personal sector, the child is able to move the thumb and made vertical line; for language sector the child is more alert to voice. As for ELM scale, improvements are observed in Alert to Voice (AR) and global language from 7 months to 12 months. *Conclusion:* Beside showing the effectiveness of SCT treatment, we also found that habilitation programs helped to stimulates new cells to become functional cells and in assisting the migration of the new cell into the injured areas.

0522PP076

MEASUREMENT RELIABILITY OF SPIKING MOVEMENT KINEMATICS IN VOLLEYBALL PLAYERS

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Purpose: Spiking is an important scoring technique in volleyball competition, which involves large overhead shoulder movement and could predispose athletes to higher risks of shoulder pathology. However, studies describing spiking kinematics are scarce. The aim of this study was therefore to describe the movement pattern and to determine the measurement reliability of the spiking kinematics in volleyball players. *Materials and Methods:* We recruited 10 asymptomatic college volleyball players for this study. An electromagnetic tracking system LibertyTM was used to record kinematics of the scapula, humerus and trunk during spiking. The spiking movement was performed indoors with the ball hung from the ceiling. Five repe titions of each spiking movement (cross body and straight forward) were performed for each session, and two sessions of testing were conducted during the same day. An intraclass correlation coefficient (ICC) model was used to calculate the measurement repeatability. *Results:* Before ball contact, shoulder elevated with external rotation and the scapula rotated upwards and tilted posteriorly. A large shoulder horizontal adduction was observed during the follow through stage. Measurement reliability of the spiking kinematics was good to excellent for shoulder rotations in sagital and frontal planes and in all directions of scapular and trunk movement with ICCs 0.800–0.996. *Conclusion:* With clear definitions of movement kinematics and testing procedures, the within day reliability reached good to excellent for measuring spiking kinematics in volleyball players. A large shoulder horizontal adduction might put volleyball players in high risks of shoulder impingement.

0522PP077

REHABILITATION PROGRAM ON BILATERAL HEMIMELIA TIBIA: A CASE REPORT

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Purpose: Hemimelia tibia or longitudinal deficiency of tibia is a congenital limb deficiency where the whole tibia bone is absent. It occurs in 1 per 1,000,000 births. Clinical picture includes varus foot, a short leg, and an unstable knee, or ankle, or both.The treatment of choice is disarticulation of the knee, but the use of orthotics or prosthetics without surgical intervention is also an option in treatment. *Materials and Methods:* A 16-month-old boy diagnosed with bilateral hemimelia tibia. Both of his tibial bones are absent, known by his parents since birth. The parents refused the disarticulation of the knee. The patient was already able to crawl, to sit, and started learning to stand. We gave the patient bilateral knee ankle foot orthosis with ischial weight-bearing, patten bottom, and thigh cuff. *Results:* The patient is still adapting with the orthosis and cannot ambulate with the orthosis yet. We hope by the time, he adapt to the orthosis and able to walk independently using the orthosis. *Conclusion:* We can manage patient with bilateral hemimelia by using custom made orthosis without surgical intervention.

0522PP078

A PRELIMINARY STUDY ON EXPLORING MOTOR DEVELOPMENT OF VERY LOW BIRTH WEIGHT PREMATURE BABY IN PRESCHOOL AGE

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Purpose: The main purposes of this study are to 1) understand the motor development of very low birth weight premature baby in preschool age, and 2) analyze the possible factors affecting motor development on these children. *Materials and Methods:* This is a cross-sectional study. A convenient sample of 48 preschool-aged children born prematurely with very low birth weight, 27 boys and 21 girls (mean age 3.6 years), were recruited. All participants' motor performance was evaluated by Peabody development motor scale (PEMS-II), and their visual functions were examined by pediatric ophthalmologists. To understand the related factor of motor development, the basic data of the participants including sex, birth weight, gestational age, complications of prematurity were collected. One sample t-test was used to compare the motor development of our participants to the norm of PDMS-II. Independent t-test was used to compare the motor development in children with different related factors. *Results:* The development of gross motor, fine motor and global motor in the study group were significant lower than the norm of PDMS-II. The motor development on the group without intraventricular hemorrhage (IVH) or with grade I of IVH was significant better than the group with grade II and III of IVH. The motor performance on the group with normal visual acuity and mild abnormal was better than the group with moderately and severely impaired visual function. *Conclusion:* We concluded that the motor development of preschool children born prematurely with very low birth weight was significantly more delay than children of the same age. The factors related to motor development delay in these prematurely children are IVH, and visual functions.

0522PP079

ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION WITH HAMSTRING TENDON OR PATELLAR TENDON AUTOGRAFT EXHIBIT DIFFERENT MUSCLE STRENGTH

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Purpose: We hypothesize long term results of ACL reconstruction with hamstring auto-graft or patellar tendon auto-graft, isokinetic performance will be the same. The purpose of the study is to quantify and interpret the isokinetic properties between two auto grafts. *Material and Methods:* Ten patients were included in this study. There are five subjects in patellar tendon auto-graft group and another five patients in hamstring tendon auto-graft group. Lysholm score, anterior drawer test and Lachman test were evaluated. Isokinetic contraction were performed at angular velocity of 60 d/s, 120 d/s, 180 d/s, followed by maximum voluntary isometric contraction at 45 degrees and 90 degrees of knee flexion. *Results:* There was a statistic significant difference between normal knee and reconstructed knee at angular velocity of 180 degrees concentric knee flexion in hamstring tendon auto-graft group. The Z value was –1.88 (p=0.048) There was a statistic significant difference at angular velocity of 120 degrees concentric knee extension in patellar tendon auto-graft group. The Z value was –1.91 (p=0.042). There was a statistic significant difference in isometric contraction at 90 degrees of knee extension in patellar tendon auto-graft group.