**Clinical Research:Vitamin D status in gastrostomy/jejunostomy fed children with cerebral palsy(GMFCS 2-5)**

**Background:**

Children with limited mobility & cerebral palsy GMFCS 2-5 are likely to have hypovitaminosis D due to their mobility issues,diet,exposure to sunshine & increased exposure to anti-epileptic medications.However there is little evidence on the prevalence of vitamin D deficiency(defined as vitamin D levels <50 nanogram/ml) in children with cerebral palsy who are gastrostomy fed..There is some evidence that hypovitaminosis D can occur in chronic neurological conditions[[1]](#endnote-1) (mainly in older obese children) & although cerebral palsy is included in this study,it also included children with developmental delay,learning difficulties & autism & the conclusion was that gastrostomy feeds were protective in these children.There is some evidence that there might be hypovitaminosis D in children with learning disability[[2]](#endnote-2).There was also 1 study which looked at gastrostomy fed special needs children in special school & the outcome was that 83% of children had adequate vitamin D levels & that standard gastrostomy feeds were postulated to give reasonable amount of vitamin D[[3]](#endnote-3).There is no clear prevalence or incidence of hypovitaminosis D in gastrostomy fed children with cerebral palsy (GMFCS 2-5).It would help us to answer the question if those children also need vitamin D supplementation & regular blood levels annually.Cerebral palsy Children GMFCS 2-5 who are orally fed are usually supplemented with multivitamins & vitamin D.

Children with cerebral palsy & orally fed already would have been supplemented with vitamin D according to RCPCH guidelines & therefore are excluded from this study.

**Research Questions:**

Do children with cerebral palsy GMFCS 2-5 who are gastrostomy fed have significant hypovitaminosis D & would they benefit from vitamin D supplementation.

**Type of Study:**

Cross Sectional study

**Factors influencing vitamin D levels in these children**:

-age particularly older children

-mobility

-exposure to sunshine

-diet

-other medications particularly antiepileptics

**Inclusion Criteria:**

Children in Wales who have Cerebral Palsy GMFCS 2-5

Gastrostomy fed

**Exclusion Criteria:**

Cerebral Palsy children with GMFCS1

Orally fed

Already on Vitamin D supplements

**Methodology:**

Involvement of Research & Development Team in BCU

All children who met the inclusion criteria needs to be identified through physiotherapists & dieticians in each area of North Wales.

Consent obtained from parents or with carers who have parental responsibility

Bloods-vitamin D & bone profile needs to be organised with POPD staff in each area.

Discussion with Biochemistry laboratory in each area to process the bloods

Discussion with statistician to analyse the results

1. 2016), Hypovitaminosis D in children with chronic neurological disorders. Dev Med Child Neurol, 58: 20-21. <https://doi.org/10.1111/dmcn.22_13224> [↑](#endnote-ref-1)
2. Walton, C, Isaac, A, Kerr, M. Prevalence of vitamin D deficiency in people with learning disability: A systematic review. *Br J Learn Disabil*. 2019; 47: 279– 288. <https://doi.org/10.1111/bld.12285> [↑](#endnote-ref-2)
3. Kuter, H., Das, G. and Mughal, M.Z. (2017), Vitamin D status of gastrostomy‐fed children with special needs: a cross‐sectional pilot study. Acta Paediatr, 106: 2038-2041. <https://doi.org/10.1111/apa.14054> [↑](#endnote-ref-3)