Welcome!

While we wait to start, please review ways to navigate this webinar.

If you move your **cursor** to the **bottom** of **your screen** you will see a **menu**.

This menu allows you to **control**:

- **Raise Hand**
- Access to the **Chat** box
- Access to the **Q & A** box

Camera options are not available for participants. Participants can be unmuted by raising their hand and being recognized by the presenter.

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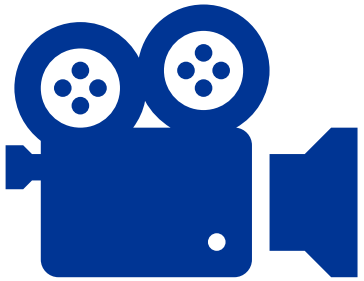
Housekeeping



This session is being recorded to **Tomorrow's Healthcare**

If you used a forwarded link, we need your **email address**

Pose questions in the chat to **all participants**

Please complete the post-session **evaluation**

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Continuing Education Information

In support of improving patient care, this activity has been planned and implemented by the University of Pittsburgh and The Jewish Healthcare Foundation. The University of Pittsburgh is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME) and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team. **1.25 hours is approved for this course**.

As a Jointly Accredited Organization, University of Pittsburgh is approved to offer social work continuing education by the Association of Social Work Boards (ASWB) Approved Continuing Education (ACE) program. Organizations, not individual courses, are approved under this program. State and provincial regulatory boards have the final authority to determine whether an individual course may be accepted for continuing education credit. University of Pittsburgh maintains responsibility for this course. Social workers completing this course receive **1.25 continuing education credits.**

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Disclosures

All individuals in a position to control the content of this education activity have disclosed all financial relationships with any companies whose primary business is producing, marketing, selling, re-selling, or distributing healthcare products used by or on patients. All of the relevant financial relationships for the individuals listed below **have been mitigated**

- Mark S. Wolff, DDS, PhD, Colgate Palmolive, Consultant

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Mutual Agreement

- Everyone on every Program Evaluation and Research Unit (PERU) webinar is **valued**. Everyone has an expectation of **mutual, positive regard** for everyone else that respects the **diversity** of everyone on the webinar.
- We operate from a **strength-based, empathetic, and supportive** framework – with the people we serve, and with each other on PERU webinars.
- We encourage the use of **affirming language** that is not discriminatory or stigmatizing.
- We treat others as **they** would like to be treated and, therefore, avoid argumentative, disruptive, and/or aggressive language.

Mutual Agreement (continued)

- We strive to: **listen** to each person, avoid interrupting others, and seek to **understand** each other through the Learning Network as we work toward the highest quality services for Centers of Excellence (COE) clients.
- Information presented in Learning Network sessions has been vetted. We recognize that people have different opinions, and those **diverse perspectives** are welcomed and valued. Questions and comments should be framed as **constructive feedback**.
- The Learning Network format is **not conducive to debate**. If something happens that concerns you, please send a chat during the session to the panelists and we will attempt to make room to address it either during the session or by scheduling time outside of the session to process and understand it. Alternatively, you can reach out offline to your PERU point of contact.

Penn Dental Medicine
University of Pennsylvania

University of Pittsburgh | School of Pharmacy

Opioid Use Disorder (OUD) and Dental Health

Penn Dental Medicine
University of Pennsylvania

Mark S. Wolff, DDS, PhD

Morton Amsterdam Dean
University of Pennsylvania
School of Dental Medicine
Philadelphia, PA USA

mswolff@upenn.edu

“Conflict of Interest Disclosure”

Dr. Mark S. Wolff, Morton Amsterdam Dean, receives compensation from the Colgate-Palmolive Company for activities, consulting and speaking engagements, that are not related to his responsibilities to University of Pennsylvania School of Dental Medicine.

Subjects for this presentation

- Describe the impact of opioid use on oral health
- Describe the importance and available training for fluoride treatment
- Discuss specific considerations for those receiving medications for opioid use disorder (MOUD)
- Discuss the importance of regular dental check-ups and preventive care
- Address stigma and barriers to accessing dental care for individuals with OUD

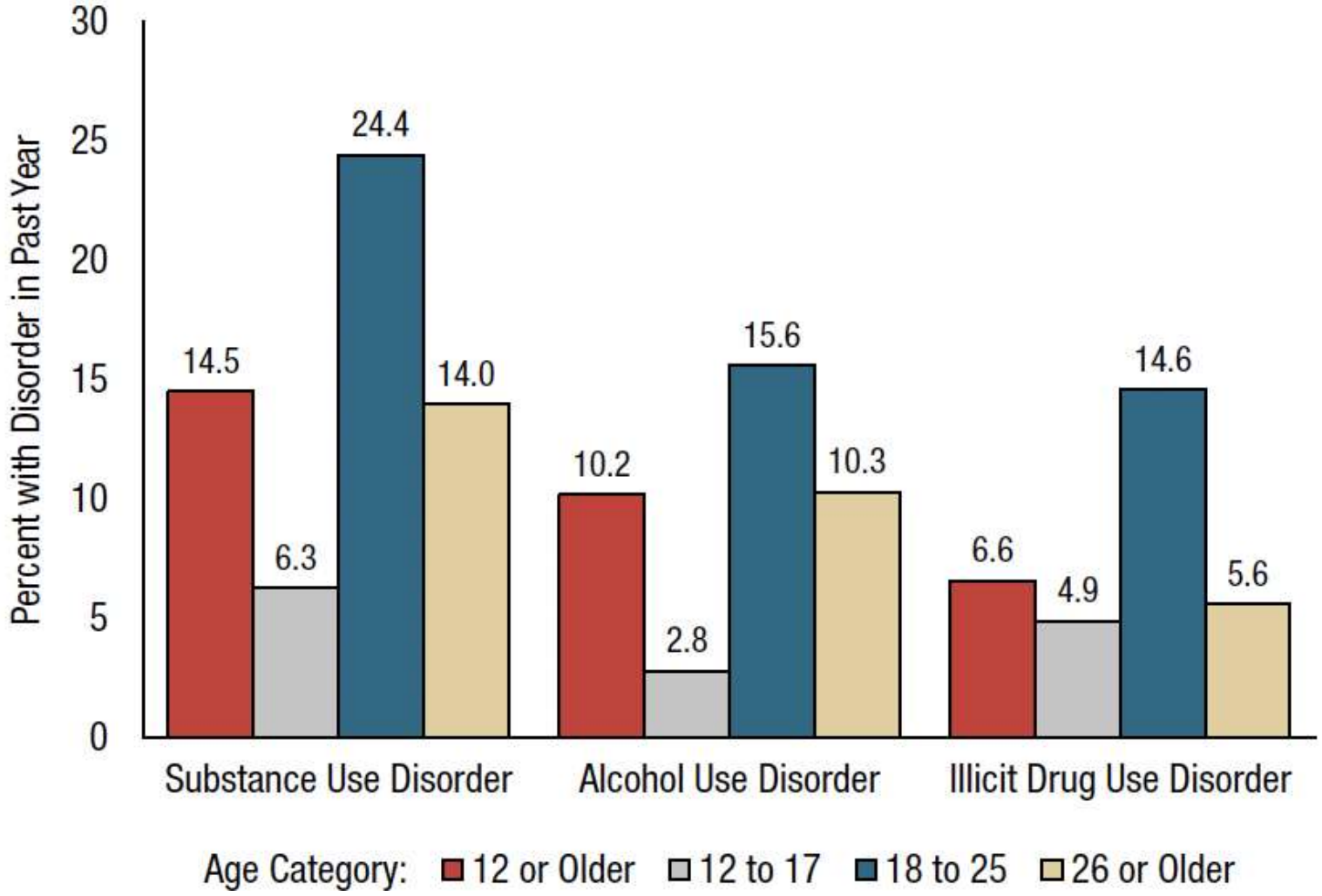
Substance use disorder in the United States (2020)

40.3 million Americans (14.5%)

- 28.3 million who had alcohol use disorder
- 18.4 million who had an illegal substance use disorder (SUD)
- 11.9 million who had an illegal substance use disorder, but not alcohol use disorder

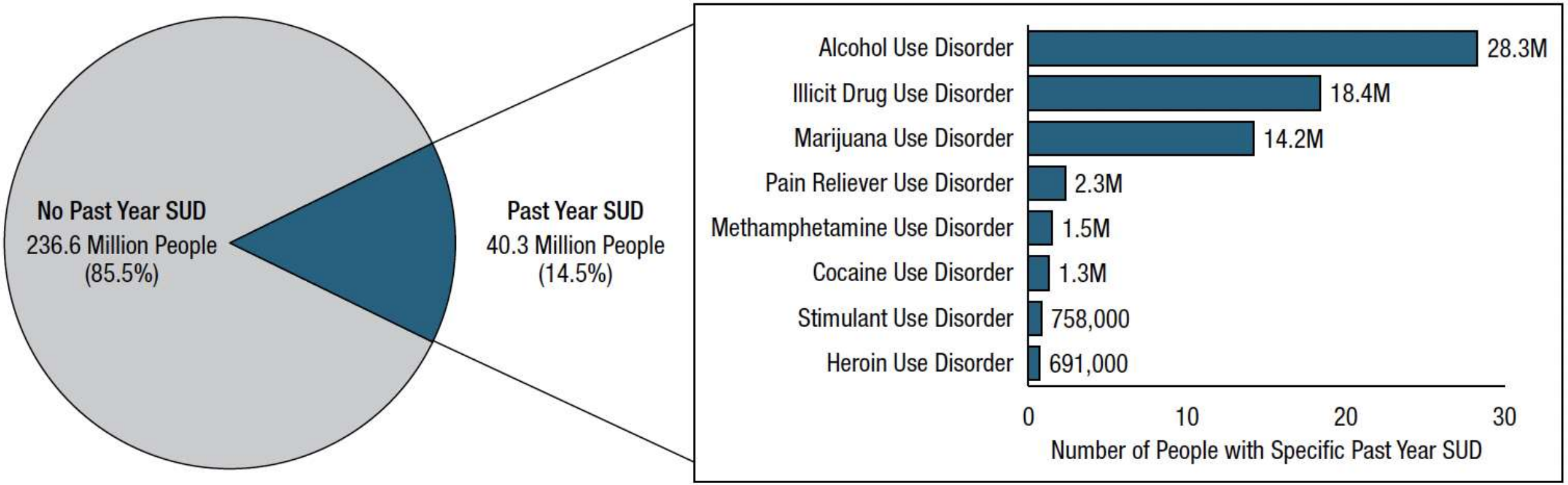
Substance Abuse and Mental Health Services Administration. (2020). *Key Substance Use and Mental Health Indicators in the United States: Results from the 2020 National Survey on Drug Use and Health*. https://www.samhsa.gov/data/sites/default/files/reports/rpt35325/NSDUHFFRPDFWHTMLFiles2020/2020NSDUHFFR1PDFW102121.pdf

Alcohol use disorder and illegal substance use, aged 12 or older (2020)



Substance Abuse and Mental Health Services Administration. (2020). *Key Substance Use and Mental Health Indicators in the United States: Results from the 2020 National Survey on Drug Use and Health*. https://www.samhsa.gov/data/sites/default/files/reports/rpt35325/NSDUHFFRPDFWHTMLFiles2020/2020NSDUHFFR1PDFW102121.pdf

People aged 12 or older with substance use disorder (2020)



Substance Abuse and Mental Health Services Administration. (2020). *Key Substance Use and Mental Health Indicators in the United States: Results from the 2020 National Survey on Drug Use and Health*. https://www.samhsa.gov/data/sites/default/files/reports/rpt35325/NSDUHFFRPDFWHTMLFiles2020/2020NSDUHFFR1PDFW102121.pdf

What are some of the commonly used substances?

- Alcohol
- Marijuana
- Hallucinogens
- Rx Pain Reliever
- Rx Tranquilizer
- Rx Stimulant
- Inhalants
- Cocaine
- Rx Sedative
- Methamphetamine
- Heroin

Substance Abuse and Mental Health Services Administration. (2020). *Key Substance Use and Mental Health Indicators in the United States: Results from the 2020 National Survey on Drug Use and Health*. https://www.samhsa.gov/data/sites/default/files/reports/rpt35325/NSDUHFFRPDFWHTMLFiles2020/2020NSDUHFFR1PDFW102121.pdf

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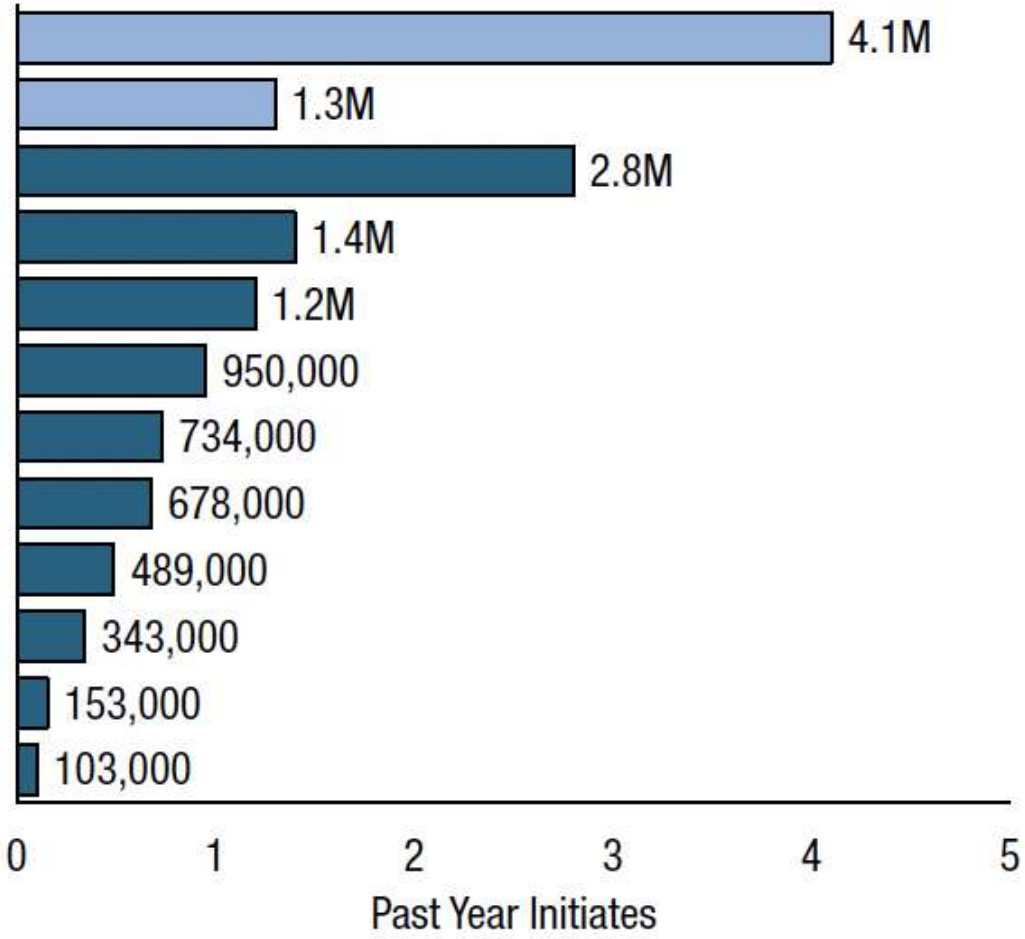
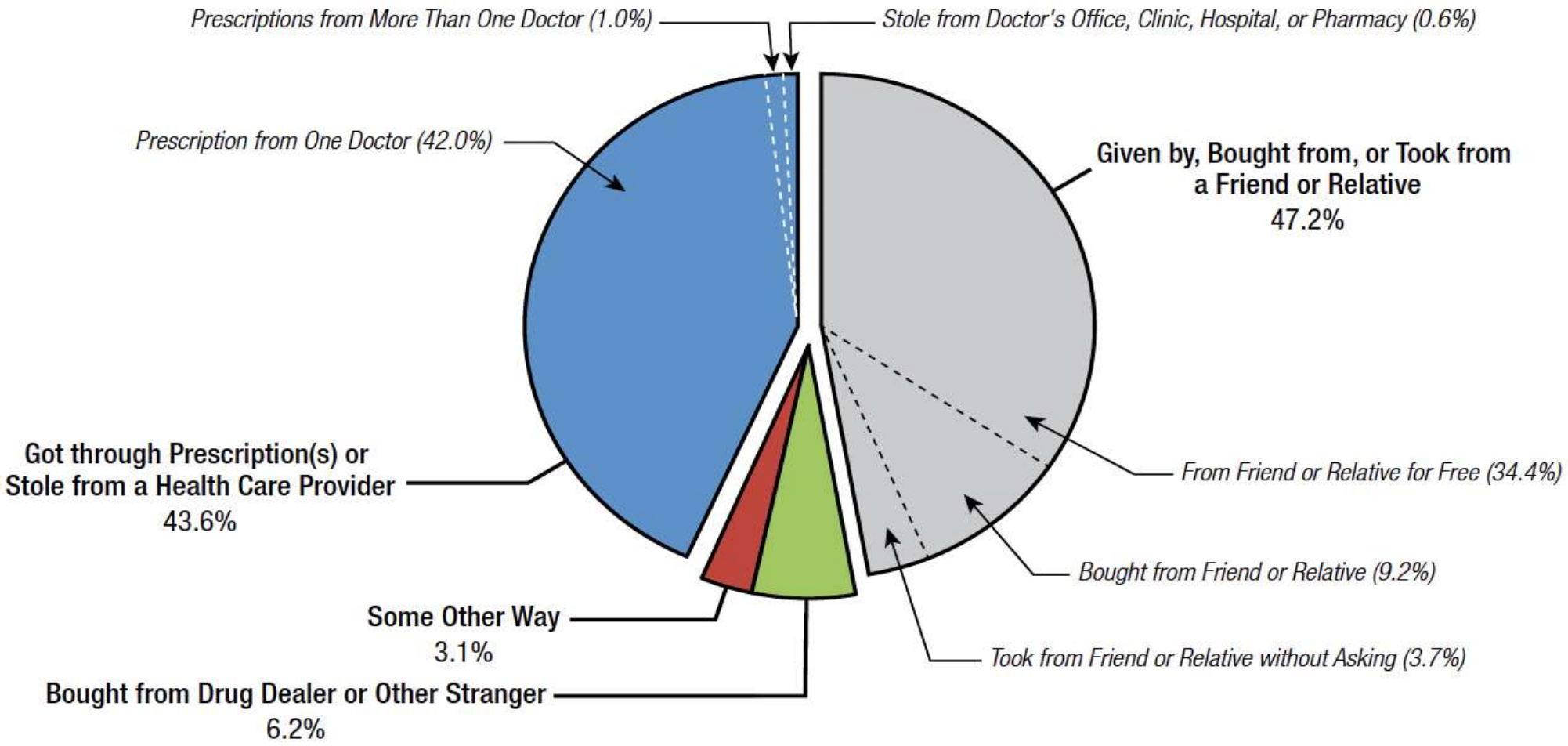


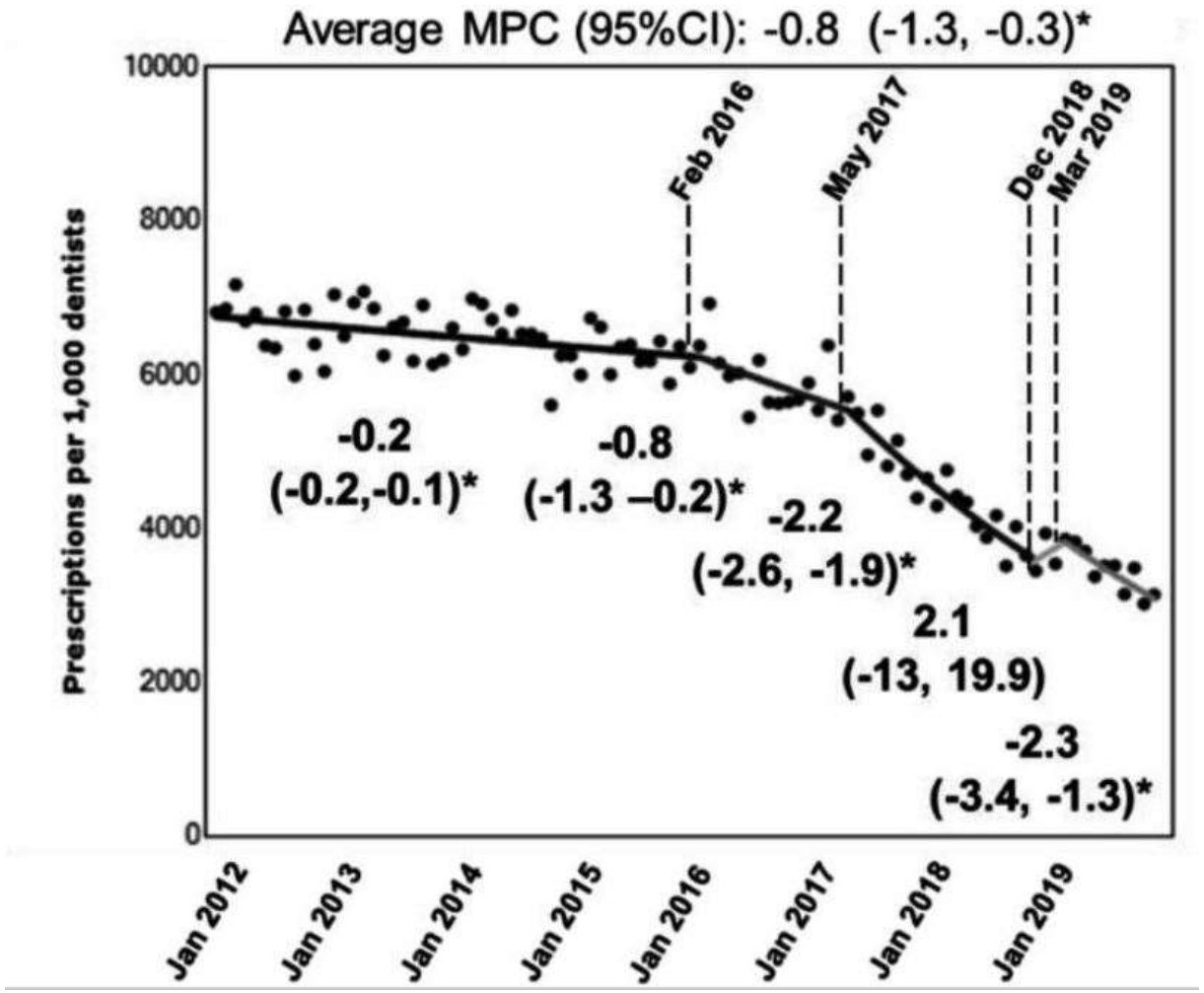
Substance Abuse and Mental Health Services Administration. (2020). *Key Substance Use and Mental Health Indicators in the United States: Results from the 2020 National Survey on Drug Use and Health*. https://www.samhsa.gov/data/sites/default/files/reports/rpt35325/NSDUHFFRPDFWHTMLFiles2020/2020NSDUHFFR1PDFW102121.pdf

What do health professionals do to contribute to the problem?



Substance Abuse and Mental Health Services Administration. (2020). *Key Substance Use and Mental Health Indicators in the United States: Results from the 2020 National Survey on Drug Use and Health*. https://www.samhsa.gov/data/sites/default/files/reports/rpt35325/NSDUHFFRPDFWHTMLFiles2020/2020NSDUHFFR1PDFW102121.pdf

What do dental health professionals do to contribute to the problem?



Trends in Opioid Prescribing by General Dentists and Dental Specialists in the United States, 2012–2019
Am J Prev Med. 2022 Jul; 63(1): 3–12.
doi: 10.1016/j.amepre.2022.01.009

What do many of these substances have in common?

Alcohol	Cigarettes	Marijuana	Hallucinogens
Rx Pain Reliever	Rx Tranquilizer	Rx Stimulant	Inhalants
Cocaine	Rx Sedative	Met	

They cause dry mouth…

Many increase cravings… particularly for sweets!

Substance Abuse and Mental Health Services Administration. (2020). *Key Substance Use and Mental Health Indicators in the United States: Results from the 2020 National Survey on Drug Use and Health*. https://www.samhsa.gov/data/sites/default/files/reports/rpt35325/NSDUHFFRPDFWHTMLFiles2020/2020NSDUHFFR1PDFW102121.pdf

Why do we get decay?

W.D. Miller's Acid Decalcification Theory – 1890

Step 1:

Fermentable carbohydrates

Acidogenic Bacteria

Acids

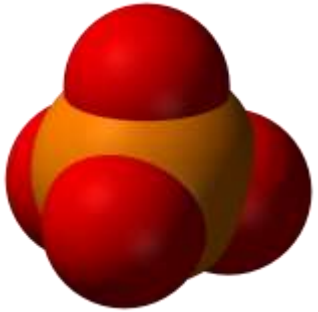
Step 2:

Tooth mineral

Bacteria Produced Acids

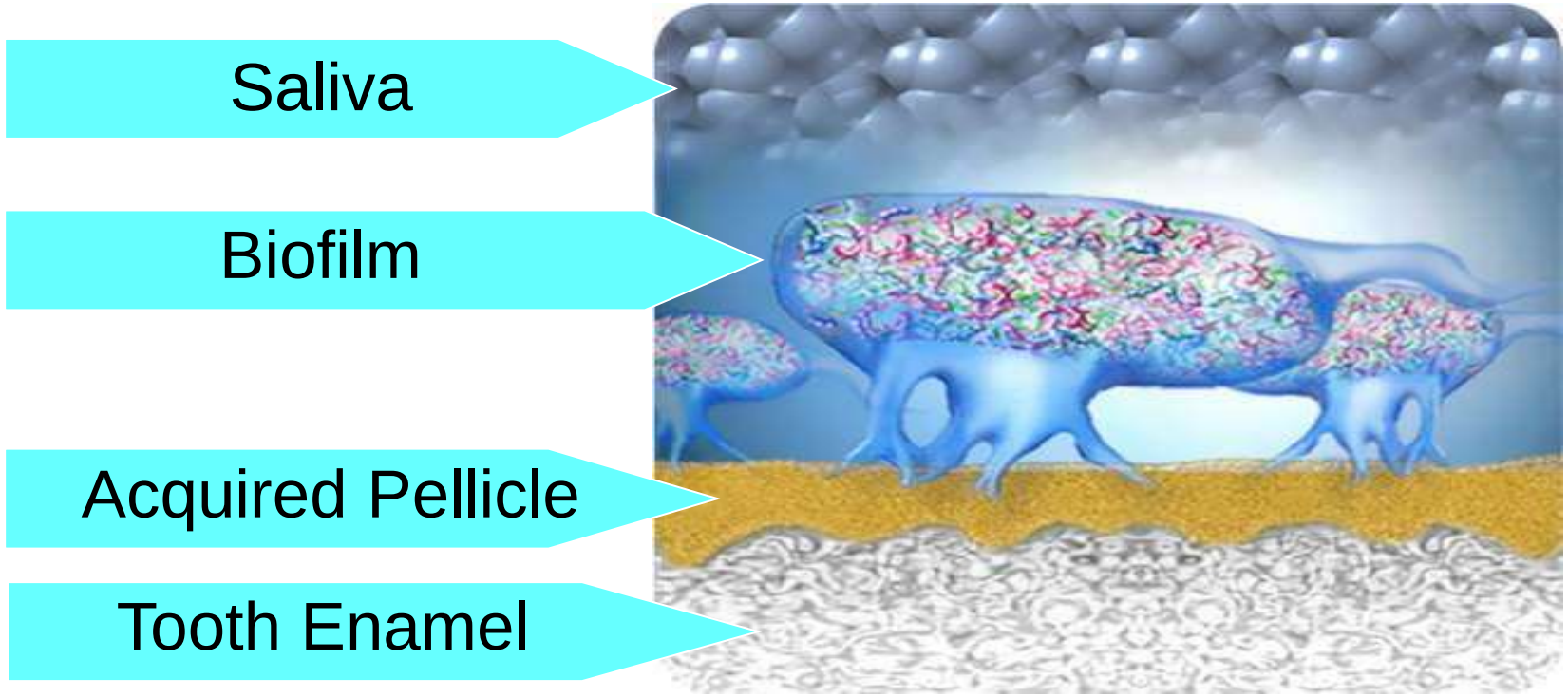
Calcium

\+



Phosphate ions

Why do we get decay?



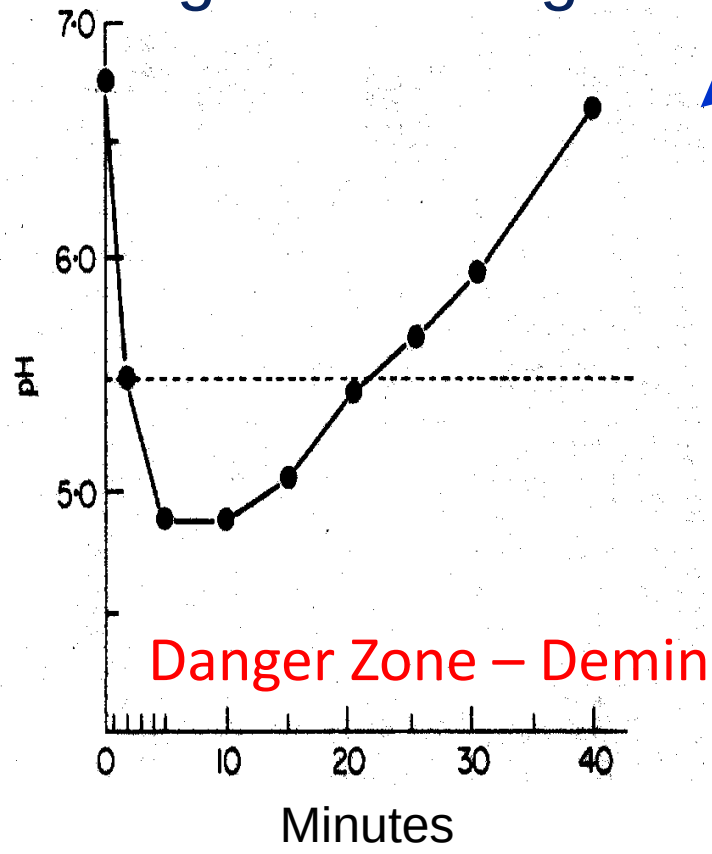
Depiction of Plaque Biofilm (Overman, 2000)

Stephan Curve

Sugar source

pH drop

Measure of Plaque pH after Sugar Challenge



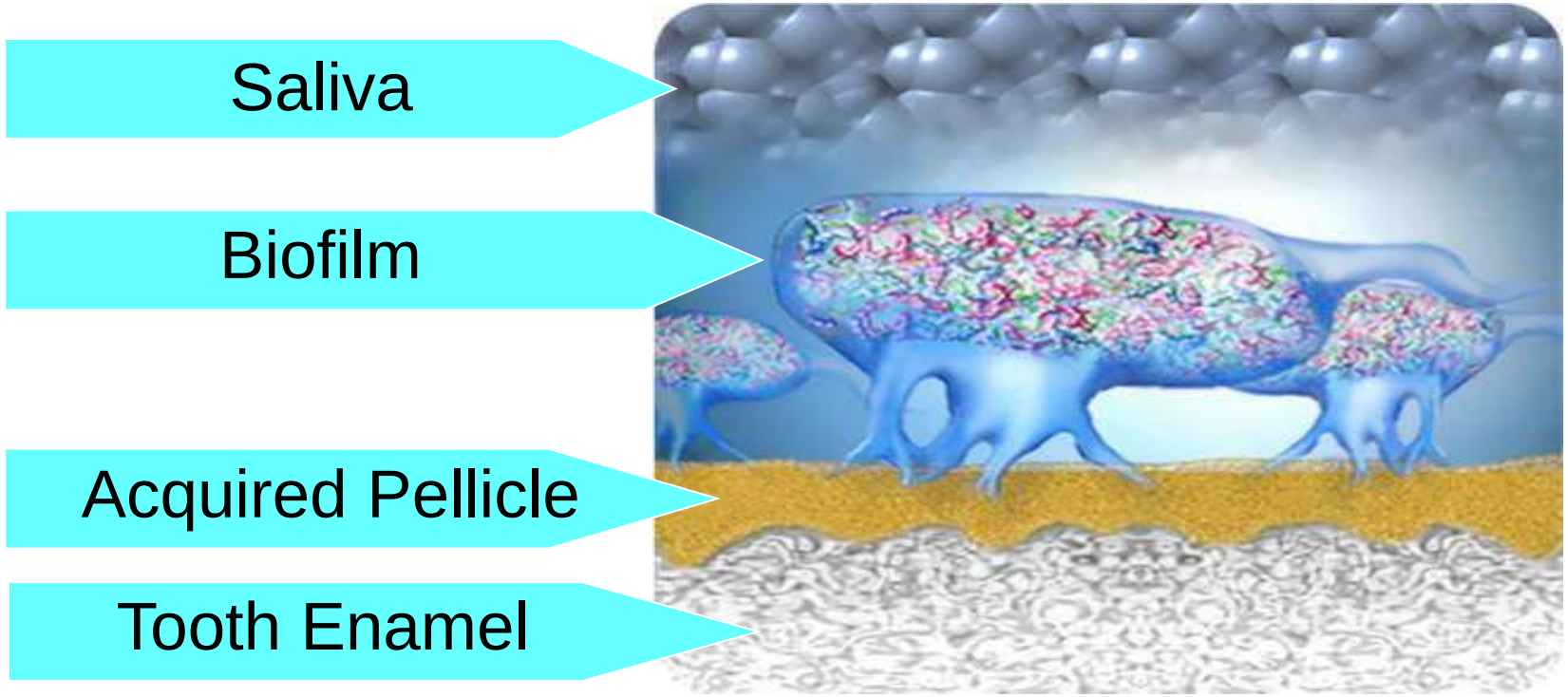
pH rebounds to normal value

Terminal pH = After sugar challenge

Danger Zone – Demineralization

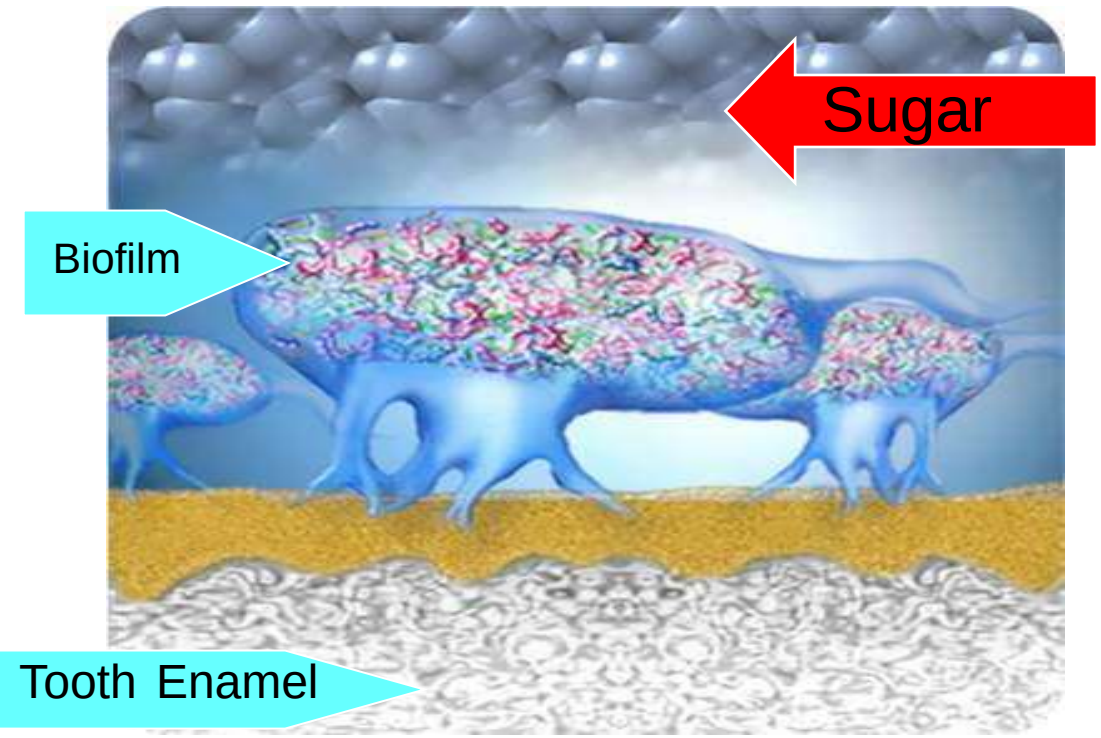
Jenkins G. The Physiology and Biochemistry of the Mouth. 1978.

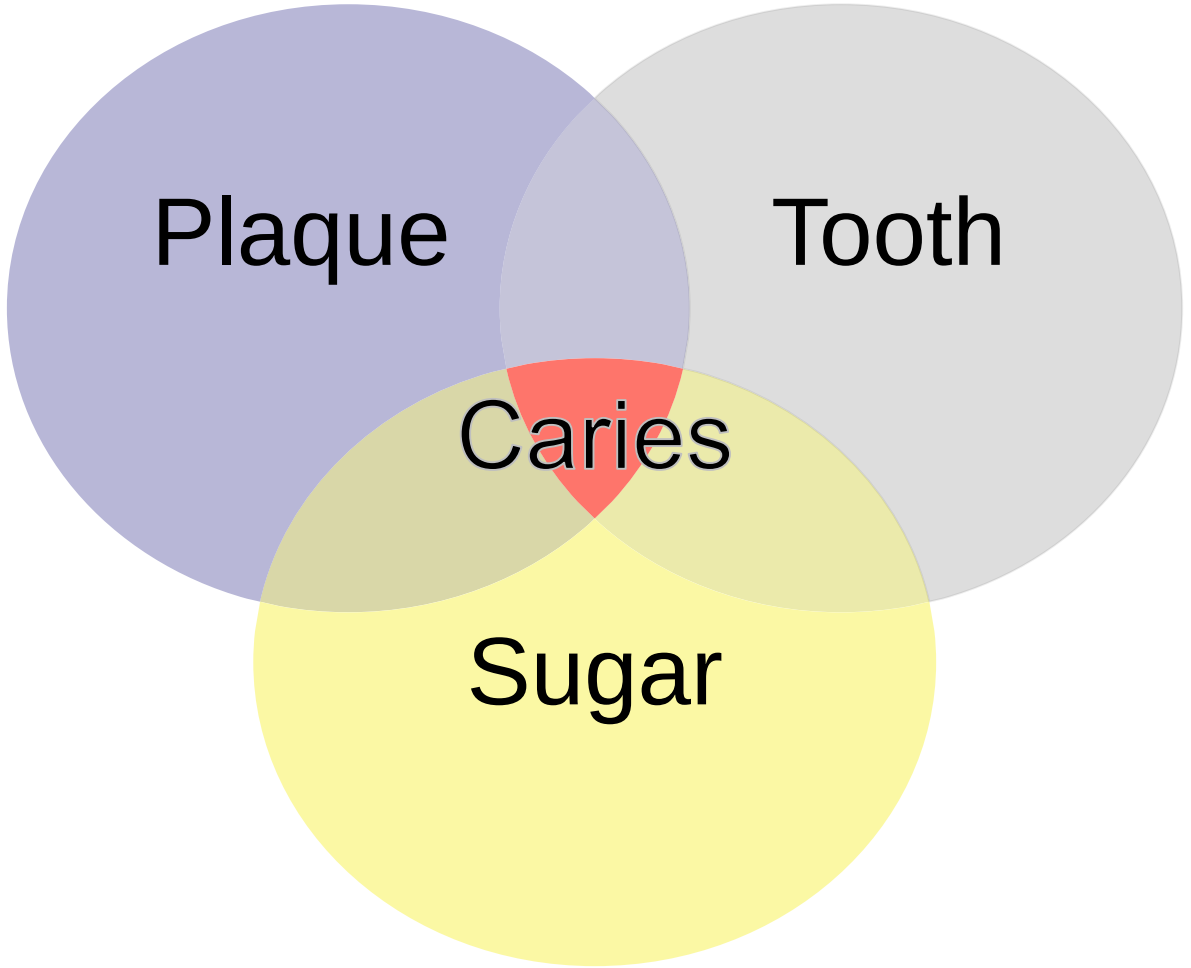
What is Plaque/Biofilm?



Depiction of Plaque Biofilm (Overman, 2000)

Source of Caries Problem



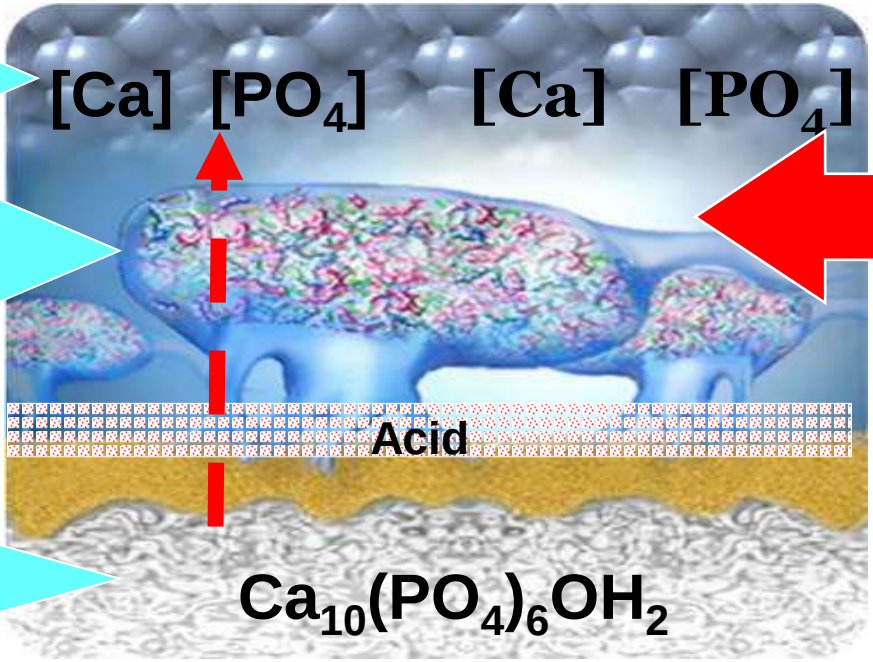


Formation of Decay

Saliva

Biofilm

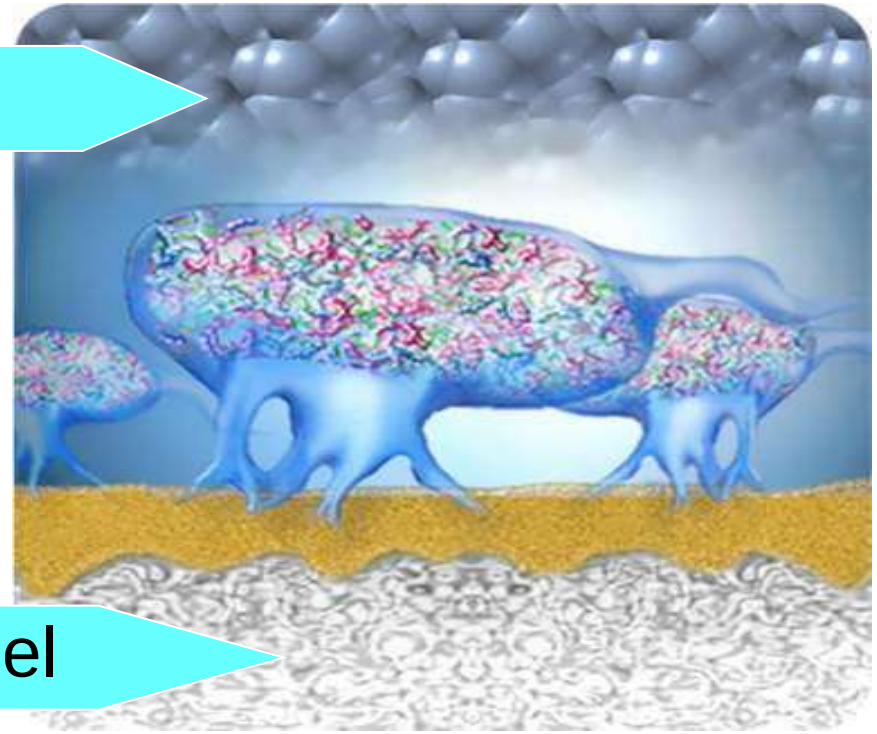
Tooth Enamel



Sugar

pH drops <5.5 and Ca + PO_4 move out of enamel

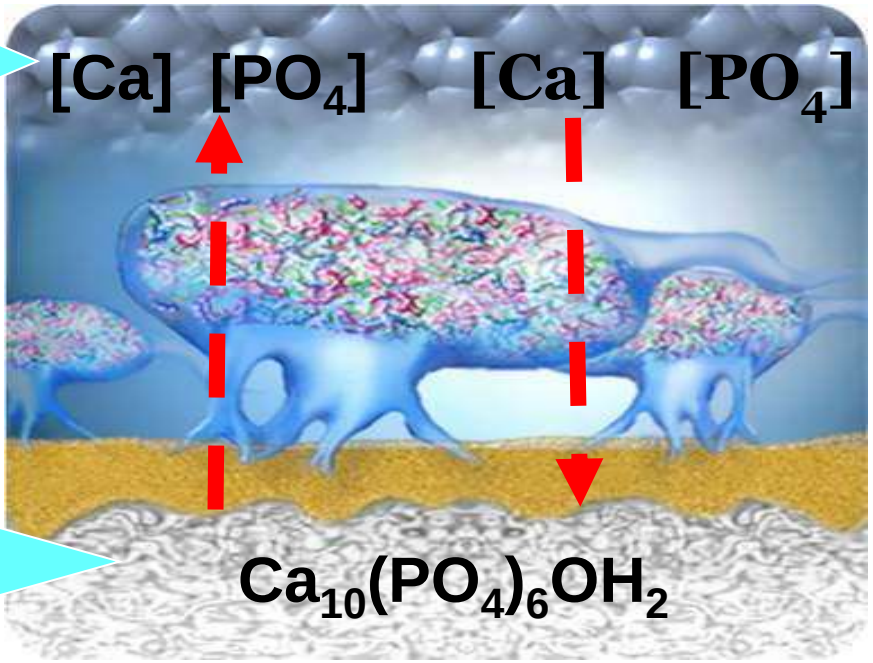
Role of Saliva



- Contains bicarbonate
  - Excellent buffer
- Flushing action to wash away carbohydrate substrates and neutralize acids
- Supersaturated with Ca and PO_4
  - Same as tooth mineral

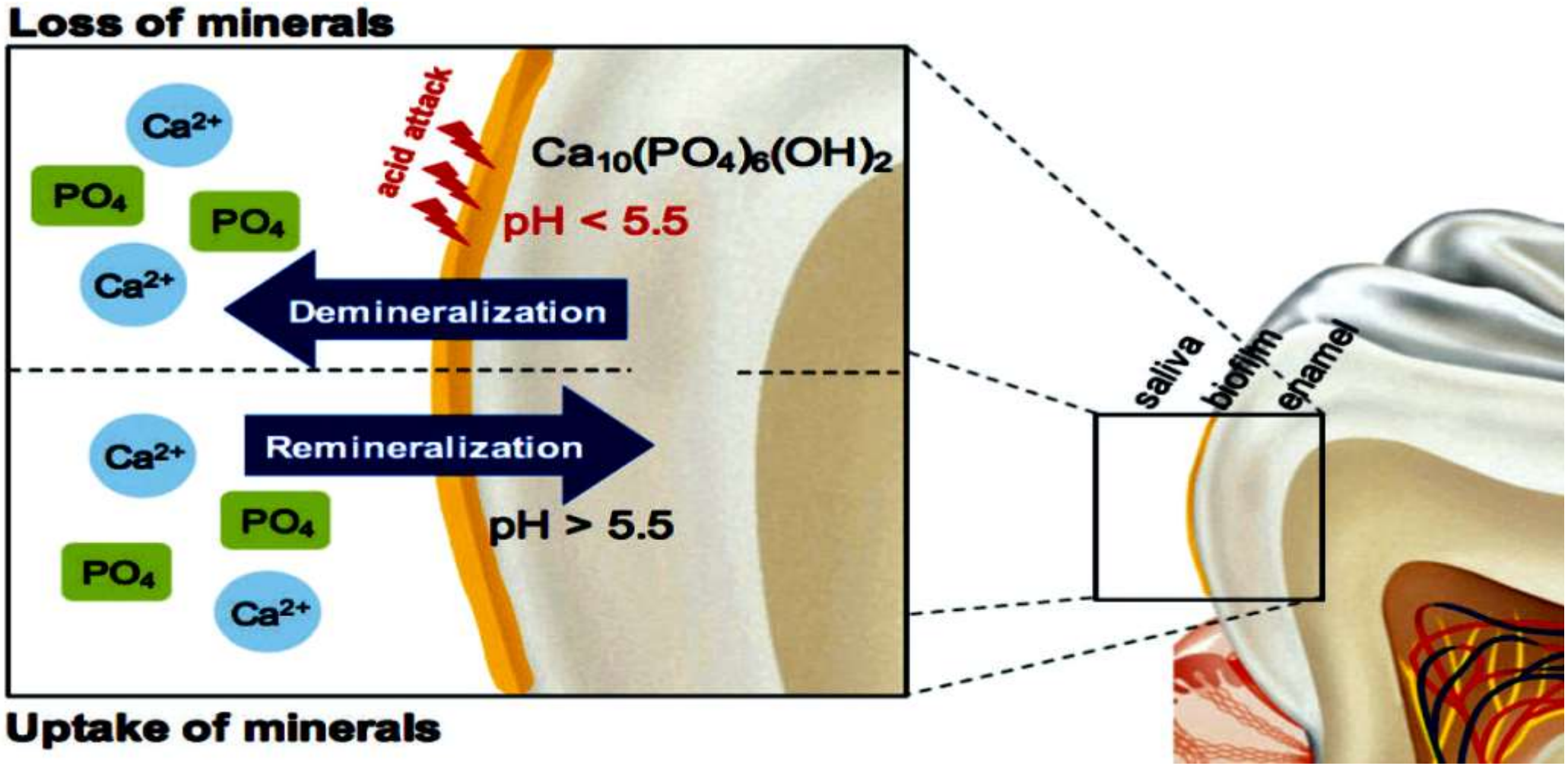
With Saliva, a Normal pH is restored….pH 7

Saliva



Tooth Enamel

No Cavitation Occurs



Source: Image courtesy of the Colgate-Palmolive Company.

Disclaimer

The next four slides contain images of the mouth and dental issues. If you may find these images disturbing, please minimize your screen at this time.

Early decay

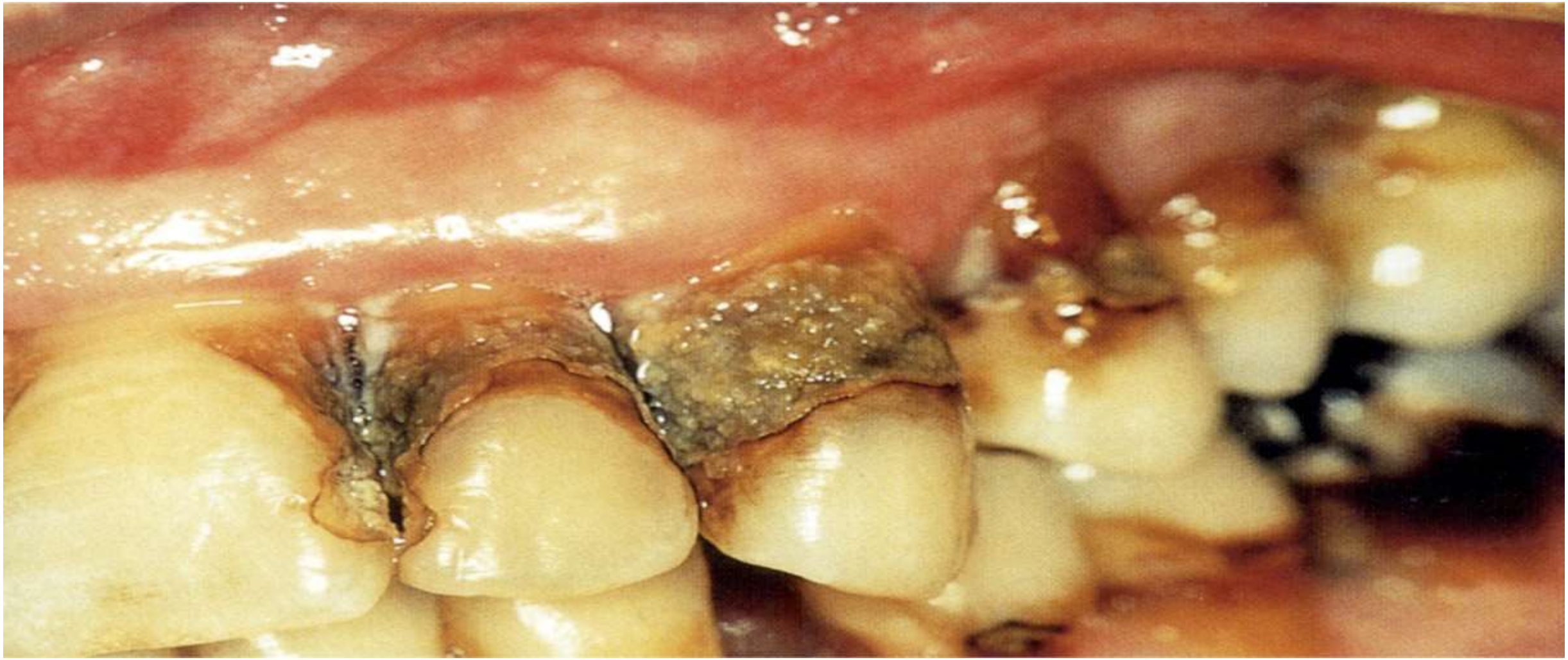
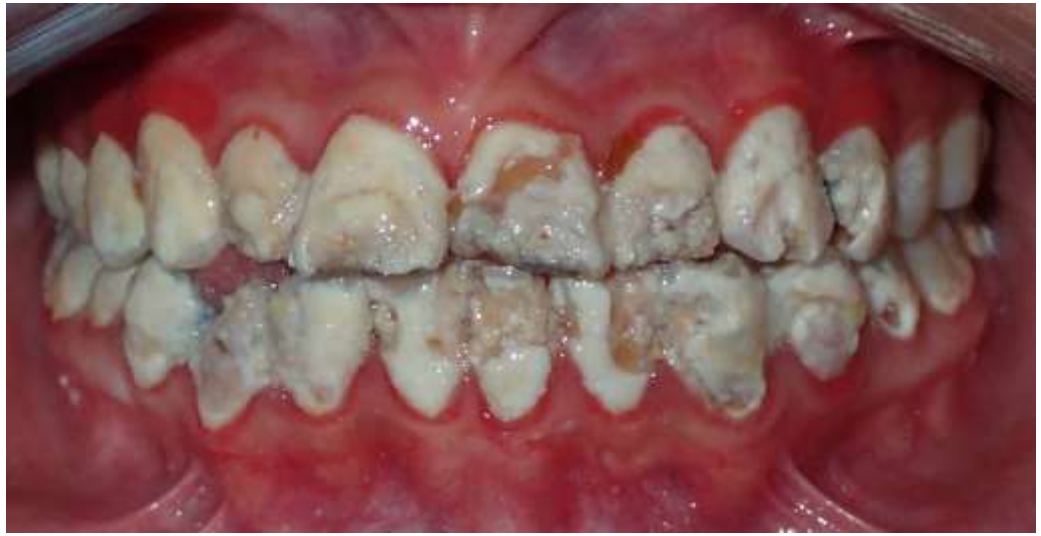
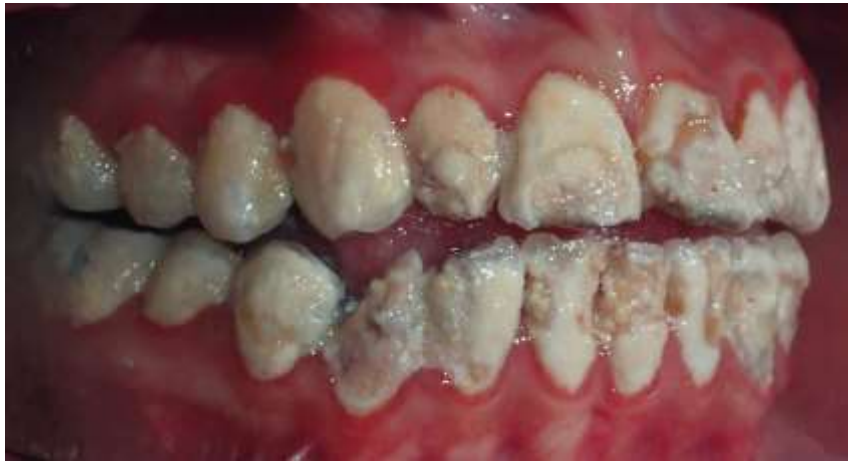
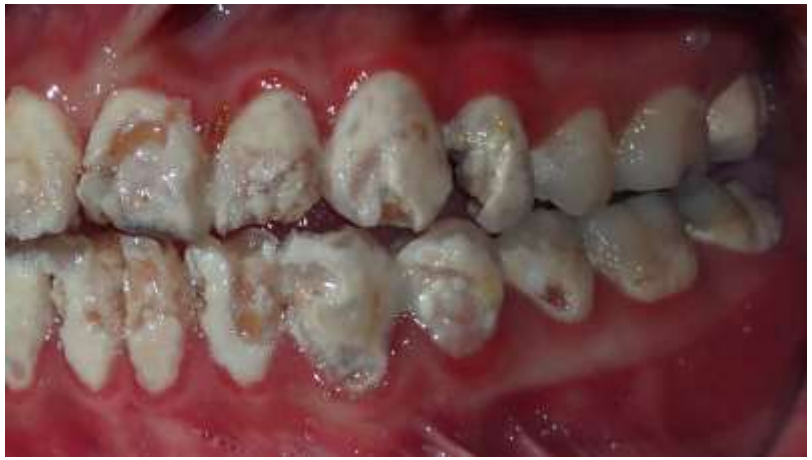


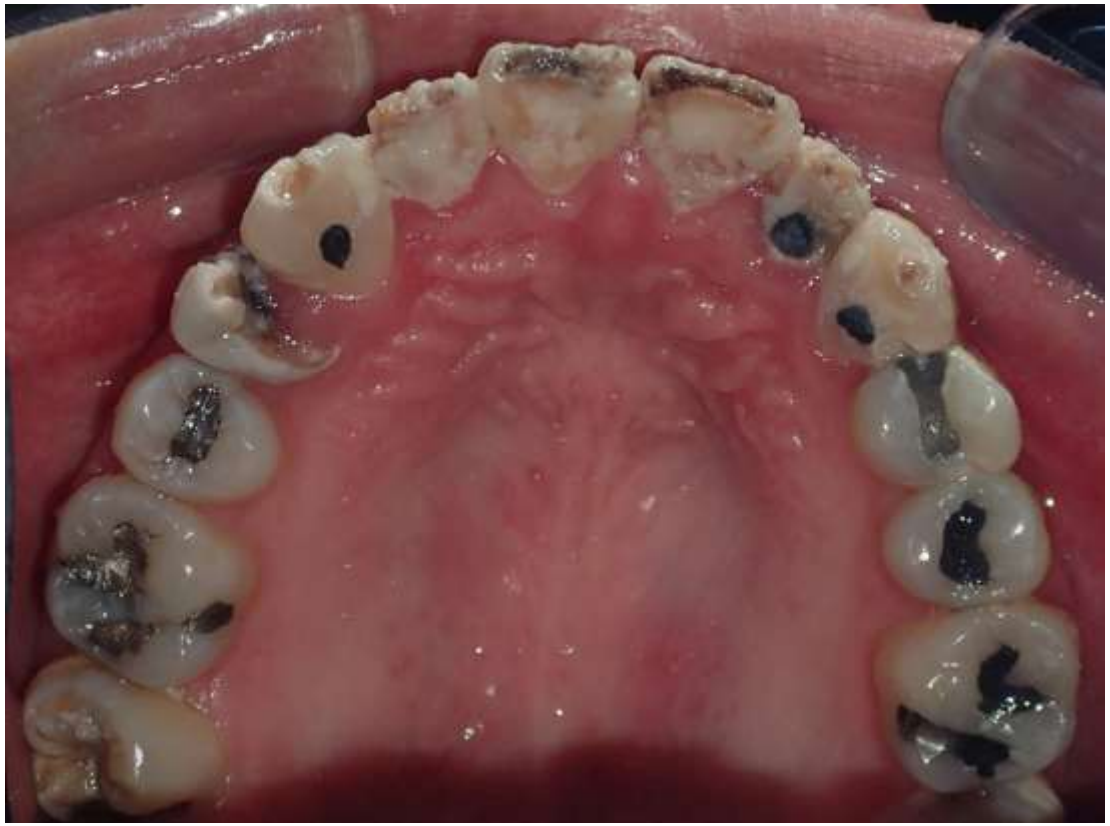
Photo Courtesy Dr. Miriam Robbins

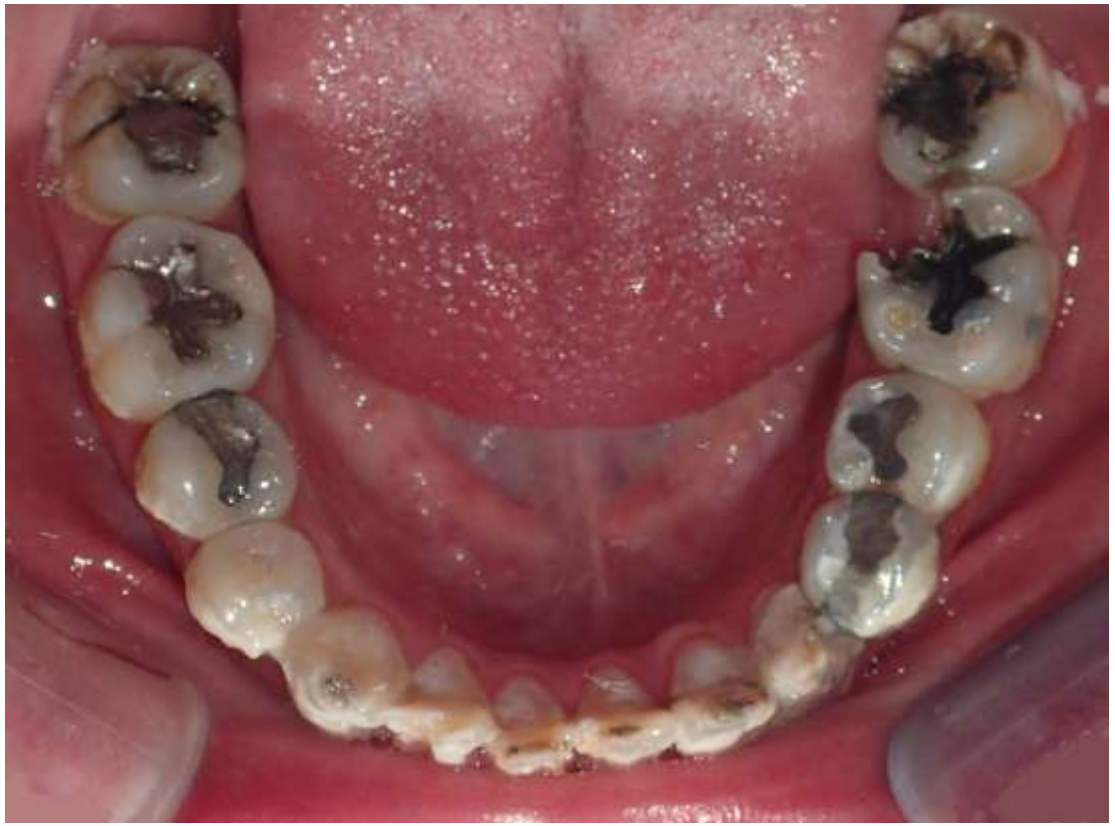
Methamphetamine Use











Fluoride in Tooth Decay Prevention

FLUORIDE

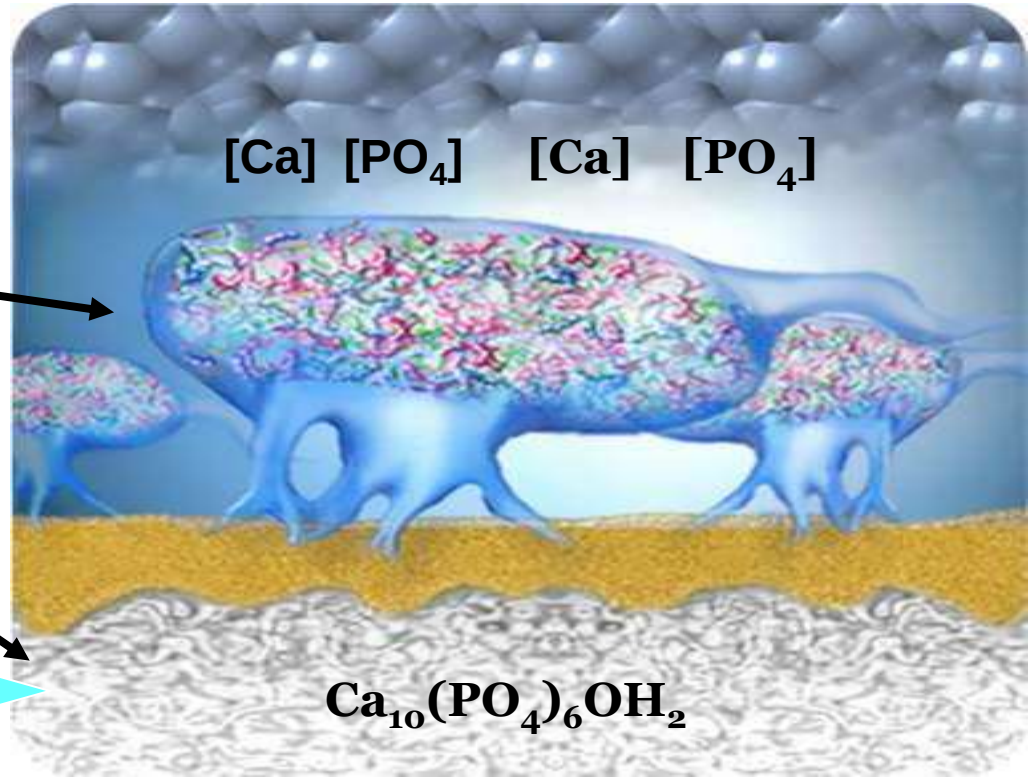
in

Toothpaste

Mouth Rinse

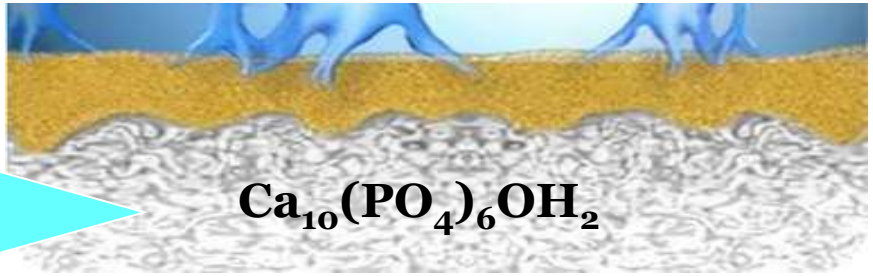
Varnishes

Tooth Enamel



This is the most evidenced-based decay prevention.

Demineralization Reduction/Caries Arrest/Remineralization



FLUORIDE
in
Varnishes

Penn Dental Medicine
University of Pennsylvania


Duraphat
22,600 ppmF
5% w/v Sodium Fluoride Varnish


Duraflor
Duraflor


MPL
VarnishAmerica


ZOOBY


NUPRO
5% Sodium Fluoride
Varnish


ClearShield
ClearShield


FLUORIDEX
LASTING
DEFENSE


DuraShield


Colgate
PreviDent
Varnish


CariFree
CariFree


Duraflor
D2
Duraflor


CavityShield


BUTLER

Penn Dental Medicine
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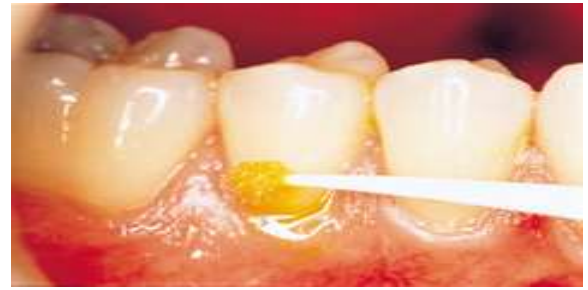
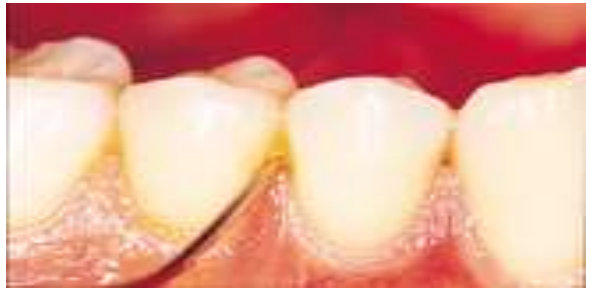
RISK CATEGORY	AGE CATEGORY FOR RECALL PATIENTS								
	< 6 Years			6 to 18 Years			18 + Years		
	Recommendation	Grade of Evidence	Strength of Recommendation	Recommendation	Grade of Evidence	Strength of Recommendation	Recommendation	Grade of Evidence	Strength of Recommendation
Low	May not receive additional benefit from professional topical fluoride application*	1a	B	May not receive additional benefit from professional topical fluoride application*	1a	B	May not receive addi- tional benefit from professional topical fluoride application*	IV	D
Moderate	Varnish application at 6-month intervals	1a	A	Varnish application at 6-month intervals OR Fluoride gel applica- tion at 6-month intervals	1a 1a	A A	Varnish application at 6-month intervals OR Fluoride gel applica- tion at 6-month intervals	IV IV	D*** D****
High	Varnish application at 6-month intervals OR Varnish application at 3-month intervals	1a 1a	A D**	Varnish application at 6-month intervals OR Varnish application at 3-month intervals OR Fluoride gel applica- tion at 6-month intervals OR Fluoride gel applica- tion at 3-month intervals	1a 1a 1a 1a 1a	A A A A D****	Varnish application at 6-month intervals OR Varnish application at 3-month intervals OR Fluoride gel applica- tion at 6-month intervals OR Fluoride gel applica- tion at 3-month intervals	IV IV IV IV	D*** D*** D**** D****

Application of varnish

- Clean the teeth (prophylaxis not required)
- No need to dry the teeth
- Use small brush or cotton tip applicator
- Apply 0.25-0.75ml to teeth
- No brushing or chewing for 4 hours
- Quick: 30 seconds to 2 minutes



Occlusal buccal and lingual



Exposed dental necks, interdental spaces

Why Fluoride Varnish?

- Simple to apply
- Safe
- Low unit cost
- No special equipment or cleanings needed
- Proven record in decay reduction

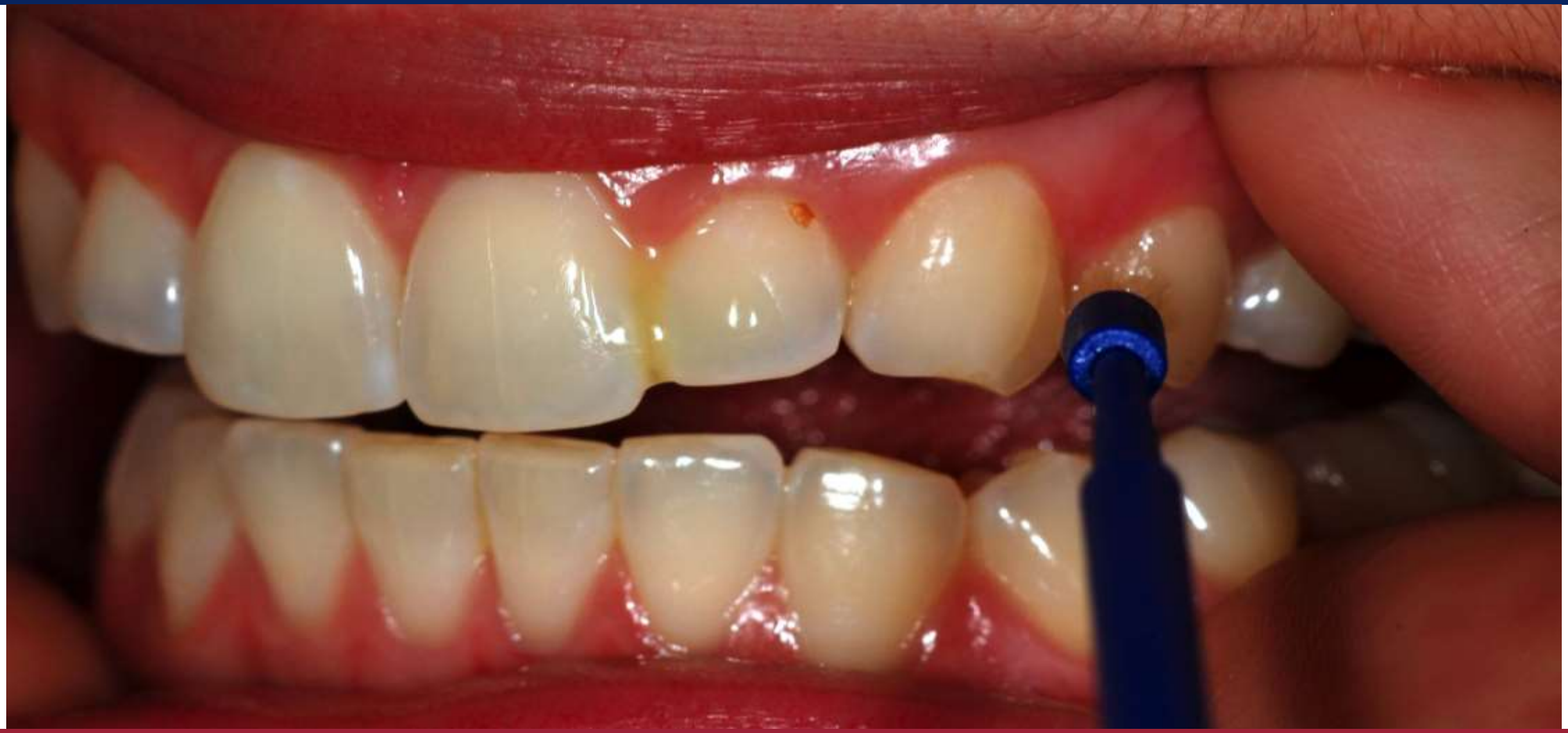
IT WORKS!

40%-70% Reduction!

When should fluoride varnish be applied?

- From the efficacy point of view:
  - As frequent as possible (*within reason* ☺) to patients at increased risk for dental caries

- From the cost/effectiveness point of view:
  - 2-4 times/year
  - Repeated application in short time (e.g., weekly for 3 weeks)



Medications for Opioid Use Disorder

Addiction Medicine Specialist:

- Methadone
- Buprenorphine
- Naltrexone

They **cause dry mouth**….

May **increase cravings**…
particularly sweets!

Centers for Disease Control and Prevention (CDC). (2022, March 2). Addiction Medicine Primer. Centers for Disease Control and Prevention. https://www.cdc.gov/opioids/addiction-medicine/primer.html
Centers for Disease Control and Prevention (CDC). (2019, November 29). Medications for Opioid Use Disorder Study (MOUD Study). https://www.cdc.gov/opioids/framework/surveillance-research/moud-study.html

Addressing the stigma and barriers to accessing dental care

Finding a dentist willing to treat individuals with OUD

- Helping keep the individuals with OUD in active care
- Helping the dentist succeed by positive reinforcement
- Helping the dentist navigate care for the individual with OUD

Fluoride Varnish

Safe and effective

- Prevention of caries and of evolution of caries process
- Very low risk of ingestion due to the varnish form
- Outstanding evidence-based clinical dossier

Easy to use

- Quick and easy application
- No prolonged immobilization in chair
- Painless, well accepted by patients
- Can be applied in a variety of settings

Courtesy Roger Ellwood BDS, MDS, MSc PhD

W.D. Miller's Acid Decalcification Theory – 1890

Step I:

Fermentable carbohydrates

Acidogenic Bacteria

Acids

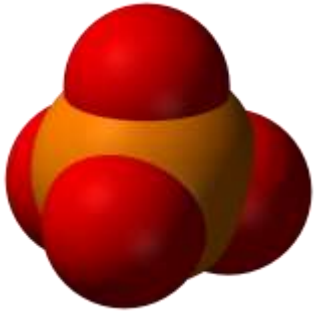
Step 2:

Tooth mineral

Bacteria Produced Acids

Calcium

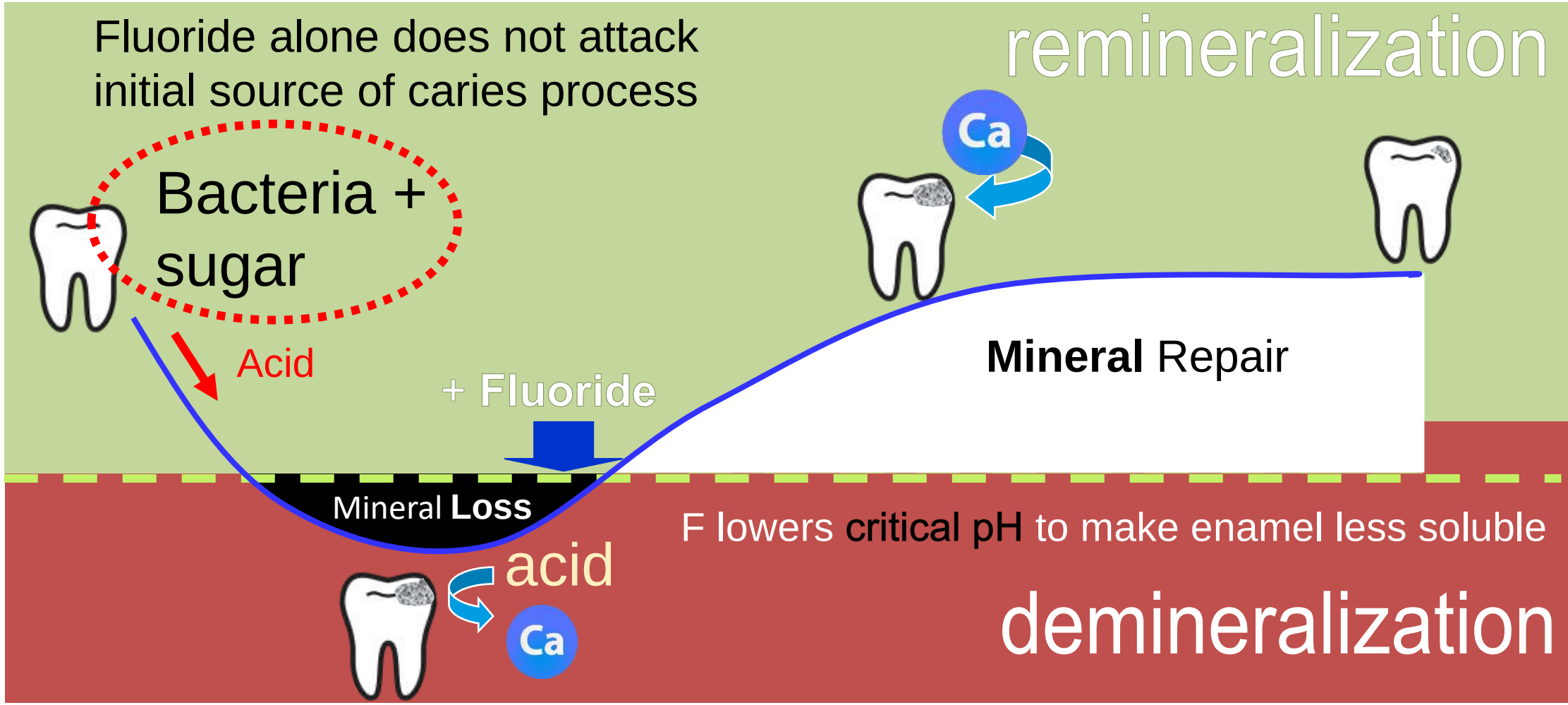
+



Phosphate ions

Fluoride

Fluoride Decreases Demineralization, Promotes Remineralization and Arrests Caries



Oral Health Recommendations for Individuals Receiving Medication Assisted Treatment (MAT)

Care Manager Role:

- Encourage engagement of dental professionals
- Apply fluoride varnish frequently (any primary care provider)
  - As frequently as once per month
- Provide toothbrushes and toothpastes
  - Brush for two minutes twice per day
- Restrict sugar consumption

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Thank You!
Questions?
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