**Pre-eclampsia** is a multi-system disorder characterised by hypertension and involvement of one or more other organ systems and/or the foetus. Left untreated, pre-eclampsia can lead to serious, even fatal, complications for both mother and baby. The only cure for pre-eclampsia is delivery of the baby even if the baby needs more time to mature.

**Symptoms**¹⁻⁴
- Maternal blood pressure ≥140/90 on two occasions at least 4 hours apart after 20 weeks of gestation in a woman previously normotensive.
- Maternal blood pressure ≥160/110.
And one of the following:
- Proteinuria
- Thrombocytopenia
- Renal insufficiency
- Impaired liver function
- Pulmonary oedema
- General or visual symptoms.

**Risk Factors**¹⁻⁴
- History of pre-eclampsia. A personal or family history of significantly increases the risk of developing pre-eclampsia.
- First pregnancy: The risk of developing pre-eclampsia is highest during the first pregnancy.
- New paternity: Each pregnancy with a new partner increases the risk of pre-eclampsia over a second or third pregnancy with the same partner.
- Age: The risk of pre-eclampsia is higher for pregnant women older than 40.
- Obesity.
- Multiple pregnancy. Pre-eclampsia is more common in women who are carrying twins, triplets or other multiples.
- Interval between pregnancies. Having babies less than two years or more than 10 years apart leads to a higher risk of pre-eclampsia.
- History. A personal or family background in conditions such as chronic high blood pressure, migraine headaches, diabetes, kidney disease, a tendency to develop blood clots or lupus increases the risk of pre-eclampsia.

**Pathophysiology of Pre-eclampsia**¹⁻⁶

1. **Immune Mechanisation**
2. **Genetic predisposition**
   - Maternal
   - Fetal/Placental
   - Maternal-fetal interaction
3. **Material constitutional factors**
   - Hypermethioninaemia
   - Hypertension
   - Obesity
   - Diabetes
   - Insulin resistance
   - Hyperhomocysteinaemia
4. **Inflammatory response**
5. **Abnormal placental development**
   - Reduced perfusion
6. **Increased oxidative stress**
7. **Reduced folate blood nutrient and oxygen supply**
8. **Development of symptoms**
   - Reduced and immature placental resistance
9. **Oedema**
10. **Maternal hypertension**
11. **Reduction of organ perfusion**
12. **Organ dysfunction, renal and haemorrhage**
13. **Infant small for gestational age**

**Nutritional Interventions**

- **Coenzyme Q10 (CoQ10)**
  - Antioxidant – reduces oxidative stress.
  - Improves endothelial function.
- **Selenium**
  - Antioxidant – reduces oxidative stress.
  - Low selenium status associated with increased serum soluble vascular endothelial growth factor receptor-1 (sFlt-1).
- **Choline**
  - Influences a wide array of genes and biological processes including vascular function.
  - Down-regulates sFlt-1.
- **Probiotics**
  - Probiotics may modify placental trophoblast inflammation, systemic inflammation and blood pressure.
- **Fish oil**
  - Fish oils play a role in the regulation of sFlt-1, VEGF and PIGF.
  - Fish oils also display various anti-inflammatory properties.