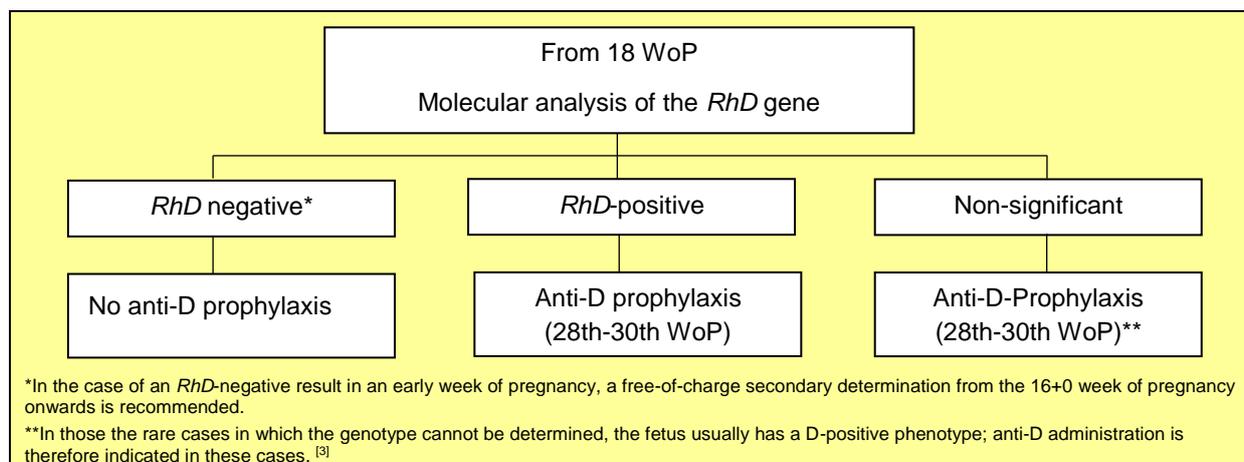


## Non-Invasive Fetal Rhesus D Genotyping from Maternal Blood

**A venous blood sample drawn from a pregnant woman can determine the fetal rhesus D status in a non-invasive and reliable manner. An (unnecessary) anti-D prophylaxis can thus be avoided.**

Anti-D prophylaxis prevents rhesus D negative pregnant women from forming their own antibodies against the Rh antigen of their child in the event of Rh incompatibility. This is because this kind of maternal alloimmunisation can have life-threatening consequences, especially for children in subsequent pregnancies (haemolytic disease of the fetus and newborn – HDFN). In Switzerland, the prophylaxis is administered ante- and postnatally. However, it is only necessary if the child is rhesus D positive. In about 40% of the cases the fetus is rhesus D negative like the mother. The fetal rhesus D status can be

determined in a non-invasive and reliable manner by taking a venous blood sample from a pregnant woman.<sup>[1]</sup> This fetal *RHD* genotyping is made possible by the presence of cell-free fetal DNA in maternal plasma, which can be analysed by molecular methods.<sup>[2]</sup> The fetal ratio of cell-free fetal DNA in maternal blood increases during the course of the pregnancy. The Swiss Society of Gynecology and Obstetrics (SSGO) recommends that all *Rhd*-negative pregnant women should be offered genetic testing between week 18 and 24 of their pregnancy.



### Analytics

Profile 8170

**Material:** 9 ml whole blood in Streck or EDTA tubes

**Analytics:** Real-time PCR on exons 5, 7, 10

**Price:** 285 TP (covered by mandatory health insurance)

### Bibliography:

Akolekar R, Finning K, Kuppusamy R, Daniels G, Nicolaidis KH: Fetal *RHD* genotyping in maternal plasma at 11-13 weeks of gestation, in: *Fetal Diagnosis and Therapy* 29/4, 2011, 301-306. <https://doi.org/10.1159/000322959>

Hodel M, Lejon Crottet S, Raio L, Zimmermann R, Lapaire O, Canellini G, Henny C, Niederhauser C, Waldvogel S, Fontana S: Empfehlungen zur Anti-D Immunglobulin Gabe in der Schwangerschaft (=Anti-D-Prophylaxe), in: *Expertenbrief SGGG* 68, 2020.

Lo YM, Corbetta N, Chamberlain PF, Rai V, Sargent IL, Redman CW, Wainscoat JS: Presence of fetal DNA in maternal plasma and serum, in: *The Lancet* 350/9076, 1997, 485-487. [https://doi.org/10.1016/S0140-6736\(97\)02174-0](https://doi.org/10.1016/S0140-6736(97)02174-0)

van der Schoot CE, de Haas M, Clausen FB: Genotyping to prevent Rh disease: has the time come?, in: *Current Opinion in Hematology* 24/6, 2017, 544-550. <https://doi.org/10.1097/MOH.0000000000000379>