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| Paper | Model | Exposure | Results |
| Placental Glucose Transporter Expression Is Regulated by Glucocorticoids <https://academic.oup.com/jcem/article/84/4/1445/2864464>  T.Hahn 1999 | Human placental extracts from term pregnancy treated with triamcinolone (TA)  E21 Rat placentas from rats injected with 0.38mg/kg TA once at E16  Mouse E17 placentas from GR transgenic mice using antisense RNA – this antisense is in the mother, but in placenta GR protein expression was reduced by 28% |  | Human TB cells had GLUT1 on MVM, GLUT3 on endothelial cells  GLUT1 mRNA and protein was reduced after TA  GLUT3 mRNA unaffected, but protein decreased  In rat and mouse, GLUT1 and GLUT3 localized in STB, CTB and endothelial cells(weakest in CTB)  In rats, fetal and placental wts were reduced by 73% and 53%, respectively at E21.  Implantation number unaffected  GLUT1 and GLUT3 mRNA and protein was reduced after TA  Placental wt of transgenic mice reduced by 28%, offspring of transgenic mice were 20% lighter  GLUT1 mRNA and protein was reduced  GLUT3 mRNA and protein increased  This suggests that GC may act via the GR to regulate GLUT expression in the placenta (since GC downregulates GR in placentas and other tissues) |
| Corticosterone alters materno-fetal glucose partitioning and insulin signalling in pregnant mice  VAUGHAN OR 2015  <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4358686/> |  |  |  |
| Karl PI, Alpy KL, Fisher SE. Amino acid transport by the cultured human placental trophoblast: effect of insulin on AIB transport. American The Journal of Physiology. 1992;262(4, part 1):C834–C839.  <https://www.ncbi.nlm.nih.gov/pubmed/1566812> |  |  |  |
| Audette MC, Greenwood SL, Sibley CP, et al. Dexamethasone stimulates placental system A transport and trophoblast differentiation in term villous explants. Placenta. 2010;31(2):97–105.  <https://www.ncbi.nlm.nih.gov/pubmed/20045184> |  |  |  |
| Jones HN, Ashworth CJ, Page KR, McArdle HJ. Cortisol stimulates system A amino acid transport and SNAT2 expression in a human placental cell line (BeWo) American The Journal of Physiology. 2006;291(3):E596–E603.  <https://www.ncbi.nlm.nih.gov/pubmed/16621896> |  |  |  |
| Audette MC, Challis JR, Jones RL, Sibley CP, Matthews SG. Antenatal dexamethasone treatment in midgestation reduces system A-mediated transport in the late-gestation murine placenta. Endocrinology. 2011;152(9):3561–3570  <https://www.ncbi.nlm.nih.gov/pubmed/21733830> |  |  |  |
| Cortisol stimulates system A amino acid transport and SNAT2 expression in a human placental cell line (BeWo) American journal of physiology Endocrinology and metabolism.  2006;291:E596–603. doi: 10.1152/ajpendo.00359.2005 |  |  |  |
| Synthetic Glucocorticoid Reduces Human Placental System A Transport in Women Treated With Antenatal Therapy [Melanie C. Audette,](javascript:;) [John R. G. Challis,](javascript:;) [Rebecca L. Jones,](javascript:;) [Colin P. Sibley,](javascript:;) [Stephen G. Matthews](javascript:;)  <https://academic.oup.com/jcem/article/99/11/E2226/2836194> |  |  |  |
| <https://www.hindawi.com/journals/bmri/2018/5106174/>  Excess Hydrocortisone Hampers Placental Nutrient Uptake Disrupting Cellular Metabolism  Maria Mateos R 2018 |  |  |  |
|  |  |  |  |
|  |  |  |  |
| Placental efficiency and adaptation: endocrine regulation. The Journal of physiology. 2009;587:3459–3472. doi: 10.1113/jphysiol.2009.173013. |  |  |  |
| Langley-Evans SC, Phillips GJ, Benediktsson R, Gardner DS, Edwards CR, Jackson AA, Seckl JR. Protein intake in pregnancy, placental glucocorticoid metabolism and the programming of hypertension in the rat. Placenta. 1996;17:169–172. doi: 10.1016/S0143-4004(96)80010-5. |  |  |  |
| Enhanced placental GLUT1 and GLUT3 expression in dexamethasone-induced fetal growth retardation.  [Langdown ML](https://www.ncbi.nlm.nih.gov/pubmed/?term=Langdown%20ML%5BAuthor%5D&cauthor=true&cauthor_uid=11738800)1, [Sugden MC](https://www.ncbi.nlm.nih.gov/pubmed/?term=Sugden%20MC%5BAuthor%5D&cauthor=true&cauthor_uid=11738800). 2001  <https://www.ncbi.nlm.nih.gov/pubmed/11738800> |  |  |  |
| Glucocorticoid programming.  [Seckl JR](https://www.ncbi.nlm.nih.gov/pubmed/?term=Seckl%20JR%5BAuthor%5D&cauthor=true&cauthor_uid=15677396)1, [Meaney MJ](https://www.ncbi.nlm.nih.gov/pubmed/?term=Meaney%20MJ%5BAuthor%5D&cauthor=true&cauthor_uid=15677396).  2004  <https://www.ncbi.nlm.nih.gov/pubmed/15677396/> |  |  |  |
| Dexamethasone-induced intrauterine growth restriction impacts the placental prolactin family, insulin-like growth factor-II and the Akt signaling pathway.  [Ain R](https://www.ncbi.nlm.nih.gov/pubmed/?term=Ain%20R%5BAuthor%5D&cauthor=true&cauthor_uid=15845918)1, [Canham LN](https://www.ncbi.nlm.nih.gov/pubmed/?term=Canham%20LN%5BAuthor%5D&cauthor=true&cauthor_uid=15845918), [Soares MJ](https://www.ncbi.nlm.nih.gov/pubmed/?term=Soares%20MJ%5BAuthor%5D&cauthor=true&cauthor_uid=15845918)  2005  <https://www.ncbi.nlm.nih.gov/pubmed/15845918/> |  |  |  |
| Seckl JR, Holmes MC. Mechanisms of disease: glucocorticoids, their placental metabolism and fetal 'programming' of adult pathophysiology. Nature clinical practice Endocrinology & metabolism. 2007;3:479–488. |  |  |  |
| Nyirenda MJ, Lindsay RM, Kenyon CJ, Burchell A & Seckl JR 1998 Glucocorticoid exposure in late gestation permanently programs rat hepatic phosphoenolpyruvate carboxykinase and glucocorticoid receptor expression and causes glucose intolerance in adult offspring. Journal of Clinical Investigation 101 2174–2181. |  |  |  |
| Benediktsson R, Lindsay R, Noble J, Seckl JR & Edwards CRW 1993 Glucocorticoid exposure in |  |  |  |
| Seckl JR 2001 Glucocorticoid programming of the fetus: adult phenotypes and molecular mechanisms. Molecular and Cellular Endocrinology 185 61–71. |  |  |  |
| **Effects of chronic maternal dexamethasone treatment on the hormones of the hypothalamo-pituitary-adrenal axis in the rat fetus**  DUPOUY JP 1987  <https://www.ncbi.nlm.nih.gov/pubmed/2823915?dopt=Abstract> |  |  |  |
| <https://www.ncbi.nlm.nih.gov/books/NBK279156/>  GREAT RESOURCE FOR GC EQUIVALENCIES AND POTENCY, TABLE 1  Nicolaides N , 2000 |  |  | Dex has long half-life, highest HPA suppressive capacity |
| <https://www.ncbi.nlm.nih.gov/pubmed/9129953>  GOOD REVIEW ON PLACENTAL TRANSPORTERS ACTIVITY AND EXPRESSION  SIBLEY C , 1997 |  |  | Diffusion of nutrients and transport-mediated transport |
| Regulation of Nutrient Transport across the Placenta LAGER S AND POWELL TL 2012  <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3523549/>  REVIEW ON PLACENTAL TRASNPORT INFLUENCED BY MULTIPLE FACTORS/CONDITIONS |  |  |  |
| Endocrine Regulation of Feto-Placental Growth  FOWDEN AL AND FORHEAD AJ 2009  MINI REVIEW  <https://www.karger.com/Article/FullText/245927#ref35> |  |  |  |