

PHARMA EPISTLE



Dear Readers,

It is with immense pride and enthusiasm that we welcome you to the latest edition of Pharma Epistle, the official e- magazine of I.T.S College of Pharmacy, Muradnagar, Ghaziabad. This publication reflects not only the academic excellence of our institution but also the creativity, dedication, and innovative spirit that define our vibrant college community.

At I.T.S College of Pharmacy, we believe that education extends beyond classrooms and laboratories. Pharma Epistle serves as a dynamic platform where knowledge meets expression — a space where students, faculty, researchers, and staff come together to share ideas, celebrate achievements, and inspire one another.

This edition presents a rich blend of intellectual and creative contributions. From insightful articles on emerging pharmaceutical trends and research advancements to thought-provoking write-ups, literary pieces, artistic creations, and snapshots of campus life — every submission showcases the remarkable talent within our institution. We are proud to feature the active participation of our students, whose enthusiasm and originality continue to elevate the standards of this publication.

HAPPY READING !

Warm Regards,

Nidhi Sharma

Editor

I.T.S College of Pharmacy

Arts Corner



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Photography



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Non-Animal Methods of Drugs Development and Testing

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Abstract

The traditional reliance on animal models for evaluating drug safety and efficacy has been increasingly challenged due to ethical considerations, regulatory changes, and scientific advancements. This shift has led to the development of alternative methodologies collectively known as New Approach Methodologies (NAMs), which aim to reduce or replace animal testing. **In vitro** techniques, such as cell culture assays, provide controlled environments to study cellular responses to pharmacological agents. These methods utilize human cells to more accurately predict human-specific reactions, thereby enhancing translational relevance. **In silico** approaches, including computational modeling and simulations, predict drug behavior by replicating human biological processes. These models can efficiently screen compounds and forecast potential toxicities, streamlining the drug development pipeline. **Organ-on-a-chip** technology employs microfluidic devices to simulate the microarchitecture and functions of human organs. By recreating the dynamic interactions within human tissues, these platforms offer insights into drug interactions in a physiologically relevant context. **Microdosing** studies involve administering sub-therapeutic doses of investigational drugs to human volunteers. This approach allows for the assessment of pharmacokinetics and early pharmacodynamic effects without significant risk, providing preliminary human data that can inform further development. Collectively, these NAMs not only address ethical concerns but also enhance the predictive accuracy of preclinical testing by more closely mirroring human physiology. Challenges remain, particularly in replicating the full complexity of human biological systems; however, these innovative methods represent a significant advancement toward more humane and effective drug development processes.

KEYWORDS: - NAMs, In vitro techniques, In silico techniques, Organ-on-a-chip techniques, Microdosing studies.

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Historical Beauty Practices and their Physical/Medical Effects.

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Skin Whitening Practices

In various regions including Japan and colonial-era Europe, pale skin symbolized wealth and purity.

Dangerous Ingredients Used:

- Lead-based powders
- Mercury compounds
- Arsenic

Pharmaceutical Impact:

Ironically, cosmetic "beauty" products overlapped with early pharmaceutical preparations. Many toxic compounds used in cosmetics were prepared by apothecaries. Long-term use led to:

- Lead poisoning
- Kidney damage
- Neurological symptoms

This historical misuse contributed to modern pharmaceutical regulations and toxicology standards.



Tight Corsets in Europe

During the 16th to 19th centuries in Europe, especially in France and England, women wore tightly laced corsets made from whale baleen (often called "whalebone") to achieve an exaggerated hourglass figure.

• Purpose:

Slim waist (sometimes under 18 inches)

Symbol of refinement and discipline

Social and aristocratic status

• Physical Consequences:

Restricted lung capacity

Fainting spells

Rib deformities

Organ displacement

Digestive issues

• Pharmaceutical & Medical Relation:

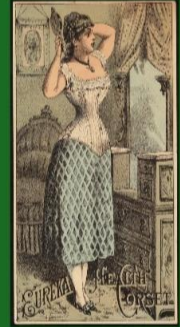
Smelling salts (ammonium carbonate) for fainting

Digestive tonics

Laudanum (opium tincture) for pain relief

Herbal relaxants

The frequent fainting among women led to a widespread market for stimulants and restorative tonics in Victorian Europe.



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Foot Binding in China

For nearly a thousand years, particularly during the Song Dynasty and later periods, foot binding was practiced among Han Chinese women. Young girls' feet were tightly wrapped to prevent normal growth, creating the so-called "lotus foot," typically about 3 inches long.

• Purpose:

Symbol of beauty and femininity

Indicator of family wealth and social status

Increased marriage prospects

• Physical Consequences:

Broken toes and arch deformation

Chronic infections

Reduced mobility

Lifelong pain

• Pharmaceutical & Medical Relation:

Women often relied on:

Herbal antiseptic pastes (using traditional medicinal herbs)

Powdered alum to reduce infection

Pain-relieving herbal decoctions

Camphor-based balms for swelling

Traditional Chinese medicine practitioners played a role in managing infections, bone pain, and ulcerations. The need for wound care preparations increased in communities where foot binding was common.



Neck Elongation Among the Kayan

Among the Kayan (often associated with Myanmar and Thailand), women wear brass neck rings that create the illusion of elongated necks.

Physical Consequences:

- Collarbone compression
- Muscle weakening
- Skin irritation

Medical Connection:

- Ointments for skin irritation
- Herbal muscle relaxants
- Topical treatments for bruising



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DIABETES

About

Diabetes is a chronic metabolic disease characterized by high blood glucose (hyperglycaemia) resulting from inadequate insulin production or inefficient insulin use, affecting hundreds of millions globally.

TYPES

Type 1 (insulin deficiency) and Type 2 (insulin resistance) are the main forms, alongside gestational diabetes during pregnancy.

SYMPTOMS

Common signs include frequent urination, extreme thirst, unexplained weight loss, fatigue, and blurry vision.

pathophysiology

Studies focus on how insulin resistance and beta-cell dysfunction lead to hyperglycemia

TREATMENT ADVANCEMENTS

Research highlights new medications like GLP-1 drugs for weight loss and blood sugar control.

PREVENTION & LIFESTYLE

Articles frequently emphasize that lifestyle modifications, including diet and exercise, can prevent or manage Type 2 diabetes.

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