Chiropractic history and examination forms for the infant, pre-school, and school-aged child

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Introduction

Chiropractic education typically includes a cursory level of education within pediatrics[1] which varies from institution to institution. Practitioners interested in pediatrics can pursue additional education through continuous education courses (continuing professional development), a diplomate, or a Master's degree, through a range of providers. Surveys have shown that the majority of practitioners see children of all ages, but feel they have inadequate skills in assessment and treatment.[1]

Triaging musculoskeletal (MSK) and non-MSK complaints is of the highest priority when assessing the pediatric patient.[2] Some apparently-MSK presentations have serious red flag causes, such as bone or joint infection, malignancy, or non-accidental injury.[2] Other conditions which appear to be MSK at first glance may be due to potentially disabling pathology, including orthopedic hip conditions, rheumatological diseases, or neuromuscular diseases.[2] Ability to triage is therefore a vital skill and knowledge base for practitioners to develop when seeing the pediatric patient, as differential diagnosis and treatment vary significantly from the adult patient.[3] Children, and particularly infants, are not small adults. There are specific and different concerns which must be addressed with an appropriate history and examination.

Aims

The European Academy of Chiropractic (EAC) is working to provide post-registration education for practitioners. One of the EAC's special interest groups (SIGs) is pediatrics, where members are working to advance education around pediatric practice. The pediatric SIG is a team of four, each with advanced education within chiropractic and/or pediatrics (post-graduate Master's degree or PhD), and each with expertise in clinical practice, research, or education.

Fungible pediatric history and examination forms for chiropractors and other manual therapists have not yet been made available. Consequently, a key initiative of the SIG over the past year has been to provide basic history and examination forms for the infant, pre-school, and school-aged child, for use by practitioners with limited education in this area. The forms presented with this article have been designed to organize the pediatric history (Tables 1, 4, and 7) and examination (Tables 3, 6, and 9), giving it form and consistency, aiding the practitioner in undertaking a thorough assessment. The primary focus is on triaging common musculoskeletal (MSK) and non-MSK presentations in the three pediatric age groups, and on identifying red flags which are indications for referral (Tables 2, 5, 8). In highlighting non-MSK and red flag presentations,[4,5] there is an emphasis on safety, particularly identifying and referring the ill child for medical assessment and care. These forms are helpful in reaching the goal of arriving at the correct diagnosis or diagnoses, in order that the proper management can be recommended.

Process

The pediatric history and examination forms have been reviewed by all members of the SIG in an extensive, iterative process spanning 18 months. Within the SIG and for each age group, an initial draft was created, multiple iterations were developed, and meetings were held to discuss and resolve disagreements by consensus. In total, six meetings were held between members of the SIG. Once agreed upon within the group, the forms were then discussed at length with a pediatrician (MD), and recommendations adopted. This iteration was then shared with and reviewed by chiropractors with expertise in the pediatric patient, and their comments were reviewed by the authors.

Recommendations for chiropractors

The authors recommend adopting these forms in clinical practice. Just as these forms reflect the fact that the child is growing and developing, treatment is also adjusted based on age and development. That said, our recommendations include referring the neonate to another chiropractor with more education and experience as this patient group has special considerations not all covered in the infant form. The age group delineations are not ideal as the 13-month-old is not developmentally the same as the 5-year-old. We will be working to develop more optimal forms. The toddler is difficult to evaluate and because of this, may require advanced skills in evaluation and treatment. The 6-year-old presents challenges, for example, as they may refuse to undress for proper evaluation as developmentally, blossoming self-awareness may result in shyness with strangers.

For those practitioners with additional education and experience with these age groups, there may be additional information you wish to seek in the history and assessment

you will carry out in the examination. Using these forms as a foundation will provide a safety net, highlighting non-MSK conditions and red flags for the different age groups within the pediatric patient.[4,5]

These forms will be available to download from the European Academy of Chiropractors' website. Accompanying 'add-on' history and examination forms for common presenting complaints, such as the crying infant, childhood headache, and scoliosis, are currently being developed. A series of recorded lectures to accompany these forms are in progress, discussing key aspects of the history and examination of the pediatric patient. These will also be available through the European Academy of Chiropractic and the General Education Network for Chiropractic (GEN-C).

Conclusion

These forms represent a minimum standard for assessing pediatric patients to ensure safe and effective management. The implementation of these forms should not only raise competence of practitioners, but with widespread use, enable data collection on a large scale for future research. This is a starting point in a series of work, aimed at elevating the safety and quality of musculoskeletal care provided by chiropractors to babies, children, and their families.

Editors Note: *The forms are included on the following pages, and can be found on the JCCP website as stand-alone PDFs which can be easily downloaded for your use.*

Table 1. Infant history form (0-12 months)

Patient information and consent	
Patient name	
Patient date of birth	
Parent/guardian names	
Legal relationship to child	
General practitioner/pediatrician	
Consent to contact other healthcare practitioners	
Consent to care	
Consent to use anonymized data for research purposes	
Date	
Antenatal health	
Maternal health in pregnancy	
Maternal illness in pregnancy	
Previous pregnancies	
Fetal health in pregnancy	
Birth	
Duration of pregnancy	____ weeks ____ days
Duration of labor	1st stage ____ hours 2nd stage ____ hours
Presentation (cephalic, breech)	
Intervention during labor/birth	
Medication perinatally, including analgesia	
Obvious signs of injury after birth (e.g. bruising, skin damage, cephalohematoma)	
Baby's health after birth	
Time between birth and first feed	
Presenting complaint	
Parent/guardian concern/s	
Onset, associated symptoms, timing/course, aggravating and relieving factors, severity	
Crying	
Timing/frequency	
Pitch/intensity	
Consolability	
Associated symptoms/behaviors (e.g. pulling ears, scratching eyes)	
Can the baby be put down?	
Sleeping	
Time and duration	
Positioning (supine or other)	
Location (e.g. cot, car seat)	
Quality of sleep	

Table 1. Infant history form (0-12 months) - continued

Feeding	
How is baby fed? *Breast, bottle, other*	
What is baby fed? *Breastmilk, formula, other*	
From 6 months: Introduced solid foods? When, and what foods?	
Weight gain and growth *Growth chart*	
Any difficulty with or concerns about feeding?	

General health	
Diagnosed conditions	
Suspected conditions	
Medications: Prescribed and over the counter *What, why, outcome, any side effects*	
Supplements	
GP or hospital visits *When, why, outcome*	
Other healthcare practitioners seen	
Vaccinations — normal schedule followed?	
Allergies or intolerances	
Family medical history *Who, what, management, outcome*	

Review of systems	
Respiratory *Recurrent coughs, mucous, wheeze*	
Skin *Rash, eczema, nappy rash*	
Gastrointestinal *Regurgitation, vomiting, wind, stool*	
Output *Number of wet and dirty nappies in 24 hours*	
Positional or postural preference *Asymmetry of head or trunk, upright vs. supine*	
Injuries or falls	
Development *Does the baby move and interact like other babies the same age?*	
Other *Any other thoughts or concerns not covered?*	

Table 2. Red Flags in the infant (0-12 months) – Indications for referral

Age group	Sign/symptom	✓ / ×	
Any age	Labored breathing		
	Rib retractions		
	Fever		
	Fewer than 4 heavy wet nappies in 24 hours		
	Slow or halted growth (weight, length, head circumference)		
	Halted or regression of development		
	Fractures in non-ambulatory child		
	Lethargic, difficult to rouse		
Development:	Not responding to loud noises		
1-3 months	Not following objects with eyes by 2-3 months		
Development:	Not supporting head well		
3-4 months	Not weightbearing on feet when held upright		
Development:	Stiff or contracted muscles of extremities		
4-7 months	Hypotonia or floppiness of neck or extremities		
	Head not held when pulled from supine to sitting by arms		
Development:	Not crawling by 12 months		
8-12 months	Asymmetry in crawling, e.g. dragging one leg		
	Not standing when supported		
	Not sitting steadily by 10 months		

Table 3. Infant examination form (0-12 months)

Observations and vital signs			
General observations *General appearance, movement pattern, skin, handedness*			
Head, face, eyes, ears, nose *Marks, bruising, swelling, discharge, rash, mucous, asymmetry*			
Cardiovascular and respiratory *Chest wall deformities, respiratory effort, color*			
Abdomen *Distention, rigidity, umbilicus*			
Social interaction *Child and parents, child and practitioner*			
Measurements*	Weight:	lb.	kg
	Length:	in	cm
	Heart rate:		BPM
	Respiratory rate:		RPM
	Capillary refill:		secs
	Temperature:	°F	°C

Table 3. Infant examination form (0-12 months) continued

Neurological examination
When indicated, plus additional neurological examination as indicated (tone, co-ordination, posture, stance, gait, etc.)

Cranial nerve screening	**Normal/abnormal response**
CN 2: Pupillary light reflex	
CNs 3, 4, 6: extra-ocular movements	
CN 5: facial sensation, masseter/temporalis motor	
CN 7: blink response, facial expression	
CN 8: hearing screen	
CN 9, 10: speech swallow, gag	
CN 11: active head rotation	
CN 12: active tongue movement	
Primitive Reflexes	**Normal/abnormal response**
Rooting reflex	
Sucking reflex	
Moro Reflex	
Plantar grasp	
Palmer grasp	
Babinski	
ATNR	
Stepping reflex	
Muscle stretch reflexes	**Normal/abnormal response**
Biceps	
Brachioradialis	
Triceps	
Patella	
Hamstring	
Achilles	
Orthopedic examination	**Normal/abnormal findings**
Hip examination if indicated *Issues with walking*	
Observation and palpation for spinal and extremity deformity, e.g. scoliosis	

Musculoskeletal examination

Palpation	**Findings**
Active and passive range of motion *Spine, extremities — as indicated*	Cervical: Thoracic: Lumbar: Pelvic: Upper extremity: Lower extremity:
Static and motion palpation for regional restriction, tenderness *Spine, extremities — as indicated*	Cervical: Thoracic: Lumbar: Pelvic: Upper extremity: Lower extremity:

Table 4. Pre-school aged child history form (1-5 years)

Patient information and consent	
Patient name	
Patient date of birth	
Parent/guardian names	
Legal relationship to child	
General practitioner/pediatrician	
Consent to contact other practitioners	
Consent to care	
Consent to use anonymized data for research	
Date	
Primary complaint	
Description (ask parent/guardian & child)	
Onset	
Course since onset	
Possible causes/contributing factors	
Aggravating factors	
Relieving factors	
Behavioral changes	
Associated symptoms	
Previous episodes and management	
Pre-school attendance, engagement	
Activities affected	
Nutrition	
Diagnosed or suspected allergies/intolerances	
Usual diet and any restrictions	
Growth (weight, height, head circumference)	
Sleep	
Sleep patterns	
Any concerns about sleep	
Activity levels	
Physical activity *What, how long, how often*	
Sedentary time	
Screen time	

Table 4. Pre-school aged child history form (1-5 years) continued

Other medical conditions	
General health	
Diagnosed conditions *When diagnosed?*	
Suspected conditions	
Medications *Prescribed and OTC*	
Supplements	
GP or hospital visits/admissions *When and why?*	
Other healthcare professionals seen	
Surgeries *What and why?*	
Atopic: *Skin, respiratory, gastrointestinal*	
Injuries	
Infections	
Vaccinations — normal schedule followed?	
Family medical history *Who, what, management, outcome*	
Review of systems	
Respiratory *Recurrent coughs, mucous, wheeze*	
Skin *Rash, eczema*	
Gastrointestinal *Pain, vomiting, wind, stool*	
Output *Frequency of urination and defecation in 24hrs*	
Positional or postural preference *Asymmetry of head, trunk, or limbs*	
Injuries or falls	
Development *Does the child move and interact like other children the same age?*	
Other *Any other thoughts or concerns not covered?*	

Table 5. Red Flags in the pre-school aged child (1-5 years) - Indications for referral

Sign/symptom	✓ / ×	
Labored breathing		
Rib retractions		
Fever		
Reduced urinary output (dehydration)		
Slow or halted growth *Weight, height, head circumference*		
Halted or regression of development (loss of skills)		
Marked difference between left and right sides of body *Strength, tone*		
Marked high or low tone, especially with impact on motor skills/development		
Extreme lethargy, difficulty rousing		

Table 5. Red Flags in the pre-school aged child (1-5 years) - Indications for referral continued

Age	Developmental skills		✓ / ×
>1 year	Fine motor	*Unable to do the following:*	
		Point with finger to picture in book	
		Hold a cup	
		Hold a toy with both hands at midline	
	Gross motor	Not sitting upright steadily	
		Not crawling	
		Unusual crawling pattern	
		Not pulling up to standing	
		Not rolling over	
>2 years	Fine motor	Unable to do the following:	
		Scribble	
		Stack at least four blocks	
		Put round or square pegs into holes	
	Gross motor	Frequent falling and difficulty with stairs	
		Cannot stand alone at 14 months	
		Cannot walk by 18 months	
		Fails to develop a mature heel-toe walking pattern Walks exclusively on toes	
		Not jumping by 30 months of age	
		"Walking" their hands up their bodies to achieve a standing position	
		Still "toeing in" at two years of age	
		Unusual creeping patterns	
>3 years	Fine motor	Cannot grasp a crayon between thumb and fingers	
		Cannot copy a circle	
		Cannot stack 4 blocks	
	Gross motor	Cannot jump in place	
		Cannot ride a trike	
		Cannot stand tandem	
>4 years	Fine motor	Movements seem shaky or stiff	
		Arms and hands seem very weak	
		Is not able to cut a piece of paper with scissors	
		Cannot copy a cross (+)	
		Is not able to draw a circle and straight lines	
	Gross motor	Stands out from the group in structured motor tasks	
		Difficulty getting up from floor	
		Excessive slouching during sitting activities	
		Limping	
		Cannot climb stairs alternating feet	
		Cannot hop	
>5 years	Fine motor	Movements seem shaky or stiff	
		Arms and hands seem very weak	
		Is not able to cut along a straight line	
		Is not holding her crayons or pencils with her thumb and fingers	
		Is not able to draw a circle, square and cross	
	Gross motor	Cannot hop on one foot	
		Cannot jump	
		Cannot throw a ball	
		Cannot bounce a ball	
		Cannot skip	
		Cannot stand on one foot	
		Cannot walk on a balance beam	
		Fatigue during movement activities	

Table 6. Pre-school aged child examination form (1-5 years)

Observations and vital signs	
General observations *General appearance, movement pattern, skin, handedness*	
Head, face, eyes, ears, nose *Marks, bruising, swelling, discharge, rash, mucous, asymmetry*	
Cardiovascular and respiratory *Chest wall deformities, respiratory effort, color*	
Abdomen *Distention, rigidity, umbilicus*	
Social interaction *Child and parents, child and practitioner, friends*	

Measurements			
	Weight:	lb	kg
	Length:	in	cm
	Heart rate:		BPM
	Respiratory rate:		RPM
	Temperature:	°F	°C
	Blood pressure:		mmHg

Neurological examination
When indicated, plus additional neurological examination as indicated (tone, co-ordination, posture, stance, gait, etc.)

Cranial nerve screening	**Normal/abnormal response**
CN 2: Pupillary light reflex	
CNs 3, 4, 6: extra-ocular movements	
CN 5: facial sensation, masseter/temporalis motor	
CN 7: blink response, facial expression	
CN 8: hearing screen	
CN 9, 10: speech, swallowing, gag	
CN 11: active head rotation	
CN 12: active tongue movement	
Primitive reflexes	**Normal/abnormal response**
Babkin reflex	
Galant reflex	
Palmar grasp reflex	
Parachute reflex	
Tonic neck reflex	
Moro Reflex	
Other retained reflexes	

Table 6. Pre-school aged child examination form (1-5 years) continued

Muscle stretch reflexes	**Normal/abnormal response**
Biceps	
Brachioradialis	
Triceps	
Patellar	
Hamstring	
Achilles	
Babinski flexor response	
Orthopedic examination	**Normal/abnormal findings**
Observation and palpation for spinal and extremity deformity, e.g. scoliosis	
Posture	
Hip examination if indicated *Issues with walking*	
Musculoskeletal examination	
Palpation	**Findings**
Active and passive range of motion	Cervical:
Spine, extremities — as indicated	Thoracic:
	Lumbar:
	Pelvic:
	Upper extremity:
	Lower extremity:
Static and motion palpation for	Cervical:
regional restriction, tenderness	Thoracic:
Spine, extremities — as indicated	Lumbar:
	Pelvic:
	Upper extremity:
	Lower extremity:

Table 7. School-aged child history form (5-12 years)

Patient information and consent	
Patient name	
Patient date of birth	
Parent/guardian names	
Legal relationship to child	
General practitioner/pediatrician	
Consent to contact other practitioners	
Consent to care	
Consent to use anonymized data for research	
Date	
Primary complaint	
Description (ask parent/guardian & child)	
Onset	
Course since onset	
Possible causes/contributing factors	
Aggravating factors	
Relieving factors	
Behavioral changes	
Associated symptoms	
Previous episodes and management	
School attendance, engagement, achievement	
Activities affected	
Transport mode to school	
Car, walk, bike	
Any history of emotional trauma	
e.g. bereavement, bullying, abuse	
Nutrition	
Diagnosed or suspected allergies/intolerances	
Usual diet and any restrictions	
Growth (weight, height)	
Sleep	
Sleep patterns	
Any concerns about sleep	
Activity levels	
Physical activity	
What, how long, how often	
Sedentary time	
Screen time	

Table 7. School-aged child history form (5-12 years) continued

Other medical conditions	
General health	
Diagnosed conditions *When diagnosed?*	
Suspected conditions	
Medications *Prescribed and OTC*	
Supplements	
GP or hospital visits/admissions *When and why?*	
Other healthcare professionals seen	
Surgeries *What and why?*	
Atopic: *Skin, respiratory, gastrointestinal*	
Injuries	
Infections	
Vaccinations — normal schedule followed?	
Family medical history *Who, what, management, outcome*	
Review of systems	
Respiratory *Recurrent coughs, mucous, wheeze*	
Skin *Rash, eczema*	
Gastrointestinal *Pain, vomiting, gas, stool*	
Output *Frequency of urination and defecation in 24 hrs*	
Positional or postural preference *Asymmetry of head, trunk, or limbs*	
Injuries or falls	
Development *Does the child move and interact like other children the same age?*	
Other Recreational drug use *Any other thoughts or concerns not covered?*	

Table 8. Red flags in the school-aged child (5-12 years) – Indications for referral

Sign/symptom	✓ / ×	
Labored breathing		
Rib retractions		
Fever		
Reduced urinary output (dehydration)		
Lethargy, difficulty rousing, change in mentation		
Slow or halted growth		
Growth curve/chart		
Halted or regression of development (loss of skills)		
Marked difference between left and right sides of body		
Strength, tone		
Marked high or low tone, especially with impact on motor skills/development		
Persistent toe-walking		

Table 9. School-aged child examination form (6-12 years)

Observations and vital signs			
General observations *General appearance, movement pattern, skin, handedness*			
Head, face, eyes, ears, nose *Marks, bruising, swelling, discharge, rash, mucous, asymmetry*			
Cardiovascular and respiratory *Chest wall deformities, respiratory effort, color*			
Abdomen *Distention, rigidity, umbilicus*			
Social interaction *Child and parents, child and practitioner, friends*			
Measurements	Weight:	lb	kg
	Length:	in	cm
	Heart rate:		BPM
	Respiratory rate:		RPM
	Temperature:	°F	°C
	Blood pressure:		mmHg

Table 9. School-aged child examination form (6-12 years) continued

Neurological examination
When indicated, plus additional neurological examination as indicated (tone, co-ordination, posture, stance, gait, etc.)

Cranial nerve screening	**Normal/abnormal response**
CN 2: Pupillary light reflex	
CNs 3, 4, 6: extra-ocular movements	
CN 5: facial sensation, masseter/temporalis motor	
CN 7: blink response, facial expression	
CN 8: hearing screen	
CN 9, 10: speech, swallowing	
CN 11: active head rotation	
CN 12: active tongue movement	
Muscle stretch reflexes	**Normal/abnormal response**
Biceps	
Brachioradialis	
Triceps	
Patella	
Hamstring	
Achilles	
Babinski flexor response	
Developmental screening	✓ / ×
Stand steadily with feet together, eyes closed	
Stand steadily on one leg	
Stand steadily on one leg with eyes closed	
Heel-toe walk	
Finger-to-nose	
Dysdiadochokinesia	
Retained primitive reflexes	
Orthopedic examination	**Normal/abnormal findings**
Observation and palpation for spinal and extremity deformity, e.g. scoliosis	
Posture	
Adam's forward bend (scoliosis)	

Musculoskeletal examination **Palpation**	**Findings**
Active and passive range of motion *Spine, extremities — as indicated*	Cervical: Thoracic: Lumbar: Pelvic: Upper extremity: Lower extremity:
Static and motion palpation for regional restriction, tenderness *Spine, extremities — as indicated*	Cervical: Thoracic: Lumbar: Pelvic: Upper extremity: Lower extremity: