There was once a nice clear line of determinism in genetics. Everything was written in the DNA, and if only we could examine it closely enough we could predict the destiny of our bodies. But now we know that DNA changes all the time, especially through methylation, and the processes of epigenetics can blur cause and effect. A study from Saarland, Germany, shows that low methylation intensity at F2RL3 is strongly associated with mortality (International Journal of Epidemiology 2014, doi:10.1093/ije/dyu006). The remarkable thing is that low methylation at this locus is strongly associated with smoking, and that changes here seem to mediate most of the lethal effects of inhaling tobacco smoke.

Doctors confronted with a child whose asthma worries them usually use five days of prednisone in the US, or five days of prednisolone in the UK, with the alternative in either country being dexamethasone, either as a single dose or two daily doses. The logic of these precise regimens is not clear, but they all work equally well, according to a new meta-analysis in Pediatrics (2014, doi:10.1542/peds.2013-2273). Minerva suggests using the shortest and the simplest:

“There is an ongoing epidemic of thyroid cancer in the United States” declares an article in JAMA Otolaryngology—Head and Neck Surgery (2014, doi:10.1001/jamaoto.2014.1). Since 1975, the incidence of thyroid cancer has nearly tripled, with almost all of this increase the result of papillary carcinoma. But, say the authors, “The epidemiology of the increased incidence, however, suggests that it is not an epidemic of disease but rather an epidemic of diagnosis. The problem is particularly acute for women, who have lower autopsy prevalence of thyroid cancer than men but higher cancer detection rates by a 3:1 ratio.” The overall mortality rate for thyroid cancer in the US has not changed between 1975 and 2009.

The beautiful haze that gives the Blue Mountains their name comes from evaporating eucalyptus oils, the most abundant of which is known variously as eucalyptol, cajeputol, 1,3,3-trimethyl-2-oxabicyclo[2.2.2]octane, or cineole. The last of these names seems to be favoured in Germany, where a double blind placebo controlled trial was carried out to compare oral capsules of cineole with placebo capsules in 242 patients with acute bronchitis (Cough 2013;9:25, doi:10.1186/1745-9974-9-25). At four days, the cineole group showed a marked reduction in cough compared with placebo. Cineole can also be extracted from camphor laurel, bay leaves, tea tree, mugwort, sweet basil, wormwood, rosemary, sage, or even cannabis, but do not try this at home—it can be toxic and has a flash point of 49°C.

The British population is being prescribed ever more drugs on a regular basis, if the folk of Bradford and Airedale are anything to go by. Sampling of 29 practices there found that the proportion of repeat items to acute items has not changed over the past two decades, but that the number of repeat prescription items issued has doubled (from 5.8 to 13.3 items/patient/annum) (BMJ Health Services Research 2014;14:76, doi:10.1186/1472-6963-14-76). If this is happening among the stoical denizens of west Yorkshire, how much worse might it be in the softer regions of the south?

After the arrival of serological testing for coeliac disease in the 1990s, it became routine to test first degree relatives of those with the condition. It was thought that a single reliable serum antibody test in people taking a gluten containing diet would detect the condition, but from a Brazilian study it seems that seroconversion in adulthood is relatively common (BMJ Gastroenterology 2014;14:36, doi:10.1186/1471-230X-14-36). The investigators looked at 205 first degree relatives of people with coeliac disease who had been negative on testing 10 years previously and retested them using antibodies to tissue transglutaminase and endomysium. Of these, eight proved positive and five cases were confirmed by duodenal biopsy.

The Crossmodal Research Laboratory in the Department of Experimental Psychology at the University of Oxford is definitely a place for mixing work with pleasure. A recent study (Flavour 2013;2:29, doi:10.1186/2044-7248-2-29) there set about looking for cross-modal correspondences between classical music and fine wine, with collaborators from the London Symphony Orchestra; the Antique Wine Company; and the Centre for the Study of the Senses, University of London. They have established the important facts that Tchaikovsky’s First String Quartet goes well with Chateau Margaux (what doesn’t?), and that Mozart’s Flute Concerto in D major enhances the flavour of Pailly Fumé. Ah, what further discoveries lie in store? Minerva feels she could write such a paper every day for the rest of her life. And bear in mind that she is immortal.

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Tomaltyt of the abdomen and pelvis
Try the anatomy quiz in ENDGAMES, p 40