ALLERGY, GENETICS

HOW DOES VITAMIN D IMPRINTING WORK?

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I have predicted an epigenetic regulation of vitamin D converting enzymes in 2010 to explain the programming effect of vitamin D supplements on later allergy.
Last week, a first study examining vitamin D supplement effects in newborns has been published. They compare 400IU versus 3800IU while I am already convinced that 400 IU has some measureable effect.

	Infant methylation gain		
At 4–6 weeks of life	Collagen metabolic processes	1.82	*ADMTS2, MMP27, TNXB*
	Lung development	1.44	*ADMTS2, MGP, PDGFRA, TGFB3*
	Ossification	1.35	*GNAS, GABBR1, MGP, TGFB3*
	Palate development	1.04	*PDGFRA, TFGB3, TGFRB3*
	In-utero embryonic development	0.94	*PDGFRA, TFGB3, TGFRB3, ZMIZ1*
	Steroid metabolism	0.85	*AMR1C2, CYP7B1, HDLBP*
	Synaptosome	0.80	*CYF1P2, DOC2A, SNPH*
	Infant methylation loss		
At 4–6 weeks of life	Regulation of apoptosis	1.61	*GIMAP1, MCF2 L, SMAD3, DLC1, DBH*
	Antigen processing/presentation, MHC class 1	1.56	*HLA-A, HLA-H, TAP2*
	Regulation of Rho signal transduction	1.03	*MCF2 L, ARHGEF10, DLC1, NGEF*
	Metabolic processes	0.99	*COQ3, NMNAT3, PDHB*

table 2 screenshot of selected rows

So maybe I was wrong with my prediction of a differential CYP24A1 methylation, as the authors now describe CYP7B1. CYP7B1 encodes for 25-hydroxycholesterol 7-alpha-hydroxylase which is more upstream in the synthesis of cholesterol.