For safer pregnancies.

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Pre-Eclampsia management in 2T/3T
with PlGF or sFlt-1/PlGF ratio

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# Pre-eclampsia management for optimal course of care

**Pre-eclampsia is a complication of pregnancy. Left untreated, it can lead to life threatening conditions. Avoiding pre-eclampsia would bring substantial improvements to maternal and fetal health.**

## What is the role of angiogenic factors?

PlGF and sFlt-1 are found to be key factors in the pathophysiology of pre-eclampsia. [4] Serum levels of PlGF and sFlt-1 are altered in women with pre-eclampsia compared to those with uncomplicated pregnancies. In pregnancies that develop pre-eclampsia, maternal serum placental growth factor (PlGF) levels decrease significantly, while soluble fms-like tyrosine kinase 1 (sFlt-1) levels increase several weeks prior to clinical symptom onset. [4]

Thus, PlGF and sFlt-1 are important biomarkers used to identify high risk women that are likely to develop preterm pre-eclampsia later in their pregnancy and to predict the onset of pre-eclampsia. Biomarker levels are also found to be correlating with severity of disease. During the 1st trimester sFlt-1 levels are not predictive for the onset of preterm pre-eclampsia. [4]

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### 1st Trimester:
### Screening and prevention of preterm pre-eclampsia

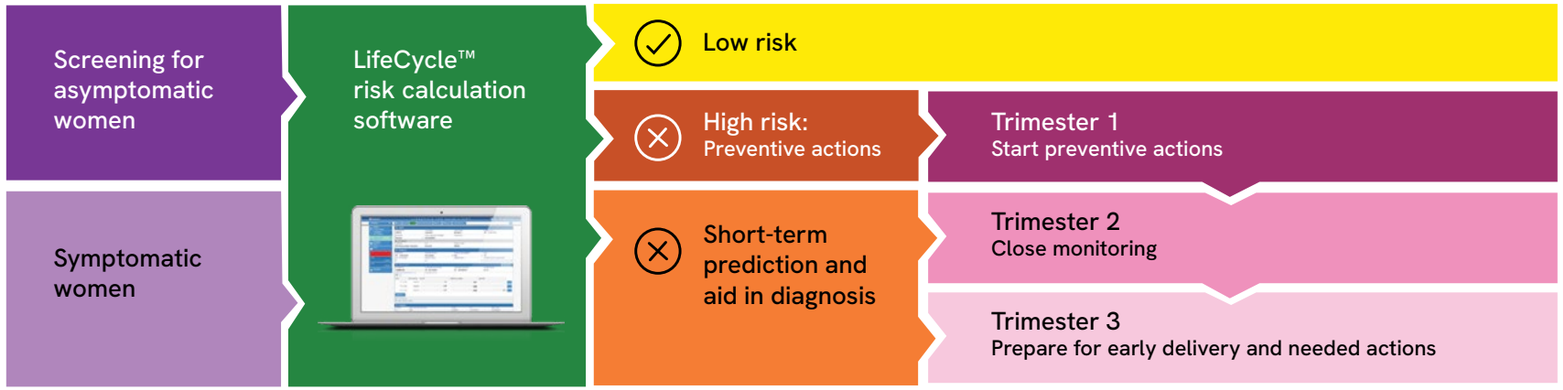
With pre-eclampsia screening, women with increased risk for preterm pre-eclampsia can be identified. This enables timely intervention for reducing the incidence of pre-eclampsia and enables efficient patient care thru pregnancy.

Traditional methods (Maternal risk factors) have poor sensitivity and specificity to predict pre-eclampsia. Better detection rate could be achieved with PlGF together with other relevant clinical information (maternal history, mean arterial blood pressure and uterine artery pulsatility index) for pre-eclampsia screening. Decreased PlGF levels predict future development of preterm PE.[1,2]

### 2nd and 3rd Trimester:
### Short term prediction and aid in diagnosis

Women with signs or symptoms of pre-eclampsia do not always develop pre-eclampsia. Angiogenic markers can be used to help identify women with increased risk for developing pre-eclampsia in the coming days.

It has been shown that decreased levels of PlGF or increased sFlt-1/PlGF ratio (increased sFlt-1 and decreased PlGF) can predict the subsequent onset of pre-eclampsia, and improve the clinical management and decision making (risk stratification) with symptomatic women.

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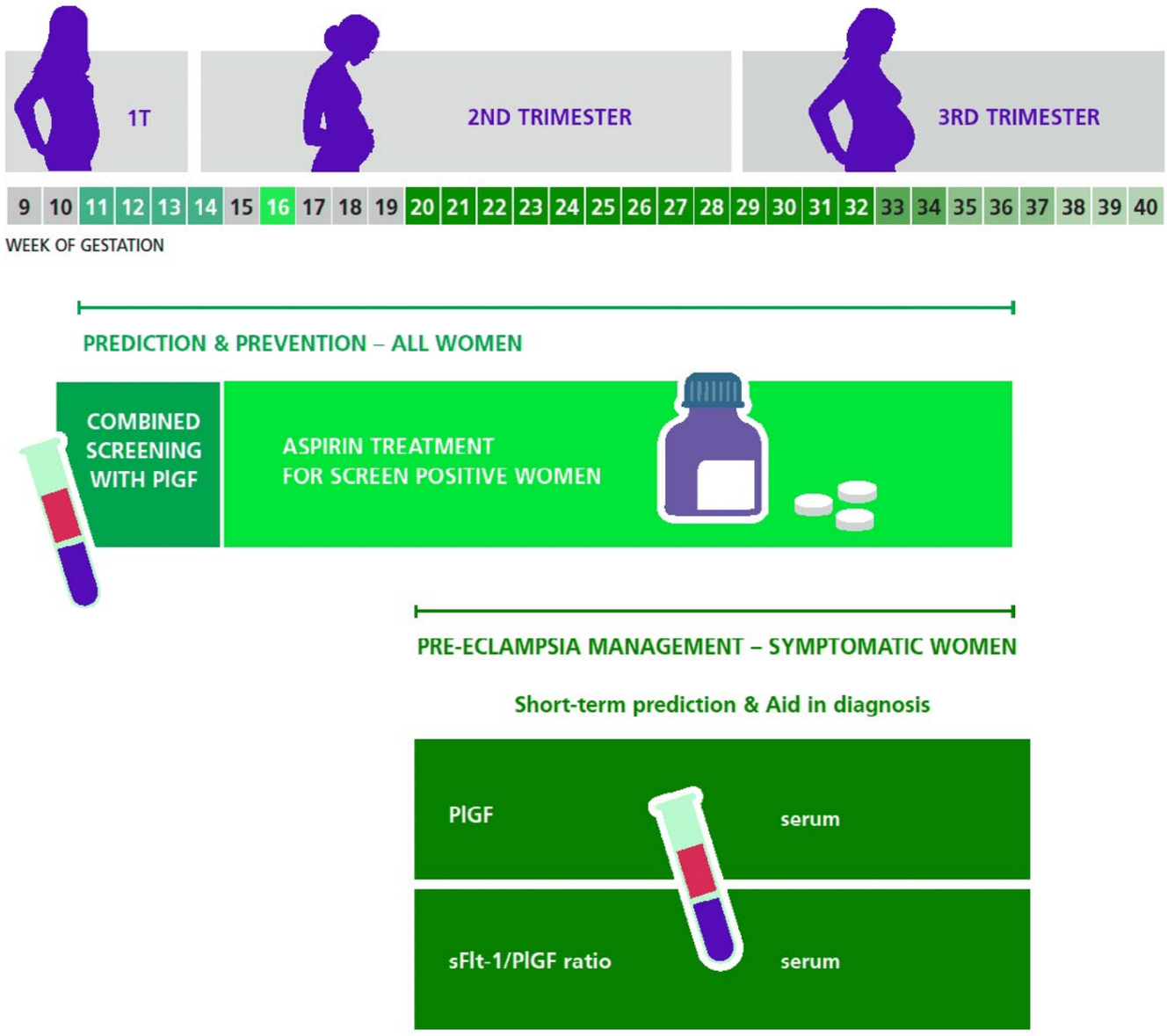


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# Second and third trimester: Short-term prediction and aid in diagnosis

**After week 20 of gestation, PlGF based testing improves pre-eclampsia management for symptomatic women**

## Short term prediction and aid in diagnosis

During the 2nd and 3rd trimesters sFlt-1 and PlGF are both predictive and diagnostic for pre-eclampsia. It has been shown that increased levels of sFlt-1 and decreased levels of PlGF in maternal serum can predict the subsequent onset of pre-eclampsia.[4, 5]

Determining serum PlGF concentration, used as a single marker, or sFlt-1 and PlGF, used as a ratio, improve the clinical management and decision making (risk stratification) with women showing signs and symptoms of pre-eclampsia.[4, 5]

## When is PlGF based testing valuable?

- For testing women with signs and symptoms of pre-eclampsia after week 20 of gestation
- To help Rule-out and Rule-in suspected pre-eclampsia
- To monitor women that are at high risk for pre-eclampsia
- To confirm clinical suspection of pre-eclampsia with symptomatic women and/or to confirm unclear diagnosis of pre-eclampsia
- Serum concentrations of sFlt-1 and PlGF can differentiate healthy women from women with pre-eclampsia. Changes in sFlt-1 and PlGF levels reflect the severity of the disease. [4, 5]

## What are the benefits of PlGF based testing in clinical care?

- To avoid unnecessary hospitalization that is associated with cost-savings
- To enable improved prognosis, triage & diagnosis leading to better maternal & neonatal outcomes

Decisions regarding delivery are not based solely on the PlGF based assays, but are always made in context of other clinical signs and symptoms.

## Two alternatives - PlGF as a single marker or sFlt-1/PlGF ratio

PlGF alone compared to sFlt-1/PlGF ratio for pre-eclampsia rule-in and rule-out has a comparable performance, and both options are equally recommended for clinical use. In addition to sFlt-1/PlGF ratio, PLGF alone, with concentration based cut-offs, could provide more simpler and affordable alternative to dual biomarker testing. [6, 7, 8]

Using PlGF has additional advantages. Studies have shown that PlGF is a good marker (decreased serum PlGF level) for identifying pregnancies with placental insufficiency including fetal growth restriction and/or stillbirth. [9, 10, 11]

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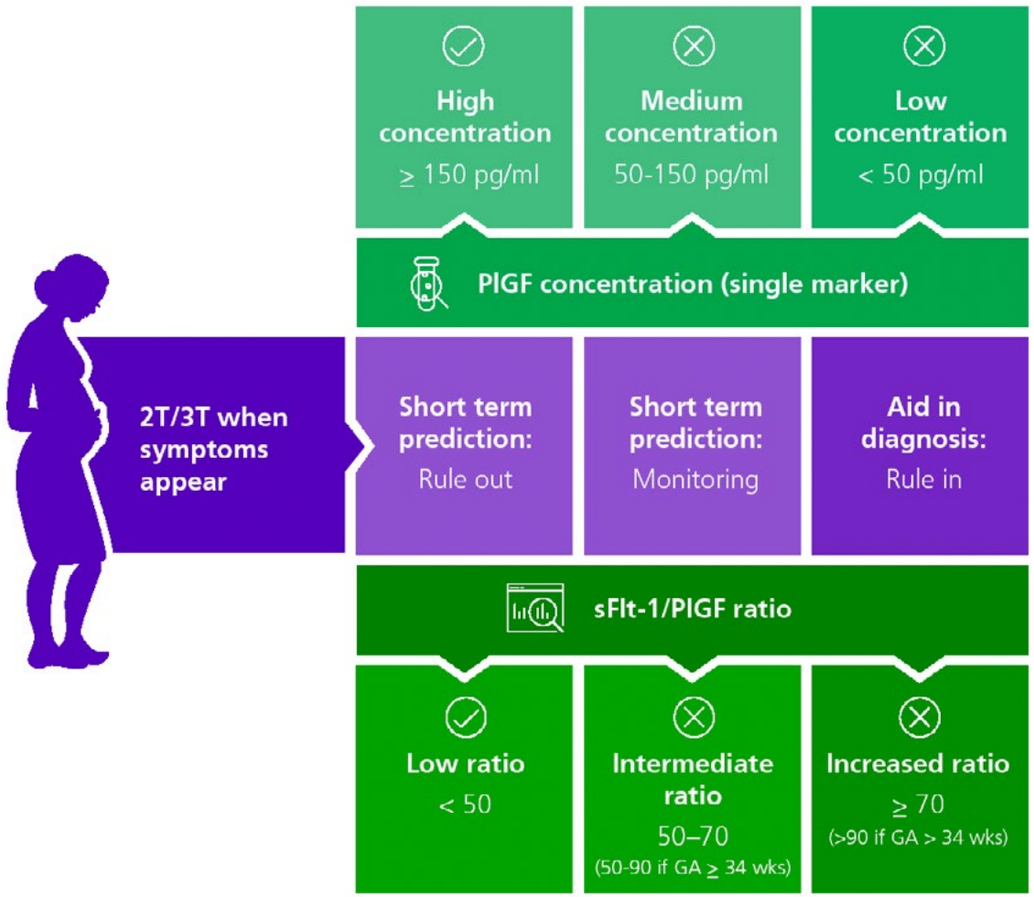
# Short term prediction and aid in diagnosis




GA= gestational age

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# Comprehensive offering covering all trimesters

**Revvity offers compehensive solutions for pre-eclampsia management for all trimesters.**

### PlGF 1-2-3™ - unique kit for all trimesters

Revvity's high-sensitivity PlGF 1-2-3™ kit is the only assay that can offer the level of accuracy and precision that was required for 1T prediction and prevention of pre-eclampsia by the ground-breaking ASPRE trial.

The kit is used for screening pregnant women for pre-eclampsia in the first trimester of pregnancy. The same PlGF kit can also be used for short term prediction and aid in diagnosis for pre-eclampsia in the 2T/3T, as a single marker or together with sFlt-1 as a ratio of concentrations.

Possibility to use only one kit through whole pregnancy from screening to management brings cost-benefits as well as ease and effectiveness for laboratories.

### DELFIA® Xpress sFlt-1 kit

The kit is used with the PlGF kit for the determining the sFlt-1/PlGF ratio. The ratio of sFlt-1/PlGF may be used as an aid in diagnosis of pre-eclampsia and for short term prediction of suspected pre-eclampsia together with other biochemical and clinical information.

### Native Serum Controls

Lyophilized human serum controls for both PlGF and sFlt-1 allow performance monitoring within the clinically relevant range. Two levels of controls are sold as separate products for both PlGF and sFlt-1 assays.

### LifeCycle software

With LifeCycle™ software you can follow up the patient from 1T pre-eclampsia risk assessment to 2T/3T pre-eclampsia management. For ratio calculation, sFlt-1 and PlGF concentrations are transferred automatically from the DELFIA® Xpress platform to the LifeCycle™ software, so there is no need for manual typing.

LifeCycle software enables monitoring pre-eclampsia status with PlGF concentration or the sFlt-1/PlGF ratio and the ratio results can be linked to the same patients' other results in LifeCycle™ software. The cut-offs for pre-eclampsia management are adjustable.

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# Dedicated random access prenatal screening platform from the world leader in prenatal testing

DELFIA® Xpress streamlines workflows in laboratories and clinics providing prenatal screening ser-vices. Already in use in more than 50 countries, DELFIA® Xpress offers a range of benefits critical for operational efficiency.

- The speed and flexibility of random access
- Simplicity and ease of use with up-to-date software design
- The security associated with barcoded reagents and samples to ensure positive identification
- The reassurance from using reliable, proven DELFIA chemistry
- Smart connectivity to Revvity's clinically validated LifeCycle™ prenatal screening software with MFH risk calculation engine and statistical analysis tool
- The flexibility to support connections to 3rd party software such as Viewpoint and Astraia

**Leaders in prenatal screening for over 30 years**

Revvity provides state-of-the-art solutions to benefit maternal and fetal health. Our solutions comprise instruments, reagents and screening management software, all based on our broad-ranging expertise and understanding of today's needs.

We are the global leader in products for detecting fetal anomalies during pregnancy, and our platforms are used in more than 50 countries to perform some 10 million prenatal risk assessments per year. DELFIA® Xpress has become the platform of choice in many parts of the world.

**The DELFIA® Xpress instrument and first trimester assays are approved by the Fetal Medicine Foundation (FMF).**

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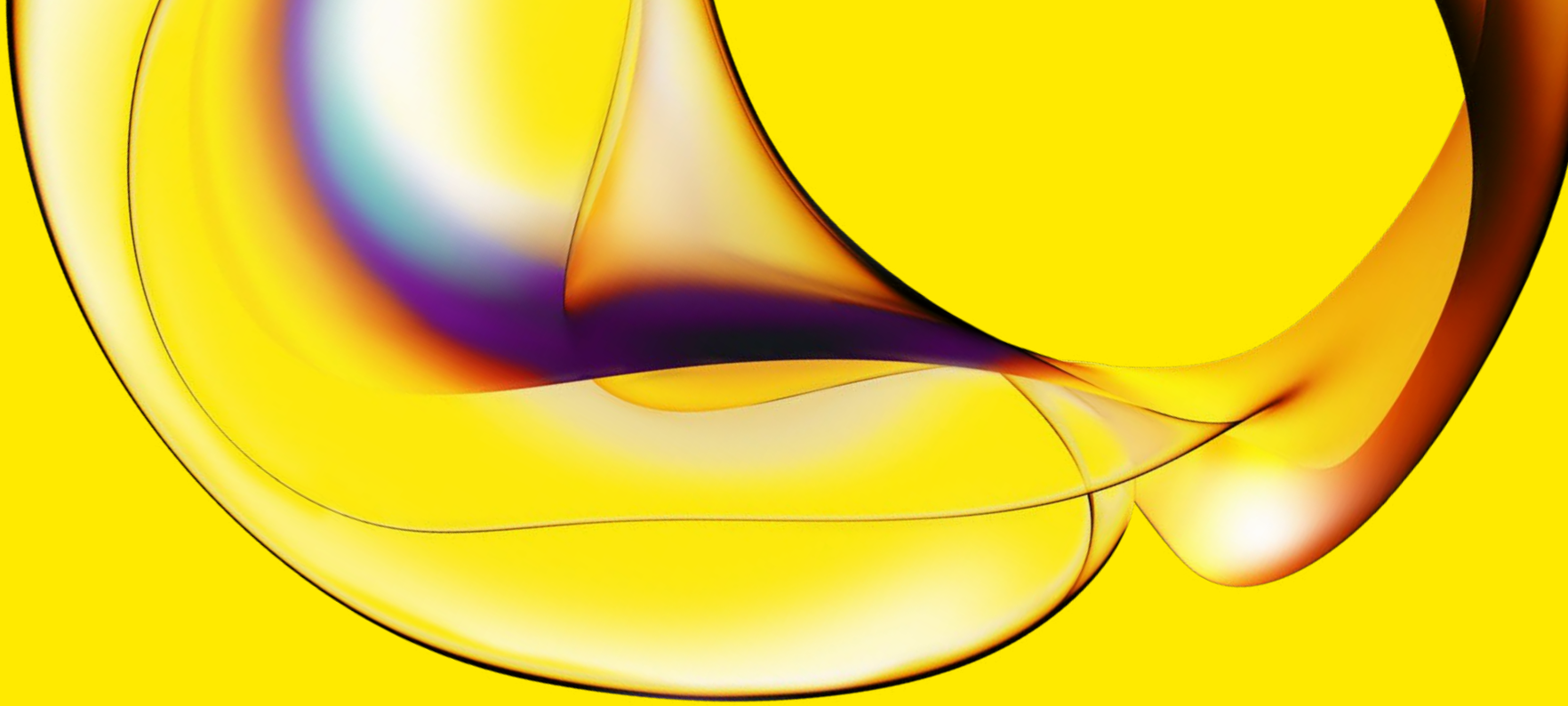

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