Have you ever felt different on your medication? More tired, more anxious, a bit off. And just assumed it was normal? What if those changes were not from your disease at all, but from an undetected drug-drug interaction? And what if your own observations could be the key to catching it?

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SafePolyMed.eu

Improving Safety in Polymedication by Managing Drug-Drug-Gene Interactions

Safety in Polypharmacy training 2026

Session 2 - Video 2/2

Fundamental Concepts in Drug-Drug Interactions (DDIs)

The Patient Perspective: PROs, PROMs & Real-World DDI Cases

Rachel Giles, Olga Millán

LeukaNET Leukemia Advocates Network

Patvocates PATIENT ENGAGEMENT IS IN OUR DNA

Funded by the European Union

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Why DDIs Matter for You

Patients on multiple medications face a significantly higher risk of medication-related harm
→ **Your clinical data must be balanced with your patient experience**

DDIs can come from:

- Prescribed medicines
- Self-medication (OTC drugs)
- Herbal supplements
- Food & drink (e.g., grapefruit)

Understanding your meds can lead to:

- Better care plans
- Improved shared decision-making
- Stronger treatment adherence
- Discovering unknown DDIs

💡 Your perspective fills gaps that lab tests alone cannot

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Patient Reported Outcomes (PROs)

A PRO is a health outcome questionnaire reported directly by the patient and is related to assessing health-related Quality of Life and function.

Standard Clinical Measures

- Blood pressure readings
- Lab test results
- Imaging scans

PROs: What YOU Report

- How you feel day-to-day
- Energy, mood, pain, anxiety
- Daily functioning & wellbeing

💡 Two patients with the same diagnosis may experience their treatment **VERY** differently.

James KA, et. al., Res Social Adm Pharm. 2022 Sep;18(9):3501-3523. doi: 10.1016/j.sapharm.2022.03.003

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PROMs: Measuring What Matters to You

PROMs = Patient Reported Outcome Measures — systematic self-assessment tools to collect data on PROs

Health-Related Quality of Life



- Physical function
- Emotional wellbeing
- Social role
- Psychological health

Patient Satisfaction



- Preferences
- Healthcare delivery
- Treatment evaluation
- Device satisfaction

Daily Living Activities



- Mobility
- Self-care
- Work & household
- Leisure activities

💡 PRO data pointing to drug-related issues **MUST** lead clinicians to consider DDIs, not just single-drug effects

Kadesha, et al., 2022. https://doi.org/10.1016/j.sapharm.2022.03.003

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Real-World Case 1
Atorvastatin & Grapefruit Juice

Atorvastatin

Common cholesterol lowering medication

Is **processed** and removed by certain CYP450 enzymes

Grapefruit & Juice

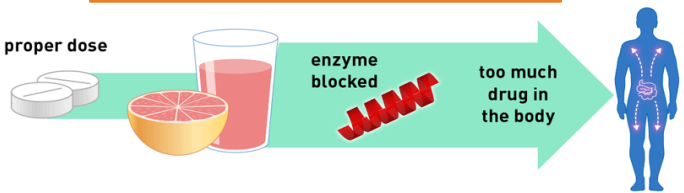
Natural substance, not a medicine

It **BLOCKS** the same CYP450 enzymes

Consequence

Drug accumulates in the body

↑ **risk** of muscle pain & damage



⚠ A DDI caused **not** by another drug, but **by a natural substance** that you might drink every day

"Image: U.S. Food and Drug Administration, Grapefruit Juice and Some Drugs Don't Mix," https://www.fda.gov/consumers/consumer-updates/grapefruit-juice-and-some-drugs-dont-mix

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Real-World Case 2
Hidden DDIs in Cancer Clinical Trials (SWOG Study)

167 cancer trial patients on oral chemotherapy | Average of 6.6 medications at enrollment

18.6%

had a DDI at enrollment

12.0%

had a DDI violating the trial's safety rules – exclusion criteria

7.2%

had a clinically relevant DDI

83.3%

of clinically relevant DDIs were due to acid suppressants given with dasatinib

Data from Marcath, et al., BMC Cancer 21, 324 (2021). https://doi.org/10.1186/s12885-021-08050-w

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Real-World Case 3
When a DDI is Actually Beneficial

Synergistic DDI (beneficial)

Dorzagliatin + Sitagliptin
(Phase 1 trial, Type 2 Diabetes)

Improved blood sugar control than either drug alone

→ No increased side effects

→ No extra hypoglycemia risk

💡 Not all DDIs are harmful, some can be used deliberately to improve outcomes → The key is monitoring

Authors' summary of Chen et al., 2023 https://www.nature.com/articles/s41467-023-36946-7

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Your Voice Matters!

If something feels different after a medication change, write it down and tell your healthcare team.

Take PRO questionnaires seriously, your answers help your healthcare team make better decisions.

Remember: DDIs are not only about prescription drugs. Food, drinks, and supplements all play a role.

Session 2 complete!

▶ Next: Session 3 — Drug-Gene & Drug-Drug-Gene Interactions

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Credits & Attributions

Authors

Rachel Giles | Olga Millán

AI disclosure

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Figures

- Grapefruit and drugs illustration from Grapefruit Juice and Some Drugs Don't Mix by U.S. Food and Drug Administration. https://www.fda.gov/consumers/consumer-updates/grapefruit-juice-and-some-drugs-dont-mix

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