

When to “Fix” a Pencil Grasp

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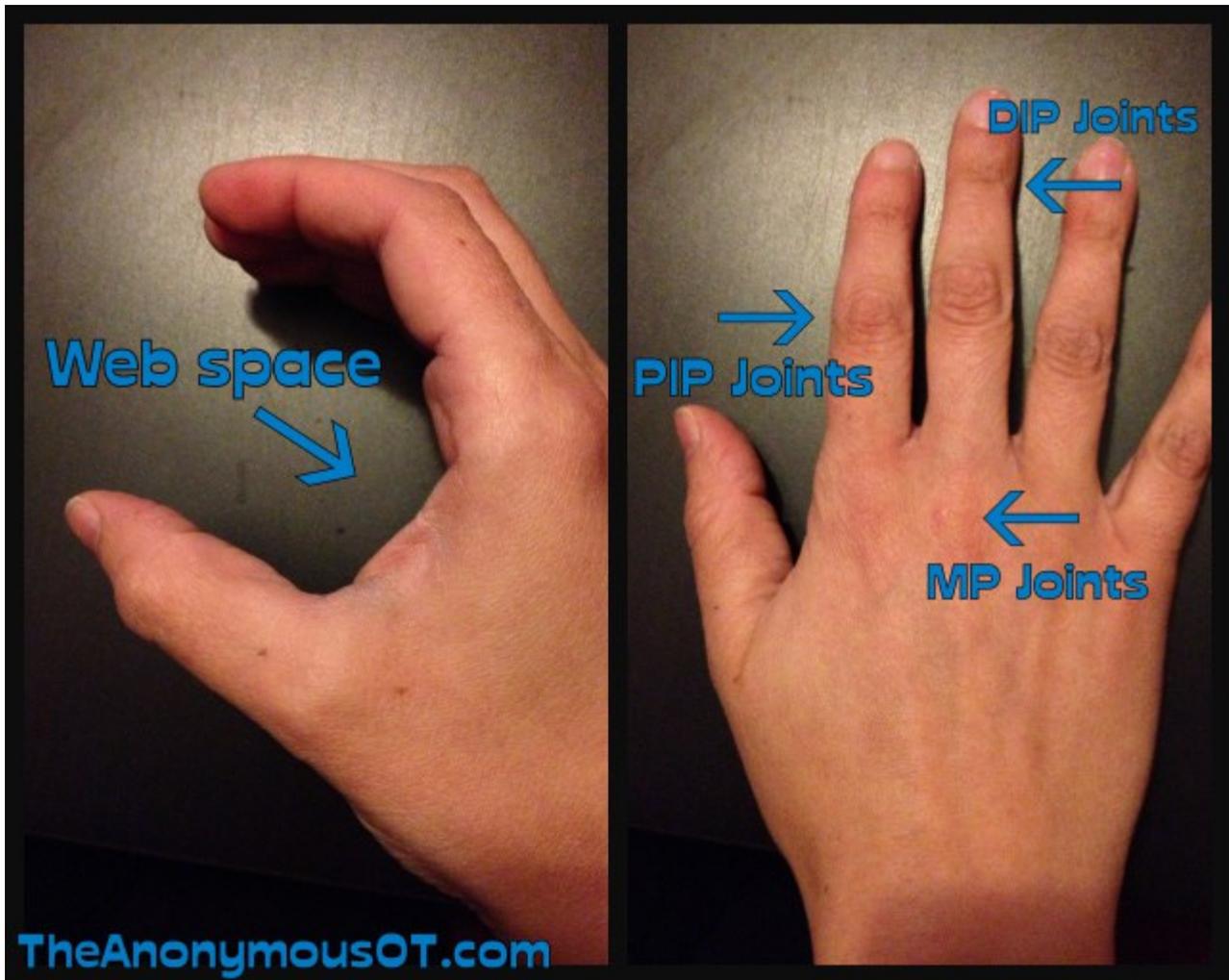
Hey, we can't all have perfect grasps...but we can have *functional* grasps. Determining the differences between the two can save parents and children a lot of unnecessary headaches.

Before I dive too deeply into this subject, allow me to explain some of the terminology that Occupational Therapists tend to slip into when they talk about a child's grasp. Since grasps don't always fit into a certain category, we might use anatomical terms to clarify things. If you understand some of these key phrases, then you should be able to decipher what your child's OT is describing:

MP / PIP / DIP joints: These are the “knuckles” of your hand. The MP joints are the ones closest to your wrist, the PIP joints are in the middle of the fingers, and the DIP joints are closest to

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your fingernails. If a child is demonstrating an inefficient grasp, they might be putting unnecessary strain on these joints due to awkward positioning.



Web space: The first web space is between your thumb and index finger. If you make the letter “c” with your hand, this web space is described as “open”. A child with a death grip on a pencil is going to have a closed off web space.



Separation of the Hand: The hand has two sides; a side for movement and a side for stability. Typically, the thumb, index, and middle fingers are the movers, and the ring and pinky are the stabilizers. Think of the way your hand moves when you cut with scissors, hold a utensil, brush your teeth, etc... you might not have ever realized how important this concept is.

Proximal: Closer to the center of the body. For example, the knee is proximal to the ankle.

Distal: Further from the center of the body. For example, the hand is distal to the elbow. A therapist might also use this terminology to describe the hand's position on the pencil. For example, "the child grasps the pencil at the distal end," meaning closer to the paper.

Static grasp: The fingers are locked in their position, and the muscles within the hand aren't doing much work. This means that the pencil is being controlled by the larger muscle groups of the wrist, elbow, or even shoulder.

Dynamic grasp: The fingers and muscles within the hand are doing their job to move the pencil to create letters. Everything else is stable.

Thumb tuck or thumb wrap: The thumb might tuck under the first fingers or wrap around them. This is usually done for additional stability.



So now that you know the anatomy and grasping jargon, let's talk about the good stuff: pencil grasps! In my mind, a grasp can be classified a few different ways:

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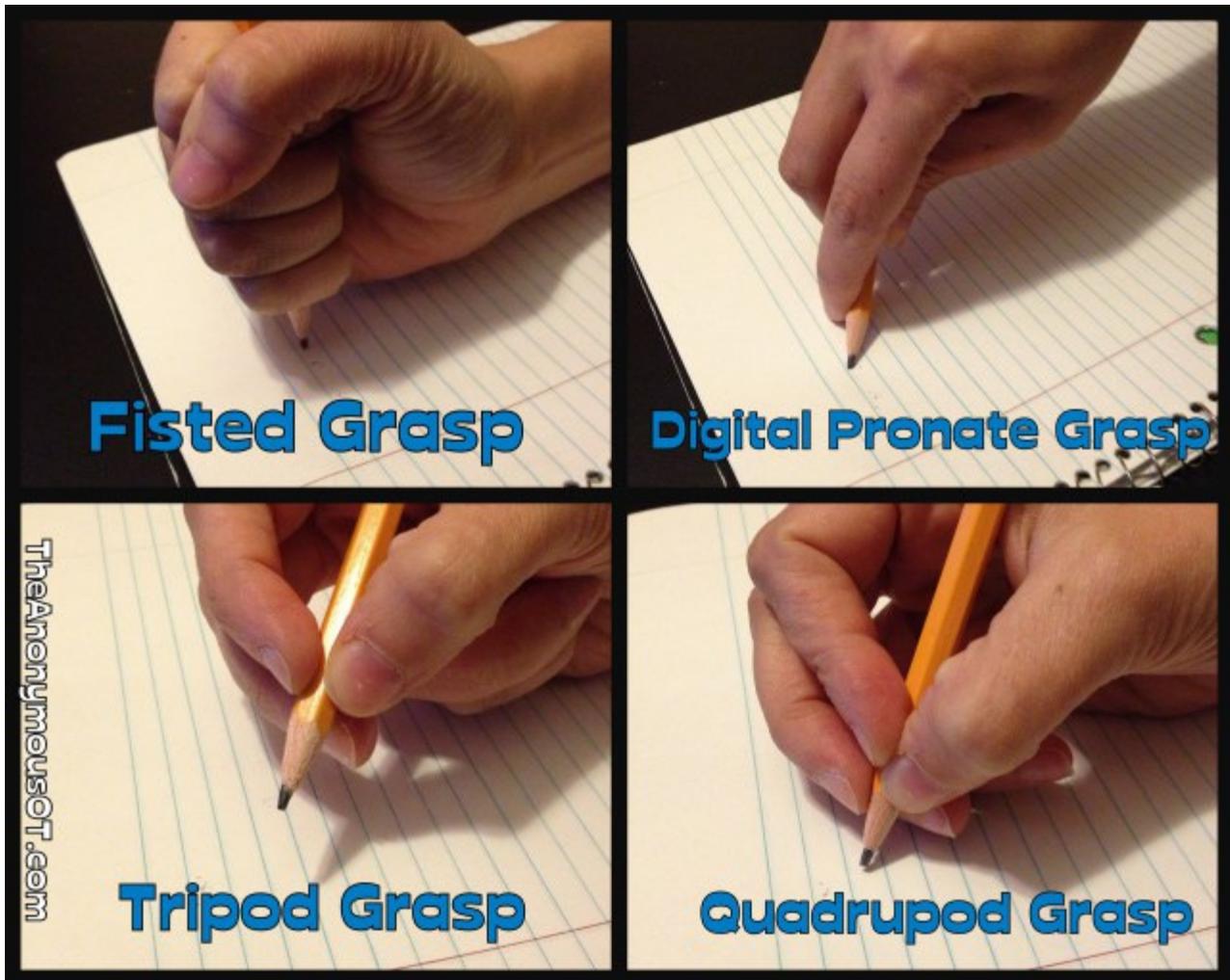
Developmentally Appropriate Grasps:

Fisted /Gross Grasp: No mystery here – this is when the child holds the pencil with a fist. This grasp is the most immature, yet is still a typical part of development. A toddler first begins to grasp writing utensils in this position.

Digital Prontate Grasp: The thumb, index, and middle fingers are holding the pencil on the underside of the hand. This grasp is also a part of typical development, hanging around for ages 2-3 or so. It is the start of a shift away from the whole handed “fisted” grasp and into a more controlled grasp with appropriate hand separation.

Tripod Grasp: Using three fingers to control the pencil. This is the “cremè de la cremè” of pencil grasps, the one you are most likely to see as the example of the perfect pencil grasp.

Quadrupod grasp: Using four fingers to control the pencil. This is very similar to the tripod grasp, except the ring finger is incorporated into the mix. I think this one gets a bad reputation from some parents who think their child is doing something crazy with 4 fingers on the pencil. However, a quad grasp can be every bit as functional as a tripod. It might even be preferred if a little one’s fingers need just a little more support.



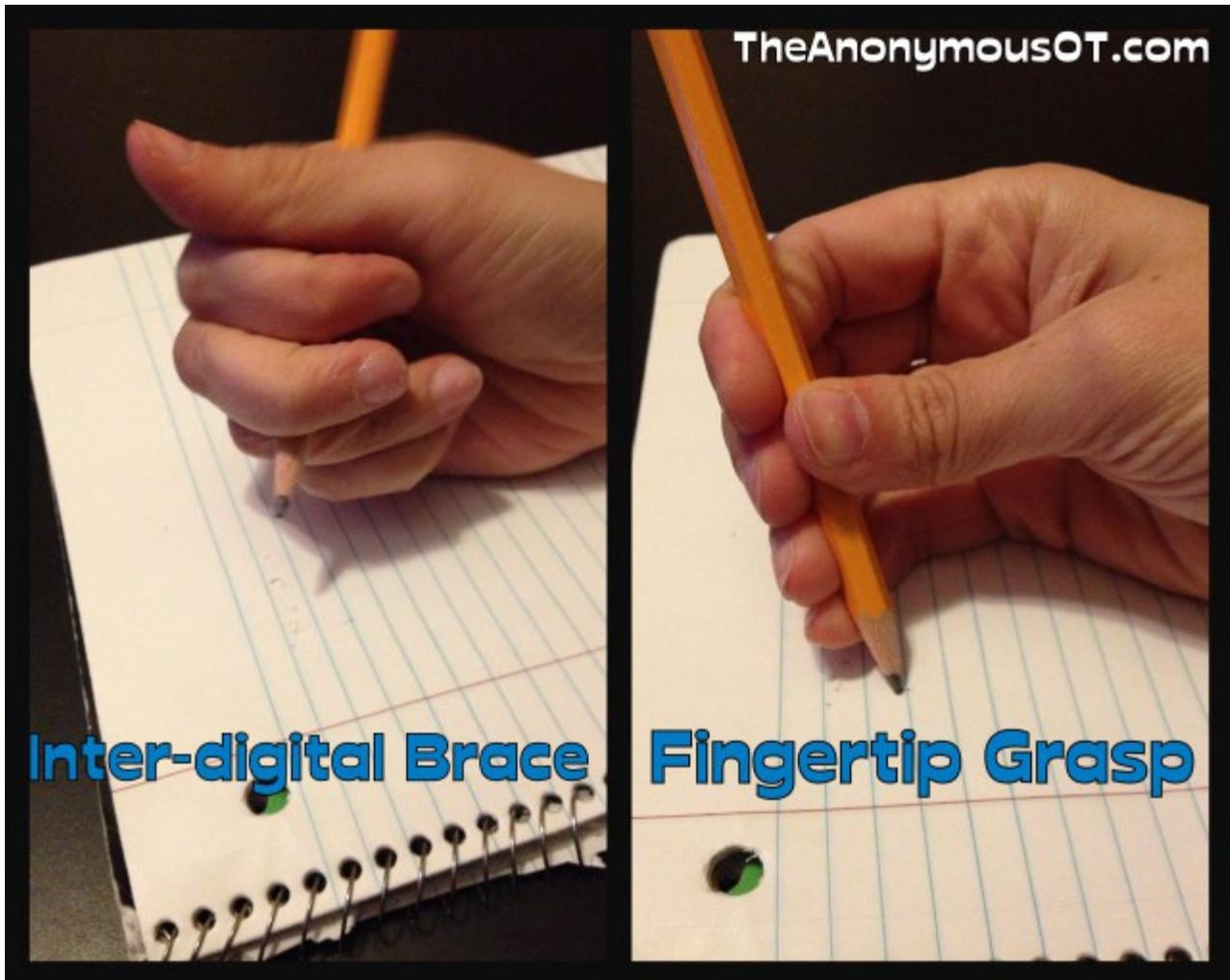
A therapist may classify a child's grasp as "immature" if it is still amongst one of these typically developing grasps, just a few stages behind. (i.e. a 3 year old that still uses a fisted grasp.)

Inefficient or Less Functional Grasps:

Inter-digital Brace: This one just sounds cool, right? It means that the pencil is being stabilized between the fingers of the hand. A child may assume this grasp when they need a lot more stability in the hand.

Fingertip Grasp: The pencil is controlled by the fingertips, with a majority of the movement directed by the pinky or ring fingers. This grasp may make a quick appearance in between the digital pronate and tripod grasp in typical development as a child is figuring things out. However, it doesn't provide much stability in the hand or a lot of control over pencil movement.

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Components of a Functional Grasp:

As educational demands increase to ridiculous levels, children are finding themselves forced into writing tasks and grasping skills that they just aren't ready for. They are scolded when those three little fingers are joined by others in a desperate search for stability that hasn't developed yet. If a child doesn't have the foundational skills for a proper grasp, they are going to start doing some funky things to try to compensate.

With that said, what are some of the components of a functional grasp?

Proximal Stability: Child has to have a stable base of support in order to move fine motor muscles appropriately. "Stability before mobility" is a common therapy mantra. This means a proper seat in their chair, stable shoulder muscles, and a stable forearm on the table.

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Stability within the hand: This is where that “separation of the hand” concept comes into play. In a typical functional grasp, the ring and pinky fingers are the stable ones, as they relax in the hand or rest on the table to provide a base of support.

Mobility within the hand: The thumb, index, and middle fingers are the ones that should be doing most of the pencil moving. They are made to complete the small movements necessary to create delicate fine motor work such as writing. These muscles within the hand need to be developed so that other fingers aren't pulled in to create a basket weave of grasping chaos.

Using this sort of criteria for a functional grasp assessment, you may notice that the tripod doesn't have to be the *only* one that works. I often say to parents, “It doesn't need to be pretty, it needs to be functional.” It's important to mention this because children can get stressed out when someone relentlessly harps on their grasp, or when they are forced to use these hugely embarrassing grippers on their pencil. (Especially when it's for no reason other than their grasp doesn't look exactly like what everyone else has.)

When to Change a Pencil Grasp:

There have been several research studies about pencil grasps and handwriting. Most of which state that pencil grasp does not influence legibility. (Check out this research article here: [Effect of Pencil Grasp on the Speed and Legibility of Handwriting in Children](#)) So if that is the main reason you want to change a child's pencil grasp, I'll have to stop you right there.

However, there are definitely some situations that call for intervention:

Biomechanical stress on joints of the hand: If a child doesn't have the strength necessary to control the pencil, they are going to start locking joints in order to “hold” themselves in the writing position. This can lead to hyperextension, putting unnecessary strain on joints we want to be in good shape for a long time.

Fatigue or pain during writing tasks: Yes, a child might grasp the pencil for dear life as they try to exert some sort of control. This can cause fatigue or pain during writing tasks, which can then lead to avoidance or behaviors related to writing. No need to make handwriting more painful than it already is.

Compromised writing speed: If a child's pencil is woven into their fingers, it might be challenging for them to write with any sort of functional speed. If they are having trouble in school because they can't keep up with their peers, or are unable to get their school work done in time due to their grasp, then it needs to be addressed.

Immature grasps that lack stability and/or mobility: A child may be stuck in an immature grasping pattern due to lack of strength or stability. Strengthening the muscles of the hand or training them in the proper position can help to move the child along the developmental road.

Pencil Grasps and Handwriting:

As I mentioned previously, changing a pencil grasp is not going to magically change your child's handwriting. Yes, it is a component of handwriting, but most certainly not the only thing that should be looked at. (Check out my previous post: [Evaluating a Child's Handwriting: An Inside Look](#) for other components of handwriting.) Some parents come to an evaluation with the unrealistic expectation that changing a grasp will be the magic "fix" they were looking for.

Most likely, with a lot of work, a child's grasp can be adjusted. With this change, they might see less fatigue and/or pain with writing, and therefore might be more willing to work on letter formations, line placement, and spacing: components that are really going to change the legibility of their writing.

OTs could go on about pencil grasps for ages, so this is by no means an inclusive list of all the aspects of grasping. However, the big message here is to understand why a grasp might need to be changed and the realistic impacts of that change. Ok, I'll just admit it- I'm a quadrupod grasp with a thumb wrap, but hey, I've made it this far. Or maybe I'm just jealous of all those tripod grasps out there...