

EVIDENCE AND EXPERIENCE GENERATE CONSENSUS REPORT

The Canadian Advisory Board contributed their own diverse clinical and academic experience to the scientific evidence and Needs Assessment results, establishing a framework for directing clinicians in their practice. The resulting *Consensus-Based Recommendations for the Diagnosis and Management of Dentin Hypersensitivity* were subsequently published in the April 2003 issue of the *Journal of the Canadian Dental Association*.

The board's recommendations were comprehensive, addressing: screening, diagnosis, predisposing factors and causes, treatment, follow-up, educational issues as well as research needs. The pivotal directive calls for practitioners to

take a more active role, beginning with diligent screening and proper diagnosing.

Since many patients with dentin hypersensitivity suffer from recurrent pain, continuous follow-up and a long-term management approach are critical to treatment success.

The board advocates that treatment should begin with at-home non-invasive therapy, specifically recommending desensitizing toothpaste as first-line treatment because it is inexpensive, efficacious, non-invasive and convenient. Invasive, in-office treatments should be reserved as contingent therapy.

IN THE NEXT ISSUE


- *Aetiology of dentin hypersensitivity*
- *Mechanism of dentin hypersensitivity pain*
- *Exposing common myths*

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The Canadian Advisory Board on Dentin Hypersensitivity was supported by an unrestricted educational grant from GlaxoSmithKline Consumer Healthcare.

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Dentin Hypersensitivity BULLETIN

Scientific Perspectives

ISSUE 1

The Dentin Hypersensitivity Bulletin is a Sensodyne® initiative designed to provide your busy practice with a convenient overview of the latest professional information regarding dentin hypersensitivity: events, trends, published materials, expert perspectives and commentary.

In this issue, we report on the most recent events that have led to key developments in the management and treatment of dentin hypersensitivity.

As consulting dentist and editor of the Bulletin, I am confident that you will find the content informative and relevant to your practice when dealing with dentin hypersensitivity.

David C. Alexander,
 BDS, MSc, MGDSRCS, DDPHRC
 Editor



NEW ATTITUDES AND EXPECTATIONS AFFECTING DENTAL CARE

In recent years, dentin hypersensitivity has gained significant attention from the dental profession. A number of factors have influenced this growing concern.

Advances in oral care have undoubtedly enabled the shift in focus from fundamental matters like treating

caries to the management of various other dental problems – including dentin hypersensitivity.¹

Epidemiological surveys and published studies from around the world have led to the recognition that dentin hypersensitivity is pandemic and therefore requires greater attention.^{2,3}

There is also a distinct change underway in both the public's and health professionals' attitudes and expectations about pain control. The informed patient now expects dental care to include effective pain relief.⁴

THE COMMON COLD OF DENTISTRY?

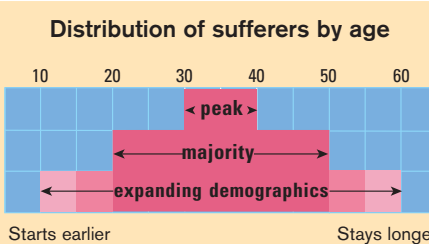
Dentin hypersensitivity is recognized as a common dental condition, with a reported prevalence rate of 30% among the general Canadian population.⁵ Among patients who bleach their teeth, the occurrence can be even higher, reaching 75%.⁶ In fact, dentin hypersensitivity is so prevalent, that it has been referred to as the “common cold of dentistry”.

While worldwide studies reveal its pandemic nature, significant underreporting compounds the problem. Up to 40% of patients do not consult a dental care professional about this pain, leaving the condition susceptible to underdiagnosis.²

Dentin hypersensitivity is defined as a short, sharp pain arising from exposed dentin in response to stimuli – typically thermal, evaporative, tactile, osmotic or chemical – which cannot be ascribed to any other form of dental defect or disease.⁵

What is even more disturbing, according to experts, is evidence of changing patient demographics which now include an increasing number of younger patients.³ At the other end of the scale, a growing number of mature patients are also being affected, as they tend to keep their teeth longer.

The graph below illustrates this expanding age range, indicating that the condition now starts earlier and stays longer.²



WORLD DENTAL CONGRESS AIMS FOR SENSITIVITY

At the 2002 FDI (Fédération Dentaire Internationale) World Dental Congress in Vienna, a panel of leading international clinicians discussed the management of dentin hypersensitivity as it applies to general dental practice. The objective of the symposium was to use their collective expertise to generate a better understanding of the condition and ultimately improve its management and treatment.

Dr. Jolán Bánóczy, Professor Emeritus of the Semmelweis University in Hungary, chaired the meeting. In her opening remarks, she acknowledged that despite discussion of dentin hypersensitivity in literature which began over a hundred years ago, only in the last twenty years have dental researchers and practitioners given practical consideration to its aetiology, definition and clinical trial guidelines.¹

Dr. Martin Addy (UK), a key contributor to the understanding of dentin hypersensitivity aetiology, pointed out that “failure to consider causation in the management of dentin hypersensitivity,

as with caries and periodontal disease, may result at least in recurrence or, at worst, failure of treatment.”³

Furthermore, regarding treatment, Dr. Andrej Kielbassa (Germany) stated, “follow-up care, accompanied by re-instruction and continued home-use of desensitizing toothpastes meeting the patient’s general demands (e.g. fluoride prophylaxis, whitening, tartar control, flavour), will keep the patient free of pain.”⁷

Commenting on other causative factors related to dentin hypersensitivity, Dr. Connie H. Drisko and Dr. Van B. Haywood (USA) identified the involvement of dental hygiene and periodontal concerns, as well as bleaching and restorative considerations, respectively.^{2,6}

These remarks underscore that dentin hypersensitivity is a slowly progressing but cumulative disease process. They also highlight the need for ongoing care by the dental professional, in order to achieve effective long-term management.

LAUNCHING OF A CANADIAN INITIATIVE

While the FDI World Dental Congress participants were preparing their presentations, a multidisciplinary panel of dental care professionals launched their own initiative in Canada. Prompted by concerns of high prevalence rates, widely varied and undefined management strategies, as well as diverse reports on the efficacy of available therapies, the panel set out to develop consensus-based recommendations for the diagnosis and management of dentin hypersensitivity.⁵

The Canadian Advisory Board on Dentin Hypersensitivity consisted of a 12-member panel of dentists and dental hygienists representative of general dental practice, specialist practice, academia and research from across Canada. Also included were two international experts on the subject.

The Advisory Board began its work by gathering information from multiple sources. A thorough search of literature, articles and reviews from 1966 to 2002 provided the available scientific evidence on dentin hypersensitivity. This was followed by a large national survey of 5,000 Canadian dentists and 3,000 dental hygienists designed to reveal practitioners’ understanding of the condition as well as related clinical practices. The survey was instrumental in identifying knowledge gaps and determining specific skill requirements for the profession’s management of this condition.⁵

Canadian Advisory Board on Dentin Hypersensitivity



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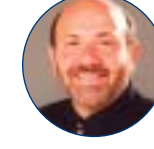
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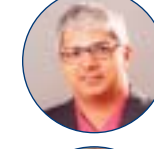
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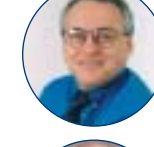
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KNOWLEDGE GAPS – SEPARATING EVIDENCE FROM MYTH

The Needs Assessment survey identified 14 key knowledge gaps regarding various aspects of dentin hypersensitivity, ranging from aetiology and diagnosis to management:⁵

1. Prevalence was underestimated, particularly for young adult patients. Approximately 70% of respondents indicated that most of their patients with dentin hypersensitivity were between 35 and 50 years old. Yet an independent research study (by The Chapman Group Limited) of 683 adults drawn from a nationally representative sample of the Canadian population found that the prevalence of sensitive teeth was about 30% in adults throughout the 18 to 64-year age band.
2. Screening is not routinely conducted, except when prompted by patients.
3. Fewer than half of the respondents considered a differential diagnosis, even though dentin hypersensitivity is by definition a diagnosis of exclusion.
4. Many respondents (64% of dentists and 77% of hygienists) identified bruxism and malocclusion as triggers of dentin hypersensitivity, even though neither has been identified as a major causative factor.
5. Only 7% of dentists and 5% of hygienists correctly identified erosion as a primary cause of dentin hypersensitivity. 60% of respondents overall incorrectly identified gingival recession (rather than a predisposing factor) as the most common cause of dentin hypersensitivity.
6. 17% of dentists and 48% of hygienists failed to identify the accepted theory of dentin hypersensitivity (the hydrodynamic theory).
7. 85% of dentists and 94% of hygienists incorrectly cited toothbrush abrasion as a reason for continued tubule exposure, even though toothbrushing has no significant effect on tubule exposure.
8. About 50% of respondents reported that they lacked confidence in managing their patients’ pain.
9. Only 50% of respondents reported that they try to modify predisposing factors.
10. 50% of dentists and 73% of hygienists reported, incorrectly, that the most popular desensitizing ingredients in desensitizing toothpastes are fluoride compounds; in fact, the most widely available desensitizing ingredient is potassium nitrate.
11. Only 10% of respondents correctly thought that desensitizing toothpastes disrupt pain transmission by preventing repolarization within the nerve. The remaining 90% responded incorrectly that the principal action of desensitizing toothpastes is tubule occlusion. Potassium nitrate is thought to act by interfering with the transmission of pain, whereas strontium chloride, which is much less widely available, acts by occluding tubules.
12. Although many desensitizing toothpastes offer substantial secondary benefits and are suitable for daily use, misunderstanding exists. For example, 49% of dentists and 40% of hygienists did not believe that desensitizing toothpastes were effective in preventing caries, even though most contain fluoride.
13. 39% of respondents recommend topical application (dabbing) of desensitizing toothpaste, despite a lack of published evidence of the effectiveness of this method.
14. Although most dentists (56%) and hygienists (68%) believe that desensitizing toothpastes were effective in preventing dentin hypersensitivity, 31% of dentists and 16% of hygienists did not believe that desensitizing toothpastes relieve dentin hypersensitivity.