

CYPASS[®] - extended: complete genetic passport for drug metabolism

Pharmacogenetics

Almost one third of hospital admissions in Europe result from adverse events caused by drug interactions. The knowledge of genetic variations present in the genes coding for the enzymes responsible for the metabolism of the prescribed drugs could prevent a large part of these adverse events by adjusting drug dosages.

Many enzymes are involved in the metabolism (activation and elimination) of drugs. These enzymes include phase I enzymes such as the cytochromes and phase II enzymes, which play a role in the elimination of medication and toxic substances. The activity of these enzymes is strongly modulated by polymorphisms present in the genome of each person. These variations of activity increase the risk to develop adverse event upon drug treatment or to have no effect of the treatment when the drug needs to be activated and transformed into an active substance by these enzymes (pro-drug).

The field of pharmacogenetics integrates the differences between people and gives the tools to the medical doctors to tailor their treatment to each patient.

CYPASS[®] - extended profile

CYPASS[®]-extended profile includes the analysis of more than 127 **genetic variants** in the genes encoding enzymes or proteins involved in phase I and phase II drug metabolism. These include: clinically relevant cytochromes (CYP1A2, CYP2A6, CYP2B6, CYP2C8, CYP2C9, CYP2C19, CYP2D6, CYP2E1, and CYP3A4/5), as well as DPYD, involved in toxicity of 5-fluorouracil type therapies, BCHE, involved in choline ester response, UGT1A1 involved in the Irinotecan toxicity, TPMT, assessing the efficacy of thiopurine treatments, GSTT1, GSTM1, GSTP1, NAT2 and SULTA1, all involved in the elimination of medication and toxic substances, COMT and MTHFR. This profile also includes genetic variants in 4 transporters (ABCB1, ABCG2, SLC19A1 and SLC22A1) involved in drug transport to the cells.

Genetic testing

This test, prescribed by a medical doctor, costs 790 CHF and is not reimbursed by the health insurance. However, it is now reimbursed for patients who use drugs on a regular basis and have subscribed a complementary PRIMEO insurance with HELSANA. They are performed once in a lifetime in a simple and non-invasive fashion (buccal swab).