

## Cervical Proprioception in a Young Population Who Spend Long Periods on Mobile Devices: A 2-Group Comparative Observational Study.

*Journal of Manipulative and Physiologic Therapeutics* February 2018 Volume 41, Issue 2, Pages 123—128

Andrew Portelli, BPhysiotherapy(Hons); Susan A. Reid, PhD, MMedSc(Phty), GradDip(Manip.Phty)

School of Physiotherapy, Australian Catholic University, North Sydney, New South Wales, Australia

DOI: <https://doi.org/10.1016/j.jmpt.2017.10.004>

### ABSTRACT

**Objectives:** The purpose of this study was to evaluate if young people with insidious-onset neck pain who spend long periods on mobile electronic devices (known as “text neck”) have impaired cervical proprioception and if this is related to time on devices. **Methods:** A 2-group comparative observational study was conducted at an Australian university. Twenty-two participants with text neck and 22 asymptomatic controls, all of whom were 18 to 35 years old and spent  $\geq 4$  hours per day on unsupported electronic devices, were assessed using the head repositioning accuracy (HRA) test. Differences between groups were calculated using independent sample t-tests, and correlations between neck pain intensity, time on devices, and HRA test were performed using Pearson’s bivariate analysis. **Results:** During cervical flexion, those with text neck ( $n = 22$ , mean age  $\pm$  standard deviation [SD]:  $21 \pm 4$  years, 59% female) had a  $3.9^\circ$  (SD:  $1.4^\circ$ ) repositioning error, and the control group ( $n = 22$ ,  $20 \pm 1$  years, 68% female) had a  $2.9^\circ$  (SD:  $1.2^\circ$ ) error. The mean difference was  $1^\circ$  (95% confidence interval:  $0-2$ ,  $P = .02$ ). For other cervical movements, there was no difference between groups. There was a moderately significant correlation ( $P \leq .05$ ) between time spent on electronic devices and cervical pain intensity and between cervical pain intensity and HRA during flexion. **Conclusion:** The participants with text neck had a greater proprioceptive error during cervical flexion compared with controls. This could be related to neck pain and time spent on electronic devices.

**Key Indexing Terms:** Neck Pain, Proprioception, Cervical Vertebrae

---

## Breastfeeding and early white matter development: A cross-sectional study.

*NeuroImage* Volume 82-Novv 12, 2013

Sean C, Deoni, Douglas Dean III, Irene Piryatinsky, Jonathan O’Muircheartaigh, et al.

<https://doi.org/10.1016/j.neuroimage.2013.05.090>

### ABSTRACT

Does breastfeeding alter early brain development? The prevailing consensus from large epidemiological studies posits that early exclusive breastfeeding is associated with improved measures of IQ and cognitive functioning in later childhood and adolescence. Prior morphometric brain imaging studies support these findings, revealing increased white matter and sub-cortical gray matter volume, and parietal lobe cortical thickness, associated with IQ, in adolescents who were breastfed as infants compared to those who were exclusively formula-fed. Yet it remains unknown when these structural differences first manifest and when developmental differences that predict later performance improvements can be detected. In this study, we used quiet magnetic resonance imaging (MRI) scans to compare measures of white matter microstructure (mcDESPOt measures of myelin water fraction) in 133 healthy children from 10 months through 4 years of age, who were either exclusively breastfed a minimum of 3 months; exclusively formula-fed; or received a mixture of breast milk and formula. We also examined the relationship between breastfeeding duration and white matter microstructure. Breastfed children exhibited increased white matter development in later maturing frontal and association brain regions. Positive relationships between white matter microstructure and breastfeeding duration are also exhibited in several brain regions, that are anatomically consistent with observed improvements in cognitive and behavioral performance measures. While the mechanisms underlying these structural differences remains unclear, our findings provide new insight into the earliest developmental advantages associated with breastfeeding, and support the hypothesis that breast milk constituents promote healthy neural growth and white matter development.

**Keywords:** Brain development, breastfeeding, Myelin maturation, White matter development; Infant imaging, Myelin, Myelin water fraction; Magnetic resonance imaging.

**Download Free PDF:** <https://www.sciencedirect.com/science/article/pii/S1053811913005922/pdf?md5=6506d05ed3d0d98b1c352d0c23bf9d5a&pid=1-s2.0-S1053811913005922-main.pdf>

## Association of Combined Patterns of Tobacco and Cannabis Use in Adolescence with Psychotic Experiences.

*JAMA Psychiatry* 2018;75(3):240-246.

<https://jamanetwork.com/journals/jamapsychiatry/fullarticle/2669772>

Hannah J. Jones, PhD; Suzanne H. Gage, PhD; Jon Heron, PhD; et al.

**Key Points – Question:** Are patterns of adolescent cigarette and cannabis use differentially associated with subsequent onset of psychotic experiences? **Findings:** In this longitudinal cohort study of 3328 adolescents, there is evidence that both cannabis and cigarette use are associated with subsequent psychotic experiences prior to adjusting for confounders. However, after adjusting, the associations for cigarette-only use attenuated substantially, whereas those for cannabis use remained consistent. **Meaning:** While individuals who use either cannabis or cigarettes during adolescence appear to be at increased risk of psychotic experiences, the association of psychotic experiences is greater with cannabis than with tobacco smoking.

### ABSTRACT

**Importance:** There is concern about potentially causal effects of tobacco use on psychosis, but epidemiological studies have been less robust in attempts to minimize effects of confounding than studies of cannabis use have been. **Objectives:** To examine the association of patterns of cigarette and cannabis use with preceding and subsequent psychotic experiences, and to compare effects of confounding across these patterns. **Design, Setting, and Participants:** This cohort study used data from the Avon Longitudinal Study of Parents and Children, which initially consisted of 14,062 children. Data were collected periodically from September 6, 1990, with collection ongoing, and analyzed from August 8, 2016, through June 14, 2017. Cigarette and cannabis use data were summarized using longitudinal latent class analysis to identify longitudinal classes of substance use. Associations between classes and psychotic experiences at age 18 years were assessed. **Exposures:** Depending on the analysis model, exposures were longitudinal classes of substance use or psychotic experiences at age 12 years. **Main Outcomes and Measures:** Logistic regression was used to examine the associations between substance use longitudinal classes and subsequent onset of psychotic experiences. **Results:** Longitudinal classes were derived using 5,300 participants (56.1% female) who had at least 3 measures of cigarette and cannabis use from ages 14 to 19 years. Prior to adjusting for a range of potential confounders, there was strong evidence that early-onset cigarette-only use (4.3%), early-onset cannabis use (3.2%), and late-onset cannabis use (11.9%) (but not later-onset cigarette-only use [14.8%]) latent classes were associated with increased psychotic experiences compared with nonusers (65.9%) (omnibus  $P < .001$ ). After adjusting for confounders, the association for early-onset cigarette-only use attenuated substantially (unadjusted odds ratio [OR], 3.03; 95% CI, 1.13-8.14; adjusted OR, 1.78; 95% CI, 0.54-5.88), whereas those for early-onset cannabis use (adjusted OR, 3.70; 95% CI, 1.66-8.25) and late-onset cannabis use (adjusted OR, 2.97; 95% CI, 1.63-5.40) remained consistent. **Conclusions and Relevance:** In this study, our findings indicate that while individuals who use cannabis or cigarettes during adolescence have an increased risk of subsequent psychotic experiences, epidemiological evidence is substantively more robust for cannabis use than it is for tobacco use.

## Rebellious Behaviors in Adolescents with Epilepsy.

*J Pediatr Psychol* 2018;43(1):52-60.

Aimee W. Smith, PhD; Constance Mara, PhD; Shannon Ollier, Psy.D; et al.

### ABSTRACT

**Objectives:** The study aims are to (1) examine the prevalence of risk-taking (i.e., behaviors that can be categorized as rebellious or reckless) and (2) determine the influence of risk-taking on adherence, seizures, and health-related quality of life (HRQOL) in adolescents with epilepsy. An exploratory aim was to identify predictors of risk-taking. **Methods:** Fifty-four adolescents with epilepsy ( $M = 15.33 \pm 1.46$  years) and caregivers completed questionnaires on demographics, risk-taking, parent—child relations, adolescent inattention/hyperactivity, and HRQOL at four time points across 1 year. Seizure occurrence and electronically monitored adherence were also collected. **Results:** Rebellious behaviors were normative and stable over 1 year in adolescents with epilepsy. Higher rebelliousness was related to poorer adolescent-reported memory HRQOL. The only significant positive predictor of rebellious behaviors was adolescent age. **Conclusions:** Adolescents with epilepsy endorsed normative levels of rebelliousness, which is negatively related to HRQOL. Older adolescents may warrant clinical attention.

## Association of Sex with Recurrence of Autism Spectrum Disorder Among Siblings.

*JAMA Pediatr* 2017;171(11):1107-1112.

Nathan Palmer, PhD; Andrew Beam, PhD; Denis Agniel, PhD; et al

**Key Points – Question:** What are the sex-specific recurrence rates of autism spectrum disorder among siblings? **Findings:** In this population analysis of 1 583 271 families with 2 children, a significantly increased risk of recurrence of autism spectrum disorder was found among males than among females. **Meaning:** An older female sibling diagnosed with autism spectrum disorder is associated with greater risk of recurrence in the younger sibling compared with an older diagnosed male sibling, and male siblings are more likely to experience recurrence than female siblings regardless of the sex of the diagnosed sibling.

### ABSTRACT

**Importance:** Autism spectrum disorder (ASD) is known to be more prevalent among males than females in the general population. Although overall risk of recurrence of ASD among siblings has been estimated to be between 6.1% and 24.7%, information on sex-specific recurrence patterns is lacking. **Objective:** To estimate high-confidence sex-specific recurrence rates of ASD among siblings. **Design, Setting, and Participants:** This observational study used an administrative database to measure the incidence of ASD among children in 1 583 271 families (37 507 with at least 1 diagnosis of ASD) enrolled in commercial health care insurance plans at a large US managed health care company from January 1, 2008, through February 29, 2016. Families in the study had 2 children who were observed for at least 12 months between 4 and 18 years of age. **Main Outcomes and Measures:** The primary measure of ASD recurrence was defined as the diagnosis of ASD in a younger sibling of an older sibling with an ASD diagnosis. **Results:** Among the 3,166,542 children (1,547,266 females and 1,619,174 males; mean [SD] age, 11.2 [4.7] years) in the study, the prevalence of ASD was 1.96% (95% CI, 1.94%-1.98%) among males and 0.50% (95% CI, 0.49%-0.51%) among females. When a male was associated with risk in the family, ASD was diagnosed in 4.2% (95% CI, 3.8%-4.7%) of female siblings and 12.9% (95% CI, 12.2%-13.6%) of male siblings. When a female was associated with risk in the family, ASD was diagnosed in 7.6% (95% CI, 6.5%-8.9%) of female siblings and 16.7% (95% CI, 15.2%-18.4%) of male siblings. **Conclusions and Relevance:** These findings are in agreement with the higher rates of ASD observed among males than among females in the general population. Our study provides more specific guidance for the screening and counseling of families and may help inform future investigations into the environmental and genetic factors that confer risk of ASD.

## Chiropractic management of dominating one-sided pelvic girdle pain in pregnant women; a randomized controlled trial.

*BMC Pregnancy Childbirth*. 2017 Sep 29;17(1):331.

<https://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/s12884-017-1528-9>

Gausel AM, Kjærmann I, Malmqvist S, Andersen K, Dalen I, Larsen JP, Økland I.

### ABSTRACT

**Background:** The aim of this study was to investigate the outcome of chiropractic management for a subgroup of pregnant women with dominating one-sided pelvic girdle pain (PGP). **Methods:** The study population was recruited from a prospective longitudinal cohort study of pregnant women. Women reporting pelvic pain (PP), and who were diagnosed with dominating one-sided PGP after a clinical examination, were invited to participate in the intervention study. Recruitment took place either at 18 weeks, or after an SMS-tracking up to week 29. The women were randomized into a treatment group or a control group. The treatment group received chiropractic treatment individualized to each woman with regards to treatment modality and number of treatments. The control group was asked to return to conventional primary health care. The primary outcome measure was new occurrence of full time and/or graded sick leave due to PP and/or low back pain. Secondary outcome measures were self-reported PP, physical disability and general health status. Proportion of women reporting new occurrence of sick leave were compared using Chi squared tests. Differences in secondary outcome measures were estimated using linear regression analyses. **Results:** Fifty-Six women were recruited, and 28 of them were randomized into the treatment group, and 28 into the control group. There was no statistically significant difference in sick leave, PP, disability or general health status between the two groups during pregnancy or after delivery. **Conclusion:** The study did not demonstrate superiority of chiropractic management over conventional care for dominating one-sided PGP during pregnancy. However, the analyses revealed wide confidence intervals containing both positive and negative clinically relevant effects.

**TRIAL REGISTRATION:** The study was registered in ClinicalTrials.gov ( NCT01098136 ; 22/03/2010).

**Keywords:** Manual therapy; Pregnancy; SMS track; Sick leave; Subgroups

**Free download PDF:** [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5622492/pdf/12884\\_2017\\_Article\\_1528.pdf](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5622492/pdf/12884_2017_Article_1528.pdf)

## Association Between Use of Acid-Suppressive Medications and Antibiotics During Infancy and Allergic Diseases in Early Childhood.

*JAMA Pediatr* Published online April 2, 2018. doi:10.1001/jamapediatrics.2018.0315

Edward Mitre, MD; Apryl Susi, MS; Laura E. Kropp, MPH; et al

**Key Points – Question:** Does use of medications that disturb the microbiome in infancy increase subsequent risk of developing allergic diseases? **Findings:** In this cohort study of 792 130 children, the hazard of developing an allergic disease was significantly increased in those who had received acid-suppressive medications or antibiotics during the first 6 months of life. **Meaning:** Exposure to acid-suppressive medications or antibiotics in the first 6 months of life may increase risk of allergic disease development.

### ABSTRACT

**Importance:** Allergic diseases are prevalent in childhood. Early exposure to medications that can alter the microbiome, including acid-suppressive medications and antibiotics, may influence the likelihood of allergy. **Objective:** To determine whether there is an association between the use of acid-suppressive medications or antibiotics in the first 6 months of infancy and development of allergic diseases in early childhood. **Design, Setting and Participants:** A retrospective cohort study was conducted in 792 130 children who were Department of Defense TRICARE beneficiaries with a birth medical record in the Military Health System database between October 1, 2001, and September 30, 2013, with continued enrollment from within 35 days of birth until at least age 1 year. Children who had an initial birth stay of greater than 7 days or were diagnosed with any of the outcome allergic conditions within the first 6 months of life were excluded from the study. Data analysis was performed from April 15, 2015, to January 4, 2018. **Exposures:** Exposures were defined as having any dispensed prescription for a histamine-2 receptor antagonist (H2RA), proton pump inhibitor (PPI), or antibiotic. **Main Outcomes and Measures:** The main outcome was allergic disease, defined as the presence of food allergy, anaphylaxis, asthma, atopic dermatitis, allergic rhinitis, allergic conjunctivitis, urticaria, contact dermatitis, medication allergy, or other allergy. **Results:** Of 792 130 children (395 215 [49.9%] girls) included for analysis, 60 209 (7.6%) were prescribed an H2RA, 13 687 (1.7%) were prescribed a PPI, and 131 708 (16.6%) were prescribed an antibiotic during the first 6 months of life. Data for each child were available for a median of 4.6 years. Adjusted hazard ratios (aHRs) in children prescribed H2RAs and PPIs, respectively, were 2.18 (95% CI, 2.04-2.33) and 2.59 (95% CI, 2.25-3.00) for food allergy, 1.70 (95% CI, 1.60-1.80) and 1.84 (95% CI, 1.56-2.17) for medication allergy, 1.51 (95% CI, 1.38-1.66) and 1.45 (95% CI, 1.22-1.73) for anaphylaxis, 1.50 (95% CI, 1.46-1.54) and 1.44 (95% CI, 1.36-1.52) for allergic rhinitis, and 1.25 (95% CI, 1.21-1.29) and 1.41 (95% CI, 1.31-1.52) for asthma. The aHRs after antibiotic prescription in the first 6 months of life were 2.09 (95% CI, 2.05-2.13) for asthma, 1.75 (95% CI, 1.72-1.78) for allergic rhinitis, 1.51 (95% CI, 1.38-1.66) for anaphylaxis, and 1.42 (95% CI, 1.34-1.50) for allergic conjunctivitis. **Conclusions and Relevance:** This study found associations between the use of acid-suppressive medications and antibiotics during the first 6 months of infancy and subsequent development of allergic disease. Acid-suppressive medications and antibiotics should be used during infancy only in situations of clear clinical benefit.

## Revision Lingual Frenotomy Improves Patient-Reported Breastfeeding Outcomes: A Prospective Cohort Study.

*Journal of Human Lactation*, May 2018

Bobak A. Ghaheri, MD, Melissa Cole, IBCLC, Jess C. Mace, MPH, CCRP

First Published May 22, 2018 Research Article

### ABSTRACT

**Background:** Lingual frenotomy improves patient-reported outcome measures, including infant reflux and maternal nipple pain, and prolongs the nursing relationship; however, many mother—infant dyads continue to experience breastfeeding difficulty despite having had a frenotomy. **Research aim:** The aim of this study was to determine how incomplete release of the tethered lingual frenulum may result in persistent breastfeeding difficulties. **Methods:** A one-group, observational, prospective cohort study was conducted. The sample consisted of breastfeeding mother—infant (0-9 months of age) dyads (N = 54) after the mothers self-elected completion lingual frenotomy and/or maxillary labial frenectomy following prior lingual frenotomy performed elsewhere. Participants completed surveys preoperatively, 1-week postoperatively, and 1-month postoperatively consisting of the Breastfeeding Self-Efficacy Scale—Short-Form (BSES-SF), Visual Analog Scale (VAS) for nipple pain severity, and the Revised Infant Gastroesophageal Reflux Questionnaire (I-GERQ-R). **Results:** Significant postoperative improvements were reported between mean preoperative scores compared with 1-week and 1-month scores of the BSES-SF, F(2) = 41.2, p < .001; the I-GERQ-R, F(2) = 22.7, p < .001; and VAS pain scale, F(2) = 46.1, p < .001. **Conclusion:** We demonstrated that besides nipple pain, measures of infant reflux symptoms and maternal breastfeeding self-confidence can improve following full release of the lingual frenulum. Additionally, a patient population was identified that could benefit from increased scrutiny of infant tongue function when initial frenotomy fails to improve breastfeeding symptoms.

**Keywords:** ankyloglossia, breastfeeding, breastfeeding assessment, health services research, tongue-tie

## Schroth physiotherapeutic scoliosis-specific exercises for adolescent idiopathic scoliosis: how many patients require treatment to prevent one deterioration? - results from a randomized controlled trial - "SOSORT 2017 Award Winner"

*Scoliosis Spinal Disord.* 2017 Nov 14;12:26.

<https://scoliosisjournal.biomedcentral.com/articles/10.1186/s13013-017-0137-8>

Schreiber S, Parent EC, Hill DL, Hedden DM, Moreau MJ, Southon SC.

### ABSTRACT

**Background:** Recent randomized controlled trials (RCTs) support using physiotherapeutic scoliosis-specific exercises (PSSE) for adolescents with idiopathic scoliosis (AIS). All RCTs reported statistically significant results favouring PSSE but none reported on clinical significance. The number needed to treat (NNT) helps determine if RCT results are clinically meaningful. The NNT is the number of patients that need to be treated to prevent one bad outcome in a given period. A low NNT suggests that a therapy has positive outcomes in most patients offered the therapy. The objective was to determine how many patients require Schroth PSSE added to standard care (observation or brace treatment) to prevent one progression (NNT) of the Largest Curve (LC) or Sum of Curves (SOC) beyond 5° and 10°, respectively over a 6-month interval. **Methods:** This was a secondary analysis of a RCT. Fifty consecutive participants from a scoliosis clinic were randomized to the Schroth PSSE + standard of care group (n = 25) or the standard of care group (n = 25). We included males and females with AIS, age 10-18 years, all curve types, with curves 10°- 45°, with or without brace, and all maturity levels. We excluded patients awaiting surgery, having had surgery, having completed brace treatment and with other scoliosis diagnoses. The local ethics review board approved the study (Pro00011552). The Schroth intervention consisted of weekly 1-h supervised Schroth PSSE sessions and a daily home program delivered over six months in addition to the standard of care. A prescription algorithm was used to determine which exercises patients were to perform. Controls received only standard of care. Cobb angles were measured using a semi-automatic system from posterior-anterior standing radiographs at baseline and 6 months. We calculated absolute risk reduction (ARR) and relative risk reduction (RRR). The NNT was calculated as:  $NNT = 1/ARR$ . Patients with missing values (PSSE group; n = 2 and controls; n = 4) were assumed to have had curve progression (worst case scenario). The RRR is calculated as  $RRR = ARR/CER$ . **Results:** For LC, NNT = 3.6 (95% CI 2.0-28.2), and for SOC, NNT = 3.1 (95% CI 1.9-14.2). The corresponding ARR was 28% for LC and 32% for the SOC. The RRR was 70% for LC and 73% for the SOC. Patients with complete follow-up attended 85% of prescribed visits and completed 82.5% of the home program. Assuming zero compliance after dropout, 76% of visits were attended and 73% of the prescribed home exercises were completed. **Conclusions:** The short term of Schroth PSSE intervention added to standard care provided a large benefit as compared to standard care alone. Four (LC and SOC) patients require treatment for the additional benefit of a 6-month long Schroth intervention to be observed beyond the standard of care in at least one patient.

**Keywords:** Adolescents; Clinical significance; Cobb angle; Exercise; Number needed to treat; Physiotherapeutic scoliosis specific exercises; Radiography; Schroth; Scoliosis; Spinal curvatures

**Free download PDF:** [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5684768/pdf/13013\\_2017\\_Article\\_137.pdf](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5684768/pdf/13013_2017_Article_137.pdf)

## Breastfeeding and Maternal Hypertension.

*American Journal of Hypertension*, Vol 31 (13), May 2018

Article published: 30 January 2018

Sangshin Park, Nam-Kyong Choi

### ABSTRACT

**Background:** Little is known about the relationship between breastfeeding and hypertension. We performed this study to identify whether breastfeeding itself influenced maternal hypertension and whether degree of obesity or insulin sensitivity would contribute to the relationship between breastfeeding and hypertension in postmenopausal women. **Methods:** Our study population comprised 3,119 nonsmoking postmenopausal women aged 50 years or above in the 2010–2011 Korea National Health and Nutrition Examination Survey. We performed logistic regression analyses to examine the relationship between breastfeeding and hypertension and mediation analyses to examine the contributions of obesity and insulin sensitivity to the breastfeeding-hypertension relationship. **Results:** The odds ratios, with 95% confidence intervals, for hypertension among the highest quintile of number of breastfed children (5–11) and the highest quintile of duration of breastfeeding (96–324 months) were 0.49 (0.31–0.75) and 0.55 (0.37–0.82), respectively, compared to each of lowest quintile groups. The population attributable fractions of hypertension caused by breastfeeding 3 or fewer children and breastfeeding for 56 months or less were 10.2% ( $P < 0.001$ ) and 6.5% ( $P = 0.017$ ), respectively. In the mediation analysis, unexpectedly, increased insulin resistance significantly attenuated the protective effect on hypertension of having breastfed more children; additionally, greater obesity and insulin resistance significantly attenuated the protective effects on hypertension of having breastfed for longer. **Conclusions:** More children breastfed and longer duration of breastfeeding were associated with lower risk of hypertension in postmenopausal women, and degree of obesity and insulin resistance moderated the breastfeeding-hypertension association.

## Associations Between Brain Structure and Connectivity in Infants and Exposure to Selective Serotonin Reuptake Inhibitors During Pregnancy.

*JAMA Pediatr.* Published online April 9, 2018.

Claudia Lugo-Candelas, PhD<sup>1,2</sup>; Jiook Cha, PhD<sup>1,2</sup>; Susie Hong, BS<sup>1,2</sup>; et al

### ABSTRACT

**Importance:** Selective serotonin reuptake inhibitor (SSRI) use among pregnant women is increasing, yet the association between prenatal SSRI exposure and fetal neurodevelopment is poorly understood. Animal studies show that perinatal SSRI exposure alters limbic circuitry and produces anxiety and depressive-like behaviors after adolescence, but literature on prenatal SSRI exposure in humans is limited and mixed. **Objective:** To examine associations between prenatal SSRI exposure and brain development using structural and diffusion magnetic resonance imaging (MRI). **Design, Setting, and Participants:** A cohort study conducted at Columbia University Medical Center and New York State Psychiatric Institute included 98 infants: 16 with in utero SSRI exposure, 21 with in utero untreated maternal depression exposure, and 61 healthy controls. Data were collected between January 6, 2011, and October 25, 2016. **Exposures:** Selective serotonin reuptake inhibitors and untreated maternal depression. **Main Outcomes and Measures:** Gray matter volume estimates using structural MRI with voxel-based morphometry and white matter structural connectivity (connectome) using diffusion MRI with probabilistic tractography. **Results:** The sample included 98 mother (31 [32%] white, 26 [27%] Hispanic/Latina, 26 [27%] black/African American, 15 [15%] other) and infant (46 [47%] boys, 52 [53%] girls) dyads. Mean (SD) age of the infants at the time of the scan was 3.43 (1.50) weeks. Voxel-based morphometry showed significant gray matter volume expansion in the right amygdala (Cohen  $d=0.65$ ; 95% CI, 0.06-1.23) and right insula (Cohen  $d=0.86$ ; 95% CI, 0.26-1.14) in SSRI-exposed infants compared with both healthy controls and infants exposed to untreated maternal depression ( $P < .05$ ; whole-brain correction). In connectome-level analysis of white matter structural connectivity, the SSRI group showed a significant increase in connectivity between the right amygdala and the right insula with a large effect size (Cohen  $d=0.99$ ; 95% CI, 0.40-1.57) compared with healthy controls and untreated depression ( $P < .05$ ; whole connectome correction). **Conclusions and Relevance:** Our findings suggest that prenatal SSRI exposure has an association with fetal brain development, particularly in brain regions critical to emotional processing. The study highlights the need for further research on the potential long-term behavioral and psychological outcomes of these neurodevelopmental changes.

**Full Text Available:** <https://jamanetwork.com/journals/jamapediatrics/fullarticle/2676821?widget=personalizedcontent&previousarticle=2616362>

## Breastfeeding and motor development in term and preterm infants in a longitudinal US cohort.

*Am J Clin Nutr.* 2017 Dec;106(6):1456-1462. doi: 10.3945/ajcn.116.144279. Epub 2017 Nov 1.

Michels KA, Ghassabian A, Mumford SL, Sundaram R, Bell EM, et al.

### ABSTRACT

**Background:** The relation between breastfeeding and early motor development is difficult to characterize because of the problems in existing studies such as incomplete control for confounding, retrospective assessment of infant feeding, and even the assessment of some motor skills too early. **Objective:** We sought to estimate associations between infant feeding and time to achieve major motor milestones in a US cohort. **Design:** The Upstate New York Infant Development Screening Program (Upstate KIDS Study) enrolled mothers who delivered live births in New York (2008-2010). Mothers of 4270 infants (boys: 51.7%) reported infant motor development at 4, 8, 12, 18, and 24 mo postpartum; information on infant feeding was reported at 4 mo. Accelerated failure time models were used to compare times to standing or walking across feeding categories while adjusting for parental characteristics, daycare, region, and infant plurality, sex, rapid weight gain, and baseline neurodevelopmental test results. Main models were stratified by preterm birth status. **Results:** The prevalence of exclusive breastfeeding in preterm infants was lower than in term infants at 4 mo postpartum (8% compared with 19%). After adjustment for confounders, term infants who were fed solids in addition to breast milk at 4 mo postpartum achieved both standing [acceleration factor (AF): 0.93; 95% CI: 0.87, 0.99] and walking (AF: 0.93; 95% CI: 0.88, 0.98) 7% faster than did infants who were exclusively breastfed, but these findings did not remain statistically significant after correction for multiple testing. We did not identify feeding-associated differences in motor milestone achievement in preterm infants. **Conclusion:** Our results suggest that differences in feeding likely do not translate into large changes in motor development. The Upstate KIDS Study was registered at [clinicaltrials.gov](http://clinicaltrials.gov) as [NCT03106493](https://clinicaltrials.gov/ct2/show/study/NCT03106493).

**Keywords:** breastfeeding; infant formula; infant nutritional physiological phenomena; longitudinal studies; motor skills; premature birth

## Low back pain and causative movements in pregnancy: a prospective cohort study.

*BMC Musculoskelet Disord.* 2017;18: 416.

Saori Morino, Mika Ishihara, Fumiko Umezaki, Hiroko Hatanaka, et al.

Published online 2017 Oct 16. doi: [10.1186/s12891-017-1776-x](https://doi.org/10.1186/s12891-017-1776-x)

PMCID: PMC5644197 PMID: [29037184](https://pubmed.ncbi.nlm.nih.gov/29037184/)

### ABSTRACT

**Background:** Low back pain (LBP) during pregnancy might be strongly related to posture and movements of the body, and its management is a clinically important issue. The purpose of this study was to investigate the activities related to LBP during pregnancy. **Methods:** Participants included 275 women before 12 weeks of pregnancy. The women were evaluated at 12, 24, 30, and 36 weeks of pregnancy. The intensity of LBP was assessed using the Numerical Rating Scale (NRS). Movements related to LBP were investigated by free descriptive answers. Descriptive statistics were used to compile the movements that pregnant women thought induced LBP at each evaluation. Subsequently, a linear regression analysis was performed to evaluate the degree of association of certain movements with LBP using the data of participants who had LBP. The intensity of LBP (NRS score) was specified as the dependent variable, the movements that were related to pain were specified as the independent variables at the analysis. A significance threshold was set at 0.05. **Results:** The final sample used in the analyses was 254, 249, 258, and 245 women at 12, 24, 30, and 36 weeks of pregnancy, respectively. There were 16 kinds of movements that induced LBP and all of them were daily activities rather than special movements that require extra task or effort. As pregnancy progressed, less number of participants attributed pain to a specific movement. At all evaluations, movements, especially sitting up, standing up from a chair, and tossing and turning were thought to be related to LBP. Furthermore, standing up from a chair and tossing and turning were significantly related to LBP throughout the pregnancy. In contrast, lying down and sitting up were significantly related to LBP but the relationship did not continue till late pregnancy. **Conclusions:** Daily routine activity is related to LBP during pregnancy. These results suggest that recommendations for pregnant women about basic physical movements, such as ways of standing up that reduce the load on the body might be useful in the management of LBP.

**Keywords:** Activity, Low back pain, Lumbopelvic pain, Motion, Pregnancy

**Free download PDF:** [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5644197/pdf/12891\\_2017\\_Article\\_1776.pdf](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5644197/pdf/12891_2017_Article_1776.pdf)

## Osteopathic manipulative treatment for low back and pelvic girdle pain during and after pregnancy: A systematic review and meta-analysis.

*J Bodyw Mov Ther* 2017 Oct;21(4):752-762. doi: 10.

Franke H, Franke JD, Belz S, Fryer G.

1016/j.jbmt.2017.05.014. Epub 2017 May 31.

### ABSTRACT

**Background:** Low back pain (LBP) is a common complaint during pregnancy. This study examined the effectiveness of osteopathic manipulative treatment (OMT) for LBP in pregnant or postpartum women. **Methods:** Randomized controlled trials unrestricted by language were reviewed. Outcomes were pain and functional status. Mean difference (MD) or standard mean difference (SMD) and overall effect size were calculated. **Results:** Of 102 studies, 5 examined OMT for LBP in pregnancy and 3 for postpartum LBP. Moderate-quality evidence suggested OMT had a significant medium-sized effect on decreasing pain (MD, -16.65) and increasing functional status (SMD, -0.50) in pregnant women with LBP. Low-quality evidence suggested OMT had a significant moderate-sized effect on decreasing pain (MD, -38.00) and increasing functional status (SMD, -2.12) in postpartum women with LBP. **Conclusions:** This review suggests OMT produces clinically relevant benefits for pregnant or postpartum women with LBP. Further research may change estimates of effect, and larger, high-quality randomized controlled trials with robust comparison groups are recommended.

Copyright © 2017 Elsevier Ltd. All rights reserved.

**Keywords:** Low back pain; Osteopathic manipulative treatment; Postpartum; Pregnancy; Spinal manipulation; Systematic review

PMID: 29037623

DOI: [10.1016/j.jbmt.2017.05.014](https://doi.org/10.1016/j.jbmt.2017.05.014)

## Risk for Autism Spectrum Disorders According to Period of Prenatal Antidepressant Exposure: A Systematic Review and Meta-analysis.

*JAMA Pediatr* 2017;171(6):555-563.

<https://jamanetwork.com/journals/jamapediatrics/fullarticle/2616362>

Antonia Mezzacappa, MD; Pierre-Alexandre Lasica; Francesco Gianfagna, MD, PhD; et al.

**Key Points – Question:** Does prenatal antidepressant exposure increase the risk for autism spectrum disorders? **Findings:** This systematic review and meta-analysis suggests an association between increased autism spectrum disorder risk and maternal use of antidepressants during pregnancy; however, it appears to be more consistent during the preconception period than during each trimester. The association was weaker when controlled for past maternal mental illness. **Meaning:** Maternal psychiatric disorders in treatment before pregnancy rather than antenatal exposure to antidepressants could have a major role in the risk for autism spectrum disorders.

### ABSTRACT

**Importance:** Several studies have examined the links between prenatal exposure to antidepressants and autism spectrum disorders (ASDs) in children, with inconsistent results, especially regarding the impact of the trimester of exposure. **Objective:** To perform a systematic review of the literature and a meta-analysis of published studies to assess the association between ASDs and fetal exposure to antidepressants during pregnancy for each trimester of pregnancy and preconception. **Data Sources:** PubMed, EMBASE, and PsycINFO databases up to May 2016 were searched in June 2016 for observational studies. For the meta-analyses, data were analyzed on RevMan version 5.2 using a random-effect model. For the review, studies were included if they had been published and were cohort or case-control studies, and for the meta-analysis, studies were included if they were published studies and the data were not derived from the same cohorts. **Study Selection:** We included all the studies that examined the association between ASDs and antenatal exposure to antidepressants. **Data Extraction and Synthesis:** Three reviewers independently screened titles and abstracts, read full-text articles, and extracted data. The quality of the studies was also assessed. **Main Outcomes and Measures:** Primary outcome was the association between antidepressants during pregnancy and ASDs. Secondary outcomes were the associations between antidepressants in each individual trimester or before pregnancy and ASDs. **Results:** Our literature search identified 10 relevant studies with inconsistent results. For prenatal exposure, the meta-analysis on the 6 case-control studies (117,737 patients) evidenced a positive association between antidepressant exposure and ASDs (odds ratio [OR], 1.81; 95% CI, 1.49-2.20). The association was weaker when controlled for past maternal mental illness (OR, 1.52; 95% CI, 1.09-2.12). A similar pattern was found whatever the trimester of exposure considered (first trimester: OR, 2.09, 95% CI, 1.66-2.64; second: OR, 2.00, 95% CI, 1.55-2.59; and third: OR, 1.90, 95% CI, 1.20-3.02. Controlled for past maternal mental illness: first trimester: OR, 1.79; 95% CI, 1.27-2.52, second: OR, 1.67, 95% CI, 1.14-2.45; and third: OR, 1.54, 95% CI, 0.82-2.90). No association was found when the 2 cohort studies were pooled (772,331 patients) for the whole pregnancy (hazard ratio, 1.26; 95% CI, 0.91-1.74) or for the first trimester. In addition, preconception exposure to antidepressants was significantly associated with an increased risk for ASDs (OR controlled for past maternal illness, 1.77; 95% CI, 1.49-2.09). **Conclusions and Relevance:** There is a significant association between increased ASD risk and maternal use of antidepressants during pregnancy; however, it appears to be more consistent during the preconception period than during each trimester. Maternal psychiatric disorders in treatment before pregnancy rather than antenatal exposure to antidepressants could have a major role in the risk for ASDs. Future studies should address the problem of this potential confounder.

## Pregnancy and Pelvic Girdle Pain.

*Journal of the American Podiatric Medical Association*, July 2017, Vol. 107, No. 4, pp. 299-306

Floriane Kerbourc'h, Jeanne Bertuit, Véronique Feipel and Marcel Rooze

<https://doi.org/10.7547/15-087>

### ABSTRACT

**Background:** A woman's body undergoes many changes during pregnancy, and it adapts by developing compensatory strategies, which can be sources of pain. We sought to analyze the effects of pregnancy and pelvic girdle pain (PGP) on center of pressure (COP) parameters during gait at different speeds. **Methods:** Sixty-one healthy pregnant women, 66 women with PGP between 18 and 27 weeks of pregnancy, and 22 healthy nonpregnant women walked at different velocities (slow, preferential, and fast) on a walkway with built-in pressure sensors. An analysis of variance was performed to determine the effects of gait speed and group on COP parameters. **Results:** In healthy pregnant women and women with PGP, COP parameters were significantly modified compared with those in nonpregnant women ( $P < .01$ ). Support time was increased regardless of gait speed, and anteroposterior COP displacement was significantly decreased for women with PGP compared with healthy pregnant women. In addition, mediolateral COP displacement was significantly decreased in pregnant women compared with nongravid women. **Conclusions:** Gait speed influenced COP displacement and velocity parameters, and gait velocity potentiated the effect of pregnancy on the different parameters. Pelvic girdle pain had an influence on COP anteroposterior length only. With COP parameters being only slightly modified by PGP, the gait of pregnant women with PGP was similar to that of healthy pregnant women but differed from that of nonpregnant women.



## Effect of Foot Manipulation on Pregnancy-Related Pelvic Girdle Pain: A Feasibility Study.

*J Chiropr Med.* 2017 Sep;16(3):211-219.

Melkersson C, Nasic S, Starzmann K, Bengtsson Boström K.

### ABSTRACT

**Objective:** The objective of this study was to investigate if the research process to evaluate the effect of foot manipulation on pregnancy-related pelvic girdle pain (PPGP) is feasible. **Methods:** A randomized, single-blind (patients and evaluators) pilot trial was performed to compare foot manipulation to a comparative group at 6-weekly treatment sessions at 5 physiotherapy outpatient clinics in Skaraborg primary care (Skövde, Sweden). Women at 12 to 31 weeks of pregnancy with well-defined PPGP (n = 97) and joint dysfunction or decreased range of movement in the feet were included. Women with a twin pregnancy, low back pain, rheumatoid arthritis, or other serious diseases and those who had previous foot manipulation were excluded. Visual analog scale scores were recorded before study start, before and after each treatment session, and 3 months after delivery. **Results:** One-hundred and two women were eligible, and 97 were included (group 1: foot manipulation, n = 47; group 2: comparative treatment, n = 50); 40 and 36 in the foot manipulation and comparative treatment groups, respectively, completed the study. The foot manipulation group had a nonsignificant pain relief score compared with that of the comparative group, which had higher pain relief scores. The difference was most pronounced at the first and second treatment sessions. A power analysis showed that at least 250 individuals would be needed in each group to confirm the effect of foot manipulation. **Conclusions:** This study showed that it is feasible to assess the effect of foot manipulation on PPGP in a multicenter physical therapy outpatient clinic setting. A new larger study should choose a different comparative method and test this hypothesis in a full-scale trial.

**Keywords:** Ankle Joint; Osteopathic Manipulation; Physiotherapy; Pregnancy Pelvic Girdle Pain; Primary Health Care; Randomized Clinical Feasibility Study

**Free download PDF:** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5659811/pdf/main.pdf>

---

## Manual therapy for unsettled, distressed and excessively crying infants: a systematic review and meta-analyses.

*BMJ Journals/Open Volume 8, Issue 1*

Dawn Carnes, Austin Plunkett, Julie Ellwood, Clare Miles

### ABSTRACT

**Objective:** To conduct a systematic review and meta-analyses to assess the effect of manual therapy interventions for healthy but unsettled, distressed and excessively crying infants and to provide information to help clinicians and parents inform decisions about care. **Methods:** We reviewed published peer-reviewed primary research articles in the last 26 years from nine databases (Medline Ovid, Embase, Web of Science, Physiotherapy Evidence Database, Osteopathic Medicine Digital Repository, Cochrane (all databases), Index of Chiropractic Literature, Open Access Theses and Dissertations and Cumulative Index to Nursing and Allied Health Literature). Our inclusion criteria were: manual therapy (by regulated or registered professionals) of unsettled, distressed and excessively crying infants who were otherwise healthy and treated in a primary care setting. **Outcomes of interest were:** crying, feeding, sleep, parent—child relations, parent experience/satisfaction and parent-reported global change. **Results:** Nineteen studies were selected for full review: seven randomised controlled trials, seven case series, three cohort studies, one service evaluation study and one qualitative study. We found moderate strength evidence for the effectiveness of manual therapy on: reduction in crying time (favourable: -1.27 hours per day (95% CI -2.19 to -0.36)), sleep (inconclusive), parent—child relations (inconclusive) and global improvement (no effect). The risk of reported adverse events was low: seven non-serious events per 1,000 infants exposed to manual therapy (n=1308) and 110 per 1,000 in those not exposed. **Conclusions:** Some small benefits were found, but whether these are meaningful to parents remains unclear as does the mechanisms of action. Manual therapy appears relatively safe.

**Full text FREE:** <http://bmjopen.bmj.com/content/8/1/e019040.long>

## Association of Prenatal Ultrasonography and Autism Spectrum Disorder.

*JAMA Pediatr* 2018;172(4):336-344.

<https://jamanetwork.com/journals/jamapediatrics/article-abstract/2672728>

N. Paul Rosman, MD; Rachel Vassar, MD; Gheorghe Doros, PhD; et al

**Key Points – Question:** Is prenatal ultrasonography frequency, timing, duration, or strength associated with later diagnosis of autism spectrum disorder? **Findings:** In this case-control study of 420 children, those with autism spectrum disorder were exposed to greater mean depth of ultrasonographic penetration during the first and second trimesters compared with typically developing children and during the first trimester compared with developmentally delayed children. No association between the number of scans or duration of ultrasound exposure and later autism spectrum disorder was found. **Meaning:** Increased depth of prenatal ultrasonographic penetration may be associated with perturbations in fetal neuronal cortical migration and later autism spectrum disorder; this correlation deserves further study.

### ABSTRACT

**Importance:** The prevalence of autism spectrum disorder (ASD) has been increasing rapidly, with current estimates of 1 in 68 children affected. Simultaneously, use of prenatal ultrasonography has increased substantially, with limited investigation into its safety and effects on brain development. Animal studies have demonstrated that prenatal ultrasonography can adversely affect neuronal migration. **Objective:** To quantify prenatal ultrasound exposure by the frequency, timing, duration, and strength of ultrasonographic scans in children with later ASD, developmental delay, and typical development. **Design, Setting, and Participants:** This case-control study included 107 patients with ASD, 104 control individuals with developmental delay, and 209 controls with typical development. Participants were identified from medical records based on prenatal care and delivery at Boston Medical Center, a diverse, academic, safety-net medical center, from July 1, 2006, through December 31, 2014, with a gestational age at birth of at least 37 weeks. Data were analyzed from May 1, 2015, through November 30, 2017. **Exposures:** Ultrasonographic exposure was quantified by the number and timing of scans, duration of exposure, mean strength (depth, frame rate, mechanical index, and thermal index), and time of Doppler and 3- and 4-dimensional imaging. **Main Outcomes and Measures:** Among participants with ASD and controls with developmental delay and typical development, ultrasound exposure was quantified and compared per trimester and for the entire pregnancy, with adjustment for infant sex, gestational age at birth, and maternal age. **Results:** A total of 420 participants were included in the study (328 boys [78.1%] and 92 girls [21.9%]; mean age as of January 1, 2016, 6.6 years; 95% CI, 6.5-6.8 years). The ASD group received a mean of 5.9 scans (95% CI, 5.2-6.6), which was not significantly different from the 6.1 scans (95% CI, 5.4-6.8) in the developmental delay group or the 6.3 scans (95% CI, 5.8-6.8) in the typical development group. Compared with the typical development group, the ASD group had shorter duration of ultrasound exposure during the first (290.4 seconds [95% CI, 212.8-368.0 seconds] vs 406.4 seconds [95% CI, 349.5-463.3 seconds]) and second (1687.6 seconds [95% CI, 1493.8-1881.4 seconds] vs 2011.0 seconds [95% CI, 1868.9-2153.1 seconds]) trimesters but no difference in the number of scans. The ASD group had greater mean depth of ultrasonographic penetration than the developmental delay group in the first trimester (12.5 cm [95% CI, 12.0-13.0 cm] vs 11.6 cm [95% CI, 11.1-12.1 cm]). The ASD group had greater mean depth than the typical development group during the first (12.5 cm [95% CI, 12.0-13.0 cm] vs 11.6 cm [95% CI, 11.3-12.0 cm]) and the second (12.9 cm [95% CI, 12.6-13.3 cm] vs 12.5 cm [95% CI, 12.2-12.7 cm]) trimesters. **Conclusions and Relevance:** This study found significantly greater mean depth of ultrasonographic penetration in the ASD group compared with the developmental delay group in the first trimester and compared with the typical development group in the first and second trimesters. Further research is needed to determine whether other variables of ultrasound exposure also have adverse effects on the developing fetus.