but these reductions were no associated with performance on the NPR. However, abundances of specific OTUs within *Bacteroides* and *Lactobacillus* were associated with place task performance. Minocycline did not affect gene expression of IL-1B, TNF or IL6 in retroperitoneal white adipose tissue, although rats fed cafeteria diet and minocycline exhibited significantly increased expression of TLR-4. In summary, cafeteria diet produced persistent deficits in NPR that were prevented by minocycline cotreatment. The differences in behaviour observed correlated with differences in microbiome composition, but not with inflammatory gene expression in retroperitoneal fat.

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Genetic architecture of a healthy diet in *Drosophila*

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Obesity is the strongest risk factor for type 2 diabetes, however, excess body fat does not fully explain the etiology of diabetes as several human populations develop diabetes at a lower level of obesity than others, and about 20% of obese people display normal metabolism. A major recommendation is to reduce calorie intake, yet the contribution of individual macronutrients to individuals risk of developing metabolic diseases is poorly understood. There is no clear consensus on what comprises the optimal healthy diet, and emerging evidence shows tremendous variation on health effects of different diets between individuals and populations. The aim of this study was to understand how the genetic background defines a framework for a healthy diet. To this end, we have used the Drosophila Genetic Reference Panel (DGRP), a collection of 200 inbred fly strains derived from a single outbred natural population, to dissect the gene-diet interaction across various macronutrients. Our study shows that genetic background determines the survival of flies on different diets. Functional validation of candidate SNPs identified a large number of genes previously unknown to control the metabolism and utilization of macronutrients. Isolating genes that predispose to better health outcomes in response to different nutrients will have considerable impact on public health and provides a first step towards the development of personalized nutrition as a practice to manage metabolic diseases.

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Metformin and dietary advice for pregnant women who are overweight or obese: the GROW randomised trial

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Introduction: Maternal overweight and obesity is associated with well-recognised pregnancy complications. Our aim was to evaluate the role of metformin in addition to dietary and lifestyle advice for pregnant women who were overweight or obese.

Methods: We conducted a double blind, placebo controlled, randomised trial. Eligible women with a live singleton pregnancy between 10^{+0} and 20^{+0} weeks gestation, and were overweight or obese (BMI $\geq$25.0 kg/m^2) at their first prenatal visit were recruited from public maternity hospitals in Adelaide, South Australia.

All women received an antenatal dietary intervention and were randomly allocated to receive either metformin to a maximum dose of 2000 mg per day, or an identical appearing placebo.

The primary outcome was the proportion of infants with birth weight > 4000grams. Secondary outcomes included gestational weight gain (GWG), maternal pregnancy, labour and birth, and infant outcomes. Statistical analyses adopted intention to treat principles.

Results: 524 women were randomized (261 Metformin; 263 Placebo). There was no significant difference in the proportion of infants with birth weight >4000 g (15.63% Metformin versus 14.34% Placebo; aRR 0.97; 95% CI 0.65–1.47; $p = 0.899$). Women receiving metformin had lower weekly GWG (0.38 + 0.34 kg Metformin vs 0.47 + 0.35 kg Placebo; aMD −0.08; 95% CI −0.14–0.02; $p = 0.007$), and were more likely to gain below the Institute of Medicine recommendations (39.2% Metformin vs 27.0% Placebo; aRR 1.46; 95% CI 1.10–1.94; $p = 0.008$). Total GWG was not statistically significantly different (7.48 + 6.95 kg Metformin versus 8.72 + 6.91 kg Placebo; aMD −1.18; 95% CI −2.37 to 0.01; $p = 0.053$). There was no evidence of impact on pregnancy and birth outcomes.

Conclusion: There was some evidence that metformin as an adjuvant therapy to a dietary and lifestyle intervention in overweight and obese pregnant women reduced GWG measures, but there was no evidence of an impact on pregnancy and birth outcomes.

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The importance of good dialogue between healthcare professionals and people with obesity

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Background: The ACTION (Awareness, Care, and Treatment In Obesity maNagement) study examined perceptions, attitudes and behaviours related to obesity management among people with obesity (PwO) and healthcare professionals (HCPs).

Methods: A cross-sectional, US-based, stratified sampling of 3008 adults with obesity and 606 HCPs completed an online survey assessing perceptions, attitudes and behaviours associated with obesity management. Both groups self-reported on their height and weight and perceptions of obesity-related discussions between PwO and HCPs.

Results: Most PwO (82%) agreed weight loss (WL) is completely their responsibility and most HCPs (72%) agreed they are responsible to contribute to PwO WL efforts. PwO believe reaching a target weight is central to success. Half of PwO reported receiving a formal obesity diagnosis; however, PwO were more likely to have an obesity diagnosis if they were actively seeking treatment (57% vs. 51%)