

# Pediatric technique

D. Bruce Fligg, DC\*

### Introduction

The necessity for chiropractic treatment of babies, infants and children has been poorly understood, not only by other health disciplines, but by the general public as well. The chiropractic profession realizes this necessity<sup>1,2,3</sup> and therefore must clearly articulate the rationale. The main criticism is "what could possibly be wrong with a baby?" And yet there are documented cases of babies responding to chiropractic care.<sup>4</sup> There are many biomechanical developmental stages that the child must pass through in order for proper neuromuscular development to occur. Our rationale for treatment depends on our understanding the biomechanical relationship throughout these developmental stages and the realization that pathomechanical states requiring chiropractic treatment can occur.

### Developmental concerns

The following is a biomechanical assessment of each of the developmental stages.

#### Birth

There are two main concerns at birth. The first and main concern lies with the cervical spine, especially the atlas and the sternocleidomastoid muscle. Due to the pressures exerted on the head and cervical region during labour and delivery, there is often an injury in this area. The second concern lies with the hips, especially in situations of breech presentations. Often the hip alignment is disturbed which can possibly lead to congenital hip dislocation.<sup>5</sup> The hips during the last trimester generally externally rotate into its normal anatomical positioning. However, breech presentations can retard this external rotation. Many times the adductor muscles become hypertonic resulting in an instability within the hip joint.

#### 0-3 Months

The development of the cervical lordosis during this stage is extremely important. As the baby begins to lift its head, the forces help to develop this secondary lordotic curve. The importance of proper development during this stage reflects on the rest of the postural development. For it is here that neck-righting reflexes begin. Improper breast feeding techniques, stomach sleeping, etc. can abnormally affect this stage.

#### 4-8 Months

The cervical lordosis continues to develop throughout this stage as well as does the lumbar lordosis. The baby begins to push up the chest, then sit up, and then crawl. Often times the baby can support itself while holding on to an object and stand. The use of developmental aids such as walkers, jolly jumpers, and playpens are most common during the latter part of this stage and are often badly misused. Overuse of these aids can severely hamper the development of the lumbar lordosis and weaken

the postural muscles resulting in damage to the supporting tissues of the spine. Another major concern during this period of time is the practice of double-diapering. Double-diapering creates a coxa vara resulting in abnormal pressures being transmitted through the acetabulum. The only time double-diapering is indicated is in the instance of hypertonic adductor muscles.

#### 8-14 Months

During this stage the baby struggles against the forces of gravity. The number of falls sustained are too numerous for any parent to count. It is during this stage that pelvic mechanics begin to develop as well as a continuing development of the lumbar lordosis and postural muscle tone. The baby should be encouraged to crawl during this stage as much as possible to help in developing the muscle tone necessary for upright posture. Too often babies during this stage are encouraged to stand upright and walk, often for prolonged periods of time.

#### 14 Months-4 Years of Age

The infant during this stage continues the battle against gravity. Running, jumping, climbing, etc. are the activities that the child slowly develops. Injury-producing falls are numerous during these years, each one potentially harmful in impeding the proper development of posture, possibly leading to early degenerative changes seen in later years. During this stage the determinants of the gait are developed.<sup>6</sup> Wolfe's and Von Heuter's laws of structure and function are at work and it is the developing neuromuscular coordination of the child which shapes the articular structures.

#### 5-12 Years of Age

During this stage the child is active at school. It is during these years that the critical postural habits develop.<sup>7</sup> Desk and chair height, the nature of carrying books, etc. are all important features that have to be dealt with. The negative effects of poor posture during these years are often overwhelming and many studies have been done to try to document these effects.<sup>8</sup>

### Manipulative Technique<sup>9,10</sup>

#### 0-8 Months

When adjusting babies several procedures should be observed. For example, making sure the babies are warm and not exposed; are comforted by a parent; soft language, relaxed manner with slow approach movements.

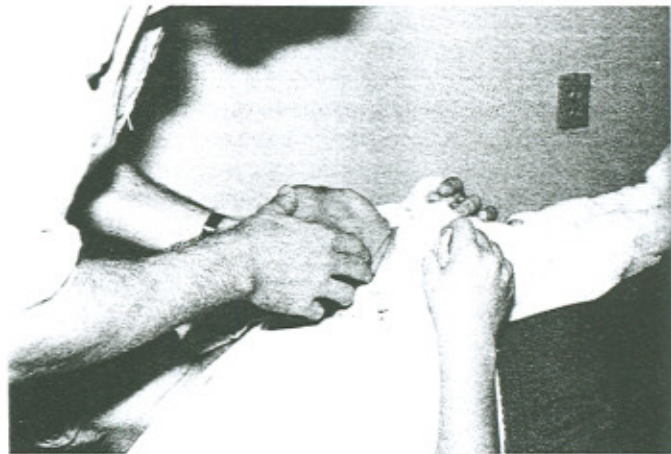
The adjusting itself is much different than an adult's. The thrust mechanisms are very low in amplitude. The contact is usually the finger tip which initiates most of the thrust along with the hand and wrist. The "release" is different, and therefore should be appreciated likewise. The loud audible sound is usually not associated with the adjustment, and therefore the release is appreciated by the fingertips.

The parent lies on the table supine with the baby on the parent's chest, with the parent supporting the baby (see Figures 1-5). The doctor approaches the baby accordingly. The main concerns are the upper cervical and upper thoracic regions.

\*Assistant Professor  
Canadian Memorial Chiropractic College, 1900 Bayview Avenue Toronto,  
Ontario M3G 3E6  
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**Figure 1:** This picture demonstrates the baby's position on the parent's chest.



**Figure 2:** This picture demonstrates the doctor's positioning for a rotary cervical manipulation.



**Figure 3:** This picture demonstrates the finger tip contact for the rotary manipulation.



**Figure 4:** This picture demonstrates the baby's position on the parent's chest for a thoracic, lumbar or pelvic manipulative procedure.



**Figure 5:** This picture demonstrates a bilateral finger tip adjustment for the mid-thoracic region.



**Figure 6:** This picture demonstrates a lateral recumbent posture for a lumbar adjustment.

### 8 Months–3 Years of Age

The supportive procedures for this group are: interact more on infant's level, i.e. – child-like antics, be familiar with their favourite T.V. programs and interests like Polka Dot Door, using puppets, etc.; make it a game like approach; avoid harsh tones, aggressive action and too much "fooling" around. The main concern during this period is the development of gait determinants (sacroiliac mechanics), however the rest of the spine has to be monitored to ensure that the numerous falls, bumps, etc. have not created negative effects on the continued biomechanical-neuromuscular development of their spine. The manipulative techniques can be a bit more aggressive. Alternate hand contacts can be used, i.e., pisiform, hypothenar. The infant can lie on your lap while you check and correct the thoracic, lumbar, pelvis and lower extremities. The infant can be on their back in order to check and correct for cervical spine problems.



**Figure 7:** This picture demonstrates the hand contact for a rotary cervical manipulation.

### 4–12 Years of Age

Corrective procedures for this age group, are very similar to that of an adult, however the following considerations should be made: be familiar with the interests of various age levels; more serious behaviour in the treatment room; separate child from parent during treatment if behaviour warrants it. (see Figures 6 and 7).

One of our profession's main philosophical thrusts is prevention. To overlook the needs of this age group, certainly detracts from the expression "an ounce of prevention is worth a pound of cure."

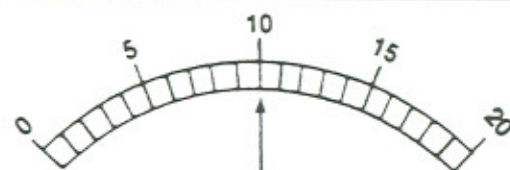
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