AADMD: UOS Student Chapter
AMERICAN ACADEMY OF DEVELOPMENTAL MEDICINE AND DENTISTRY

AADMD

NEWSLETTER

Volume 2 | Issue 1

Rare Diseases

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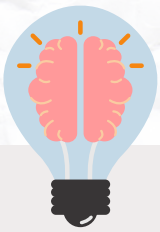
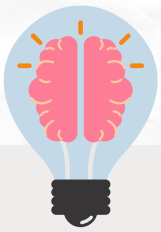
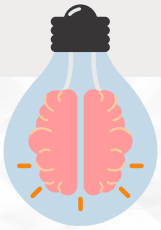
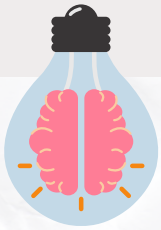





an INSIGHT

AADMD: UOS Student Chapter
AMERICAN ACADEMY OF DEVELOPMENTAL MEDICINE AND DENTISTRY

Malak Bouali

WHAT IS AADMD?

The American Academy of Developmental Medicine and Dentistry (AADMD) is a distinguished non-profit membership organization dedicated to empowering underserved populations, particularly those in the disabled community. Through our collaborative efforts, we strive to strengthen the healthcare system by promoting evidence-based practices, high-quality care, education, research, and advocacy. Our ultimate objective is to create a better future for individuals with developmental disabilities by raising awareness of the unique challenges they face and providing them with the most up-to-date information on new discoveries and advancements in developmental medicine and dentistry. In the upcoming interviews, we will delve deeper into the experiences and perspectives of the AADMD's esteemed leaders, while exploring a range of relevant topics.

meet BOARD our

Tehreem Iman -&- Nada Ashraf

Meet the Founder: Dr. Shadi Alkhatib

1. What are the goals that the AADMD has set for 2023-2024?

"The AADMD goals are to establish a strong community of like-minded individuals who share a common interest or goal, facilitate collaboration and partnerships with other organizations and stakeholders to achieve shared goals, and promote awareness and education about the issues related to the association's purpose and mission. Specifically, I aim to increase awareness about disability issues through advocacy, education and training programs, and partnerships with other organizations and stakeholders, in order to improve the lives of people with disabilities."

2. What's the AADMD's vision?

"The vision for the AADMD UOS Student Chapter is to become a leading association in the UAE and beyond, by raising public awareness and promoting integration and care for people with disabilities. Our chapter's growth and expansion would be a reflection of the AADMD's overall mission to improve the health and well-being of individuals with intellectual and developmental disabilities. The AADMD strives to provide high-quality healthcare to people with disabilities, advocate for their rights and needs, and advance research on disability-related health issues. By offering education, and training programs, and forging partnerships with other organizations and stakeholders, we can make a significant impact on the lives of people with disabilities."

3. Which aspect of your practice do you find yourself looking forward to the most?

"I have always been passionate about working with individuals with disabilities and improving their quality of life, which is why I was drawn to the AADMD's mission. With years of experience in the disability community, I have witnessed firsthand the challenges that people with disabilities face, and I wanted to be part of an organization dedicated to addressing those challenges. Working with the AADMD has been incredibly rewarding, as I have seen the positive impact we have on the lives of people with disabilities.

In my clinical practice, my focus is on Special Care Dentistry and Pediatric Dentistry, and I have extensive experience working with patients who have general or critical health problems and those who are physically and mentally incapacitated or handicapped. I am committed to providing excellent dental care services and was honored to work on a project for H.H. Sheikh Sultan Bin Mohammad Al Qassimi, a member of the UAE Supreme Council, Ruler of Sharjah, and President of the University of Sharjah. As an expert in Special Care Dentistry, I was responsible for overseeing and launching the first Mobile Dental Unit for elderly and patients with special needs in UAE."

4. What qualities does a team member need to have to join your group?

"A good team member should have strong communication skills, a collaborative attitude, and be open to other people's ideas. They should be proactive in problem-solving and take ownership of their tasks and responsibilities. Additionally, they should be reliable, accountable, and have a positive attitude. Other desirable qualities may include adaptability, flexibility, creativity, and a willingness to learn and grow. These attributes can help build a cohesive team and promote productivity and success."

5. What message would you like to send to new members or people considering joining the association?

"There are many compelling reasons why joining AADMD is one of the best decisions anyone can make. By being a part of this organization, we can all contribute to our community and make a positive impact on the lives of those around us. Joining AADMD not only helps others but it also helps us grow as individuals by providing opportunities to learn new skills, network with like-minded individuals, and gain valuable experiences that can benefit us in many different ways."

Meet the President: Dr. Alaa Mardini

1. Which aspect of the AADMD do you believe provides the most influence?

"The AADMD offers an inclusive chance to comprehend individuals with determination and our duties as healthcare providers in catering to their needs. Since this subject might not be readily available in university curriculums, it's essential to obtain this experience externally."

2. What is the association's greatest strength?

"The AADMD is a strong organization, and one of its main strengths lies in its emphasis on interdisciplinary collaboration and the merging of medicine and dentistry to provide care for individuals with disabilities.

Contributing to the community and being connected with individuals with disabilities who have pure souls can provide strength and inspiration to individuals, motivating them to give even more."

3. How do you stay motivated and focused on your goals?

"To achieve larger goals, it is helpful to break them down into smaller, more manageable tasks. This not only provides a sense of accomplishment and progress as each task is completed but also helps you stay motivated and focused on achieving your goals. In addition, having a clear plan or roadmap can help you stay on track and measure your progress. This plan should include a timeline or schedule to help you remain focused and motivated toward achieving your goals. Lastly, finding inspiration or role models can be a great way to stay motivated and focused. This can be achieved by seeking out successful people in your field or personal heroes who have achieved similar goals. By following these steps, you can achieve your goals and stay motivated along the way."

4. If you could change one thing about AADMD's system right now, what would it be?

"If I could change one thing about the AADMD's system right now, it would be to increase the organization's outreach efforts to engage more people and encourage them to become members. Although the AADMD has made significant progress in advocating for individuals with disabilities, there are still many individuals and organizations that are not aware of the AADMD's mission and the benefits of becoming a member. By increasing outreach efforts and promoting the organization's work, the AADMD can attract more members and have a greater impact on the lives of people with disabilities. Additionally, increased membership will also provide the organization with more resources to advance its goals and objectives."

5. If you could go back to your first year of college, what valuable insights or information do you wish you had been aware of?

"Reflecting on my college experience, I wish I had been aware of the numerous outreach and volunteer programs available for students. These programs provide invaluable opportunities to learn and gain hands-on experience while making a difference in the lives of others. As a student, it can be easy to focus solely on studying for exams and achieving good grades, but it's important to remember that being a doctor is more than just having book knowledge. It's about being compassionate and making a positive impact on the world around you. So, I encourage future dental students to seek out these opportunities and use them to not only improve their skills but also to contribute to the greater good."

under the

SPOTLIGHT

Paediatric Occupational Therapy

Khadijah Omar Zaidan

Since April is approaching and is dedicated to Occupational Therapy month, I decided to interview Mrs. Salma Mohammed, an extraordinary occupational therapist specializing in pediatric care, with over 30 years of experience in multiple institutions. We started talking and I was never tired of listening to her experiences and knowledge.

Why did you choose occupational therapy as your career?

"I graduated with a degree in physiotherapy from one of the best universities in my hometown. In fact, I was one of the few women in my village who studied something in the medical field. Afterwards, I went back to my village and started to work in the health center there. I started to realize that I loved occupational therapy the most. I loved how you could support the patients' independence, and I love working with children. After a couple of years' work, I decided to return and obtain a master's degree in pediatric occupational therapy."

What is occupational therapy? And who needs it?

"OT is a therapy that is provided to patients who have an injury, illness, or accident that has affected their lifestyle in performing their daily activities. Thus, OT helps people restore function and their ability to work, as our main aim is to increase their functional independence.

OT can be extremely beneficial for children and adults with disabilities, such as post-stroke patients, by which it can increase physical performance, self-esteem, and acceptance. OT requires huge dedication and the ability to understand the patient as well as the experience of finding solutions for people to live their daily lives.

Ok, I will simplify it for you and for the readers. What is common between wearing your shirt, brushing your hair, and eating with a spoon? All these activities which you do on a daily basis involves the upper limbs, but each one of them has a different approach, different muscle responses and different pathways in the brain. However, first we communicate with the child, their parents, and the working team; I take detailed history and assess the patient and that's to put the best plan I could."

Could you give us an example from your practice? In which we could understand how helpful it is?

"Yes sure, patients with cerebral palsy usually complain of tremors, shaking, and weak muscles. So, if they want to eat using a spoon, we have to work on the grip and movements in which they scoop and lead the spoon to their mouth. However, we would not be able to achieve this with a regular spoon, because it is light and thin, so it will slip and shake. This is why we must use a heavier spoon that has a bigger body, and sometimes it needs to have a handle. So, if you are asking if we work with engineers? Then the answer is yes, we must. This is similar to an amputated limb, where we must work on the prosthetic.

Another?? Oh, you're being greedy! You might find this interesting because I honestly do. I worked with children with ADHD and autism, in which some might struggle with opening packages, such as chips, crayons, toys and so on. I know that it sounds simple, but let us say, whenever you want to open a bag of chips, it ends up on the floor. Or you are sitting in the classroom where your teacher asks you to open the box of crayons, and it ends up everywhere and everyone is laughing at you, even bully you for it and calling you names. It's hard, isn't it? So, this detail might give them independence instead of asking someone else to do it every time because they fear the outcome."

How could you tell the prognosis of the patient? And what determines it?

"There are multiple factors that contribute to a better prognosis; most importantly, the involvement and the continuation of therapy at home, because I only see the patient for a few hours weekly and this is not sufficient at all. Therefore, communication with family is crucial. Other points include other comorbidities, intellectual disability, and unfortunately, the financial situation plays a huge role in buying the tools and paying for institutional services."

Do you think occupational therapy could be helpful as a monotherapy?

"In most cases, occupational therapy alone is not sufficient. Most of the children that I work with require speech therapy, physiotherapy, and sometimes music therapy or other forms of therapy."

What is the best and worst thing about your job?

"The best thing about it is the moment when you see the improvement of your patients, and since they need many sessions, most of the patients will turn to be your friends. One of the cons of my job is that it is physically and mentally draining."

Thank you for this lovely chat, would you like to add something?

"My pleasure indeed. I would like to advise my young colleagues to take it easy and slow, results do not show up in day or two, it needs time. I would also ask them to learn how to communicate, and always take your time by teaching the parents."

under the

SPOTLIGHT

Friedreich's Ataxia

Lubaina Ali -&- Menatalla Abdelmomen

Can you introduce yourself and tell us a little about your condition?

"My name is H.S. and I'm 25 years old. I reside in Egypt and I recently graduated with a bachelor's degree in Mass Media. I have a neurodegenerative movement disorder called ***Friedreich's Ataxia***. I was diagnosed when I was 15 years old, around a decade ago. My family began observing signs that indicated something was not right and so we decided to consult medical specialists. It was a period of extreme uncertainty since I was diagnosed by 3 doctors; however with no conclusive result. When my family finally heard of Friedreich's Ataxia, they were relieved in the sense that they now knew what the problem was and that they could start with the treatments immediately."

What was your family's initial reaction when they heard of your diagnosis?

"My whole family was devastated after getting to know not just that I had Friedreich's Ataxia but that it was a neurodegenerative illness that was considered rare. I remember my mom feeling guilty and blaming herself, as the doctor who made the diagnosis informed her eventually that earlier care could have slowed the progression of my condition.

My grandmother was in complete shock and denial and she insisted that we consult further doctors in the hopes of receiving a different diagnosis.

My aunt's reaction was of acceptance and relief since she worked in the health sector and wasn't convinced by the prior physicians' diagnoses. In addition, she was relieved to learn that I would not endure any unneeded surgeries or be given any extra medications."

After learning about your diagnosis, what was your reaction? And how did you learn to come to terms with your condition?

"Initially, it was really difficult for me to not view my situation negatively. I kept asking myself if this was a punishment of some sort and kept questioning-why me? However my perspective changed after the following incident; I was sitting with my friends and saw a young, healthy-looking man fall and pass out. That's when I realized that having Friedreich's Ataxia didn't make me prone to muscle weakness and frequent falls; I was at risk for such things regardless of my diagnosis. In actuality, this is something that can occur to everyone, and it need not define my identity. With my family's support, especially my grandmother's, I came to terms with the fact that having Friedreich's Ataxia does not limit who I am or what I can accomplish."

Have you experienced any bullying/discrimination due to your illness?

"I haven't experienced frequent harassment or teasing, however, I vividly remember one incident in detail where I was actually bullied, not because of my condition, but because of how normal I seemed in terms of physicality despite having my condition.

There was an old man who needed assistance walking and crossing the road and he asked me for help. I blatantly refused since I knew that if I helped him, we would both be at risk of collapsing. However, he had an angry outburst and began verbally abusing me, thinking perhaps that I was just another lazy lad. It made me think how we are so quick when it comes to judging people and how we have no right to do so because of what they may be going through internally."

How did your family and peers support you in your day to day activities?

"As a person who has a rare disease, my close family and friends are the reason why I'm here today. All of my accomplishments in my personal and academic field are solely because of their persistent motivation and encouragement.

My peers were very understanding when they heard of my condition and the one thing I love about our relationship is that they treat me normally without giving me special attention. It's a little annoying when strangers and acquaintances are unable to have a normal conversation with you without bringing sympathetic phrases and words of pity into the picture. I understand that there are times when I require assistance when other people don't, however my peers and family have dealt with such situations maturely without making me uncomfortable."

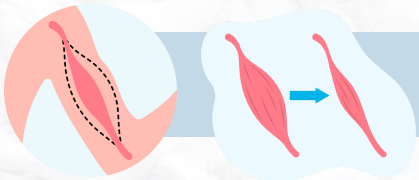
How would you describe yourself in one word/phrase?

My doctor actually informed me that according to my current test results, I am expected to be wheelchair bound, however I'm not! I still have hope that one day when there is a defined cure for this condition, I will be able to live like everyone else.
Hence, to answer your question, I would define myself as 'patient' and a 'fighter' because I am bravely combating my condition.

Awab Musaad Suliman

HISTORY

In the 19th century, the French neurologist Guillaume Benjamin Amand Duchenne described a form of muscular weakness or hypotrophy in his book “Childhood hypertrophic paraplegia of cerebral cause”. Duchenne was the first to examine a living tissue out of a living patient under the microscope, which was controversial in his time from a moral standpoint. The calf muscles of the child appear enlarged or hypertrophied, but a view under the microscope would reveal fat or other connective tissue rather than muscles. Duchenne gave it the name “pseudohypertrophy”, a false enlargement of the muscles. By 1868, he reported 13 children with the condition and labeled it as having “pseudohypertrophic muscle paralysis”. Duchenne correctly found out that the clinical picture and symptoms were related to an abnormality in the muscle.



THE DISEASE

Normally, muscles are held while contracting so that they do not tear by a protein called the dystrophin protein, but different mutations can lead to an abnormal or dysfunctional dystrophin protein, leading to gradual tearing and loss of muscles over time.

Duchenne muscular dystrophy (DMD) is an X-linked recessive neuromuscular disorder with a prevalence of approximately 1 in 3500–5000 males. Muscles around the body gradually weaken over time and shrink in size to finally lose their function. This manifests in a young male with gradual loss of ambulatory function, respiratory difficulties owing to the respiratory muscle weakness, and changes in their heart’s shape and pumping mechanics, which unfortunately is the reason to claim most of these patients’ lives. Other symptoms of DMD that are noted in some patients and not related to the muscles are variable degrees of neurodevelopmental co-morbidities and cognitive impairment. The reason for these neurological manifestations is believed to be due to the lack of the brain-specific type of dystrophin.

The gene mutated in this disease is called the DMD gene, located in the short arm of chromosome 21, and it is one of the longest genes. The gene is responsible for encoding the dystrophin protein, therefore a mutated DMD gene will encode a non-functional protein. Since it is a big gene, it is susceptible to many mutations. For example, deletion of a large segment of the gene, point mutations, and duplications, can occur anywhere throughout the DMD gene. Any of these mutations can lead eventually to a deformed dystrophin protein.
A less severe form of the disease manifests if the gene is less mutated and so the protein is partially functional, it is called Becker muscular dystrophy (BMD). It progresses slower than DMD and patient’s symptoms are generally milder.

TREATMENT

Unfortunately, DMD has no cure, and treatment options are limited. The current approach to DMD is to administer glucocorticoids in the early stages to reduce ambulatory loss, but routine administration of these medications has its side effects. Weight gain, behavioral changes, and endocrine dysfunctions which can lead to life-threatening ailments are a few of these side effects. Studies showed that the median life expectancy for these patients without ventilatory support ranged from 14 years to 27 years at best. Although ventilatory support correlates to an increase in life expectancy, it still hinders patients' quality of life.

Currently, there are 4 FDA-approved treatments for DMD: Eteplirsen, Golodirsen, Viltolarsen, and Casimersen. In practice, these medications have a transient effect, and so they need to be administered regularly. In addition, these agents cost a lot of money. Some studies also suggest they are poorly taken up by target organs like the heart. It was also noted that these medications are not applicable to all DMD patients.

ON THE BRIGHT SIDE, RESEARCH NEVER STOPS!

Recently, another highly advanced gene-editing tool called CRISPR (clustered regularly interspaced short palindromic repeats) is being explored as a possible cure for DMD. In theory, this tool can permanently correct the DMD gene, meaning the patients don't need regular treatments. Added to other components, CRISPR can generate double-stranded DNA breaks (DSBs) which can target specific parts of the DMD protein and stop the reading of the mutated gene. This process is then corrected endogenously to skip, delete, or reframe that part of the gene. Although this repair mechanism is prone to errors, it is still a promising advancement. CRISPR can also bind to enzymes inside the nucleus to precisely edit the gene on its own, which is believed to cause fewer errors compared to the endogenous repair after a DSB.

Utrophin is a dystrophin homolog, which originally is a membrane-stabilizing protein for fetal muscles that gets replaced by dystrophin in adulthood. Upregulation of utrophin is thought to partially compensate for the lack of dystrophin. This can be done also by CRISPR.
Some parts of dystrophin are essential for its function, and a mutation in these parts cannot be repaired using CRISPR. An approach called exon knock-in can restore a full-length dystrophin protein, but it's still being studied in the context of DMD.

Future studies plan to tackle the challenges faced by CRISPR in treating DMD, like delivery method, immune reactions, off-target mutation formations, and long-term efficacy.
To a large extent, CRISPR is a promising therapeutic approach to correct DMD gene mutations. The fact that it can fix the mutated gene is outstanding compared to the continuous administration of corticosteroids. A single CRISPR treatment to change and save the life of a dying child diagnosed with Duchenne muscular dystrophy (DMD) is where the future is heading!

SCIENCE SPEAKS

dental research

Rand Alkhaldi

IN BRIEF

Osteogenesis imperfecta (OI), also known as brittle bone disease, is a rare genetic disorder characterized by bone fragility and an increased risk of fractures, the disease has an incidence of about 1 in 10,000 to 1 in 20,000. Most cases of OI are associated with mutations of the genes COL1A1 and COL1A2 , which are the genes that encode for type I collagen, however, in the past few years other cases of OI have been shown to have an association with different genes that function within the collagen biosynthesis pathway. OI eventually leads to either a decrease in the quantity of collagen or formation of defective collagen. Thus, tissues that are rich in type I collagen are affected. OI can be diagnosed according to clinical and radiographic findings, along with collagen testing, family history and molecular testing .

CLINICALLY SPEAKING

Manifestations of OI can be divided into skeletal and extraskeletal manifestations. Skeletal findings include decreased bone mass and increased bone fragility, recurrent fractures and fractures in atypical locations, short stature and scoliosis in more severe cases.Extra-skeletal findings include hearing loss, blue-gray discoloration of the sclera, hypermobility of the joints, dental abnormalities, decreased respiratory function and cardiovascular problems.

DENTAL MANIFESTATIONS

Rich in type I collagen, Dentin is the principal tissue in the composition of teeth. Due to this close biochemical relationship, teeth can be affected in some cases of OI leading to Dentinogenesis Imperfecta (DI), a genetic disorder of tooth development that affects both primary and permanent teeth. Teeth that are affected by DI display an opalescent grayish, brownish, or yellowish discoloration, accompanied by severe attrition and enamel fractures.

Besides Dentinogenesis Imperfecta, some other dental abnormalities that can present in OI include absent or ectopic teeth and dental malocclusions that are usually present in more severe cases. Dental manifestations of OI can be of great diagnostic value particularly in atypical ambiguous presentations.

DENTAL MANAGEMENT

General Considerations

- Primary care physicians are preferably consulted for the need of prophylactic antibiotics in children with medical history of orthopedic rods.
- Patients with OI are at a higher risk of developing latex allergies, use of non-latex gloves is favored.
- Excessive forces during extractions should be avoided to prevent fractures.
- Parents of children with OI can seek support from groups or organizations whose members experienced similar problems.

Primary Dentition Stage

- Early treatment to ensure a favorable condition for the eruption of permanent successors.
- Assessment of DI in a child with a known case of OI through first primary tooth eruption evaluation.
- Radiographic examination to determine the presence of a delayed eruption pattern.
- Caries prevention using fissure sealants if needed.
- Stainless steel crowns can be placed to prevent excessive loss of tooth structure and to re-establish the vertical dimension.

Mixed Dentition Stage

- Restoration of permanent discolored teeth with provisional crowns until growth is complete.
- Celluloid strip or polycarbonate crowns application for the permanent anterior teeth.
- Stainless-steel crowns can be used for permanent molars and composite.
- Consultation of an orthodontist when the child is around 7 years old.

Permanent Dentition Stage

- Possible use of Porcelain or composite veneers and/or crowns for discolored teeth as permanent restorations.
- In severe cases, replacement of extracted teeth using fixed partial dentures, removable partial dentures, or complete dentures.
- Prosthetic rehabilitation with implants shows good survival rates in some studies, however further studies with longer follow up periods are needed.
- Orthognathic surgery is potentially indicated for skeletal discrepancies.

Habiba Mohamed

TOURETTE SYNDROME (TS)

Tourette syndrome (TS) is a chronic neurodevelopmental disorder characterised by tics, which are uncontrollable, repeated movements and vocalisations. These symptoms can significantly affect the daily lives of patients in various ways. Tics tend to be most severe in children and adolescents; therefore, their presence has the potential to influence a phase of life that is both crucial for learning and is generally connected with a sense of greater social stress and self-consciousness than maturity. In addition, it is crucial to have control over tics that result in physical impairment or self-destructive behaviour to maintain health and quality of life. The prescription of treatment for tics is complicated by a number of factors, including patient characteristics such as age and the negative effects of these medications. (Eddy et al., 2010)

TREATMENT

Despite significant research, TS remains incurable. The goal of treatment is to reduce tics, which impair daily functioning and activities. The adverse effects of certain drugs should be carefully monitored by doctors or healthcare practitioners. Treatment may not be required if the tics are not severe. (Tourette Syndrome - Diagnosis and Treatment - Mayo Clinic, 2018)

MEDICATION

Medications to help control tics or reduce symptoms of related conditions include medications that block or lessen dopamine, antiepileptics, antidepressants, central adrenergic inhibitors, and botulinum (Botox) injections, as an injection into affected muscles might help relieve a simple or vocal tic, etc. (Tourette Syndrome - Diagnosis and Treatment - Mayo Clinic, 2018)

HALOPERIDOL

Haloperidol is a commonly used drug to reduce tics with an efficacy of 78-91%, which means that haloperidol is not a complete cure for TS. The side effects of haloperidol are numerous and include weight gain, drowsiness, menstrual and lactational changes, as well as movement problems like parkinsonism, akathisia, and tardive dyskinesia. Menstrual and lactational issues can be reversed by discontinuing treatment; but movement abnormalities may persist. (Eddy et al., 2010)

ECOPIPAM

The results from a second phase trial presented at the International Congress on Parkinson's Disease and Movement Disorders revealed an investigational medication that decreased motor and phonic tics in children and teenagers with Tourette syndrome.

Ecopipam is a first-in-class dopamine D-1 receptor antagonist, in contrast to already licensed medications such as haloperidol and pimozide, which are antagonists of the dopamine D-2 receptor. Researchers are hopeful that the new medication may reduce tics as effectively as older medications while avoiding negative side effects like tardive dyskinesia. (Ecopipam Appears Safe and Effective in Children with Tourette Syndrome : Neurology Today, 2023)

Currently available treatments for Tourette syndrome cause intolerable side effects that interfere with the patients' daily lives. Although all current antidopaminergic treatments focus only on blocking D2 receptors, there is evidence that D1 receptors play a central role in the development of Tourette syndrome (Boylan, 2017). Compared to D2 receptor antagonism, D1 receptors cause mild movement side effects (Niethammer & Eidelberg, 2017). Ecopipam, an unsuccessful weight loss drug, is currently being investigated as an alternative to D2 receptor blockers because of its ability to selectively block D1 receptors (Boylan, 2017).

RECENT LABORATORY STUDY

A recent study performed on mice suggested that D1 receptors may be involved in the development of Tourette's. Two groups of mice were used; one group was injected with saline and the other was injected with IDPN. Tourette's was induced in mice by injection of 3,3'-iminodipropionitrile (IDPN), a synthetic organic nitrile, a substance that induces vertical head shaking, random circling, hyperactivity, and an increased acoustic startle response in rodents that resembles the symptoms of patients with Tourette's syndrome (Lin et al., 2021).

D1 RECEPTORS

Activation of D1 receptors in the dorsal striatum of saline-injected mice resulted in the exacerbation of stereotypic behaviours resembling symptoms of Tourette's syndrome. Activation of D1 receptors in the Substantia Nigra Pars Compacta of mice injected with saline showed no change in behavioural stereotypes. Inhibition of D1 receptors in the Dorsal Striatum of mice injected with IDPN significantly attenuated Tourette's associated behavioural stereotypes. Inhibition of D1 receptors in the Substantia Nigra Pars Compacta of mice injected with IDPN significantly attenuated Tourette's associated behavioural stereotypes.

D2 RECEPTORS

Activation of D2 receptors in the Substantia Nigra Pars Compacta of mice injected with saline showed no change in behavioural stereotypes. Activation of D2 receptors in the Dorsal Striatum of mice injected with saline showed no change in behavioural stereotypes. Inhibition of D2 receptors in the Dorsal Striatum of mice injected with IDPN significantly attenuated Tourette's associated behavioural stereotypes. Inhibition of D2 receptors in the Substantia Nigra Pars Compacta of mice injected with IDPN significantly attenuated Tourette's associated behavioural stereotypes.

These results suggest that D1 receptors may play a central role in the pathogenesis of Tourette's syndrome, and that antagonism of D1 receptors may be a more precise drug target than antagonism of D2 receptors.

RECENT CLINICAL STUDY

Forty patients aged 7 - 17 years with Tourette's syndrome were enrolled in a 4-week randomised, double-blind, placebo-controlled crossover study to determine the efficacy and safety of ecopipam. The Yale Global Tic Severity Scale (total tic score) was used to measure tic severity. All patients had a total tic score of 20 or higher. Half of the patients received ecopipam, while the other half received placebo for 30 days. This was followed by a 2-week washout period, and then treatments were alternated for an additional 30 days (Gilbert et al., 2018).

Results: Ecopipam showed a greater reduction in the total tic score than the placebo group, with no weight gain, movement side effects, changes in electrocardiogram, electrolyte tests, or vital signs. There were few adverse effects, which included dizziness, tiredness, and sleep problems (Gilbert et al., 2018).

Ecopipam decreased the severity score by 32%, from an average of 68 to 46. The placebo group experienced a 20% decline in the mean score from 66 to 54. The researcher noticed that 21% of those taking placebos and 34% of those in the ecopipam group experienced headaches and exhaustion as side effects. They believe that the American Food and Drug Administration will approve of this medication. One tablet of ecopipam was administered daily. Similar to most paediatric drugs, the dosage is determined by the patient's weight (New, 2022).

MYTH vs FACT

Developmental Disabilities

Ridha Umar

MYTH: One can outgrow developmental disabilities with time.

FACT: Developmental disabilities are long-term diseases that are present throughout life. Conditioning and training including physical, speech, and occupational therapy along with special education classes and psychological counselling can often decrease the severity and improve the quality of life and adaptability.

MYTH: All children with autism are alike with impassive personalities.

FACT: Each child with autism is different from the others as it is a spectrum disorder. Children with autism can feel emotions however they just communicate them differently from others.

MYTH: Developmental disability is classified as a mental illness.

FACT: Although developmental disabilities are neurological conditions, they are not the same as mental illnesses like anxiety or depression. Unlike mental illnesses, Developmental disabilities tend to interfere with the intellectual abilities and capacity to understand concepts.

MYTH: Children with learning disabilities are incapable of reading and writing.

FACT: Children with learning disabilities can learn. However, they learn using different methods and require a different environment for the same results.

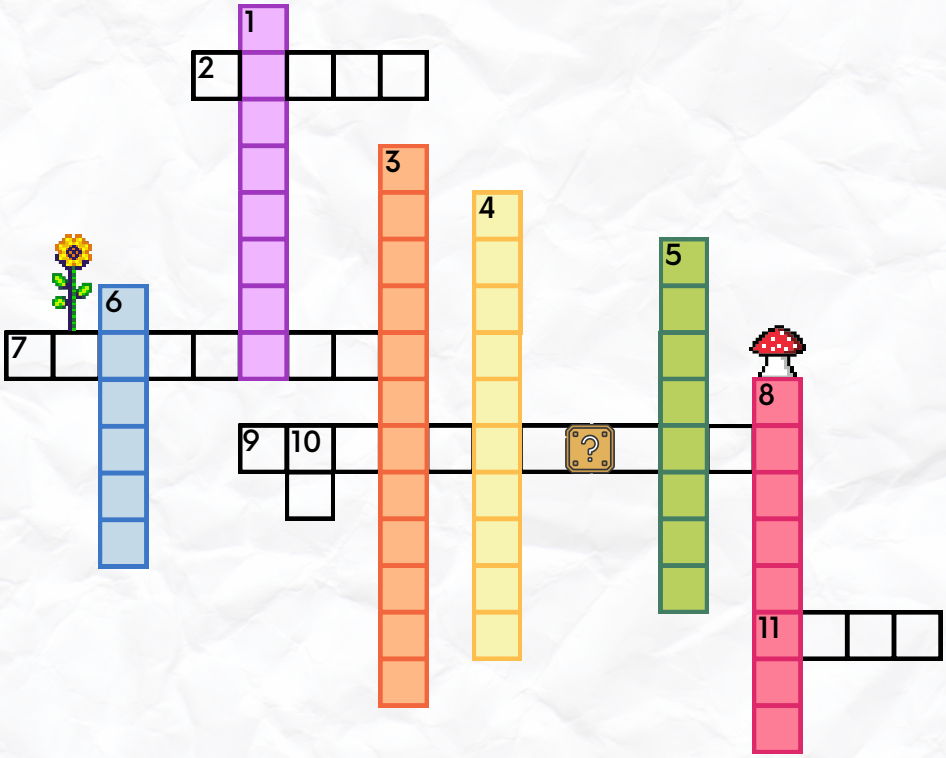
MYTH: People with developmental disabilities are always intellectually impaired.

FACT: Not all developmental disabilities lead to intellectual impairment, some of them have physical or other manifestations that do not influence their intellect.

THE ARCADE

MENU START

Afrah Hajmydeen



Looking for a fun challenge? Test your crossword skills with these statements related to developmental disabilities. Fill in the blanks and use the letters provided to solve the puzzle horizontally or vertically according to the numbered clues.

Answer key in the appendix

ACROSS

2. Spina bifida may be caused by the deficiency of _____ acid during pregnancy

7. _____ syndrome is a developmental disability associated with the occurrence of sudden and repeated twitches, movements, or sounds called Tics.

9. mode of communication for patients with hearing loss

11. Child loses concentration fast and is very impulsive

DOWN

1. Cerebral Palsy is a physical disability affecting _____ and posture

3. caused by trisomy 21

4. learning disability leading to problems in handwriting, spelling, and organization 5. Fetal alcohol syndrome (FAS) happens due to _____ exposure to alcohol

6. a developmental disability affecting communication and social interactions

8. International epilepsy day falls on _____(month)

10. people with intellectual disability have an ___ of 70 or lower

FUN FACTS

about Cerebral Palsy

Maya El Yafi

1. You Cannot Get Cerebral Palsy as an Adult:

In some cases, milder forms of cerebral palsy may go unnoticed until the child demonstrates developmental delays.

2. Cerebral Palsy Does Not Directly Affect Cognitive Function:

Although 50% of individuals with cerebral palsy have a co-occurring intellectual disability, an intellectual disability is not caused by the same source of brain damage as cerebral

3. The Effects of Cerebral Palsy Can Worsen If Not Properly Managed:

Cerebral palsy is not a degenerative disorder, and brain damage will not worsen over time. However, secondary effects of cerebral palsy such as spasticity (high muscle tone) can progress if left unmanaged.

4. Cerebral Palsy is Not Hereditary:

Potential causes may include bleeding in the brain, infections, seizures, premature birth, or traumatic injury to the head

5. Cerebral Palsy is the Most Common Childhood Motor Disability:

Cerebral Palsy Can Affect the Face, thereby affecting one's ability to speak, chew, and swallow.

6 . Many People with Cerebral Palsy Can Walk

Many children with CP learn how to walk, but would have abnormal gait patterns such as tip-toeing, scissoring, and crouching gait because of spasticity.

CREATIVE CORNER

Comic Strip about Cerebral Palsy

Hajir Saeed

However, despite the environmental accessibility limitations us with cerebral palsy face, I am confident that the world is moving forward towards a more accommodating and inclusive version of itself.

WHEELS CAN FLY

PROLOGUE

Behold, a tale of Ibrahim's will,
Of iron spirit and unyielding skill.
As he raced with his peers, young and free,
His perspective, a window for us to see.

Through his eyes, we witness his soul,
His thoughts, his actions, a vivid whole.
A canvas of mindset, rich and bright,
A palette of colors, a breathtaking sight.

For in this race, we see more than speed,
We glimpse the beauty of the human breed.
The power of determination, the strength of will,
A symphony of life, with each note a thrill.

WRITTEN BY HIND AL KHALAF
ARTWORK BY HAJIR SAEED

The sun was in my eyes
So bright I couldn't recognize.
The sound of the bell ringing
It was time for me to run, and I started singing.

Kids running past the blue skies.
I couldn't help but laugh, and think about blueberry pies.
Saw my mom in the distance yelling!
Run run! The race has started!
Why am I so off guarded??

I put my hands on the wheel and started rolling.
It was like I was rowing the boat gently down the stream.
Oh, I wish if I could run with both of my feet, what a dream.
Everyone started to scream, go go Ibrahim!!

Show them how special you are!
Show them what you can achieve!
I could feel the wind rising upon my face.
Like a warm embrace,

I see the finish line and push my wheels, where I see my mom smiling, and that is all I need.
God why do I feel defeated, if I could've just succeeded, maybe just partially completed the race.
But that's okay, as long as I'm brave, I could dance with the stars far across outer space.

APPENDIX

The Arcade answer key:

1. Movement
2. Folic
3. Down Syndrome
4. Dysgraphia
5. Prenatal
6. Autism
7. tourettes
8. February
9. Sign Language
10. IQ
11. ADHD

Medical research:

1. Author links open overlay panelTheodora Markati MPhil a, a, b, c, d, e, f, g, h, & SummaryDuchenne muscular dystrophy is an X-linked disease caused by the absence of functional dystrophin in the muscle cells. Major advances have led to the development of gene therapies. (2022, July 15). Emerging therapies for Duchenne muscular dystrophy. The Lancet Neurology. Retrieved March 4, 2023, from https://www.sciencedirect.com/science/article/pii/S1474442222001259
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