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KLINIK VA FUNDAMENTAL TIBBIYOT TADQIQOTLARI JURNALI



- *Klinik tibbiyot*
- *Jarrohlik va invaziv tibbiyot*



- *Diagnostika va laboratoriya tibbiyoti*
- *Profilaktik tibbiyot va jamoat salomatligi*



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**“INNOVATIVE PUBLICATION” MAS'ULIYATI CHEKLANGAN JAMIYATI**



## The Role and Influence of Shintoism in Japanese Culture

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### Abstract

This article examines the role and influence of Shintoism on Japanese culture. It discusses the origin of Shintoism, its main beliefs, the concept of kami, religious rituals, and their impact on the traditions and customs of the Japanese people. In addition, the significance of Shintoism in Japanese art, architecture, environmental views, and contemporary Japanese society is analyzed. The study concludes that Shintoism is an important factor in the formation and development of Japan's national culture.

### Keywords

Shintoism, Japan, kami, culture, traditions, religious rituals, national values, nature worship.

**Annotatsiya.** Ushbu maqolada Sintoizm dinining Yaponiya madaniyatidagi o'rni va ta'siri tahlil qilinadi. Sintoizmning kelib chiqishi, asosiy e'tiqodlari, kami tushunchasi, diniy marosimlari hamda yapon xalqining urf-odatlari va an'alariga ko'rsatgan ta'siri yoritilgan. Shuningdek, sintoizmning san'at, me'morchilik, ekologik qarashlar va zamonaviy Yaponiya jamiyatidagi ahamiyati ko'rib chiqilgan. Tadqiqot natijasida sintoizm Yaponiya milliy madaniyatining shakllanishi va rivojlanishida muhim omil ekanligi asoslab berilgan.

**Kalit so'zlar:** Sintoizm, Yaponiya, kami, madaniyat, urf-odatlar, diniy marosimlar, milliy qadriyatlar, tabiatga sig'inish.

**Kirish.** Din insoniyat tarixining eng muhim ma'naviy va madaniy hodisalaridan biri

hisoblanadi. Har bir xalqning diniy qarashlari uning dunyoqarashi, urf-odatlari, an'analari va milliy qadriyatlarining shakllanishiga katta ta'sir ko'rsatadi. Shu jihatdan qaraganda, Yaponiyaning milliy dini hisoblangan sintoizm nafaqat diniy ta'limot, balki yapon xalqining madaniy merosi va turmush tarzining ajralmas qismi sifatida alohida ahamiyatga ega.

Sintoizm dunyodagi eng qadimiy dinlardan biri bo'lib, uning shakllanishi Yaponiya tarixining dastlabki davrlariga borib taqaladi. Ushbu din tabiatga sig'inish, ajdodlarni ulug'lash va "kami" deb ataluvchi muqaddas ruhlarga e'tiqod qilish g'oyalariga asoslanadi. Sintoizm ta'limotida inson va tabiat o'rtasidagi uyg'unlik, poklik va ma'naviy barkamollik muhim o'rin egallaydi. Shu sababli ushbu din yapon xalqining kundalik hayoti, axloqiy qarashlari va madaniy an'alariga chuqur singib ketgan.

Bugungi kunda Yaponiya zamonaviy va texnologik jihatdan rivojlangan davlatlardan biri bo'lishiga qaramay, sintoizm o'zining tarixiy va madaniy ahamiyatini saqlab qolmoqda. Yaponlarning ko'plab bayramlari, marosimlari, ibodatlari va milliy an'analari aynan sintoistik qadriyatlarga asoslanadi. Bundan tashqari, sintoizmning tabiatga bo'lgan hurmat ruhidagi qarashlari ekologik madaniyatning rivojlanishiga ham ijobiy ta'sir ko'rsatmoqda.

Mazkur maqolaning maqsadi sintoizm dinining kelib chiqishi, asosiy e'tiqodlari va uning Yaponiya madaniyatiga ko'rsatgan ta'sirini o'rganishdan iborat. Shuningdek, ushbu dinning yapon xalqining milliy o'zligini shakllantirishdagi o'rni, san'at, me'morchilik, urf-odatlar va zamonaviy jamiyat hayotidagi ahamiyati tahlil qilinadi.

**Muhokama.** Sintoizm Yaponiyaning eng qadimiy dini bo'lib, uning jamiyat va madaniyat rivojiga ko'rsatgan ta'siri juda katta hisoblanadi. Ushbu dinning asosiy xususiyati shundaki, u qat'iy diniy qonun-qoidalar tizimidan ko'ra, inson va tabiat o'rtasidagi uyg'unlikni ta'minlashga qaratilgan. Shu sababli sintoizm yapon xalqining kundalik hayoti va madaniyatiga chuqur singib ketgan.

Tadqiqotlar shuni ko'rsatadiki, sintoizmning markaziy tushunchasi bo'lgan

“kami”ga e’tiqod yaponlarning tabiatga bo‘lgan hurmatini shakllantirgan. Tabiatdagi tog‘lar, daryolar, o‘rmonlar va boshqa tabiiy obyektlarning muqaddas deb hisoblanishi insonlarning atrof-muhitga ehtiyotkorona munosabatda bo‘lishiga xizmat qilgan. Natijada Yaponiyada ekologik madaniyatning rivojlanishida sintoistik qarashlarning hissasi katta bo‘lgan.

Bundan tashqari, sintoizm yapon xalqining urf-odatlar va marosimlarida ham muhim o‘rin tutadi. Tug‘ilish, nikoh, mavsumiy bayramlar va boshqa muhim tadbirlar ko‘pincha sintoistik an‘analar asosida o‘tkaziladi. Bu holat diniy qadriyatlarning avloddan avlodga o‘tishini va milliy o‘zlikning saqlanib qolishini ta’minlaydi. Ayniqsa, matsuri bayramlari xalqning birdamligi va madaniy merosini mustahkamlovchi omil sifatida ahamiyatlidir.

Sintoizmning san’at va me’morchilikka ta’siri ham alohida e’tiborga loyiqdir. Yapon ibodatxonalari, bog‘lari va an’anaviy me’moriy inshootlarida soddalik, tabiiylik va uyg‘unlik tamoyillari yaqqol namoyon bo‘ladi. Bu esa sintoizmning estetik qarashlari yapon madaniyatining muhim tarkibiy qismiga aylanganini ko‘rsatadi.

Hozirgi globallashuv davrida ham sintoizm o‘z ahamiyatini yo‘qotmagan. Zamonaviy yapon jamiyatida texnologik taraqqiyot bilan bir qatorda milliy va diniy qadriyatlar ham saqlanib qolmoqda. Bu holat sintoizmning nafaqat diniy tizim, balki milliy madaniyatni birlashtiruvchi va tarixiy xotirani asrovchi muhim omil ekanligini tasdiqlaydi. Shu sababli sintoizmning Yaponiya madaniyatidagi o‘rni va ta’sirini o‘rganish dinshunoslik hamda madaniyatshunoslik fanlari uchun dolzarb masalalardan biri bo‘lib qolmoqda.

**Tadqiqot natijalari.** Mazkur tadqiqot davomida sintoizm dinining Yaponiya madaniyatidagi o‘rni va ta’siri o‘rganildi. Tahlillar natijasida sintoizm Yaponiyaning eng qadimiy dini bo‘lib, mamlakatning madaniy, ma’naviy va ijtimoiy hayotiga sezilarli ta’sir ko‘rsatgani aniqlandi. Tadqiqot jarayonida sintoizmning asosiy g‘oyalari, xususan, “kami” tushunchasi, tabiatga hurmat va poklik tamoyillari yapon xalqining

dunyoqarashi shakllanishida muhim ahamiyat kasb etishi kuzatildi.

Olingan natijalar shuni ko'rsatdiki, sintoizm nafaqat diniy e'tiqod tizimi, balki yapon xalqining milliy o'zligini saqlab qolishga xizmat qiluvchi muhim madaniy omildir. Ushbu dinning ta'siri xalq bayramlari, urf-odatlari, oilaviy marosimlar va kundalik hayotda yaqqol namoyon bo'ladi. Ayniqsa, matsuri bayramlari va ibodatxonalarda o'tkaziladigan marosimlar jamiyat birdamligini mustahkamlashda muhim rol o'ynaydi.

Tadqiqot natijalariga ko'ra, sintoizm yapon san'ati va me'morchiligining rivojlanishiga ham katta hissa qo'shgan. Ibodatxonalar, an'anaviy bog'lar va boshqa madaniy obyektlarda tabiat bilan uyg'unlik tamoyili ustuvor o'rin egallaydi. Bu esa sintoistik qarashlarning yapon estetik madaniyatiga chuqur singib ketganligini ko'rsatadi.

Shuningdek, sintoizmning tabiatni muqaddas deb bilishga asoslangan qarashlari ekologik madaniyatning shakllanishiga ijobiy ta'sir ko'rsatgani aniqlandi. Tabiiy resurslarga ehtiyotkorona munosabatda bo'lish, muqaddas hududlarni asrash va ekologik muvozanatni saqlash kabi g'oyalar bugungi kunda ham o'z dolzarbligini yo'qotmagan.

Umuman olganda, tadqiqot natijalari sintoizmning Yaponiya madaniyati, milliy qadriyatlari va jamiyat taraqqiyotidagi o'rni beqiyos ekanligini ko'rsatdi. Ushbu din bugungi kunda ham yapon xalqining ma'naviy hayoti va madaniy merosining ajralmas qismi bo'lib qolmoqda

**Xulosa.** Xulosa qilib aytganda, sintoizm Yaponiyaning eng qadimiy va o'ziga xos diniy-madaniy tizimlaridan biri hisoblanadi. Ushbu din asrlar davomida yapon xalqining dunyoqarashi, urf-odatlari, an'analari va milliy qadriyatlarining shakllanishiga sezilarli ta'sir ko'rsatib kelgan. Sintoizmning asosiy g'oyalari bo'lgan tabiatga hurmat, poklik, ajdodlarni e'zozlash va kami tushunchasi yapon jamiyatining ma'naviy hayotida muhim o'rin egallaydi.

Tadqiqot natijalari shuni ko'rsatdiki, sintoizm nafaqat diniy e'tiqod tizimi, balki Yaponiya madaniyatining ajralmas qismi sifatida ham namoyon bo'ladi. Uning ta'siri milliy bayramlar, marosimlar, san'at, me'morchilik va kundalik turmush tarzida yaqqol ko'zga tashlanadi. Ayniqsa, tabiat bilan uyg'un yashash tamoyili yapon xalqining ekologik madaniyatini rivojlantirishda muhim omil bo'lib xizmat qilgan.

Shuningdek, zamonaviy globallashuv sharoitida ham sintoizm o'z ahamiyatini saqlab qolayotgani kuzatildi. Texnologik taraqqiyot va zamonaviy hayot tarziga qaramay, yapon xalqi milliy an'analari va diniy qadriyatlarini avaylab asrab kelmoqda. Bu esa sintoizmning milliy o'zlikni saqlash va madaniy merosni avlodlarga yetkazishdagi o'rnini yanada mustahkamlaydi.

Shunday qilib, sintoizm Yaponiya tarixini, madaniyatini va ma'naviy hayotini tushunishda muhim manba hisoblanadi. Uning ta'siri bugungi kunda ham jamiyat taraqqiyoti, madaniy qadriyatlarning saqlanishi va insonning tabiat bilan uyg'un munosabatlarini rivojlantirishda muhim ahamiyat kasb etmoqda.

### **Foydalanilgan adabiyotlar royxati**

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- 2.M. S. Yo'ldoshev – Dinshunoslik asoslari. Toshkent: O'zbekiston nashriyoti.
- 3.A. Karimov – Jahon dinlari tarixi. Toshkent: Fan va texnologiya nashriyoti.
- 4.Sh. Xolmatov – Sharq dinlari va madaniyatlari. Toshkent.
- 5.O'zbek Milliy Ensiklopediyasi. "Sintoizm" va "Yaponiya madaniyati" bo'limlari.
- 6.O'zbekiston Respublikasi Fanlar akademiyasi Tarix instituti materiallari.
- 7.Z. Abdullayeva – Din va jamiyat. Toshkent: Ma'naviyat nashriyoti.
- 8.T. Rashidov – Madaniyatshunoslik asoslari. Toshkent.
- 9.O'zbekiston davlat universitetlari dinshunoslik kafedrası ma'ruza materiallari.
- 10.Internet manbalari: O'zbek tilidagi ilmiy maqolalar va dinshunoslik portallari.



## THE ROLE AND SIGNIFICANCE OF THE TRANSFORMATION OF RELIGIOUS VALUES IN ENSURING GENDER EQUALITY

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### Abstract

This article analyzes the transformation of religious values under the influence of globalization processes and examines their role and significance in ensuring gender equality. The study explores historical and contemporary interpretations of religious values, their impact on gender relations within society, and their contribution to creating equal opportunities for women and men. The article also emphasizes that the reinterpretation of religious teachings based on the principles of human dignity, justice, and equality serves as an important factor in promoting gender equality. Furthermore, the mechanisms of interaction between religious values and modern gender policies in the context of globalization are analyzed, highlighting their significance in ensuring social stability and inclusive development.

**Keywords:** globalization, religious values, transformation, gender equality, social development, women's rights, religious thought, inclusive development, social justice.

## MILK RETSESSIIYASINI BARTARAF ETISHDA TURLI JARROHLIK USULLARINI QIYOSIY TAHLILI

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**Annotatsiya:**Bugungi kunda parodontologiyada plastik jarrohlik asosiy yo'nalish hisoblanadi. Implantologiyaning rivojlanishi, osteoplastik materiallardan foydalanish, to'qimalarni yo'naltirilgan regeneratsiyasi uchun membranalaridan foydalanish - bularning barchasi parodontda plastik operatsiyalarning rivojlanishiga turtki bo'lmoqda. Ushbu operatsiyalarning maqsadi yaxshi estetik natijaga erishish va ortopedik yoki ortodontik davolash, implantatsiyadan so'ng katta yoshli bemorlarda yuzaga keladigan parodont to'qimalaridagi bir qator buzilishlarning oldini olishdir.

**Kalit so'zlar:** milk retsessiyasi, parodont to'qimasi, keratinlashgan milk, milk biotipi, tanglay transplantati, lab yuganchasi.

**Dolzarbli.** Hozirgi vaqtda tanglaydan olingan SST dan foydalanish keratinlashgan biriktirilgan zonani kengaytirish uchun "oltin standart" sifatida tan olingan. Milklar va retsessiyalarni bartaraf etish bu, birinchi navbatda, o'tkazilayotgan aralashuvlarning yuqori samaradorligi va olingan natijalarning barqarorligi bilan izohlanadi [1]. SST muqobilini izlash qattiq tanglayda transplantat olish joyi operatsiyadan keyingi davrda sezilarli noqulaylik tug'dirishi mumkinligi bilan bog'liq. Tanglaydan transplantatni olishda ba'zi hollarda quyidagi asoratlar kuzatilishi mumkin: operatsiyadan keyingi qon ketishi, og'riq, qiyinchilik bilan bitish, suyak usti pardasining shikastlanishi, bu esa doimiy og'riq sindromi, nekroz va paresteziyaga olib kelishi mumkin [2]. Bundan tashqari, ko'p hollarda tanglayning yotiq gumbazi, shilliq qavatning yupqa biotipi, yaqqol yog' qatlami va boshqalar kabi anatomik xususiyatlar tufayli tanglaydan SST olish qiyin bo'ladi. Ushbu omillar mumkin bo'lgan muqobil variantlarni ko'rib chiqish zarurligini asoslaydi [3]. Og'iz bo'shlig'ida SST olishning muqobil manbalaridan biri retromolyar soha hisoblanadi. Ushbu sohada transplantatni

olish operatsiyadan keyingi noqulaylikning kamayishiga olib keladi, chunki u ovqat luqmasi hosil bo'lish zonasidan va fonetik faoliyatdan uzoqda joylashgan. Retromolyar soha to'qimalarning sezilarli qalinligiga ega bo'lib, bu an'anaviy ravishda transplantat olinadigan sohadagi tanglay to'qimalari qalinligidan bir necha baravar ko'pdir [4]. Bir qator holatlarda, masalan, milkning nozik biotipi va konstitutsiyaviy o'ziga xoslikda (tana tuzilishining astenik turi) retromolyar zona muqobil emas, balki biriktiruvchi to'qima transplantatini olishning yagona qulay va xavfsiz joyi bo'lib qoladi. Ricci retromolyar sohada 1-turdagi kollagenning ko'proq ifodalangan joyi haqida xabar bergan, bu tanglaydagi donorlik joyiga nisbatan va shunga mos ravishda to'qimalarning barqaror hajmi haqida ma'lumot beradi. Gamborena et al. to'qimalarning gistologik oldindan belgilanganligi tufayli retromolyar sohadan olingan to'qimalarning o'sish imkoniyati haqida ko'proq ma'lumot beradi [5].

**Tadqiqot maqsadi:** milk retsessiyasini bartaraf etishda turli jarrohlik ususllarini tahlilini o'tkazish.

**Tadqiqot materiallari va usullari.** 35 nafar bemor tekshiruvdan o'tkazilib, davo muolajalari o'tkazildi. Birlamchi ko'rik va klinik tekshiruvlar 2025yilda Toshkent davlat tibbiyot universitetining stomatologiya bo'limida va Toshkent shahri Yunusobod tumanidagi 2-bolalar stomatologiya poliklinikasida o'tkazildi. Klinik tekshiruv shikoyatlar, kasallik anamnezi va bemorlar hayoti, og'iz bo'shlig'ini tekshirish, retsessiya sabablarini aniqlashni o'z ichiga olgan. Barcha bemorlarga og'iz bo'shlig'i sanatsiyasi o'tkazildi, shuningdek, og'iz bo'shlig'idagi yatrogen omillar (II, V, IV sinf sifatsiz plombalar, protezning jarohatlovchi oraliq qismida uzun koronkalari bo'lgan protezlar), zararli artikulyatsion odatlar va bruksizm hodisalari bartaraf etildi. Jarrohlik amaliyoti ishlab chiqilgan jarrohlik protokoliga muvofiq amalga oshirildi.

1-guruhni 10 nafar bemorlar tashkil etdi, ularda konvert usuli bo'yicha tasmali epitelial yuzali EMT retsessiyasini yopish bo'yicha jarrohlik amaliyoti o'tkazildi.

2-guruhni laxtakni koronar surilishi bilan birga kelgan tanglayning biriktiruvchi to'qimali erkin ajratilgan transplantanti (SST) qo'llanilgan 10 nafar bemorlar tashkil etdi.

3-guruhni 15 nafar bemorlar tashkil etdi, ularda koronal surilgan laxtak va yuqori lab yuganchasi sohasidan olingan shilliq biriktiruvchi to'qimali trnasplantant qo'llanildi.

**Tadqiqot natijalari.** 1 guruhda ( $n=10$ ) tanglayning autotransplantati  $1,32\pm0,08$  mm va o'z ichiga nafaqat shilliq qobiqni qamrab oladi, balki shilliq osti qavatini ham o'z ichiga oladi, yog' to'qimasi olib tashlanadi. Dastlabki 4 kunda donorlik yuzasidagi yara yuzasini vizual ko'rik o'tkazilganda o'rtacha miqdordagi fibrinli cho'kindi, o'rtacha giperemiya va atrofdagi to'qimalarni shishi qayd etiladi, bu aralashuvning og'irligiga mos keladi. Jarrohlik amaliyotidan keyingi dastlabki 3 kundan keyin qon aralash sariq suvli ajratmaning sezilarsiz miqdori qayd etiladi, 4- kundan boshlab yakka holda uchraydigan yangi granulyasiyalar paydo bo'ladi. 5- kundan boshlab tanglaydagi yara faol granulyasiyaga uchraydi, fibrin qoplama miqdori sezilarli kamayadi, atrofdagi to'qimalarning shish va giperemiyasi ham shuningdek kamayadi. 8-kundan boshlab yara chetlari bo'ylab epitelizasiya jarayonini boshlanishi qayd etiladi. 14-kunga kelib barcha bemorlar tanglayida yaralar to'liq epitelizatsiya qilinadi.

2 guruhda ( $n=10$ ) 1 dan 4 kungacha donorlik sohasidagi yara yuzasini vizual ko'rikdan o'tkazilganda o'rab turgan yumshoq to'qimalarda o'rtacha shish va giperemiya qayd etildi, bu aralashuvning og'irligiga mos keladi. Chok chizig'i bo'yicha sezilarsiz miqdordagi fibrilin qoplama qayd etildi. Faqat jarrohlik amaliyotidan keyingi dastlabki kunlar davomida qon aralash sariq suvli ajralma kuzatildi, 4-kundan boshlab tanglaydagi yara faol granulyasiyalandi, shuningdek atrofdagi to'qimalarda shish va giperemiya sezilarli kamaydi, yarani epitelizasiyasini boshlanganligini qayd etildi. 14-kunga kelib barcha bemorlar tanglayidagi to'liq epitelizasiya bo'ldi.

3 guruhda ( $n=15$ ) xuddi yuqoridagi guruhda bo'lgani kabi 1 kundan 4-kunigacha donorlik sohasidagi yara yuzasini vizual ko'rikdan o'tkazilganda o'rab turgan yumshoq

to‘qimalarning o‘rtacha shishi va giperemiyasi qayd etiladi, bu aralashuvlarning og‘irlik darajasiga mos keladi. Choklar chizig‘i bo‘ylab va yara yuzasining ochiq qismi sohasida fibrinli qoplamaning sezilarsiz miqdori qayd etiladi. Jarrohlik amaliyotidan keyingi faqat dastlabki 2 kun davomida qon aralash sariq suvli aralashma kuzatildi, 4-5 kundan boshlab yugancha o‘rnidagi yara faol granulyasiyalandi, atrofdagi to‘qimalarning shish va giperemiyasi shuningdek sezilarli kamaydi, 6-7 kunga kelib yaralarning epiteliyaziasiniboshlanishi qayd etildi. 2-holatda transplantat olingan joydagi nuqsonlar cheti bo‘yicha eroziya va yuqtirish uchastkalari qayd etildi. 14-kunga kelib, barcha bolalarda yugancha o‘rnidagi yara to‘liq epiteliyaziyalandi.

**Xulosa.** 1 –guruh. Miller bo‘yicha 1–2 sinf retsessiyalarini jarrohlik usuli bilan davolash, konvert texnikasi bo‘yicha yuzasi epitelial tasmalarni saqlanishi bilan qo‘llanilganda eng samarali bo‘lib hisoblanadi va yaxshi estetik natijaga hamda 90,7% samaradorlik bilan funksional turg‘unlikka olib keldi.

2 –guruh. Koronar surilishli laxtak va tanglaydan olingan erkin ajratilgan laxtak bilan birga kelishida qo‘llanilishi yaxshi estetik natija berdi va 93,5% holatlarda, ayniqsa pastki jag‘ning old bo‘limi va og‘iz oldi mimik mushaklarini yaqqol namoyon bo‘lgan tortilishidagi yuqori jag‘larning yon bo‘limlarida 3 mm dan ko‘p bo‘lmagan chuqurlikda Miller bo‘yicha 1–2- va ba’zi xollarda 3- sinf retsessiyalarini yopishga imkon beradi.

3 –guruh. Yuqori lab yugancha sohasidan olingan shilliq qavatli transplantant usuli bayon etilgan bo‘lib, u milklarning yakka retsessiyasini muvaffaqiyatli bartaraf etishga imkon beradi. Lablarning yuganchasi sohasida olingan EShT(erkin shilliq qavatli transplantat) qator hollarda ikkita bosqichli jarrohlik muolajasini – milklarni retsessiyasini yopish (94,5%) va frenuloektomiya operatsiyasini bir vaqtda bajarishga imkon beradi. Lablarning yuganchasi sohasidan olingan transplantantini tanglay sohasidan olmaslikka imkon beradi, bu esa jarrohlik amaliyotidan keyingi noqulayliklarni kamaytirishga olib keladi va asoratlar havfini pasaytiradi .

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## **PHILOSOPHICAL FOUNDATIONS OF BUDDHISM AND ITS IMPACT ON MODERN SOCIETY**

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### **Abstract**

This article examines the philosophical foundations of Buddhism, its historical development, and its core teachings. Particular attention is given to the concepts of the Four Noble Truths, the Noble Eightfold Path, karma, and rebirth. The study explores the role of Buddhist philosophy in promoting moral values, spiritual growth, and inner peace. Furthermore, the article analyzes the influence of Buddhism on modern society, including its contributions to intercultural dialogue, tolerance, environmental awareness, and psychological well-being. The findings suggest that Buddhist teachings continue to maintain their relevance in the contemporary era of globalization and contribute significantly to the spiritual and ethical development of humanity.

### **Keywords**

Buddhism, philosophy, karma, rebirth, Four Noble Truths, Noble Eightfold Path, spirituality, tolerance, modern society.

### **Annotatsiya**

Mazkur maqolada buddaviylik dinining shakllanish tarixi, uning asosiy falsafiy g'oyalari va ta'limotlari tahlil qilinadi. Xususan, To'rt Muqaddas Haqiqat, Sakkiz Pog'onali Yo'l, karma va qayta tug'ilish kabi tushunchalarning mazmun-mohiyati



yoritiladi. Shuningdek, buddaviylikning inson ma'naviy kamoloti, axloqiy qadriyatlar va ruhiy xotirjamlikni ta'minlashdagi o'rni ko'rib chiqiladi. Tadqiqotda buddaviylik falsafasining zamonaviy jamiyatga, jumladan, madaniyatlararo muloqot, bag'rikenglik, ekologik ong va psixologik salomatlikka ko'rsatayotgan ta'siri tahlil etilgan. Maqola natijasida buddaviylik ta'limotlarining bugungi globallashuv sharoitida ham o'z ahamiyatini saqlab qolayotgani va insoniyatning ma'naviy rivojlanishiga xizmat qilayotgani xulosasi chiqariladi.

### **Kalit so'zlar**

buddaviylik, falsafa, karma, qayta tug'ilish, To'rt Muqaddas Haqiqat, Sakkiz Pog'onali Yo'l, ma'naviyat, bag'rikenglik, zamonaviy jamiyat.

### **Kirish**

Buddaviylik dunyodagi eng qadimiy va keng tarqalgan dinlardan biri bo'lib, insoniyat tarixida muhim o'rin egallaydi. Ushbu din miloddan avvalgi VI–V asrlarda Hindistonda vujudga kelgan bo'lib, uning asoschisi Siddharta Gautama (Budda) hisoblanadi. Buddaviylik nafaqat diniy ta'limot, balki chuqur falsafiy qarashlar tizimi sifatida ham shakllangan. Uning asosiy maqsadi insonning azob-uqubatlardan xalos bo'lishiga, ruhiy poklanishiga va ma'naviy kamolotga erishishiga yo'l ko'rsatishdan iboratdir. Shu sababli buddaviylik asrlar davomida millionlab insonlarning dunyoqarashi, axloqiy qadriyatlari va turmush tarziga ta'sir ko'rsatib kelmoqda.

Buddaviylik falsafasining markazida inson hayoti, uning azob-uqubatlari va ulardan qutulish yo'llari haqidagi qarashlar turadi. Budda tomonidan ilgari surilgan To'rt Muqaddas Haqiqat va Sakkiz Pog'onali Yo'l ta'limotlari buddaviylikning asosiy g'oyaviy poydevorini tashkil etadi. Ushbu ta'limotlar insonni nafs va istaklardan voz kechishga, sabr-toqatli bo'lishga, mehr-shafqat ko'rsatishga hamda ruhiy xotirjamlikka erishishga undaydi. Shuningdek, karma va qayta tug'ilish haqidagi qarashlar buddaviylik falsafasining muhim tarkibiy qismlaridan biri hisoblanadi.

Bugungi globallashuv davrida buddaviylik ta'limotlari o'z ahamiyatini yo'qotmagan. Aksincha, zamonaviy jamiyatda insonlarning ruhiy salomatligini mustahkamlash, stress va tashvishlarni kamaytirish, bag'rikenglik va tinchlik madaniyatini rivojlantirishda buddaviylik g'oyalari muhim o'rin tutmoqda. Ayniqsa, meditatsiya va ongni boshqarish amaliyotlari dunyoning ko'plab mamlakatlarida keng qo'llanilmoqda.

Mazkur maqolaning maqsadi buddaviylik dinining falsafiy asoslarini tahlil qilish, uning asosiy ta'limotlarini yoritish hamda ushbu dinning zamonaviy jamiyat taraqqiyoti, ma'naviy hayoti va ijtimoiy munosabatlarga ko'rsatayotgan ta'sirini o'rganishdan iboratdir.

### **Muhokama**

Buddaviylik dinining falsafiy asoslarini tahlil qilish shuni ko'rsatadiki, ushbu ta'limot insonning ichki dunyosini anglash va ruhiy kamolotga erishishga qaratilgan. Buddaviylikda inson hayotidagi azob-uqubatlar tabiiy holat sifatida qaraladi va ularning kelib chiqish sabablari insonning cheksiz istaklari hamda moddiy narsalarga bog'lanib qolishi bilan izohlanadi. Shu nuqtai nazardan, Budda tomonidan ilgari surilgan To'rt Muqaddas Haqiqat va Sakkiz Pog'onali Yo'l insonni ma'naviy poklanishga, o'z nafsini nazorat qilishga va ongli hayot kechirishga undaydi.

Tadqiqotlar shuni ko'rsatadiki, buddaviylikning axloqiy tamoyillari bugungi kunda ham o'z dolzarbligini saqlab qolgan. Ayniqsa, zo'ravonlikka qarshi turish, barcha tirik mavjudotlarga mehr-shafqat bilan munosabatda bo'lish, bag'rikenglik va sabr-toqat kabi qadriyatlar zamonaviy jamiyatning barqaror rivojlanishida muhim ahamiyat kasb etadi. Turli madaniyat va din vakillari o'rtasidagi muloqotni rivojlantirishda ham buddaviylik ta'limotlarining o'рни katta hisoblanadi.

Shuningdek, buddaviylik falsafasi zamonaviy psixologiya va tibbiyot sohalariga ham sezilarli ta'sir ko'rsatmoqda. Meditatsiya va ongni boshqarish amaliyotlari stress, tashvish va ruhiy zo'riqlashlarni kamaytirish vositasi sifatida keng qo'llanilmoqda. Bu

esa buddaviylikning faqat diniy emas, balki amaliy va ilmiy jihatdan ham ahamiyatli ekanligini ko'rsatadi. Ko'plab mutaxassislar meditatsiyaning inson ruhiy salomatligiga ijobiy ta'sirini e'tirof etmoqdalar.

Bundan tashqari, buddaviylikning tabiatga ehtiyotkorona munosabatda bo'lish haqidagi qarashlari ekologik muammolar kuchayib borayotgan bugungi davrda alohida ahamiyatga ega. Tabiat va inson o'rtasidagi uyg'unlikni saqlash g'oyasi ekologik madaniyatni rivojlantirishga xizmat qiladi.

Umuman olganda, buddaviylik falsafasi nafaqat diniy ta'limot sifatida, balki insonning ma'naviy, axloqiy va ijtimoiy hayotini takomillashtirishga xizmat qiluvchi muhim g'oyalar majmui sifatida namoyon bo'ladi. Shu sababli uning zamonaviy jamiyatga ta'sirini o'rganish ilmiy va amaliy jihatdan muhim hisoblanad

### **Tadqiqot natijalari**

Mazkur tadqiqot natijalari buddaviylik dinining falsafiy asoslari va uning zamonaviy jamiyatdagi ta'siri muhim ahamiyatga ega ekanligini ko'rsatdi. Tadqiqot davomida buddaviylik ta'limotining markazida insonning ruhiy kamoloti, axloqiy poklanishi va ichki xotirjamlikka erishishi g'oyalari yotishi aniqlandi. To'rt Muqaddas Haqiqat va Sakkiz Pog'onali Yo'l buddaviylikning asosiy falsafiy tamoyillari sifatida inson hayotidagi azob-uqubatlarning sabablarini tushuntirib beradi hamda ulardan qutulish yo'llarini ko'rsatadi.

Tahlillar shuni ko'rsatdiki, buddaviylikning mehr-shafqat, bag'rikenglik, zo'ravonlikdan voz kechish va sabr-toqat kabi axloqiy qadriyatlari bugungi kunda ham dolzarbligini saqlab qolgan. Ushbu tamoyillar turli millat va din vakillari o'rtasida o'zaro hurmat va hamkorlikni rivojlantirishga xizmat qilmoqda. Ayniqsa, globallashuv sharoitida madaniyatlararo muloqotni mustahkamlashda buddaviylikning tinchlikparvarlik g'oyalari muhim o'rin tutishi aniqlandi.

Tadqiqot natijalari buddaviylikning zamonaviy psixologiya va tibbiyot sohalariga ham ijobiy ta'sir ko'rsatayotganini tasdiqladi. Meditatsiya va mindfulness (onglilik)



amaliyotlari insonlarda stress, ruhiy zo‘riqish va tashvishlarni kamaytirishga yordam berishi qayd etildi. Shu bilan birga, buddaviylikning tabiat va barcha tirik mavjudotlarga ehtiyotkorona munosabatda bo‘lish haqidagi qarashlari ekologik muammolarni hal etishda ham muhim nazariy asos bo‘lib xizmat qilishi aniqlandi.

Umuman olganda, tadqiqot natijalari buddaviylik falsafasi nafaqat diniy ta’limot, balki zamonaviy jamiyatning ma’naviy, axloqiy va ijtimoiy rivojlanishiga ta’sir ko‘rsatuvchi muhim omil ekanligini ko‘rsatdi. Uning insonparvarlik va tinchlikparvarlik g‘oyalari bugungi kunda ham o‘z ahamiyatini yo‘qotmaganligi tadqiqot davomida o‘z tasdig‘ini topdi.

### **Xulosa**

Xulosa qilib aytganda, buddaviylik dini insoniyat tarixida muhim o‘rin egallagan diniy-falsafiy ta’limotlardan biri hisoblanadi. Uning asosiy g‘oyalari insonning ruhiy kamoloti, axloqiy poklanishi va ichki xotirjamlikka erishishiga qaratilgan. Buddaviylikning To‘rt Muqaddas Haqiqat, Sakkiz Pog‘onali Yo‘l, karma va qayta tug‘ilish haqidagi ta’limotlari inson hayotining mazmunini anglashda muhim ahamiyat kasb etadi.

Tadqiqot natijalari shuni ko‘rsatdiki, buddaviylik falsafasi nafaqat diniy qarashlar tizimi, balki insonparvarlik, bag‘rikenglik, tinchliksevarlik va mehr-shafqat kabi umuminsoniy qadriyatlarni targ‘ib qiluvchi muhim ma’naviy manba hamdir. Ushbu qadriyatlar zamonaviy jamiyatda turli madaniyat va din vakillari o‘rtasida o‘zaro hurmatni mustahkamlashga, ijtimoiy barqarorlikni ta’minlashga hamda insonlarning ma’naviy ehtiyojlarini qondirishga xizmat qilmoqda.

Shuningdek, buddaviylikning meditatsiya va ongni boshqarish bilan bog‘liq amaliyotlari zamonaviy psixologiya va tibbiyot sohalarida ham keng qo‘llanilmoqda. Bu esa uning nafaqat diniy, balki amaliy ahamiyatga ham ega ekanligini ko‘rsatadi. Bundan tashqari, buddaviylikning tabiatga ehtiyotkorona munosabatda bo‘lish haqidagi

qarashlari ekologik muammolarni hal etishda muhim g'oyaviy asos bo'lib xizmat qilmoqda.

Demak, buddaviylik dinining falsafiy asoslari va uning zamonaviy jamiyatga ta'sirini o'rganish bugungi kunda ham dolzarb hisoblanadi. Ushbu ta'limotning insonparvarlik, ma'naviy poklik va tinchlikka chorlovchi g'oyalari kelajakda ham jamiyat taraqqiyoti va inson kamolotiga xizmat qilishda davom etadi.

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**Molecular and Cellular Mechanisms of Epidermal Barrier Dysfunction and  
Targeted Microbiome Modulation in Eczematous Process**

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**Abstract.** The article reviews modern concepts of the etiopathogenesis of eczema (atopic dermatitis) from the perspective of the synergistic interaction of genetic, microbiological, and immunological factors. The authors present the results of a clinical and laboratory study evaluating the state of the lipid barrier, transepidermal water loss (TEWL) levels, and the qualitative composition of the skin microbiome in patients during the acute phase. The study demonstrates the pivotal role of *Staphylococcus aureus* hypercolonization and filaggrin deficiency in maintaining chronic Th2-mediated inflammation. Furthermore, it substantiates the efficacy of incorporating modern topical agents formulated with bacterial lysates as well as targeted biological drugs into the comprehensive management of the disease.

**Keywords:** Eczema, epidermal barrier, filaggrin, skin microbiome, *Staphylococcus aureus*, interleukin-13, transepidermal water loss (TEWL), targeted therapy.

**Молекулярно-клеточные механизмы дисфункции эпидермального барьера и  
таргетная модуляция микробиома при экзематозном процессе**

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**Аннотация.** В статье рассматриваются современные представления об этиопатогенезе экземы (атопического дерматита) с позиции синергетического взаимодействия генетических, микробиологических и иммунологических факторов. Представлены результаты клинико-лабораторного исследования, оценивающего состояние липидного барьера, уровень трансэпидермальной потери воды (TEWL) и качественный состав микробиома кожи у пациентов в фазе обострения. Продемонстрирована ключевая роль гиперколонизации *Staphylococcus aureus* и дефицита филаггрина в поддержании хронического Th2-опосредованного воспаления. Обоснована эффективность включения современных топических средств с лизатами бактерий и таргетных биологических препаратов в комплексную терапию заболевания.

**Ключевые слова.** Экзема, эпидермальный барьер, филаггрин, микробиом кожи, *Staphylococcus aureus*, интерлейкин-13, трансэпидермальная потеря воды (TEWL), таргетная терапия.

**Введение.** Экзема представляет собой одно из наиболее распространенных хронических воспалительных заболеваний кожи, характеризующееся полиморфной сыпью, выраженным зудом и склонностью к рецидивирующему течению. Долгое время в дерматологии доминировала иммуноцентрическая модель, рассматривающая экзему исключительно как следствие гиперреактивности иммунной системы в ответ на экзогенные аллергены. Однако в последние годы парадигма сместилась в сторону концепции «outside-inside-outside» (снаружи внутрь и обратно). Согласно этой теории, первичным звеном патогенеза является генетически детерминированная или приобретенная несостоятельность физико-химического барьера эпидермиса. Структурный дефект рогового слоя, в частности дефицит структурного белка филаггрина (FLG), приводит к повышению уровня pH кожи и нарушению архитектоники межклеточных липидных пластов. Это создает условия для неконтролируемой трансэпидермальной потери воды (TEWL) и массивной проницаемости для

ирритантов, гаптенов и микроорганизмов.

Особое место в поддержании хронического воспаления занимает кожный дисбиоз. Резкое снижение микробного разнообразия с параллельной гиперколонизацией патогенными штаммами *Staphylococcus aureus* запускает каскад секреции аларминов (TSLP, ИЛ-33) кератиноцитами, что активирует Th2-хелперный иммунный ответ и приводит к избыточной продукции ИЛ-4 и ИЛ-13.

**Цель исследования.** Оценить характер взаимосвязи между степенью нарушения эпидермального барьера (по показателям TEWL и pH), плотностью колонизации кожи *Staphylococcus aureus* и выраженностью клинических проявлений у пациентов с истинной и атопической экземой для научного обоснования таргетной терапии.

**Материалы и методы исследования.** В обсервационное сравнительное исследование было включено 60 пациентов (34 женщины, 26 мужчин) в возрасте от 18 до 45 лет с диагнозом «Экзема» в фазе обострения. Контрольную группу составили 20 практически здоровых добровольцев аналогичного возраста без признаков дерматологической патологии.

Методы оценки включали.

1. Клинический индекс EASI / SCORAD — для объективизации тяжести течения и интенсивности зуда.
2. ТЭВМетрия (TEWL) — измерение трансэпидермальной потери воды ( $\text{g/h/m}^2$ ) с помощью прибора Tewameter на пораженных и интактных участках кожи.
3. pH-метрия — определение уровня кислотности рогового слоя.
4. Молекулярно-генетический и микробиологический анализ — взятие мазков-отпечатков с кожи с последующим проведением количественной ПЦР (кПЦР) для верификации плотности обсемененности *Staphylococcus aureus* и секвенирования гена 16S рРНК для оценки общего разнообразия микробиома.

Статистический анализ данных выполнялся с использованием пакета программ SPSS Statistics. Различия считались достоверными при  $p < 0.05$ .



**Результаты и обсуждение.** В ходе исследования у 88% пациентов основной группы было выявлено статистически значимое повышение показателей TEWL в очагах поражения по сравнению с контрольной группой (в среднем  $34.2 \pm 4.1$   $\text{g/h/m}^2$  против  $8.5 \pm 1.2$   $\text{g/h/m}^2$ ,  $p < 0.001$ ). Примечательно, что даже на клинически не измененной (визуально здоровой) кожи пациентов с экземой уровень TEWL был повышен до  $14.6 \pm 2$ .

$3$   $\text{g/h/m}^2$ , что подтверждает системный характер дефекта барьера. Значения pH кожи в очагах экземы были смещены в щелочную сторону и составляли  $6.2 \pm 0.4$  (в контрольной группе —  $5.4 \pm 0.2$ ). Сдвиг pH активирует сериновые протеазы, которые разрушают корнеодесмосомы, препятствуя нормальному десквамационному процессу и синтезу керамидов.

Результаты микробиологического профилирования показали прямую корреляционную зависимость между тяжестью течения экземы (по шкале SCORAD) и титром *Staphylococcus aureus* ( $r = 0.74$ ,  $p < 0.01$ ). У пациентов с тяжелым течением удельный вес *S. aureus* в общей структуре микробиома кожи достигал 82–90%, вытесняя нормальных симбионтов — *Staphylococcus epidermidis* и *Propionibacterium acnes*.

Обсуждая полученные данные, необходимо подчеркнуть, что *S. aureus* индуцирует выработку суперантигенов, которые, проникая через поврежденный филаггриновый барьер, стимулируют дегрануляцию тучных клеток и поддерживают персистенцию Th2-цитокинов (ИЛ-4, ИЛ-13). Это формирует «порочный круг»: воспаление подавляет синтез антимикробных пептидов (каталицидинов), что влечет за собой дальнейший рост стафилококковой биопленки.

**Заключение.** Таким образом, экзематозный процесс представляет собой комплексную патологию, где физическое разрушение эпидермального барьера и микробный дисбиоз выступают как триггеры иммунологического сдвига.

Традиционная терапия, основанная исключительно на топических

кортикостероидах, дает временный эффект, так как не устраняет первопричину — дефект липидного слоя и доминирование патобионтов.

Перспективным вектором лечения является сочетанное применение высокотехнологичных эмолентов, обогащенных церамидами и бактериальными лизатами (для восстановления pH и вытеснения *S. aureus*), а при среднетяжелых формах — своевременное подключение таргетных биологических препаратов (ингибиторов ИЛ-4/ИЛ-13) и топических JAK-ингибиторов.

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**MODERN ASPECTS OF THE PATHOGENESIS AND  
COMPREHENSIVE THERAPY OF PEDIATRIC ECZEMA: THE  
ROLE OF THE EPIDERMAL BARRIER AND SKIN MICROBIOME**

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**Abstract.** Pediatric eczema (atopic dermatitis) remains one of the most significant challenges in pediatric dermatology. This article reviews current concepts regarding the multifactorial pathogenesis of the disease, including genetically determined defects of the epidermal barrier and alterations in the composition of the skin microbiome. The results of a clinical study evaluating the effectiveness of a comprehensive therapeutic approach combining topical anti-inflammatory agents with modern emollients enriched with prebiotic components are presented. The findings demonstrate that restoration of the skin's microbial balance and prolonged moisturization significantly reduce the frequency of disease relapses and improve patients' quality of life.

**Keywords:** pediatric eczema, atopic dermatitis, epidermal barrier, filaggrin, skin microbiome, *Staphylococcus aureus*, emollients, topical glucocorticosteroids.

**СОВРЕМЕННЫЕ АСПЕКТЫ ПАТОГЕНЕЗА И КОМПЛЕКСНОЙ  
ТЕРАПИИ ДЕТСКОЙ ЭКЗЕМЫ: РОЛЬ ЭПИДЕРМАЛЬНОГО БАРЬЕРА И  
МИКРОБИОМА КОЖИ**

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**Аннотация.** Детская экзема (атопический дерматит) остается одной из наиболее актуальных проблем педиатрической дерматологии. В статье рассматриваются современные представления о мультифакторном патогенезе данного заболевания, включая генетически детерминированные дефекты эпидермального барьера и изменения в структуре кожного микробиома. Приведены результаты клинического исследования эффективности комплексной терапии, сочетающей топические противовоспалительные средства и современные эмоленты, обогащенные пребиотическими компонентами. Продемонстрировано, что восстановление микробиологического равновесия кожи и пролонгированное увлажнение достоверно снижают частоту рецидивов и улучшают качество жизни пациентов.

**Ключевые слова:** детская экзема, atopический дерматит, эпидермальный барьер, филаггрин, микробиом кожи, *Staphylococcus aureus*, эмоленты, топические глюкокортикостероиды.

**Введение.** Детская экзема представляет собой хроническое воспалительное заболевание кожи, дебютирующее, как правило, в раннем детском возрасте и характеризующееся волнообразным течением с выраженным зудом. В последние десятилетия отмечается неуклонный рост заболеваемости во всем мире, что связывают с урбанизацией, изменением характера питания и экологическими факторами. Современный взгляд на патогенез дерматоза сместился от первично иммунологической концепции к признанию ведущей роли дефектов эпидермального барьера («outside-in» гипотеза). Нарушение синтеза структурных белков, в частности филаггрина (FLG), приводит к трансэпидермальной потере воды (ТЭПВ), ксерозу и облегчению проникновения аллергенов и патогенов. Важнейшим триггером воспаления признан дисбиоз: колонизация кожи штаммами *Staphylococcus aureus* коррелирует с тяжестью обострений. В связи с

этим разработана и оценена схема терапии, направленных на синергическое подавление воспаления и реставрацию микробиома, являются высокоактуальными.

**Цель исследования.** Оценить клиническую эффективность и безопасность комплексного терапевтического подхода, направленного на одновременное купирование воспаления и восстановление барьерно-микробиологического потенциала кожи у детей с экземой средней степени тяжести.

**Материалы и методы исследования.** В проспективное исследование было включено 60 пациентов в возрасте от 6 месяцев до 7 лет с диагнозом «детская экзема / атопический дерматит» среднетяжелого течения. Пациенты были разделены на две однородные группы по 30 человек:

- Основная группа: получала стандартную противовоспалительную терапию (топический метилпреднизолон ацепонат кратким курсом до 7 дней) в сочетании с современным эмоментом, содержащим лизаты бактерий (*Vitreoscilla\ filiformis*) для коррекции микробиома, дважды в сутки.
- Группа сравнения: получала аналогичную противовоспалительную терапию и базовый традиционный эмомент (вазелиново-ланолиновая основа). Тяжесть процесса оценивали по индексам SCORAD (Scoring Atopic Dermatitis) и EASI (Eczema Area and Severity Index) на 0-й, 14-й и 28-й дни. Состояние микробиома верифицировали бактериологическим посевом мазков с очагов поражения. Статистический анализ выполнен с использованием t-критерия Стьюдента.

**Результаты и обсуждение.** До начала лечения у 85% пациентов обеих групп отмечалась высокая плотность колонизации кожи *Staphylococcus\ aureus* ( $> 10^5$  КОЕ/см<sup>2</sup>). К 14-му дню терапии в обеих группах зафиксировано значительное снижение остроты воспаления и редукция зуда за счет применения топического стероида.

Однако к 28-му дню исследования выявились достоверные межгрупповые различия:

- В основной группе средний балл SCORAD снизился с  $42,6 \pm 3,1$  до  $11,2 \pm 1,4$  ( $p < 0,05$ ). Бактериологический контроль показал эрадикацию или снижение титра *S. aureus* до нормативных значений у 78% детей благодаря топическому пребиотическому компоненту.
- В группе сравнения индекс SCORAD снизился с  $41,9 \pm 2,8$  до  $19,5 \pm 2,1$ . У 53% пациентов сохранялась высокая колонизация золотистым стафилококком, что клинически проявлялось сохраняющимся умеренным ксерозом и шелушением.

Динамика показателей представлена в таблице:

| Индекс/срок | Группа    | 0-й день       | 14-й день      | 28-й день      |
|-------------|-----------|----------------|----------------|----------------|
| SCORAD      | Основная  | $42.6 \pm 3.1$ | $22.4 \pm 1.8$ | $11.2 \pm 1.4$ |
|             | Сравнения | $41.9 \pm 2.8$ | $24.1 \pm 2.0$ | $19.5 \pm 2.1$ |
| EASI        | Основная  | $18.4 \pm 1.5$ | $8.2 \pm 0.9$  | $3.1 \pm 0.4$  |
|             | Сравнения | $17.9 \pm 1.3$ | $9.5 \pm 1.1$  | $6.8 \pm 0.7$  |

\*Примечание: различия достоверны между группами на 28-й день ( $p < 0,05$ ).

Полученные данные доказывают, что простого подавления иммунного воспаления недостаточно для стойкой ремиссии. Использование специализированных эмоленов, влияющих на микробиом, предотвращает повторный запуск каскада воспаления, индуцируемый стафилококковыми суперантигенами.

**Заключение.** Современная стратегия ведения детей с экземой должна носить комплексный характер. Включение в схему наружной терапии инновационных липидовосполняющих средств с пребиотической активностью позволяет не только восстановить дефектный эпидермальный барьер, но и нормализовать кожный биоценоз. Это приводит к ускорению регресса клинических симптомов,



значимому продлению периода ремиссии и снижению медикаментозной нагрузки на детский организм.

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## COMPARATIVE ANALYSIS OF DIFFERENT SURGICAL METHODS FOR THE TREATMENT OF GINGIVAL RECESSION

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### Abstract

Plastic surgery is currently one of the leading areas in periodontology. The development of implantology, the use of osteoplastic materials, and the application of membranes for guided tissue regeneration have all contributed to the advancement of plastic periodontal surgery. The main objective of these procedures is to achieve favorable aesthetic outcomes and to prevent various periodontal tissue disorders that may occur in adult patients following orthopedic or orthodontic treatment and dental implantation.

### Keywords

gingival recession, periodontal tissue, keratinized gingiva, gingival biotype, palatal graft, labial frenum.

## MILK RETSESSIVASINI BARTARAF ETISHDA TURLI JARROHLIK USULLARINI QIYOSIY TAHLILI

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**Annotatsiya:** Bugungi kunda parodontologiyada plastik jarrohlik asosiy yo'nalish hisoblanadi. Implantologiyaning rivojlanishi, osteoplastik materiallardan foydalanish, to'qimalarni yo'naltirilgan regeneratsiyasi uchun membranalardan foydalanish - bularning barchasi parodontda plastik operatsiyalarning rivojlanishiga turtki bo'lmoqda. Ushbu operatsiyalarning maqsadi yaxshi estetik natijaga erishish va ortopedik yoki ortodontik davolash, implantatsiyadan so'ng katta yoshli bemorlarda yuzaga keladigan parodont to'qimalaridagi bir qator buzilishlarning oldini olishdir.

**Kalit so'zlar:** milk retsessiyasi, parodont to'qimasi, keratinlashgan milk, milk biotipi, tanglay transplantati, lab yuganchasi.

**Dolzarbli.** Hozirgi vaqtda tanglaydan olingan SST dan foydalanish keratinlashgan biriktirilgan zonani kengaytirish uchun "oltin standart" sifatida tan olingan. Milklar va retsessiyalarni bartaraf etish bu, birinchi navbatda, o'tkazilayotgan aralashuvlarning yuqori samaradorligi va olingan natijalarning barqarorligi bilan izohlanadi [1]. SST muqobilini izlash qattiq tanglayda transplantat olish joyi operatsiyadan keyingi davrda sezilarli noqulaylik tug'dirishi mumkinligi bilan bog'liq. Tanglaydan transplantatni olishda ba'zi hollarda quyidagi asoratlar kuzatilishi mumkin: operatsiyadan keyingi qon ketishi, og'riq, qiyinchilik bilan bitish, suyak usti pardasining shikastlanishi, bu esa doimiy og'riq sindromi, nekroz va paresteziyaga olib kelishi mumkin [2]. Bundan tashqari, ko'p hollarda tanglayning yotiq gumbazi, shilliq qavatning yupqa biotipi, yaqqol yog' qatlami va boshqalar kabi anatomik xususiyatlar tufayli tanglaydan SST olish qiyin bo'ladi. Ushbu omillar mumkin bo'lgan muqobil variantlarni ko'rib chiqish zarurligini asoslaydi [3]. Og'iz bo'shlig'ida SST olishning muqobil manbalaridan biri retromolyar soha hisoblanadi. Ushbu sohada transplantatni

olish operatsiyadan keyingi noqulaylikning kamayishiga olib keladi, chunki u ovqat luqmasi hosil bo'lish zonasidan va fonetik faoliyatdan uzoqda joylashgan. Retromolyar soha to'qimalarning sezilarli qalinligiga ega bo'lib, bu an'anaviy ravishda transplantat olinadigan sohadagi tanglay to'qimalari qalinligidan bir necha baravar ko'pdir [4]. Bir qator holatlarda, masalan, milkning nozik biotipi va konstitutsiyaviy o'ziga xoslikda (tana tuzilishining astenik turi) retromolyar zona muqobil emas, balki biriktiruvchi to'qima transplantatini olishning yagona qulay va xavfsiz joyi bo'lib qoladi. Ricci retromolyar sohada 1-turdagi kollagenning ko'proq ifodalangan joyi haqida xabar bergan, bu tanglaydagi donorlik joyiga nisbatan va shunga mos ravishda to'qimalarning barqaror hajmi haqida ma'lumot beradi. Gamborena et al. to'qimalarning gistologik oldindan belgilanganligi tufayli retromolyar sohadan olingan to'qimalarning o'sish imkoniyati haqida ko'proq ma'lumot beradi [5].

**Tadqiqot maqsadi:** milk retsessiyasini bartaraf etishda turli jarrohlik usullarini tahlilini o'tkazish.

**Tadqiqot materiallari va usullari.** 35 nafar bemor tekshiruvdan o'tkazilib, davo muolajalari o'tkazildi. Birlamchi ko'rik va klinik tekshiruvlar 2025yilda Toshkent davlat tibbiyot universitetining stomatologiya bo'limida va Toshkent shahri Yunusobod tumanidagi 2-bolalar stomatologiya poliklinikasida o'tkazildi. Klinik tekshiruv shikoyatlar, kasallik anamnezi va bemorlar hayoti, og'iz bo'shlig'ini tekshirish, retsessiya sabablarini aniqlashni o'z ichiga olgan. Barcha bemorlarga og'iz bo'shlig'i sanatsiyasi o'tkazildi, shuningdek, og'iz bo'shlig'idagi yatrogen omillar (II, V, IV sinf sifatsiz plombalar, protezning jarohatlovchi oraliq qismida uzun koronkalari bo'lgan protezlar), zararli artikulyatsion odatlar va bruksizm hodisalari bartaraf etildi. Jarrohlik amaliyoti ishlab chiqilgan jarrohlik protokoliga muvofiq amalga oshirildi.

1-guruhni 10 nafar bemorlar tashkil etdi, ularda konvert usuli bo'yicha tasmali epitelial yuzali EMT retsessiyasini yopish bo'yicha jarrohlik amaliyoti o'tkazildi.

2-guruhni laxtakni koronar surilishi bilan birga kelgan tanglayning biriktiruvchi to'qimali erkin ajratilgan transplantanti (SST) qo'llanilgan 10 nafar bemorlar tashkil etdi.

3-guruhni 15 nafar bemorlar tashkil etdi, ularda koronal surilgan laxtak va yuqori lab yuganchasi sohasidan olingan shilliq biriktiruvchi to'qimali trnasplantant qo'llanildi.

**Tadqiqot natijalari.** 1 guruhda ( $n=10$ ) tanglayning autotransplantati  $1,32\pm 0,08$  mm va o'z ichiga nafaqat shilliq qobiqni qamrab oladi, balki shilliq osti qavatini ham o'z ichiga oladi, yog' to'qimasi olib tashlanadi. Dastlabki 4 kunda donorlik yuzasidagi yara yuzasini vizual ko'rik o'tkazilganda o'rtacha miqdordagi fibrinli cho'kindi, o'rtacha giperemiya va atrofdagi to'qimalarni shishi qayd etiladi, bu aralashuvning og'irligiga mos keladi. Jarrohlik amaliyotidan keyingi dastlabki 3 kundan keyin qon aralash sariq suvli ajratmaning sezilarsiz miqdori qayd etiladi, 4- kundan boshlab yakka holda uchraydigan yangi granulyasiyalar paydo bo'ladi. 5- kundan boshlab tanglaydagi yara faol granulyasiyaga uchraydi, fibrin qoplama miqdori sezilarli kamayadi, atrofdagi to'qimalarning shish va giperemiyasi ham shuningdek kamayadi. 8-kundan boshlab yara chetlari bo'ylab epitelizasiya jarayonini boshlanishi qayd etiladi. 14-kunga kelib barcha bemorlar tanglayida yaralar to'liq epitelizatsiya qilinadi.

2 guruhda ( $n=10$ ) 1 dan 4 kungacha donorlik sohasidagi yara yuzasini vizual ko'rikdan o'tkazilganda o'rab turgan yumshoq to'qimalarda o'rtacha shish va giperemiya qayd etildi, bu aralashuvning og'irligiga mos keladi. Chok chizig'i bo'yicha sezilarsiz miqdordagi fibrilin qoplama qayd etildi. Faqat jarrohlik amaliyotidan keyingi dastlabki kunlar davomida qon aralash sariq suvli ajralma kuzatildi, 4-kundan boshlab tanglaydagi yara faol granulyasiyalandi, shuningdek atrofdagi to'qimalarda shish va giperemiya sezilarli kamaydi, yarani epitelizasiyasini boshlanganligini qayd etildi. 14-kunga kelib barcha bemorlar tanglayidagi to'liq epitelizasiya bo'ldi.

3 guruhda ( $n=15$ ) xuddi yuqoridagi guruhda bo'lgani kabi 1 kundan 4-kunigacha donorlik sohasidagi yara yuzasini vizual ko'rikdan o'tkazilganda o'rab turgan yumshoq

to‘qimalarning o‘rtacha shishi va giperemiyasi qayd etiladi, bu aralashuvlarning og‘irlik darajasiga mos keladi. Choklar chizig‘i bo‘ylab va yara yuzasining ochiq qismi sohasida fibrinli qoplamaning sezilarsiz miqdori qayd etiladi. Jarrohlik amaliyotidan keyingi faqat dastlabki 2 kun davomida qon aralash sariq suvli aralashma kuzatildi, 4-5 kundan boshlab yugancha o‘rnidagi yara faol granulyasiyalandi, atrofdagi to‘qimalarning shish va giperemiyasi shuningdek sezilarli kamaydi, 6-7 kunga kelib yaralarning epiteliyaziasiniboshlanishi qayd etildi. 2-holatda transplantat olingan joydagi nuqsonlar cheti bo‘yicha eroziya va yuqtirish uchastkalari qayd etildi. 14-kunga kelib, barcha bolalarda yugancha o‘rnidagi yara to‘liq epiteliyaziyalandi.

**Xulosa.** 1 –guruh. Miller bo‘yicha 1–2 sinf retsessiyalarini jarrohlik usuli bilan davolash, konvert texnikasi bo‘yicha yuzasi epitelial tasmalarni saqlanishi bilan qo‘llanilganda eng samarali bo‘lib hisoblanadi va yaxshi estetik natijaga hamda 90,7% samaradorlik bilan funksional turg‘unlikka olib keldi.

2 –guruh. Koronar surilishli laxtak va tanglaydan olingan erkin ajratilgan laxtak bilan birga kelishida qo‘llanilishi yaxshi estetik natija berdi va 93,5% holatlarda, ayniqsa pastki jag‘ning old bo‘limi va og‘iz oldi mimik mushaklarini yaqqol namoyon bo‘lgan tortilishidagi yuqori jag‘larning yon bo‘limlarida 3 mm dan ko‘p bo‘lmagan chuqurlikda Miller bo‘yicha 1–2- va ba’zi xollarda 3- sinf retsessiyalarini yopishga imkon beradi.

3 –guruh. Yuqori lab yugancha sohasidan olingan shilliq qavatli transplantant usuli bayon etilgan bo‘lib, u milklarning yakka retsessiyasini muvaffaqiyatli bartaraf etishga imkon beradi. Lablarning yuganchasi sohasida olingan EShT(erkin shilliq qavatli transplantat) qator hollarda ikkita bosqichli jarrohlik muolajasini – milklarni retsessiyasini yopish (94,5%) va frenuloektomiya operatsiyasini bir vaqtda bajarishga imkon beradi. Lablarning yuganchasi sohasidan olingan transplantantini tanglay sohasidan olmaslikka imkon beradi, bu esa jarrohlik amaliyotidan keyingi noqulayliklarni kamaytirishga olib keladi va asoratlar havfini pasaytiradi .

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**TREATMENT OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE**

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**Abstract**

Chronic airway obstruction drives progressive respiratory failure, necessitating highly targeted pharmacological interventions. This clinical investigation evaluates the comparative efficacy of phenotype-guided inhalation regimens in stabilizing pulmonary function and mitigating exacerbations among patients with advanced airflow limitation. In a prospective, randomized 18-month clinical trial, 342 adults diagnosed with moderate-to-severe obstructive pulmonary pathology were monitored using spirometry, peripheral blood eosinophil quantification, and the COPD Assessment Test. Empirical data dictates that untargeted bronchodilation strategies yield suboptimal outcomes in patients exhibiting active systemic eosinophilic inflammation. By stratifying the cohort and deploying a precise triple therapy regimen (long-acting muscarinic antagonist + long-acting beta2-agonist + inhaled corticosteroid) specifically in patients with elevated eosinophil counts ( $\geq 300$  cells/ $\mu\text{L}$ ), the experimental protocol achieved profound functional stabilization. Statistical modeling demonstrates this phenotype-directed approach reduced the annualized rate of moderate-to-severe exacerbations by 46.8% while securing a sustained improvement in forced expiratory volume in one second (FEV1) by  $142 \pm 18$  mL over baseline ( $p < 0.001$ ). The transition from generic bronchodilator escalation to biomarker-driven therapeutic algorithms provides a mathematically verified paradigm advancement, offering a highly accurate, non-invasive blueprint capable of preserving ventilatory mechanics in high-risk demographics.

### **Keywords**

Obstructive pulmonary pathology, bronchodilation, inhaled corticosteroids, spirometry, eosinophilic inflammation, forced expiratory volume, therapeutic algorithms, respiratory failure.

### **Introduction**

The progressive deterioration of ventilatory mechanics inherent to chronic airway disease initiates a cascading failure of the cardiopulmonary axis. Pathophysiologically, continuous exposure to noxious particulate matter triggers an intense, localized inflammatory response within the respiratory epithelium. This biochemical storm engineers a pathological environment defined by widespread alveolar septal destruction, small airway fibrosis, and severe airflow limitation. Consequently, afflicted individuals endure unremitting exertional dyspnea and an exponentially elevated risk of acute respiratory decompensation requiring hospitalization.

Pharmacological management strategies have historically prioritized immediate symptom relief through the sequential escalation of inhaled bronchodilators. Global protocols advocate for the dual administration of long-acting muscarinic antagonists (LAMA) and long-acting beta2-agonists (LABA). While these agents successfully manipulate smooth muscle tone and reduce dynamic hyperinflation, pure bronchodilation fails to arrest the underlying cellular inflammation driving the progressive loss of FEV1. Patients exhibiting specific inflammatory endotypes, particularly those with a pronounced eosinophilic signature, experience recurrent acute exacerbations despite maximal dual bronchodilation. This distinct biophysical failure forces pulmonologists to reevaluate the integration of inhaled corticosteroids (ICS) into maintenance regimens.

Existing regional literature lacks robust quantitative evaluations mapping exact functional recovery rates under biomarker-guided triple therapy compared to standard dual therapy. The primary objective of this investigation is to rigorously quantify the

physiological deficits in advanced airflow obstruction and construct a modernized, phenotype-directed therapeutic protocol. By statistically evaluating a combined LAMA/LABA/ICS delivery system triggered specifically by peripheral blood eosinophil thresholds, this study maps the precise trajectory of respiratory preservation.

### **Materials and Methods**

To capture the biophysical variables governing respiratory stabilization, the research deployed a structured, prospective, randomized, parallel-group clinical design. The framework aggregated functional, hematological, and clinical data from 342 adult patients formally diagnosed with moderate-to-severe chronic airflow limitation at the Andijan State Medical Institute over an 18-month operational period.

Inclusion criteria mandated patient age  $> 40$  years, a post-bronchodilator FEV1/FVC ratio  $< 0.70$ , an FEV1 between 30% and 80% of predicted, and a history of at least one moderate or severe acute exacerbation within the preceding 12 months. Patients with concurrent asthma, active pulmonary tuberculosis, or severe congestive heart failure were systematically excluded.

The cohort was stratified based on baseline peripheral blood eosinophil counts and randomized into two therapeutic arms. The Control Group (N = 171) received standard dual bronchodilator therapy (indacaterol/glycopyrronium once daily) regardless of eosinophil levels. The Experimental Group (N = 171) transitioned to a biomarker-guided protocol: patients exhibiting an eosinophil count  $\geq 300$  cells/microL were assigned to triple therapy (fluticasone furoate/umeclidinium/vilanterol once daily), while those  $< 300$  cells/microL received standard dual therapy.

Clinical efficacy was quantified using the COPD Assessment Test (CAT). Internal spatial aerodynamics were mathematically mapped via standardized spirometry, measuring pre-dose and post-dose FEV1 (mL). The annualized rate of moderate-to-severe exacerbations was meticulously recorded to evaluate longitudinal clinical

stability. Quantitative data processing utilized SPSS (v.28.0) employing repeated-measures ANOVA, Kaplan-Meier survival curves, and Student's t-tests ( $p < 0.05$ ).

## Results

Computational processing of the registries exposes an irrefutable discrepancy between untargeted generic bronchodilation and active, phenotype-directed intervention. Baseline evaluations confirmed exceptional statistical homogeneity: initial mean CAT scores registered at  $19.4 \pm 2.5$  (Control) and  $19.6 \pm 2.2$  (Experimental), indicating massive functional impairment. Baseline FEV1 stood at a critically constricted  $1.34 \pm 0.22$  Liters (48.5% of predicted) across the population.

Following the 18-month macrocycle, quantitative divergence became starkly evident within the eosinophilic sub-population:

**Pulmonary Function Stabilization:** In the Control Group, generic dual therapy increased trough FEV1 by only  $54 \pm 12$  mL. The Experimental sub-cohort receiving targeted triple therapy exhibited a rapid and sustained airway expansion, improving trough FEV1 by an impressive  $142 \pm 18$  mL from baseline ( $p < 0.001$ ). The integrated ICS resolved local airway edema, preventing the rapid decline typical of this severe phenotype.

**Exacerbation Prevention:** The annualized exacerbation rate in the Control Group remained high at  $1.85 \pm 0.3$  events per year. The biomarker-guided Experimental Group recorded a massive clinical recovery, dropping the rate to  $0.98 \pm 0.2$  events per year. This 46.8% reduction mathematically proves the superiority of aggressively treating the eosinophilic trait. Kaplan-Meier analysis demonstrated that patients on targeted triple therapy exhibited a 55% lower probability of experiencing a severe exacerbation requiring hospitalization (Hazard Ratio 0.45, 95% CI: 0.38 - 0.54,  $p < 0.001$ ).

**Quality of Life:** The Control Group's CAT score dropped marginally to  $16.2 \pm 2.1$  points. The optimized triple therapy cohort achieved profound symptomatic relief,

registering a CAT score of 11.4 +/- 1.8 points as patients regained substantial exercise tolerance and functional autonomy.

### **Discussion**

The empirical indices generated by this study necessitate an immediate recalibration of pulmonary therapeutic priorities. Evaluated through modern cellular immunology, the dramatic stabilization observed in the Experimental Group aligns perfectly with the pharmacodynamics of synthetic corticosteroids acting upon specific inflammatory endotypes. By reserving ICS escalation strictly for patients crossing the 300 cells/microL threshold, the optimized protocol neutralizes the biological engine driving recurrent exacerbations while shielding the non-eosinophilic population from unnecessary immunosuppressive side effects, such as pneumonia.

These findings correlate with recent extensive international analyses documenting a severe pharmacokinetic ceiling effect regarding standard dual bronchodilators in frequent exacerbators. Generic bronchodilation fails to halt the continuous migration of inflammatory cells into the mucosal stroma. Treating chronic airway obstruction strictly as a mechanical failure of the smooth muscle is clinically obsolete; the disease must be aggressively managed as a dynamic, phenotype-specific immunological dysregulation.

While the 18-month longitudinal observation captures acute functional stabilization and exacerbation reduction, it falls short of predicting multi-year mortality benefits. Subsequent prospective studies utilizing continuous fractional exhaled nitric oxide (FeNO) monitoring alongside high-resolution computed tomography are required to definitively map the cellular mechanisms maintaining prolonged disease remission.

### **Scientific Novelty and Practical Significance**

This investigation achieves definitive scientific novelty by engineering the first mathematically verified, biomarker-directed spatial mapping of airway recovery utilizing single-inhaler triple therapy in this demographic. It successfully transitions pulmonary pharmacology from generalized escalation to rigorous, precision-medicine

modeling. Practically, the established statistical indices provide a critical blueprint for outpatient algorithms. By formally integrating peripheral blood eosinophil quantification as an absolute prerequisite for prescribing ICS, internal medicine specialists can exponentially amplify drug efficacy, drastically reduce hospital admission rates, and intercept the trajectory of respiratory failure.

### **Conclusion**

Arresting the relentless mechanical degradation and aggressive inflammatory exacerbations inherent to chronic pulmonary obstruction demands a paradigm shift away from ineffective generic bronchodilation toward precision phenotype-guided rehabilitation. Empirical data definitively establishes that severe structural airway decline is actively manageable when targeted triple therapy is deployed strictly according to verified systemic immunomodulatory markers. Attempting to manage an architecturally failing respiratory system purely through superficial mechanical dilation is biologically flawed; the rigid execution of combined smooth muscle relaxation and targeted intracellular inflammatory downregulation represents the only viable clinical strategy.

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**CLINICAL AND FUNCTIONAL ASPECTS AND  
IMPROVEMENT OF THE TREATMENT OF PERENNIAL  
ALLERGIC RHINITIS IN CHILDREN**

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**Abstract**

The continuous immunological burden of perennial allergic rhinitis fundamentally alters the anatomical and functional integrity of the pediatric upper respiratory tract. This investigation systematically quantifies the biophysical deficits within the nasal mucosa of pediatric patients and evaluates the efficacy of a modernized, regenerative therapeutic protocol. Operating within a prospective, randomized clinical architecture, the study monitored 214 children (aged 6 to 14) diagnosed with persistent perennial allergic rhinitis. Diagnostics utilized Total Nasal Symptom Scores, anterior active rhinomanometry, and saccharin transit time tests. Empirical data explicitly demonstrates that traditional intranasal corticosteroid monotherapy fails to adequately restore physiological ciliary beat frequency. By integrating a targeted mucosal rehabilitation regimen—comprising isotonic micro-diffused seawater enriched with dexpanthenol alongside standard topical steroids—the experimental cohort achieved profound functional recovery. Statistical modeling indicates the optimized protocol reduced nasal airway resistance by 68.4% and accelerated mucociliary transport times to a near-physiological norm of 13.2 +/- 1.4 minutes ( $p < 0.01$ ). This structural transition from mere symptom suppression to active epithelial regeneration provides a mathematically verified paradigm shift in pediatric otorhinolaryngology, capable of preventing irreversible morphological remodeling.

**Keywords**

Perennial allergic rhinitis, pediatric otorhinolaryngology, mucociliary clearance, acoustic rhinomanometry, mucosal regeneration, epithelial desquamation, topical corticosteroids.

### **Introduction**

The pediatric nasal cavity functions as the primary biomechanical and immunological interface between the developing respiratory system and the external environment. Afflicted by perennial allergic rhinitis (driven by indoor allergens like house dust mites and fungal spores), the mucosal lining experiences chronic IgE-mediated degranulation. This biochemical cascade engineers a distinct pathophysiological architecture characterized by goblet cell hyperplasia, subepithelial edema, and extensive ciliary dyskinesia, leading to unremitting nasal congestion and susceptibility to secondary bacterial rhinosinusitis.

Classical pharmacological interventions overwhelmingly prioritize acute symptom suppression utilizing intranasal corticosteroids (INCS) and H1-receptor antagonists. While these agents successfully dampen the overt inflammatory storm, standard synthetic corticosteroids exert a drying effect on the delicate respiratory epithelium, frequently failing to actively restore the critically damaged sol-gel layer of the mucociliary escalator. Existing pediatric rhinology literature lacks robust quantitative evaluations mapping exact functional recovery rates under varying therapeutic regimens, forcing clinicians to rely on subjective symptom reporting.

The primary objective of this investigation is to rigorously quantify functional mucosal deficits in pediatric perennial allergic rhinitis and construct a modernized therapeutic protocol. By statistically comparing the regenerative capacity of a combined mucosal-repair regimen against conventional monotherapy, this study provides a definitive blueprint for restoring total nasal functionality.

### **Materials and Methods**

To capture exact biophysical variables governing mucosal recovery, the research deployed a structured, prospective, randomized, parallel-group clinical design. The framework aggregated functional and clinical data from 214 pediatric patients (aged 6-14) formally diagnosed with moderate-to-severe perennial allergic rhinitis at the Andijan State Medical Institute over 18 months. Patients with severe anatomical anomalies or concurrent acute infections were systematically excluded.

The cohort was randomized into two defined arms for a 12-week therapeutic macrocycle. The Control Group (N = 107) received standard monotherapy: mometasone furoate aqueous nasal spray (50 micrograms/nostril daily). The Experimental Group (N = 107) received an optimized regenerative protocol: the identical corticosteroid dosage immediately preceded by a mechanical lavage utilizing a micro-diffused isotonic seawater solution enriched with 5% dexpanthenol.

Clinical efficacy was quantified using the Total Nasal Symptom Score (TNSS). Functional biophysics were mapped utilizing anterior active rhinomanometry (AARM) to measure total nasal airway resistance (NAR in Pa/cm<sup>3</sup>/s) and the saccharin transit time (STT) test to evaluate mucociliary escalator velocity. Quantitative data processing utilized SPSS (v.28.0) with repeated-measures ANOVA and Student's t-tests (alpha threshold  $p < 0.05$ ).

## **Results**

The computational processing of clinical registries exposes a profound discrepancy between symptom management and active physiological repair. Baseline evaluations confirmed high statistical homogeneity: initial TNSS registered at ~9.4, elevated NAR at 0.88 +/- 0.15 Pa/cm<sup>3</sup>/s, and STT indicated profound ciliary paralysis at 26.4 +/- 2.3 minutes.

Post-intervention, the quantitative divergence became starkly evident. The Control Group demonstrated a TNSS reduction to 4.2 +/- 0.9 points, whereas the Experimental Group exhibited a rapid collapse in symptom severity to 1.8 +/- 0.6 points ( $p < 0.001$ ).

Biophysical measurements provided critical structural insights. Standard monotherapy lowered total NAR to  $0.45 \pm 0.12$  Pa/cm<sup>3</sup>/s. Conversely, the optimized regenerative protocol restored aerodynamic flow to near-perfect physiological parameters, dropping NAR to  $0.28 \pm 0.06$  Pa/cm<sup>3</sup>/s ( $p < 0.01$ ). This proves the pre-lavage technique effectively strips viscous mucus, allowing subsequent corticosteroids to bind directly to epithelial receptors.

Crucially, the saccharin transit time in the Control Group remained abnormally prolonged at  $19.5 \pm 1.8$  minutes, indicating steroid monotherapy completely failed to rehabilitate ciliary beat frequency. The Experimental Group recorded an STT of  $13.2 \pm 1.4$  minutes, representing a complete restoration of the innate mechanical defense system. Patients utilizing the integrated protocol exhibited a 3.4-fold higher probability of achieving complete functional mucosal normalization.

### **Discussion**

Evaluated through the lens of modern cellular biology, the functional recovery observed in the Experimental Group aligns perfectly with the pharmacodynamics of pantothenic acid derivatives. Dexpanthenol acts as an aggressive catalyst for rapid epithelial re-epithelialization. By repairing microscopic fissures, the protocol halts secondary neurogenic inflammation.

These findings correlate with recent cohort analyses documenting a severe ceiling effect regarding isolated intranasal corticosteroids. Without concurrent mechanical clearance, steroid molecules become trapped in the pathological mucus blanket, degrading bioavailability by up to 40%. The methodology deployed here mathematically circumvents this pharmacokinetic barrier. The isotonic lavage flushes hyper-concentrated histamines from the nasal vault, priming receptor sites for maximal absorption. Perennial allergic rhinitis must be treated as a dual pathology: an immunological overreaction combined with severe biomechanical failure of the mucociliary escalator.

While the 12-week observation period successfully captures acute mucosal healing, it falls short of predicting multi-year relapse rates. Subsequent prospective studies utilizing advanced non-invasive transcriptomic nasal swabbing are required to map exact ciliary beat frequency alterations at the cellular level.

### **Scientific Novelty and Practical Significance**

This investigation achieves definitive scientific novelty by engineering the first mathematically verified, functional mapping of the pediatric nasal cavity undergoing combined regenerative therapy for allergic rhinitis. Practically, the established statistical indices provide an immediate blueprint for pediatric treatment algorithms. By formally integrating a dexpanthenol-enriched mechanical lavage as a prerequisite to topical steroid administration, specialists can exponentially amplify drug efficacy, restore innate mechanical immunity, and intercept the trajectory of irreversible turbinate hypertrophy.

### **Conclusion**

Mitigating the anatomical and physiological degradation caused by perennial allergic rhinitis demands a paradigm shift away from simple immunosuppression toward holistic mucosal rehabilitation. The empirical data definitively establishes that structural mucosal failure is fully reversible when targeted mechanical clearance and epithelial nutrients are combined with standard anti-inflammatory agents. Attempting to manage an architecturally damaged nasal cavity purely through chemical symptom suppression is biologically flawed; simultaneous protection and restoration of the ciliary micro-environment is absolutely imperative.

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## **Prevalence and Prevention of Diabetes in Uzbekistan: Systematic Review**

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### **Abstract:**

Diabetes mellitus represents a growing public health challenge in Uzbekistan, contributing to the increasing burden of non-communicable diseases (NCDs), which account for over 80% of total mortality. This review article employs qualitative analysis to examine trends in diabetes prevalence, associated risk factors, and the effectiveness of current policies. Data were collected from PubMed, Google Scholar, Scopus, and reports from the International Diabetes Federation (IDF), Global Burden of Disease (GBD), World Health Organization (WHO), and national sources, with comparisons to selected countries.

The findings indicate a rapid increase in diabetes prevalence, rising from approximately 813,000 cases in 2011 to 1.5 million in 2024, with projections reaching 2.2 million by 2050. A significant proportion of cases (74%) remain undiagnosed. The burden of disease, measured by disability-adjusted life years (DALYs), has increased markedly, with notable regional disparities. Key risk factors include obesity, physical inactivity, unhealthy diet, and hypertension, alongside limited awareness and inadequate screening. Despite ongoing national programs, challenges such as insufficient treatment coverage, outdated registries, and gaps in preventive care persist. Strengthening early detection, improving primary healthcare, and implementing targeted prevention strategies are essential to mitigate the growing impact of diabetes in Uzbekistan.

**Keywords:**

Diabetes mellitus, prevalence, risk factors, prevention, screening, public health, health policy, Uzbekistan

**Introduction**

Diabetes has become a major global health challenge. The International Diabetes Federation counted 529 million adults with diabetes in 2021, but by 2050, it'll cross 1.3 billion (1). Most of the surge hits low- and middle-income countries. Nearly all cases are type 2—driven by genetics, urban living, aging, and lifestyle factors. (2)

Uzbekistan is among the countries heavily impacted by this trend. By 2019, 80% of deaths were due to non-communicable diseases (3). Diabetes cases reached from 813,000 in 2011 to 1.5 million today, with 2.2 million expected by 2050. The rate jumped from 6.4% to 7.5% (1). Notably, approximately three out of four adults with diabetes remain undiagnosed and do not receive adequate care (4).

The country isn't ignoring the problem. Uzbekistan with the help of WHO and World Bank, is trying to shift from old-fashioned hospital care to prevention and primary care (3). National Health Strategy 2030 focuses on early detection, family medicine, and community-based prevention (5). The Sirdarya pilot project, in partnership with World Diabetes Foundation and WHO, aims to evaluate innovative approaches (3). This review article aims to bring together scattered information on prevalence, risk factors, screening, prevention, system capacity, and policy gaps to support more effective policies and research in addressing diabetes.

**Prevalence of Diabetes in Uzbekistan**

**National and Regional Estimates**

IDF shows diabetes is from 813,000 in 2011 to 1.5 million by 2024, shooting up to 2.2 million by 2050. The prevalence rose from 6.4% to 7.5%, though remaining slightly below the global average of 11.1%; however, this gap is shrinking rapidly (1). According to the GBD (Global Burden of Disease) 2021 study, diabetes accounted for

approximately 341,000 DALYs (6) (disability-adjusted life years), equivalent to 1,147 per 100,000 population. Since 1990, DALYs have nearly quintupled, with rates increasing by 151% (6), indicating not only rising prevalence but also a growing disease burden. The NCD Risk Factor Collaboration estimates that roughly 89% of untreated diabetes cases in Central Asia. Uzbekistan demonstrates lower screening coverage, highlighting the need to strengthen primary healthcare system (4).

### **Local and Regional Patterns of Diabetes**

Diabetes prevalence in Uzbekistan shows notable regional variation influenced by lifestyle and geography. In Bukhara, diagnosed cases rose from 2.1% to 2.8% over five years (7). Higher prevalence is noticed in desert areas such as Kanimekh (12.7%) compared to mountainous regions like Nurota (~7%) (8). Prediabetes is also common, especially in desert populations, where poorer glycemic control, higher BMI, and lower physical activity levels are common (8). These key findings suggest the need for region-specific prevention strategies.

Samarkand shows a high-burden, with a large number of reported cases and a predominance of type 2 diabetes, particularly in individuals over 40 years of age (9). Hypertension is also prevalent among affected individuals (1), further increasing disease risk.

### **Type, Distribution and Risk Patterns**

Type 2 diabetes accounts for over 90% of cases in Uzbekistan, consistent with global trends (2). Although pediatric data are limited, existing evidence recommends a growing concern due to rising childhood obesity and inactivity. A considerable part of the population is at high risk, with large numbers of individuals affected by impaired glucose regulation (2).

### **Regional Comparisons**

Compared with other regions, Uzbekistan faces significant challenges in screening and diagnosis. Countries such as Iran reports lower portion of undiagnosed cases (10).

Uzbekistan is experiencing gaps in detection and registry systems (1). Strengthening primary healthcare and improving surveillance system is very important to address the rising burden of diabetes.

### **Risk Factors in Uzbekistan**

#### **Global Evidence**

Bellou et al. list 142 non-genetic risk factors for type 2 diabetes. Top causes: bad food, inactivity, sugary drinks, high ALT or uric acid, low vitamin D, obesity, preterm birth, air pollution, metabolic issues, smoking, hypertension, low education, and odd blood lipids (11). Uzbekistan has all of them.

#### **Local Data**

One study followed 1,200 adults aged 35–75 years in clinics. Among 480 with T2DM: average BMI was 31.8, waist 102.3cm, BP 148/92, HbA1c 8.7%. Nearly three-quarters didn't exercise, most ate poorly, over half had high stress, and about a fifth smoked (12). The prediabetes group averaged 52.6 years old, BMI 29.4—borderline numbers all around. Metabolic troubles hit middle age hardest.

#### **Demographic, Environmental and Socioeconomic Factors**

Age is a major factor. In Samarkand, people over 40 had a 13.7% diabetes rate (12). Uzbekistan's adult population will jump from 21.9 million to over 30 million by 2050 (1)—so expect a increase wave of cases. Women show higher rates—68% in Samarkand and 71% in Tashkent (11). Climate also plays a real role—a desert region has double the T2DM rate compared to mountains, probably because heat keeps people indoors (8). Prevention needs to fit—maybe early morning or indoor exercise. Cost and access are major obstacles. With three-quarters undiagnosed, screening is very limited. Health literacy is also low (3). High out-of-pocket costs drive people away from care altogether.

#### **Methods**

This review article is based on a broad search of available literature and reports on diabetes in Uzbekistan and globally. Information was collected from databases such as

PubMed, Google Scholar and MEDLINE, as well as national Uzbek data sources. In addition, international reports from IDF (International Diabetes Federation) and WHO (World Health Organization) were used to ensure up-to-date and reliable data. Relevant studies, reports, and policy documents were selected based on their relevance to diabetes prevalence, risk factors, prevention strategies, and health system capacity. The gathered information was then compared and combined to provide a clear and comprehensive overview of the current situation.

## **Results:**

### **Preventive Strategies and Programs**

#### **Primary Prevention—Stopping Diabetes before it starts**

Uzbekistan fights diabetes mostly by health education and community outreach (5). Doctors and nurses advice patients for better diet, more exercise, and screening for those, who are at risk (3). Campaigns happen everywhere—often kicked off by Presidential orders (5). “Healthy Life” rounded up local officials, youth, religious leaders, women and men groups. In trial areas, 80% of people over 40 got screen out for hypertension and diabetes (5). WHO programs target clinics, focusing on alcohol, tobacco, bad nutrition and inactivity (3).

Other countries proved that primary prevention works. India and China lowered the rates with lifestyle programs. Schools, soda taxes, cooking classes, group support—all contribute to reduce risks (2).

#### **Secondary Prevention—Screening and Early Detection**

Uzbekistan’s big struggle is the missed diagnoses (4). Screening (especially over 40) is picking up (18). Navoi trained the nurses, handed out glucometers for screening. Andijan and Nukus ran similar drives during Diabetes Month (5). Rural and remote areas need more attention. Studies show universal screening costs too much so target high-risk groups (4). Strong primary care and referrals can change the things in better way (13).

#### **Tertiary Prevention—Managing Diabetes**

After diagnosis, it's all about control. Uzbekistan's situation has been improved with WHO Sirdaryo project—care is more patient-focused, staffs are trained, and teams are working together. Digital tools help manage follow-ups. They are trying to follow the WHO guidelines (3).

Still, in Tashkent, only about 13.5% of T2DM patients control their glucose, and regular HbA1c checks are rare (1). Management needs a lot of more work. Kazakhstan saw fewer deaths after improving diagnosis and care—good management saves lives (1).

### **Health System Reforms**

Uzbekistan's Health System Strategy 2030 (backed by WHO and World Bank) focuses on stronger primary care and preventive care (5). When care is provided in local context, it keeps the cost low (3). NCDs cost over \$1 billion a year—medical bills, lost productivity and early deaths (18). Primary care saves money and delivers better results (3).

### **Policy and Health System Capacity**

#### **Diabetes Registries**

Registration matters a lot, but this system is still weak in Tashkent(1). In 2016, 16,356 patients tracked, but only a fifth got lipid checks, just 3% had triglycerides tested, HbA1c barely reported (1). Only 13.5% kept glucose controlled (1).

Kazakhstan's electronic registry tracks more people, but real prevalence (2.1%) doesn't match surveys (8%) (10). Half remain undiagnosed (1). Electronic registries are better, but don't catch everyone. Bangladesh's registry is shaky—no national database (14).

### **Creative, Affordable Approaches**

Other countries show what works:

— Train nurses, pharmacists, health workers to handle diabetes care. India, Pakistan saw improved blood lipids, blood pressure, and HbA1c (6).

— Text reminders help people stick to meds, healthy habits. Mobile eye screenings catch diabetes early, especially in remote spots (4).

— Mobile vans bring checkups to neighborhoods, covering those who are often missed (2).

— Schools run eating/exercise programs to tackle childhood obesity and future diabetes. Soda taxes work—a 20% increase in India and Mexico brought down obesity and diabetes (2).

— Universal insurance needs to mean real coverage—meds, support, continuous care (3).

### **Future Directions and Recommendations**

So, what does Uzbekistan actually need to do?

1. Launch nationwide diabetes/prediabetes screening for everyone over 40—use clinics and mobile vans (5). Start with high-risk groups (18).
2. Adapt prevention according to regional context—cool indoor or early morning exercise where it's very hot (8,19).
3. Health education—push info through TV, social media, schools, workplaces, mosques (3). Early checkups should be a routine practice.
4. Invest in clinics. Every clinic needs the right test kits, trained staff, and systems to spot high-risk patients (4). Pay health workers for screening/counseling targets. Blood sugar and cholesterol checkups must be standard (20).
5. Tie diabetes prevention into other health efforts—maternal/child health, school meals, exercise, screenings for all pregnant women (21, 15).
6. Build a national diabetes registry—connect clinics, doctors. Gather data on cases, treatments, and complications (1).
7. Empower nurses/pharmacists, send text reminders, use mobile vans, school programs, and enforce soda tax (4).
8. Track everything—testing programs, monitor outcomes, costs, and barriers, so resources go where they actually help (4).



9. Make everyone part of the solution: coordinate health, education, agriculture, and local government. Social and environmental factors should be the part of the solution(22,23).

10. Implement universal health insurance—cover screenings, tests, meds like insulin/metformin, and ongoing care (3). Keep treatment affordable and available to all.

### **Conclusion:**

Diabetes is becoming a serious and growing problem in Uzbekistan, with many people still undiagnosed and not receiving proper care. Since the country has started important reforms, particularly in prevention and primary care, there is still a long way to go. Strengthening early detection, improving public awareness, and making healthcare more accessible and affordable are key steps forward. Simple actions like community education, better screening, and stronger health system can make a big difference. With the right efforts and cooperation across sectors, Uzbekistan has a strong opportunity to slow down the rise of diabetes and improve the health of its population.

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