GLOSSARY

MASSACHUSETTS MALE AGING STUDY
A population-based observational cohort study of 1,709 men aged 40–70 years at baseline, who were followed at three time points over 15 years

TAP-CT
Standard thoracoabdominopelvic computed tomography; an imaging modality that uses iodinated contrast agent

FDG/PET-CT
Innovative imaging modality based on a combination of positron emission tomography and computed tomography, with ^{18}F fluorodeoxyglucose

SDHB-related disease and 100% of cases of *SDHD*-related disease. Screening from an even younger age would detect more *SDHB*-related disease but should be balanced against the risk of cumulative radiation dose.

A strength of the study is its ethnically diverse cohort: patients were referred from 7 tertiary centers worldwide. In total, 116 individuals with either *SDHB* or *SDHD* mutations were studied, from 62 families with pheochromocytoma and paraganglioma syndromes. Of these, 83 individuals were symptomatic and 33 were clinically unaffected (5 of these went on to develop disease).

Interestingly, four families with Scottish ancestry carried a *SDHB* IVS1 + G>T splice site mutation. The authors speculate that this might be a founder mutation, although haplotype analysis to confirm this was not performed.

Caroline Barranco

Original article Benn DE *et al.* (2006) Clinical presentation and penetrance of pheochromocytoma/paraganglioma syndromes. *J Clin Endocrinol Metab* **91:** 827–836

Androgen deficiency predicts development of the metabolic syndrome in lean men

A new study has found that low levels of total testosterone or sex-hormone-binding globulin (SHBG) predict onset of the metabolic syndrome. Kupelian *et al*. identified 950 men enrolled in the MASSACHUSETTS MALE AGING STUDY with complete follow-up data, who did not have the metabolic syndrome at baseline. The association was strongest for SHBG, particularly in lean men (BMI <25), in whom low SHBG levels conferred a more than twofold increase in risk of incident metabolic syndrome. Among overweight or obese men, on the other hand, the authors observed no increased risk of developing the metabolic syndrome attributable to low hormone levels. Similarly, clinical androgen deficiency only predicted development of the metabolic syndrome in lean men.

These observations strongly support the role of obesity as the predominant risk factor for the development of the metabolic syndrome, say the authors. For men with a BMI ≥25, they suggest that exercise and weight reduction would have a greater effect on their risk of developing the metabolic syndrome than androgen-replacement therapy.

In lean men, who would otherwise be considered at low risk of developing the metabolic syndrome, the presence of low SHBG, total testosterone, or clinical androgen deficiency might be a useful predictive marker not only for the development of the metabolic syndrome, but also for subsequent diabetes or cardiovascular disease. These men could be targeted for early introduction of therapies designed to reduce their cardiovascular risk.

Caroline Barranco

Original article Kupelian V *et al.* (2006) Low sex hormone-binding globulin, total testosterone, and symptomatic androgen deficiency are associated with development of the metabolic syndrome in nonobese men. *J Clin Endocrinol Metab* **91:** 843–850

Complementary imaging modalities in the surveillance of adrenocortical cancer

Patients with adrenocortical cancer require close surveillance, as their risk of tumor recurrence within 2 years is very high, even after 'complete' resection. Once the tumor recurs, prognosis is poor, with 5 year survival rates of 12%. An early diagnosis of recurrence confers survival benefits; a French team, therefore, compared the diagnostic value of two imaging modalities (TAP-CT and FDG/PET-CT) in monitoring such patients.

Of the 28 patients with adrenocortical cancer, 19 had proven metastatic disease and 9 were in remission. TAP-CT and FDG/PET-CT had similar sensitivity for the diagnosis of metastatic lesions (90% and 88%, respectively), although a substantial proportion of lesions (10–12%) were seen with only one technique. These techniques are complementary, say the authors.

FDG/PET-CT was better at detecting relapse than TAP/CT, because TAP/CT has difficulty distinguishing local relapse from postsurgical fibrosis. On the other hand, small lesions—particularly those ≤5 mm in diameter—might be missed with FDG/PET-CT owing to its lower resolution. Most small lesions can, however, be detected by FDG/PET-CT after correction for CT attenuation. The authors state that FDG/PET-CT should not be the only imaging modality used to monitor these patients.

Interestingly, high uptake of fluorodeoxyglucose (intensity >10) in FDG/PET-CT was a predictor of poor survival: more than half these