

Psychologically weak at the knees?

Psychological factors are important in recovery from joint replacement surgery. **GEOFF LOWE**

HOW quickly patients regain 'normal' function after joint replacement surgery may well depend on psychological factors, in addition to medical technology. Psychologists are now providing answers as to why some individuals fail to gain the maximum benefit from their new joints.

Psychologists Katherine Kendell and Brian Saxby (Priority Healthcare Wearside NHS Trust) and colleagues gave 46 patients undergoing knee-replacement surgery a pre-operative psychological assessment. They assessed patients' strategies for coping with pain, degree of social support, how much they felt in control, and symptoms of psychological distress. Afterwards they measured post-operative outcomes in terms of the number of days it took for patients to reach certain physiotherapy milestones (e.g. straight leg raise, 90° bend) and discharge.

Patients who perceived themselves as

having some control over their recovery process made better progress during their initial physiotherapy regime – as did those who felt satisfied with social support. Others who had a more negative outlook on their health and treatment process were identified as 'catastrophisers' and took longer to recover knee function.

'Understanding more about immediate post-operative recovery is important for both physical and financial reasons,' the authors say. 'As rationing becomes more likely in the British National Health Service, decisions should be made on the basis of who is likely to benefit the most. Length of hospital stay is a key factor in the cost of treatment and in determining how many patients can be offered surgery each year.'

If a patient's coping style can be identified before surgery takes place, it

should then be possible to modify inappropriate styles to achieve better post-surgical rehabilitation. Such patients – especially 'catastrophisers' – could be offered a brief cognitive-behavioural intervention. This would involve teaching patients to identify their maladaptive beliefs and to use cognitive techniques to challenge them and reinterpret threats in a more adaptive way.

Emphasising the importance of the patient's role in rehabilitation is also crucial, accompanied by techniques aimed at increasing patients' self-efficacy.

Kendell, K., Saxby, B., Farrow, M., & Naisby, C. (2001). Psychological factors associated with short-term recovery from total knee replacement. *British Journal of Health Psychology*, 6, 41–52.

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Mood and food

A carbohydrate-rich meal reduces depression in the highly stressed. **NEIL MARTIN**

CAN the food you eat genuinely alter the way you feel? In the 1980s controversial evidence suggested that elements of food had direct effects on behaviour: vitamins seemed to improve nonverbal IQ in children; carbohydrate meals made your cognitive performance sluggish (or quite efficient, depending on the study). Since then, the field has been relatively quiet. Work in psychopharmacology, however, has refuelled interest in the area. Specifically, researchers have pointed to an association between serotonin increases, carbohydrate intake and stress reduction. According to some researchers, the inconsistency in the mood and food literature may have been due to individual differences, especially susceptibility to stress. Perhaps a meal high in carbohydrate and low in protein would reduce depressive mood in people who are stress prone.

Rob Markus and colleagues from the TNO Nutrition and Food Research Centre and the University of Utrecht investigated the degree to which the intake of carbohydrate-rich, protein-poor food



(CR/PP) or carbohydrate-poor, protein-rich food affected depressive mood and cortisol response in participants who were either 'high' or 'low' in stress proneness. In the experiment the participants were subjected to uncontrollable or controllable laboratory stress. This was induced by having participants complete a mental arithmetic task during loud noise. The controllable stress group were told that they could reduce the noise if they performed well. Mood measures were taken before and after.

Predictably, uncontrollable stress was associated with significantly higher levels

of tension, fatigue and anger. However, the stress-prone group receiving the CR/PP meal expressed significantly lower feelings of stress, regardless of the controllability of the stress task.

The authors suggest that the effect may be due to carbohydrate boosting the serotonin system in highly stressed people (the ones more likely to benefit from serotonin boosts).

Markus, R., Panhuysen, G., Tuiten, A., & Koppeschaar, H. (2000). Effects of food on cortisol and mood in vulnerable subjects under controllable and uncontrollable stress. *Physiology & Behaviour*, 70, 333–342.

Waist disposal

New studies show that female waist-to-hip ratio is not the most important attraction factor. **NEIL MARTIN**

Evolutionary psychologists contend that men prefer women with a waist-to-hip ratio (WHR) of about 0.7. This means a slim waist and noticeable hips. They argue that men prefer this type because it indicates health and fecundity. As an evolutionary adaptation, this preference should be evident across cultures.

But new research suggests that the picture may not be quite so simple. Two recent studies have shown that in specific cultures, men actually prefer heavier women, and that, in any case, the face is the most important determinant of mate selection.

Frank Marlowe and Adam Westman, two anthropologists from Harvard and UCLA, presented the Hazda hunter-gatherers in Tanzania with a series of frontal drawings of women with varying WHR. A previous study had shown that the men in this group cared more about weight than WHR, strongly disliking thin women. In their new study the images varied only by WHR, not eight. The group's responses were compared with those from a group of American men.

The researchers found that while the American men preferred low WHR, and especially liked the intermediate image showing a WHR of 0.7, the Hazda men preferred higher WHRs. The authors argue that this choice reflects a preference for heavier women; they go on to speculate that 'the more subsistence-oriented a society is, and the more energetically expansive women's work, the more men will find fatter women attractive. Among foragers, thinness probably indicates poorer health.'

A further knock to evolutionary psychology's notions of universality and importance of preference for physical shape is reported in a study by Adrian Furnham and his colleagues at University



College London. On the basis of evidence indicating that we make attractiveness judgements about faces just as much as we do about shapes, they investigated whether facial attractiveness was more important than WHR when making overall ratings of attractiveness about members of the opposite sex. They showed images of women to 100 men with a mean age of 24 and asked them to rate the images for attractiveness, sexiness, fertility, healthiness and probability of being pregnant. The images had been morphed so that bodies varying in WHR

either featured an attractive or unattractive face (as determined in a pilot study).

Regardless of WHR, images with attractive faces were rated as healthier, sexier, more attractive and more fertile.

A figure with a WHR of 1.0 was regarded as more desirable when the face was attractive and significantly more so than a figure with a WHR of 0.7 and an unattractive face. The only measure for which WHR seemed to be important – and attractiveness of faces unimportant – was 'likelihood of being pregnant.'

The evidence is contrary to what we would expect from the 'first pass filter' theory of mate selection. This refers to the notion that WHR is the first feature we focus on to determine our attraction to a partner; if it is acceptable, we then focus on other features and behaviours to further refine our choice.

'As facial features can also give cues to age, and as a result, reproductive capability,' the authors conclude, 'choosing a facially attractive female would result in choosing a female who was fertile, healthy and whose genes were of good quality.'

Furnham, A., Lavancy, M., & McClelland, A.

(2001). Waist-to-hip ratio and facial attractiveness: A pilot study. *Personality and Individual Differences*, 30, 491–502.

Marlowe, F., & Westman, A. (2001). Preferred waist-to-hip ratio and ecology.

Personality and Individual Differences, 30, 481–489.

AND OUR SURVEY SAID? UMM...

Web-based surveys may be more effective than mailshots. **NEIL MARTIN**

If you received a lengthy questionnaire in the mail, would you respond? Or bin it with the Readers Digest exhortations and credit card blandishments? If you normally bin them, how likely would it be that you would be willing to complete an e-mail or web-based version of the same questionnaire?

To show the effectiveness of the web in encouraging people to respond to surveys, Colleen Cook and colleagues from Texas A & M University meta-analysed response rates in 68 surveys taken from 49 studies. Cook and her analysts found that the average electronic response rate was 39.6 per cent but several factors facilitated responses. When the correspondence was personalised ('Dear Dr Belcher' instead of 'Dear friend', for example), response rate was better. Precontact with respondents also increased the likelihood of responding.

While the salience of the issue addressed in surveys was important for both mail and web-based exercises, the offer of an incentive to participate in web surveys was actually associated with a lower response rate.

Cook, C., Heath, F., & Thompson, R.L. (2000). A meta-analysis of response rates in web- or internet-based surveys. *Educational and Psychological Measurement*, 60, 6, 821–836.

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Further submission details are on p.223

Who are you looking at?

Aspects of self-recognition and attractiveness. **NEIL MARTIN**

TO most of us, the bleary-eyed, dishevelled vision staring back from the bathroom mirror each morning is unfortunately quite recognisably you. Yet, there are some people with specific brain damage who are unable to recognise such familiar faces. This has led some psychologists to suggest that there are different neural pathways responsible for familiar and unfamiliar face recognition. New research, however, has shown that the brain not only responds differently when it sees its own face but also when it sees the faces of familiar people.

Tilo Kircher of the University of Tübingen and his colleagues in the UK measured the brain reaction of six young men to versions of their own faces, their partners' faces, or unknown faces. The group found that when participants viewed themselves, there was an increase in activity in the right limbic cortex and left prefrontal and superior temporal cortex. The right limbic region is known to be active when responding to pleasant and unpleasant emotional stimuli and has also been shown to be active during retrieval of autobiographical memory. When

participants viewed their partners' faces, however, only one region on the right side showed increased activation – the insula – when compared with the unknown face condition.

'One explanation for the differences in activation in the fMRI experiments', the authors suggest, 'is that memory and verification processes are being stimulated in the self-condition only rather than processes inherent in self-recognition.' The novelty of recognising our own face may account for the extensive pattern of brain activity seen during this task: we're accustomed to identifying others' faces in a crowd but we're obviously not as accustomed to seeing our own faces.

We are used to seeing faces that we like but psychologists and anthropologists have very recently begun to explore what we find attractive about such faces. The data aren't particularly consistent, with some studies showing that women prefer exaggeratedly masculine male faces and that men and women prefer 'average-looking' faces. New research, however, suggests that women's preference for men's faces changes across the menstrual cycle. To find out how, Ian Penton-Voak and David Perrett from the University of St Andrews presented five face-stimuli which varied in masculinity and femininity in a UK magazine (*Tomorrow's World*) and asked readers to complete a questionnaire assessing the faces' attractiveness. Women also noted their point on the menstrual cycle.

Women in the follicular phase of their cycle (6–14 days) were significantly more likely to choose a masculine face than those in menses (0–5 days) or in the luteal phase (15–28 days). This, the authors provocatively suggest, shows that 'women are attracted to relatively exaggerated male traits when conception following coitus is more likely (days 6–14 of the follicular phase) and not at other times in the menstrual cycle.'

Kircher, T.T.J., Senior, C., Phillips, M.L., Rabe-Hesketh, S., Benson, P.J., Bullmore, E.T., Brammer, M., Simmons, A., Bartels, M., & David, A.S. (2001). Recognizing one's own face. *Cognition*, 78, B1–B15.

Penton-Voak, I., & Perrett, D. I. (2000). Female preference for male faces change cyclically: Further evidence. *Evolution and Human Behaviour*, 21, 39–48.



Virtual lift-off

Virtual planes can recreate fear of flying. **NEIL MARTIN**

Virtual reality (VR) technology is being increasingly used to treat psychological problems. Phobic individuals, for example, have been exposed to virtual versions of their fears to see if the treatment makes them less afraid.

Now, a new study from the Emory University School of Medicine, Georgia, has shown that similar technology can be used to conquer the fear of flying. Barbara Rothbaum and her colleagues randomly assigned 49 patients who expressed a fear of flying to one of three conditions: VR training, standard exposure therapy or no therapy (patients were on a waiting list for treatment).

The VR training involved exposure to a virtual aircraft (sitting in it while it took off and landed); standard exposure involved direct exposure to an airport and a stationary plane. Both experimental conditions were preceded by four sessions of anxiety management. Patients received

treatment over eight weeks and a post-treatment flight was set up after this period to examine the efficacy of the VR treatment, as measured by willingness to fly and self-reported anxiety about this first flight.

Both VR and standard exposure treatments were better than control for combating fear of flying. This effect prolonged at a six month follow-up. Ninety-three per cent of VR patients and 93 per cent of standard exposure patients had flown post-treatment. The results show that VR may be an inexpensive and more convenient way of reducing the fear of flying than is actual exposure to real aeroplanes. The authors also found that, if given the choice, patients would opt for the VR treatment.

Rothbaum, B.O., Hodges, L., Smith, S., Lee, J.H. & Price, L. (2000). A controlled study of virtual reality exposure therapy for the fear of flying. *Journal of Consulting and Clinical Psychology*, 68, 6, 1020–1026.