

## Inappropriate Postural Habits of High School Students from the Municipality of Ceres, Brazil

This study aims to evaluate the prevalence of inappropriate postural habits in students. 827 Brazilian students aged 14 to 19 were evaluated with a self-administered questionnaire. A high prevalence of (>90%) inappropriate habits in sitting postures (on a chair, to write, and at a computer) and picking up an object off the floor was observed, suggesting the need to develop preventive programs.

**Keywords:** Adolescent health, Epidemiology, Posture.

Many postural problems affecting the general population [1], especially those related to the spine, start during growth and body development [2] - a period that coincides with the phase in which adolescents attend school. Identifying and understanding the postural habits of children and adolescents are important to prevent postural problems in adulthood. This information can guide both physical education and wider school policies [3,4]; therefore, the aim of this study was to verify the prevalence of inappropriate postural habits in students from Ceres, Goiás, Brazil, and compare the results between male and female students.

This cross-sectional study evaluated 827 students (49.3% males) aged 14 to 19 from Ceres, Brazil. To assess the prevalence of inappropriate postural habits, we used a self-administered questionnaire – the Back Pain and Body Posture Evaluation Instrument (BackPEI) – with versions specific to male and female students [5]. The questionnaires were filled out individually. Percentage analysis and the chi-square test were used to assess associations between postural habits and gender.

The results indicated a high prevalence of inappropriate postural habits in all postures, except in the means and mode of carrying school materials. Positive results were obtained with respect to the time spent watching television and at a computer because most of the students spent from 0 to 3 hours per day in these positions (85% and 81.3%, respectively). However, only 28.2% of the students slept 8 to 9 hours per night as recommended in the literature [3]. Differences between male and female students are presented in **Table I**. Appropriate sitting posture to write was seen in 6%, and for picking up objects from the floor in 10%, with no gender differences. Appropriate sitting posture on a chair/bench, and at a computer was seen in 4.2% and 9.8%, respectively. An appropriate means to carry school

material (back pack with two straps) was used by 76.8% students, with 70.9% student appropriately using it (symmetrical on the shoulder). Boys had better postural habits than girls for the latter four variables ( $P < 0.05$ ).

Regardless of male and female student differences, our results are worrisome. More than 90% of the students remained in inappropriate sitting postures (generally, with an anterior flexion of the trunk and lack of lumbar and forearm support) and when picking up an object off the floor, predisposing them to a higher degree of general discomfort, such as fatigue and tingling affecting different parts of the body, back pain, and degenerative processes in the structures of the spine [1,6,7].

In contrast to these findings, most of the students correctly used a school backpack as a means to carry their materials (76.8%), which was symmetrically carried on their shoulders (70.9%). It is speculated that this result may reflect the effect of preventive programs carried out in recent years specifically to teach this habit and the great emphasis placed on this position by the media, whereas other postural habit interventions and/or initiatives have not been applied with such frequency and intensity [4,8,9].

The results of assessments such as those carried out in this study can be applied to direct educational and preventive interventions to improve postural habits [8]. Interventions can provide alternative to prevent such habits in the school environment that, once adopted at this stage of life, become permanent in adulthood [4,9,10].

*Contributors:* MN and PRSN: conception, design of the work, the acquisition, analysis and interpretation of data; Drafting the

**TABLE I** POSTURAL HABITS OF STUDENTS FROM ELEMENTARY SCHOOLS IN CERES, BRAZIL

<i>Time/day</i>	<i>Male, No. (%)</i>	<i>Female, No.(%)</i>
<i>Watching television (n = 695)*</i>		
0 to 3 h	314 (88.7)	277 (81.2)
4 to 5 h	29 (8.2)	50 (14.7)
≥ 6 h	11 (3.1)	14 (4.1)
<i>Using a computer (n = 640)</i>		
0 to 3 h	248 (76.3)	272 (86.3)
4 to 5 h	40 (12.3)	24 (7.6)
≥ 6 h	37 (11.4)	19 (6)
<i>Sleeping time/night (n = 719)</i>		
0 to 7 h	259 (71.5)	235 (65.8)
8 to 9 h	92 (25.4)	111 (31.1)
≥ 10 h	11 (3)	11 (3.1)

\*  $P < 0.05$ .

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## Oral Paracetamol for Closure of Patent Ductus Arteriosus in Selected Preterm Neonates

We prospectively studied the effect of oral paracetamol in closing hemodynamically significant Patent ductus arteriosus in preterm infants (gestational age <32 weeks) where ibuprofen was contraindicated. 29 of 40 neonates (72.5%) showed successful response while 11 (29.5%) failed to show any response. No major complications were seen.

**Keywords:** *Paracetamol, Patent Ductus arteriosus, Prematurity.*

**A** hemodynamically-significant Patent ductus arteriosus (PDA) may cause cardiovascular instability, exacerbate respiratory distress syndrome and also prolong the requirement for assisted ventilation in preterm neonates. The options available to close the duct are pharmacological (Ibuprofen or indomethacin) and surgical. Recently, paracetamol has been shown to be an alternative treatment for closure of PDA [1-4]. We aimed to analyze the efficacy of paracetamol in closing PDA in preterm neonates where ibuprofen was contra-indicated.

This observational study was performed at a tertiary Level IIIB Neonatal Intensive Care Unit in Southern India. The study was approved by Institutional ethics committee. Preterm neonates with hemodynamically-significant PDA where ibuprofen was contraindicated-platelet count < 60,000/mm<sup>3</sup>, serum creatinine >1.5 mg/dL, necrotizing enterocolitis and bleeding diathesis [4,5], were included. Hemodynamically significant PDA was defined as transductal size >1.5 mm with Left atrium to Aortic root diameter >1.4 mm or reversal of diastolic flow in descending aorta causing increased fraction inspired oxygen (FiO<sub>2</sub> of >40% or oxygenation index of >10 on invasive ventilation). Neonates with major congenital abnormality, elevated liver enzymes (AST >55 U/L or ALT >23 U/L) [6], and those with perinatal asphyxia were excluded. An informed consent was obtained from the parents. Echocardiography was performed by the same Pediatric Cardiologist. Oral paracetamol (Crocin drops 100 mg/mL, GlaxoSmithKline Asia), 15 mg/kg/dose every 6 hourly (gestational age >30 weeks) or 8 hourly (gestational age <30 weeks), was administered. There were 192 preterm neonates (gestational age <32 weeks) admitted in the unit during study period, of which forty were given paracetamol. Mean (SD) birth weight and gestation were 1186 (289) grams and 29 (1.9) weeks, respectively. All the neonates had PDA size of more than