ALLERGY, GENETICS

## HOW DOES VITAMIN D IMPRINTING WORK?

29.05.2018

I have predicted an epigenetic regulation of vitamin D <u>converting enzymes</u> in 2010 to explain the programming effect of <u>vitamin D supplements on later allergy</u>.

Last week, a first study examining <u>vitamin D supplement effects in newborns</u> has been published. They compare 400IU versus 3800IU while I am already convinced that 400 IU has some measureable effect.

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	Infant	methylation	gain
At 4-6 weeks	Collagen metabolic processes	1.82	ADMTS2, MMP27, TNXB
of life	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	COO3, 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.

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