**PUBLIC RELEASE: 15-MAR-2016**

Communicating genetic disease risk has little or no impact on health related behavior

*Evidence does not support genetic testing to encourage changes in health behaviors*

Communicating the results of DNA tests has little or no impact on behaviour change, such as stopping smoking or increasing physical activity, finds a study published by The BMJ today.

These results are timely, given high levels of interest in personalised medicine and increasing use of direct-to-consumer testing for a range of common complex disorders, say the research team, led by Professor Theresa Marteau at the University of Cambridge.

They reviewed the results of 18 studies on the effects of communicating genetic risk estimates of heart disease, cancers, and Alzheimer's disease, for which behaviour change could reduce that risk.

Behaviours included smoking, alcohol consumption, diet, and physical activity. Other outcomes analysed were motivation to change behaviour and levels of depression and anxiety.

The results show no significant effects of communicating DNA based risk estimates on smoking cessation, diet, or physical activity.

There were also no effects on any other behaviours (alcohol use, medication use, sun protection behaviours, and attendance at screening or behavioural support programmes).

There were also no effects on motivation to change behaviour, and no adverse effects, such as depression and anxiety.

Further analyses provided no clear evidence that communication of a risk-conferring genotype affected behaviour more than communication of the absence of such a genotype.

The researchers point out that studies were predominantly at high or unclear risk of bias, and evidence was typically of low quality.

Nevertheless, they say their results suggest that communicating DNA based disease risk estimates has little or no effect on risk-reducing health behaviour.

"Existing evidence does not support expectations that such interventions could play a major role in motivating behaviour change to improve population health," they conclude.

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