

# PAINASSAY™

## SUMMARY

**PAINASSAY™** is genetic test that assists effective management of chronic pain for both patient and physician.

Approximately 40 % of chronic pain sufferers are unable to manage their pain symptoms and side effects effectively.

An individual's genetic profile may affect the ability to metabolize analgesics, reducing efficacy of pain treatment and predisposing the individual to a range of side effects such as nausea, vomiting, constipation and sedation.

Many of these lead to disruption of day to day activities and a substantially diminished quality of life, however sedation brings a risk of depression of respiration and, in some cases, can cause accidental death.

## THE ASSAY

**PAINASSAY™** analyses of a set of 20 genes known to affect drug metabolism. It interprets them to determine the patient's own metabolism profile and from this identifies the most effective and safe pain management approach.

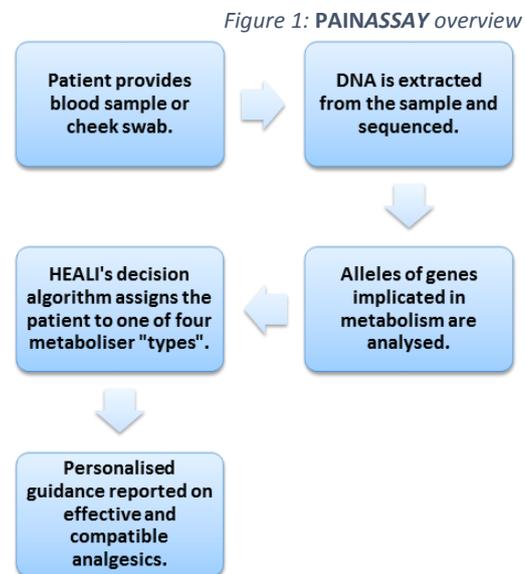
It is a non-invasive test, carried out on a sample of inner cheek cells collected onto a buccal swab or on a whole blood sample.

DNA from the sample is analysed by next generation sequencing followed by bioinformatics analysis, where the sequence of each of the 20 test genes are reanalysed and compared to reference data.

The results are given weightings based on HEALI's decision algorithm and used to assign the patient to one of four metabolism profiles.

## RESULTS AND REPORTING

The report identifies the patient's personal metabolism type, explains the implications that it has on metabolism of specific classes of analgesic and from this identifies analgesics likely to be most beneficial. This enables the physician to recommend to the patient the treatment that is likely to be the safest and most effective based on the patient's genetic profile.

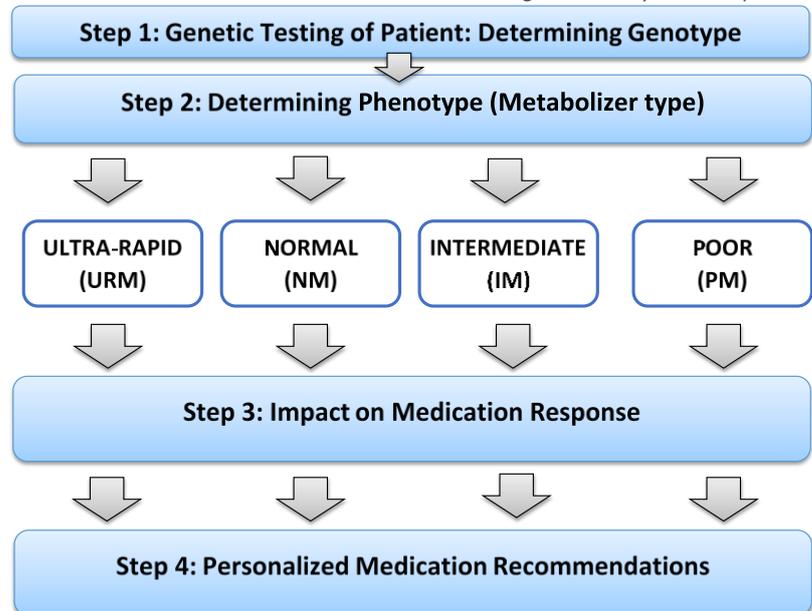


## ANALYSIS and DECISION PROCESS

The assay analysis is a 3 step process (Figure 2):

1. The patient’s metabolism phenotype is determined from interpretation of the genome sequence analysis;
2. The impact of the phenotype on specific analgesic types is assessed;
3. Recommendations are made of the most effective analgesics, and those likely to have least side effects.

Figure 2: Assay decision process



## VALIDATION AND DEVELOPMENT

**PAINASSAY™** is validated using published and peer reviewed data reporting genetic markers shown to be implicated in response to analgesics.

HEALI welcomes collaboration with clinicians where this leads to additional validation data.

## ABOUT HEALI

HEALI is a personalised medicine company whose aim is to improve medical decision making for treatment of a range of life changing illnesses and conditions.

Its assay platform, comprising analysis of genetic markers with clinical or physical data and interpretation of the data set using its proprietary decision making algorithm, is applicable, in principle, to any condition where an individual’s genetic information can be used to categorise likely outcome or most effective treatment.

## REFERENCES

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