Importance of Initiating a "Tummy Time" Intervention Early in Infants With Down Syndrome

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Purpose: This study compared differences in motor development in infants with Down syndrome beginning a tummy time intervention before 11 weeks of age and after 11 weeks of age. **Methods:** Nineteen infants with Down syndrome participated in tummy time until they could independently transition in and out of sitting. Motor development was assessed monthly using the Bayley III Motor Scales and compared between the groups. **Results:** A difference in motor development between early and late groups is apparent 1, 2, and 3 months following intervention initiation. **Conclusion**: Early implemented tummy time was effective in reducing motor delay in young infants with Down syndrome and is a prudent first step in intervention. **(Pediatr Phys Ther 2017;29:68–75)** *Key words: Down syndrome, early intervention, motor development, tummy time*

INTRODUCTION AND PURPOSE

Down syndrome (DS) results from the triplication of genes on chromosome 21 and is the most commonly occurring chromosomal condition with 1 in 691 babies born in the United States.[1] In addition to an increased risk for related health conditions (eg, heart defects, hypothyroidism, and obesity), children born with DS are at increased risk for delays in motor development.[2,3] The acquisition of motor behaviors in infancy is critical because it facilitates child-environmental interactions, which support cognitive, social, physical, and emotional development.[4-8] Consequently, delays in motor skill development may negatively impact the other systems.[4-8] Children with DS experience varying degrees of motor and global developmental delays[9] that ultimately impair their ability to participate in meaningful life events.[10-12] Interventions that attenuate delays in motor development could improve outcomes for infants with DS.

Deficient dendritic proliferation and myelination of cortical and subcortical brain structures as well as general synaptic dysfunction contribute to the observed motor skill delays in infants with DS.[9,13-16] Because of these neurological differences, the more complex the skill, the greater the difference in age of acquisition between infants with typical development (TD) and infants with DS.[13,17,18] The gap in motor development emerges around 4 months of age and continues to widen as the complexity of motor demands increases and is especially evident for skills requiring high levels of muscle co-activation against gravity.[18] The opportunity to experiment with movement in the prone position (ie, tummy time) is beneficial for infants with DS as it affords the chance to develop progressively more motor control against gravity.[13,18] The brain is responsive to sensorimotor inputs during early life[19] and delays in motor skill acquisition are likely to have detrimental effects on other systems.[4-8] A tummy time intervention for infants with DS should begin early in development.

The practice of tummy time became less prevalent starting in 1992 when the American Academy of Pediatrics urged parents to put infants to sleep on their backs to decrease the incidence of sudden infant death syndrome. Although the incidence of sudden infant death syndrome has dramatically decreased, the change in sleep positioning has influenced awake positioning practices as infants come

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to prefer the supine position when awake and parents avoid putting infants in the prone position as a routine.[20] Infants who sleep on their backs are less likely to be placed on their tummies during awake hours.[20,21] This lack of exposure to tummy time affords infants with limited opportunities to learn and practice motor skills requiring antigravity extension.[22] Motor control against the force of gravity is requisite for attainment of many early motor milestones.

Evidence supports the relationship between tummy time and early motor skill acquisition in infants with TD. Infants who spend little time in the prone position demonstrate a decreased ability to hold their heads up to 45° and to sit (supported) with their head steady at 2 months of age.[23] Infants who spend more awake time on their tummies achieve motor milestones (eg, rolling prone to supine, prop sitting, and belly crawling) earlier.[22,24] It has been suggested that 81 minutes of deliberate daily tummy time is necessary to achieve motor milestones without delay.[25] The indication is that many infants with TD are not engaging in sufficient tummy time to achieve timely motor development.

Although the benefits of tummy time in infants with TD are apparent, the effect of deliberate, daily tummy time in infants with DS has not been studied. The overall trend of less wakeful time in the prone position, coupled with a diagnosis of DS, makes these infants highly susceptible to progressive motor delays. Motor interventions in this population are imperative as delays in motor development likely contribute to delays in other areas.[4-8] The literature suggests earlier is better, yet evidence regarding the optimal age to begin intervening with infants with DS is inconclusive. One of the challenges for interventionists is to determine the timing and intensity of interventions that will maximize results.

To further understand optimal timing, a parent-implemented tummy time program for infants with DS was implemented. The purpose was to compare differences in motor development in a group of infants with DS beginning tummy time before 11 weeks of age and a comparable group beginning the same intervention at 11 weeks of age or later. Motor outcomes were compared between the groups for 12 months following study entry.

METHODS

Study approval was obtained from the Medical School Institutional Review Board at the University of Michigan. Informed consent was obtained from participating families.

Participants

Nineteen infants with DS between 0 and 20 weeks of age were recruited from southern Michigan, Ohio, Atlanta, New York City, and Philadelphia. Participants were recruited from local agencies working with families with DS. Age in days was calculated by multiplying the infants' age in months by 30 and adding remaining days. A corrected age was used for infants born before 37 weeks' gestation. Infants starting the intervention before 11 weeks of age (corrected) comprised the early start group (n = 10). Nine infants with DS comprised the late start group. Group assignment criteria were determined after full recruitment, but prior to complete data collection. The criteria created approximately even group size and split of study entry window. Exclusion criteria were infants who were placed in the prone position for sleeping or infants who had or developed serious medical conditions such as infantile spasms, extensive cardiac complications, or leukemia. All participants were supine sleepers. One baby in the early start group withdrew after the seventh postbaseline visit. His data were included because more than 50% of the visits were completed. Historical data on 9 infants with DS that were similarly monitored for motor development in the first year of life but received no formal tummy time intervention were included for control purposes.[26] Participant complications in all groups included prematurity (<37 weeks' gestation), neonatal intensive care unit stays, cardiac defects requiring surgical correction in the first year of life, Hirschsprung disease, and club feet. There were 9 infants between 3 and 6 weeks premature, 4 in the early start group, 1 in the late start group, and 4 in the control group (Table 1).

Home Visits

Home visits were similar for all groups. The intervention, or the observation for the control group, took place in the participants' home or daycare. Motor skill development was assessed each visit. Following study entry, infants in the early and late start tummy time groups were assessed each month for another 12 months. Once infants were able to independently transition in and out of the sitting position, families were no longer required to engage in deliberate tummy time or logging activities Monthly visits continued for 12 months to examine intervention effects. The infants with DS in the control group were monitored at baseline, then at 1, 2, 3, 4, and 11 months postbaseline.[26]

Tummy Time Intervention

During the baseline visit, the family was instructed to begin a supervised, daily, tummy time program. Based on findings from Dudek-Shriber and Zelazny,[25] the goal for each family was to accumulate 90 minutes of supervised tummy time over the course of each day. Families could choose their own activities to engage infants during tummy time, but developmentally appropriate, written strategies to improve success and adherence were provided (Figure 1). A log of daily tummy time was kept by the family and submitted each subsequent visit. Infants in the control group likely engaged in tummy time. It was postulated, however, that these participants did not complete the deliberate or systematic tummy time minutes performed by either intervention group.

TABLE 1

Comparison of Baseline Demographics Early, Late, and Control Groups[a]

Participants' Study Group	Age at Study Entry	Gender	Maternal Education (0 = HS or Less; 1 = Some College)	Race (0 = White; 1 = Other)	Siblings, n	Birth Weight	Pre/Peri/ Postnatal Complications	Ponderal Index at Study Entry	Bayley Motor Composite at Study Entry
Early (10)									
Mean	**40.900**	0.400	0.900	0.100	1.200	2.865	1.400	26.840	100.400
SE	7.742	0.163	0.100	0.100	0.389	0.263	0.371	.976	1.992
SD	24.483	0.516	0.316	0.316	1.229	0.832	1.174	3.086	6.077
Late (9)									
Mean	**95.000**	0.670	0.890	0.000	2.220	2.991	0.780	26.216	94.220
SE	6.414	0.167	0.111	0.000	0.401	0.186	0.222	.880	4.576
SD	19.242	0.500	0.333	0.000	1.202	0.526	0.667	2.640	13.728
Control (9)									
Mean	**64.000**	0.560	0.560	0.220	1.330	2.912	0.780	29.065	105.560
SE	3.508	0.176	0.176	0.147	0.441	0.133	0.222	1.300	3.571
SD	10.524	0.527	0.527	0.441	1.323	0.398	0.667	3.900	10.713

Abbreviations: HS, high school; SD, standard deviations; SE, standard error.
[a]ANOVA, $F(2, 27)$, $P > .05$ bolded.

Tests and Measures

Motor development was evaluated using the Bayley III Motor Scales (Bayley-III).[27] The Bayley-III is reliable for special populations[27] and is a valid discriminative measure that is recommended for identification of motor delay.[28] Although primarily a discriminative measure, the Bayley-III was administered in this study to investigate how infants with DS develop in the motor domain compared with the normative sample. Infants with DS in the control group had been evaluated using the Bayley-III. The motor composite calculation, a compilation of fine and gross motor skills, incorporated the infant's age in days at the time of each assessment. Because the groups were of different ages at study entry, this accounted for changes in motor development occurring because of maturity not the intervention. The Bayley-III motor composite was compared between the groups from study entry through the following 12 months.

Health Questionnaire

Families in the tummy time groups completed a brief questionnaire regarding their children's health and the amount of outside therapies received during the previous month. These were potential covariates. There was no significant difference in health status between groups. There were no statistically significant differences in monthly mean number of tummy time minutes performed or in external physical therapy minutes received by either group (Table 2). No information on external physical therapy received by the control group was collected.

Data Analysis

The design of this study was quasiexperimental and longitudinal. The Statistical Package for Social Science (SPSS) 22.0 was used for data analysis, with 0.05 α level. Demographic data at study entry were compared to identify potential confounders. Models for repeated-measures data were used. A marginal linear model, with months as the continuous covariate, nonconstant variance over time, an autoregressive correlation structure, and correlated errors, illustrated overall marginal group differences. There was a nonlinear trend of group motor development during the first 4 months of intervention (Figure 2). The model was reanalyzed treating time as a categorical variable for this period. Because the groups were small, Cohen's *d,* which is independent of sample size,[29] was calculated to further investigate the effect of early intervention. An effect size greater than 0.8 was considered large, between 0.5 and 0.8 medium, and between 0.2 and 0.5 small.

RESULTS

The groups were similar in number of participants, gender, maternal education, race, siblings, ponderal index (PI), motor development, and pre/peri/postnatal complications. Baseline PI was included to demonstrate that groups were composed of infants with similar body composition prior to beginning the intervention. The mean age in days at study entry was significantly different and validated the criteria used for group assignment.

Figure 2 graphs the differences in group motor development over time. Although the early start group demonstrated the highest motor development at every observed time point, the slope of the trajectory for this group (−1.70; $P < .001$), assuming a linear relationship over time points, declines more steeply than the slope of the trajectory for the late start group (−0.84; $P < .001$). The difference in slopes was 0.862 ($P < .001$). The trajectories generated by a linear model depicted slopes for each of the intervention groups declining significantly less rapidly than the slope for the control group, with a difference in slope from the early group of −1.62 ($P < .001$) and from the late group of −2.48 ($P < .001$).

Motor development deviated from linearity in the early months of the intervention (Figure 2). The final model was adjusted such that time was treated categorically

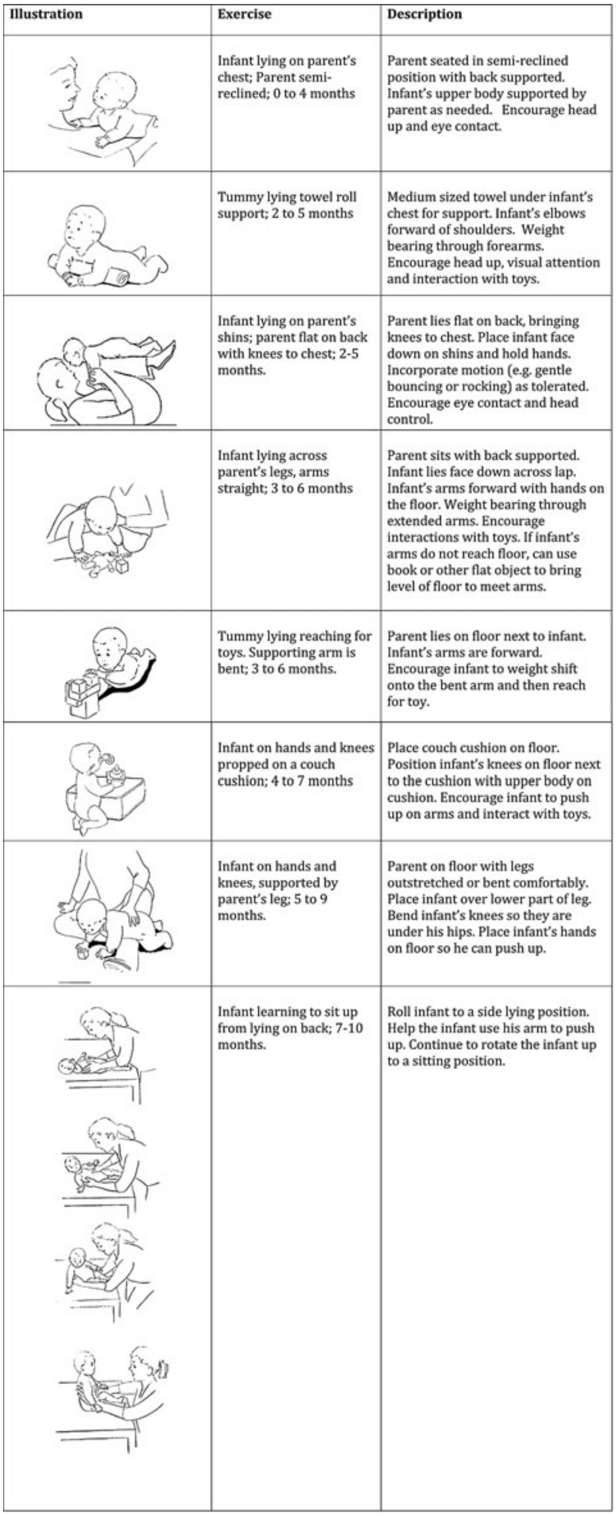

Illustration	Exercise	Description
	Infant lying on parent's chest; Parent semi-reclined; 0 to 4 months	Parent seated in semi-reclined position with back supported. Infant's upper body supported by parent as needed. Encourage head up and eye contact.
	Tummy lying towel roll support; 2 to 5 months	Medium sized towel under infant's chest for support. Infant's elbows forward of shoulders. Weight bearing through forearms. Encourage head up, visual attention and interaction with toys.
	Infant lying on parent's shins; parent flat on back with knees to chest; 2-5 months.	Parent lies flat on back, bringing knees to chest. Place infant face down on shins and hold hands. Incorporate motion (e.g. gentle bouncing or rocking) as tolerated. Encourage eye contact and head control.
	Infant lying across parent's legs, arms straight; 3 to 6 months	Parent sits with back supported. Infant lies face down across lap. Infant's arms forward with hands on the floor. Weight bearing through extended arms. Encourage interactions with toys. If infant's arms do not reach floor, can use book or other flat object to bring level of floor to meet arms.
	Tummy lying reaching for toys. Supporting arm is bent; 3 to 6 months.	Parent lies on floor next to infant. Infant's arms are forward. Encourage infant to weight shift onto the bent arm and then reach for toy.
	Infant on hands and knees propped on a couch cushion; 4 to 7 months	Place couch cushion on floor. Position infant's knees on floor next to the cushion with upper body on cushion. Encourage infant to push up on arms and interact with toys.
	Infant on hands and knees, supported by parent's leg; 5 to 9 months.	Parent on floor with legs outstretched or bent comfortably. Place infant over lower part of leg. Bend infant's knees so they are under his hips. Place infant's hands on floor so he can push up.
	Infant learning to sit up from lying on back; 7-10 months.	Roll infant to a side lying position. Help the infant use his arm to push up. Continue to rotate the infant up to a sitting position.

Fig. 1. Sample progression of tummy time exercises.

TABLE 2

Summary of Mean Minutes of "Tummy Time" and External Physical Therapy Received per Month

	Group	N	Mean	P
Average daily prone time (T1), min/d	Early	10	63.75 (27.18)	
	Late	9	43.18 (17.50)	.070
PT (T1), min/mo	Early	10	46.50 (61.83)	
	Late	9	38.33 (33.35)	.729
Average daily prone time (T2), min/d	Early	10	58.36 (26.76)	
	Late	9	44.15 (29.01)	.283
PT (T2), min/mo	Early	10	70.50 (149.34)	
	Late	9	26.67 (37.16)	.405
Average daily prone time (T3), min/d	Early	10	62.71 (29.12)	
	Late	8	58.45 (26.82)	.784
PT (T3), min/mo	Early	10	90.00 (152.97)	
	Late	8	55.00 (66.33)	.556
Average daily prone time (T4), min/d	Early	10	62.71 (27.01)	
	Late	9	63.94 (38.90)	.936
PT (T4), min/mo	Early	10	126.00 (107.52)	
	Late	9	84.44 (71.26)	.341
Average daily prone time (T5), min/d	Early	10	68.35 (27.78)	
	Late	9	78.35 (33.21)	.484
PT (T5), min/mo	Early	10	144.50 (150.12)	
	Late	9	90.56 (54.97)	.311
Average daily prone time (T6), min/d	Early	10	64.16 (39.75)	
	Late	9	98.01 (28.60)	.050
PT (T6), min/mo	Early	10	139.50 (160.94)	
	Late	9	110.56 (67.61)	.623
Average daily prone time (T7), min/d	Early	10	76.97 (40.45)	
	Late	9	98.69 (28.41)	.1980
PT (T7), min/mo	Early	10	150.00 (136.38)	
	Late	9	87.78 (68.52)	.224
Average daily prone time (T8), min/d	Early	9	88.52 (39.45)	
	Late	9	111.55 (30.83)	.187
PT (T8), min/mo	Early	9	128.33 (124.85)	
	Late	9	100.56 (85.02)	.589
Average daily prone time (T9), min/d	Early	9	89.35 (36.32)	
	Late	9	107.40 (24.06)	.232
PT (T9), min/mo	Early	7	100.71 (91.12)	
	Late	8	93.75 (80.48)	.877
Average daily prone time (T10), min/d	Early	9	85.19 (39.71)	
	Late	9	114.11 (34.14)	.117
PT (T10), min/mo	Early	9	83.33 (91.89)	
	Late	9	103.33 (83.67)	.636
Average daily prone time (T11), min/d	Early	9	83.74 (40.63)	
	Late	9	114.11 (34.14)	.105
PT (T11), min/mo	Early	9	126.67 (92.20)	
	Late	9	82.78 (72.33)	.278
Average daily prone time (T12), min/d	Early	9	85.79 (39.85)	
	Late	9	114.11 (34.14)	.125
PT (T12), min/mo	Early	9	103.89 (82.91)	
	Late	9	74.44 (53.00)	.383

Abbreviation: PT, physical therapy.

for the first 4 months and continuously during months 5 through 12. In this model, the difference in motor development between the early and late groups approached significance in month 1 ($P = .063$), reached statistical significance in months 2 ($P = .001$) and 3 ($P = .004$), and was not statistically significant in month 4 ($P = .103$). Neither intervention group was significantly different from the control group in month 1 ($P = 1.00$, $P = .458$). At months 2 ($P = .023$, $P = .774$), 3 ($P = .004$, $P = 1.00$), and 4 ($P = .003$, $P = .503$), only the early start group was significantly different from the control group. The slope of the motor development trajectories for months 5 through 12 for the early and late groups was not statistically significant ($P = .214$).

A large effect on motor development by beginning the tummy time intervention early was noted for the majority of time points. A Cohen's d greater than or equal to 0.8

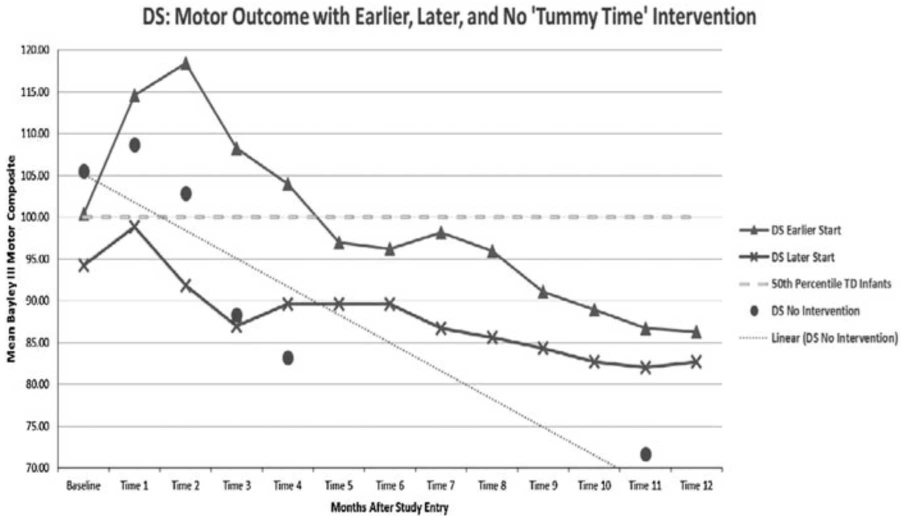

Fig. 2. Difference in Bayley-III motor composite scores in earlier versus later (Down syndrome) tummy time intervention onset with control group.

is observed at time 1, 2, 3, 4, 7, 8, 9, and 10 (Table 3). However, at time 4 and time 9 the CI crosses zero, suggesting that the large effect at those time points may not be significant.

DISCUSSION

Tummy time was the motor intervention for this study because it can be started at birth, it can be easily performed by parents or caregivers, and it is foundational to the motor skills that need to be mastered in the first year of life. The window of entry into the overall study was wide (0-20 weeks). When implementing interventions in populations with congenital challenges that may not have been anticipated, the time at which any given family is ready to embrace study or intervention participation is variable. Families that were not expecting an infant with DS may require a period of adjustment to the diagnosis and thus may not be immediately open to interacting with individuals outside the family. With minimal instruction, tummy time can be started at birth, or at earliest medical stability, without necessitating a high degree of interaction with persons outside the family. Besides promoting antigravity strength of the trunk and providing a vantage point that promotes environmental exploration, tummy time facilitates infant and parent interaction as it can be done on the chest of a parent in the newborn period (Figure 1). This is important for infants with health concerns because parents may be initially hesitant to interact with their babies. Finally, the development of motor control against the force of gravity is requisite for sitting and standing, making tummy time an important foundational activity for motor skills that should be mastered in the first year of life.

Tummy time should be started as early as possible when intervening with infants with DS. The results indicated that the group of infants with DS beginning the intervention early demonstrated higher motor development than the group of infants with DS beginning the intervention later at each time point. The early start group demonstrated motor development at or above the 50th percentile for infants with TD for a longer period than the late start group, indicating a greater reduction of motor delay by beginning tummy time earlier. The linear marginal model illustrated that both tummy time groups achieved significantly better motor development than the control group during the 12-month study period. However, the final model reflecting a nonlinear relationship in the first 4 months and a linear relationship from months 5 through 12 showed that only the early start group demonstrated significantly better motor development than the control group during the nonlinear period. The final model also supported a significant effect of starting the intervention earlier in months 1, 2, and 3 after study entry. A large effect (d) of starting tummy time before 11 weeks on motor development was noted at the majority of time points following baseline, suggesting clinically significant rationale for beginning motor interventions as early in the life of an infant with DS as possible. This finding had not been consistently demonstrated previously, especially in field-based research.[30]

Tummy time was most impactful early in the implementation period. This finding supported earlier work done in infants with TD noting a positive influence of tummy time on achieving skills such as rolling back to tummy and sitting, but not on walking.[24,31,32] Tummy time is an appropriate activity for young infants, infants who do not have a large repertoire of skills. It follows that tummy time will be most impactful during early infancy when motor competencies are emerging. Despite the diminished benefit of early tummy time in later months, the influence of tummy time on early motor development should be acknowledged. In this study, once a participant was able to independently transition in and out sitting, imposed tummy time stopped and no further intervention was given. Had the next intervention been implemented once tummy time concluded, perhaps the early start group

TABLE 3

Summary of Motor Development (Bayley-III Motor Composite), Effect Size (d) of Starting "Tummy Time" Before 11 Weeks of Age (Corrected) and Statistical Power

Participants' Study Group	Total Motor Composite—Bayley Study Entry	Total Motor Composite—Bayley T1	Total Motor Composite—Bayley T2	Total Motor Composite—Bayley T3	Total Motor Composite—Bayley T4	Total Motor Composite—Bayley T5	Total Motor Composite—Bayley T6	Total Motor Composite—Bayley T7	Total Motor Composite—Bayley T8	Total Motor Composite—Bayley T9	Total Motor Composite—Bayley T10	Total Motor Composite—Bayley T11	Total Motor Composite—Bayley T12
Early start													
Mean	100.40	114.60	118.40	108.30	104.00	97.00	96.20	98.20	96.00	91.11	89.00	86.67	86.33
N	10	10	10	10	10	10	10	10	9	9	9	9	9
SD	6.077	8.834	5.910	13.736	8.679	13.638	9.402	9.920	8.216	7.305	6.364	7.517	9.014
Late start													
Mean	94.22	98.89	91.89	87.00	89.67	89.67	89.67	86.78	85.67	84.33	82.67	82.00	82.67
N	9	9	9	8	9	9	9	9	9	9	9	9	9
SD	13.728	14.861	13.308	13.990	20.075	16.756	8.093	12.696	7.467	8.588	9.341	8.746	5.766
Control													
Mean	105.56	108.67	102.88	88.38	83.25							71.67	
N	9	9	8	8	8							9	
SD	10.713	16.867	10.092	11.612	18.344							14.705	
Effect of early start													
d	0.58	**1.29**	**2.57**	**1.54**	**0.93**	0.48	0.74	**1.00**	**1.32**	**0.85**	0.79	0.57	0.52
95% CI	−0.34; 1.5	0.30; 2.27	1.36; 3.79	0.51; 2.56	−0.02; 1.87	−0.43; 1.39	−0.19; 1.68	0.05; 1.96	0.32; 2.31	−0.09; 1.79	−0.17; 1.75	−0.34; 1.49	−0.39; 1.44
Statistical power early vs late	23%	79%	100%	92%	51%	18%	37%	58%	80%	44%	39%	23%	18%

Abbreviations: CI, confidence interval; SD, standard deviation.
Cohen's d effect size (unadjusted), $d \geq 0.80$, bolded.

would have continued to demonstrate significantly greater motor development. The skills that need to be mastered after independent sitting (eg, 4-point crawling and independent walking) are more complex and require greater motor control over gravity.[18] Tummy time in isolation was not sufficient for prompting accelerated development of these higher level motor skills. Although tummy time was impactful on early motor development, follow-up interventions may be necessary to address the demands of higher level motor skills, especially in infants with DS.

Clinical Implications

Parent-driven interventions such as tummy time can enhance the development of infants with DS.[10] The goal of tummy time and other motor interventions is to minimize delays in motor development that can negatively impact other developing systems of the infant. Tummy time can begin early and be followed by the next developmentally appropriate intervention, prompting optimal motor development.

The central nervous system limitations common in infants with DS impact learning. It takes longer and considerably more practice to learn a new skill, and it is difficult for the infant with DS to generalize skills to different settings and situations.[33] Given these learning challenges, early initiated parent-administered interventions are a vital component in minimizing motor delays in infants with DS. It is not sufficient for an interventionist to interact with an infant with DS an hour each week as this frequency and duration will not meet infant learning needs.[34] Parents and caregivers are best suited to provide sufficient practice in their infants' natural environment for optimal learning of skills. The role of the interventionist, therefore, is to maximize natural learning environments and empower caregivers as the primary teacher for their young infants to ensure the best possible developmental outcomes.[35] Tummy time is one such motor intervention that can be started immediately in life, improving early motor development in infants with DS.

Limitations of This Study

The small size of the groups limited the statistical power of the study. Although the principal investigator (PI) performed all assessments on participants in both intervention groups, the PI was not blind to group assignment or to study purpose. The absence of an assessor blind to these factors increased the risk of introducing bias into the results. Furthermore, the PI did not administer the motor evaluations to the control group, which also limited comparability of results.

The personality of families that chose to volunteer to participate in this research study may not have been reflective of all families with an infant with DS. Families that volunteer to participate in research studies may be more motivated to adhere to prescribed interventions than families not opting to participate. However, the results of this study suggested that there is potential for tummy time to be an impactful intervention in infants with DS, if a family is willing to engage in the activities as recommended.

Recommendations for Future Study

Beyond increasing the sample size to increase statistical power, future studies should investigate other important outcomes for infants with DS. Previous research indicates cascading effects of motor development on the other systems of the infant, so future work should investigate the effect of a motor intervention, such as tummy time, on cognition, language acquisition, social, and self-help skills. Subsequent studies might investigate the effect of a sequence of interventions as the effect of tummy time on motor development diminished once independent sitting was achieved. In addition, because of the increased risk of obesity and adoption of primarily sedentary behaviors in persons with DS,[2,3] future studies should examine the effect of enhanced motor development on the body composition and activity level of infants.

CONCLUSION

It is important to minimize delays in motor development in infancy because motor competency affords infant-environmental interactions, which bolster the development of the cognitive, language, social, and self-help domains. Because infants with DS are at increased risk for motor delays beginning in early infancy that consequently increase their risk for global developmental delays, it is critical they receive relevant motor inventions to maximize outcomes. Early implemented tummy time has shown evidence of effectiveness in reducing motor delay in young infants with DS, rendering it a prudent first step in intervention in this population.

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