# Medication adherence during and after pregnancy among women at risk for gestational hypertensive disorders

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## Background and Objectives

The **risk of developing early-onset preeclampsia** can be reduced by using **low-dose aspirin** from ≤16 weeks of gestation. However, no data were available on medication adherence among women living in Belgium at risk for gestational hypertensive disorders (GHD).

This study aimed to evaluate **medication adherence** in this high-risk pregnant population, and to explore the **relationship between medication adherence and pregnancy and neonatal outcomes**.

## Methods

A **longitudinal cohort** was established as part of the prospective Pregnancy REmote MOnitoring (PREMOM II) RCT conducted in Belgium.

Participants assigned to the remote monitoring group were included, all of whom initiated **160 mg aspirin per day before 16 weeks** of gestation.

**Adherence measurements**

- **The Probabilistic Medication Adherence Scale** (ProMAS questionnaire)
  - Completed at 10-21 days postpartum
  - Completed at 4-6 months postpartum
- Self-registrations via the **MediSafe app**

**Medication intake** in the **MediSafe app** was recorded as 'taken', 'skipped', or 'missed'. **'Taken' and 'skipped'** required active user input via the app. After up to four 10-minute snoozes, reminders were automatically marked as **'missed'**.

The **minimal aspirin intake percentage** was calculated as the proportion of 'taken' entries relative to all recorded entries ('taken', 'skipped', and 'missed').

The **maximal percentage** was calculated as 'taken' entries divided by the sum of 'taken' and 'skipped' entries—i.e., the number of days with actively recorded medication intake.

## Results

A total of **73 participants** were included, with a **median gestational age of 14.1 weeks at enrollment** (IQR:13.2-15.6).

*Table 1: Results of the ProMAS questionnaire completed during pregnancy and in the postpartum period.[a]*

| ProMAS score | During pregnancy (N = 61) | 10–21 days postpartum (N = 38) | 4–6 months postpartum (N = 34) |
|---|---|---|---|
| ProMAS – sum score | 10.3 ± 3.9 | 9.8 ± 4.5 | 8.8 ± 4.4 |
| Low adherence (0–4) | 4 (6.6%) | 5 (13.2%) | 7 (20.6%) |
| Medium-low adherence (5–9) | 23 (37.7%) | 13 (34.2%) | 11 (32.4%) |
| Medium-high adherence (10–14) | 22 (36.1%) | 14 (36.8%) | 14 (41.2%) |
| High adherence (15–18) | 12 (19.7%) | 6 (15.8%) | 2 (5.9%) |

The mean "minimal" and **"maximal" self-reported aspirin intake** during pregnancy was 82.5% (min-max: 4.2-100.0%) and **98.6%** (min-max: 79.4-100.0%), with **97.0%** achieving a **"maximal aspirin intake" level of ≥90%.**

Correlation analysis showed a **positive correlation** between the **pregnancy ProMAS sum score** and the **"minimal"** ($r = 0.524$, $p < 0.001$) and **"maximal"** ($r = 0.297$, $p = 0.028$) **self-reported aspirin intake**.

Women with **uncomplicated pregnancies** had **higher ProMAS adherence scores** in pregnancy (10.9±3.5), compared to those with complicated pregnancies (8.9±4.1).

## Conclusion

**Self-reported aspirin adherence among pregnant women** at risk for GHD in this RCT was **very high**.

However, further research is needed to assess "real-world" medication adherence as well as the value of the ProMAS questionnaire to predict, early in pregnancy, medication adherence throughout pregnancy & mother-infant outcomes.

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[a]Dreesen et al, Front Drug Saf Regul, 2025

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