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## **MODULE 36: Clinical therapy**

There are several treatment and management approaches for dyslexia. Instructional reading techniques are most often used to help treat the primary challenges of the disorder. However, there are clinical treatment approaches that may help children and adults with the disorder as well. This module will give you an understanding of these approaches in order to help you offer, those with dyslexia, a wider array of treatment options beyond reading techniques. As you complete this module, it is important to keep in mind that some of these therapies do not have as much research support demonstrating their effectiveness as many of the educational approaches have.

What you will learn in this module:

36.1 Introduction to Clinical Therapy for Dyslexia

36.2 Medical Treatments

36.3 Nutritional/Allergic Treatment

36.4 Physical Therapies

36.5 Transfer of Function

### **36.1 Introduction to Clinical Therapy for Dyslexia**

If you are unfamiliar with dyslexia treatments, it is important to note that there are a number of approaches offered for children and adults with this learning disorder. However, not all of these approaches have been shown to be effective, and some are offered with little to no research support at all. Indeed, there is disagreement among scholars, clinicians, therapists, and others who work with dyslexia about the best and most appropriate treatments.

#### **36.1.1 Introduction to Clinical Therapy for Dyslexia - The Use of Medications**

A key point that you should know about clinical therapy is that there is no actual “cure” or medication for dyslexia. Because the disorder can create a lot of stress and learning challenges, for those who have it (and their families), it can be very appealing and tempting to look to



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therapists for a cure. However, there is agreement among most who have researched it. There is no drug that can help treat the disorder because it is a learning disorder, and not a disease [5, 6, 8]. Parents who have children with this disorder should be cautioned against searching for miracle cures or paying money to therapists who claim to have discovered alternative treatment options that can dramatically turn everything around for their child. These are often misleading and embellished claims.

To be clear though, children and adults with dyslexia may benefit from certain medications, but only if they have symptoms of co-occurring disorders like attention deficit hyperactivity disorder (ADHD), anxiety, or depression [8]. In these cases, both medication and psychotherapy may be used as clinical treatment approaches.



### **36.1.2 Introduction to Clinical Therapy for Dyslexia – Aetiology Matters**

Another important aspect of dyslexia treatment approaches is that one's theory of aetiology (causes) make a difference in which treatments one recommends [2]. In other words, a researcher or clinician's beliefs about the cause of dyslexia influence which treatments they believe should be used for treatment. Theories about dyslexia causes range from physical



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defects (e.g., poor vision) to cognitive problems (e.g., poor brain processing of certain information).

For example, those who believe that dyslexia is caused by physical problems like poor vision are more likely to seek clinical treatments that are designed to treat a child's vision. This was the view held by Samuel Orton, a neuropathologist who pointed to problems in parts of the eye as the cause of the symptoms of dyslexia. There are also published accounts of ophthalmologists who held similar views in the 20<sup>th</sup> century [2].

As another example, it is now a widely held belief that the cause of many of the reading difficulties that identify dyslexia is poor phonological awareness (PA) [2, 9]. PA is the ability "to identify and mentally manipulate the constituent speech sounds [and it] has been found to predict much of the variance in reading skills at any age" [2]. It is unknown which parts of the brain controls PA, but there is evidence that the brain of dyslexic individuals is different than those without the disorder. It is also a widely held belief that genetics play a role in who has dyslexia.

### **36.1.3 Introduction to Clinical Therapy for Dyslexia – Treatment Components**



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Overall, treatment for dyslexia should involve two main parts. First, treatment and management of the direct symptoms of dyslexia (e.g., reading problems). And second, treatment of any co-occurring psychological problems that arise (e.g., depression or anxiety that develops as a result of school difficulties) [8]. The following module will cover clinical therapy approaches that have been used to treat the direct symptoms of this learning disorder, but which are considered “alternative therapies” by many who study and treat dyslexia.

### **36.2 Medical Treatments (1 of 3)**

To reiterate the earlier point, there are no medications that can cure or treat dyslexia [5, 6, 8]. However, the medical treatments that may benefit those with the disorder include medications that are used to treat the many dyslexics who also have co-occurring disorders like ADHD, anxiety, and depression. These include stimulants, anti-anxiety medications, and anti-depression medications. If a child, with whom you are working with, shows signs of any other disorder, beyond their dyslexia, you need to consult their parents about your observations, and refer them to their medical doctor or psychiatrist for this type of treatment.



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It is very common for those with dyslexia to also have ADHD [5, 9]. Some estimates show that as many as 30% of dyslexics also have ADHD [9]. To be clear though, dyslexia cannot cause ADHD, nor vice versa.



### **36.2 Medical Treatments (2 of 3)**

Although dyslexia is a learning disorder and not a disease, there appear to be medical treatments offered as one can discover by doing an Internet search. One example is that of Dr. Harold Levinson, a psychiatrist and neurologist who runs a learning disorder clinic in the United States. Dr. Levinson claims to hold a theory of aetiology that he calls a “dynamic vector theory of dyslexic symptom formation.” In this theory, he points to several possible factors that play into dyslexia:



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*“All the many and varied dyslexic symptoms and their respective intensities are resultants of a dynamic combination of dysfunctioning inner-ear-related mechanisms on the one hand, and compensating mechanisms attempting to minimize impairments on the other. Thus stress, anxiety, seasonal allergies, ear and sinus infections as well as any and all disorders impairing or destabilizing inner-ear functioning tend to maximize the intensity of symptom formation. By contrast, maturation, parental and educational support as well as favorable responses to a wide range of helpful therapies tend to minimize symptoms via compensatory functioning.” [3]*

Based on this theory about the causes of dyslexia – that it originates in the inner ear – Dr. Levinson claims to have developed the “first and only medical treatment for dyslexia.” He claims that anti-motion sickness medications can improve the symptoms of dyslexia including memory, cognition, ADHD-related behaviors, and mood issues. It is important to note, however, that these claims of effectiveness are based on the doctors own research studies, books, and clinical cases of reportedly countless numbers of successfully treated patients.

### **36.2 Medical Treatments (3 of 3)**

Parents who seek treatment for their children, and show interest in treatment approaches like those of Dr. Levinson should be given information on dyslexia. It should be made clear to



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them that there are no medications or cures that can change the fact that their child has this learning disorder. Furthermore, they should be highly sceptical of claims that have no scientific research support or acceptance within the medical and therapy communities. As a therapist, you should inform families of all of their treatment options, and emphasize those which can be validated as effective until more research is conducted on newer or alternative approaches.



### **36.3 Nutritional/Allergic Treatment (1 of 3)**





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Some clinicians who treat dyslexia have pointed to the role of nutrition in treating it. For example, Dr. Levinson claims to use the following vitamin and natural supplements to help those with dyslexia [3]:

- Niacin, B vitamins and minerals – to help improve inner-ear related symptoms like dizziness
- Ginger root – to help treat motion sickness
- Lecithin and Ginkgo – to help improve memory
- Fatty acids and Omega 3 – to help improve concentration
- Amino acids (e.g., DL phenylalanine) – to help decrease hyperactivity and improve focus in those with co-occurring ADHD

This doctor also recommends that those with dyslexia avoid “neurotoxic” substances like certain dyes and sugars in foods that can create allergic reactions. Dr. Levinson is careful to note, however, that dyslexia cannot be caused by allergies. Rather, he claims that the symptoms can be worsened [3].

### **36.3 Nutritional/Allergic Treatment (2 of 3)**

Another example of the role of nutrition in the treatment of dyslexia is the published research of Richardson [2001]. Richardson points to the lack or imbalance of unsaturated fatty acids (HUFA), within the omega-3 and omega-6 family of nutrients, as contributors to several disorders including dyslexia. Thus, balancing these nutrients, Richardson asserts, may help manage dyslexia. There is clear acknowledgement that more research is needed on this.

The belief that HUFA may help with dyslexia is based on the point made by Richardson that these acids are known to be critical for proper brain development, and functioning throughout life. It also stems from early-stage research evidence of nutritional approaches helping kids with ADHD. Furthermore, there is anecdotal evidence that appears to show improvement. Richardson offers a single case report of a child who was treated for dyslexia, and presented to therapy with signs of fatty acid deficiency:

*“Michael had very dry, patchy, dull, skin. Like a matte finish on a photograph, his skin, as well as his hair, failed to reflect light with a normal lustre. His hair was easily tousled and when pulled between the fingers it had a straw-like texture rather than a normal silky feel. He had dandruff. The skin on the backs of his arms was raised in tiny closed bumps like chicken skin. His fingernails were soft and frayed at the ends.*





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*All of these findings point to an imbalance of fatty acids” (Baker, 1985 as quoted in Richardson, 2001[7]).*

However, as Richardson points out, the view that nutrition can help treat dyslexia is rejected by many:

*“[In Michael’s case] biochemical testing confirmed this picture, and nutritional intervention to correct these imbalances was followed by clear improvements in the child’s school work...Unfortunately, despite the success of a biochemical/nutritional approach in this case, other ‘specialists’ were apparently critical, telling the child’s parents firmly that ‘Nutrition has nothing to do with dyslexia[7].*

### **36.3 Nutritional/Allergic Treatment (3 of 3)**

The following chart shows Richardson’s recommended guidelines for therapists and clinicians to identify children who may have fatty acid deficiencies and benefit from nutritional supplements[7]:

Physical Signs	Excessive thirst, frequent urination, rough or dry skin and hair, dandruff, and soft or brittle nails; atopic tendencies (e.g., eczema)
Visual Signs	Poor night vision, sensitivity to bright light, visual disturbances when reading (e.g. letters and words move, swim or blur on the page)
Attention-Related Signs	Symptoms often seen in ADHD including distractibility, concentration and memory issues
Emotional Signs	Emotional sensitivity, undue anxiety/tension, mood swings or temper tantrums (e.g., low tolerance of frustration)
Sleep Signs	Difficulty falling asleep or waking up

As a therapist, you can inform families of what is known so far about the roles of nutrition and allergies in dyslexia. It should be emphasized that very little is known and the only evidence of possible effectiveness comes mostly from studies of other disorders (like ADHD) and case reports. These come from individual doctors of treatments that appeared to have



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helped individual patients. However, because good nutrition is always beneficial, especially for developing children, encouraging a healthy diet through nutritious food can be helpful.

### **36.4 Physical Therapies (1 of 2)**

Some clinicians who treat dyslexia have pointed to the role of physical therapies in treating it. These include occupational, sensory integration, and reflex treatment. For example, Dr. Levinson who runs a clinic which treats learning disabilities, including dyslexia, claims that the repetition of various sensory motor (physical motion), and eye-training exercises leads to improvement in academic performance for patients [3]. However, the theory behind why such treatments would help dyslexic individuals is not well explained. Anecdotal evidence is offered about athletes who appear to do better academically when they are in their training seasons (more so than when out of training), however this type of therapy does not appear to be supported by research.



### **36.4 Physical Therapies (2 of 2)**

In response to claims such as those presented by Dr. Levinson [3], at least one researcher has published an article. The article examines similar such treatments, in more depth, with cautions against accepting these claims for the purposes of treatment. Bishop focused on the Dore Achievement Centers which treat what they deem to be the cause of dyslexia: cerebellar (brain-related) developmental delay [1].

According to Bishop's research, these centers use advertisements, and make bold claims about offering high success rates for those with disorders like dyslexia, ADHD, dyspraxia, etc. However, the studies which they use to back up their claims are of poor quality. In Fact, they have caused controversy within the treatment field for being published at all.



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It is Bishop's view that there is some reason to point to brain-related developmental delays as the cause of dyslexia, and try to target such delays for treatment. Bishop explains that:

*The notion that the cerebellum might be implicated in some children's learning difficulties is not unreasonable: both postmortem and imaging studies have reported cerebellar abnormalities. 3 Furthermore, some studies have reported behavioral deficits involving balance and automatization of motor skills in a subset of people with dyslexia, consistent with a cerebellar deficit hypothesis. However, it is premature to conclude that abnormal cerebellar development is the cause of dyslexia, rather than an associated feature. Many people with dyslexia do not show any evidence of motor or balance problems [1].*

As a Dyslexia Therapist you should be aware that physical therapies for dyslexia – such as training children to have better eye-hand coordination and balance – are considered misleading by many, and not widely recommended for treatment. Parents of children with dyslexia need to be given accurate information. It is your role to do so, and inform them of the views of such treatments should they inquire about them for their children.

### **36.5 Transfer of Function**

Some practitioners who treat dyslexia have suggested that by strengthening certain skills for children with the disorder, others can in turn be improved. This is thought to occur by improving brain pathways with the hopes of improving other nearby pathways that control reading, speech, etc. For example, according to Dr. Levinson: "if repetitive eye-tracking techniques help fine-tune and stabilize its underlying "TV" circuit or channel e, and if this conditioned or improved effect is transferred to neighboring and interconnected circuits, i.e., channels r, w, m, c, t, etc., then reading, writing, math, concentration, and tennis will correspondingly improve" [3]. Dr. Levinson does acknowledge, however, that therapy of this type has its limitations.

What does the research say? There appears to be no strong evidence showing that this type of transfer occurs for children with dyslexia. However, there does appear to be some evidence that transfer of learning can occur using reading exercise programs for dyslexic children.

It is clear that dyslexia creates difficulty generalizing the rules that we all learn to use while learning to read onto new words beyond the specific ones already learned. In other words, they have difficulty transferring their learning and tend to use "instance-based learning" rather than "rule-based learning." For example, if a child learns to pronounce "bark" in theory they would be able to apply what they know about reading that word to a new word like "shark" or "dark." However, this can be very difficult for children with dyslexia and would be considered "transfer of learning" failures.



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This trouble with generalizing what has been learned prompted a research study in which Lovett and colleagues compared two different types of word identification training programs with dyslexic children [4]. Although one outperformed the other, both programs included skills to help children with transfer of learning and both showed significant improvements and helped children generalize reading rules to other words.

**[EXAM LINK](#)**