

Unconventional Dentistry: Part I. Introduction

• **Burton H. Goldstein, DMD, MS, FRCD(C)** •

A b s t r a c t

This is the first in a series of five articles providing a contemporary overview and introduction to unconventional (alternative) dentistry (UD) and correlation with unconventional (alternative) medicine (UM). UD is analogous to and conceptually inseparable from UM. Dentists should learn about UD and UM and be aware of evidence on the safety and effectiveness of treatments and procedures. While being skeptical of promotions, dentists should be able to accept and encompass science-based advances and reject unproven and disproven methods. Incorporating selected unconventional methods with conventional dentistry in selected patients for specific purposes may be useful to both patients and dentists. Improved education in critical thinking, research, science, medicine, behaviour, communication and patient management is needed.

MeSH Key Words: *alternative medicine; dentistry; science*

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Unconventional medicine (UM) has been known and practised since the recorded history of civilization. Some unconventional practices may be viewed as “the continuity of traditions, religious beliefs, and even quackery that nonspecialists practice.”¹ These practices have been associated with religious beliefs and the spiritual domain as well as with the physical domain. In ancient Old World civilizations, UM was performed by skilled experts or wise men; in today’s Western civilization, practitioners may or may not be licensed, and some are charlatans.

Dentistry, like medicine, is a traditional, science-based, highly regulated health care profession that serves increasingly sophisticated and demanding clients. Today, traditional dental practice is dealing with an array of challenges to the established professional system; these challenges are generally termed “alternative” (or complementary, unconventional or integrative). Genuine alternatives are comparable methods of equal value that have met scientific and regulatory criteria for safety and effectiveness. Because “alternative care” has become politicized and is often a misnomer — referring to practices that are not alternative to, complementary to or integrating with conventional health care — the more accurate term “unconventional” will be used in this series of papers.

The controversies surrounding unconventional dentistry (UD) range from the very definition of “alternative” practice to concepts of science, the role of beliefs and the ethics of practices that do not fit into traditional care. Also, because dentistry is a business, UD may be seen as competitive business practice. Given the rapidly growing, multi-billion

dollar worldwide health market, there is public concern about the ethics of any health care profession having competitive and economic pressures and financial self-interests.

This paper gives an overview of UD. Because traditional scientific (as well as unconventional) dentistry and medicine are interrelated — inseparable in many instances — this and the subsequent papers will deal broadly with UM in a dental context, emphasizing UD.

Definition and Characteristics of Unconventional Dentistry and Medicine

The acceptance and popularity of a wide variety of practices outside mainstream medicine is undeniable. More than 40% of the American public use UM,² and a 1996 survey of residents in Richmond, British Columbia, revealed that 59.4% of respondents used UM and 86% wanted them funded through provincial health insurance.³

UD and UM may be defined as “a broad set of health care practices that are not readily integrated into the dominant health care model, because they pose challenges to diverse societal beliefs and practices (cultural, economic, scientific, medical, and educational).”⁴ They are characterized by a lack of sufficient documentation on their safety and effectiveness for diagnosis, treatment or prevention; a lack of a valid scientific base and their absence from the curriculum in schools of dentistry or medicine.⁵

The lack of scientific testing and the denial of the need for such testing by promoters are what most characterize UM and UD. The scientific community acknowledges that some

Table 1 Classification of unconventional dental practices

I Mind-Body Control
Behavioral, psychological, social and spiritual approaches exploring the mind's capacity to affect the body. Related to traditional views of the interconnectedness of mind and body. A. Mind-body systems. B. Mind-body methods: conventional practices applied to conditions for which they are not usually used (e.g., yoga or psychotherapy for malocclusion). C. Religion and spirituality (e.g., spiritual healing for cancer). D. Social and contextual areas.
II Alternative Medical/Dental Systems
Theory and practices developed outside the Western biomedical approach. A. Acupuncture and oriental medicine. B. Traditional indigenous systems (e.g., Ayurvedic medicine, Kampo medicine, psychic surgery). C. Unconventional Western systems (e.g., amalgam-mercury toxicity, disturbance of functional occlusion syndrome (DOFOS), holistic/biological dentistry, homeopathy for oral/dental conditions, TMJ disorders causing systemic illness). D. Naturopathy: an eclectic collection of natural systems and therapies that has gained prominence in North America.
III Lifestyle and Disease Prevention
Preventing illness, maintaining health and reversing the effects of chronic diseases and aging. A. Clinical preventive practices (e.g., fluoridation harm and conspiracy, electronic testing for dental allergies and TMD). B. Lifestyle therapies: must be based on non-orthodox system of medicine, applied in unconventional way or applied across non-Western diagnostic approach. C. Health promotion (e.g., cosmetic dentistry for a healthy lifestyle).
IV Biologically Based Dental Therapies
Drugs, vaccines, treatments, practices and interventions not accepted by mainstream medicine and dentistry. A. Phytotherapy or herbalism (e.g., ginkgo biloba, echinacea). B. Special diet therapies (e.g., megavitamins or macrobiotic diet for periodontal conditions, nutritional or dietary products for oral/dental conditions). C. Orthomolecular medicine (e.g., melatonin for cancer). D. Pharmacological, biological and instrumental interventions (e.g., Sargenti root canal treatment (N2); mandibular repositioning, orthodontic treatment, electromyography, jaw tracking, thermography or sonography for TMD; neuralgia-inducing cavitation osteonecrosis (NICO); urine therapy for toothache; "natural," herbal, homeopathic, or synthetic dental products).
V Manipulative and Body-Based Systems
Using touch and manipulation of the body as a diagnostic and therapeutic tool. A. Chiropractic medicine (e.g., osteopathic, chiropractic treatment for TMD) B. Massage and body work (e.g., craniosacral therapy for TMD or malocclusion, dental kinesiology). C. Unconventional physical therapies (e.g., low-power laser treatments for TMD, facial pain or headache).
VI Biofield
Use of subtle energy fields in and around the body (e.g., therapeutic touch or Reiki used for oral/dental conditions).
VII Bioelectromagnetics
Using electromagnetic fields for medical/dental purposes (e.g., wearing magnets for TMD or arthritis).

Adapted from: Classification of Alternative Medicine Practices, NCCAM⁵

medical and dental treatments have not been rigorously tested, but sees this as a failing in need of remedy. Conversely, many promoters of UM and UD believe that scientific testing does not apply to their methods; they rely instead on theories and anecdotes.⁶ Because many chronic disorders are not adequately managed by science-based methods, unconventional practitioners argue that a different ("alternative") approach is needed.⁷ For example, some dental organizations advocate the use of "biocompatible" dental materials and dental treatment methods to enhance systemic health and wellness, yet scientific evidence of such enhancement is lacking.⁸ Professional debates

reflect the depth of emotion and confusion surrounding the issue of UD.^{9,10}

Some unconventional practices have been studied and proven to be useful for some conditions; once science-based, these practices move into the realm of the conventional. Most unconventional treatments have not been studied scientifically or to adequate scientific standards; instead, they exist in a grey zone of beliefs, influenced by many factors.

Science and Scientific Research

Science is more than a body of knowledge — it is a way of thinking. The scientific method is not easily defined and

consists of no rigid rules. Objectivity coexists with creativity, critical thinking and scepticism. A scientific protocol generally starts with a question asked; information is organized, a working hypothesis answering the question is formulated, observations testing the hypothesis are made, results are tested to confirm or modify the hypothesis, and the results are published; scientific consensus is reached when these results are repeatedly replicated by others. Scepticism questions the validity of a particular claim and calls for evidence to prove or disprove it.

Dental and medical science recognizes the need for well-designed research.¹¹ The prospective, double-blind, randomized, placebo-controlled study is the gold standard in clinical therapy and prevention research, and also allows observations about causation. Cohort studies best address questions about diagnosis, and questions about prognosis and harm are addressed by case-control studies or cohort studies. Methodology and design supercede an author's fame or academic status as the best quality of evidence. The pitfalls of relying too heavily on expert personal opinion are recognized.¹² Publication in a peer-reviewed journal is important, but may not assure the quality of evidence applied to the reader's question. In general, the hierarchy of quality of evidence, in descending order, is as follows: systematic reviews of well-designed studies, results of one or more well-designed studies, results of large case series, expert opinion and personal experience.¹³

Because science requires debate and testing under properly controlled conditions, some observations may be contradictory and controversial. Intuitive thought is not necessarily correct, nor is it scientifically valid. Health, medicine and dentistry are inherently complex, and simple answers are often wishful thinking.

Pseudoscience and Junk Science

Pseudoscience refers to claims that appear to be scientific but lack supporting evidence and plausibility.¹⁴ Problems in critical thinking and logic may result in erroneous attributions of relationship between a premise or statement of evidence and a conclusion.¹⁵ "Junk science" is a contemptuous label used by trial lawyers to refer to elaborate, systematized, jargon-filled deceptions that take the form of science but have no substance.¹⁶ For example, "by harboring bacteria which continuously release toxins into the body, root canal teeth weaken the immune system and are contributing to a number of degenerative diseases ... that range from head and neck pain all the way through to rheumatism and cancer."¹⁷ This serious-sounding claim has no scientific basis.

Scientific Literature, the Media and the Internet

Readers must distinguish between peer-reviewed scientific literature and commercial trade publications, sometimes disguised as scientific journals, as well as other sources of information such as books, press conferences, newspaper articles, radio and television news reports, and Internet sites. We recognize an important tension between scientists and journalists.¹⁸

Often the media are more interested in highlighting disagreement and controversy than in establishing the extent of consensus, and this tension can lead to confusion and distrust. The best hopes for constructive media information lie in responsible journalism and clear communication from scientists.¹⁹

The public is constantly bombarded with media reports of scientific breakthroughs; in fact, these "breakthroughs" are almost always minor steps in basic or clinical research that do not translate to useful clinical advice. In addition, advertisements for unconventional products are carefully worded to appeal to the public, who may be unable to discern substance from marketing.

One of the most fertile grounds for promoting unconventional practices is the Internet. Both the advantage of and the main problem with the Internet is the abundance of information. Unfortunately, there are no safeguards to ensure the quality of that information. The Internet appears to be the most pervasive source of pseudoscientific misinformation available, while also being an increasingly valuable source for scientific information. There are many reliable, scientific dental Internet resources. One of the most important sites combating quackery in dentistry and medicine is Quack Watch.²⁰

Unconventional Dental Practices

Unconventional dental practices can be categorized into major areas corresponding to the National Center for Complementary and Alternative Medicine (NCCAM) Classification of Complementary and Alternative Medicine (Table 1). Such practices represent "alternative" medical practices extended to oral-dental conditions, dental services provided for non-dental conditions or inventions unique to dentistry. Future articles will deal more specifically with some of these practices and many associated issues. ♦

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Dr. Goldstein is clinical associate professor in the faculty of dentistry, University of British Columbia.

Correspondence to: Dr. Burton H. Goldstein, 208-2223 West Broadway, Vancouver, BC V6K 2E4. E-mail: burtgold@unixg.ubc.ca

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