



Dynamic Movement Orthosis (DMO) – Frequently Asked Questions

1. What is it?

DMO is a new way to look at bracing. Traditional braces typically either hold a certain body segment in place or prevent an undesired movement or posture. DMOs actually ALLOW any motion or posture, good or bad. The trick is it encourages the wearer to do the things we would like to see them do. For example, some children have trouble opening their hand, grasping a toy and then releasing that toy to pick up another one. The DMO can be designed to help do just that. The difference is it helps the wearer to do these things better and more often. Over time, the goal is they will be able to do these things without assistance from any external device because they have trained themselves how to do it correctly. Wearers do not always gain this ability however it has been attained by many. Independence! Regardless, greater functional ability and/or posture are the results.

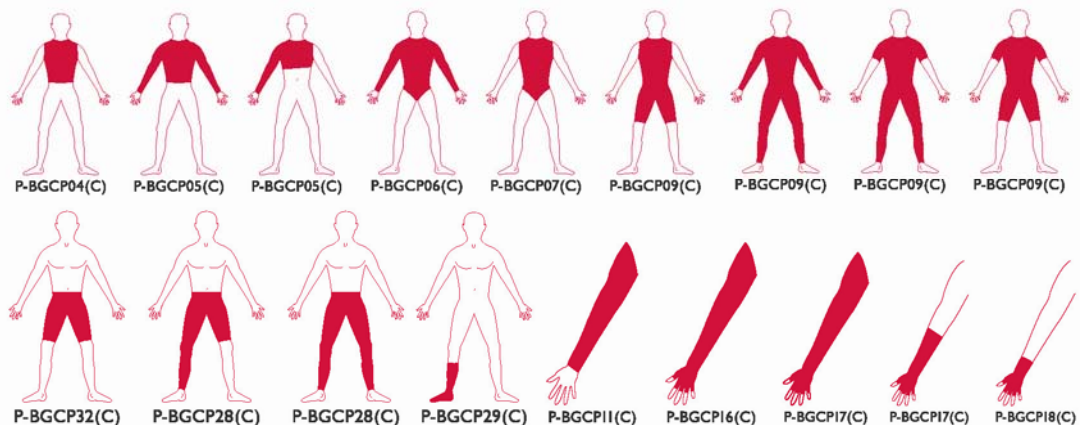
2. What is it made of?

Very basic materials, mostly lycra. It is soft, comfortable, light and airy! Thicker than control top panty hose however thinner than Isotoner gloves. **DMOs do not interfere with anything & can fit underneath any piece of clothing or shoe!**

3. What styles are available (see below, solid red is area DMO would cover)?

Basically anything. The DMO can be a simple “glove” (traditionally called a wrist-hand orthosis), “sock” (ankle-foot orthosis), “suit” which is typically from the shoulders to the hips, or anything in between. The orthosis can include or not include whatever is necessary for that person.

Dynamic Movement Orthoses Categories



4. How does it work?

It works in a couple ways:

- a. The base layer of lycra provides compression to the entire body segment. This helps send more & better sensory information to the brain. Example, touch is a form of sensory information. When we touch something hot, our brain immediately tells us to stop touching it!! The DMO helps send different sensory information, called proprioceptive sensory information to the brain. "Proprioception" means the person's ability to know where their body is in space. This means the wearer will be more aware of where that body segment is (bodily awareness) and now will be able to relax. This helps reduce spasticity & high tone. Ironically it can also help increase a person's level of tone if they tend to have low tone or are "floppy". It does this the same way, through better proprioception. The wearer now understands they need to increase their muscle tone to achieve the goal (function, posture or both).
- b. Over the base layer are other "panels". These panels are put on based on the needs of the wearer. For example, if a person catches their toes with each step then we can add a panel which will help them lift their toes. Or, if the person tends to fall to a certain side while sitting, we can add panels to their "suit" to help them sit up and be steadier. The orthotist, therapist & physician should collaborate to design the best DMO for each person.

5. How can this "soft" device overcome my child's severe high tone? Now he/she is in something with "stays" (rigid) & that doesn't even work.

With high tone, stays CAN actually make matters worse. For example, sometimes when high tone meets resistance (the stays), the tone actually increases. They become uncomfortable & cause redness in certain areas like on the wrist, or on the chest, etc. depending on the device. The DMO will help your child learn how to self-calm at the brain level and also help them relax in that particular body part. The DMO allows that undesirable posture temporarily which helps the wearer relax quicker. Upon relaxing, the DMO will help them achieve OUR desired goal (function, posture or both).

6. How can this "soft" device help my child sit up better ... or have a more stable hand/wrist or foot/ankle? My child is too big & will overpower that lycra!

Actually, your child's size & weight don't make much difference. The DMO is not designed to do "all the work". The idea is that it helps "teach" your child to do it for themselves. Through the two means described in question #3, it helps put your child in position for success. Even small successes like holding a better position for a few seconds or doing a new task once. These small successes snowball into doing that one thing more or for longer periods of time.

Remember, this is truly a re-training tool. Not something to manage the progression of the dysfunction.

7. Who can use it?

We are only beginning to understand DMOs true reach however we have found it to be successful in quadriplegia, diplegia & hemiplegia with the following general presentations:

- a. High tone and/or spasticity
- b. Low tone

- c. Athetoid
- d. Ataxic
- e. Dystonic
- f. Mixed presentations

It is certainly not for everyone however a good rule of thumb is if you can help the person achieve that desired task using your hands then the DMO will be able to do the same thing & probably better because of the sensory feedback. Another rule of thumb is that if you, the potential wearer & your rehab professionals think you could be doing better than your current state or if your current orthotic intervention is causing other issues (like redness, skin breakdown, etc), a DMO may be a good thing to consider. Some people simply do not tolerate rigid braces. **DMOs are like another piece of clothing that they will feel comfortable wearing.**

We are happy to consult and give honest feedback based on our experiences. We can also share before & after video of patients that may present with similar types of dysfunction and may have similar goals.

8. When can't DMO be used?

DMOs have been used successfully in treating neuropathic scoliosis however they are not recommended for idiopathic scoliosis and should not be used if the neuropathic scoliosis exceeds 35 degrees (primary curve). In bracing limbs, DMO will not likely reduce any true range of motion deficit (contracture). It can absolutely help the wearer use all of their passive range of motion actively. It is designed to do this. The other known limitation is in the ankle. If the goal is to provide clearance of the toes when walking, the person needs to exhibit some ability to lift their toes on their own. If this is not possible then it is likely the device will NOT help that person with toe clearance and a more rigid device will be better.

9. How do we get a DMO?

The best way is to inquire to your physician, therapist, or orthotist. If all in agreement, your physician would need to write a prescription stating the type of device & the goal(s). Now we can design the DMO appropriately. If they are unaware of DMOs, please feel free to have them contact Nate Smiley at 617-223-1122 or nsmiley@bostonbrace.com. He can answer their questions and even direct them to relevant patient video that may help in the decision making process.

10. Where can I get a DMO?

From any of our partners! (link to partner page)

Measuring for & providing DMOs is quite a challenge. We have trained a small group of orthotists in New England based on their passion, ability, & geography. We wanted to make sure that any person that could benefit from a DMO could get it relatively local to them. We consider this group of orthotists our extended network. They have been instrumental in advancing our mission of improving patient care by providing insightful feedback, opening up their doors to us for discussion & hands-on training, and in documentation or results. This

network is the only known network heavily focused on training & documenting evidence in order to improve patient care every day.