

- **Understanding Common Fee Structures in Orthodontics**
Understanding Common Fee Structures in Orthodontics Insurance Coverage That Reduces Out of Pocket Costs Exploring Payment Plans and Financing Arrangements Differences Between Flexible Spending and Health Savings Factors Influencing Variations in Treatment Pricing Asking the Right Questions During Cost Consultations Allocation of Funds for Long Term Orthodontic Care Prioritizing Necessary Treatments Within a Budget Navigating Claims and Reimbursements Step by Step How Location Affects Orthodontic Expenses Educating Patients on Financial Planning for Treatment Strategies to Keep Future Costs Predictable
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Here's the article outline for 'Understanding Common Fee Structures in Orthodontics' focusing on orthodontic treatment for kids:

Factors Influencing Variations in Treatment Pricing: A Closer Look at Orthodontic Care for Kids

When parents start exploring orthodontic treatment for their children, they're often surprised by the wide range of pricing they encounter. The cost of braces or other orthodontic interventions isn't as straightforward as most people might expect. Several key factors contribute to these price variations, making each treatment plan uniquely priced.

Jaw growth issues are easier to correct at an early age **Dental braces for children** physician.

First and foremost, the complexity of the individual case plays a significant role. Some kids might need simple alignment corrections, while others require more extensive work involving jaw realignment or addressing severe crowding. More complex cases naturally demand more time, specialized techniques, and potentially additional treatments, driving up the overall cost.

Geographic location is another crucial factor. Orthodontic practices in urban areas or regions with a higher cost of living typically charge more than those in rural or less expensive areas. This reflects not just the local economic conditions, but also the overhead costs of running a practice in different locations.

The experience and reputation of the orthodontist also heavily influence pricing. Highly sought-after specialists with years of experience and advanced training often command higher fees. While this might seem like an added expense, many parents find that expertise can translate to more efficient and effective treatment.

Technology and treatment methods represent another pricing variable. Traditional metal braces are generally less expensive, while newer options like clear aligners or ceramic braces tend to come with a premium price tag. These modern alternatives offer aesthetic benefits and sometimes more comfortable treatment, but at an increased cost.

Insurance coverage and payment plans can also significantly impact the final price parents experience. Some dental insurance plans offer partial orthodontic coverage, while others might not cover treatment at all. Many orthodontic practices now offer flexible payment options to help manage the financial burden.

The age of the child can surprisingly affect pricing too. Early intervention treatments might seem costly upfront but can potentially reduce the complexity and duration of future orthodontic work. Some orthodontists recommend phased treatments that spread costs over multiple years.

Understanding these factors helps parents navigate the complex world of orthodontic pricing. While the variations can seem overwhelming, they ultimately reflect the personalized nature of dental care. Each child's smile is unique, and so too is their path to achieving optimal dental alignment.

Ultimately, the goal remains the same: providing children with healthy, confident smiles that can last a lifetime. The price may vary, but the value of good orthodontic care remains consistently high.

Geographic Location and Regional Cost Differences play a significant role in the complex landscape of healthcare pricing. When you think about medical treatment costs, it's fascinating how dramatically they can vary simply based on where you live.

Imagine two patients with identical medical conditions, but one lives in a major metropolitan area like New York City, while the other resides in a small rural town in the Midwest. The pricing disparities can be striking. Urban centers typically have higher operational costs for healthcare facilities, including more expensive real estate, higher wages for medical professionals, and more advanced medical infrastructure. These factors naturally drive up treatment prices.

Regional economic conditions also substantially impact healthcare costs. Areas with higher costs of living tend to have more expensive medical services. For instance, California and the Northeast generally see higher treatment prices compared to southern or midwestern states. This isn't just about facility costs, but also reflects local market dynamics, insurance landscapes, and regional healthcare competition.

Rural areas often face different challenges. While their operational costs might be lower, they frequently struggle with fewer healthcare providers and limited medical resources. This scarcity can paradoxically lead to higher per-patient costs due to reduced economies of scale.

State-level regulations and healthcare policies further complicate this picture. Some states have more stringent healthcare requirements or more comprehensive insurance mandates, which can influence treatment pricing.

Understanding these regional variations is crucial for patients, healthcare administrators, and policymakers. It highlights the need for nuanced approaches to healthcare pricing that recognize the complex geographic and economic factors at play.

Insurance Coverage and Impact on Orthodontic Expenses

When it comes to orthodontic treatment, the complexity of a patient's condition plays a significant role in determining the overall cost and treatment approach. Each individual's dental misalignment is unique, presenting its own set of challenges that directly impact the intricacy of the required intervention.

The complexity of an orthodontic condition can stem from various factors. Some patients may have relatively simple crowding or minor spacing issues that can be addressed relatively quickly and with less invasive methods. In contrast, others might present with more complex scenarios like severe malocclusion, significant jaw misalignment, or complicated bite issues that demand extensive and sophisticated treatment protocols.

Factors such as the severity of tooth crowding, the degree of jaw misalignment, the patient's age, and the presence of additional dental complications all contribute to the overall treatment

complexity. For instance, adult patients often require more intricate treatment plans compared to teenagers, as their bone structure is less flexible and dental movement becomes more challenging.

The treatment requirement directly correlates with these complexity levels. More complex cases typically necessitate longer treatment durations, more advanced orthodontic techniques, and potentially additional interventions like surgical orthodontics. These elements naturally translate into higher treatment costs, as they demand more specialized expertise, advanced technology, and extended professional time.

Orthodontists carefully assess each patient's unique dental landscape, creating personalized treatment strategies that address specific structural challenges. This individualized approach ensures that the treatment not only corrects aesthetic concerns but also addresses functional dental health requirements.

Understanding the nuanced relationship between condition complexity and treatment requirements helps patients appreciate the variability in orthodontic pricing and the value of personalized dental care.

Payment Plan Options for Pediatric Orthodontic Care

When it comes to orthodontic treatment, the type of appliance and technology used can significantly impact the overall cost. Let me break this down in a way that makes sense.

Traditional metal braces have been the go-to option for decades and are typically the most affordable. These classic brackets and wires are reliable and cost-effective, making them a popular choice for many patients, especially younger individuals. They're straightforward and get the job done without breaking the bank.

On the other hand, ceramic braces represent a more aesthetic option. Made from clear or tooth-colored materials, they blend better with your natural teeth but come at a higher price point. Patients often pay a premium for this less noticeable alternative, which can increase treatment costs by several hundred dollars.

Invisalign and other clear aligner technologies have revolutionized orthodontic treatment in recent years. These custom-made, nearly invisible trays are incredibly popular among adults and teens who want a more discreet option. However, this cutting-edge technology comes with a heftier price tag. The advanced 3D imaging, computer-guided treatment planning, and custom manufacturing process contribute to higher overall expenses.

Lingual braces, which are placed behind the teeth, represent the most expensive option. These specialized appliances require exceptional skill to install and adjust, meaning orthodontists with specific training can charge significantly more for this nearly invisible treatment method.

Digital scanning technologies like iTero have also entered the scene, allowing for more precise measurements and treatment planning. While these technologies improve accuracy and patient comfort, they also add to the overall treatment cost.

The complexity of the technology, the materials used, and the expertise required to implement these advanced orthodontic solutions all play crucial roles in determining pricing. Patients now have more choices than ever, but these choices come with varying price points that reflect the sophistication of the treatment approach.

Factors Influencing Orthodontic Treatment Costs

When it comes to orthodontic treatment pricing, the experience and reputation of the professional play a significant role in determining the cost patients can expect to pay. Seasoned orthodontists with years of specialized training and a proven track record of successful treatments typically command higher fees, and for good reason.

An orthodontist who has been practicing for decades brings a wealth of knowledge and expertise that goes far beyond textbook learning. These professionals have encountered countless unique cases, developed refined techniques, and built a deep understanding of complex dental alignments. Their extensive experience allows them to diagnose issues more accurately and create more effective treatment plans, which patients are often willing to pay a premium for.

Reputation is equally crucial in this field. Orthodontists who have established themselves as leaders in their community, with glowing patient testimonials and a strong professional network, can justify higher pricing. Word-of-mouth recommendations and positive online reviews contribute significantly to their perceived value. Patients are more likely to trust and invest in a treatment from a well-respected professional who has consistently delivered exceptional results.

Moreover, an orthodontist's reputation isn't just built on successful treatments, but also on their approach to patient care. Those who are known for their compassionate communication, state-of-the-art technology, and personalized treatment strategies can often charge more because patients see value beyond the technical procedure.

Board certifications, advanced training, and participation in professional development also enhance an orthodontist's reputation. These credentials signal a commitment to excellence and continuous learning, which can justify higher treatment costs.

While experience and reputation can drive up pricing, they also provide patients with a sense of confidence and security. Many individuals are willing to invest more in their dental health when they know they're receiving treatment from a truly skilled and respected professional.

Comparing Different Orthodontic Practices and Their Pricing Strategies

Insurance Coverage and Reimbursement Policies: Navigating the Complex Landscape of Treatment Pricing

When it comes to healthcare costs, the world of insurance coverage and reimbursement policies can feel like a maze of complexity. It's not just about how much a treatment costs, but about the intricate web of factors that determine what patients actually pay and how healthcare providers get compensated.

Different insurance plans have wildly different approaches to coverage. Some might cover a procedure almost entirely, while others leave patients with significant out-of-pocket expenses. This variation isn't random - it's the result of carefully negotiated contracts, risk assessments, and strategic decision-making by insurance companies.

Reimbursement rates play a crucial role in this ecosystem. Hospitals and medical providers negotiate with insurance companies to establish how much they'll be paid for specific treatments. These negotiations are like a delicate dance, balancing the provider's need for fair compensation with the insurer's goal of managing costs.

Geographic location adds another layer of complexity. Treatment prices can vary dramatically between urban and rural areas, or even between different regions of the same state. What might be a standard price in one city could be significantly higher or lower just a few miles away.

Patient demographics also influence pricing. Age, pre-existing conditions, and specific health risks can all impact coverage and potential out-of-pocket expenses. Younger patients might find more flexible options, while those with complex medical histories often face more challenging insurance landscapes.

Technology and medical innovation further complicate the picture. New treatments and cutting-edge procedures often come with higher price tags and less predictable insurance coverage. What's considered experimental today might become standard care tomorrow, constantly shifting the insurance landscape.

Understanding these dynamics requires patience and careful research. Patients are increasingly becoming active participants in their healthcare financial decisions, comparing plans, asking detailed questions, and seeking transparency in pricing.

While the system isn't perfect, awareness is key. By understanding the various factors that influence treatment pricing and insurance coverage, individuals can make more informed decisions about their healthcare and financial planning.

The world of insurance and medical pricing might seem overwhelming, but it's a system that continues to evolve, hopefully moving towards greater transparency and accessibility for patients.

Additional Fees and Potential Hidden Expenses in Orthodontic Treatment

When it comes to dental treatment pricing, the age of a child and their stage of dental development play crucial roles in determining the complexity and cost of procedures. It's fascinating how something as seemingly simple as a child's age can significantly impact dental care expenses.

Young children in their early developmental stages often require different approaches compared to older children or adolescents. For instance, a toddler with primary teeth will have very different treatment needs compared to a pre-teen experiencing mixed dentition or a teenager with fully erupted permanent teeth.

In the early years, dental treatments tend to focus on preventive care and monitoring growth. Simple procedures like routine check-ups and fluoride treatments are typically less expensive. As children progress through different dental development stages, the complexity and potential cost of interventions increase.

Orthodontic considerations become particularly significant during late childhood and early adolescence. The timing of interventions like braces or corrective procedures can dramatically influence treatment pricing. Some dental issues are most effectively addressed at specific developmental windows, which can impact overall treatment strategy and cost.

Factors such as tooth eruption patterns, jaw development, and potential alignment challenges all contribute to the nuanced pricing landscape. Dentists must carefully assess each child's unique developmental stage to recommend appropriate and cost-effective treatments.

Understanding these developmental stages helps parents and healthcare providers make informed decisions about dental care, balancing medical necessity with financial considerations. Each child's journey through dental development is unique, making personalized assessment critical in treatment planning and pricing.

Duration of Treatment and Follow-up Care: Understanding Its Impact on Treatment Pricing

When it comes to healthcare costs, the length of treatment and ongoing follow-up care can significantly influence the overall pricing of medical services. Patients and healthcare providers alike recognize that the complexity and duration of treatment play a crucial role in determining

the total expense of medical care.

Different medical conditions require varying lengths of treatment, which directly impacts the total cost. Chronic conditions like diabetes or heart disease often demand long-term management, resulting in extended treatment periods and higher cumulative expenses. In contrast, acute conditions might require shorter, more intensive interventions that can be less financially demanding.

Follow-up care is another critical factor that contributes to treatment pricing. Regular check-ups, monitoring, and potential additional interventions can substantially increase the overall cost of treatment. For instance, cancer treatments often involve multiple follow-up appointments, diagnostic tests, and potential additional therapies, which can significantly escalate medical expenses.

The complexity of the medical condition also plays a vital role. More complicated treatments that require specialized medical expertise, advanced technologies, or multiple healthcare professionals typically result in higher pricing. Patients with intricate medical histories or those requiring personalized treatment plans may experience more extended treatment durations and consequently higher costs.

Insurance coverage and healthcare system structures further complicate the pricing landscape. Different healthcare providers and insurance plans may have varying approaches to calculating treatment duration and follow-up care costs, leading to price variations across different regions and healthcare systems.

Technological advancements and innovative treatment methods can also influence treatment duration and pricing. More efficient medical technologies might reduce treatment times and potentially lower overall costs, while cutting-edge treatments might initially be more expensive but provide more effective long-term outcomes.

Understanding these factors can help patients and healthcare providers navigate the complex world of medical treatment pricing more effectively. By recognizing how treatment duration and follow-up care impact costs, individuals can make more informed decisions about their healthcare options.

Ultimately, the relationship between treatment duration, follow-up care, and pricing is nuanced and multifaceted. It requires a comprehensive approach that considers medical complexity, individual patient needs, and broader healthcare system dynamics.

When exploring the complex landscape of healthcare pricing, additional diagnostic and preparatory procedures play a crucial role in understanding the nuanced factors that influence treatment costs. These procedures are not merely administrative tasks, but essential steps that provide deeper insights into patient-specific needs and potential treatment variations.

Medical professionals often employ a range of supplementary diagnostic techniques to gather comprehensive information before determining a treatment plan. These might include advanced imaging studies, genetic testing, comprehensive blood panels, or specialized consultative assessments. Each of these procedures contributes valuable data that can significantly impact the overall approach to patient care and subsequent pricing structures.

The preparatory phase is equally important, involving detailed risk assessments, patient history evaluations, and potential pre-treatment interventions. Such thorough groundwork allows healthcare providers to develop more personalized and precise treatment strategies, which can ultimately affect the overall cost of medical services.

Factors like technological complexity, specialized expertise required, and the specific diagnostic tools used can create substantial variations in pricing. For instance, a cutting-edge genetic screening might be considerably more expensive than traditional diagnostic methods, reflecting the advanced technology and specialized knowledge involved.

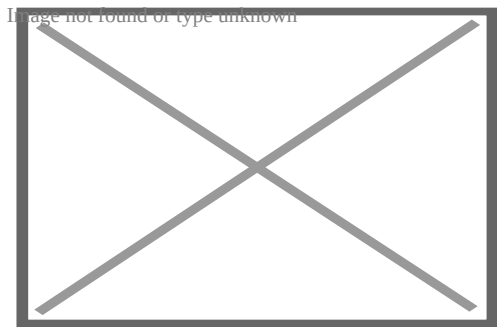
Moreover, regional differences, healthcare system structures, and individual institutional practices can further complicate pricing models. What might be a standard procedure in one medical center could be considered an additional diagnostic step in another, leading to significant cost disparities.

Understanding these nuanced factors helps patients and healthcare administrators navigate the intricate world of medical pricing, emphasizing the importance of comprehensive diagnostic and preparatory procedures in delivering high-quality, personalized healthcare.

About pediatrics

This article is about the branch of medicine. For the journal, see Pediatrics (journal). For the branch of dentistry, see Pedodontics.

Pediatrics



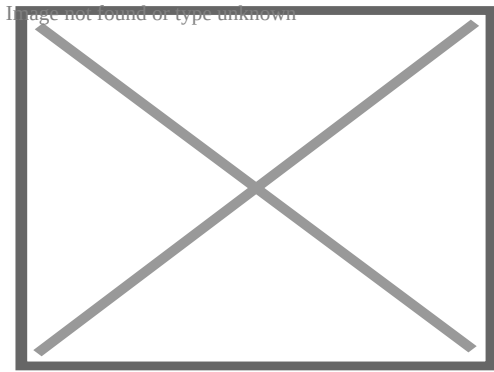
A pediatrician examines a neonate.

Focus	Infants, Children, Adolescents, and Young Adults
Subdivisions	Paediatric cardiology, neonatology, critical care, pediatric oncology, hospital medicine, primary care, others (see below)
Significant diseases	Congenital diseases, Infectious diseases, Childhood cancer, Mental disorders
Significant tests	World Health Organization Child Growth Standards
Specialist	Pediatrician
Glossary	Glossary of medicine

Pediatrics (American English) also spelled **paediatrics** (British English), is the branch of medicine that involves the medical care of infants, children, adolescents, and young adults. In the United Kingdom, pediatrics covers many of their youth until the age of 18.^[1] The American Academy of Pediatrics recommends people seek pediatric care through the age of 21, but some pediatric subspecialists continue to care for adults up to 25.^{[2][3]} Worldwide age limits of pediatrics have been trending upward year after year.^[4] A medical doctor who specializes in this area is known as a **pediatrician**, or **paediatrician**. The word *pediatrics* and its cognates mean "healer of children", derived from the two Greek words: *παῖς* (*pais* "child") and *ἰατρός* (*iatros* "doctor, healer"). Pediatricians work in clinics, research centers, universities, general hospitals and children's hospitals, including those who practice pediatric subspecialties (e.g. neonatology requires resources available in a NICU).

History

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Part of Great Ormond Street Hospital in London, United Kingdom, which was the first pediatric hospital in the English-speaking world.

The earliest mentions of child-specific medical problems appear in the *Hippocratic Corpus*, published in the fifth century B.C., and the famous *Sacred Disease*. These publications discussed topics such as childhood epilepsy and premature births. From the first to fourth centuries A.D., Greek philosophers and physicians Celsus, Soranus of Ephesus, Aretaeus, Galen, and Oribasius, also discussed specific illnesses affecting children in their works, such as rashes, epilepsy, and meningitis.^[5] Already Hippocrates, Aristotle, Celsus, Soranus, and Galen^[6] understood the differences in growing and maturing organisms that necessitated different treatment: *Ex toto non sic pueri ut viri curari debent* ("In general, boys should not be treated in the same way as men").^[7] Some of the oldest traces of pediatrics can be discovered in Ancient India where children's doctors were called *kumara bhrtya*.^[6]

Even though some pediatric works existed during this time, they were scarce and rarely published due to a lack of knowledge in pediatric medicine. *Sushruta Samhita*, an ayurvedic text composed during the sixth century BCE, contains the text about pediatrics.^[8] Another ayurvedic text from this period is *Kashyapa Samhita*.^{[9][10]} A second century AD manuscript by the Greek physician and gynecologist Soranus of Ephesus dealt with neonatal pediatrics.^[11] Byzantine physicians Oribasius, Aëtius of Amida, Alexander Trallianus, and Paulus Aegineta contributed to the field.^[6] The Byzantines also built *brephotrophia* (crèches).^[6] Islamic Golden Age writers served as a bridge for Greco-Roman and Byzantine medicine and added ideas of their own, especially Haly Abbas, Yahya Serapion, Abulcasis, Avicenna, and Averroes. The Persian philosopher and physician al-Razi (865–925), sometimes called the father of pediatrics, published a monograph on pediatrics titled *Diseases in Children*.^{[12][13]} Also among the first books about pediatrics was *Libellus [Opusculum] de aegritudinibus et remediis infantium* 1472 ("Little Book on Children Diseases and Treatment"), by the Italian pediatrician Paolo Bagellardo.^{[14][5]} In sequence came Bartholomäus Metlinger's *Ein Regiment der Jungerkinder* 1473, Cornelius Roelans (1450–1525) no title Buchlein, or Latin compendium, 1483, and Heinrich von Louffenburg (1391–1460) *Versehung des Leibs* written in 1429 (published 1491), together form the *Pediatric Incunabula*, four great medical treatises on children's physiology and pathology.^[6]

While more information about childhood diseases became available, there was little evidence that children received the same kind of medical care that adults did.^[15] It was during the seventeenth and eighteenth centuries that medical experts started offering specialized care for children.^[5] The Swedish physician Nils Rosén von Rosenstein (1706–1773) is considered to be the founder of modern pediatrics as a medical specialty,^{[16][17]} while his work *The diseases of children, and their remedies* (1764) is considered to be "the first modern textbook on the subject".^[18] However, it was not until the nineteenth century that medical professionals acknowledged pediatrics as a separate field of medicine. The first pediatric-specific publications appeared between the 1790s and the 1920s.^[19]

Etymology

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The term pediatrics was first introduced in English in 1859 by Abraham Jacobi. In 1860, he became "the first dedicated professor of pediatrics in the world."^[20] Jacobi is known as the *father of American pediatrics* because of his many contributions to the field.^{[21][22]} He received his medical training in Germany and later practiced in New York City.^[23]

The first generally accepted pediatric hospital is the *Hôpital des Enfants Malades* (French: *Hospital for Sick Children*), which opened in Paris in June 1802 on the site of a previous orphanage.^[24] From its beginning, this famous hospital accepted patients up to the age of fifteen years,^[25] and it continues to this day as the pediatric division of the Necker-Enfants Malades Hospital, created in 1920 by merging with the nearby *Necker Hospital*, founded in 1778.^[26]

In other European countries, the Charité (a hospital founded in 1710) in Berlin established a separate Pediatric Pavilion in 1830, followed by similar institutions at Saint Petersburg in 1834, and at Vienna and Breslau (now Wrocław) both in 1837. In 1852 Britain's first pediatric hospital, the Hospital for Sick Children, Great Ormond Street was founded by Charles West.^[24] The first Children's hospital in Scotland opened in 1860 in Edinburgh.^[27] In the US, the first similar institutions were the Children's Hospital of Philadelphia, which opened in 1855, and then Boston Children's Hospital (1869).^[28] Subspecialties in pediatrics were created at the Harriet Lane Home at Johns Hopkins by Edwards A. Park.^[29]

Differences between adult and pediatric medicine

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The body size differences are paralleled by maturation changes. The smaller body of an infant or neonate is substantially different physiologically from that of an adult. Congenital defects, genetic variance, and developmental issues are of greater concern to

pediatricians than they often are to adult physicians. A common adage is that children are not simply "little adults". The clinician must take into account the immature physiology of the infant or child when considering symptoms, prescribing medications, and diagnosing illnesses.^[30]

Pediatric physiology directly impacts the pharmacokinetic properties of drugs that enter the body. The absorption, distribution, metabolism, and elimination of medications differ between developing children and grown adults.^{[30][31][32]} Despite completed studies and reviews, continual research is needed to better understand how these factors should affect the decisions of healthcare providers when prescribing and administering medications to the pediatric population.^[30]

Absorption

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Many drug absorption differences between pediatric and adult populations revolve around the stomach. Neonates and young infants have increased stomach pH due to decreased acid secretion, thereby creating a more basic environment for drugs that are taken by mouth.^{[31][30][32]} Acid is essential to degrading certain oral drugs before systemic absorption. Therefore, the absorption of these drugs in children is greater than in adults due to decreased breakdown and increased preservation in a less acidic gastric space.^[31]

Children also have an extended rate of gastric emptying, which slows the rate of drug absorption.^{[31][32]}

Drug absorption also depends on specific enzymes that come in contact with the oral drug as it travels through the body. Supply of these enzymes increase as children continue to develop their gastrointestinal tract.^{[31][32]} Pediatric patients have underdeveloped proteins, which leads to decreased metabolism and increased serum concentrations of specific drugs. However, prodrugs experience the opposite effect because enzymes are necessary for allowing their active form to enter systemic circulation.^[31]

Distribution

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Percentage of total body water and extracellular fluid volume both decrease as children grow and develop with time. Pediatric patients thus have a larger volume of distribution than adults, which directly affects the dosing of hydrophilic drugs such as beta-lactam antibiotics like ampicillin.^[31] Thus, these drugs are administered at greater weight-based doses or with adjusted dosing intervals in children to account for this key difference in body composition.^{[31][30]}

Infants and neonates also have fewer plasma proteins. Thus, highly protein-bound drugs have fewer opportunities for protein binding, leading to increased distribution.^[30]

Metabolism

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Drug metabolism primarily occurs via enzymes in the liver and can vary according to which specific enzymes are affected in a specific stage of development.^[31] Phase I and Phase II enzymes have different rates of maturation and development, depending on their specific mechanism of action (i.e. oxidation, hydrolysis, acetylation, methylation, etc.). Enzyme capacity, clearance, and half-life are all factors that contribute to metabolism differences between children and adults.^{[31][32]} Drug metabolism can even differ within the pediatric population, separating neonates and infants from young children.^[30]

Elimination

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Drug elimination is primarily facilitated via the liver and kidneys.^[31] In infants and young children, the larger relative size of their kidneys leads to increased renal clearance of medications that are eliminated through urine.^[32] In preterm neonates and infants, their kidneys are slower to mature and thus are unable to clear as much drug as fully developed kidneys. This can cause unwanted drug build-up, which is why it is important to consider lower doses and greater dosing intervals for this population.^{[30][31]} Diseases that negatively affect kidney function can also have the same effect and thus warrant similar considerations.^[31]

Pediatric autonomy in healthcare

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A major difference between the practice of pediatric and adult medicine is that children, in most jurisdictions and with certain exceptions, cannot make decisions for themselves. The issues of guardianship, privacy, legal responsibility, and informed consent must always be considered in every pediatric procedure. Pediatricians often have to treat the parents and sometimes, the family, rather than just the child. Adolescents are in their own legal class, having rights to their own health care decisions in certain circumstances. The concept of legal consent combined with the non-legal consent (assent) of the child when considering treatment options, especially in the face of conditions with poor prognosis or complicated and painful procedures/surgeries, means the pediatrician must take into account the desires of many people, in addition to those of the patient.^[citation needed]

History of pediatric autonomy

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The term autonomy is traceable to ethical theory and law, where it states that autonomous individuals can make decisions based on their own logic.^[33] Hippocrates was the first to use the term in a medical setting. He created a code of ethics for doctors called the *Hippocratic Oath* that highlighted the importance of putting patients' interests first, making autonomy for patients a top priority in health care.^[34]

In ancient times, society did not view pediatric medicine as essential or scientific.^[35] Experts considered professional medicine unsuitable for treating children. Children also had no rights. Fathers regarded their children as property, so their children's health decisions were entrusted to them.^[5] As a result, mothers, midwives, "wise women", and general practitioners treated the children instead of doctors.^[35] Since mothers could not rely on professional medicine to take care of their children, they developed their own methods, such as using alkaline soda ash to remove the vernix at birth and treating teething pain with opium or wine. The absence of proper pediatric care, rights, and laws in health care to prioritize children's health led to many of their deaths. Ancient Greeks and Romans sometimes even killed healthy female babies and infants with deformities since they had no adequate medical treatment and no laws prohibiting infanticide.^[5]

In the twentieth century, medical experts began to put more emphasis on children's rights. In 1989, in the United Nations Rights of the Child Convention, medical experts developed the Best Interest Standard of Child to prioritize children's rights and best interests. This event marked the onset of pediatric autonomy. In 1995, the American Academy of Pediatrics (AAP) finally acknowledged the Best Interest Standard of a Child as an ethical principle for pediatric decision-making, and it is still being used today.^[34]

Parental authority and current medical issues

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The majority of the time, parents have the authority to decide what happens to their child. Philosopher John Locke argued that it is the responsibility of parents to raise their children and that God gave them this authority. In modern society, Jeffrey Blustein, modern philosopher and author of the book *Parents and Children: The Ethics of Family*, argues that parental authority is granted because the child requires parents to satisfy their needs. He believes that parental autonomy is more about parents providing good care for their children and treating them with respect than parents having rights.^[36] The researcher Kyriakos Martakis, MD, MSc, explains that research shows parental influence negatively affects children's ability to form autonomy. However, involving children in the decision-making process allows children to develop their cognitive skills and create their own opinions and, thus, decisions about their health. Parental authority affects the degree of

autonomy the child patient has. As a result, in Argentina, the new National Civil and Commercial Code has enacted various changes to the healthcare system to encourage children and adolescents to develop autonomy. It has become more crucial to let children take accountability for their own health decisions.^[37]

In most cases, the pediatrician, parent, and child work as a team to make the best possible medical decision. The pediatrician has the right to intervene for the child's welfare and seek advice from an ethics committee. However, in recent studies, authors have denied that complete autonomy is present in pediatric healthcare. The same moral standards should apply to children as they do to adults. In support of this idea is the concept of paternalism, which negates autonomy when it is in the patient's interests. This concept aims to keep the child's best interests in mind regarding autonomy. Pediatricians can interact with patients and help them make decisions that will benefit them, thus enhancing their autonomy. However, radical theories that question a child's moral worth continue to be debated today.^[37] Authors often question whether the treatment and equality of a child and an adult should be the same. Author Tamar Schapiro notes that children need nurturing and cannot exercise the same level of authority as adults.^[38] Hence, continuing the discussion on whether children are capable of making important health decisions until this day.

Modern advancements

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According to the Subcommittee of Clinical Ethics of the Argentinean Pediatric Society (SAP), children can understand moral feelings at all ages and can make reasonable decisions based on those feelings. Therefore, children and teens are deemed capable of making their own health decisions when they reach the age of 13. Recently, studies made on the decision-making of children have challenged that age to be 12.^[37]

Technology has made several modern advancements that contribute to the future development of child autonomy, for example, unsolicited findings (U.F.s) of pediatric exome sequencing. They are findings based on pediatric exome sequencing that explain in greater detail the intellectual disability of a child and predict to what extent it will affect the child in the future. Genetic and intellectual disorders in children make them incapable of making moral decisions, so people look down upon this kind of testing because the child's future autonomy is at risk. It is still in question whether parents should request these types of testing for their children. Medical experts argue that it could endanger the autonomous rights the child will possess in the future. However, the parents contend that genetic testing would benefit the welfare of their children since it would allow them to make better health care decisions.^[39] Exome sequencing for children and the decision to grant parents the right to request them is a medically ethical issue that many still debate today.

Education requirements

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The examples and perspective in this section **deal primarily with United States** and **do not represent a worldwide view of the subject**. You may improve this section, discuss the issue on the talk page, or create a new section, as appropriate. *(September 2019)* *(Learn how and when to remove this message)*

Aspiring medical students will need 4 years of undergraduate courses at a college or university, which will get them a BS, BA or other bachelor's degree. After completing college, future pediatricians will need to attend 4 years of medical school (MD/DO/MBBS) and later do 3 more years of residency training, the first year of which is called "internship." After completing the 3 years of residency, physicians are eligible to become certified in pediatrics by passing a rigorous test that deals with medical conditions related to young children.^[*citation needed*]

In high school, future pediatricians are required to take basic science classes such as biology, chemistry, physics, algebra, geometry, and calculus. It is also advisable to learn a foreign language (preferably Spanish in the United States) and be involved in high school organizations and extracurricular activities. After high school, college students simply need to fulfill the basic science course requirements that most medical schools recommend and will need to prepare to take the MCAT (Medical College Admission Test) in their junior or early senior year in college. Once attending medical school, student courses will focus on basic medical sciences like human anatomy, physiology, chemistry, etc., for the first three years, the second year of which is when medical students start to get hands-on experience with actual patients.^[40]

Training of pediatricians

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Pediatrics

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Occupation

Names

- Pediatrician
- Paediatrician

Occupation type Specialty

Activity sectors Medicine

Description

Education required

- Doctor of Medicine
- Doctor of Osteopathic Medicine
- Bachelor of Medicine, Bachelor of Surgery (MBBS/MBChB)

**Fields of
employment**

Hospitals, Clinics

The training of pediatricians varies considerably across the world. Depending on jurisdiction and university, a medical degree course may be either undergraduate-entry or graduate-entry. The former commonly takes five or six years and has been usual in the Commonwealth. Entrants to graduate-entry courses (as in the US), usually lasting four or five years, have previously completed a three- or four-year university degree, commonly but by no means always in sciences. Medical graduates hold a degree specific to the country and university in and from which they graduated. This degree qualifies that medical practitioner to become licensed or registered under the laws of that particular country, and sometimes of several countries, subject to requirements for "internship" or "conditional registration".

Pediatricians must undertake further training in their chosen field. This may take from four to eleven or more years depending on jurisdiction and the degree of specialization.

In the United States, a medical school graduate wishing to specialize in pediatrics must undergo a three-year residency composed of outpatient, inpatient, and critical care rotations. Subspecialties within pediatrics require further training in the form of 3-year fellowships. Subspecialties include critical care, gastroenterology, neurology, infectious disease, hematology/oncology, rheumatology, pulmonology, child abuse, emergency medicine, endocrinology, neonatology, and others.^[41]

In most jurisdictions, entry-level degrees are common to all branches of the medical profession, but in some jurisdictions, specialization in pediatrics may begin before completion of this degree. In some jurisdictions, pediatric training is begun immediately following the completion of entry-level training. In other jurisdictions, junior medical doctors must undertake generalist (unstreamed) training for a number of years before commencing pediatric (or any other) specialization. Specialist training is often largely under the control of '*pediatric organizations* (see below) rather than universities and depends on the jurisdiction.

Subspecialties

[edit]

Subspecialties of pediatrics include:

(not an exhaustive list)

- Addiction medicine (multidisciplinary)
- Adolescent medicine
- Child abuse pediatrics
- Clinical genetics
- Clinical informatics
- Developmental-behavioral pediatrics
- Headache medicine
- Hospital medicine
- Medical toxicology
- Metabolic medicine
- Neonatology/Perinatology
- Pain medicine (multidisciplinary)
- Palliative care (multidisciplinary)
- Pediatric allergy and immunology
- Pediatric cardiology
 - Pediatric cardiac critical care
- Pediatric critical care
 - Neurocritical care
 - Pediatric cardiac critical care
- Pediatric emergency medicine
- Pediatric endocrinology
- Pediatric gastroenterology
 - Transplant hepatology
- Pediatric hematology
- Pediatric infectious disease
- Pediatric nephrology
- Pediatric oncology
 - Pediatric neuro-oncology
- Pediatric pulmonology
- Primary care
- Pediatric rheumatology
- Sleep medicine (multidisciplinary)
- Social pediatrics
- Sports medicine

Other specialties that care for children

[edit]

(not an exhaustive list)

- Child neurology
 - Addiction medicine (multidisciplinary)
 - Brain injury medicine

- Clinical neurophysiology
- Epilepsy
- Headache medicine
- Neurocritical care
- Neuroimmunology
- Neuromuscular medicine
- Pain medicine (multidisciplinary)
- Palliative care (multidisciplinary)
- Pediatric neuro-oncology
- Sleep medicine (multidisciplinary)
- Child and adolescent psychiatry, subspecialty of psychiatry
- Neurodevelopmental disabilities
- Pediatric anesthesiology, subspecialty of anesthesiology
- Pediatric dentistry, subspecialty of dentistry
- Pediatric dermatology, subspecialty of dermatology
- Pediatric gynecology
- Pediatric neurosurgery, subspecialty of neurosurgery
- Pediatric ophthalmology, subspecialty of ophthalmology
- Pediatric orthopedic surgery, subspecialty of orthopedic surgery
- Pediatric otolaryngology, subspecialty of otolaryngology
- Pediatric plastic surgery, subspecialty of plastic surgery
- Pediatric radiology, subspecialty of radiology
- Pediatric rehabilitation medicine, subspecialty of physical medicine and rehabilitation
- Pediatric surgery, subspecialty of general surgery
- Pediatric urology, subspecialty of urology

See also

[edit]

- American Academy of Pediatrics
- American Osteopathic Board of Pediatrics
- Center on Media and Child Health (CMCH)
- Children's hospital
- List of pediatric organizations
- List of pediatrics journals
- Medical specialty
- Pediatric Oncall
- Pain in babies
- Royal College of Paediatrics and Child Health
- Pediatric environmental health

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Further reading

[edit]

- *BMC Pediatrics* - open access
- *Clinical Pediatrics*
- *Developmental Review* - partial open access
- *JAMA Pediatrics*
- *The Journal of Pediatrics* - partial open access

External links

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- Pediatric Health Directory at OpenMD
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Medicine

Specialties and subspecialties	Diagnostic	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 ○ Allergy / Immunology ○ Angiology ○ Cardiology ○ Endocrinology ○ Gastroenterology ○ Hepatology
			○ Geriatrics ○ Hematology ○ Hospital medicine ○ Infectious diseases ○ Nephrology ○ Oncology ○ Pulmonology ○ Rheumatology ○ Gynaecology ○ Gynecologic oncology ○ Maternal–fetal medicine ○ Obstetrics ○ Reproductive endocrinology and infertility ○ Urogynecology
			○ Radiology ○ Interventional radiology ○ Neuroradiology ○ Nuclear medicine ○ Pathology ○ Anatomical ○ Clinical pathology

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
- 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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Infants and their care



Health (Pediatrics)

- Baby food
- Birth weight
- Breast pump
- Breastfeeding
- Breastfeeding and medications
- Breastfeeding and mental health
- Bottle feeding
- Colic
- Cradle cap
- Esotropia
- Failure to thrive
- Immunization
- Infant and toddler safety
- Infant bathing
- Infant feeding
- Infant food safety
- Infant formula
- Infant massage
- Infant respiratory distress syndrome
- Infant sleep training
- Neonatal intensive care unit
- Newborn care and safety
- Oral rehydration therapy
 - Pedialyte
- Preterm birth
- Shaken baby syndrome
- Soy formula
- SIDS

Development

- Attachment parenting
- Baby-led weaning
- Baby talk
- Babbling
- Birth defect
- Childbirth
- Crawling
- Gestational age
- Infant visual development
- Irritant diaper dermatitis
- Infant cognitive development
- Infant crying
- Kangaroo care
- Mother
- Nursery rhyme
- Object permanence
- Parent
- Parenting
- Peekaboo
- Play
- Prenatal development
- Prenatal development table
- Teething
- Walking
- Weaning
- Attachment
- Babysitting
- Child abuse
- Child care
- Child custody
- Children's rights

Socialization and Culture

- UN Child rights
- Circumcision
- Foster care
- Grandparent visitation
- Infant swimming
- Milk bank
- Nanny
- Wet nurse

Infant care and equipment

- Baby bouncer
- Baby gate
- Baby monitor/Hidden camera
- Baby powder
- Baby shampoo
- Baby toy
- Baby walker
- Bib
- Baby swing
- Baby transport
- Bassinet
- Car seat safety
- Cloth diaper
- Cradle board
- Diaper
- Diaper bag
- Baby wipes
- Haberman Feeder
- High chair
- Infant bed (*American 'crib' and 'cradle', British 'cot'*)
- Infant carrier
- Infant clothing
- Pacifier
- Playpen
- Stroller
- Supplemental nursing system
- Swaddling
- Swim diaper
- Teether
- Travel cot
- Baby shower
- Babywearing
- Child neglect
- Closed adoption
- Cry room
- Infant ear piercing
- Open adoption
- Prenatal cocaine exposure
- Neonatal withdrawal syndrome
- Parental child abduction
- Parental responsibility
- Parenting plan
- Paternity
 - Paternity fraud

Other topics

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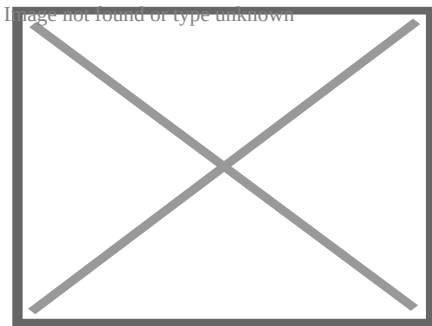
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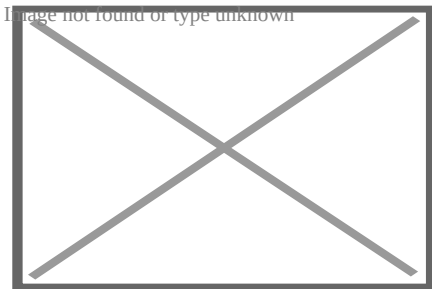
About thumb sucking

For other uses, see Thumbsucker (disambiguation).



Infants may use pacifiers or their thumb or fingers to soothe themselves

Newborn baby thumb sucking



A bonnet macaque thumb sucking

Thumb sucking is a behavior found in humans, chimpanzees, captive ring-tailed lemurs,^[1] and other primates.^[2] It usually involves placing the thumb into the mouth and rhythmically repeating sucking contact for a prolonged duration. It can also be accomplished with any organ within reach (such as other fingers and toes) and is considered to be soothing and therapeutic for the person. As a child develops the habit, it will usually develop a "favourite" finger to suck on.

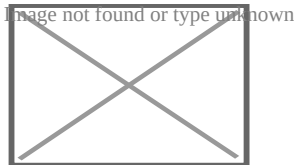
At birth, a baby will reflexively suck any object placed in its mouth; this is the sucking reflex responsible for breastfeeding. From the first time they engage in nutritive feeding, infants

learn that the habit can not only provide valuable nourishment, but also a great deal of pleasure, comfort, and warmth. Whether from a mother, bottle, or pacifier, this behavior, over time, begins to become associated with a very strong, self-soothing, and pleasurable oral sensation. As the child grows older, and is eventually weaned off the nutritional sucking, they can either develop alternative means for receiving those same feelings of physical and emotional fulfillment, or they can continue experiencing those pleasantly soothing experiences by beginning to suck their thumbs or fingers.^[3] This reflex disappears at about 4 months of age; thumb sucking is not purely an instinctive behavior and therefore can last much longer.^[4] Moreover, ultrasound scans have revealed that thumb sucking can start before birth, as early as 15 weeks from conception; whether this behavior is voluntary or due to random movements of the fetus in the womb is not conclusively known.

Thumb sucking generally stops by the age of 4 years. Some older children will retain the habit, which can cause severe dental problems.^[5] While most dentists would recommend breaking the habit as early as possible, it has been shown that as long as the habit is broken before the onset of permanent teeth, at around 5 years old, the damage is reversible.^[6] Thumb sucking is sometimes retained into adulthood and may be due to simply habit continuation. Using anatomical and neurophysiological data a study has found that sucking the thumb is said to stimulate receptors within the brain which cause the release of mental and physical tension.^[7]

Dental problems and prevention

[edit]



Alveolar prognathism, caused by thumb sucking and tongue thrusting in a 7-year-old girl.

Percentage of children who suck their thumbs (data from two researchers)

Age	Kantorowicz ^[4]	Brückl ^[8]
0–1	92%	66%
1–2	93%	
2–3	87%	—
3–4	86%	
4–5	85%	25%
5–6	76%	
Over 6	—	9%

Most children stop sucking on thumbs, pacifiers or other objects on their own between 2 and 4 years of age. No harm is done to their teeth or jaws until permanent teeth start to erupt. The only time it might cause concern is if it goes on beyond 6 to 8 years of age. At this time, it may affect the shape of the oral cavity or dentition.^[9] During thumbsucking the tongue sits in a lowered position and so no longer balances the forces from the buccal group of musculature. This results in narrowing of the upper arch and a posterior crossbite. Thumbsucking can also cause the maxillary central incisors to tip labially and the mandibular incisors to tip lingually, resulting in an increased overjet and anterior open bite malocclusion, as the thumb rests on them during the course of sucking. In addition to proclination of the maxillary incisors, mandibular incisors retrusion will also happen. Transverse maxillary deficiency gives rise to posterior crossbite, ultimately leading to a Class II malocclusion.^[10]

Children may experience difficulty in swallowing and speech patterns due to the adverse changes. Aside from the damaging physical aspects of thumb sucking, there are also additional risks, which unfortunately, are present at all ages. These include increased risk of infection from communicable diseases, due to the simple fact that non-sterile thumbs are covered with infectious agents, as well as many social implications. Some children experience social difficulties, as often children are taunted by their peers for engaging in what they can consider to be an “immature” habit. This taunting often results the child being rejected by the group or being subjected to ridicule by their peers, which can cause understandable psychological stress.^[11]

Methods to stop sucking habits are divided into 2 categories: Preventive Therapy and Appliance Therapy.^[10]

Examples to prevent their children from sucking their thumbs include the use of bitterants or piquant substances on their child's hands—although this is not a procedure encouraged by the American Dental Association^[9] or the Association of Pediatric Dentists. Some suggest that positive reinforcements or calendar rewards be given to encourage the child

to stop sucking their thumb.

The American Dental Association recommends:

- Praise children for not sucking, instead of scolding them when they do.
- If a child is sucking their thumb when feeling insecure or needing comfort, focus instead on correcting the cause of the anxiety and provide comfort to your child.
- If a child is sucking on their thumb because of boredom, try getting the child's attention with a fun activity.
- Involve older children in the selection of a means to cease thumb sucking.
- The pediatric dentist can offer encouragement to the child and explain what could happen to the child's teeth if he/she does not stop sucking.
- Only if these tips are ineffective, remind the child of the habit by bandaging the thumb or putting a sock/glove on the hand at night.
- Other orthodontics^[12] for appliances are available.

The British Orthodontic Society recommends the same advice as ADA.^[13]

A Cochrane review was conducted to review the effectiveness of a variety of clinical interventions for stopping thumb-sucking. The study showed that orthodontic appliances and psychological interventions (positive and negative reinforcement) were successful at preventing thumb sucking in both the short and long term, compared to no treatment.^[14] Psychological interventions such as habit reversal training and decoupling have also proven useful in body focused repetitive behaviors.^[15]

Clinical studies have shown that appliances such as TGuards can be 90% effective in breaking the thumb or finger sucking habit. Rather than use bitterants or piquants, which are not endorsed by the ADA due to their causing of discomfort or pain, TGuards break the habit simply by removing the suction responsible for generating the feelings of comfort and nurture.^[16] Other appliances are available, such as fabric thumb guards, each having their own benefits and features depending on the child's age, willpower and motivation. Fixed intraoral appliances have been known to create problems during eating as children when removing their appliances may have a risk of breaking them. Children with mental illness may have reduced compliance.^[10]

Some studies mention the use of extra-oral habit reminder appliance to treat thumb sucking. An alarm is triggered when the child tries to suck the thumb to stop the child from this habit.^{[10][17]} However, more studies are required to prove the effectiveness of external devices on thumb sucking.

Children's books

[edit]

- In Heinrich Hoffmann's *Struwwelpeter*, the "thumb-sucker" Konrad is punished by having both of his thumbs cut off.
- There are several children's books on the market with the intention to help the child break the habit of thumb sucking. Most of them provide a story the child can relate to

and some coping strategies.^[18] Experts recommend to use only books in which the topic of thumb sucking is shown in a positive and respectful way.^[19]

See also

[edit]

- Stereotypic movement disorder
- Prognathism

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[edit]

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Further reading

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External links

[edit]

- "Oral Health Topics: Thumbsucking". *American Dental Association*. Archived from the original on 2010-06-19.
- "Pacifiers & Thumb Sucking". *Canadian Dental Association*.

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Frequently Asked Questions

Why do orthodontic treatment costs vary so much?

Costs vary due to factors like complexity of dental misalignment, treatment duration, type of braces/aligners, orthodontists experience, geographic location, and specific clinic overhead expenses.

Does dental insurance help reduce orthodontic treatment expenses?

Many dental insurance plans cover partial orthodontic treatment for children, typically ranging from 25-50% of total costs, with lifetime maximums between \$1,000-\$3,000.

What are the main types of braces and how do they impact pricing?

Traditional metal braces are least expensive (\$3,000-\$5,000), ceramic braces are mid-range (\$4,000-\$6,000), and clear aligners like Invisalign are most expensive (\$4,500-\$8,000).

At what age should children first see an orthodontist, and how does early intervention affect costs?

The American Association of Orthodontists recommends first evaluation around age 7. Early intervention can potentially reduce overall treatment complexity and cost by addressing issues before they become more severe.

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