

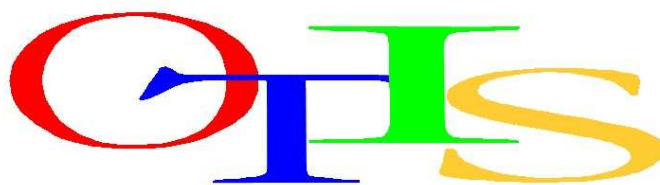
Ask OTIS: Dysgraphia

Q: We have recently had several students referred to the multidisciplinary team for an occupational therapy evaluation, due to the diagnosis of “dysgraphia”. What is dysgraphia and when is it appropriate for the OT to provide services? Also, what are some suggestions for accommodations or modifications that I could share with teachers?

“Dysgraphia” basically just means difficulty with the writing process but not all students with writing difficulties or illegible handwriting have dysgraphia. Dysgraphia is a learning disability and should be diagnosed by a qualified clinician (should we include a “such as”. It generally emerges when children first start writing. They may make letters with inappropriate size and poor formation, even after much instruction and practice. As they start writing sentences, words may be written backwards, have letters out of order or left out, and mixed upper and lower case letters. Writing on the page is often positioned poorly, with little regard to lines, inconsistent letter and word spacing, and uneven (or non-existent) margins. A student with dysgraphia often writes very slowly, with great effort, and may hold the pencil with a tight, cramped or non-standard grasp. Hand and wrist position may also be unusual, and the paper may be positioned awkwardly. Other signs may include talking to self while writing, slow and difficult copying, and inability to produce smooth, “automatic” writing. Teachers may complain of written work being illegible, sloppy, and poorly organized and think of the student as lazy, careless or not motivated although this is not the problem.

Children with dysgraphia may have other learning disabilities and may be bright with excellent verbal skills. There is often a large gap between what their written work shows and what they can express verbally. The problem that manifests itself as poor handwriting is actually a sequencing and information processing deficit. Current research on brain function does not support the idea of a visual or perceptual basis for dysgraphia. Instead, it seems that the student has difficulty organizing and sequencing details, formulating the ideas and then physically getting it all down on paper, while trying to hold on to the ideas. The student may then lose his or her train of thought while trying to process all this and manage the “mechanics” of writing (the correct punctuation, spelling, spacing, etc.). Trying to simultaneously perform all the functions that writing entails – motor skill, memory, organization, sequencing, attention, language – may just be too overwhelming. In addition, the inability to express one's ideas through written language and complete assignments in a timely manner can lead to frustration, inattention, and low productivity, as well as interfering with the learning process.

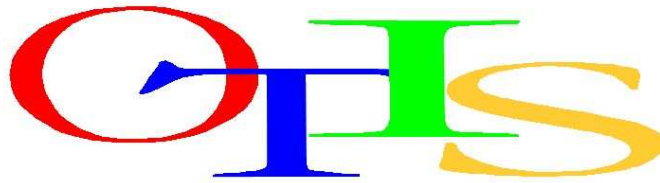
Since dysgraphia often appears to be a motor-based problem and shows up as poor or messy handwriting, the student may be referred for an OT evaluation. There is research that demonstrates that only about 20% of dysgraphia is truly a motor-based problem. Usually it is related to sequencing and processing, as noted above. Thus, the OT evaluation should identify factors that facilitate or interfere with the student's performance. The OT may look at typical



handwriting readiness skills, pencil grasp, visual-motor integration, perceptual skills, shoulder and wrist stability, motor planning ability, etc., as well as any activity demands, environmental factors, or underlying postural, fine motor, sensory or perceptual deficits that would contribute to the handwriting difficulties. If the team recommends occupational therapy services under special education regulations, the OT may help with handwriting remediation, as well as developing hand skills, writing posture, distal control for improved pencil grasp, organizational strategies, etc. It is important that a student continue to work on handwriting, even if it is difficult, as this is still an important functional skill for school and on into adulthood.

Some ideas to share with teachers for accommodations and modifications in the classroom are:

- When learning to write, a multi-sensory approach (including kinesthetic, tactile, verbal cues of how to form, etc.) is usually best for a student with dysgraphia.
- Use raised line or colored base-line paper
- Try different types of pencils (different diameter or lead hardness).
- Encourage a functional, efficient pencil grip, which may not be the typical “tripod”.
- Allow extra time and include for “stretch breaks”.
- Teach correct sitting posture and paper position.
- Teach letters individually, one at a time, and allow LOTS of time for practice.
- Encourage students to brainstorm or make an outline of what they want to say before they start writing. Even primary students can do this. Get the main ideas down without worrying about spelling, letter formation or punctuation.
- Let student draw a picture for each paragraph to help them organize thoughts
- Use graph paper with 1/2” or 1” squares for math problems (or turn lined paper sideways).
- Have student write the assignment, take a break, then return to do the proofreading and editing.
- Create a checklist for editing: complete thoughts, spelling, punctuation, margins, etc.
- Encourage student to use an electronic, talking spell checker.
- Have student complete longer writing tasks in small steps, rather than all at once.
- Use keyboarding -- and practice, practice!
- Use oral reports, tape-recorded assignments, or visual projects.
- Continue to practice handwriting! Build handwriting instruction into schedule.
- Reduce amount of copying that must be done: e.g, for math problems, provide a worksheet with the problems on it, so student needs only to write answers.
- Allow student to use pencils/pens/writing paper of different colors, to help organize.
- Allow use of computer or other assistive technology at least for organizing ideas (e.g., software such as Inspiration, Draft-Builder). Keyboarding skills may be slow or difficult to learn for the dysgraphic student, but the computer can help with spelling and organizing information. Voice recognition software may be needed.
- Let student to speak ideas quietly while writing, since auditory feedback may help.



- Make sure the assignment expectations and demands are clear and are understood.
- Instead of expecting student to write complete set of notes, provide an outline of what is being covered, so he or she can just fill in some of the details.
- Reinforce the positive – written work may be messy or hard to read, but contains wonderful, creative ideas that need to be acknowledged.
- Try to monitor or check in with student to see if he/she is frustrated, or becomes easily fatigued when writing, then figure out helpful strategies together.

There are some great resources available online. Two sites I have used are: www.nclld.org, and www.ldonline.org. These are both sites about learning disabilities and have lots of good information, including teacher and classroom suggestions. School psychologists are often helpful and a great source of knowledge about aspects of learning disabilities, too.

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OTIS (Occupational Therapists In Schools) is a standing committee for the Washington Occupational Therapy Association (WOTA) that was set up to help support therapists in school-based practice.