Oral Hygiene

- **Reasons for Wearing Retainers After Treatment**
  Reasons for Wearing Retainers After Treatment Differences Between Removable and Fixed Retention Establishing a Routine to Prevent Tooth Shifting Oral Hygiene Tips for Retainer Care Monitoring Changes After Active Orthodontic Phase Factors That Influence Retention Duration Communicating the Value of Long Term Follow Ups How Retainers Support Jaw Positioning Over Time Signs That Signal the Need for Retainer Adjustments Materials Used in Crafting Effective Retainers Incorporating Retainer Wear Into Daily Habits Assessing Compliance and Its Impact on Stability
- **Basics of Brushing With Braces or Aligners**
  Basics of Brushing With Braces or Aligners Practical Tips for Flossing Around Orthodontic Wires Understanding the Role of Mouthwash in Oral Care Techniques to Prevent White Spots on Enamel Avoiding Common Foods That Damage Orthodontic Appliances Solutions for Managing Gum Irritation and Inflammation Tools That Simplify Cleaning With Orthodontic Hardware Importance of Regular Dental Checkups During Treatment Risk Factors for Plaque Buildup With Braces Adapting Hygiene Routines for Clear Aligner Users Balancing Oral Care With Busy Lifestyles Early Intervention for Minor Issues That Escalate
- **About Us**

Okay, so we're talking about kids, braces, and keeping those teeth straight *after* all the hard work is done. Proper oral hygiene is crucial during orthodontic treatment **Children's braces treatment** malocclusion. That's where compliance comes in, and it's honestly, a bit of a tricky beast in pediatric orthodontics. When we say "compliance," we're really talking about how well a young patient (and often, their parents!) follows the orthodontist's instructions. It's more than just showing up for appointments, though that's part of it. It's about wearing those elastics religiously, putting in the retainer every night (or as directed!), cleaning around the appliances properly, and avoiding those sticky, hard candies that are basically orthodontic kryptonite.

But here's the thing: compliance isn't just a simple "yes" or "no." It's a spectrum. You've got the all-stars who are practically poster children for orthodontic perfection. Then you have the kids who try their best, but life happens, and maybe a few nights are missed with the retainer. And then there are the ones... well, let's just say their retainers spend more time gathering dust than doing their job.

Defining compliance, then, is about figuring out *where* a patient falls on that spectrum. It's about understanding *why* they might be struggling. Are they forgetting? Are they uncomfortable? Are they just plain rebelling? Because the level of compliance directly impacts the long-term stability of the orthodontic treatment. If the teeth aren't being held in their new positions, they're going to want to drift back. Recurrence is the orthodontist's nemesis, and poor compliance is one of its best friends. So, defining and accurately assessing compliance is not just about ticking a box; it's about setting the stage for a successful, lasting smile.

* Preventing teeth from shifting back to their original positions as the jawbone settles. —

- *** Maintaining the corrected tooth alignment achieved during braces.**
- *** Preventing teeth from shifting back to their original positions as the jawbone settles.**

- *** Protecting the investment made in orthodontic treatment.**
- *** Ensuring the long-term stability of the bite and smile.**
- *** Supporting proper jaw growth and development in younger children.**
- *** Avoiding the need for future, potentially more extensive, orthodontic intervention.**
- *** Contributing to overall oral health by preventing crowding and misalignment.**

Assessing compliance in young orthodontic patients and understanding its impact on long-term stability is crucial, but let's face it, getting kids to consistently follow instructions isn't always a walk in the park. Several common compliance challenges pop up frequently. One big hurdle is simply remembering. Young patients have a lot on their minds – school, friends, extracurriculars – and remembering to wear their elastics, brush meticulously around brackets, or keep their aligners in can easily slip their minds.

Then there's the discomfort factor. Orthodontic treatment, especially in the initial stages or after adjustments, can be uncomfortable. This discomfort can lead to reduced wear time for removable appliances or a reluctance to thoroughly brush, creating a breeding ground for plaque and potential problems. Peer pressure also plays a significant role. Kids might feel self-conscious about wearing appliances at school or during social activities, leading to decreased wear time or even outright refusal to wear them.

Finally, let's not forget the fun factor, or lack thereof. Orthodontic treatment requires consistent effort and can feel restrictive. Avoiding certain foods, spending extra time on oral hygiene, and remembering to wear appliances can feel like a chore, leading to decreased motivation and ultimately, poor compliance. Addressing these challenges with clear communication, positive reinforcement, and perhaps even a bit of creative problem-solving is key to achieving successful and stable orthodontic outcomes.

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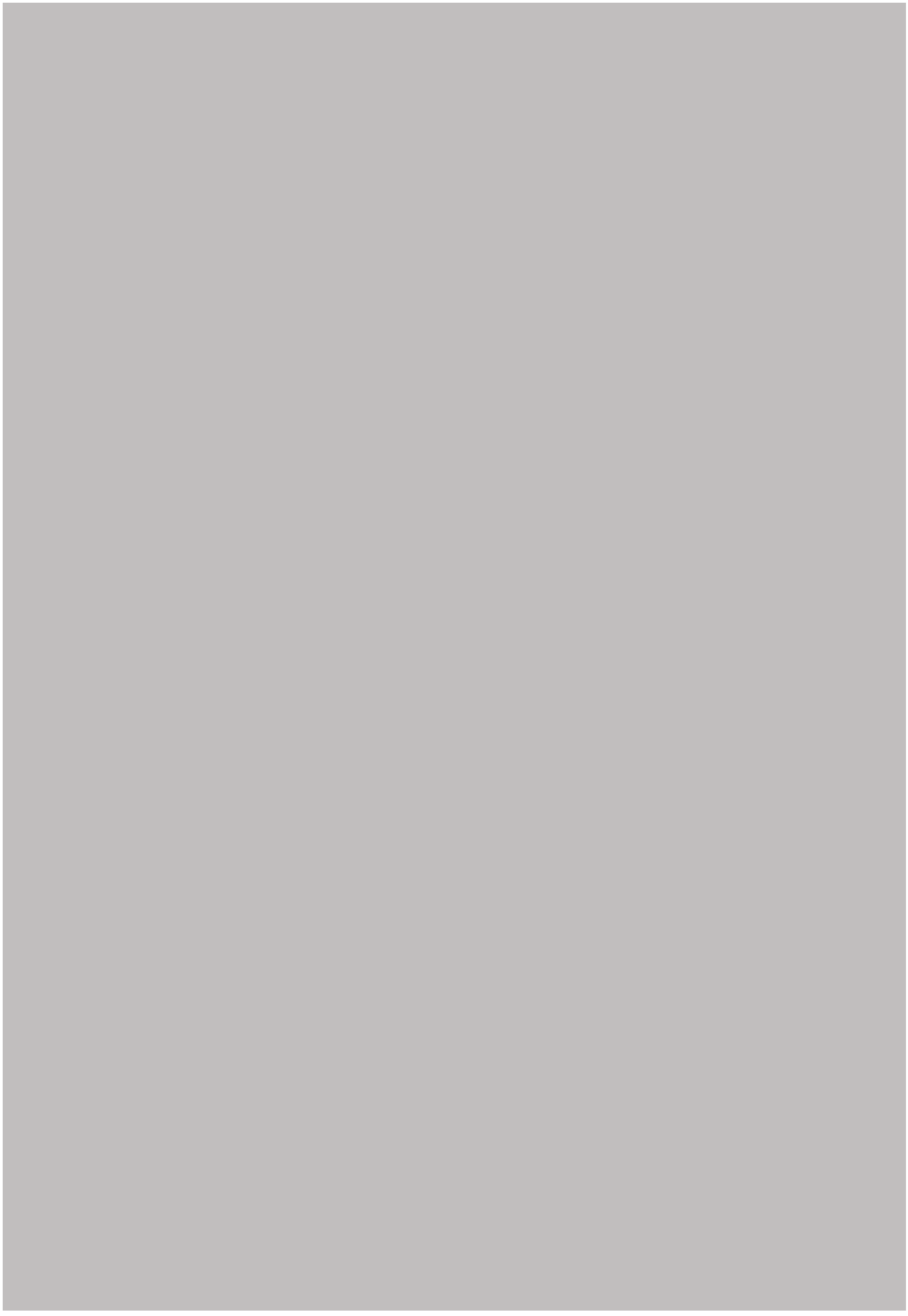

* Protecting the investment made in orthodontic treatment.

Okay, so you're trying to figure out if your patients are *actually* wearing their aligners, headgear, or elastics like they're supposed to be. We've all been there, right? The perfect treatment plan, the beautiful brackets, and then...progress stalls. Compliance, or the lack thereof, is often the elephant in the room. But how do we, as clinicians, actually *know* what's going on? Let's break down some methods for assessing compliance, and why it matters for long-term stability.

First, there's the classic: patient self-reporting. Just asking them! Now, we all know that patients may sugarcoat the truth a little (or a lot). But a good, non-judgmental conversation can still be valuable. Frame it as a partnership, emphasizing that knowing the truth helps *you* tailor the treatment for the *best* possible outcome. Ask specific questions about wear time, frequency of elastic changes, and any challenges they're facing.

Then we move on to more objective measures. For aligners, apps and digital monitoring are becoming increasingly popular. Some aligner companies offer built-in tracking, giving you a glimpse into actual wear time. These tools aren't foolproof, but they can provide a more accurate picture than just relying on patient recall.

For elastics and headgear, it gets a bit trickier. Sometimes, you can see physical clues. Are the elastics stretched out? Are the headgear components showing signs of wear and tear, or are they pristine and untouched? These are indirect indicators, but can be telling. Another option, although less common due to invasiveness and cost, is using microelectronic monitoring devices embedded in appliances. These devices can record usage time accurately, but they require patient consent and can be challenging to implement.

Finally, remember the power of clinical observation. Is the tooth movement progressing as expected based on the treatment plan and the reported wear time? Are there unusual patterns of tooth contact or wear facets that suggest inconsistent elastic use? Sometimes, your gut

feeling, based on years of experience, is surprisingly accurate.

Why does all this matter for stability? Well, think about it. If teeth aren't moved properly during treatment due to poor compliance, you're essentially building a house on a shaky foundation. Relapse is much more likely. Achieving long-term stability requires that the teeth are moved into their ideal positions and the surrounding tissues (bone, ligaments, muscles) adapt to those new positions. Inconsistent force application hinders this adaptation, increasing the risk of teeth shifting back to their original, crowded or misaligned state.

In the end, assessing compliance is a multi-faceted process. It's about combining subjective reports, objective measures, and clinical judgment to get a clear understanding of how your patients are engaging with their treatment. It's not about catching them in a lie, but about working together to achieve the best possible, and most stable, result.

* Ensuring the long-term stability of the bite and smile.

Okay, let's talk about something really important in healthcare: how well people stick to their treatment plans, and what happens when they don't. We call it "compliance," but maybe a better word is "adherence" because it feels less like being bossed around and more like working *with* your doctor. Anyway, whether you call it compliance or adherence, if it's poor, it

can really throw a wrench into things.

Think about it. If you're prescribed medication for something, say high blood pressure, and you only take it some of the time, or not the right dose, what's going to happen? Your blood pressure probably won't come down, will it? That means you're still at risk for all the bad things high blood pressure can cause – heart attack, stroke, kidney problems. So, the treatment isn't working, and you're still sick. That's a direct impact on the outcome.

But it's not just about medication. It's about all sorts of treatments. If you're supposed to be doing physical therapy after an injury, but you skip your exercises or don't do them correctly, you're probably not going to heal as well or as quickly. If you have diabetes and you're not following your diet or checking your blood sugar, you're setting yourself up for complications. The lack of adherence basically sabotages the whole point of the treatment.

And here's the thing: poor compliance also makes things take longer. If the initial treatment doesn't work because you're not sticking to it, you might need more aggressive treatment later on. You might end up in the hospital. You might need surgery. The whole process becomes more complicated, more expensive, and frankly, more miserable. It's a domino effect. What started as a simple treatment plan turns into a long, drawn-out ordeal.

It's easy to blame the patient for not complying, but it's usually more complicated than that. Sometimes people don't understand the instructions. Sometimes they can't afford the medication. Sometimes they have side effects that make them stop taking it. Sometimes they just forget. So, it's up to doctors and healthcare providers to really work with patients, to listen to their concerns, to explain things clearly, and to find solutions that work for *them*. Because in the end, good compliance is a team effort, and it's crucial for getting the best possible results and keeping treatment as short and effective as possible.

* Supporting proper jaw growth and development in

younger children.

Okay, so we're talking about getting patients and parents on board with treatment plans, right? Compliance – it sounds so clinical, so...bossy. But really, it's about working together to achieve the best possible outcome, especially when we're looking at long-term stability. And let's be honest, it's tough. Life gets in the way. People forget, they get overwhelmed, or they just plain disagree. So, what can we do?

First, communication is key. We can't just hand someone a prescription or a set of instructions and expect them to follow it blindly. We need to actually *listen* to their concerns, understand their fears, and acknowledge their experiences. Are they worried about side effects? Is the treatment schedule disruptive to their daily routine? Are they struggling to afford the medication? Addressing these issues head-on, with empathy and honesty, builds trust. And trust is the foundation of any successful partnership.

Then, we need to make things as easy as possible. Simplify the regimen. Use reminders – texts, apps, even old-fashioned pillboxes. Tailor the information to their specific needs and learning style. Some people prefer detailed explanations, while others just want the bottom line. Maybe a visual aid would help. The goal is to make the treatment plan feel manageable and integrated into their lives, not like a burden.

Education is also crucial. Patients and parents need to understand *why* they're doing what they're doing. What are the potential consequences of non-compliance? What are the benefits of sticking to the plan? This isn't about scaring them; it's about empowering them to make informed decisions. When they understand the rationale behind the treatment, they're much more likely to be invested in its success.

Finally, don't underestimate the power of positive reinforcement. Celebrate small victories! Acknowledge their efforts and progress. Let them know you appreciate their dedication. A little encouragement can go a long way in keeping them motivated and on track.

Ultimately, improving compliance isn't about forcing people to do what we think is best. It's about building a collaborative relationship, providing the support they need, and empowering

them to take control of their health. Because when patients and parents feel heard, understood, and valued, they're much more likely to become active partners in their own care, leading to better outcomes and long-term stability.

*** Avoiding the need for future, potentially more extensive,**

orthodontic intervention.

Assessing compliance and its impact on stability is a complex undertaking, but at its heart lies a simple truth: people are more likely to follow rules they understand and believe in. That's where communication and education step in, playing a pivotal role in fostering compliance and, ultimately, contributing to a more stable and predictable environment.

Think of it like this: if you're told to do something without knowing why, your first reaction is likely resistance or, at best, half-hearted compliance. But if someone explains the rationale, the benefits, and the potential consequences of non-compliance, you're much more inclined to cooperate. Effective communication isn't just about dictating rules; it's about building understanding and trust. It's about creating a shared sense of purpose where everyone understands their role in maintaining stability. This means crafting clear, accessible messaging, avoiding jargon, and actively listening to concerns.

Education, meanwhile, equips individuals with the knowledge and skills they need to comply. It goes beyond simply stating the rules; it teaches people how to apply them in different situations. For instance, in a financial compliance context, education might involve training employees on anti-money laundering procedures, explaining the risks involved, and providing practical examples of how to identify suspicious activity. A well-educated workforce is less likely to inadvertently break the rules and more likely to proactively report potential violations.

The impact of effective communication and education ripples outwards. When people understand why compliance matters, they're more likely to hold themselves and others accountable. This fosters a culture of ethical behavior and reduces the need for heavy-handed enforcement. In turn, this creates a more stable and predictable environment, whether we're talking about a business, a government, or even a community. Ultimately, investing in communication and education is an investment in stability. It's about empowering people to be active participants in upholding the rules, rather than simply being passive recipients of them.

* Contributing to overall oral health by preventing crowding and misalignment.

Let's talk about the long game, shall we? We're talking about long-term stability after treatment, and why sticking to the plan afterward is just as crucial, maybe even *more* so, than the treatment itself. Think of it like this: you've painstakingly built a house, brick by brick. The treatment is the construction phase, the hard labor that gets the structure up. But what happens if you neglect the upkeep? The roof starts to leak, the foundation cracks, and before you know it, all that initial effort goes to waste.

Compliance after treatment is the maintenance. It's the regular check-ups, the consistent application of learned strategies, the conscious choices that reinforce the positive changes you've worked so hard to achieve. It's not glamorous, and it often requires ongoing effort, maybe even adjusting your lifestyle. But it's the key to preventing relapse, to consolidating gains, and ultimately, to enjoying a lasting sense of well-being.

Why is compliance so important for stability? Well, think about it. Many treatments, whether they're for mental health, addiction, or physical ailments, address the *symptoms* of a problem. Compliance helps address the *underlying causes* and build resilience against future triggers. It allows you to internalize healthy habits, develop coping mechanisms, and create a support system that reinforces your progress.

Imagine someone recovering from addiction. The treatment might involve detox and therapy, addressing the immediate physical and psychological dependence. But if they don't comply

with aftercare – attending support groups, avoiding triggers, continuing therapy – the risk of relapse skyrockets. Compliance is the bridge between short-term gains and long-term sobriety.

Ultimately, long-term stability isn't just about *getting* better; it's about *staying* better. And that requires a commitment to compliance, a willingness to actively participate in your own ongoing recovery. It's a marathon, not a sprint, and consistent effort trumps heroic bursts of activity every time. So, let's not underestimate the power of consistent, mindful compliance in securing lasting stability after treatment. It's the quiet hero of the story, the unsung champion of long-term well-being.

Assessing compliance and its impact on stability is a crucial exercise, whether we're talking about financial regulations in a global market or the rules of a local community garden. When things go wrong, when non-compliance rears its head, the knee-jerk reaction is often punitive – fines, sanctions, maybe even expulsion. But is that always the most effective, or even the most humane, approach? I think we need to seriously consider alternative treatment options for addressing non-compliance, ones that focus less on punishment and more on understanding, correction, and ultimately, reintegration.

Imagine a small business struggling to meet new environmental regulations. A hefty fine might cripple them, leading to closure and job losses. Is that a stable outcome? Probably not. Instead, offering access to subsidized consulting, tailored training programs, or even tax incentives for adopting greener technologies might be a far more effective way to achieve compliance and foster long-term stability. It's about collaborative problem-solving, not just wielding a regulatory hammer.

Similarly, think about a student consistently failing to meet academic deadlines. Suspension might seem like the obvious answer, but what if they're struggling with undiagnosed learning disabilities or facing difficult circumstances at home? Providing tutoring, counseling, or flexible deadlines could address the root cause of the non-compliance and help them get back on track. It's about recognizing the individual within the system and offering support, not just applying a blanket rule.

Of course, not all non-compliance is created equal. Deliberate and malicious violations require a different response. But even in those cases, restorative justice approaches, where the offender takes responsibility for their actions and works to repair the harm caused, can be incredibly powerful. It shifts the focus from punishment to accountability and healing, potentially leading to a more stable and just outcome for everyone involved.

Ultimately, addressing non-compliance effectively requires a nuanced and thoughtful approach. We need to move beyond the simplistic binary of “compliant” versus “non-compliant” and explore the underlying reasons for the deviation. By focusing on alternative treatment options that prioritize understanding, support, and rehabilitation, we can create a more stable and resilient system, one that fosters compliance not through fear, but through genuine engagement and a shared commitment to the rules of the game.

About dental caries

Redirect to:

- Tooth decay
- **From a page move**: This is a redirect from a page that has been moved (renamed). This page was kept as a redirect to avoid breaking links, both internal and external, that may have been made to the old page name.

About dentistry

- Sub-Millimeter Surgical Dexterity
- Knowledge of human health, disease, pathology, and anatomy
- Communication/Interpersonal Skills
- Analytical Skills
- Critical Thinking
- Empathy/Professionalism
- Private practices
- Primary care clinics
- Hospitals
- Physician
- dental assistant
- dental technician
- dental hygienist
- various dental specialists

Dentistry

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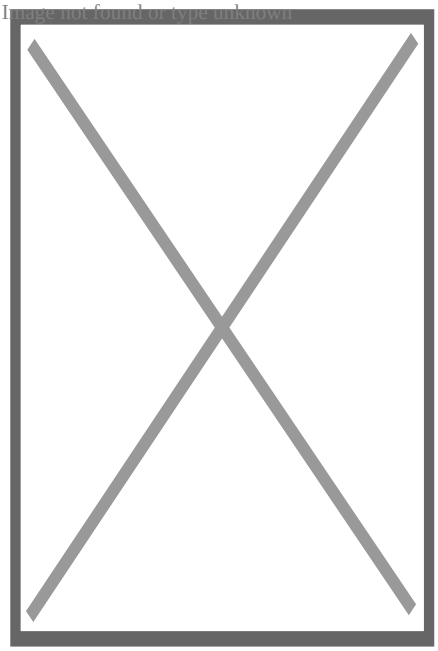

A dentist treats a patient with the help of a dental assistant.

Occupation	
Names	○ Dentist ○ Dental Surgeon ○ Doctor [1][nb 1]
Occupation type	Profession
Activity sectors	Health care, Anatomy, Physiology, Pathology, Medicine, Pharmacology, Surgery
Description	
Competencies	
Education required	Dental Degree
Fields of employment	
Related jobs	
ICD-9-CM	23-24
MeSH	D003813

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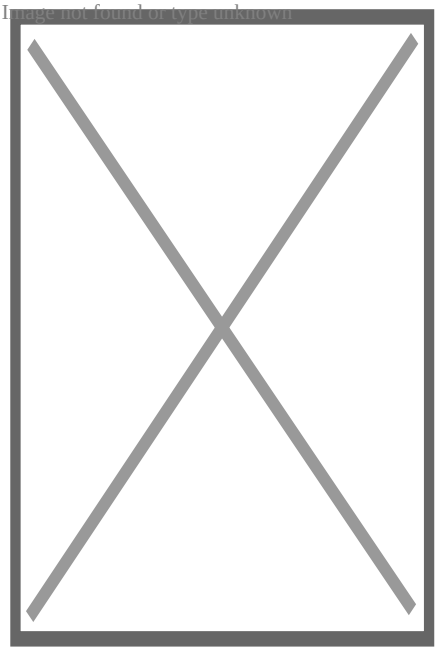

An oral surgeon and dental assistant removing a wisdom tooth

Dentistry, also known as **dental medicine** and **oral medicine**, is the branch of medicine focused on the teeth, gums, and mouth. It consists of the study, diagnosis, prevention, management, and treatment of diseases, disorders, and conditions of the mouth, most commonly focused on dentition (the development and arrangement of teeth) as well as the oral mucosa.[2] Dentistry may also encompass other aspects of the craniofacial complex including the temporomandibular joint. The practitioner is called a dentist.

The history of dentistry is almost as ancient as the history of humanity and civilization, with the earliest evidence dating from 7000 BC to 5500 BC.[3] Dentistry is thought to have been the first specialization in medicine which has gone on to develop its own accredited degree with its own specializations.[4] Dentistry is often also understood to subsume the now largely defunct medical specialty of stomatology (the study of the mouth and its disorders and diseases) for which reason the two terms are used interchangeably in certain regions. However, some specialties such as oral and maxillofacial surgery (facial reconstruction) may require both medical and dental degrees to accomplish. In European history, dentistry is considered to have stemmed from the trade of barber surgeons.[5]

Dental treatments are carried out by a dental team, which often consists of a dentist and dental auxiliaries (such as dental assistants, dental hygienists, dental technicians, and dental therapists). Most dentists either work in private practices (primary care), dental hospitals, or (secondary care) institutions (prisons, armed forces bases, etc.).

The modern movement of evidence-based dentistry calls for the use of high-quality scientific research and evidence to guide decision-making such as in manual tooth

conservation, use of fluoride water treatment and fluoride toothpaste, dealing with oral diseases such as tooth decay and periodontitis, as well as systematic diseases such as osteoporosis, diabetes, celiac disease, cancer, and HIV/AIDS which could also affect the oral cavity. Other practices relevant to evidence-based dentistry include radiology of the mouth to inspect teeth deformity or oral malaises, haematology (study of blood) to avoid bleeding complications during dental surgery, cardiology (due to various severe complications arising from dental surgery with patients with heart disease), etc.

Terminology

[edit]

The term dentistry comes from *dentist*, which comes from French *dentiste*, which comes from the French and Latin words for tooth.[6] The term for the associated scientific study of teeth is **odontology** (from Ancient Greek: Ã¡Â½â‚¬??Ã•Â•?romanized: *odoús*, lit. 'tooth') – the study of the structure, development, and abnormalities of the teeth.

Dental treatment

[edit]

Dentistry usually encompasses practices related to the oral cavity.[7] According to the World Health Organization, oral diseases are major public health problems due to their high incidence and prevalence across the globe, with the disadvantaged affected more than other socio-economic groups.[8]

The majority of dental treatments are carried out to prevent or treat the two most common oral diseases which are dental caries (tooth decay) and periodontal disease (gum disease or pyorrhea). Common treatments involve the restoration of teeth, extraction or surgical removal of teeth, scaling and root planing, endodontic root canal treatment, and cosmetic dentistry[9]

By nature of their general training, dentists, without specialization can carry out the majority of dental treatments such as restorative (fillings, crowns, bridges), prosthetic (dentures), endodontic (root canal) therapy, periodontal (gum) therapy, and extraction of teeth, as well as performing examinations, radiographs (x-rays), and diagnosis. Dentists can also prescribe medications used in the field such as antibiotics, sedatives, and any other drugs used in patient management. Depending on their licensing boards, general dentists may be required to complete additional training to perform sedation, dental implants, etc.

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Irreversible enamel defects caused by an untreated celiac disease. They may be the only clue to its diagnosis, even in absence of gastrointestinal symptoms, but are often confused with fluorosis, tetracycline discoloration, acid reflux or other causes.[10][11][12] The National Institutes of Health include a dental exam in the diagnostic protocol of celiac disease.[10]

Dentists also encourage the prevention of oral diseases through proper hygiene and regular, twice or more yearly, checkups for professional cleaning and evaluation. Oral infections and inflammations may affect overall health and conditions in the oral cavity may be indicative of systemic diseases, such as osteoporosis, diabetes, celiac disease or cancer.[7][10][13][14] Many studies have also shown that gum disease is associated with an increased risk of diabetes, heart disease, and preterm birth. The concept that oral health can affect systemic health and disease is referred to as "oral-systemic health".

Education and licensing

[edit]
Main article: Dentistry throughout the world

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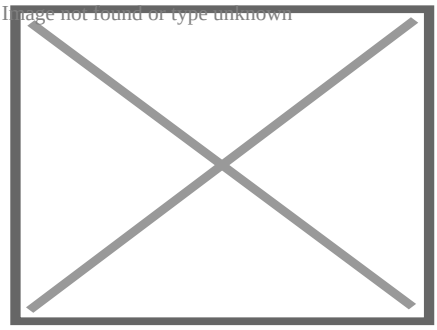
A sagittal cross-section of a molar tooth; 1: crown, 2: root, 3: enamel, 4: dentin and dentin tubules, 5: pulp chamber, 6: blood vessels and nerve, 7: periodontal ligament, 8: apex and periapical region, 9: alveolar bone



Early dental chair in Pioneer West Museum in Shamrock, Texas

John M. Harris started the world's first dental school in Bainbridge, Ohio, and helped to establish dentistry as a health profession. It opened on 21 February 1828, and today is a dental museum.[15] The first dental college, Baltimore College of Dental Surgery, opened in Baltimore, Maryland, US in 1840. The second in the United States was the Ohio College of Dental Surgery, established in Cincinnati, Ohio, in 1845.[16] The Philadelphia College of Dental Surgery followed in 1852.[17] In 1907, Temple University accepted a bid to incorporate the school.

Studies show that dentists that graduated from different countries,[18] or even from different dental schools in one country,[19] may make different clinical decisions for the same clinical condition. For example, dentists that graduated from Israeli dental schools may recommend the removal of asymptomatic impacted third molar (wisdom teeth) more often than dentists that graduated from Latin American or Eastern European dental schools.[20]

In the United Kingdom, the first dental schools, the London School of Dental Surgery and the Metropolitan School of Dental Science, both in London, opened in 1859.[21] The British Dentists Act of 1878 and the 1879 Dentists Register limited the title of "dentist" and "dental surgeon" to qualified and registered practitioners.[22][23] However, others could legally describe themselves as "dental experts" or "dental consultants".[24] The practice of dentistry in the United Kingdom became fully regulated with the 1921 Dentists Act, which required the registration of anyone practising dentistry.[25] The British Dental Association, formed in 1880 with Sir John Tomes as president, played a major role in prosecuting dentists practising illegally.[22] Dentists in the United Kingdom are now regulated by the General Dental Council.

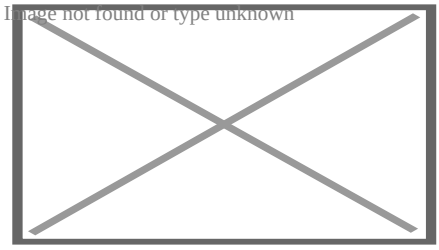
In many countries, dentists usually complete between five and eight years of post-secondary education before practising. Though not mandatory, many dentists choose to complete an internship or residency focusing on specific aspects of dental care after they have received their dental degree. In a few countries, to become a qualified dentist one must usually complete at least four years of postgraduate study;[26] Dental degrees awarded around the world include the Doctor of Dental Surgery (DDS) and Doctor of Dental Medicine (DMD) in North America (US and Canada), and the Bachelor of Dental Surgery/Baccalaureus Dentalis Chirurgiae (BDS, BDent, BChD, BDSc) in the UK and

current and former British Commonwealth countries.

All dentists in the United States undergo at least three years of undergraduate studies, but nearly all complete a bachelor's degree. This schooling is followed by four years of dental school to qualify as a "Doctor of Dental Surgery" (DDS) or "Doctor of Dental Medicine" (DMD). Specialization in dentistry is available in the fields of Anesthesiology, Dental Public Health, Endodontics, Oral Radiology, Oral and Maxillofacial Surgery, Oral Medicine, Orofacial Pain, Pathology, Orthodontics, Pediatric Dentistry (Pedodontics), Periodontics, and Prosthodontics.[27]

Specialties

[edit]
Main article: Specialty (dentistry)



A modern dental clinic in Lappeenranta, Finland

Some dentists undertake further training after their initial degree in order to specialize. Exactly which subjects are recognized by dental registration bodies varies according to location. Examples include:

- Anesthesiology[28] – The specialty of dentistry that deals with the advanced use of general anesthesia, sedation and pain management to facilitate dental procedures.
- Cosmetic dentistry – Focuses on improving the appearance of the mouth, teeth and smile.
- Dental public health – The study of epidemiology and social health policies relevant to oral health.
- Endodontics (also called *endodontology*) – Root canal therapy and study of diseases of the dental pulp and periapical tissues.
- Forensic odontology – The gathering and use of dental evidence in law. This may be performed by any dentist with experience or training in this field. The function of the forensic dentist is primarily documentation and verification of identity.
- Geriatric dentistry or *geriodontics* – The delivery of dental care to older adults involving the diagnosis, prevention, and treatment of problems associated with normal aging and age-related diseases as part of an interdisciplinary team with other health care professionals.
- Oral and maxillofacial pathology – The study, diagnosis, and sometimes the treatment of oral and maxillofacial related diseases.

- Oral and maxillofacial radiology – The study and radiologic interpretation of oral and maxillofacial diseases.
- Oral and maxillofacial surgery (also called *oral surgery*) – Extractions, implants, and surgery of the jaws, mouth and face.[nb 2]
- Oral biology – Research in dental and craniofacial biology
- Oral Implantology – The art and science of replacing extracted teeth with dental implants.
- Oral medicine – The clinical evaluation and diagnosis of oral mucosal diseases
- Orthodontics and dentofacial orthopedics – The straightening of teeth and modification of midface and mandibular growth.
- Pediatric dentistry (also called *pedodontics*) – Dentistry for children
- Periodontology (also called *periodontics*) – The study and treatment of diseases of the periodontium (non-surgical and surgical) as well as placement and maintenance of dental implants
- Prosthodontics (also called *prosthetic dentistry*) – Dentures, bridges and the restoration of implants.
    - Some prosthodontists super-specialize in maxillofacial prosthetics, which is the discipline originally concerned with the rehabilitation of patients with congenital facial and oral defects such as cleft lip and palate or patients born with an underdeveloped ear (microtia). Today, most maxillofacial prosthodontists return function and esthetics to patients with acquired defects secondary to surgical removal of head and neck tumors, or secondary to trauma from war or motor vehicle accidents.
- Special needs dentistry (also called *special care dentistry*) – Dentistry for those with developmental and acquired disabilities.
- Sports dentistry – the branch of sports medicine dealing with prevention and treatment of dental injuries and oral diseases associated with sports and exercise.[29] The sports dentist works as an individual consultant or as a member of the Sports Medicine Team.
- Veterinary dentistry – The field of dentistry applied to the care of animals. It is a specialty of veterinary medicine.[30][31]

History

[edit]
See also: History of dental treatments

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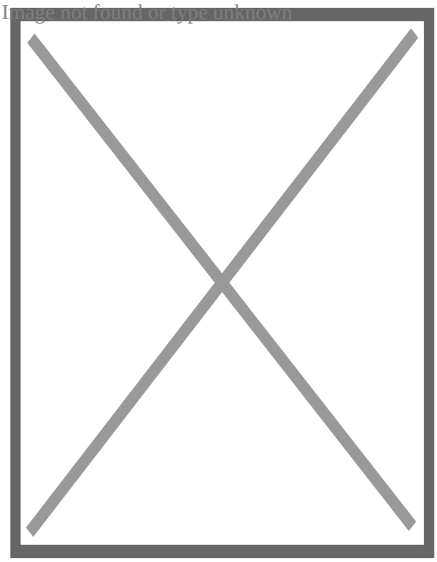

A wealthy patient falling over because of having a tooth extracted with such vigour by a fashionable dentist, c. 1790. History of Dentistry.

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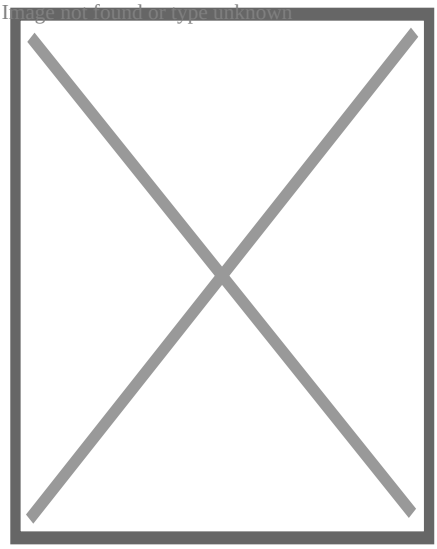


Farmer at the dentist, Johann Liss, c. 1616–17

Tooth decay was low in pre-agricultural societies, but the advent of farming society about 10,000 years ago correlated with an increase in tooth decay (cavities).[32] An infected tooth from Italy partially cleaned with flint tools, between 13,820 and 14,160 years old, represents the oldest known dentistry,[33] although a 2017 study suggests that 130,000 years ago the Neanderthals already used rudimentary dentistry tools.[34] In Italy evidence dated to the Paleolithic, around 13,000 years ago, points to bitumen used to fill a tooth[35] and in Neolithic Slovenia, 6500 years ago, beeswax was used to close a fracture in a tooth.[36] The Indus valley has yielded evidence of dentistry being practised as far back as 7000 BC, during the Stone Age.[37] The Neolithic site of Mehrgarh (now in Pakistan's south western province of Balochistan) indicates that this form of dentistry involved curing tooth related disorders with bow drills operated, perhaps, by skilled bead-crafters.[3] The reconstruction of this ancient form of dentistry showed that the methods

used were reliable and effective.[38] The earliest dental filling, made of beeswax, was discovered in Slovenia and dates from 6500 years ago.[39] Dentistry was practised in prehistoric Malta, as evidenced by a skull which had a dental abscess lanced from the root of a tooth dating back to around 2500 BC.[40]

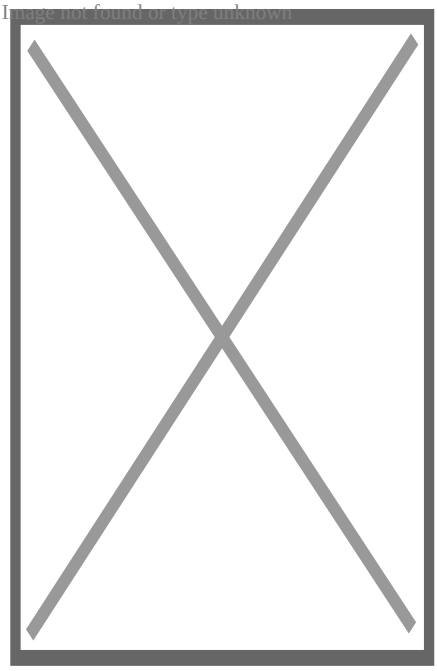
An ancient Sumerian text describes a "tooth worm" as the cause of dental caries.[41] Evidence of this belief has also been found in ancient India, Egypt, Japan, and China. The legend of the worm is also found in the *Homeric Hymns*,[42] and as late as the 14th century AD the surgeon Guy de Chauliac still promoted the belief that worms cause tooth decay.[43]

Recipes for the treatment of toothache, infections and loose teeth are spread throughout the Ebers Papyrus, Kahun Papyri, Brugsch Papyrus, and Hearst papyrus of Ancient Egypt.[44] The Edwin Smith Papyrus, written in the 17th century BC but which may reflect previous manuscripts from as early as 3000 BC, discusses the treatment of dislocated or fractured jaws.[44][45] In the 18th century BC, the Code of Hammurabi referenced dental extraction twice as it related to punishment.[46] Examination of the remains of some ancient Egyptians and Greco-Romans reveals early attempts at dental prosthetics.[47] However, it is possible the prosthetics were prepared after death for aesthetic reasons.[44]

Ancient Greek scholars Hippocrates and Aristotle wrote about dentistry, including the eruption pattern of teeth, treating decayed teeth and gum disease, extracting teeth with forceps, and using wires to stabilize loose teeth and fractured jaws.[48] Use of dental appliances, bridges and dentures was applied by the Etruscans in northern Italy, from as early as 700 BC, of human or other animal teeth fastened together with gold bands.[49][50][51] The Romans had likely borrowed this technique by the 5th century BC.[50][52] The Phoenicians crafted dentures during the 6th–4th century BC, fashioning them from gold wire and incorporating two ivory teeth.[53] In ancient Egypt, Hesy-Ra is the first named "dentist" (greatest of the teeth). The Egyptians bound replacement teeth together with gold wire. Roman medical writer Cornelius Celsus wrote extensively of oral diseases as well as dental treatments such as narcotic-containing emollients and astringents.[54] The earliest dental amalgams were first documented in a Tang dynasty medical text written by the Chinese physician Su Kung in 659, and appeared in Germany in 1528.[55][56]

During the Islamic Golden Age Dentistry was discussed in several famous books of medicine such as The Canon in medicine written by Avicenna and Al-Tasreef by Al-Zahrawi who is considered the greatest surgeon of the Middle Ages.[57] Avicenna said that jaw fracture should be reduced according to the occlusal guidance of the teeth; this principle is still valid in modern times. Al-Zahrawi invented over 200 surgical tools that resemble the modern kind.[58]

Historically, dental extractions have been used to treat a variety of illnesses. During the Middle Ages and throughout the 19th century, dentistry was not a profession in itself, and often dental procedures were performed by barbers or general physicians. Barbers usually limited their practice to extracting teeth which alleviated pain and associated chronic tooth infection. Instruments used for dental extractions date back several centuries. In the 14th century, Guy de Chauliac most probably invented the dental pelican[59] (resembling a pelican's beak) which was used to perform dental extractions up until the late 18th century. The pelican was replaced by the dental key[60] which, in turn, was replaced by modern forceps in the 19th century.[61]



Dental needle-nose pliers designed by Fauchard in the late 17th century to use in prosthodontics

The first book focused solely on dentistry was the "Artzney Buchlein" in 1530,[48] and the first dental textbook written in English was called "Operator for the Teeth" by Charles Allen in 1685.[23]

In the United Kingdom, there was no formal qualification for the providers of dental treatment until 1859 and it was only in 1921 that the practice of dentistry was limited to those who were professionally qualified. The Royal Commission on the National Health Service in 1979 reported that there were then more than twice as many registered dentists per 10,000 population in the UK than there were in 1921.[62]

Modern dentistry

[edit]

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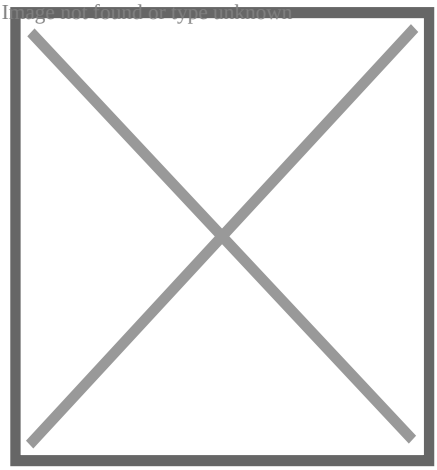

A microscopic device used in dental analysis, c. 1907

It was between 1650 and 1800 that the science of modern dentistry developed. The English physician Thomas Browne in his *A Letter to a Friend* (c. 1656 pub. 1690) made an early dental observation with characteristic humour:

> The Egyptian Mummies that I have seen, have had their Mouths open, and somewhat gaping, which affordeth a good opportunity to view and observe their Teeth, wherein 'tis not easie to find any wanting or decayed: and therefore in Egypt, where one Man practised but one Operation, or the Diseases but of single Parts, it must needs be a barren Profession to confine unto that of drawing of Teeth, and little better than to have been Tooth-drawer unto King Pyrrhus, who had but two in his Head.

The French surgeon Pierre Fauchard became known as the "father of modern dentistry". Despite the limitations of the primitive surgical instruments during the late 17th and early 18th century, Fauchard was a highly skilled surgeon who made remarkable improvisations of dental instruments, often adapting tools from watchmakers, jewelers and even barbers, that he thought could be used in dentistry. He introduced dental fillings as treatment for dental cavities. He asserted that sugar-derived acids like tartaric acid were responsible for dental decay, and also suggested that tumors surrounding the teeth and in the gums could appear in the later stages of tooth decay.[63][64]

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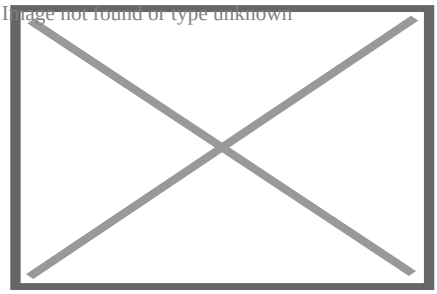
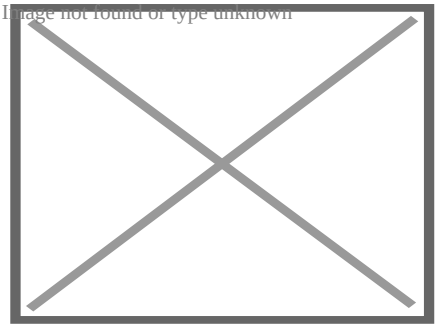


Panoramic radiograph of historic dental implants, made 1978

Fauchard was the pioneer of dental prosthesis, and he invented many methods to replace lost teeth. He suggested that substitutes could be made from carved blocks of ivory or bone. He also introduced dental braces, although they were initially made of gold, he discovered that the teeth position could be corrected as the teeth would follow the pattern of the wires. Waxed linen or silk threads were usually employed to fasten the braces. His contributions to the world of dental science consist primarily of his 1728 publication Le chirurgien dentiste or The Surgeon Dentist. The French text included "basic oral anatomy and function, dental construction, and various operative and restorative techniques, and effectively separated dentistry from the wider category of surgery".[63][64]



A modern dentist's chair

After Fauchard, the study of dentistry rapidly expanded. Two important books, *Natural History of Human Teeth* (1771) and *Practical Treatise on the Diseases of the Teeth* (1778), were published by British surgeon John Hunter. In 1763, he entered into a period of collaboration with the London-based dentist James Spence. He began to theorise about the possibility of tooth transplants from one person to another. He realised that the chances of a successful tooth transplant (initially, at least) would be improved if the donor tooth was as fresh as possible and was matched for size with the recipient. These principles are still used in the transplantation of internal organs. Hunter conducted a series of pioneering operations, in which he attempted a tooth transplant. Although the donated teeth never properly bonded with the recipients' gums, one of Hunter's patients stated that he had three which lasted for six years, a remarkable achievement for the period.[65]

Major advances in science were made in the 19th century, and dentistry evolved from a trade to a profession. The profession came under government regulation by the end of the 19th century. In the UK, the Dentist Act was passed in 1878 and the British Dental Association formed in 1879. In the same year, Francis Brodie Imlach was the first ever dentist to be elected President of the Royal College of Surgeons (Edinburgh), raising dentistry onto a par with clinical surgery for the first time.[66]

Hazards in modern dentistry

[edit]
Main article: Occupational hazards in dentistry

Long term occupational noise exposure can contribute to permanent hearing loss, which is referred to as noise-induced hearing loss (NIHL) and tinnitus. Noise exposure can cause excessive stimulation of the hearing mechanism, which damages the delicate structures of the inner ear.[67] NIHL can occur when an individual is exposed to sound levels above 90 dBA according to the Occupational Safety and Health Administration (OSHA). Regulations state that the permissible noise exposure levels for individuals is 90 dBA.[68] For the National Institute for Occupational Safety and Health (NIOSH), exposure limits are set to 85 dBA. Exposures below 85 dBA are not considered to be hazardous. Time limits are placed on how long an individual can stay in an environment above 85 dBA before it causes hearing loss. OSHA places that limitation at 8 hours for 85 dBA. The exposure time becomes shorter as the dBA level increases.

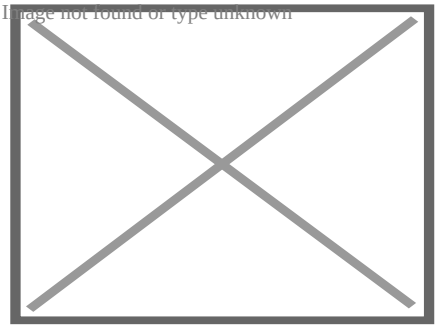
Within the field of dentistry, a variety of cleaning tools are used including piezoelectric and sonic scalers, and ultrasonic scalers and cleaners.[69] While a majority of the tools do not exceed 75 dBA,[70] prolonged exposure over many years can lead to hearing loss or complaints of tinnitus.[71] Few dentists have reported using personal hearing protective devices,[72][73] which could offset any potential hearing loss or tinnitus.

Evidence-based dentistry

[edit]
Main article: Evidence-based dentistry

There is a movement in modern dentistry to place a greater emphasis on high-quality scientific evidence in decision-making. Evidence-based dentistry (EBD) uses current scientific evidence to guide decisions. It is an approach to oral health that requires the application and examination of relevant scientific data related to the patient's oral and medical health. Along with the dentist's professional skill and expertise, EBD allows dentists to stay up to date on the latest procedures and patients to receive improved treatment. A new paradigm for medical education designed to incorporate current research into education and practice was developed to help practitioners provide the best care for their patients.[74] It was first introduced by Gordon Guyatt and the Evidence-Based Medicine Working Group at McMaster University in Ontario, Canada in the 1990s. It is part of the larger movement toward evidence-based medicine and other

evidence-based practices, especially since a major part of dentistry involves dealing with oral and systemic diseases. Other issues relevant to the dental field in terms of evidence-based research and evidence-based practice include population oral health, dental clinical practice, tooth morphology etc.



A dental chair at the University of Michigan School of Dentistry

Ethical and medicolegal issues

[edit]

Dentistry is unique in that it requires dental students to have competence-based clinical skills that can only be acquired through supervised specialized laboratory training and direct patient care.[75] This necessitates the need for a scientific and professional basis of care with a foundation of extensive research-based education.[76] According to some experts, the accreditation of dental schools can enhance the quality and professionalism of dental education.[77][78]

See also

[edit]

- icon Medicine portal

- Dental aerosol
- Dental instrument
- Dental public health
- Domestic healthcare:
  - Dentistry in ancient Rome
  - Dentistry in Canada
  - Dentistry in the Philippines
  - Dentistry in Israel
  - Dentistry in the United Kingdom
  - Dentistry in the United States
- Eco-friendly dentistry
- Geriatric dentistry
- List of dental organizations
- Pediatric dentistry

- Sustainable dentistry
- Veterinary dentistry

Notes

[edit]

1. **^** Whether Dentists are referred to as "Doctor" is subject to geographic variation. For example, they are called "Doctor" in the US. In the UK, dentists have traditionally been referred to as "Mister" as they identified themselves with barber surgeons more than physicians (as do surgeons in the UK, see Surgeon#Titles). However more UK dentists now refer to themselves as "Doctor", although this was considered to be potentially misleading by the British public in a single report (see Costley and Fawcett 2010).
2. **^** The scope of oral and maxillofacial surgery is variable. In some countries, both a medical and dental degree is required for training, and the scope includes head and neck oncology and craniofacial deformity.

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Dentistry

Specialties	○ Endodontics ○ Oral and maxillofacial pathology ○ Oral and maxillofacial radiology ○ Oral and maxillofacial surgery ○ Orthodontics and dentofacial orthopedics ○ Pediatric dentistry ○ Periodontics ○ Prosthodontics ○ Dental public health ○ Cosmetic dentistry ○ Dental implantology ○ Geriatric dentistry ○ Restorative dentistry ○ Forensic odontology ○ Dental traumatology ○ Holistic dentistry
Dental surgery	○ Dental extraction ○ Tooth filling ○ Root canal therapy ○ Root end surgery ○ Scaling and root planing ○ Teeth cleaning ○ Dental bonding ○ Tooth polishing ○ Tooth bleaching ○ Socket preservation ○ Dental implant

Organisations	○ American Association of Orthodontists ○ British Dental Association ○ British Dental Health Foundation ○ British Orthodontic Society ○ Canadian Association of Orthodontists ○ Dental Technologists Association ○ General Dental Council ○ Indian Dental Association ○ National Health Service
By country	○ Canada ○ Philippines ○ Israel ○ United Kingdom ○ United States
See also	○ Index of oral health and dental articles ○ Outline of dentistry and oral health ○ Dental fear ○ Dental instruments ○ Dental material ○ History of dental treatments ○ Ancient Rome ○ Infant oral mutilation ○ Mouth assessment ○ Oral hygiene

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Cleft lip and cleft palate

Related specialities	○ Advance practice nursing ○ Audiology ○ Dentistry ○ Dietetics ○ Genetics ○ Oral and maxillofacial surgery ○ Orthodontics ○ Orthodontic technology ○ Otolaryngology ○ Pediatrics ○ Pediatric dentistry ○ Physician ○ Plastic surgery ○ Psychiatry ○ Psychology ○ Respiratory therapy ○ Social work ○ Speech and language therapy
Related syndromes	○ Hearing loss with craniofacial syndromes ○ Pierre Robin syndrome ○ Popliteal pterygium syndrome ○ Van der Woude syndrome
National and international organisations	○ Cleft Lip and Palate Association ○ Craniofacial Society of Great Britain and Ireland ○ Interplast ○ North Thames Regional Cleft Lip and Palate Service ○ Operation Smile ○ Overseas Plastic Surgery Appeal ○ Shriners Hospitals for Children ○ Smile Train ○ Transforming Faces Worldwide ○ Smile Angel Foundation (China)

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Dental schools

American dental schools	○ UAB ○ Arizona ○ Augusta (DCG) ○ Boston U (Goldman) ○ California (UCLA, UCSF) ○ Case Western Reserve ○ Colorado ○ Columbia ○ Connecticut ○ Creighton ○ Detroit Mercy ○ East Carolina ○ Florida ○ Harvard ○ Howard ○ Illinois–Chicago ○ Indiana ○ Iowa ○ Kentucky ○ Lake Erie ○ Loma Linda ○ Louisville ○ LSU Health–New Orleans ○ Marquette ○ Maryland–Baltimore ○ Meharry ○ Michigan ○ Midwestern ○ Minnesota ○ Mississippi ○ Missouri–Kansas City ○ Nebraska–Medical Center ○ Nevada–Las Vegas ○ New England ○ NYU ○ SUNY (Buffalo, Stony Brook) ○ North Carolina ○ Nova ○ Ohio State ○ Oklahoma ○ Oregon ○ Pacific (Dugoni) ○ Penn ○ Pitt ○ Puerto Rico ○ Rochester ○ Pacific Northwest ○ Rutgers ○ South Carolina

Defunct American dental schools	○ Emory ○ Fairleigh Dickinson ○ Georgetown ○ Harris ○ Loyola ○ Northwestern ○ Ohio College ○ Oral Roberts ○ Pennsylvania College ○ Wash U
Canadian dental schools	○ Alberta ○ British Columbia ○ Dalhousie ○ Laval ○ Manitoba ○ McGill ○ Montréal ○ Saskatchewan ○ Toronto ○ Western
British dental schools	○ Aberdeen ○ Barts and The London School of Medicine and Dentistry ○ Glasgow ○ Guy's, King's & St Thomas's ○ Liverpool ○ Newcastle ○ Peninsula College of Medicine and Dentistry ○ UCL Eastman Dental Institute
Australian and New Zealand dental schools	○ Sydney ○ Melbourne ○ Adelaide ○ Charles Sturt University ○ Griffith University ○ James Cook ○ La Trobe ○ Queensland ○ Western Australia ○ University of Otago

South Korean dental schools	○ Chonbuk ○ Chonnam ○ Chosun ○ Dankook ○ Gangneung-Wonju ○ Kyung Hee ○ Kyungpook ○ Pusan ○ Seoul ○ Wonkwang ○ Yonsei

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Medicine

Specialties and subspecialties	**Surgery**	○ Cardiac surgery ○ Cardiothoracic surgery ○ Endocrine surgery ○ Eye surgery ○ General surgery ○ ○ Colorectal surgery ○ ○ Digestive system surgery ○ Neurosurgery ○ Oral and maxillofacial surgery ○ Orthopedic surgery ○ Hand surgery ○ Otolaryngology ○ ○ ENT ○ Pediatric surgery ○ Plastic surgery ○ Reproductive surgery ○ Surgical oncology ○ Transplant surgery ○ Trauma surgery ○ Urology ○ ○ Andrology ○ Vascular surgery
	Internal medicine	○ Allergy / Immunology ○ Angiology ○ Cardiology ○ Endocrinology ○ Gastroenterology ○ ○ Hepatology ○ Geriatrics ○ Hematology ○ Hospital medicine ○ Infectious diseases ○ Nephrology ○ Oncology ○ Pulmonology ○ Rheumatology
	Obstetrics and gynaecology	○ Gynaecology ○ Gynecologic oncology ○ Maternal–fetal medicine ○ Obstetrics ○ Reproductive endocrinology and infertility ○ Urogynecology
	Diagnostic	○ Radiology ○ ○ Interventional radiology ○ ○ Neuroradiology ○ ○ Nuclear medicine ○ Pathology ○ ○ Anatomical

Medical education	○ Medical school ○ Bachelor of Medicine, Bachelor of Surgery ○ Bachelor of Medical Sciences ○ Master of Medicine ○ Master of Surgery ○ Doctor of Medicine ○ Doctor of Osteopathic Medicine ○ MD–PhD ○ Medical Scientist Training Program
Related topics	○ Alternative medicine ○ Allied health ○ Molecular oncology ○ Nanomedicine ○ Personalized medicine ○ Public health ○ Rural health ○ Therapy ○ Traditional medicine ○ Veterinary medicine ○ Physician ○ Chief physician ○ History of medicine

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