

An initiative of the IUPHAR to foster CLINICAL PHARMACOLOGY development

2026 IUPHAR World Smart Medication day

SAVE THE DATE

Race, Ethnic and Socioeconomic influences on Clinical Pharmacology



May 7, 2026





2026 IUPHAR INTERNATIONAL STUDENTS' POSTER COMPETITION. MAY 7

- All entries should illustrate and reflect the 2026 theme “**Race, Ethnic and Socioeconomic influences on Clinical Pharmacology**”
- Two poster entries:
 - **General posters:** open to all medical, pharmacy or pharmacology **pregraduate students.**
 - **Research posters:** open to all medical, pharmacy or pharmacology **pre- and post-graduate students.**
- **4 prizes awarded by IUPHAR**

This year's IUPHAR WSMD 2025 poster presentation and webinar can be accessed via this link
<https://iuphar.org/2025-world-smart-medication-day/>



2026 IUPHAR INTERNATIONAL STUDENTS' POSTER COMPETITION. MAY 7th

- **Winners of local society competitions due at IUPHAR by **April 6, 2026****
- **4 prizes awarded by IUPHAR**
- **Awardees invited to present at World Smart Medication Day Webinar May 7, 2026**

[2025 World Smart Medication Day | IUPHAR - International Union of Basic & Clinical Pharmacology](#)

The procedure for selecting the winners of the poster competition is as follows

1. Spread the call for student posters through your members' National Societies.

Two poster entries:

- **General posters:** open to all medical, pharmacy or pharmacology **pregraduate students**.
- **Research posters:** open to all medical, pharmacy or pharmacology **pre- and post-graduate students**

2. IUPHAR member National Societies of Pharmacology will **review the posters** that meet the criteria and **nominate the best in each category** for the IUPHAR WSMD

3. The National Society of Pharmacology will provide us with the names of the nominees filling in the form that is uploaded to the website.

[IUPHAR WSMD 2025 – NOMINEE SUBMISSION FORM](#)

4. **Winners of the local society competitions should be sent to IUPHAR by 6 April 2025**

5. **All posters received** will be judged for originality, relevance, message, universality by the **IUPHAR EC** and members of the **M&CP committee who will nominate the winners**.

6. **Winners will be invited to present** at the World Smart Medication Day webinar **on 7 May 2026**.

7. **Four prizes awarded** by IUPHAR, **2 prizes in each category**

General poster prize winners 2025



Leonor Amador Pérez
Marina Gamero Martínez
University of Malaga,
Spain

BLOWING UP PHARMACOLOGY

1. LIBERATION

A SCIENTIST IN 1982 THINKING ABOUT STARTING HIS CLINICAL TRIAL FOR A NEW DRUG...

BOOM!

YOU MUST PAY ATTENTION TO PHARMACOKINETIC DIFFERENCES. I'LL EXPLAIN SOME OF THEM TO YOU

WAIT! I COME FROM THE FUTURE. YOU CAN'T FORGET THAT THE SAME DRUG CAN ACT DIFFERENTLY IN MEN AND WOMEN.

WE MUST CONSIDER THAT WOMEN USUALLY HAVE A **SLOWER GASTRIC EMPTYING**, WHICH AFFECTS THE RELEASE SPEED, AND A **HIGHER ACIDITY LEVEL**, WHICH CAN MODIFY THE DRUG'S SOLUBILITY

THIS CAUSES LIPOPHILIC DRUGS TO BE STORED MORE IN FAT

WOMEN HAVE A HIGHER PERCENTAGE OF **FAT TISSUE** COMPARED TO MEN.

THESE DIFFERENCES MAY CAUSE SOME DRUGS TO LAST LONGER IN WOMEN'S BODIES OR HAVE MORE INTENSE OR PROLONGED EFFECTS

2. ABSORPTION

IT MAY VARY DEPENDING ON THE PHASE OF THE **MENTRUAL CYCLE**.

SOME DRUGS THAT ARE RAPIDLY METABOLIZED IN MEN MIGHT ACCUMULATE IN WOMEN AND CAUSE TOXIC EFFECTS IF DOSES ARE NOT PROPERLY ADJUSTED.

3. DISTRIBUTION

WOMEN TEND TO HAVE **LOWER ALBUMIN LEVELS**, WHICH CAN INCREASE THE AMOUNT OF ACTIVE DRUG IN THE BLOOD.

4. METABOLISM

WOMEN HAVE HIGHER ACTIVITY IN CERTAIN **CYP450** ENZYMES, SUCH AS CYP3A4 AND CYP2D6, WHICH CAN LEAD TO **FASTER** METABOLISM OF SOME DRUGS.

WOMEN GENERALLY HAVE A SLIGHTLY **LOWER GLOMERULAR FILTRATION RATE (GFR)** THAN MEN DUE TO LOWER MUSCLE MASS AND THEREFORE LESS CREATININE IN THE BLOOD.

5. EXCRETION

URINARY **PH** MAY BE SLIGHTLY MORE ACID, WHICH ALSO AFFECTS THE ELIMINATION OF SOME DRUGS

AS YOU HAVE SEEN, **PHARMACOKINETIC DIFFERENCES** BETWEEN MEN AND WOMEN AFFECT THE **LADME** PROCESSES, WHICH CAN IMPACT THEIR EFFICACY AND SAFETY. THIS IS WHY A CLINICAL TRIAL THAT REFLECTS THE **ACTUAL POPULATION** IS OF VITAL IMPORTANCE. THESE VARIATIONS REQUIRE **DOSE ADJUSTMENTS** AND ATTENTION TO POTENTIAL ADVERSE EFFECTS. **SOME DRUGS MAY REMAIN EFFECTIVE FOR LONGER IN WOMEN AND EVEN CAUSE TOXIC EFFECTS THAT DO NOT OCCUR IN MEN.** A PERSONALIZED TREATMENT APPROACH OPTIMIZES CLINICAL OUTCOMES AND MINIMIZES RISKS.



General poster prize winners 2025



Zhan Xuan Chong

IMU University,
Malaysia



“One Pill Fits For All” Approach Has to Stop!

Correct Drug Selection

Suitable Drug Regimen

No Error in Prescribing & Dispensing

Adequate Duration

Suitable formulation and Route of Administration

Correct Dose

Pharmacokinetics

- Females generally have **more body fats** than Male
- E.g. Lipophilic drugs like diazepam have a **longer half-life** in women.

Pharmacogenomic Influences

- A **“BIG”** term. Prescribe drug to the right patient, **maximises the benefit-risk ratio**
- E.g (PK aspect): Patients with CYP2C19 enzyme deficiency can have anti-bleeding effects when taking clopidogrel.
- E.g (PD aspect): Patients with HLA-B*5701 polymorphism can increase skin hypersensitivity when taking abacavir

P.H.A.R.M.A
GENDER DIFFERENCES IN CLINICAL PHARMACOLOGY
World Smart Medication Day 2025

Adaptation to Chronic Use

- Males develop **faster drug tolerance** due to higher enzyme activity and receptor desensitisation
- Females develop slower tolerance but may have stronger withdrawal symptoms (e.g: benzodiazepine)

Hormonal Influence

- Oestrogen and Testosterone have ADME effects
- E.g. Propranolol clearance in men surpasses that of women because testosterone affects liver enzyme activity.

Metabolism

- Females have more active **CYP3A4 activity**
- Thus, females clear cyclosporine and erythromycin **faster**

Ever wonder why men crash from caffeine sooner?

- Male have faster clearance due to **higher CYP1A2 activity.**

Adverse Drug Reactions

- Female has **MORE ADR** due to metabolism and body composition
- E.g: Warfarin & Fluconazole (oral candidiasis) **increase bleeding** in female

Risk & Safety

- Females have higher risks of drug-induced liver injury
- e.g.: Teratogenic drugs (e.g. ACE inhibitors) cause severe harm in the **embryonic stage (W3-W8)** in a pregnant female

“There are a lot of drugs that are prescribed on a ‘one-size-fits-all’ basis, and it’s clear that this doesn’t always work”
(Prendergast, 2020)

Practical Recommendations

- Labellings should include research-proven dosage recommendations and ADR for different genders
- Advocate more **women’s representation** in clinical, disease research trials

Role of Inclusive Trial Design & Regulatory Guidance

Conclusion Statement

As clinicians, providing treatment is essential for our patients, but we must always take into consideration of gender differences and ensure we tailor **personalised treatment ALWAYS!**

References & Declaration

Chong Zhan Xuan (ME224)

I actually consider it a scandal that researchers who know the complete female cycle have an influence on a drug or a disease ignore this cycle by conducting studies only on male test animals, and then it is approved for both sexes.
(Regitz-Zagrosek, 2023)
Translated from German

2025 RESEARCH POSTERS WINNERS



Andrew Sullivan (United Kingdom)

Barts and the London School of Medicine and Dentistry, London, United Kingdom

Sex differences in optimal medical therapy following invasive angiography for coronary artery disease.



Elonora Cecchin (Italia)

Centro di Riferimento Oncologico – Aviano, Pordenone, Italy

Sex Differences in Imatinib and Sunitinib Exposure:
The Role of Pharmacogenetics and Therapeutic Drug
Monitoring.



Save The Date

WCP 2026 - 12-17 JULY
MELBOURNE, AUSTRALIA

20th World Congress of Basic
and Clinical Pharmacology 2026

#WCP2026

