

germline mutation in a DNA mismatch repair gene. These included 64 cases of hereditary nonpolyposis colorectal cancer (HNPCC), 8 HNPCC-like cases, and 17 cases of colorectal cancer in patients aged <50 years.

Conventional genomic DNA sequence analysis of the mismatch repair genes *MLH1*, *MSH2*, or *MSH6* revealed 28 pathogenic coding-domain mutations, 16 missense mutations, 4 inframe deletions, and 22 putative splice-site mutations. Conversion analysis confirmed the presence of all of these mutations, and also identified 12 large genomic deletions, an exon duplication and an exon mutation. This technique increased the diagnostic yield still further by revealing that 17 of the putative splice-site mutations resulted in splicing defects or affected mRNA transcript stability, and that 4 of the missense mutations resulted in exon skipping.

In summary, conversion analysis appeared to be superior to genomic DNA sequencing alone in the analysis of mutations in these colorectal cancer patients. Casey *et al.* note that the technique has now been adapted to use blood samples and so is feasible in a reference laboratory setting.

Original article Casey G *et al.* (2005) Conversion analysis for mutation detection in *MLH1* and *MSH2* in patients with colorectal cancer. *JAMA* 293: 799–809

Does sunlight reduce the risk of malignant lymphoma?

A recent study by Ekström Smedby and colleagues has investigated the rapid increase in the incidence of malignant lymphomas. Surprisingly, the results suggest that exposure to ultraviolet radiation might reduce the risk of developing these tumors.

The Scandinavian Lymphoma Etiology (SCALE) study used a telephone interview to assess the history of sun exposure and other factors in 3,740 adults with a first, newly diagnosed malignant lymphoma. The analysis also included 3,187 control subjects, matched for age and sex. All participants were from Denmark or Sweden and were under 75 years old.

The risk of non-Hodgkin's lymphoma was 30–40% lower in those who reported a history of frequent sunbathing, sunburn, or 'sun vacations abroad' than in those who had

had lower UV exposure ($P < 0.01$). A similar, inverse relationship was also found between UV exposure and the risk of Hodgkin's lymphoma, although this association was weaker. As expected, those with a self-reported history of skin cancer were at increased risk of Hodgkin's and non-Hodgkin's lymphoma.

In conclusion, these unexpected results suggest a negative association between UV exposure and malignant lymphoma risk. The link between skin cancer and these tumors is, therefore, likely to be independent of UV exposure. Ekström Smedby *et al.* call for further epidemiologic studies and research into the underlying mechanisms by which UV exposure might reduce the risk of malignant lymphoma.

Original article Ekström Smedby K *et al.* (2005) Ultraviolet radiation exposure and risk of malignant lymphomas. *J Natl Cancer Inst* 97: 199–209

Differential gene expression in androgen-independent prostate tumors

A new study published in the *International Journal of Cancer* has identified 19 genes that are differentially expressed in hormone-refractory prostate cancer compared with clinically localized tumors. This information might be helpful in the development of novel therapies and in understanding the mechanisms of disease progression.

Fromont and colleagues obtained tumor samples from 33 patients with localized prostate cancer and 13 patients with androgen-independent disease. Using real-time quantitative reverse transcription polymerase chain reaction, and with reference to normal prostate tissue samples, they quantified the expression of 37 selected genes with known biologic functions.

Thirteen of the genes analyzed displayed significantly increased expression in hormone-resistant prostate cancer by comparison with localized disease, and a further six showed decreased expression. These differentially expressed genes were associated with diverse functions including androgen signaling, regulation of apoptosis, cell adhesion, and DNA mismatch repair.

Observing that a number of mechanisms are likely to be involved in the progression of