative dental restorative materials, environmentally sustainable practice, and economic analyses to identify cost-effective interventions.

Of course, the statement is false and we need to support the full continuum of research, not create a new research agenda and abandon the "historical" research agenda. It's a very ill-informed and anti-science statement. We will say so in our comments which are still under development. (Makyba will say it more diplomatically than me)

On the detailed SP priorities document, are you just looking for AADOCR's comments? Two weeks should be fine.

Chris

Christopher H. Fox, DMD, DMSc, Chief Executive Officer
International Association for Dental Research | www.iadr.org
American Association for Dental, Oral, and Craniofacial Research | www.aadocr.org
1619 Duke Street, Alexandria, VA 22314-3406, USA
T: + (b) (6) | F: + (b) (6) | E: (b) (6)
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From: Horsford, Jonathan (NIH/NIDCR) [E] <(b) (6)>
Sent: Tuesday, August 31, 2021 8:11 AM
To: Christopher H. Fox <(b) (6)>

Cc: Stredrick, Denise (NIH/NIDCR) [E] <(b) (6)>

Subject: Two requests

EXTERNAL EMAIL

Morning Chris,

I hope this isn't too much work, but I have two requests:

- You mentioned concerns about the WHO oral health research language. Can you send me more info? Do you have a draft of what you plan on submitting?
- Rena wanted you to see the more detailed priorities and objectives for the strategic plan (attached). I am not sure of your process, but would two weeks be enough (i.e. Wed Sept 15)?

Thanks,

Jonathan

D. Jonathan Horsford, Ph.D.
Acting Deputy Director
National Institute of Dental and Craniofacial Research
National Institutes of Health
Cell: (b) (6)

WHO DISCUSSION PAPER
(Version dated 9 August 2021)

DRAFT GLOBAL STRATEGY ON ORAL HEALTH

BACKGROUND

1. Recognizing the global public health importance of major oral diseases and conditions, the World Health Assembly adopted resolution WHA74.5 (2021) on oral health and requested the Director-General to develop, in consultation with Member States, a draft global strategy on tackling oral diseases.¹ The strategy will inform the development of a global action plan on oral health, including a framework for tracking progress with clear measurable targets to be achieved by 2030.

2. The resolution on oral health and the resulting draft global strategy are grounded in the 2030 Agenda for Sustainable Development, in particular Sustainable Development Goal 3 (Ensure healthy lives and promote well-being for all at all ages) and its target 3.8 to achieve universal health coverage. They are aligned with the WHO's Thirteenth General Programme of Work (2019); the Political Declaration of the High-level Meeting on Universal Health Coverage (2019); the Operational framework for primary health care (2020); the Global strategy on human resources for health: Workforce 2030 (2016); the Global action plan for the prevention and control of noncommunicable diseases 2013–2030 (2013); the WHO Framework Convention on Tobacco Control (2003); WHA73(12) (2020) on the Decade of Healthy Ageing 2020–2030; and WHA67.11 (2014) on public health impacts of exposure to mercury and mercury compounds: the role of WHO and ministries of public health in the implementation of the Minamata Convention.

GLOBAL OVERVIEW OF ORAL HEALTH

3. Oral health is the well-being of the mouth, encompassing many essential functions, including breathing, eating, speaking, smiling and socializing. Experiencing good oral health, comfortably and confidently, enables an individual to achieve their full capacity and participation in society. Oral health is integral to overall health, well-being and quality of life, from birth to old age.

Oral Disease Burden

4. Globally, there are estimated to be more than 3.5 billion cases of oral diseases and other oral conditions, most of which are preventable.² For the last three decades, the combined global prevalence of dental caries (tooth decay), periodontal (gum) disease and tooth loss has remained unchanged at 45%, which is higher than the prevalence of any other noncommunicable disease.²

5. Cancers of the lip and oral cavity together represent the sixteenth most common cancer worldwide, with over 375 000 new cases and nearly 180 000 deaths in 2020.³ Noma is a necrotizing disease that is a marker of extreme poverty; it starts in the mouth and is fatal for as much as 90% of affected children.^{4,5} Cleft lip and

¹ https://apps.who.int/gb/ebwha/pdf_files/WHA74/A74_R5-en.pdf

² <http://dx.doi.org/10.1177/0022034520908533>

³ <https://gco.iarc.fr/today/data/factsheets/cancers/1-Lip-oral-cavity-fact-sheet.pdf>

⁴ <https://daccess-ods.un.org/TMP/1058816.4627552.html>

⁵ <http://www.who.int/iris/handle/10665/254579>

palate, the most common craniofacial birth defects, have a prevalence of approximately 1 in 1500 births.⁶⁷ Traumatic dental injury is estimated to have a global prevalence of 23% for primary teeth and 15% for permanent teeth, affecting over one billion people.⁸

Social and Economic Costs of Poor Oral Health

6. The personal consequences of untreated oral diseases and conditions - including physical symptoms, functional limitations, and detrimental impacts on emotional and social well-being - are severe. For those who obtain treatment for oral diseases and conditions, the costs can be high and can lead to significant economic burdens. Worldwide, in 2015 oral diseases and conditions accounted for US\$357 billion in direct costs and US\$188 billion in indirect costs, with large differences between high-, middle- and low-income countries.⁹

7. There is a very strong and consistent association between socioeconomic status (income, occupation and educational level) and the prevalence and severity of oral diseases and conditions. Across the life course, oral diseases and conditions disproportionately affect the poor and vulnerable members of societies, often including those who are on low incomes, people living with disability, refugees, prisoners and/or socially marginalized groups.

Commercial Determinants and Risk Factors of Oral Health

8. Oral diseases and conditions and oral health inequalities are directly influenced by commercial determinants, which are strategies and approaches used by the private sector to promote products and choices that are detrimental to health.

9. Oral diseases and conditions share modifiable risk factors common to the leading noncommunicable diseases, that is, cardiovascular disease, cancer, chronic respiratory disease and diabetes. These risk factors include all forms of tobacco use, betel quid and areca nut use, harmful alcohol use, high sugars intake and lack of breastfeeding, as well as the human papilloma virus for oropharyngeal cancers. Some of these risk factors are also associated with cleft lip and palate and traumatic dental injury. The risk factors for noma include malnutrition, coinfections, poor oral hygiene and poor living conditions.

Oral Health Promotion and Oral Disease Prevention

10. Only rarely have oral health promotion and oral disease prevention efforts targeted the social and commercial determinants of oral health at the population level. However, initiatives that tackle upstream determinants (such as policy and regulation) can be cost-effective and have a high population reach and impact. Moreover, oral health promotion and oral disease prevention typically are not integrated into other noncommunicable disease programmes that share major common risk factors and social determinants.

11. In 2015, the WHO guideline on sugars intake for adults and children made the strong recommendation to reduce intake of free sugars throughout the life course based on the evidence of positive associations between intake of free sugars and body weight and dental caries. Nonetheless, dental public health initiatives to reduce sugar consumption are rare.

⁶ <https://apps.who.int/iris/rest/bitstreams/1320658/retrieve>

⁷ <http://dx.doi.org/10.1016/j.jormas.2021.05.008>

⁸ <http://dx.doi.org/10.1111/edt.12389>

⁹ <http://dx.doi.org/10.1177/0022034517750572>

12. Millions of people do not have access to oral health promotion and oral disease prevention programmes. The use of fluorides for prevention of dental caries is limited, and essential prevention methods, such as community-based methods, topical fluoride applications or the use of fluoridated toothpaste, frequently are not available or affordable for people.

Oral Health Care Systems

13. Political commitment and resources for oral health care systems often are limited at the ministry of health level. Typically, the oral health care system is inadequately funded, highly specialized and isolated from the broader health care system. In most countries, universal health coverage benefit packages and noncommunicable disease interventions do not include essential oral health care. Oral health care usually is not covered in primary care facilities, and private and/or public insurance scheme coverage of oral health is highly variable between countries.

14. In many countries, insufficient attention is given to planning the oral health workforce to address the population's oral health needs. Dental training rarely is integrated within general health training systems and focuses on educating highly specialized dentists rather than community oral health workers and mid-level providers, such as dental assistants, dental nurses, dental therapists and dental hygienists.

15. The COVID-19 pandemic has had a negative impact on the provision of essential oral health services in most countries, leading to delays in oral health care treatment, increased antibiotic prescriptions and greater oral health inequalities. The pandemic should be seen as an opportunity to strengthen integration of oral health care into general health care systems as part of universal health coverage efforts.

VISION, GOAL, AND GUIDING PRINCIPLES

Vision

16. The vision of this strategy is universal oral health coverage for all people by 2030.

17. Universal oral health coverage means that every individual has access to essential, quality health services that respond to their needs and which they can use without suffering financial hardship. These include oral health promotion and prevention, treatment and rehabilitation interventions related to oral diseases and conditions across the life course. Universal oral health coverage will enable all people to enjoy the highest attainable state of oral health, contributing to them living healthy and productive lives. Achieving the highest attainable standard of oral health is a fundamental right of every human being.

Goal

18. The goal of the strategy is to guide Member States to develop ambitious national responses to promote oral health, reduce oral diseases, other oral conditions and oral health inequalities, make progress on the path to universal oral health coverage for their populations, and consider the development of targets and indicators, based on national situations, building on the guidance to be provided by the WHO global action plan on oral health, to prioritize efforts and assess the progress made by 2030.

../..

Guiding Principles

Principle 1: A public health approach to oral health

19. A public health approach to oral health strives to provide the maximum oral health benefit for the largest number of people by targeting the most prevalent and/or severe oral diseases and conditions. To achieve this, oral health programmes should be integrated within broader and coordinated public health efforts. A public health approach to oral health requires intensified and expanded upstream actions involving a broad range of stakeholders, including those from social, economic, education, environment and other relevant sectors.

Principle 2: Integration of oral health in primary health care

20. Primary health care is the cornerstone of strengthening health systems because it improves the performance of health systems, resulting in better health outcomes. Integration of basic oral health services with other noncommunicable disease services in primary health care is an essential component of universal health coverage. This integration has many potential benefits, including increased chance of prevention, early detection and control of related conditions, and more equitable access to comprehensive, quality health care.

Principle 3: A new oral health workforce model to respond to population needs

21. Oral health resource and workforce planning models need to better align education and training of health workers with population oral health needs. Universal oral health coverage can only be achieved by reforming the health, education and resource planning systems to ensure the oral health workforce is of adequate size and skills mix to provide essential oral health care. This requires reassessing the roles and competencies of mid-level oral health care providers and community oral health workers based on the new WHO Global competency framework for universal health coverage.

Principle 4: People-centred oral health care

22. People-centred oral health care consciously seeks and engages the perspectives of individuals, families and communities, including people affected by oral diseases and conditions. In this approach, people are seen as participants as well as beneficiaries of trusted oral health systems that respond to their needs and preferences in humane and holistic ways. People-centred oral health care actively fosters oral health literacy, shared decision-making and self-management. Through this process, people receive the opportunity, skills and resources to be articulate, engaged and empowered users of oral health services.

Principle 5: Tailored oral health across the life course

23. People are affected by oral diseases and conditions and their risk factors across the entire life course. The effects may vary and accumulate over time and have complex consequences in later life, particularly in relation to other noncommunicable diseases. These patterns highlight why tailored, age-appropriate oral health strategies need to be integrated within relevant health programmes across the life course, including pre-natal, infant, child, adolescent, working adult and older adult programmes.

Principle 6: Optimizing digital technologies for oral health

24. Digital technologies can be used strategically for oral health at different levels, including improving oral health literacy, implementing oral health e-training and provider-to-provider telehealth, and increasing early detection, surveillance and referral for oral diseases and conditions within primary care. In parallel, it is

critical to establish and/or reinforce governance for digital health and to define norms and standards for digital oral health based on best practice and scientific evidence.

STRATEGIC OBJECTIVES

Strategic Objective 1: Oral Health Governance - Improve political and resource commitment to oral health, strengthen leadership and create win-win partnerships within and outside of the health sector

25. Strategic objective 1 seeks recognition and integration of oral health in all relevant policies and public health programmes as part of the broader national noncommunicable disease and universal health coverage agendas. Increased political and resource commitment to oral health are vital at the national and subnational levels, as is reform of health and education systems.

26. Central to this process is establishing or strengthening the capacity of a national oral health unit. A dedicated, qualified, functional, well-resourced, and accountable oral health unit should be established or reinforced within noncommunicable disease structures and other relevant public health services. Sustainable partnerships within and outside of the health sector, and engagement with communities, civil society and the private sector, are essential to mobilize resources and address the social and commercial determinants of oral health.

Strategic Objective 2: Oral Health Promotion and Oral Disease Prevention - Enable all people to achieve the best possible oral health and target and reduce the social and commercial determinants and risk factors of oral diseases and conditions

27. Strategic objective 2 calls for evidence-based, cost-effective and sustainable oral health promotion and interventions to prevent oral diseases and conditions. At the downstream level, oral health promotion supports the development of personal, social and political skills that enable all people to achieve their full potential for oral health self-care. At the upstream level, oral health promotion includes creating public policies and fostering community action to improve people's control over their oral health and to promote oral health equity.

28. Prevention efforts target key risk factors and social and commercial determinants of oral diseases and other oral conditions. These initiatives should be fully integrated and mutually reinforcing with other relevant noncommunicable disease prevention strategies and regulatory policies related to tobacco, harmful alcohol use and unhealthy food and beverage products, as well as the use of fluorides for prevention of dental caries.

Strategic Objective 3: Primary Oral Health Care - Build workforce capacity and ensure financial protection and essential supplies in integrated primary oral health care

29. Strategic objective 3 seeks to increase access by the entire population to safe, effective, and affordable primary oral health care as part of the universal health coverage benefit package. Basic oral health care includes oral health promotion and prevention of oral diseases and conditions, as well as services which address oral pain, infection, trauma, dysfunction, malignant disease and referral, with agreed quality and patient-safety standards. Oral health care providers who suspect abuse or neglect should offer patients appropriate counseling, treatment, and effective means to report such cases to the relevant authority, according to the national context.

30. Oral health providers should be members of the primary health care team and work side-by-side with other health workers in tackling oral health conditions and other non-communicable diseases, with a focus on addressing common risk factors and supporting general health check-ups. Financial protection through expanded health insurance coverage - including coverage of oral health services - is one of the cornerstones of universal health coverage. Ensuring the reliable availability and distribution of essential medical consumables,

generic medicines and other dental supplies is also important for the management of oral diseases and conditions in primary health care and referral services.

Strategic Objective 4: Oral Health Information Systems - Enhance oral health surveillance and information systems to provide timely and relevant feedback to decision-makers for evidence-based policy-making

31. Strategic objective 4 involves developing more efficient and effective integrated information systems for oral health planning, management and policy-making. At the national level, strengthening oral health information systems should include systematic collection of oral health status, risk factors and resource spending data using existing health management information systems and promising digital technologies. Monitoring systems should also be established to track implementation and impact of existing policies and programmes related to oral health.

Strategic Objective 5: Oral Health Research Agenda - Create and continuously update a new research agenda focused on public health aspects of oral health and innovation for better impact on oral health

32. Strategic objective 5 strives to move beyond the historical oral health research agenda that has focused heavily on dental technology and problem description, rather than problem-solving. The new oral health research agenda should be oriented towards public health programmes, population-based interventions, learning health systems, workforce models, digital technologies, and the public health aspects of oral diseases and conditions, such as primary health care interventions, minimally invasive interventions, alternative dental restorative materials, environmentally sustainable practice, and economic analyses to identify cost-effective interventions.

ROLE OF MEMBER STATES, PARTNERS AND SECRETARIAT

WHO

33. WHO will provide a leadership and coordination role in promoting and monitoring global action on oral health, including in relation to the work of other relevant United Nations agencies, development banks and other regional and international organizations. The organization will: set the general direction and priorities for global oral health advocacy, partnerships and networking; articulate evidence-based policy options; and provide Member States with technical and strategic support.

34. WHO will continue its work with global public health partners to: establish networks for building capacity in oral health care, research and training; mobilize contributions from nongovernmental organizations and civil society; and facilitate collaborative implementation of the strategy, particularly as pertains to the needs of low- and middle-income countries.

35. By 2023, WHO will translate this strategy into an action plan for public oral health including a monitoring framework for tracking progress with clear measurable targets to be achieved by 2030. By 2024, WHO will recommend cost-effective oral health interventions as part of the updated Appendix 3 of the WHO Global action plan on the prevention and control of noncommunicable diseases and the WHO universal health coverage intervention compendium.

36. WHO will continue to update technical guidance to ensure safe and uninterrupted dental care, including during and after the COVID-19 pandemic and other health emergencies. WHO will, in collaboration with the United Nations Environment Programme, develop technical guidance on environmentally-friendly and less-invasive dentistry. WHO will also consider the classification of noma within the road map for neglected tropical diseases 2021–2030.

37. WHO will help scale and sustain innovations for oral health impact in accordance with the WHO innovation scaling framework, including social, service delivery, health product, business model, digital, and financial innovations.

38. WHO will create an oral health data platform as part of WHO's data repository for health-related statistics. The institution will strengthen integrated oral health information systems and surveillance activities through the development of new oral health indicators for population health surveys. WHO will promote and support research in priority areas to improve oral health programme implementation, monitoring and evaluation.

Member States

39. Member States have the primary role in responding to the challenge of oral diseases and conditions. Governments have the responsibility to engage all sectors of society to generate effective responses for the prevention and control of oral diseases and conditions, the promotion of oral health and reduction in oral health inequalities. They should secure appropriate oral health budgets based on intervention costing and investment cases to achieve universal oral health coverage.

40. Member States should ensure that oral health is a solid, robust and integral part of national health policies and that national oral health units have sufficient capacity and resources to provide strong leadership, coordination and accountability on oral health.

41. Member States can strengthen oral health care system capacities by: integrating primary oral health care as part of universal health coverage benefit packages; ensuring the affordability of essential dental medicines and consumables, and other equipment or supplies for the management of oral diseases and conditions; and prioritizing environmentally-friendly and less-invasive dentistry. Member States should also assess and reorient the oral health workforce as required to meet population needs by enabling interprofessional education and a wider team approach that involves mid-level and community health providers.

42. Member States can address the determinants of oral health and risk factors of oral diseases and conditions by: advocating for health taxes or regulation of the sale and advertisement of unhealthy products, and counteracting the underlying commercial interests that drive risks; strengthening health-promoting conditions in key settings; supporting legislation to increase the affordability of quality, fluoride toothpaste; and advocating for its recognition as an essential health product within the national list of essential medicines.

43. Member States should improve oral health surveillance, data collection and monitoring to inform decision-making and advocacy. This includes strengthening integrated surveillance of oral diseases and conditions, as well as analysis of oral health system and policy data, evaluation of oral health programmes and operational research.

44. Member States should critically review and continuously update their oral health education and training curricula prioritizing a public health approach to oral health and reflective problem-solving and leadership skills among future oral health professionals.

International Partners

45. International partners have a valuable role in achieving the goal and objectives of the strategy at global, regional and national levels, including playing a stronger part in advocacy, resource mobilization, exchange of information, sharing of lessons learned, capacity-building and collaborative research.

46. Coordination is needed among international partners, including the organizations of the United Nations system, intergovernmental bodies, non-state actors, nongovernmental organizations, professional associations, patients' groups, academia and research institutions. Establishing and working efficiently as an international coalition on oral health will be a more efficient way to support countries in their implementation of the strategy.

Civil Society

47. Civil society has a role to encourage governments to develop ambitious national oral health responses and to contribute to their implementation. Civil society can forge multi-stakeholder partnerships and alliances that mobilize and share knowledge, assess progress, provide services and amplify the voices of people living with and affected by oral diseases and conditions.

48. Civil society can lead grass-roots mobilization and advocacy for increased focus within the public agenda on oral health promotion and the prevention and control of oral diseases and conditions. Civil society can also help consumers advocate with governments to request the food and beverage industry to provide healthy products; support governments in implementing their tobacco control programmes; and form networks and action groups to promote the availability of healthy food and beverages and fluoridated toothpaste, including through subsidization or reduced taxes.

Private Sector

49. The private sector can strengthen its commitment and contribution to national oral health responses by implementing occupational oral health measures, including through good corporate practices, workplace wellness programmes and health insurance plans.

50. The private sector should take concrete steps towards eliminating the marketing, advertising and sale of products which cause oral diseases and conditions. The private sector should also strive to improve access to and affordability of safe, effective and quality dental equipment, devices, and oral hygiene product. It should also accelerate research on affordable, safe and environmentally sound equipment and materials for oral health care.

51. Dental professionals in the private sector can support national governments in implementation of the strategy through public-private partnerships for the provision of essential oral health care, by helping to plan and implement population-wide prevention measures and by participating in oral health data collection and surveillance.

ACTION BY THE EXECUTIVE BOARD

52. The Executive Board is invited to note the report and to provide guidance on the draft global strategy on oral health.

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From: Lipman, Ruth
Sent: Mon, 2 Aug 2021 23:15:13 +0000
To: Horsford, Jonathan (NIH/NIDCR) [E]
Cc: Ziegler, Kathleen
Subject: NIDCR patient resources
Attachments: NIDCR201 4reasons-dentist-cancer-treatment-illustrations.pdf, NIDCR_head-neck-radation-treatment.pdf, oncology-guide-dental-provider.pdf

Jonathon –

I hope this finds you well, vaxxed and wearing a mask ☺

We are wondering about the content for patients managing head and neck cancer/cancer treatment related oral sequelea that NIDCR developed in the twenty-teens which I've attached and are among the items in the [archived content section of your website](#). We have found them to be very well received when dentists reach out for content to share with patients and/or inform their management of patients.

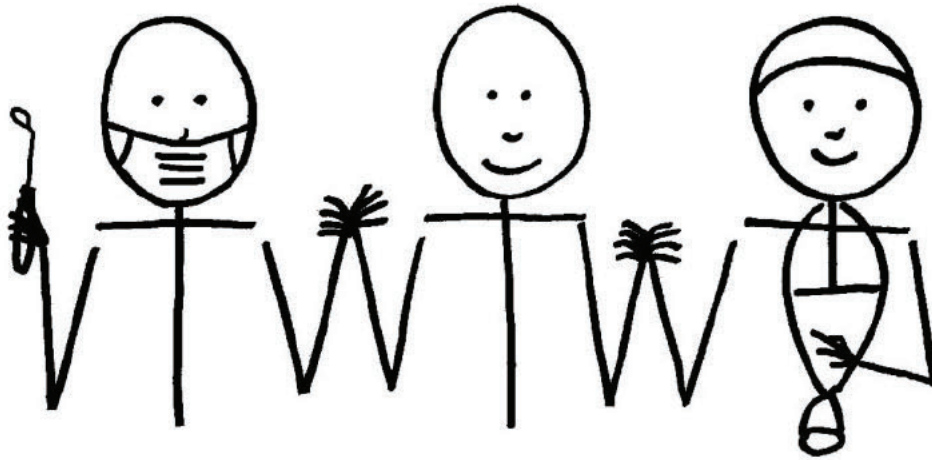
Is there a plan to fill the void with updated materials?

Ruth

Ruth Lipman, PhD (b) (6)
Director, Scientific Information
Evidence Synthesis & Translation Research
(b) (6)
(Pronouns: *she, her, hers*)

ADA Science & Research Institute, LLC 211 E. Chicago Ave. Chicago, IL 60611 www.ada.org

Improving lives through oral health, science and research



Three Good Reasons to See a Dentist Before Cancer Treatment



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
National Institutes of Health



About *Three Good Reasons To See a Dentist Before Cancer Treatment*

Thank you for your interest in *Three Good Reasons To See a Dentist Before Cancer Treatment*. This publication is intended for adults with limited reading skills. It was developed by the National Institute of Dental and Craniofacial Research (NIDCR), one of the federal government's National Institutes of Health.

This booklet provides important oral health information to patients with cancer through a series of unique illustrations called pictographs—pictures that represent ideas. Research conducted at the Johns Hopkins Oncology Center found that when pictographs were used, patients' abilities to remember how to deal with problems associated with cancer treatment increased significantly. The pictographs consist of simple sketches with stick figures, allowing actions to be depicted in a clear, culturally neutral manner.

In *Three Good Reasons To See a Dentist Before Cancer Treatment*, pictographs inform people who have been diagnosed with cancer about the oral health complications they may develop because of their treatment. The illustrations depict patients and the cancer care team in situations that highlight why patients need to seek dental care before, during, and after cancer treatment. Further, the pictographs explain steps patients can take during treatment to prevent or minimize oral health problems.

Three Good Reasons To See a Dentist Before Cancer Treatment is most effective when a member of the health care team explains the booklet to the patient. Each pictograph represents actions that need to be reviewed. Introduced in this way, the pictographs serve to remind patients of the instructions when the booklet is reviewed at home.

If you have any questions about this booklet or would like to order more copies, contact the National Oral Health Information Clearinghouse, a service of NIDCR.

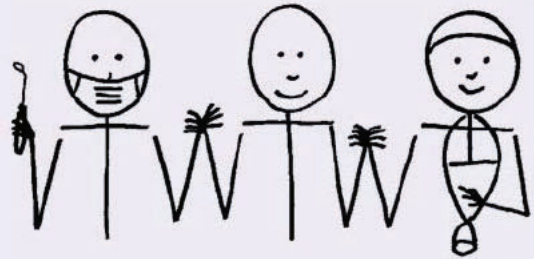
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Three Good Reasons to See a Dentist Before Cancer Treatment

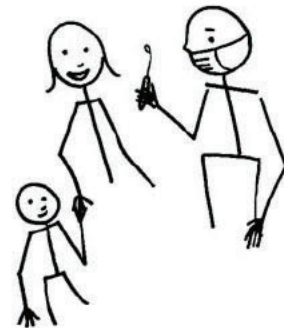
1 Fight Cancer

Your cancer care team should include a dentist.



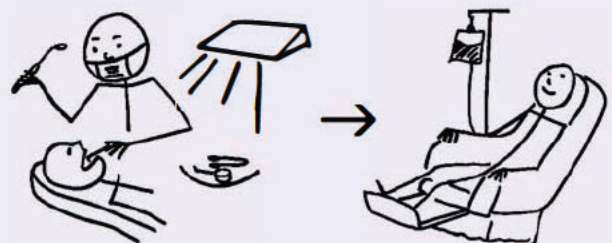
2 Save Your Teeth and Bones

Children also need special protection.



3 Feel Better

Make sure you have a dental check up before your first cancer treatment.



Protect Your Mouth



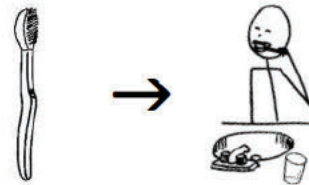
During Cancer Treatment



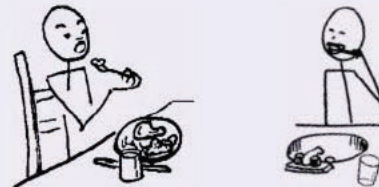
Soak an extra-soft toothbrush in warm water to make it softer.



Brush your teeth and tongue gently.



Brush after every meal.



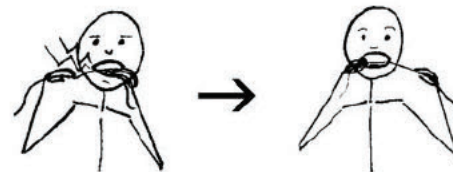
Brush at bedtime.



Floss once a day.



If flossing hurts in one place, keep flossing in the others.



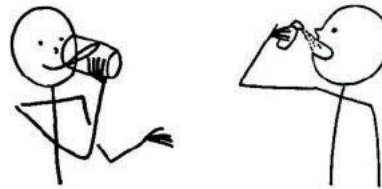
Rinse often with water.



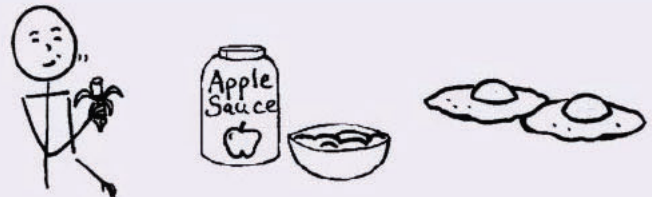
Don't use mouthwash with alcohol in it.



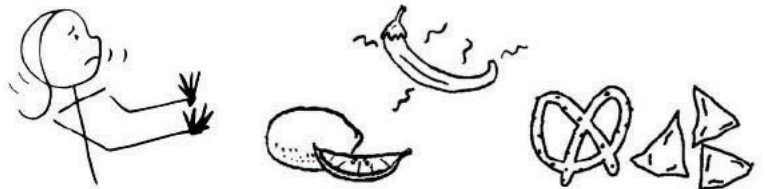
Sip water and use a saliva substitute to keep your mouth moist.



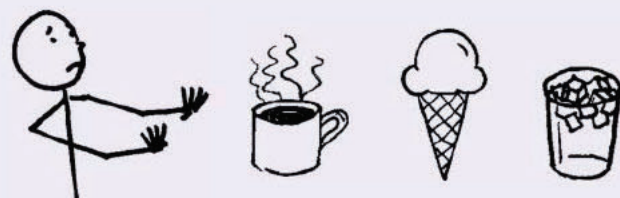
Choose soft, easy-to-chew foods.



Avoid spicy, sour, or crunchy foods.



Avoid very hot or icy-cold food.



Avoid alcohol.



Stop smoking or chewing tobacco.

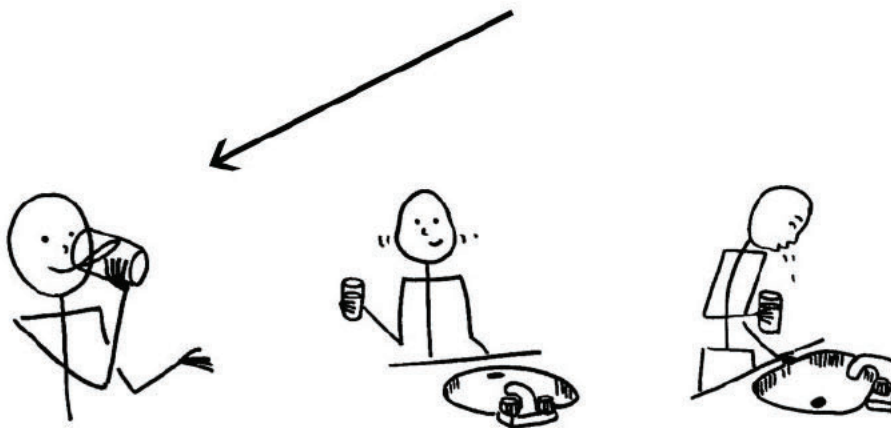
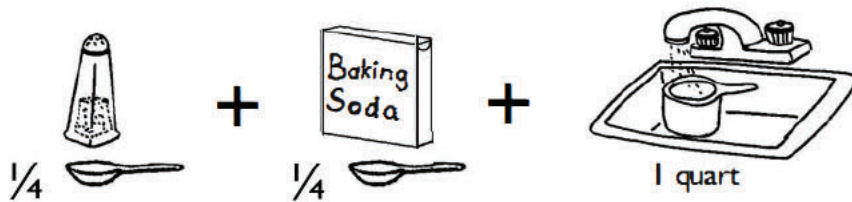


Tips for Mouth Problems

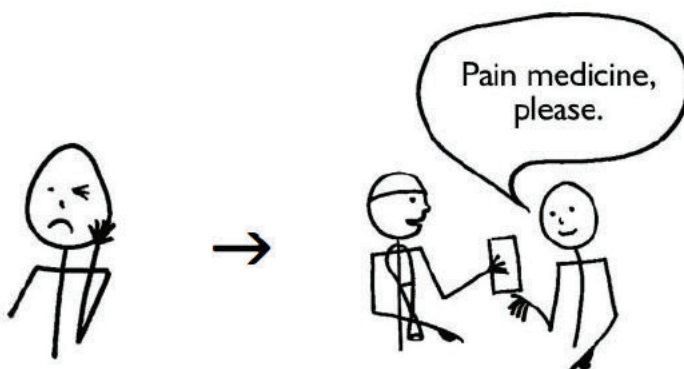
Sore Mouth, Sore Throat



- Rinse often with
 - $\frac{1}{4}$ teaspoon of salt and
 - $\frac{1}{4}$ teaspoon of baking soda in 1 quart (4 cups) of warm water
 - Don't swallow.



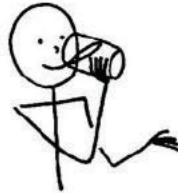
- Ask your cancer care team about medicine that can help with the pain.



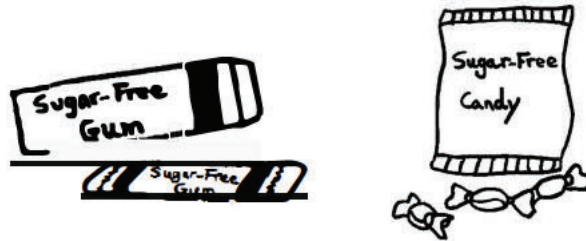
Dry Mouth



- Sip water often.



- Use sugar-free gum or candy.



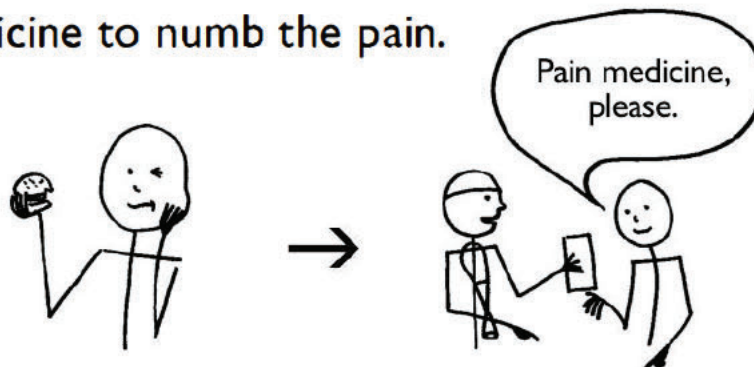
- Talk to your dentist about saliva substitutes.



Eating Problems



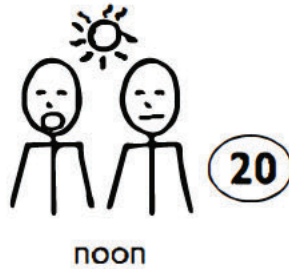
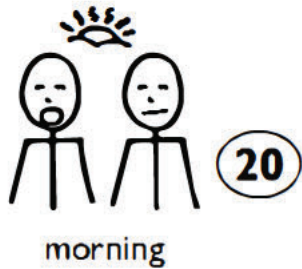
- Ask for medicine to numb the pain.



Stiff Chewing Muscles



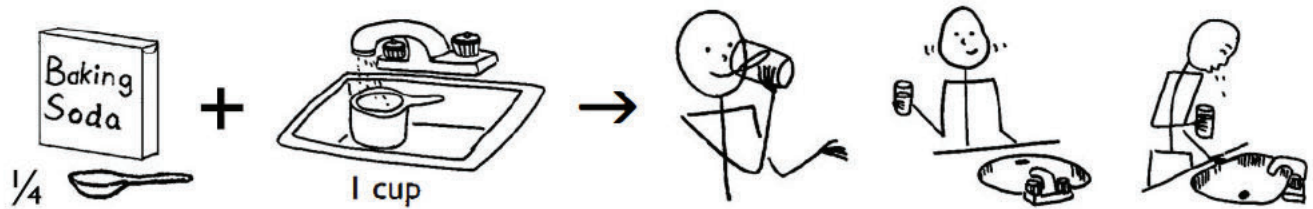
- Three times a day, open and close your mouth as far as you can without pain. Repeat 20 times.



Vomiting



- Rinse your mouth after vomiting. Use $\frac{1}{4}$ teaspoon of baking soda in 1 cup of warm water.
- Don't swallow.



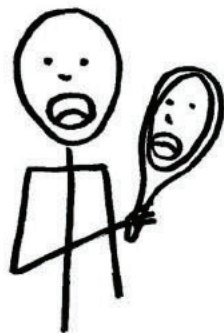
Cavities



- Ask your dentist to put fluoride on your teeth to help prevent cavities.



When to Call Your Cancer Care Team



Check your mouth every day.



Sores



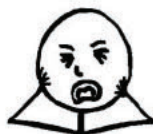
Swelling



Bleeding



Pain



Sticky white film



Oral Health, Cancer Care, and You

This booklet is part of the series, **Oral Health, Cancer Care, and You: Fitting the Pieces Together**. It was developed by the National Institute of Dental and Craniofacial Research in partnership with the National Cancer Institute and the National Institute of Nursing Research, components of the National Institutes of Health in Bethesda, Md., and the Centers for Disease Control and Prevention. Publications in this series include:

For Patients:

Chemotherapy and Your Mouth

La quimioterapia y la boca

Head and Neck Radiation Treatment
and Your Mouth

*La boca y el tratamiento de radiación en
la cabeza y el cuello*

Three Good Reasons to See a Dentist
BEFORE Cancer Treatment

*Tres buenas razones para ver a un dentista
ANTES de comenzar el tratamiento contra
el cáncer*

Three Good Reasons to See a Dentist
BEFORE Cancer Treatment (illustrated
booklet for adults with limited reading skills)

For Health Professionals:

Dental Provider's Oncology Pocket Guide

Oral Complications of Cancer Treatment:
What the Dental Team Can Do

Oncology Pocket Guide to Oral Health

Oral Complications of Cancer Treatment:
What the Oncology Team Can Do

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Head and Neck Radiation Treatment and Your Mouth



Oral Health, Cancer Care, and You
Fitting the Pieces Together

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
National Institutes of Health



This booklet is part of the series, ***Oral Health, Cancer Care, and You: Fitting the Pieces Together***, focused on managing and preventing oral complications of cancer treatment. The series was developed by the National Institute of Dental and Craniofacial Research in partnership with the National Cancer Institute, the National Institute of Nursing Research, and the Centers for Disease Control and Prevention.

For more information about oral complications of cancer treatment or to order free publications, contact:

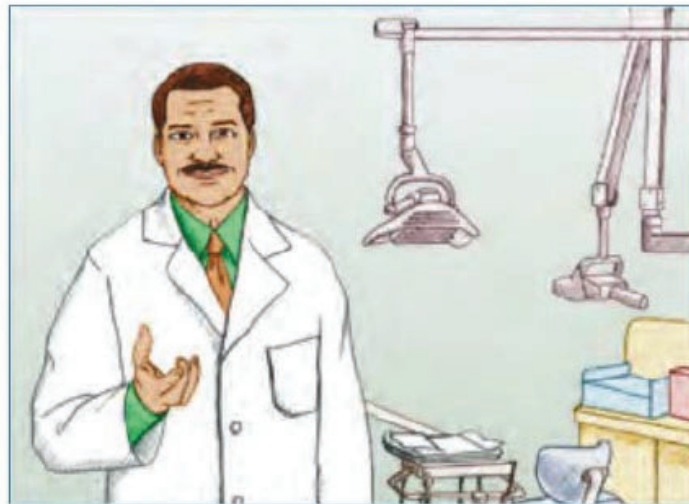
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Are You Being Treated With Radiation for Cancer in Your Head or Neck?

If so, this booklet can help you. While head and neck radiation helps treat cancer, it can also cause other things to happen in your mouth called side effects. **Some of these problems could cause you to delay or stop treatment.**

This booklet will tell you ways to help prevent mouth problems so you'll get the most from your cancer treatment.

To help prevent serious problems, see a dentist ideally 1 month before starting radiation.



A dentist can help prevent mouth problems.



How Does Head and Neck Radiation Affect the Mouth?

Doctors use head and neck radiation to treat cancer because it kills cancer cells. But radiation to the head and neck can harm normal cells, including cells in the mouth. Side effects include problems with your teeth and gums; the soft, moist lining of your mouth; glands that make saliva (spit); and jaw bones.

It's important to know that side effects in the mouth can be serious.

- The side effects can hurt and make it hard to eat, talk, and swallow.
- You are more likely to get an infection, which can be dangerous when you are receiving cancer treatment.
- If the side effects are bad, you may not be able to keep up with your cancer treatment. Your doctor may need to cut back on your cancer treatment or may even stop it.

What Mouth Problems Does Head and Neck Radiation Cause?

You may have certain side effects in your mouth from head and neck radiation. Another person may have different problems. Some problems go away after treatment. Others last a long time, while some may never go away.

- **Dry mouth.**
- **A lot of cavities.**
- **Loss of taste.**
- **Sore mouth and gums.**
- **Infections.**
- **Jaw stiffness.**
- **Jaw bone changes.**



You can see or feel most of these problems. Check your mouth every day.



Why Should I See a Dentist?

You may be surprised that your dentist is important in your cancer treatment. If you go to the dentist before head and neck radiation begins, you can help prevent serious mouth problems. Side effects often happen because a person's mouth is not healthy before radiation starts. Not all mouth problems can be avoided but the fewer side effects you have, the more likely you will stay on your cancer treatment schedule.

It's important for your dentist and cancer doctor to talk to each other before your radiation treatment begins. Be sure to give your dentist your cancer doctor's phone number.

When Should I See a Dentist?

You need to see the dentist 1 month, if possible, before your first radiation treatment. If you have already started radiation and didn't go to a dentist, see one as soon as possible.

What Will the Dentist and Dental Hygienist Do?

- Check and clean your teeth.
- Take x-rays.
- Take care of mouth problems.
- Show you how to take care of your mouth to prevent side effects.
- Show you how to prevent and treat jaw stiffness by exercising the jaw muscles three times a day. Open and close the mouth as far as possible (without causing pain) 20 times.



The dentist will do a complete exam.

What Can I Do To Keep My Mouth Healthy?

You can do a lot to keep your mouth healthy during head and neck radiation. The first step is to **see a dentist before you start cancer treatment**. Once your treatment starts, it's important to **look in your mouth every day** for sores or other changes. These tips can help prevent and treat a sore mouth:

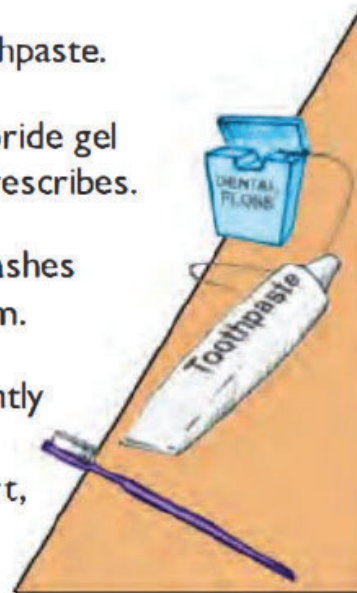
Keep your mouth moist.

- Drink a lot of water.
- Suck ice chips.
- Use sugarless gum or sugar-free hard candy.
- Use a saliva substitute to help moisten your mouth.



Clean your mouth, tongue, and gums.

- Brush your teeth, gums, and tongue with an extra-soft toothbrush after every meal and at bedtime. If it hurts, soften the bristles in warm water.
- Use a fluoride toothpaste.
- Use the special fluoride gel that your dentist prescribes.
- Don't use mouthwashes with alcohol in them.
- Floss your teeth gently every day. If your gums bleed and hurt, avoid the areas that are bleeding or sore, but keep flossing your other teeth.
- Rinse your mouth several times a day with a solution of $\frac{1}{4}$ teaspoon each of baking soda and salt in one quart of warm water. Follow with a plain water rinse.
- Dentures that don't fit well can cause problems. Talk to your cancer doctor or dentist about your dentures.



If Your Mouth Is Sore, Watch What You Eat and Drink.

- Choose foods that are good for you and easy to chew and swallow.
- Take small bites of food, chew slowly, and sip liquids with your meals.
- Eat moist, soft foods such as cooked cereals, mashed potatoes, and scrambled eggs.
- If you have trouble swallowing, soften your food with gravy, sauces, broth, yogurt, or other liquids.



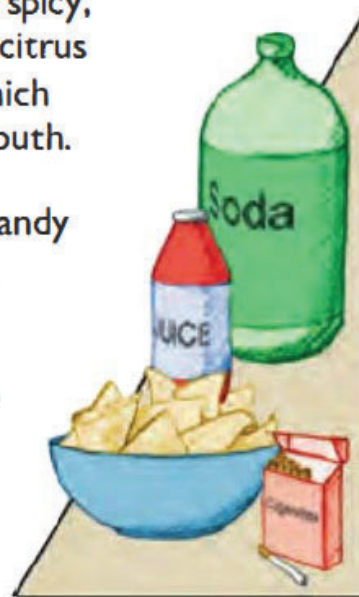
Sipping liquids with your meal will make eating easier.

Call Your Doctor or Nurse When Your Mouth Hurts.

- Work with them to find medicines to help control the pain.
- If the pain continues, talk to your cancer doctor about stronger medicines.

Remember To Stay Away From

- Sharp, crunchy foods, like taco chips, that could scrape or cut your mouth.
- Foods that are hot, spicy, or high in acid, like citrus fruits and juices, which can irritate your mouth.
- Sugary foods, like candy or soda, that could cause cavities.
- Toothpicks, because they can cut your mouth.
- All tobacco products.
- Alcoholic drinks.



Do Children Get Mouth Problems Too?

Head and neck radiation causes other side effects in children, depending on the child's age.

Problems with teeth are the most common. Permanent teeth may be slow to come in and may look different from normal teeth. Teeth may fall out. The dentist will check your child's jaws for any growth problems.

Before radiation begins, take your child to a dentist. The dentist will check your child's mouth carefully and pull loose teeth or those that may become loose during treatment. Ask the dentist or hygienist what you can do to help your child with mouth care.



Your child has special dental needs.

Remember:

- Visit your dentist **before** your head and neck radiation treatment starts.
- Take good care of your mouth **during** treatment.
- Talk to your dentist about using fluoride gel to help prevent the cavities that head and neck radiation causes.
- Talk regularly with your cancer doctor and dentist about **any** mouth problems you have during and after head and neck radiation treatment.



Call your cancer doctor or dentist if you have any mouth problems.

Acknowledgments

The individuals listed here provided assistance in developing and reviewing all of the publications in this series. The National Institute of Dental and Craniofacial Research and its partners would like to thank them for their contributions.

Scientific Committee

Gerry Barker, RDH, MA
University of Missouri-Kansas City
Kansas City, MO

Susan L. Beck, PhD, APRN, FAAN
University of Utah
Salt Lake City, UT

Marylin J. Dodd, PhD, RN, FAAN
University of California, San Francisco
San Francisco, CA

Joel Epstein, DMD, MSD, FRCD(C), FDSRCSE
University of Illinois at Chicago
Chicago, IL

Philip Fox, DDS
Spello, Italy

Deborah B. McGuire, PhD, RN, FAAN
University of Maryland
Baltimore, MD

Douglas E. Peterson, DMD, PhD
University of Connecticut
Farmington, CT

Mark M. Schubert, DDS, MSD
University of Washington
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John R. Wingard, MD
University of Florida
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For Patients

Chemotherapy and Your Mouth
La quimioterapia y la boca

Head and Neck Radiation Treatment and Your Mouth
La boca y el tratamiento de radiación en la cabeza y el cuello

Three Good Reasons to See a Dentist
BEFORE Cancer Treatment
Tres buenas razones para ver a un dentista
ANTES de comenzar el tratamiento contra el cáncer

Three Good Reasons to See a Dentist
BEFORE Cancer Treatment
(illustrated booklet for adults with limited reading skills)

For Health Professionals

Dental Provider's Oncology Pocket Guide

Oral Complications of Cancer Treatment:
What the Dental Team Can Do

Oncology Pocket Guide to Oral Health

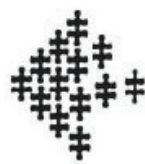
Oral Complications of Cancer Treatment:
What the Oncology Team Can Do

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April 2013**

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Dental Provider's Oncology Pocket Guide

*Prevention and management
of oral complications*

**Head and Neck
Radiation Therapy**

Chemotherapy

**Hematopoietic Stem
Cell Transplantation**



Oral Health, Cancer Care, and You
Fitting the Pieces Together

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
National Institutes of Health
National Institute of Dental and Craniofacial Research

Pre-cancer Treatment Oral Health Examination

Objectives

1. Conduct evaluation 1 month, if possible, before cancer treatment begins.
2. Establish a schedule for dental treatment.
 - Complete invasive procedures at least 14 days before head/neck radiation therapy starts; 7 to 10 days before myelosuppressive chemotherapy.
 - Postpone elective oral surgical procedures until cancer treatment is completed.
3. Identify and treat sites of low-grade and acute oral infections:
 - Caries
 - Periodontal disease
 - Endodontic disease
 - Mucosal lesions
4. Identify and eliminate sources of oral trauma and irritation such as ill-fitting dentures, orthodontic bands, and other appliances.
5. Identify and treat potential oral problems within the proposed radiation field before radiation treatment begins.
6. Instruct patients about oral hygiene.
7. Educate patients on preventing demineralization and dental caries.

Head and Neck Radiation Therapy

Patients receiving radiation therapy to the head and neck are at risk for developing oral complications. Because of the risk of osteonecrosis in irradiated fields, oral surgery should be performed before radiation treatment begins.

Before Head and Neck Radiation Therapy

- Conduct a pretreatment oral health examination and prophylaxis.
- Schedule dental treatment in consultation with the radiation oncologist.
- Extract teeth in the proposed radiation field that may be a problem in the future.
- Prevent tooth demineralization and radiation caries:
 - Fabricate custom gel-applicator trays for the patient.
 - Prescribe a 1.1% neutral pH sodium fluoride gel or a 0.4% stannous, unflavored fluoride gel (not fluoride rinses).
 - Use a neutral fluoride for patients with porcelain crowns or resin or glass ionomer restorations.
 - Be sure that the trays cover all tooth structures without irritating the gingival or mucosal tissues.
 - Instruct the patient in home application of fluoride gel. Several days before radiation therapy begins, the patient should start a daily 10-minute application.
 - Have patients brush with a fluoride gel if using trays is difficult.
- Allow at least 14 days of healing for any oral surgical procedures.
- Conduct prosthetic surgery before treatment, since elective surgical procedures are contraindicated on irradiated bone.

During Radiation Therapy

- Monitor the patient's oral hygiene.

- Watch for mucositis and infection.
- Advise against wearing removable appliances during treatment.

After Radiation Therapy

- Recall the patient for prophylaxis and home care evaluation every 4 to 8 weeks or as needed for the first 6 months after cancer treatment.
- Reinforce the importance of optimal oral hygiene.
- Monitor the patient for trismus: check for pain or weakness in masticating muscles in the radiation field. Instruct the patient to exercise three times a day, opening and closing the mouth as far as possible without pain; repeat 20 times.
- Consult with the oncology team about use of dentures and other appliances after mucositis subsides. Patients with friable tissues and xerostomia may not be able to wear them again.
- Watch for demineralization and caries. Lifelong, daily applications of fluoride gel are needed for patients with xerostomia.
- Advise against elective oral surgery on irradiated bone because of the risk of osteonecrosis. Tooth extraction, if unavoidable, should be conservative, using antibiotic coverage and possibly hyperbaric oxygen therapy.

Chemotherapy

The oral complications of chemotherapy depend upon the drugs used, the dosage, the degree of dental disease, and the use of radiation. Chemoradiation therapy carries a significant risk for mucositis.

Before Chemotherapy

- Conduct a pretreatment oral health examination and prophylaxis.

- Schedule dental treatment in consultation with the oncologist.
- Schedule oral surgery at least 7 to 10 days before myelosuppressive therapy begins.
- Consult the oncologist before conducting any oral procedures in patients with hematologic cancers; do not conduct procedures in patients who are immunosuppressed or have thrombocytopenia.

During Chemotherapy

- **Consult the oncologist before any dental procedure, including prophylaxis.**
- Ask the oncologist to order blood work 24 hours before oral surgery or other invasive procedures. Postpone when
 - the platelet count is less than $75,000/\text{mm}^3$ or abnormal clotting factors are present
 - absolute neutrophil count is less than $1,000/\text{mm}^3$, or consider prophylactic antibiotics (www.americanheart.org).
- Check for oral source of viral, bacterial, or fungal infection in patients with fever of unknown origin.
- Encourage consistent oral hygiene measures.
- Consult the oncologist about the need for antibiotic prophylaxis before any dental procedures in patients with central venous catheters.

After Chemotherapy

- Place the patient on a dental recall schedule when chemotherapy is completed and all side effects, including immunosuppression, have resolved.
- Confirm normal hematologic status prior to dental treatment.
- Ask if the patient has received intravenous bisphosphonate therapy.

Questions To Ask the Medical Oncologist

- What is the patient's complete blood count, including absolute neutrophil and platelet counts?
- If an invasive dental procedure needs to be done, are there adequate clotting factors?
- Does the patient have a central venous catheter?
- What is the scheduled sequence of treatments so that safe dental treatment can be planned?
- Is radiation therapy also planned?

Questions To Ask the Radiation Oncologist

- What parts of the mandible/maxilla and salivary glands are in the field of radiation?
- What is the total dose of radiation the patient will receive, and what will be the impact on these areas?
- Has the vascularity of the mandible been previously compromised by surgery?
- How quickly does the patient need to start radiation treatment?
- Will there be induction chemotherapy with the radiation treatment?

Hematopoietic Stem Cell Transplantation

Most stem cell transplant patients develop acute oral complications, especially patients with graft-versus-host disease.

Before Transplantation

- Conduct a pretreatment oral health examination and prophylaxis.

- Consult the oncologist about scheduling dental treatment.
- Schedule oral surgery at least 7 to 10 days before myelosuppressive therapy begins.
- Prevent tooth demineralization and radiation caries:
 - Instruct the patient in home application of fluoride gel (not fluoride rinses).
- Instruct the patient about an oral hygiene regimen.

After Transplantation

- **Consult the oncologist before any dental procedure, including prophylaxis.**
- Monitor the patient's oral health for plaque control, tooth demineralization, dental caries, and infection.
- Watch for infections on the tongue and oral mucosa. Herpes simplex and *Candida albicans* are common oral infections.
- Delay elective oral procedures for 1 year.
- Follow patients for long-term oral complications. Such problems are strong indicators of chronic graft-versus-host disease.
- Monitor transplant patients carefully for second malignancies in the oral region.

Advice for Your Patients

- Brush teeth, gums, and tongue gently with an extra-soft toothbrush and fluoride toothpaste after every meal and at bedtime. If brushing hurts, soften the bristles in warm water.
- Floss teeth gently every day. If your gums bleed and hurt, avoid the areas that are bleeding or sore but keep flossing your other teeth.
- Follow instructions for fluoride gel applications.

- Avoid mouthwashes containing alcohol.
- Rinse the mouth several times a day with a baking soda and salt solution, followed by a plain water rinse. Use ¼ teaspoon each of baking soda and salt in 1 quart of warm water. Omit salt during mucositis.
- Try the following if dry mouth is a problem:
 - Sip water frequently.
 - Suck ice chips or use sugar-free gum or candy.
 - Use saliva substitute spray or gel or a prescribed saliva stimulant if appropriate.
 - Avoid glycerin swabs.
- Exercise the jaw muscles three times a day to prevent and treat jaw stiffness from radiation treatment.
- Avoid candy, gum, and soda unless they are sugar-free.
- Avoid spicy or acidic foods, toothpicks, tobacco products, and alcohol.

Special Care for Children

Children receiving chemotherapy and/or radiation therapy are at risk for the same oral complications as adults. Other actions to consider in managing pediatric patients include the following:

- Extract loose primary teeth and teeth expected to exfoliate during cancer treatment.
- Remove orthodontic bands and brackets if highly stomatotoxic chemotherapy is planned or if the appliances will be in the radiation field.
- Monitor craniofacial and dental structures for abnormal growth and development.

Dental Care for Oral Complications of Cancer Treatment

Oral Mucositis: Culture lesions to identify secondary infection. Prescribe topical anesthetics and systemic analgesics. Consult the oncologist about prescribing antimicrobial agents for known infections. Have the patient avoid rough-textured foods and report oral problems early.

Xerostomia/salivary gland dysfunction: Advise the patient to soften or thin foods with liquid, chew sugarless gum, or suck ice chips or sugar-free hard candies. Suggest using commercial saliva substitutes or prescribe a saliva stimulant.

Taste changes: Refer to a dietitian.

Etched enamel: Advise the patient to rinse the mouth with water and baking soda solution after vomiting to protect enamel.

Complications Specific to Chemotherapy

Neurotoxicity: Provide analgesics or systemic pain relief.

Bleeding: Advise the patient to clean teeth thoroughly with a toothbrush softened in warm water; avoid flossing the areas that are bleeding but to keep flossing the other teeth.

Complications Specific to Radiation

Demineralization and radiation caries: Prescribe daily fluoride gel applications before treatment starts. Continue for the patient's lifetime if changes in quality or quantity of saliva persist.

Trismus/tissue fibrosis: Instruct the patient on stretching exercises for the jaw to prevent or reduce the severity of fibrosis.

Osteonecrosis: Avoid invasive procedures involving irradiated bone, particularly the mandible.

Oral Health, Cancer Care, and You

This guide is part of a series on managing and preventing oral complications of cancer treatment developed by the National Institute of Dental and Craniofacial Research in partnership with the National Cancer Institute, the National Institute of Nursing Research, and the Centers for Disease Control and Prevention.

To order this and other publications in the *Oral Health, Cancer Care, and You* series, contact:

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U.S. Department of Health
and Human Services
National Institutes of Health

From: International Association for Dental Research
Sent: Tue, 27 Jul 2021 17:11:31 -0400
To: Horsford, Jonathan (NIH/NIDCR) [E]
Subject: Post-Meeting Newsletter: 2021 IADR/AADR/CADR General Session & Exhibition

[Click here for a Web version of this message.](#)



2021 IADR/AADR/CADR GENERAL SESSION & EXHIBITION POST-MEETING NEWSLETTER

The virtual 99th General Session & Exhibition of the IADR, held in conjunction with the 50th Annual Meeting of the AADR and the 45th Meeting of the CADR, on July 21-24, 2021 provided scientists and researchers throughout the world with the opportunity to present, discuss and critique their investigations.

The meeting was virtually attended by 3,507 individuals from 85 countries. Those attending the meeting could choose from among 1,847 poster presentations, 350 oral presentations, 27 Focused Learning Sessions, 14 satellite symposia, 71 Symposia and three Distinguished Lecture Series plenary sessions. Delegates also had the opportunity to visit the exhibit hall, which housed 32 total exhibition booths: 7 were corporate and 25 were institutional/government/nonprofit.

[Claim Continuing Education Credits and Attendance Certificates](#)

Continuing Education Credits and Attendance Certificates are available for one year (12 months) after the completion of the meeting. If you require assistance, please contact registration@iadr.org.

In Case You Missed it

Registered attendees have exclusive access to all recorded sessions in the [General Session Virtual Experience Platform](#) for **90 days after the meeting!** Click "Recording Available" to watch. Keep the discussion going and network with attendees from around the world in the [IADR General Session Community!](#)



**Distinguished
Lecture Series**

Symposia

Schedule

**Abstract
Gallery**

Explore the Exhibitors!

Opening Ceremonies & Awards Presentations



View the 2021 IADR awards that were announced during the Opening Ceremonies of the

IADR President's Inaugural Address



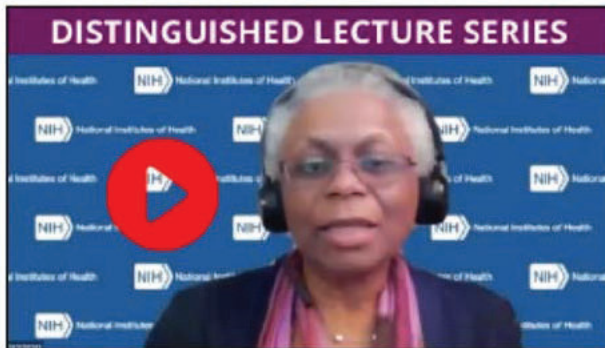
Eric Reynolds was installed as IADR's 98th president at the conclusion of the IADR/AADR/CADR General Session &

2021 IADR/AADR/CADR General Session & Exhibition.

Exhibition. View his inaugural address, "IADR 100 years on: driving science, engagement and globalization post COVID-19."

Distinguished Lecture Series

NIH's Scientific Approach to Inclusive Excellence



Thursday, July 22, 2021

Marie A. Bernard

National Institutes of Health, Chief Officer for Scientific Workforce Diversity, Bethesda, Md., USA

Digital Transformation in Manufacturing to Improve Oral Health



Friday, July 23, 2021

Joseph M. DeSimone

Stanford University, Calif., USA



This lecture was sponsored by an unrestricted educational grant from Dentsply Sirona.

Inequality Bites: Structural Causes of Inequalities in Wellbeing

Saturday, July 24, 2021

Kate Pickett

University of York, England





This lecture is sponsored by an unrestricted educational grant from CareQuest.

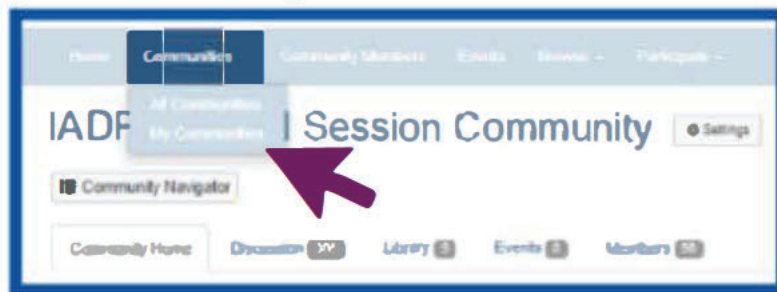
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Make sure you subscribe to the [IADR General Session Community](#) to connect with other attendees, view the Job Board and discuss research.



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2021 Awards, Fellowships And Grants Recipients

Congratulations to all award winners and participants! [View the deadlines for 2022 awards online.](#)

IADR HONORARY MEMBERSHIP

Christopher Murray

Institute for Health Metrics and Evaluation
University of Washington, Seattle, USA



IADR DISTINGUISHED SCIENTIST AWARDS

**Award in Geriatric Oral
Research**
*Supported by
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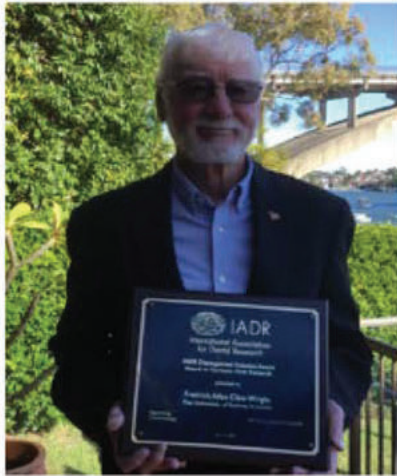
**Fredrick Allan Clive
Wright** *The University of
Sydney, Australia*

**Basic Research in
Biological Mineralization
Award**
*Supported by Unilever Oral
Care*

Eric Everett
*University of North Carolina at
Chapel Hill, USA*

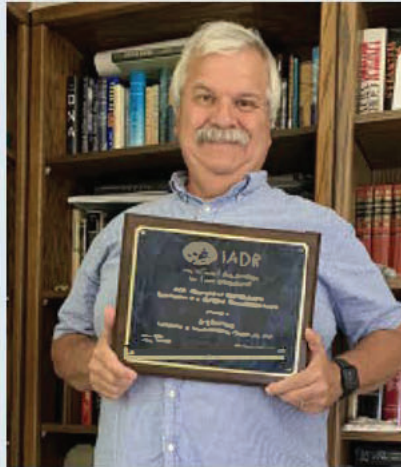
**Behavioral, Epidemiologic
and Health Services
Research Award**
*Supported by CareQuest
Institute for Oral Health*

Daniel McNeil
*West Virginia University,
Morgantown, USA*



**Craniofacial Biology
Research Award**
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YiPing Chen
Tulane University, La., USA



**Global Oral Health
Research Award**
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GlaxoSmithKline*

Lois Cohen
*National Institutes of Health,
Md., USA*



**H. Trendley Dean Memorial
Award**
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Colgate-Palmolive Company*

May Wong
*University of Hong Kong,
SAR, China*



**Isaac Schour Memorial
Award**
*Supported by an endowment
provided by Dr. Bernard G. Samat*



**Oral Medicine & Pathology
Research Award**



**Pharmacology/Therapeutics
/
Toxicology Research Award**

and Rhoda G. Samat through the
Samat Family Foundation

Alastair Sloan
University of Melbourne,
Australia



Caroline Shiboski
University of California, San
Francisco, USA



Martin Thornhill
University of Sheffield, UK



**Pulp Biology &
Regeneration Award**
Supported by Dentsply Sirona

Fionnuala Lundy
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**Research in Oral Biology
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**Research in Periodontal
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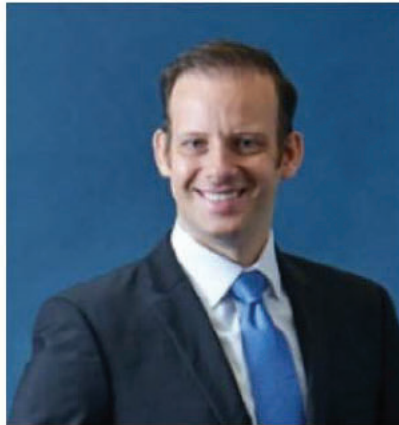
Alvaro Della Bona
*University of Passo Fundo,
Brazil*



**Young Investigator Award
Supported by P&G
Professional Oral Health,
Crest + Oral-B**

Vinicius Rosa
*National University of
Singapore*





IADR GOLD MEDAL

David Williams

*Bart's and The London School of Medicine and Dentistry,
UK*



IADR/AADR JOURNAL OF DENTAL RESEARCH COVER OF THE YEAR, 2020

*Single-Cell RNA-seq Identifies Cell Diversity
in Embryonic Salivary Glands*

**Rei Sekiguchi, Daniel Martin, Kenneth
Yamada**

J Dent Res 99(1): 69-78, 2020

IADR E.W. BORROW MEMORIAL AWARD

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University of Hong Kong, SAR, China



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Biological Research

Horizontal and Vertical Transfer of Oral Microbial Dysbiosis and Periodontal Disease

Joe Aduse-Opoku, Ahmed Hashim, Mike Curtis, Mark Payne, Susan Joseph and (not shown) Asil Alsam, William Wade
J Dent Res 98(13):1503-1510, 2019

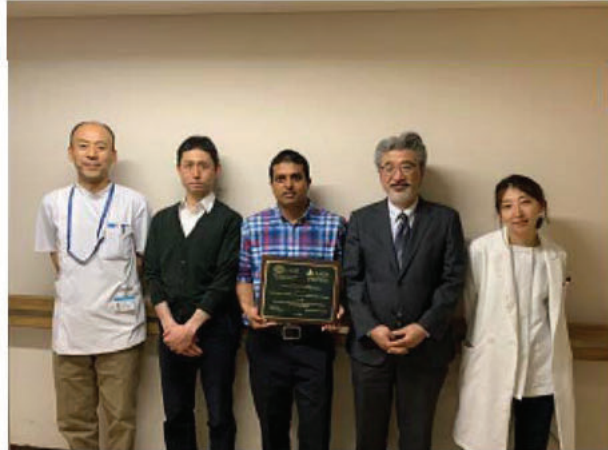


L-R: Joe Aduse-Opoku, Ahmed Hashim, Mike Curtis, Mark Payne, Susan Joseph and (not shown) Asil Alsam, William Wade.

Biomaterials and Bioengineering Research
Functionalized Graphene Oxide Shields Tooth Dentin from Decalcification

Tadashi Yamamoto, Yuta Nishina, Mohammed Zahedul Nizami, Shogo Takashiba, Yuki Shinoda-Ito

J Dent Res 99(2):182-188, 2019



L-R: Tadashi Yamamoto, Yuta Nishina, Mohammed Zahedul Nizami, Shogo Takashiba, Yuki Shinoda-Ito.

Clinical Research

Cell-Based Regenerative Endodontics for Treatment of Periapical Lesions: A Randomized, Controlled Phase I/II Clinical Trial.

Claudia Brizuela, Gastón Meza, Dennise Urrejola, María Andrea Quezada, Guillermo Concha, Valeria Ramirez, Ioannis Angelopoulos, María Ignacia Cadiz, Rafael Tapia-Limonchi, Maroun Khoury

J Dent Res 99(5):523-529, 2020



Claudia Brizuela

IADR INNOVATION IN ORAL CARE AWARDS



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Prasanna Neelakantan
University of Hong Kong,
SAR, China

*Precision Engineered,
Functional Oligonucleotide-
Eluting Mucoadhesive*

Nicole Ritzert
ADA Science and Research
Institute, Md., USA

*Label-Free, Multianalyte
Electrochemical Biosensors
for Monitoring Progression*

Cesar de la Fuente
University of Pennsylvania,
Philadelphia, USA

*Low-cost Biosensing
Mouthguard for Rapid*

Nanoscale Films For The Management Of Oral Candidiasis



and Treatment Response of Periodontitis



Detection of Emerging and Oral Pathogens



IADR HATTON COMPETITION AND AWARDS



In 2021, 47 individuals from 23 Divisions and three non-Divisional Sections competed virtually in this year's Competition.

Junior Category:



1st Place: Natalie Atyeo, University of Florida, Gainesville, USA
IADR American Division - *Oral Herpesvirus Infection Induces FOXQ1, a Novel Ly*



2nd Place: **Jordan Blum**, University of Melbourne, Australia
IADR Australia/New Zealand Division - *Breastmilk Influences the Bacterial Diversity of the Oral Microbiome*

Senior - Basic Science Category:



1st Place: **Shanmukh Peddi**, Indian Institute of Science, India
IADR Indian Division - *Maneuverability And Therapeutic Applications of Nanorobots*



2nd Place: **Zhi Ren**, University of Pennsylvania, Philadelphia, USA
IADR American Division - *Supraorganism-like Interkingdom Interactions During Infection of Saliva*

Senior - Clinical Research Category



1st Place: **Walid Ahmed Al-Soneidar**, McGill University, Montreal, Quebec, Canada
IADR Canadian Division - *Effect of Multiple Human Papillomaviruses on Head and Neck Cancer*



2nd Place: **Waheed Awotoye**, University of Iowa, Iowa City, USA
IADR American Division - *Whole-Genome-Sequencing Reveals de-novo Mutation Nonsyndromic Cleft Lip/Palate*

IADR JOSEPH LISTER AWARD FOR NEW INVESTIGATORS



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**1st Place:
Yuan Liu**

University of Pennsylvania, Philadelphia,
USA -*Novel Nanohybrid System for Precise
Cariogenic Biofilm Disruption In Vivo*



**2nd Place:
Elena Calciolari**

IADR DAVID B. SCOTT FELLOWSHIP

IADR Nigerian Division



Adedire Adetomiwa
Obafemi Awolowo University, Nigeria

IADR JOHN GRAY FELLOWSHIP

IADR Scandinavian Division



Navdeep Kaur Brar
University of Oslo, Norway

Barts and the London School of Medicine and Dentistry, UK - *Dental Panoramic Indices To Screen For Post-menopausal Osteoporosis*

IADR COLGATE RESEARCH IN PREVENTION TRAVEL AWARDS



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Christine Shaffer, University of California, San Francisco
Enamel Biomarkers of Early Life Adversity



Jennifer Baez-Polan, University of Michigan, Ann Arbor
Calcium Prerinse To Increase Oral Fluoride Retention In



Rania Nassar, Mohammed Bin Rashid University, Dubai
Antimicrobial Activity of Phytic Acid: A Potential Endodor



Thamyris de Souza Carvalho, University of São Paulo,
Hemoglobin protects against intrinsic enamel erosive de



Nathan Schiffman, Tel Aviv University, Israel
Enzyme-Responsive Nanoparticles for Targeted Drug De



Yun Niu, University of Hong Kong, SAR, China
A novel dual-action antimicrobial peptide for caries mana

**IADR OSTEOLOGY FOUNDATION NEW INVESTIGATOR
AWARD IN ORAL TISSUE REGENERATION**

Supported by  Osteology Foundation



Lauren Katz, University of North Carolina at Chapel Hill, USA
The Role of Periostin in Craniofacial Skeletal Muscle Regeneration

IADR TOSHIO NAKAO FELLOWSHIP

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IADR LION DENTAL RESEARCH AWARD FOR JUNIOR INVESTIGATORS

Supported by: 



Ting Zou
University of Hong Kong, SAR, China

Behavioral, Epidemiologic and Health
Services Research

Hazem Abbas, Tohoku University, Japan

*Does Remaining Teeth And Dental
Prosthesis Associate With Social Isolation?
A prospective cohort study from Japan
gerontological Evaluation study (JAGES).*



IADR KULZER TRAVEL AWARDS



Supported by:



Lohitha Kalluri, University of Mississippi, Oxford, USA
Parameter Screening for Preparation of Electrospun PLL



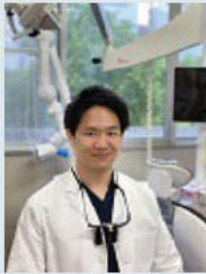
Isadora Garcia, Federal University of Rio Grande do Sul
Design of magnetic-responsive adhesives for enhancing



Yehuda Klein, The Hebrew University of Jerusalem, Israel
*Osteoimmunology: The Effect of Resolvin D1 on the Biol
Tooth Movement*



Abdulrahman A. Balhaddad, University of Md., Baltimore
*Magnetic-responsive Photosensitizer nanoplatfom via F
inactivation against Cariogenic Biofilms*



Takahiko Sakai, Osaka University, Japan
Artificial intelligence for supporting decision making of ir

IADR CENTENNIAL TRAVEL AWARDS FOR NEW INVESTIGATORS



Xingying Qi, Sichuan University, China
Cannabidiol Promotes Oral Ulcer Healing by Inactivating



Maria Lorena Cabirta, University of Buenos Aires, Argentina
Saturated Fat Diet Affecting Orthodontic Tooth Movement



Jorge Felipe Lima Teixeira, São Paulo State University
New Combinatorial Screening Platform to Unravel Nano-Differentiation



Sonali Sharma, ADC R&R, Dehli, India
PA Standardized Protocol of Laser-Assisted Caries Inhibition



Valentim Adelino, University of Campinas, Brazil
A Standardized Protocol of Laser-Assisted Caries Inhibition

Stefan Chavdarov Zlatev, Medical University Plovdiv, Bulgaria
Surface Area Available for Bonding in Different Crown Preparations



Annabella Frattaroli Pericchi, Central University of Ver
Therapeutic Parent Education: A Strategy For Early Child



Sukeshana Srivastav, All India Institute of Medical
Sciences, India
An Innovative Tool for Assessment of White Spot Lesion



Aldrin André Huamán Mendoza, University of São Pau
Mesenchymal Stem Cell Sheets On Periodontal Regene



Afef Amri, University of Monastir, Tunisia
Implication of Human Papillomavirus in the Prognosis of

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**Porphyromonas gingivalis-derived
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IADR Board Of Directors

At the conclusion of the IADR/AADR/CADR General Session & Exhibition, the 2021-2022 Board of Directors began their term.

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IADR/AADR, Alexandria, Va.

Incoming President Eric Reynolds wearing the IADR President's Chain, and outgoing IADR Board members with their plaques.



IADR Governance

Following are the Council highlights from the 2021 IADR/AADR/CADR General Session:

Council approved the following slate of nominees to stand for election as **IADR Vice-president 2022-2023**:

- Satoshi Imazato (Osaka University, Japan)
- Gabriel Sánchez (University of Buenos Aires, Argentina)
- Gottfried Schmalz (University Hospital Regensburg, Germany)

Council approved the **2021-2022 IADR Committee Appointments** as presented by the IADR Board Operations Committee

Council approved a revised **Code of Ethics**.

Council approved the **2019 Independent Auditors' Report**.

Council approved the **IADR Budget for 2021**.

The strategic session featured questions to Councilors to inform a Board appointed Task Force to evaluate the Scientific Group/Network structure.

IADR Governance

List of IADR Scientific Group and Network Officers

List of IADR Region/Division/Section Officers

List of IADR Committees

Call for Nominations: IADR Vice-president (2023-24)

IADR is seeking nominees for the position of IADR Vice-president (2023-24). Any IADR member may nominate an individual, or you may self-nominate for this position. Nominees must have had prior service to IADR as a Division, Section, Group or Network Officer, as a Councilor, as Committee Chair or as a Committee Member. Submissions must be received by **August 2, 2021**.

Visit www.iadr.org/ianominations to submit a nomination and learn more. Any questions regarding the online submission form or the nomination process can be directed to Riana Hays at rhays@iadr.org.



Can You Serve on a Committee?

Can you Serve on a Committee? Each year IADR seeks a wide variety of volunteers, representing as many geographic areas and scientific disciplines as possible, to fill committee vacancies. Information on available committee vacancies for the upcoming year, descriptions of committee duties and instructions on how to submit your candidacy for a committee appointment is available at www.iadr.org/iacommappts.

#IADR2021 SOCIAL MEDIA



Thank you for using the #IADR2021 Social Media Toolkit and the hashtag #IADR2021 to share your experience, join the conversation and get 2021 IADR/AADR/CADR General Session & Exhibition updates! Follow IADR on Twitter @IADR, Facebook, Instagram and YouTube to receive important news and updates throughout the year.

Future Meetings

2022 IADR/APR General Session & Exhibition

The graphic features a stylized globe logo for IADR General Session, with the text 'CHENGDU, CHINA - JUNE 22-25, 2022' and '100th GENERAL SESSION & EXHIBITION OF THE IADR 5th MEETING OF THE IADR ASIA PACIFIC REGION'. The background is a geometric pattern of purple and blue triangles.

**IADR/APR
General Session
& Exhibition**
June 22-25, 2022
Chengdu, China

IMPORTANT DATES:

- ▶ **October 28, 2021**
Deadline for Session Proposals Submissions
- ▶ **January 17, 2022**
Deadline for Abstract Submission

www.iadr.org/2022iags
#IADR2022

The 100th General Session & Exhibition of the IADR and the 5th Meeting of the IADR Asia Pacific Region will take place from June 22-25, 2022 in Chengdu, China. Continue to [check back to this web page](#) for the latest information about abstracts, registration, hotels and exhibiting.

Important Dates & Information

October 28, 2021: Deadline for Session Proposals Submissions

January 17, 2022: Deadline for Abstract Submission

IADR General Session Job Board

Have a job opening or looking for opportunities? [Use this job board](#) to post openings to reach other 2021 IADR/AADR/CADR General Session & Exhibition attendees.



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International Association
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1619 Duke Street
Alexandria, VA
22314-3406 USA
Phone
+1.703.548.0066
Fax
+1.703.548.1883

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