**THE D3 GROUP**
*for Developmental Dental Defects, in conjunction with*
**IADR General Session & Exhibition**

**Hosted by LSU Health**

# 'D3 DAY AT IADR'
## SYMPOSIUM ON MEDICAL-DENTAL HARMONY & CHALKY TEETH

## MAR 12th, 2024
### NEW ORLEANS, USA

**www.thed3group.org/d3day-neworleans**

# Translational science in action



**'D3 DAY at IADR' New Orleans, March 12th, 2024**
International Symposium on Medical-Dental Harmony & Chalky Teeth
thed3group.org/d3day-neworleans

THE D3 GROUP · THE CHALKY TEETH CAMPAIGN · HEALTHIER BABIES STRONGER TEETH · IADR International Association for Dental, Oral, and Craniofacial Research · LSU Health NEW ORLEANS · Colgate · GC

## EVENT DETAILS

**WHERE:**
**New Orleans Marriott Warehouse Hotel** (with IADR)
Cypress Room (second floor)

**THEME:**
Attacking the **Chalky Teeth Problem**
through **medical-dental integration**

**TOPICS:**
Translational communication, research/publication
quality, translating science across healthcare,
public & society

**WHEN:**
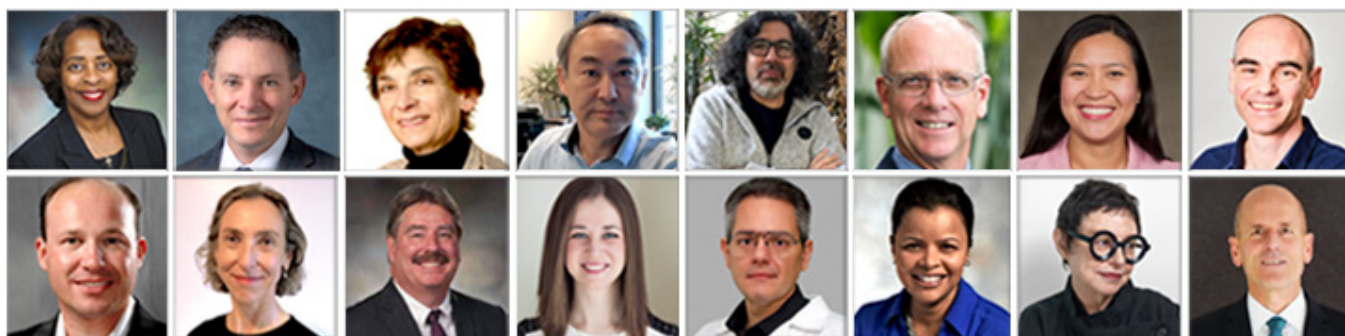**9am - 5pm** (optional networking after)

**IDEA INCUBATORS:**
AM: **Stronger Science** (building consensus)
PM: **Science to Social Good** (building awareness)

**PRESENTER / PANELLISTS:**
A wonderful array of knowledge leaders, spanning
**career scientists**, **IADR**, **dental & medical clinicians**,
**government & industry**.

# LOOK WHO'S PRESENTING



## Confirmed Presenter / Panellists & Opinion Leaders

### D3G HOSTS

**Public health dentist & transdisciplinary educator:** Janet Southerland
**Career Scientists:** Ben Ganss, Felicitas Bidlack, Mike Hubbard (D3G founder)
**Paediatric dentists:** Mike Casas, Vidal Perez, Azza Tagelsir, Francisco Paula-Silva, Ana Biondi

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### IADR

**Ophir Klein**
IADR President,
pediatrician, geneticist

**Chris Fox**
IADR CEO

**Nick Jacubovics**
Chief Editor, IADR-JDR

**Jocelyne Feine**
Chief Editor, IADR-JDR-CTR

### PUBLIC HEALTH DENTISTRY

**Bob Schroth**
ACFF Chair Canada,
paediatric dentist/researcher

**Sonica Singhal**
University of Toronto, public
health dentist/researcher

**Sheri McKinstry**
Indigenous Dental Assocn
Canada, paediatric dentist

### PAEDIATRIC DENTISTRY

**Erin Bumann**
ABPD College of Diplomates,
paediatric dentist/researcher

**Kevin Donly**
Past president AAPD,
paediatric dentist/researcher

**Viviene Valdez**
Past member ABPD CQI
committee, paediatric dentist

**Yasmi Crystal**
AAPD Guidelines & Scientific
Affairs, paediatric dentist

### INDUSTRY

**Stephen Haynes**
Head Product Management,
GC Asia

**Mark Heiss**
Director of Regulatory, Academic
& Compliance, GC America

### ACADEMIC PUBLISHING

**Martha Somerman**
Chief Editor, Frontiers
in Dental Medicine

**Noel Childers**
Chief Editor, AAPD-
Pediatric Dentistry

**Tim Wright**
Chief Editor, ADA-JADA

### GOVERNMENT

**Dan Cho**
US National Library of
Medicine (MEDLINE/PubMed)

**Rena D'Souza**
National Institute of Dental
& Craniofacial Research

**Jennifer Webster-Cyriaque**
National Institute of Dental
& Craniofacial Research

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# SOMETHING FOR EVERYONE

## Why should I attend the 'D3 Day' symposium?

### CLINICIANS
- Good science often starts with clinical problems
- Clinicians know the problems with MH
- Want to help set the direction of problem-solving?
- Then attend and share your clinical experience!

### SCIENTISTS
- Clinical problems always benefit from good science
- Scientists should know about the problems with MH
- Want to help set the approach to problem-solving?
- Then attend and share your scientific experience!

### EDUCATORS
- Educators often need educating in new topics
- Scientists & clinicians know their stuff not yours
- Want to help shape our cross-sector education?
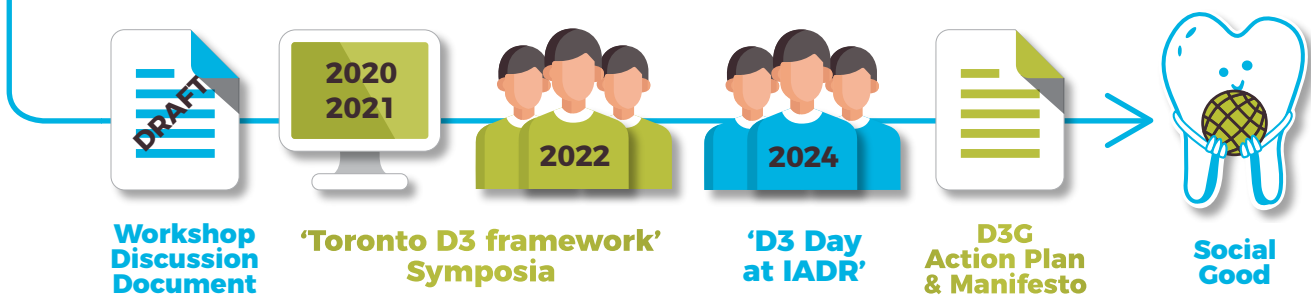- Then attend and share your educational experience!

### END-TRANSLATORS
- Good science gets better once effectively translated
- End-translators should engage "the MH problem"
- Want to help set the approach to problem-solving?
- Then attend and share your translational experience!

This **"cross-learning"** event is relevant to everyone from clinicians through to industry, research publishers and funders, and policymakers (so-called **"end-translators"**).

- Here is a unique opportunity for **clinicians** exposed to Molar Hypomin (e.g. therapists, hygienists & dentists, paediatric & orthodontic specialists, paediatricians) to voice their concerns about the day-to-day problems they face and ensuing needs for research.

- The same goes for **public health practitioners** and others battling to increase awareness of the **striking link between Molar Hypomin and childhood decay**.

- **Scientists** and other **researchers** will find this a great opportunity to learn about an under-recognised yet potentially preventable global health problem, and to share their ideas on how it might be attacked across the research spectrum.

- Likewise, **end-translators** will have an unprecedented opportunity to share their perspectives on what's needed to collaboratively **strengthen research** and formulate **better practice**, **products** and **policy**, leading to **prevention** and **social good**.

## WHY HAVE INTERNATIONAL D3 SYMPOSIA?



**DRAFT**
**Workshop Discussion Document**

**2020 2021**
**'Toronto D3 framework' Symposia**

**2022**

**2024**
**'D3 Day at IADR'**

**D3G Action Plan & Manifesto**

**Social Good**



**PATHS TO TRANSLATION**



**MEDICAL-DENTAL INTEGRATION**

If the D3 research community is to perform strongly as a "global choir", it follows we must all **"sing from the same song sheet"** and have a translational repertoire ranging from **basic science** through **end-translation** into better **practice**, **policy, products and prevention** – all with a view towards **social good**.

Addressing '*Paths To Translation*', our world-first **Toronto D3 Symposia** leveraged a powerful lineup of stakeholders – comprising clinical and public health practitioners, students, industry directors, scientists, research publishers, government reps and funders – to formulate a socially impactful repertoire and advance our "collaborative songwriting" process.

This '**D3 Day**' tackles a key translational aspect of the '**Chalky Teeth Problem**', being the **need to merge** what traditionally are **separate medical and dental research paths**. And so in 2024, at the world's music capital New Orleans, we're uniquely positioned to extend D3G's "**ideas incubator**" concept across our theme of **"medical-dental harmony"**, leading to a symphony for **social good**.

Before the show starts in March, registrants will be invited to critique various **discussion framework documents** and the **Green Paper** draft developed during the Toronto D3 events. Read on to learn more about these exciting new steps in our **D3 Movement**.

## D3G'S BUILDING BLOCKS



**STRONGER SCIENCE**
**BETTER PRACTICE**
**SOCIAL GOOD**
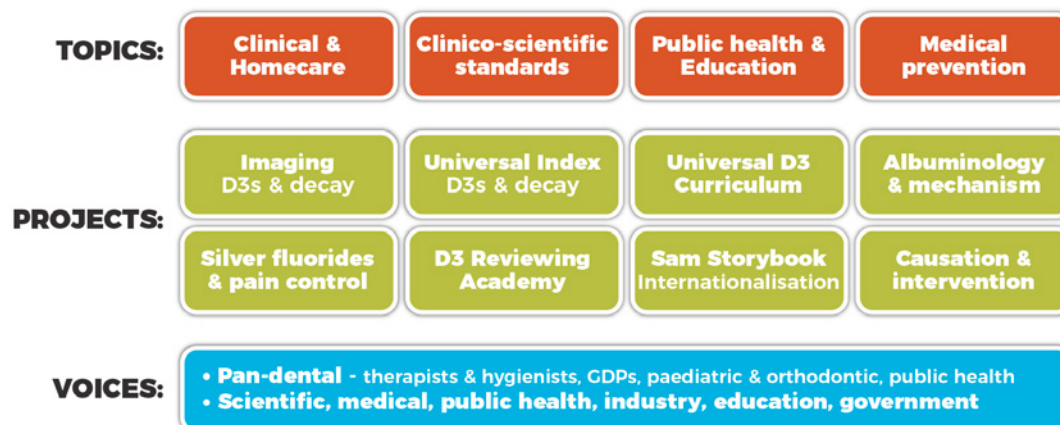
Lack of CT research
Ignorance about CT
Chalky Teeth (CT)
**'THE CHALKY TEETH PROBLEM'**

**HEALTHIER BABIES STRONGER TEETH**

Check out our translational "science to social good" **mission**, public messaging around '**The Chalky Teeth Problem**' (as **introduced academically in 2017**), and the exciting yet widely overlooked **medical-prevention** opportunity (cf. **2021 research breakthrough**).
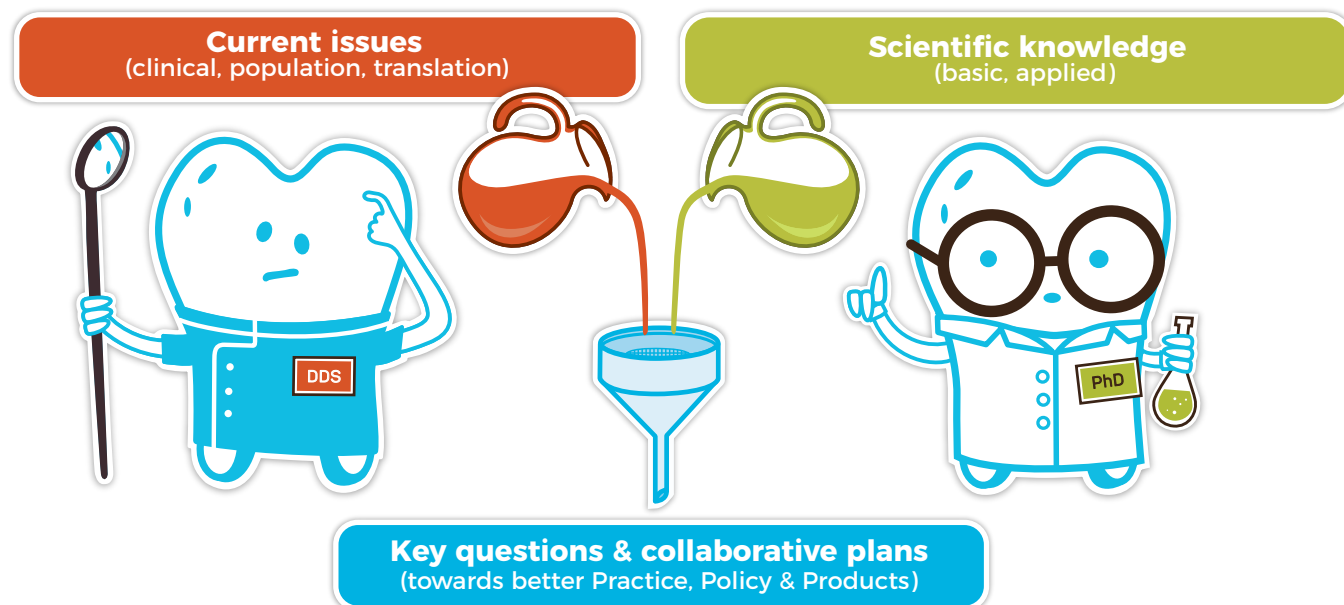
# TORONTO D3 FRAMEWORK PROJECTS

**TOPICS:**

| Clinical & Homecare | Clinico-scientific standards | Public health & Education | Medical prevention |

**PROJECTS:**

| Imaging D3s & decay | Universal Index D3s & decay | Universal D3 Curriculum | Albuminology & mechanism |
| Silver fluorides & pain control | D3 Reviewing Academy | Sam Storybook Internationalisation | Causation & intervention |

**VOICES:**
- **Pan-dental -** therapists & hygienists, GDPs, paediatric & orthodontic, public health
- **Scientific, medical, public health, industry, education, government**

A remarkable 8 field-shaping projects were developed as discussion frameworks during the Toronto D3 Symposia series– we now refer to them as the **Toronto D3 Framework Projects**. The interlinked projects span four core topics identified as priorities for the MH field, and so range from clinical & homecare aspects through public health & education to biomedical science addressing causation and medical prevention.

Notably, several projects hold broader significance across dentistry, public health and social good (e.g. *Imaging D3s & decay, Silver fluorides & dental pain control, Universal Index for D3s & decay*). Expressions of interest are welcomed; contact us **here**.

# WHAT'S OUR 'IDEA INCUBATOR' CONCEPT?

**Current issues**
(clinical, population, translation)

**Scientific knowledge**
(basic, applied)



**Key questions & collaborative plans**
(towards better Practice, Policy & Products)

Simply put, practitioners (clinicians, public health) have great awareness of major problems that hinder the field whereas researchers (particularly career scientists) excel at finding useful answers. So, given D3G's translational aim to foster **top-quality investigations into key knowledge gaps**, we think it's important that practitioners and scientists understand each other's perspectives better, and also think ahead collectively towards eventual end-translation of research outcomes into "**the 4 Ps**" (practice, policy, products, prevention).

To facilitate such **cross-learning**, this first stage of our incubator concept involves: **(1)** practitioners illustrating current issues they face; **(2)** scientists outlining latest research capabilities and understanding; then **(3)** these and other relevant parties (particularly "end-translators" comprising industry, publishers, funders & policymakers) collaboratively "filtering" this **status quo** (1+2) to arrive at **key researchable questions** and **actionable plans**. We anticipate this novel, cross-sector approach will provide a valuably holistic perspective on **what research should be prioritised** to benefit society, and **how it might be tackled best** at global scale.

# 'D3 DAY' INCUBATORS

## Attacking the Chalky Teeth Problem through
## Medical-Dental Integration

### Morning 'Idea incubator'
### STRONGER SCIENCE

### Afternoon 'Idea incubator'
### SCIENCE TO SOCIAL GOOD

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### BUILDING CONSENSUS
around **Stronger Science**

**Translational communication**
· specialist terminology & classification
· translational lingo

**Quality research & publications**
· lab & clinical guidelines
· writing, reviewing, publishing
· strategic funding

### BUILDING AWARENESS
around **Social Good**

**Healthcare sector**
· educate & train professions about D3s
· link professions, industry, policy, government

**Public & society**
· educate & train public about Chalky Teeth
· Regional Advocacy Councils
· *'Chalky Teeth America'*

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Standardise D3 terminology?

New nosology for D3s?

What's "D3 lingo"?

Who should be D3 savvy?

D3 education barriers?

Collab. with industry & govt?

D3-accredited reviewers?

Standardise D3 guidelines?

D3G-coordinated funding?

Reaching those in need?

Motivating the public?

X-sector approach to advocacy?

Who arbitrates consensus?

How to inspire medicos?

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# OFFICIAL D3 LINGO

To enable **effective intercommunication** among diverse stakeholders, we will again be using (and refining) D3G's translational "**chalky teeth lingo**" – as pioneered at the Toronto D3 Symposia since 2020.

## MIH-free zone

For those not yet in the know, D3G has evolved D3 terminology beyond chaos of the "**MIH era**" (i.e. **MIH**, **HSPM**, **DMH**, **HOPT**, **HPC**, **MIHO** and **20 other terms** describing **kids with demarcated opacities**). Yes, that's **26 overlapping terms** in recent academic literature – **can you believe your eyes?** There are multiple reasons why D3G **grabbed this crazy bull by the horns**, with our interests in **scientific rigour** and compatibility with **medical** and **dental prevention** being paramount – learn more **here** and **here**. This field-reshaping advance followed widespread consultation, both across the sector and around the world.

MIH
HSPM, DMH
HOPT, HPC, MIHO
and 20 more terms!

THE D3 GROUP

## D3G's solution with DODs, HM and MH

Instead of loosely using "MIH" across cases and affected teeth (most current literature), we recommend separating **case level** (**MH**) from **tooth level** (**HM**, standing for hypomin) and **lesion level** (**demarcated opacity**). By **starting at lesion level** with **dental enamel opacities** – and then specifying **demarcated opacity disorders** (**DODs**) before progressing to **HM** and **MH** – everything falls into place. For example, demarcated HM is distinguished from diffuse HM, and MH refers to cases with HM enamel that is both demarcated and idiopathic. Read about it **here** and **here**.

And for a scientifically-robust **academic definition of MH**, we recommend that published by the **US National Library of Medicine & D3G** – read it **here** and **here**. This is a truncation of D3G's "professional-level" definition of MH, as presented in our Green Paper *(Translationally robust characterisation of Molar Hypomineralisation as a Demarcated Opacity Disorder)* – which is to be discussed further at **D3 Day-New Orleans**.

# D3 ESSENTIALS - CLICK & LEARN

If you're new to "D3 land" or would like a refresher, take a quick and easy tour using the *'D3 Click & Learn'* links below (just click on each graphic).
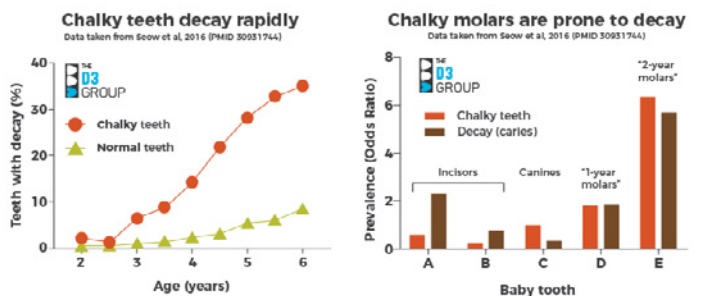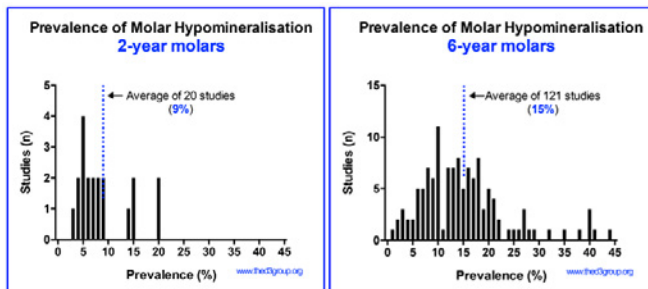
## WHAT'S THE PROBLEM?

Lack of research

Ignorance about CT

Chalky Teeth (CT)

'THE **CHALKY TEETH** PROBLEM'

### THE CHALKY TEETH PROBLEM

**1-in-5** schoolchildren HAVE **CHALKY TEETH**

**14** million **new cases** EACH YEAR

**10**-fold higher **risk of decay** FOR **CHALKY TEETH KIDS**



Prevalence of Molar Hypomineralisation — 2-year molars — Average of 20 studies (9%)

Prevalence of Molar Hypomineralisation — 6-year molars — Average of 121 studies (15%)

Chalky teeth decay rapidly — Data taken from Seow et al, 2016 (PMID 30931744) — Chalky teeth / Normal teeth

Chalky molars are prone to decay — Data taken from Seow et al, 2016 (PMID 30931744) — Chalky teeth / Decay (caries)

## WHAT ARE WE DOING ABOUT IT?



Paid-up D3 family members

SPEAK CHALKY TEETH
*Science is on your side*

SCIENCE BREAKTHROUGH

**100** 1920 - 2020 CHALKY TEETH CENTENARY

Colgate
Oral Health Network for Professional Education and Development

THE CHALKY TEETH CAMPAIGN

1 CE CREDIT

**MOLAR HYPOMINERALIZATION**

Erin Mahoney BDS, MDSC, PhD, FRACDS, MRACDS, Mike Hubbard BDS, PhD

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