Judging couples’ chemistry influenced by serotonin

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The judgements we make about the intimacy of other couples’ relationships are influenced by the brain chemical serotonin, an Oxford University study has found.

Healthy adult volunteers, whose levels of serotonin activity had been lowered, rated couples in photos as being less ‘intimate’ and less ‘romantic’ than those with normal serotonin activity.

The results raise the possibility that lower serotonin activity in people with depression and other psychiatric conditions could contribute to changes in the way they perceive personal relationships.

The Medical Research Council-funded study is published in the journal Biological Psychiatry. ‘

Serotonin is important in social behaviour, and also plays a significant role in psychological disorders such as depression’ explains Professor Robert Rogers of the Department of Psychiatry at Oxford University, who led the research.

‘We wanted to see whether serotonin activity influences the judgements we make about peoples' close personal relationships.’

Problems with social relationships, and a feeling of social isolation, are a feature of depression in some people.

It is possible that alterations in brain systems – such as serotonin – contribute to these difficulties by changing the way people think about relationships with partners.

Such understanding is important as supportive close relationships are known to protect against the development of mental illnesses and to promote recovery in those affected by psychiatric conditions.

The opposite is also true: dysfunctional relationships can be triggers for those at risk of these conditions.

The team from Oxford University, along with colleagues from the University of Liverpool and King’s College London, manipulated the serotonin activity in healthy adult volunteers, and then asked them to make judgements about sets of photographs of couples.

The approach involved giving amino acid drinks to two groups of volunteers.

One group received drinks that contained tryptophan, the amino acid from which serotonin is made in the brain.

The other group received drinks that did not contain tryptophan.

Differences in the judgements made by the two groups reflected changes in serotonin activity.

The 22 volunteers who received the drink without tryptophan consistently rated the couples in the photos as being less ‘intimate’ and ‘romantic’ than the 19 participants who received the control drink.‘

Although this is only a small study, the same patterns may well extend to the way we perceive our own relationships,’ says Professor Rogers.

‘Serotonin activity may affect people’s ability in depression to maintain positive or intimate personal relationships.’

For more information please contact Professor Robert Rogers on 07540 473769 or robert.rogers@psych.ox.ac.uk. Please note that he will be travelling after lunch and may not be able to take calls.

Or the University of Oxford press office on 01865 280530 or press.office@admin.ox.ac.uk

**Notes for editors**

* The paper ‘Serotonergic activity influences the cognitive appraisal of close intimate relationships in healthy adults’ by Amy Bilderbeck and colleagues has been published online in the journal Biological Psychiatry overnight <http://bit.ly/gjJs0F>.
* The study was funded by the UK Medical Research Council.
* For almost 100 years the **Medical Research Council** has improved the health of people in the UK and around the world by supporting the highest quality science. The MRC invests in world-class scientists. It has produced 29 Nobel Prize winners and sustains a flourishing environment for internationally recognised research. The MRC focuses on making an impact and provides the financial muscle and scientific expertise behind medical breakthroughs, including one of the first antibiotics penicillin, the structure of DNA and the lethal link between smoking and cancer. Today MRC funded scientists tackle research into the major health challenges of the 21st century. www.mrc.ac.uk
* **Oxford University’s Medical Sciences Division** is one of the largest biomedical research centres in Europe. It represents almost one-third of Oxford University’s income and expenditure, and two-thirds of its external research income. Oxford’s world-renowned global health programme is a leader in the fight against infectious diseases (such as malaria, HIV/AIDS, tuberculosis and avian flu) and other prevalent diseases (such as cancer, stroke, heart disease and diabetes). Key to its success is a long-standing network of dedicated Wellcome Trust-funded research units in Asia (Thailand, Laos and Vietnam) and Kenya, and work at the MRC Unit in The Gambia. Long-term studies of patients around the world are supported by basic science at Oxford and have led to many exciting developments, including potential vaccines for tuberculosis, malaria and HIV, which are in clinical trials.