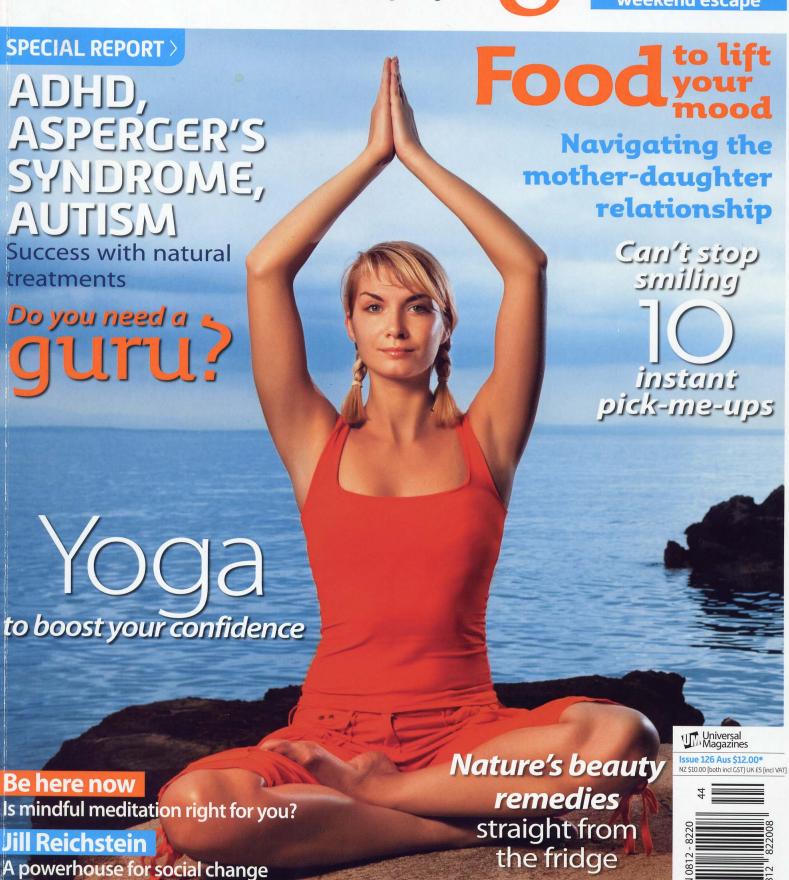
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ver wondered why you are often irritable or why you can't concentrate? Or what causes you to become suddenly depressed or angry? We have all heard by now that we are what we eat. There is certainly a psychological element to what we choose to eat that is not possible to separate from the biological, but research is showing that how we feel is affected by what we eat and don't eat, and why.

Chemicals in processed food or the environment often trigger alterations in mental or emotional states. Certain substances in food, such as preservatives, colourings and additives, as well as chemicals in household products, can cause reactions such as fatigue, headache, anxiety, irritability, depression and even psychotic behaviour.

THE FOOD AND MOOD PROJECT

The British Food and Mood Project was set up to provide workshops for groups of self-referring women who wished to explore the relationship between diet and nutrition, and mental and emotional health. More than 50 women aged from their 20s to mid-80s attended the workshops to change their diets and benefit from the results, which included lower anxiety levels, less depression, improvements in mood swings, fewer cravings and reductions in the symptoms of pre-menstrual syndrome (PMS).

A follow-up survey indicated that, up to 15 months later, many participants in the workshops were still able to maintain the alterations to their eating and retain the benefits of improved mental health. The project has recently published a record of its work and its findings, *The Food & Mood Workbook*, containing self-help information together with contributions from some of the 50 women who took part. The project confirms the link between food and mood and demonstrates that a wholefood diet benefits the body both physically and

WE ARE ALL AWARE THAT DIET AFFECTS
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BEHAVIOURS — A LINK THAT REPRESENTS
AN EXCITING NEW FRONTIER FOR PERSONAL
HEALTH AND HAPPINESS. BY SANDRA DUBS

mentally. This empowering message means human beings are able to eat for happiness.

CARBOHYDRATES

The digestion of carbohydrates actually begins in your mouth, making them the body's preference for quick energy production. Carbohydrates, usually condemned by modern diets, actually provide the energy that fuels muscle contraction and nourish your brain. Fruits, in particular, containing many simple carbs, will be metabolised into energy very quickly.

Complex carbohydrates, including starches and fibres, are also great sources of energy. They are digested more slowly in the stomach for longer-lasting fullness and

energy and are commonly found in legumes, fruits, vegetables and wholegrain products such as wheat, barley, oats, rye and triticale (a cross between wheat and rye).

PROTEIN

Protein is digested in the stomach, which is why it's important to have some at every meal. It helps keep you full and provides mid-range energy, also keeping your mind alert for longer periods. Meat, chicken and fish are high in protein. Primary sources of plant-based proteins include beans, tofu, tempeh and seitan (wheat gluten). Secondary sources are seeds, nuts, nut butters, seaweed and miso. (NB: Seeds and nuts are difficult to digest. Small amounts are good but too many can stress the liver and gallbladder, which must produce and deliver bile for processing the concentrated oils in the nuts.) Wholegrains such as quinoa, millet and brown rice also contain substantial amounts of protein.

FAT

The digestion of fat begins in the intestine. Being broken down so late in the digestion game, fat can help you stay fuller for longer. It's also an essential nutrient vital for vitamin absorption, regulating bodily functions and keeping body temperature stable. Some fat is needed in our diet to

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provide us with fat-soluble vitamins and essential fatty acids. A diet low in saturated fats and trans fats that includes moderate amounts of unsaturated fats will help you achieve and maintain good health. Healthy fats, consumed in moderation, include:

- Omega-3 essential fatty acids (EFAs) are found in coldwater fish mackerel, herring, halibut and salmon contain the most, with lesser amounts in tuna and shrimp. Flaxseed oil is a good source of EFAs and is particularly high in omega-3. Raw flaxseeds are hard to digest, so grind or use oil. Walnuts, green leafy vegetables (eg bok choy, kale, broccoli) and sea vegetables also contain omega-3.
- Omega-6 EFAs are found in raw nuts, seeds, legumes and unsaturated vegetable oils, such as borage, grapeseed, primrose, safflower and sesame oils.
- Mono-unsaturated fats are in olive oil, nut oils, avocado and most nuts.
- Polyunsaturated fats are found in sunflower, corn and walnut oils as well as sunflower, pumpkin and sesame seeds and walnuts, brazil nuts and pine nuts.

VITAMINS AND MINERALS FOR MOOD

Folic acid and vitamin B_{12} can greatly influence mood. Studies have shown that low levels of these vitamins are sometimes related to depression. Some scientists believe these vitamins are used by the body to create serotonin, one of the key neurotransmitters that help normalise mood.

Foods rich in folate include brown rice, wheat, lentils, black-eyed peas, chickpeas, pinto beans, soybeans, oatmeal, parsley, spinach, beets, broccoli, almonds, sunflower seeds, wheatgerm and oranges.

Foods rich in vitamin B_{12} include shellfish (clams, oysters, crab), wild salmon (fresh or canned), fortified wholegrain breakfast cereal, sea vegetables, lean beef, cottage cheese, low-fat yoghurt, milk (skim, skim plus, 1 per cent reduced-fat) and eggs.

Vitamin B₆ can similarly help to



Those who consume too many processed foods could be more likely to experience depression in middle age.

maintain a positive mood. A deficiency of B_6 is associated with agitation, insomnia, irritability, convulsions, depression, confusion and brainwave abnormalities. Vitamin B_6 supports the formation of the neurotransmitters. Food sources include buckwheat, brown rice, tempeh, sea vegetables and sunflower seeds.

Vitamin D is another key nutrient for maintaining a good mood. Getting a daily dose of sunshine is essential. In the past few years, research has suggested that vitamin D might help relieve mood disorders because it seems to increase the amounts of serotonin, one of the neurotransmitters responsible for mood. In particular, vitamin D seems to help relieve symptoms of seasonal affective disorder (SAD) or the winter blues. Foods rich in vitamin D include fish with bones such as sardines and canned salmon, shiitake mushrooms, fat-free and low-fat milk, fortified soymilk and egg yolks. Because vitamin D-rich foods are so limited, it's often beneficial to take a daily multivitamin that provides 400iu.

Minerals are also connected to mood and behaviour, particularly iron, magnesium and zinc. Iron-rich foods include red meat, sea vegetables, millet, oats, chickpeas, lentils, parsley and sesame seeds. Magnesium-rich foods include sea vegetables, lima beans, millet, brown rice, almonds and spinach. Zinc-rich foods include oysters, mussels corn, brown rice, brazil nuts, sunflower seeds, wheatgerm and cashews.

THE MOOD LINK

The most common foods to cause mood and mental disturbances are sugar, milk and other dairy products. Wheat also causes allergic reactions in many people, often leading to moodiness and depression. Various foods may be consumed to alter particular moods.



- Eat every 4–5 hours as this provides the brain and body with fuel and prevents dips in blood sugar levels. Hypoglycaemics need to eat even more frequently (every 2–3 hours).
- Eat foods rich in soluble fibre found in complex carbs, oats, brown rice, barley, apples, pears, strawberries, sweet potatoes, carrots, peas and beans.
- Eat plenty of wholefoods vegetables, fruit, legumes, wholegrains.
- Limit refined carbs sweets, fruit juice, jams, soft drinks, baked goods, white refined foods.
- Eat good-quality protein with meals. This helps slow the absorption of carbohydrates in the blood.
- Eat good-quality fats with meals. Include omega-3-rich foods.
- Eat foods rich in B vitamins, especially folic acid and B₁₂.
- Let the sunshine in for a healthy dose of vitamin D.

Concentration foods

Nuts, seeds, fish and green leafy vegetables (including sea vegetables) contain omega-3 and omega-6. Research indicates that mental health problems such as depression as well as concentration and brain function are enhanced with a diet high in these unsaturated fatty acids.

Relaxing foods

Breads, cereals, pasta, fruits and starchy vegetables are carbohydrate foods that scientists in the US found to boost the feel-good brain chemical serotonin and so increase relaxation. However, a balance with good-quality protein is necessary. Wholegrain carbohydrates such as brown rice, quinoa and millet, which provide slow-release energy, are more beneficial for their added fibre content. **Energising foods**

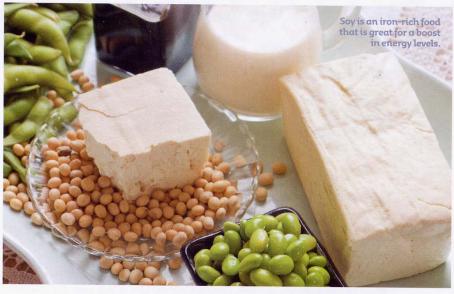
All protein foods such as small amounts of meat, fish, eggs, chicken and nuts, seeds and beans help to improve alertness and energy. Iron-rich foods are also essential for improving mood. If your iron levels are low you will feel fatigued and tired.

The most common foods to cause mood and mental disturbances are sugar, milk and other dairy products.

> Iron-rich vegetal foods include all sea vegetables, millet, oats, chickpeas, lentils, soybeans, sesame and pumpkin seeds. **Anti-depressant foods**

Research has shown links between depression and nutritional deficiencies. Low levels of B vitamins and folic acid, in particular, cause serotonin levels in the brain to decrease. leading to mood changes.

Caffeine is considered an antidepressant



as it has a stimulant effect, but more is not necessarily better. Coffee, black tea and colas can over-stress the body. They deplete vitamin B (thiamin), biotin, inositol, vitamin C, calcium, potassium and zinc. Caffeine also increases thirst, overstimulates and weakens the kidneys, pancreas, liver, stomach, intestine, heart, nervous system and glands (especially adrenal). It also over-acidifies bodily pH, causing premature ageing. Most coffee, if it's not organic, is high in pesticides and free-radical-producing hydrocarbons that also weaken cell membranes. Depression can be a side-effect from as little as two small cups

People reporting a high consumption of processed foods could be more likely to experience depression in middle age, says a new study published in the British Journal of Psychiatry (2009) that suggests food should play a greater role in preventing depressive disorders. The researchers used dietary data provided by 3486 participants. With an average age of 55 years, the participants completed a questionnaire on their eating habits at the start of the trial and, five years

later, a self-assessment on depression.

The team identified two dietary patterns. Those with the highest intake of whole foods, such as fruits, vegetables and fish, were less likely to report depression symptoms later on. Those eating a lot of processed meat, chocolate, sweets, fried foods, refined cereals and high-fat dairy, on the other hand, were seen to be more vulnerable to depression.

FOOD FOR SUSTAINING ENERGY

The brain is the organ most sensitive to a change in blood glucose level — too little produces fatigue, confusion, irritability and aggression while too much may result in loss of consciousness. Glucose intolerance, gut dysbiosis (fungal or bacterial overgrowth) and mineral and vitamin deficiencies, all of which impact on mental functioning, are risks associated with a diet containing too much refined sugar.

The body requires foods that gently release energy, at slightly varied rates, to help sugar levels remain on an even keel. One way to measure the balance of a meal is to be sure it contains carbs, protein and fats, creating a balance of macronutrients. These are the foods our bodies digest and turn into energy. The macronutrients are digested at different rates to keep you full and provide energy over longer periods of time.

Other suggested dietary strategies for improving blood glucose metabolism are to include protein and fibre for their ability to reduce the glycaemic index of a meal, and to eat regularly to avoid becoming hypoglycaemic.

With knowledge of the connection between food, mind and mood, it becomes easier to select whole foods that will power the brain, control mood and increase feelings of motivation and overall happiness.

Sandra Dubs is a wholefood nutritionist, natural food educator and cooking teacher in Melbourne. W: www.ozfoodtrainer.com

FROM FOOD TO MOOD

most commonly found linked with symptoms are:

In psychological illnesses, the foods

illnesses that can be caused or made worse by foods include:





depression

mood changes

behavioural disorders

anxiety and panic attacks

hyperactivity

poor memory, concentration

Neuro-psychological symptoms or

sleep disorders

migraine

poor co-ordination

numbness, tingling, restless legs

seasonal affective disorder (SAD)

eating disorders