

EDITORIAL



The myth of “biocompatible materials” in pediatric dentistry

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A Pedodontist’s Rebellion Against Textbook Comfort

“Education is not the learning of facts, but the training of the mind to think.” – Albert Einstein

Textbooks are a wonderful place with clean diagrams, clean canals, clean outcomes.

They promise a world where:

- Working length is always perfect
- Children always cooperate
- Materials sit obediently inside the apex
- Anything “biocompatible” behaves like divine nectar

Reality?

Every pedodontist knows the truth we never say aloud:

Biocompatible ≠ magic.

Biocompatible = ‘safe within certain limits.’

If they were truly harmless in every condition, why does Gutta Percha beyond the apex cause furious bone resorption?

Why did Bioceramic sealers once marketed as the “god-tier sealer” end up in surgical retrieval cases when they kissed the inferior alveolar nerve?

Because even the best materials have fine print. They are safe only when the anatomy allows and only when the situation is ideal, something primary teeth rarely give us.

Question 1: The textbook rulebook vs the child in your chair

Question: “Measure WL perfectly. Stay 1 mm short. Don’t let anything cross the apex.”

Great. But how often is that realistically achievable in primary teeth?

Answer: Let me tell you the truth nobody says during exams.

In my postgraduate days, the punishment for a tiny extrusion was humiliating. We weren’t treating children like we were treating X-rays. Push a little Metapex, take X-ray. Push again, take another. Make the film look beautiful. Collect marks.

And the child? More irritated, more uncooperative, more scared with every minute of this “photography session.”

Yes, the textbook protocol is correct.

But there is a difference between correct protocol and necessary protocol.

Once I entered real practice, my failures reduced not because my X-rays became prettier, but because my clarity evolved:

I’m not here to win radiographic medals. I’m here to heal living tissues.

And living tissues don’t read textbooks.

Question 2: The “forbidden” metapex beyond apex

Question: “What happens when Metapex goes beyond apex Disaster?”

Answer: No. Not disaster. Just pain for a few minutes like a sting that makes the child bounce in the chair.

And then? Healing. Pristine healing. Every time.

Calcium hydroxide is the backbone of Metapex; the same hero we trust blindly in permanent teeth to heal open apices, the same medicament we call cheap and best, the same weapon we celebrate for resolving stubborn lesions.

But in primary teeth, the textbooks suddenly preach fear: “Don’t let it go beyond the apex!”

Why? Because of ZOE’s sins, not Metapex’s. Zinc oxide eugenol didn’t resorb as fast as the primary tooth so it delayed eruption and caused ectopic permanent teeth.

Metapex does resorb. It does heal. Its extrusion is forgiving, especially in a periapical lesion where Metapex simply fills the cavity momentarily.

Do we aim to extrude? Absolutely not.

Do we panic if it happens? No.

Because biology forgives what textbooks fear.

Question 3: The hypocrisy of “perfect materials”

- **Gutta percha:** Great until it crosses the apex. Then it becomes irritating.
- **Bioceramics:** The “revolutionary sealer” we all worshipped. Then came cases where it flowed beyond apex, touched nerves, and required surgical removal.
- **MTA:** Amazing biocompatibility but let it harden beyond apex and now you have a rigid obstruction instead of a friend.

In my PG, almost every permanent tooth we treated had an open apex. Endodontists swear by sodium hypochlorite “the ultimate irrigant.” But with open apices, we weren’t allowed to use them. We used inferior irrigants like chlorhexidine and saline.

Why? Because success comes from choosing what the case demands, not what the textbook prefers.

The philosophy the books don’t teach

Books talk endlessly about behavior management: Tell-show-do. Explain. Demonstrate. Stay honest.

But try telling a child, “I’m going to extract your tooth now,” and then proudly showing them the forceps.

Will they let you do it? No.

So, is the method wrong? No but the situation decides the method, not the method itself.

Biocompatibility is not only tissue reaction. It is:

- How forgiving the material is when the child jerks
- How safely it resorbs
- How much pain it causes in the moment
- How it behaves in real, imperfect clinical conditions

Primary teeth are full of contradictions wide canals, open apices, limited cooperation, unpredictable anatomy. And yet, these tiny teeth heal beautifully when you understand two things:

1. Materials have limits
2. Biology has immense forgiveness

Real education begins after the degree

After postgraduate training, I was a well-educated pedodontist. But practice made me do something else, a skilled pedodontist.

Textbooks give ingredients. Workshops give recipes. But true practice is the flame it teaches you how much heat the dish needs, what to add more of, what to remove, and when to trust your senses over instructions. You cook differently for every child. You adjust your protocols like a chef adjusts

seasoning. That’s why two dentists, with the same degree and same training, can have completely different outcomes.

Not because one knows more theory. But because one knows how to listen to the tooth, and the other listens only to the book.

What Is “biocompatible material” really?

Not “harmless.” Not “perfect.” Not “do whatever you want.”

Biocompatible means the body can handle it if you respect its limits.

- Gutta Percha is biocompatible until it crosses the border.
- Bioceramic is biocompatible until it touches a nerve.
- Metapex is biocompatible and even forgiving but only if you don’t abuse its softness.

Open apices? Close them with MTA before using any sealer. That’s non-negotiable.

Primary teeth? Metapex is your best friend but only if you understand its temperament.

In the end, materials are tools. Judgment is the real treatment. And judgment comes only from scars, failures, frustrations, and 1000 pulpectomies worth of tactile wisdom.

“In nothing do men more nearly approach the gods than in giving health to men” – Cicero