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# **Comparing Manual Pediatric Dependent Mobility Devices**

Mobility devices for infants and children can come with many different features and accessories. When deciding which option is most suitable for a child, it can help to make a list and prioritize the key requirements.

The market now offers a range of adaptive strollers, positional strollers, and wheelchairs that can make choosing the appropriate mobility base seem daunting. Considerations when selecting the optimal mobility base includes the need for growth, length of time in the seat, size when folded, transit options and ability to provide appropriate postural support. Pediatric wheelchairs for dependent children can offer a broader range of personalization for frame color, embroidery, and selections for wheels to manage different terrains & negotiate tight spaces.

Let's take a look at an example of each of these pediatric mobility base types and what they offer.

### ZIPPIE VOYAGE<sup>®</sup> STROLLER







The **ZIPPIE Voyage** is an early intervention tilt-in-space stroller designed to provide moderate to complex postural supports for a growing and changing young child. The Voyage is suited for children 0-3 years old and offers ease of use for a busy family. Growth is built in and the stroller features an easy to fold design that mimics everyday strollers. The ability to reverse the seat position, tilt through 35 degrees with a single lever and recline flat makes it practical for monitoring the child, changing diapers and providing rest positions throughout the day. The seat is easily removed for installation on an indoor high/low booster base, providing support throughout the day at child play level as well as at high chair level. Functional life support accessories can provide accommodation for critical equipment such as ventilators and oxygen tanks, in addition to accessories beneficial to the caregiver for everyday comfort.

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### ZIPPIE SPHYNX™ TILT WHEELCHAIR



The **ZIPPIE Sphynx** is designed for portability and ease of transportation and provides a quick forward folding frame. This is best suited for children with mild to moderate postural support needs. It's the tilt wheelchair for families on-the-go, but whose child still needs postural support. Being compatible with the JAY cushion range allows for improved pressure relief and postural support while still being a light weight, easy-to-transport mobility base. The unique features of the Sphynx combines quickly adjustable back support recline and an adjustable static seat tilt of 10°, 20°, and 30° in a larger size range to support growing children and adolescents.



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ZIPPIE TS® TILT-IN-SPACE WHEELCHAIR





The TS was designed to accommodate the changes your child may experience throughout the life of the wheelchair. Up to 2" of seat width and up to 5" of seat depth adjustments allow the TS to grow, while adjustable components keep your child comfortable and properly positioned during development.

The **ZIPPIE TS** is a pediatric folding, dynamic tilt-in-space wheelchair. The unique pivot tilt design allows 45 degrees of tilt with an easy folding mechanism – ideal for families that need the wheelchair to fold for transport. The Zippie TS is appropriate for children 4 years and older with moderate to complex postural needs. Due to its ease of storage, it suits children moving between home, school, and other community spaces. The ZIPPIE TS has built-in size growth, allowing it to grow with the child. Tilt provides skin protection, enhances posture and increases sitting tolerance. Due to caster, wheel, armrest and legrest options, the Zippie TS can accommodate different levels of client complexity while providing mobility across environments.

### ZIPPIE IRIS® TILT-IN-SPACE WHEELCHAIR







The **ZIPPIE IRIS** is a pediatric dynamic tilt-in-space wheelchair which has the option of rigid or folding frames. The IRIS is appropriate for children 4 years and older with moderate to complex postural needs. It also suits mobility needs across varying environments as the child moves between home, school, and other community spaces. The ZIPPIE IRIS has built-in growth and an additional growth kit is available to maximize the chair's lifespan to accommodate the growing, changing child. Having a full 55 degrees of tilt range, which can be set to start from 5 degrees of anterior tilt to 5 degrees of fixed posterior tilt, enables it to assist with standing transfers as well as provide gravity-assisted postural support throughout the day. Many options available: caster sizes, seat-to-floor heights, back canes, and push handles. This high degree of individualization allows the ZIPPIE IRIS to accommodate different levels of client complexity while providing mobility across environments.

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The chosen pediatric mobility base will determine the available growth, seating options, size, and what postural support functions like tilt & recline are available. The table below outlines some key clinical factors and matches those features available on the ZIPPIE Voyage, Sphynx, TS and IRIS.

	ZIPPIE Voyage	ZIPPIE Sphynx	ZIPPIE TS	ZIPPIE IRIS
Age	0 to 3	4 and up	4 and up	4 and up
Typical Diagnosis	Cerebral Palsy, Rett's, Spinal Bifida, Muscular Dystrophy, Fragile X, SMA	Cerebral Palsy, Autism Spectrum Disorder, Down Syndrome, Juvenile Arthritis, Rett Syndrome, Seizure disorders	Cerebral Palsy, Osteogenesis Imperfecta, Muscular Dystrophy, Fragile X, SMA	Cerebral Palsy, Osteogenesis Imperfecta, Muscular Dystrophy, Fragile X, SMA
Weight Limit	75 lbs.	250 lbs.	165 lbs.	225 lbs.
Seat Width Range	6" to 12"	10" to 18"	10" to 18"	10" to 16" Folding 10" to 18" Rigid
Seat Depth Range	8" to 13"	10" to 19"	13" to 20"	10" to 18"
Seating Options	Two ranges of seating options which can accomodate clients needing mild to high postural support. Range of belt, harness and head support options.	Tension-adjustable sling back and depth-adjustable seat sling and upholstery with range of belt and harness options, also compatible with JAY seating. Accommodates clients with mild to moderate postural support needs.	Sling upholstery through to fully customer-specific seating supports. Accommodating clients with mild to high postural support needs.	Sling upholstery through to fully customer-specific seating supports. Accommodating clients with mild to high postural support needs.
Tilt	Dynamic 35° range (+5 to 30°)	Static 10°, 20°, and 30°	Dynamic range 0°- 45°	Dynamic range 55° Starting at +5°, 0°, -5°
Recline	Dynamic recline range 100° (80° to 180°)	Quick release adjustment 85° to 100°	Available through Built-4-Me	Dynamic recline range 30° (Available if 40° tilt range selected) OR fixed recline up to 30°
Accessories Available	Hi/Low booster base, 02/IV holder/ Vent tray, Under-seat basket, Tray, Canopy, Rain cover, Cup holder	Tray, Utility/Vent tray, Canopy, Under-seat basket, Rain cover, Cup holder, Curb tipper	Tray, Canopy, IV and Vent tray through Built-4-Me	Tray, IV pole,Vent tray, Canopy, Water bottle holder
Growth Built in	Yes; in seating and frame	Yes; in seating and frame including 5" in depth	Yes; 2" in width and 5" in depth	Yes; in seat, width, depth, back height, and leg length
Growth Kit Available	N/A	YES	YES	Free True Fit growth kit in first 5 years: Receive parts to grow the frame.
Footprint when folded	35″L x 22″W x 12″H	33"L x 25.5"W x 16.75"H	33"L x 38"W x 13"H	36″L x 37″W x 28″H
Weight	50 lbs. (28 lbs. base, 22 lbs. seat)	30 lbs. / 28 lbs. transit	29 lbs. / 26 lbs. transit	35.3 lbs., 32 lbs transit
Transit	Crash tested for occupied transit	Crash tested for occupied transit	Crash tested for occupied transit	Crash tested for occupied transit

#### **References:**

- 1. Consortium for spinal cord medicine, Pressure ulcer Prevention and treatment following spinal cord injury: a clinical Practice guideline for health-care Professionals 2nd. ed., 2014.
- 2. Sonenblum SE, Sprigle SH. The impact of tilting on blood flow and localized tissue loading. J Tissue Viability. 2011 Feb;20(1):3-13. doi: 10.1016/j.jtv.2010. 10.001. Epub 2010 Dec 8. PMID: 21145240.

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