

# Medicine meant just for your illness is on the horizon

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It sounds like something out of a science fiction novel, but doctors will soon be able to tailor prescriptions for you based on your DNA.

According to George Gericke, a specialist in the field of genetic testing and a member of the National Pathology Group, an individual's DNA holds the key to developing a personalised medicine programme that guarantees the best possible health for the individual.

Dr Gericke believes developments in pharmacogenetics (the science of how genes influence the response to medicines) will put paid to the practice of prescribing medicines to people on whom they will have little or no effect.

These developments will ultimately result in a situation where a doctor could prescribe the most effective and safest drug tailored to an individual's genetic make-up, with the assurance of the best possible results.

"As your doctor gains a greater understanding of the role of genetics in disease, he will also be able to counsel you with regard to preventive health, including lifestyle and reproductive decisions," says Gericke.

"The fact that drugs help some people but not others is not exceptional; in fact, it is the rule for drugs and a principle which was established around 40 years ago by researchers studying pharmacogenetics.

"Millions, for instance, get

less pain relief from codeine – because their particular variant of a gene called CYP2D6 is unable to convert codeine into its active form, morphine," he says.

According to the specialist, about half-a-dozen genes have been identified that appear to be responsible for the metabolism of the vast majority of prescription and over-the-counter drugs. Variations within these genes lead to adverse reactions to medication.

"An adverse reaction to as much as 20% of common prescription drugs is not uncommon, especially if they are used in combination with other medicines," he says.

But while rapid advances in medical science have made a wide range of tests available, all initiated via a simple blood

test, Gericke says genetic tests are still under-utilised due to a lack of knowledge about their availability on the part of both medical professionals and the public.

He adds that although the field is in its infancy in some respects, especially with regard to testing for the genetic component of complex disorders like schizophrenia or autism, significant advances are expected to occur during the next five years.

Gericke says the role of genetic testing extends well beyond the prescription of gene-appropriate drugs.

"All in all, genetic testing can provide far more accurate information on a disease and the patient's prognosis than physical or clinical tests."

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