



Treatments for Autism

In this Factsheet, you will find information on the two main treatments for autism. It should be read in conjunction with FS40 and FS97 which details the causes of autism. These treatments will be explored in detail and critically evaluated. This Factsheet includes examiner comments as well as a worksheet which gives you the opportunity to apply what you have learned to exam style questions. Words in bold are explained in the glossary.



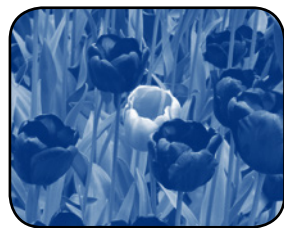
The examiner will expect you to be able to:

- Provide accurate, well organised and detailed descriptions of treatments for autism
- Discuss behaviour interventions
- Discuss biological interventions
- Refer to research evidence in your explanation of the treatments for autism
- Evaluate the studies that have explored the treatment for autism.

Introduction

Autism – Just different?

Autism spectrum disorder (ASD) is a lifelong neurodevelopmental disorder characterised typically by impaired social interactions and communication and by rigidity to routines and repetitive behaviours. It is usually described as a triad of impairments (social and emotional difficulties, language and communication difficulties and difficulties around **theory of mind**). Signs of autism tend to appear in early childhood, where differences in language, communication and social interactions become apparent.



Many reasons have been cited for the cause of autism including genetic, environmental and cognitive factors. Despite extensive research, the exact cause is still unknown. Most researchers agree that it is a combination of factors.

In the majority of cases, it is likely to be due to a complex relationship between

a genetic predisposition and an environmental trigger that results in an autism spectrum disorder diagnosis. Research also suggests that there appears to be functional and structural differences in the brains of individuals with autism.

Children with autism often exhibit the following characteristics:

- Delayed language
- Difficulty with eye contact, facial expressions, body language and gestures
- Rigidity with routines, changes to routine can be distressing and result in extreme behaviour

- Inability to express their emotions in a typical way
- Unusual attachment to objects
- Over or under sensitive to touch
- Engage in self-stimulatory behaviour (also known as **stimming**) like flapping hands or a repetitive activity such as turning light switches on and off.

Currently, there are no known cures for autism. The two main types of treatment for autism, namely behavioural and biological interventions address the behaviours of those with autism. Diagnosis and treatment for autism typically starts in early childhood and focuses on addressing social, communication and behavioural difficulties.

Exam Hint: When writing about treatment for autism, be sure to link with the definition of autism and say what aspects are being treated. The examiner will be looking for your understanding of what autism is and what is being treated.

Treatment for Autism

It is widely believed that the earlier the treatment intervention, the greater the impact. This is why treatment for autism tends to be focused on younger children, although it can occur at any age. There is a wide range of treatments for autism out there including gluten and casein free diets, neurofeedback (using electrodes to monitor brain activity) and chelation therapy using medication and other agents to remove metals such as mercury from the body. However, medical professionals do not endorse these.

The two main recognised modes of treatment are: **behavioural intervention** and **biological intervention**. Behavioural interventions address cognitive impairments such as communication, social interactions and behaviours. Biological interventions address chemical imbalances and the difficulties that those imbalances bring, for example, gastrointestinal abnormalities, immune dysfunctions and or detoxification irregularities.



Exam Hint: There are lots of treatments for autism, it is important you focus only on recognised forms that are evidence based.

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Behaviour Modification

Behaviour modification is typically done early (age 2 onwards) and is intensive. Behaviour modification works on building skills and addressing the core behavioural difficulties of autism. It would normally involve a team of professionals working closely with the child and child's family in their home and or other setting. Behaviour modification treatment tends to be long term as the child is supported through developmental stages and transitions such as starting school and adolescence. Behaviour modification is most commonly referred to **applied behaviour analysis** (ABA) and is devoted to understanding the ways in which the environment affects behaviour in order to address socially significant problems for children with autism. Typically, an assessment of the environmental factors comes first. This includes consideration of the setting in which a behaviour occurs, **motivational variables**, the **antecedent** which is what happens just before the occurrence of a behaviour, and consequences or what happens after the behaviour that determine whether the behaviour is likely to occur again. A detailed assessment of how the environment and the child with autism's behaviour interact is crucial because the information resulting from this assessment leads to the planning and implementation of the behavioural modification programme.



Behaviours that are typically addressed are language and communication, social and play skills, cognitive and academic skills, motor skills, independent living skills, and problem behaviour (Smith et al. 2007). Progress in achieving the desired behaviour change is typically determined by direct observations that occur on multiple occasions with the same individual over time. An equally important measurement is the acceptability of the interventions and outcomes to the treated individual, as well as the impact on caregivers.

ABA is based on the Lovass Model developed by Dr Lovas (1961) and uses the principles of **operant conditioning**. The idea is that behaviour is changed by manipulating the consequence; in other words, rewarding a preferred behaviour and punishing an unwanted behaviour, usually by putting the unwanted behaviour on **extinction**. Many different behavioural interventions fall under the ABA umbrella. Research by Paediatrics journal (January 2010, volume 125/ issue 1) has shown that children who received behavioural therapy showed improvement in cognitive and language abilities and adaptive behaviour and fewer autistic traits.

ABA programmes tend to follow a similar structure. Each ABA session is run one to one by a tutor, usually lasting 3 hours, although this can vary. It must be intense meaning a minimum 30 hours a week is required. It is usually done in the home with family involvement. The programme involves a focus on behaviour to bring about a change in the behaviour. The programme involves **discrete trial training**. This method of teaching involves simplified and structured steps. Instead of teaching an entire skill in one go, the skill is broken down and built-up using discrete trials that teach each step one at a time. ABA tutors refer to age related skills and help the child with autism according to achieve developmentally appropriate skills.

New behavioural interventions have been developed that embed teaching opportunities within naturally occurring events such as mealtime, play routines and bath time. Such interventions are child led. Research suggests that these naturalistic approaches can address a

variety of communicative functions, such as preverbal communication (e.g. eye contact, joint attention and social pleasantries like please, thank you and hello). In contrast Discrete Trial Teaching, naturalistic behavioural approaches have been reported as being less aversive to children with autism. Reportedly children have had less disruptive behaviour and made greater improvements in verbal attempts during naturalistic teaching conditions compared to the discrete trial format (R.L. Koegel et al. 1992b). Although most ABA intervention approaches include a parent education programme, naturalistic interventions programmes are specifically designed to fit into a family's lifestyle and routine so that teaching can occur on a regular, constant basis throughout the day.

Exam Hint: A strong paper which gains higher marks is one that demonstrates critical thinking. In an exam question on autism you would need to not only detail the treatments for autism but also critically evaluate them.

Drug Therapy

Drug therapy as a treatment for autism tends to focus on treating the physiological/ features of autism such as extreme sleep deprivation, epilepsy and hyperactivity. Often medicinal treatment is used in conjunction with other forms of treatment such as behavioural therapy.



Drugs for autism can be categorised into 2 groups, **anti-psychotic** drugs and **selective serotonin reuptake inhibitors** (SSRIs). Anti-psychotic drugs work on changing the effects of the brain chemicals and address problem behaviours that some types of autism present, such as aggressive behaviours. Anti-psychotic medications such as Risperidone and Aripiprazole treat the irritability symptoms of autism, such as tantrums and self-injurious behaviours. SSRIs work on things like sleep disturbances and obsessive behaviours, which can be linked to anxiety in some individuals. SSRIs like Fluoxetine and Sertraline are prescribed to address sleep issues in individuals with autism.

Medicines prescribed to address the traits of autism are "off label," meaning that their FDA approval is for other, sometimes-related conditions such as attention deficit hyperactivity disorder (ADHD), sleep disturbances or depression. These drugs do not typically address the main core features of ASD and tend to help manage or reduce other symptoms such as irritability and hyperactivity, in the short term. Children prescribed these types of drugs are reviewed on a 4-week basis and if there is no clinically important response, treatment is stopped. So arguably the impact of drug therapy as a treatment is measured more closely and more frequently than behavioural interventions as a treatment.

Links have been made between autism and gut problems, including constipation, reflux, diarrhoea, bloating and pain. More often than not, constipation is caused by a sensory issue, not just a physical one, such as a child avoiding the sensation of passing stool. Some drug treatments focus on optimising the function of the gut. Due to the influence of the gut on brain chemistry, the digestive tract must be free of any interference. Certain drugs prescribed for those with autism remove any pathogens (fungus, bacteria, parasites, food allergies), repair the gut and the secretory immune barrier and replace necessary enzymes and nutrients.

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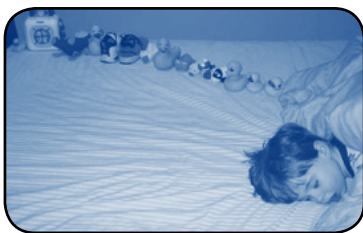
Individuals with autism can also experience epileptic seizures. The epileptic seizures they can experience can range from *petit mal* (periods of absence usually characterised by a gaze into space and no awareness of their surroundings) to *grand mal* (full blown seizures characterised by body stiffening and jerky movements and a fall to the ground, sometimes losing consciousness). Certain drugs are prescribed to individuals with autism to lessen the frequency and/or severity of the fits.

Exam Hint: It is not enough to talk about the treatments for autism alone; you should evaluate the treatment in terms of its strengths and weaknesses. For example, it might be worth exploring the fact that most drug treatments for autism are actually treatments for other conditions such as depression or epilepsy.

Evaluation

As autism is a lifelong developmental disorder, it is important to note that neither behaviour therapy nor drug therapy offer a complete cure. Successful treatment can, in some rare instances, produce outcomes that no longer meet the criteria for an autism diagnosis. However, there are a number of factors that contribute to this, mainly the severity of autism diagnosis in the first instance. It is also important to be aware that as children with autism mature, their symptoms may vary and/or lessen naturally.

Both forms of treatments have their proven success on individuals with autism. However, the success of each method doesn't appear to be consistent across the board. Autism as a disorder varies in presentation and severity therefore success rates are best measured on a case by case basis. Additionally, a number of factors can influence the success rate of any treatment, namely; the severity of the diagnosis, when the treatment started, the intensity of the treatment. ABA treatments are highly effective when they have been personalised for the individual child. Drug treatments appear to work successfully alongside other forms of intervention like ABA.



The biggest criticism of behavioural intervention as a form of treatment for autism is that behaviour is shaped into something that is not natural to the individual. This raises ethical considerations; is it right to define success for a child with autism as behaving

like a non-autistic child? On a positive note, behavioural intervention teaches children with autism functional lifelong skills and addresses behavioural presentations of autism that parents have reported to be having difficulty with. There is increased evidence to suggest that behavioural programmes lead to increased language, social, play, and academic skills in children with autism, as well as a reduction in some of the severe behavioural problems often associated with the disorder (Rogers and Vismara, 2008) (Eikeseth, 2009). It is particularly effective the earlier the intervention starts.

With certain drug treatments, there is the argument that the impact is short term at best and at worst it requires a lifetime of taking medication. There are also certain side effects that might occur as a result of drug treatment. SSRIs have side effects such as weight

gain, insomnia and increased agitation, whilst other drugs such as Risperidone, an antipsychotic, have drowsiness and increased appetite as their most common side effect. There is also an argument that drug therapy does not treat the core features of autism such as deficits in social skills, delayed or lack of communication skills and rigidity with certain routines and structures. These medicines also do not work for everyone and each individual with autism may respond differently to the medicines. In addition, changes in response to a medicine can occur as time goes on, even when the dose is not changed. Over time, some people develop tolerance (when a drug stops being effective) or sensitization (when side effects worsen) to medicines. It might therefore be fair to state that most medicines have a limited role in improving the symptoms of autism.

Exam Hint: Good critical evaluation is what pushes exam answers into higher band brackets. You should explore the success rate of each form of treatment. To move into a higher band, you could consider how the success criteria for the treatment are measured.

Most feedback about the success or lack of success of both treatments has been mainly based on observation and reliant on parent's accounts; therefore, it can be argued that this is a subjective way of measuring the success of either treatment. The data is qualitative rather than quantitative. You may also hear about children diagnosed with autism who reach "best outcome" status. This means they have scored within normal ranges on tests for IQ, language, adaptive functioning, school placement and personality, but still have mild symptoms on some personality and diagnostic tests.

Conclusion

Autism is lifelong developmental disorder with no known cures. A significant amount of research has been conducted into the causes of autism and research is increasing into the treatment of autism. Given that research has indicated there appears to be functional and structural differences in the brains of individuals with autism as well as the fact the main symptoms of autism are displayed behaviourally; drug therapy and behaviour interventions, such as ABA have been cited as the two main recognised and proven treatments. It is important to state that treatment for autism is not a one size fits all approach.

Both forms of treatment can and do complement each other in certain cases. Early intervention is crucial to the success rate of any treatment.

This is why most treatments for autism happen in early childhood. As a result of early intervention, we know that many children with autism go on to live independent and fulfilling lives.

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Glossary

ABA

An acronym for Applied Behaviour Analysis. Applied Behaviour Analysis is a scientific approach that uses the techniques and principles of Skinner's operant conditioning to bring about a positive change in an individual's behaviour.

Antecedent

In ABA, terms relates to the setting/environment and the event that occurred directly before the behaviour happened.

Anti-psychotic drugs

A class of medication mainly used to manage psychosis (including delusions, hallucinations, paranoia or disordered thought). In autism, they are mainly used to treat aggressive behaviours and self-injurious behaviours.

Behavioural intervention

A plan designed to intervene with and improve an individual's undesirable behaviour patterns. The most common form of behavioural intervention being **ABA**.

Best outcome

Refers to the fact that some children with autism after a period of treatment would have scored within normal ranges on tests for IQ, language and social functioning but still have mild symptoms on some personality and diagnostic tests.

Biological intervention

Uses prescribed medication to improve (not cure) the problematic symptoms of autism

Discrete trial training

Is an intervention method based on the science of Applied Behaviour Analysis (ABA). It is a highly-structured method of teaching skills by breaking them down into smaller, teachable components. This is done in intensive teaching sessions until the skill is mastered.

Extinction

Refers to a procedure used in ABA in which no reinforcement (positive reward) is provided for a problem behaviour in order to decrease or eliminate said behaviour.

Motivational variables

Alter the frequency of all behaviour, the motivational variable increasing the likelihood of a behaviour occurring again.

Operant conditioning

Refers to the condition in the frequency of a behaviour is determined by past consequences. In other words, behaviour is controlled via consequences either something positive or negative, depending on if you want the behaviour to occur again.

Selective serotonin reuptake inhibitors (SSRIs)

Work by increasing serotonin levels in the brain and is mainly used to treat depression as it addresses chemical imbalances in the brain. In autism, it treats symptoms such as anxiety, depression and obsessive compulsive disorder.

Stimming

Is the repetition of physical movements, sounds, or repetitive movement of objects mostly common in individuals with people with autism spectrum disorders.

Theory of mind

The ability to attribute mental states (beliefs, intents, desires, etc.) to oneself, and to others, and to understand that others have different perspective from one's own.

Worksheet: Treatments for Autism

Name: _____

1. Outline behaviour modification as a treatment for autism.

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2. Evaluate the effectiveness of behaviour modification as a treatment for autism with reference to research.

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3. Outline drug therapy as a treatment for autism.

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4. Evaluate the effectiveness of drug therapy as a treatment for autism with reference to research.

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5. The parent of a 4-year-old child recently diagnosed with autism comes to you for advice. What would you tell them about the impact and success rate of the various different treatment options?

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