

The DAFO Guide to Brace Selection

Cascade Dafo believes...

“better mobility gives children a wider range of experiences, more success in the activities they choose, and ultimately more control over their lives.”

1. Find your patient group that best matches your child's presentation.
2. Each patient group has descriptive categories of involvement: Mild, Moderate, or Strong.
3. Within each category are the recommended DAFOs

For more information regarding a specific brace, please visit www.cascadedafo.com



To request a copy online, go to the Comments and Request area on www.cascadedafo.com



Low Tone Pronation

Patients with weakness or lack of integrated muscle control of the feet and lower leg will usually present with some degree of pronation, fallen arch (flat-footed) with the forefoot turned outward (abducted) and the ankle turned inward in the more severe cases. This low tone pronation is driven by the patient's body weight bearing down on feet that are unable to support or maintain good biochemical positioning. The low tone foot can be extremely flexible and will usually be fully correctable to a neutral alignment with manipulation. In older patients, the foot may become more fixed, therefore, more difficult to correct.

- Pronated foot - valgus (everted) heel, collapsed arch, forefoot abducted
- Due to weakness or lack of integrated muscle control of the feet
- Navicular and medial malleolus prominent
- Foot usually easily corrected (especially in young patients)
- Ankle range and function usually good

MILD

Visible medial arch. Mild heel eversion and forefoot abduction.

Can correct when prompted.

Can be manually corrected with no resistance.

MODERATE

Reduced medial arch. Moderate heel eversion and forefoot abduction.

Can improve when prompted.

Can be manually corrected with mild resistance.

STRONG

Absent medial arch. Strong heel eversion and forefoot abduction.

Cannot improve when prompted.

Can be manually corrected with moderate resistance.

HotDog®

For very mild pronation with slight arch collapse and little heel eversion.

- All foam construction
- Fit to measurement



Cricket®

For moderate to strong pronation with significant arch collapse, heel eversion, forefoot abduction, and associated gait instability.

- Precision molded wrap-around support shell
- Fit to measurement



JumpStart Leap Frog®

For moderate to strong pronation with significant arch collapse, heel eversion, forefoot abduction, and associated gait instability.

- Precision molded wrap-around support shell
- Fit to measurement



PattiBob®

For mild pronation with arch collapse and slight heel eversion.

- Foam and plastic construction
- Fit to measurement



Chipmunk®

For mild to moderate pronation with significant arch collapse, heel eversion, and mild forefoot abduction.

- Medial trimline covers and protects navicular
- Fabric liner keeps feet cool and comfortable
- Flattened toe shelf
- Bottom plastic base diagonal forefoot trimline and full heel cup
- Plantar surface supports with soft foam contours
- Fit to measurement



DAFO® 4

For strong pronation with significant arch collapse, heel eversion, forefoot abduction and, associated gait instability.

- Wrap-around foot control
- Custom from cast – for difficult to fit or larger feet



Consider custom alternatives DAFO 5 and DAFO 5 Softy for difficult-to-fit feet



High Tone Pronation or Supination

Muscle contractures in patients with high tone can pull the foot into a pronated (fallen arch, forefoot turned outward, ankle turned inward) or supinated, high arch with forefoot turned inward (abducted) and ankle turned outward in the more severe cases. For the milder cases, ankle range and function remain good. As severity increases, poor foot position affects ankle function. Correcting the foot will help with ankle function. As degree of contractures increase, ankle is directly affected and moves patient into Toe Walking or Inconsistent Ankle Moducation categories.

- Foot can be either pronated or supinated:
 - Pronated foot — Valgus (everted) heel, collapsed arch, forefoot abducted
 - Supinated foot — varus (inverted) heel, high arch, forefoot adducted
- Due to high tone muscle contractures in lower extremities
- Tone prevents easy correction
- Variable ankle range

MILD

HIGH TONE PRONATION

Visible medial arch. Mild heel eversion and forefoot abduction.

Can correct when prompted.

Can be manually corrected with mild resistance.

HIGH TONE SUPINATION

Mildly increased medial arch. Mild heel inversion and forefoot adduction.

Can correct when prompted.

Can be manually corrected with mild resistance.

MODERATE

HIGH TONE PRONATION

Reduced medial arch. Moderate heel eversion and forefoot abduction.

Can improve when prompted.

Can be manually corrected with moderate resistance.

HIGH TONE SUPINATION

Increased medial arch. Moderate heel inversion and forefoot adduction.

Can improve when prompted.

Can be manually corrected with moderate resistance.

STRONG

HIGH TONE PRONATION

Absent medial arch. Strong heel eversion and forefoot abduction.

Cannot correct when prompted.

Can be manually corrected with strong resistance or cannot be corrected.

HIGH TONE SUPINATION

Significantly increased medial arch. Strong heel inversion and forefoot adduction.

Cannot correct when prompted.

Can be manually corrected with strong resistance or cannot be corrected.

Chipmunk

Pronation only

For mild to moderate pronation with significant arch collapse, heel eversion, and mild forefoot abduction.

- Medial trimline covers and protects navicular
- Fabric liner keeps feet cool and comfortable
- Flattened toe shelf
- Bottom plastic base diagonal forefoot trimline and full heel cup
- Plantar surface supports with soft foam contours
- Fit to measurement



JumpStart Leap Frog

For early intervention of mild high tone pronation-supination where foot is fully correctable.

- Wrap-around foot control
- Free ankle or plantarflexion block

Strap kit available for additional control.



DAFO 4

For milder high tone pronation/supination where patient requires wrap-around control of foot position with no ankle control to facilitate floor-to-stand transitions.

- Wrap-around foot control
- Free ankle



JumpStart Bunny®

Wrap-around strap

- Choose standard posterior strap (as shown) to resist plantarflexion and mild knee hyperextension.

- or -

- Choose an elastic anterior-posterior strap for moderate ankle instability in all planes.



DAFO 4

Wrap-around strap

For patients with moderate to strong ankle positioning and foot placement problems during ambulation that would benefit from flexible ankle control.

- Wrap-around foot control
- Mild ankle control provided by adjustable straps around the ankle



DAFO Tami2

Free Ankle

Ideal for active ambulators who would benefit from additional medial-lateral support due to strong excess pronation or supination.

- Thin polyethylene inner liner
- Posterior upright features a no-stop trimline to allow a natural free ankle motion



DAFO 3.5

Very flexible strut

For moderate to severe high tone pronation/supination where poor foot position requires a higher level of medial and lateral stability at the ankle, while still allowing near normal plantarflexion and dorsiflexion during walking.

- Wrap-around foot control
- Flexible upper component for improved foot control and side-to-side stability





Swing Phase Inconsistency

Often due to neurological problems affecting the muscle control systems, movement and positioning of the foot can be unsteady, erratic and/or inconsistent. When combined with other tone-related problems, a variety of walking and posture problems can result. This category is for ankle control problems that are typically more inconsistent and variable. Mild to severe instability during standing and walking, inconsistent rhythm when walking, or dragging a foot when swinging it forward are a few of the ways inconsistent ankle modulation can present.

- Movement and positioning of the foot unsteady, erratic, and/or inconsistent
- Includes mild to severe instability during stance and gait; inconsistencies in gait rhythm; inappropriate changes in position or posture such as momentary knee hyperextension or crouching; mild to severe ataxia; drop-foot
- Due to neurological problems that affect muscle control and/or proprioception
- May also have pronated or supinated foot

MILD

Lands heel first. No obvious compensations of the knee and hip.

Occurs almost never (less than 80% of the time).
Can control when prompted.

MODERATE

Lands foot-flat, accompanied by pronation/supination. Some compensations of the knee and hip.

Occurs almost always (80% of the time).
Can improve when prompted.

STRONG

Lands forefoot-first, accompanied by pronation/supination. Marked compensations of the knee and hip.

Occurs constantly (100% of the time).
Cannot control when prompted.

JumpStart Bunny

Wrap-around strap

For swing phase inconsistency.

- Choose standard posterior strap (as shown) to resist plantarflexion and mild knee hyperextension.

- or -

- Choose an elastic anterior-posterior strap for moderate ankle instability in all planes.



DAFO 4

Wrap-around strap

For younger/smaller patients whose primary need is for improved foot alignment, but would benefit from a small amount of added ankle control as they develop stance and gait.

- Wrap-around foot control
- Mild ankle control provided by adjustable straps around ankle region



DAFO Tami2

Free Ankle

For patients having trouble with drop foot during swing phase, the design can include dorsi-assist joints.

- Thin polyethylene inner liner
- Choose from motion or dorsiflexion assist Tamarack Flexure Joints



DAFO 3.5

Very flexible strut and elastic anterior strap

For patients with moderate to strong ankle positioning and foot placement problems during ambulation that would benefit from flexible ankle control.

- Wrap-around foot control
- Flexible Ankle Control

Softy option for bony anatomy



DAFO 3.5

Semi-rigid strut and elastic anterior strap

For patients with moderate to strong ankle positioning and foot placement problems during ambulation that would benefit from flexible ankle control.

- Wrap-around foot control
- Flexible Ankle Control

Softy option for bony anatomy



DAFO FlexiSport

Moderately flexible strut

Ideal for larger more active patients, especially teens, who need moderate to strong ankle control, sturdy support and flexibility. A great brace for sports!

- Thin polyethylene inner liner
- Outer frame design allows access to dorsiflexion and plantarflexion under weight bearing





Excessive Plantarflexion Toe Walking

During the development of standing and walking skills, children will often bear weight on the front of their foot without bringing their heels down to the ground. This is commonly referred to as “toe walking” and is a normal part of a toddler’s progress toward standing and walking. If toe walking continues beyond age three, if the height of the heel (off the ground) is extreme, or if the child is not able to bring their heels down to the ground due to tightness in the muscles or tendons, a neurological problem may be indicated.

- Bear weight on forefoot with absent or delayed heel contact during gait
- Due to chronic muscle contracture; Achilles tendon contracture; involuntary muscle contractions; sensory issues
- May have pronated or supinated foot
- Variable ankle range

MILD

- Ankle plantarflexion: 0°.
- Occurs occasionally (less than 50% of the time).
- Can correct when prompted.
- Can be manually corrected with mild resistance.

MODERATE

- Ankle plantarflexion: 0–2°.
- Occurs frequently (50% of the time).
- Can improve when prompted.
- Can be manually corrected with moderate resistance.

STRONG

- Ankle plantarflexion: 2° or more.
- Occurs constantly (100% of the time).
- Cannot correct when prompted.
- Can be manually corrected with strong resistance or cannot be corrected.

JumpStart Bunny

Posterior strap

For excess plantarflexion or toe walking.

- Choose standard posterior strap (as shown) to resist plantarflexion and mild knee hyperextension.

- or -

- Choose an elastic anterior-posterior strap for moderate ankle instability in all planes.



DAFO 4

Posterior strap

For patients with moderate to strong ankle positioning and foot placement problems during ambulation that would benefit from flexible ankle control.

- Wrap-around foot control
- Mild ankle control provided by adjustable straps around ankle region



DAFO 9

Night stretching option

A non-ambulatory brace generally used as part of a night stretching program to increase dorsiflexion range.

- Wrap-around foot control with fully cushioned foot protection
- Adjustable ankle positioning



DAFO 3.5

Moderately flexible strut

For patients whose excessive plantarflexion results in mild toe walking with moderate heel rise. Flexible ankle control resists excess plantarflexion while allowing normal ankle movement.

- Wrap-Around Foot Control
- Flexible Ankle Control

[softy](#) option for bony anatomy



DAFO FlexiSport

Moderately flexible strut

Ideal for larger more active patients, especially teens, who need moderate to strong ankle control, sturdy support and flexibility. A great brace for sports!

- Thin polyethylene inner liner
- Outer frame design allows access to dorsiflexion and plantarflexion under weight bearing



JumpStart Kangaroo

- Proximal posterior upright on this ankle-foot orthosis (AFO) blocks plantarflexion.

- Anterior opening allows free dorsiflexion. Posterior upright is meant to encourage lower leg to flex away from it.



DAFO 3

For smaller patients (birth to 3) whose excessive plantarflexion results in moderate to strong toe walking with significant heel rise.

- Wrap-around foot control
- Ankle control blocks plantarflexion – allows full dorsiflexion



DAFO Tami2

PF Block

Ideal for active ambulators with a tendency toward excessive plantarflexion who would benefit from additional medial-lateral support with the option to add a dorsi-assist hinge.

- Thin polyethylene inner liner
- Posterior upright comes with a standard PF stop block



DAFO 2

For patients whose excessive plantarflexion results in moderate to strong toe walking with significant heel rise. Hinged design ideal for patients with well developed ambulatory skills.

- Wrap-around foot control
- Hinged ankle control blocks plantarflexion – allows full dorsiflexion



[softy](#) option for bony anatomy



Knee Hyperextension

Patients with weakness in the muscles that control the knee may hyperextend their knees to improve stability when standing or walking. For patients with chronic high tone contractures of the calf muscles, excess ankle plantarflexion can drive the knee back into hyperextension or a combination of hyperextension and toe walking. An assessment of the patient's muscle tone, level of voluntary control and range of movement of the entire kinetic chain is required to determine the factors leading to Hyperextension.

- A snapping back of the knee during weight-bearing
- Can vary from mild and inconsistent to very pronounced and constant
- Caused by weakness or high tone:
 - When muscle strength or control is inadequate, hyperextension of the knee gives the patient a stable position that requires less muscle strength to maintain
 - High tone ankle plantarflexion drives the knee into hyperextension-degree of hyperextension proportional to tone
- May also have pronated or supinated foot

MILD

- Gentle knee extension: 0–2°.
- Occurs occasionally (less than 50% of the time).
- Can correct when prompted.
- Can be manually corrected with mild resistance.

MODERATE

- Marked knee extension: 2–5°.
- Occurs frequently (50% of the time).
- Can improve when prompted.
- Can be manually corrected with moderate resistance.

STRONG

- Significant knee extension: 5° or more.
- Occurs constantly (100% of the time).
- Cannot correct when prompted.
- Can be manually corrected with strong resistance.

JumpStart Bunny

Posterior strap

- Choose standard posterior strap (as shown) to resist plantarflexion and mild knee hyperextension.
- or -
- Choose an elastic anterior-posterior strap for moderate ankle instability in all planes.



DAFO 4

Posterior strap

For patients with moderate to strong ankle positioning and foot placement problems during ambulation.

- Wrap-around foot control
- Mild ankle control provided by adjustable straps around ankle region



DAFO Tami 2

Free ankle

For patients having trouble with drop foot during swing phase, the design can include dorsi-assist joints.

- Thin polyethylene inner liner
- Posterior upright features a no-stop trimline to allow a natural free ankle motion.



DAFO 3.5

Moderately flexible strut

Flexible ankle control resists the hyper-extension while allowing normal ankle movement.

- Wrap-around foot control
- Flexible ankle control

softy option for bony anatomy



DAFO FlexiSport

Moderately flexible strut

Ideal for larger more active patients, especially teens, who need moderate to strong ankle control, sturdy support and flexibility. A great brace for sports!

- Thin polyethylene inner liner
- Outer frame design allows access to dorsiflexion and plantarflexion under weight bearing



JumpStart Kangaroo

- Proximal posterior upright on this ankle-foot orthosis (AFO) blocks plantarflexion.
- Anterior opening allows free dorsiflexion. Posterior upright is meant to encourage lower leg to flex away from it.



DAFO 3

For smaller patients (birth to 3) whose excessive plantarflexion results in moderate to strong toe walking with significant heel rise.

- Wrap-around foot control
- Ankle control blocks plantarflexion – allows full dorsiflexion



DAFO Tami2

PF Block

Ideal for active ambulators with a tendency toward excessive plantarflexion who would benefit from additional medial-lateral support with the option to add a dorsi-assist hinge.

- Thin polyethylene inner liner
- Posterior upright comes with a standard PF stop block



DAFO 2

For patients whose excessive plantarflexion results in moderate to strong toe walking with significant heel rise. Hinged design ideal for patients with well developed ambulatory skills.

- Wrap-around foot control
- Hinged ankle control blocks plantarflexion – allows full dorsiflexion

softy option for bony anatomy





Crouching or Excess Knee Flexion

Patients with weakness in the muscle groups that control the knee position will often crouch when muscle strength is insufficient to maintain an upright posture and stand tall. For patients with chronic high tone contractures of hamstrings, the knees are pulled into a flexed position, resulting in a crouched posture.

- Excessive knee flexion during weight-bearing
- Can vary from mild and inconsistent to very pronounced and constant
- Caused by weakness or high tone:
 - When strength and/or control of the plantarflexors and quadriceps are inadequate, patient cannot support or maintain a normal upright stance posture
 - High tone contractures of the hamstrings can constrict stance to crouched posture - associated strong plantarflexion may result in "rocker-bottom" foot
- May also have pronated or supinated foot

MILD

Gentle excess dorsiflexion and knee flexion: 5–10°.

Occurs occasionally (less than 50% of the time).

Can correct when prompted.

Can be manually corrected with mild resistance.

MODERATE

Marked excess dorsiflexion and knee flexion: 10–15°.

Occurs frequently (50% of the time).

Can improve when prompted.

Can be manually corrected with moderate resistance.

STRONG

Significant excess dorsiflexion and knee flexion: 15° or more.

Occurs constantly (100% of the time).

Cannot correct when prompted.

Can be manually corrected with strong resistance or cannot be corrected.

JumpStart Bunny

Wrap-around strap

- Choose standard posterior strap (as shown) to resist excess dorsiflexion.

- or -

- Choose an elastic anterior-posterior strap for moderate ankle instability in all planes.



DAFO 4

Wrap-around strap

For younger/smaller patients whose primary need is for improved foot alignment, but would benefit from a small amount of added ankle control as they develop stance and gait.

- Wrap-around foot control
- Mild ankle control provided by adjustable straps around ankle region



DAFO 3.5

Semi-rigid strut, for smaller patients

For patients whose crouching is relatively mild with some variability that can be voluntarily controlled by the patient. Flexible ankle control resists excess dorsiflexion (crouching), encouraging a more consistent posture.

- Wrap-around foot control
- Flexible ankle control

[Softy](#) option for bony anatomy



DAFO FlexiSport

For larger, active patients

Ideal for larger more active patients, especially teens, who need moderate to strong ankle control, sturdy support and flexibility. A great brace for sports!

- Thin polyethylene inner liner
- Outer frame design allows access to dorsiflexion and plantarflexion under weight bearing



DAFO FA

For smaller patients

For smaller/younger patients still developing standing and walking skills with consistent and pronounced crouched posture.

- Provides a high level of support from a smaller/lighter brace design
- Wrap-around foot control
- Fixed ankle blocks plantarflexion and dorsiflexion



DAFO Turbo

For patients with consistent and pronounced crouching who need very strong ankle stability and significant foot control. Ideal for larger patients.

- Wrap-around foot control
- Ankle control blocks plantarflexion and dorsiflexion

[Softy](#) option for bony anatomy



DAFO Floor Reaction

For patients with consistent and pronounced crouching due to weakness and a lack of voluntary plantarflexion.

- Solid anterior component for firm support during weight-bearing
- Full-wrap inner liner allows full alignment control of the heel, midfoot, and forefoot.
- Ankle control blocks dorsiflexion to resist crouching





Positioning or Limited Ambulation

For patients with limited or no ambulatory abilities, DAFO braces are often utilized to provide improved foot-ankle positioning and to maintain or improve ankle range. Braces for these purposes are often referred to as “resting” or “positioning” braces. Of significant importance to the success of a resting brace is its long term comfort. Patients requiring resting braces will often have problems with sore spots and skin breakdown.

- Limited or non-ambulatory patients needing correction to comfortable foot-ankle positions
- Corrections to foot-ankle positions enhance seated postures and/or provide suitable support during weight-bearing
- Patient category requires special attention to comfort and skin health issues

MILD

Accompanied by mild pronation/supination.
Frequent assisted ambulation.
Can be manually corrected with moderate resistance.

MODERATE

Accompanied by moderate pronation/supination.
Occasional assisted ambulation.
Can be manually improved.

STRONG

Accompanied by strong pronation/supination.
Assisted transfers only; or non-weight-bearing.
Cannot be manually corrected.

JumpStart Bunny

Posterior strap

- Choose standard posterior strap (as shown) for improved foot alignment.
- or -



- Choose an elastic anterior-posterior strap for moderate ankle instability in all planes.

DAFO 4 Softy®

Posterior strap

For younger/smaller patients whose primary need is for improved foot alignment, but would benefit from a small amount of added ankle control.

- Wrap-around foot control with fully cushioned foot protection
- Mild ankle control provided by adjustable straps around ankle region



DAFO 3.5 Softy

Moderately flexible strut

For patients requiring precise and complete foot alignment but would benefit from some flexibility in ankle position.

- Wrap-around foot control with fully cushioned foot protection
- Flexible ankle control
- Easiest positioning DAFO to don



DAFO 8 Softy

For patients requiring precise and complete foot alignment with solid ankle control.

- Wrap-around foot control with fully cushioned foot protection
- Ankle control blocks plantarflexion and dorsiflexion
- More difficult to open foot section for DAFO donning



DAFO Turbo Softy

Resists crouching under weight bearing

For patients requiring precise foot alignment along with strong resistance to crouching (dorsiflexion) under weight bearing. Also excellent for controlling strong plantarflexion in adolescent and adult patients.

- Partial wrap-around foot control with fully cushioned foot protection (plastic does not enclose foot as in 3.5 and 8)
- Ankle control blocks plantarflexion and dorsiflexion

