

Adverse drug reactions (ADRs) are a major problem in treating patients: they are responsible for 5-7% of hospitalizations. Interindividual variation in drug metabolism is part of this problem. DNA analysis can predict the drugs metabolizing capacity of each individual. Cytochrome P450 (CYP) enzymes are involved in the metabolism of 80% of all drugs. For example, CYP2D6 is involved in the metabolism of many drugs, covering psychiatry, oncology, cardiology and pain medication. Yet, 5-10% of the population is CYP2D6 deficient due to inheritance of two defective alleles, causing either side effects on standard therapy (e.g. psychiatric drugs) or ineffective treatment (tramadol, codeine). Such a deficiency can be tested for by a simple blood or cheekswab analysis, and drug therapy can be adjusted upfront: personalized medicine. How far are we with implementing Pharmacogenetics in clinical practice in Europe? In the Netherlands, any patient can go with his/her DNA passport for medication to ANY pharmacy to obtain medication dosage adjusted on their genomic profile for over 90 drugs. With the increasing evidence on gene-drug interactions, the question becomes more and more relevant: "Do YOU already have your DNA passport"?