

ALLERGY, GENETICS, VITAMINS

RS4711, UH RS7041

28.04.2010

The [first GWAS of human vitamin serum D](#) level finds the most important SNPs:

In a genome-wide association study (GWAS) of 4,501 persons of European ancestry drawn from five cohorts, we identified single nucleotide polymorphisms (SNPs) in the gene encoding group-specific component (vitamin D binding) protein, GC, on chromosome 4q12-13 that were associated with 25(OH)D concentrations: rs2282679 ($P=2.0 \times 10^{-30}$), in LD with rs7041, a nonsynonymous SNP (D432E; $P=4.1 \times 10^{-22}$), and rs1155563 ($P = 3.8 \times 10^{-25}$).

Funny, rs7041 is the same variant that [we typed earlier](#) with [limited success](#) - maybe I should have also tested for FEV1 in adults only?? At least a [new COPD study this month in Thorax](#) arrives at this conclusion.

In patients with COPD, 25-OHD levels correlated significantly with forced expiratory volume in 1 s (FEV1) ($r=0.28$, $p<0.0001$) [...] Logistic regression corrected for age, gender and smoking history further revealed that homozygous carriers of the rs7041 T allele exhibited an increased risk for COPD (OR 2.11; 95% CI 1.20 to 3.71; $p=0.009$).

What really worries me - all these lines are not drawn in the original papers. A most recent review on COPD genetics even [ignores GC](#) as a candidate, nay, nay.

Addendum 12-6-2010

The [2nd genome screen](#) confirms GC with GWAS significance at

4p12 (overall $p=1.9 \times 10^{-9}$ for rs2282679, in GC); 11q12 ($p=2.1 \times 10^{-12}$ for rs12785878, near DHCR7); and 11p15 ($p=3.3 \times 10^{-10}$ for rs10741657, near CYP2R1). Variants at an additional locus (20q13, CYP24A1) were genome-wide significant in the pooled sample ($p=6.0 \times 10^{-10}$ for rs6013897).