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OBESITY

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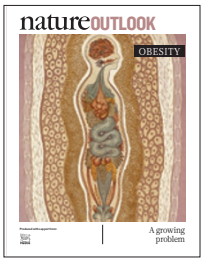

Cover art: Katie Scott

For a condition as prevalent and dangerous as obesity (see page S50), we know surprisingly little about its causes and cures. We have much to learn about how fat tissue stores and burns lipids; there may even be new types of human fat cell yet to be discovered (S52). And although it is clear that the types of microbe living in the gut correlate with body weight, we do not know whether changes in these populations are a cause of weight gain, or a consequence (S61).

The best way to lose weight is to eat less and exercise more. But as a strategy to combat obesity at the population level, this common-sense prescription is proving ineffective over the long term. Tailored treatment programmes that factor in the stresses and temptations of the real world, using insights from behavioural research, are showing some success. Drugs may also form part of the solution (S54). Or perhaps the pharmaceutical option should be a last resort, and society should instead use the power of government regulation to encourage healthier lifestyle options (S57).

Of course, obesity does not result from the environment alone — it is one of our most strongly genetically influenced traits. Scores of genes have been implicated, but the evidence suggests that something other than genes accounts for whether someone is likely to become obese (S58).

Controlling appetite is not just a matter of will power; much of our dietary behaviour is hardwired. Neuroscientists are using new techniques to map the neural circuits that control when and how much we eat (S64). But these appetite systems, which evolved to ensure we have enough of the right nutrients, are now being subverted by modern food processing (S66).

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Tony Scully
Science Editor, Nature Outlook

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