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Treatments and therapies for autism

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Treating Autism Guide for Parents



LOTTERY FUNDED



Introduction

Autism and Autism Spectrum Disorder (ASD) are general terms for a group of developmental disorders that impair one's ability to communicate and interact with others, often involving repetitive behaviours and restricted interests and activities.

The diagnosis of autism covers a wide range of symptoms, and each of these symptoms can range in severity. For example, while some individuals with autism are completely non-verbal and have no use of spoken language, some develop very complex language skills early on while suffering impairments in other areas such as understanding social interactions. Similarly, while many individuals with autism suffer cognitive impairments or learning disability, others have above-average intelligence and excel in many academic subjects.

While it has been assumed that children are born with autism and that symptoms remain static and lifelong, it is now clear from published research that this is not always the case. Not only do some typically developing children lose previously gained skills and milestones of normal development and regress into autism, but it has also become evident that some children on the autism spectrum present with decreasing symptoms, or in some cases even complete recovery from symptoms and loss of autism diagnosis.

This booklet has been produced in order to provide parents and carers with an overview of some interventions for autism available in the UK. The focus is on therapies and treatments that can be home-based and in which parents can play an active role.

Because autism is a spectrum disorder, and may even be thought of as 'autisms', it is to be expected that some treatments may work well for one person but not at all for another. Research has shown that those who go on to improve substantially or even lose their diagnosis of autism can still struggle with remaining issues such as social anxiety, attention deficit disorder or speech or cognitive impairments. None of these facts, however, should alter the primary goal of professionals and parents, which is to improve the health, overall functioning, level of independence and quality of life for people with autism.

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Behavioural and Developmental interventions for autism

Behavioural therapies are designed to reduce problem behaviours and teach appropriate behaviours and skills. Developmental and relationship-based interventions, in contrast, are not designed to directly target behaviours but instead aim to improve a child's* ability and interest in social interactions and communication. This is achieved by using the child's own interests and actions as a starting point to building and improving parent-child relationship and teaching skills.

When choosing the right intervention(s) for your own child, start from their unique needs and personalities. Family situation, including availability of help and support from family members, friends and volunteers should also be taken into consideration. It is always recommended that parents research each option in depth (detailed information on some interventions is available on treatingautism.org.uk), and by talking to professionals and especially to other parents in similar situations. Seeing these various interventions and programmes in action by visiting families already running them, or centres or home providers will also help you make the decision that is best for your child and your family.

** The words child and children are used in this document a great deal; however, our charity knows that people of all ages can learn and develop in all ways. Please know that all treatments and therapies can be helpful to many individuals, regardless of age.*

Applied Behaviour Analysis (ABA)

ABA is a learning programme aimed at improving areas such as speech and language, communication, academic learning, problem behaviours, and general life skills.

A qualified consultant defines areas in which a particular child has deficiencies and develops a plan on how to work on these. **The programme breaks skills into small tasks, which are taught through repetition by therapists working with the child on a one to one basis.** When the child does the task successfully, s/he is rewarded.

A variety of play-based activities can make an ABA session fun for children. Undesirable or harmful behaviours, like aggression or self-harm, are discouraged or ignored. As the child learns the skill and it becomes automatic, tangible rewards are faded away and replaced by social reinforcements, like praise. Data is taken throughout the session for all tasks, so that progress can be tracked and modifications made. The programme can run in tandem with targets set by other professionals, such as occupational or speech and language therapists

Traditional Lovaas approach, Verbal Behaviour and Pivotal Response Therapy, are types of ABA. A successful programme is likely to use



a combination of aims and methods from all types, depending on the needs and character of the child.

A traditional ABA approach recommends 20-40 hours per week of therapy, as well as therapist workshops and meetings with consultants. This can be time consuming and expensive, however, even a smaller number of hours per week can often result in improved skills and behaviours.

A consultant should hold a BCBA qualification awarded by the US-based Behavior Analyst Certification Board. The UK Society for Behaviour Analysis is the UK regulatory industry body uk-sba.org.

Several local authorities in the UK will now fund ABA. There are also some special schools that offer ABA as part of the curriculum. Most of them take pupils placed by local authorities, and some have a limited number of fee-paying places.

● **More information, including the evidence base for ABA, can be found in Treating Autism ABA info-sheet in resources section of the website treatingautism.org.uk**



DIR®/Floortime™

DIR/Floortime was created by Dr Stanley Greenspan and Dr Serena Weider. Parents and caregivers are coached to provide the intervention from a DIR practitioner. The DIR practitioner meets with the family once a month, or more frequently if preferred.

DIR stands for Developmental, Individual Differences, Relationship-Based:

Developmental: Parents are coached in understanding their child's level of self-regulation and emotional functioning, and how to support them to develop the next capacity. These nine developmental capacities are important for healthy emotional, social and intellectual growth: To be calm and interested in their surroundings; To engage emotionally with others; To initiate and respond in two-way purposeful communication; To communicate in a complex way; To think imaginatively; To think logically and develop 'theory of mind'; To see the many reasons for things; To be able to think in shades of grey; To be able to self-reflect.

Individual Differences: In autism, sensory, motor, psychological and biomedical differences are the norm. These profoundly affect each individual's experience within their bodies and in their world. The parent and the DIR practitioner work together with the broader network of professionals to remove challenges, foster development and support the child/adult with autism in reaching their potential.

Relationship-Based: The emotionally charged,

loving interactions between the child/adult and their caregivers are at the core of the Model.

Floortime play integrates the D, I and R, so that the child/adult with autism can evolve towards independent thinking, sustaining warm, loving relationships and having fun!

● **Further information can be found on icdl.com or stanleygreenspan.com**

Intensive Interaction

Intensive Interaction is a naturalistic, nurturing, learner-centred, play-based therapy that aims to increase learning and development more typically via quality relationships and play.

It focuses on addressing some of the key difficulties and impairments present in autism by working on and developing social interaction, relationships, flexibility, and reducing stress and anxiety. I.I. supports the child/adult via ever more meaningful interactions, “conversations”, games and relationships. It does this in a respectful, joyous, dynamic and playful way, continuously adapting to the individual learner and his/her interests. I.I. sessions are meant to be highly enjoyable for both parties involved!

I.I. is highly individualised and involves sensitively tuning in to learners to ensure that the parent/therapist works at their level. Mainly taking the lead from the learner means that the activity, “conversation” or game is highly motivating, the pace and tempo are just right since they are learner-led, and the content is

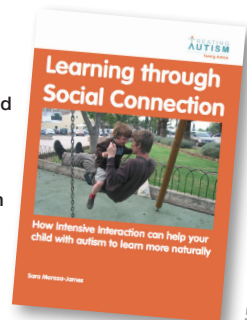
understandable as, again, it is chosen by the person with autism.

All human beings require a sufficient quantity and quality of social interactions. Sadly this is sometimes difficult for individuals on the autistic spectrum. I.I. is a way of socially including a person with autism whilst simultaneously teaching him/her how to be more social and making these social interactions increasingly easier to access. It is based on research on how these communication skills are developed naturally.

By making social interaction easier, I.I. makes subsequent learning easier as the child/adult learns to relax, trust and truly enjoy the company of others; to increase their ability to read and use body language, facial expressions, eye contacts, and intonation; and to become more flexible and to explore and trust the world around them.

To access I.I. there is a Facebook group for parents, one-day as well as advanced courses run at various locations around the UK, and various books and DVDs. I.I. consultants can be called to your home to work with you and your child with autism and many schools and professionals around the UK and in other countries offer Intensive Interaction.

● **More information, including the evidence base for I.I., can be found in the [Treating Autism](#) guidebook, available in the [resources section](#) of treatingautism.org.uk**





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Relationship Developmental Intervention®

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RDI aims to empower parents by helping them to better understand how autism impacts their child and how they can 'guide' their child to overcome obstacles associated with autism. RDI is based on research both in general child development and autism, and works on building the child's capabilities in social interaction, overcoming 'black and white' rigid thinking and gaining own emotional recognition and self-control.

Parents work with a RDI Certified Consultant to help their child master the developmental milestones autism has restricted, such as

seeking parent guidance; flexible thinking; social referencing; developing memory abilities that enhance learning individually and collaboratively; making decisions, problem solving in the moment and through reflection; and developing and maintaining friendships and relationships.

A RDI programme focuses on quality carer / child interactions that are tailored to the child's unique development with the aim of moving the child forward developmentally, socially and emotionally. The carer uses everyday activities such as housework or play to target RDI goals. Filmed interactions allow the consultant to provide feedback to the family. Families use the RDI Platform, which is a secure database, to share these filmed interactions privately with their consultant and to access other important components of the programme. Eventually, the consultant wants to teach and hand over the 'RDI guiding principles' to the family and fade the role of the professional service. RDI Consultants train through RDICoconnect and recertify yearly.

- For further information rdiconnect.com.
Information on Education, Health and
Care (personal care plan) funding:
brightfutureschool.co.uk/resources/



The Son-Rise Program® (SRP)

SRP began in the 1970's in America when one family, seeking help for their son, created a child-centred social therapy programme, now known as Son-Rise.

SRP focuses primarily on social interaction through play. The activities of play are child-led in the early development phases. As the connections between child and therapist develop, SRP becomes a more adult directed programme where play is more structured to help the child to learn.

SRP focuses on four key areas of social development: Eye Contact and Non-Verbal Communication, Communication, Interactive Attention Span, Flexibility. Progress is plotted on the SRP Developmental Model.

SRP is home-based, with a dedicated, distraction-free playroom, possibly a bedroom, which helps to create a favourable learning environment for the child. Interaction is on a one-to-one basis, with the adult using the three 'E's' (energy, enthusiasm, excitement) to engage the child.

Parents are usually the leaders of their own programmes. They receive their training through UK-based SRP training events, or by attending the Autism Treatment Center of America. A UK-based SRP teacher can also be

sourced who will demonstrate techniques and provide training and feedback. There are also independent practitioners who have previously been part of SRP that can provide similar services.

The size and scale of each programme can be adapted to meet the child's and family's needs. Programmes can be full or part time. SRP requires a team of therapists. The team can include family members but many teams use volunteers sourced locally from universities and colleges. The most expensive resource is time. Some programmes can run for over five years. Financial contributions can sometimes be obtained from Local Authorities to help fund programmes.

● More information and useful links:

Son-Rise Programme: autismtreatmentcenter.org;

Play Therapy Based Programmes:

autismseminars.org, autismathome.co.uk.





Sensory and motor/physical interventions for autism

Motor and physical interventions are therapies which make use of, or which aim to improve, motor functioning—control, coordination and movement of the body. Sensory interventions are treatments and therapies that make use of, or aim to improve functioning and balance of one or more of the senses.

Most children and adults with autism have movement and coordination difficulties and/or sensory processing problems. Frequently, the severity of the motor-sensory complications directly relates to the severity of autism. In addition vestibular (balance) and proprioception (sense of position of own body and movement) problems are often present.

Addressing these dysfunctions can help in a variety of ways, from improving gross and fine motor skills to tackling sensory sensitivities thus reducing discomfort, stress and anxiety. As the person is less overwhelmed, awareness, focus, executive functioning and social skills can improve.

Sensory and motor interventions can be delivered by health-care professionals (such as occupational therapists, behavioural optometrists, or physiotherapists), parents and carers, and by people on the spectrum themselves. We have provided a non-exhaustive list of therapies and activities that are available in the UK, several of which are covered in greater detail.

Combined-Multi Component Therapies

There are a number of interventions that use a wide range of motor and sensory techniques, including:

- Occupational Therapy
- Sensory Integrative Therapy
- Retained Reflexes Therapy
- The Low Arousal Approach
- Equipment-specific approaches such as Therapy Ball Chairs
- Multi-Sensory Environments such as Snoezelen
- Restricted Environmental Stimulation Therapy

Physical Activities There are many interventions based around physical activities undertaken by the person on the autism spectrum, including:

- Martial arts-based activities such as tai chi, taekwondo or karate
- Mind-body interventions such as yoga, meditation and slow breathing
- Sports-based activities such as running, jogging, rebound therapy (trampolining)
- Creative therapies such as dance movement therapy
- Other interventions in which physical exercises/movement activities are a significant component such as Brain Gym®.

Many of these techniques have been reported by parents to bring numerous benefits. Some, like karate or meditation, have also had these positive effects confirmed through by scientific studies.

Touch There are some interventions which use

touch or which are designed to reduce tactile defensiveness, including:

- Brushing technique
- Hug Machine
- Weighted Items such as weighted vests and weighted blankets

Hearing Music therapies and programs such as Orff Approach have been shown to improve social and communication skills in autism. In addition to interactive music therapies, some hearing interventions use listening to sounds through headphones, and/or are designed to help with hearing problems. Some of those include Auditory Integration Training techniques such as The Listening Program®, Berard Method®, Johansen®, and Tomatis®

Smell and Taste There are some interventions which use smell and taste or which are designed to help with smell and taste problems such as Aromatherapy

Sight There are a range of interventions which use sight or which are designed to improve vision, including:

- Lenses such as Ambient Prism Lenses
- Lights such as Lightwave Stimulation
- Overlays such as Coloured Overlays
- Vision Therapy

Manipulation interventions include a range of treatments and therapies in which someone other than the patient manipulates or moves his or her body. In many cases, manipulative interventions focus primarily on the structures and systems of the body, including the bones and joints, soft tissues, and circulatory and lymphatic systems. Specific manipulative and body-based practices include:

- Acupuncture
- Chiropractic
- Massage such as Tui Na and Qigong massage for autism
- Osteopathy
- Patterning therapies
- HANDLE®
- The Scotson Technique®

Various acupuncture techniques developed specifically for autism have been shown in studies to be effective at reducing disabling symptoms of autism and improving executive functioning. Unfortunately those therapies and skilled practitioners are at present time not widely available outside of China. However a simpler technique of Qigong massage, which is loosely based on acupuncture and Chinese medical practice, has been developed in recent years and has been shown to help reduce many problem behaviours and symptoms in a large number of children.

Some of the more widely used and better-understood therapies are discussed in more detail below.

Sensory massage therapies for autism

Qigong Sensory Treatment (QST) massage for autism

is a massage treatment that works by decreasing tactile (touch) and other sensory abnormalities present in almost all children and adults with autism. The QST protocol is a 15-20 minute whole-body massage that is administered by parents at home on a daily basis.



Studies have shown overall reduction in severity of autism after several months of regular QST, including improvements in autistic behavior, communication, and sensory symptoms. In addition, lots of parents report improved child-to-parent interactions, bonding, and decreased parenting stress.

Qigong massage is suitable for all ages, and although the results are more rapidly achieved in younger children, others can also greatly benefit. Success is influenced by how well parents can learn the technique, adapt it to their individual child, and engage in the massage daily.

Parents reported that the massage helped to build a stronger bond and improved the experience of touch and relationship. Children sought out touch and affection from their parents, and parents felt closer and more connected [PMID: 25878901]

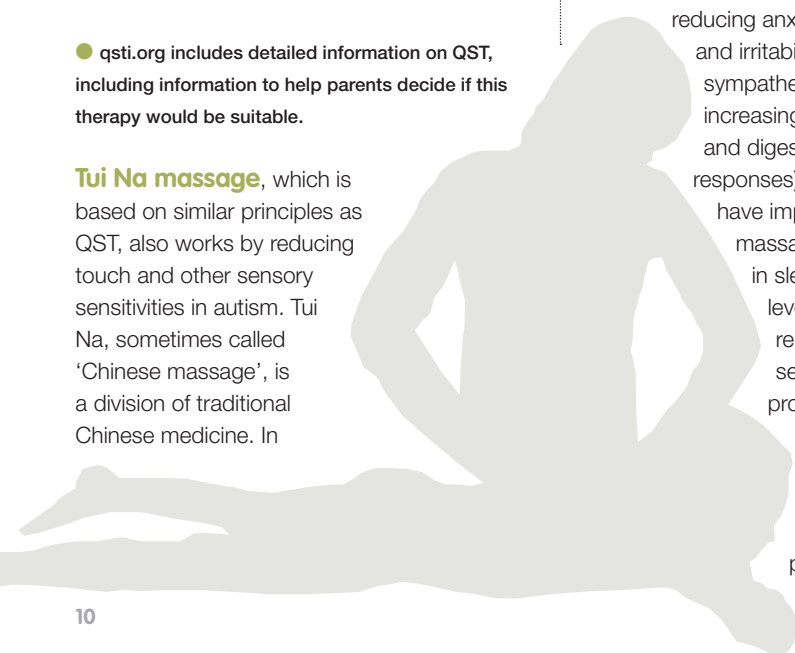
● **qsti.org** includes detailed information on QST, including information to help parents decide if this therapy would be suitable.

Tui Na massage, which is based on similar principles as QST, also works by reducing touch and other sensory sensitivities in autism. Tui Na, sometimes called 'Chinese massage', is a division of traditional Chinese medicine. In

"Child-to-parent bonding improved, and the experience of touch and relationship normalized for parent and child. Children were better able to make eye contact, focus, and listen, and parenting stress decreased. **This program can be recommended to parents and early intervention programs at the time of autism diagnosis.** It can be expected to improve educational outcomes for children and reduce stress in the preschool classroom environment." [PMID: 25878901]

addition to being used to address physical problems and injuries, it is also used widely in China to address chronic problems such as headaches, constipation, irritable bowel and sleep problems, all common in autism.

It is thought that this massage, and touch-therapies in general, reduce stress and balance the autonomic nervous system by reducing anxiety, aggressiveness and irritability ('fight or flight' sympathetic responses) and increasing relaxation ('rest and digest' parasympathetic responses). Many parents who have implemented regular massage report improvements in sleep, social skills, stress levels, outbursts, speech, repetitive behaviour, sensory and digestive problems. In addition, practicing the massage daily can further strengthen the family bond, and so reduce parental stress.



“Massage is our special time with S. We try to talk, we laugh and sometimes struggle but we are very intensely together. I see direct benefits: his sleep improved almost immediately, he communicates better and I am getting reports of improved attention from the school.”

● tuinacentre.co.uk has information on UK training courses for parents.

The Scotson Technique® (TST)

TST® was developed by Linda Scotson, based on her research into respiratory systems of children with disabilities that showed that many neurological problems led to deep respiratory problems and that breathing influenced cerebral blood circulation, body structure, posture, speech production, sleep and general health. Children with autism, cerebral palsy and brain injury often have immature and abnormal breathing patterns, which impede the delivery of oxygen to tissues, including the brain and gut and contributing to abnormal sensory, motor and metabolic function.

The treatment is administered by applying gentle pressure on the child or adult’s chest and abdomen, which attempts to mimic the pressures of breathing on the body’s internal tissues.

The Advance Centre in West Sussex provides training sessions in TST®. Once trained, parents carry out the daily therapy at home. The exercises are very gentle and can be done when the child/adult is asleep or watching their favourite programme

● treatbreathinginautism.com Parents can apply for grants to cover cost of training through treeofhope.org.uk or caudwellchildren.com.

Auditory Integration Training (AIT)

Auditory Integration Training, sometimes called Sound Therapy, is a music programme that may help people with autism, ADHD, dyslexia, hearing sensitivities, developmental delays, poor concentration and a variety of other behavioural disorders.

Many people with autism experience abnormal responses to sounds. The aim of AIT therapies is to improve abnormal sound sensitivity and behaviours that might result. The programme involves listening to electronically modified music through headphones, which provides stimulation to the hearing mechanism. This in turn can improve attention and understanding, and help one be more ‘in tune’ with the environment.

Some parents may notice outward behaviours of abnormal responses to sound. Those having extreme hearing sensitivity or distortions in how they process and experience sounds may exhibit behaviours such as covering their ears, running from, or crying in response to loud sounds; being easily distracted by random noises; difficulty following verbal instructions or commands; struggling with language delay or disorder.

Some of the reported changes following AIT have included improvements in child’s or adult’s disability such as: reduction of sound sensitivity, being better able to cope with background noise, improved focus and understanding, improved speech/clarity of speech, increased awareness and interest in conversation.



Biomedical treatments for autism

Children and adults with autism suffer from health problems much more commonly than their peers. These health problems include **seizures**, headaches, **gastrointestinal problems**, various **nutritional deficiencies**, **metabolic conditions**, compromised immune system **including allergies** and autoimmune disorders and many more (for references see our scientific review *Medical Comorbidities in Autism Spectrum Disorder*). It is also a sad fact that mortality is significantly increased in autism, with much higher death rates than in the general population.

Symptoms of health problems in autism are not always visible on the surface or easy to detect, but they may influence the child's behaviour, worsen severity of their autism-related symptoms, and undermine their quality of life. On the other hand, diagnosis and treatment of these medical conditions can often lead to **an improvement in many symptoms, including irritability, aggression, anxiety, self-injurious, self-stimulatory and repetitive and obsessive behaviours**. Improvements in the core symptoms of autism, speech and communication, sociability and imagination have also been frequently reported.

It is crucial never to dismiss concerns regarding self-harming, aggression, night-waking, change in

appetite, severe anxiety, tics, and many more as 'just autism'. None of these behaviours are part of the autism diagnosis, and there is much evidence to show that behaviour is often the result of a physical cause, for example reflux pain or seizures.

Autism is not a single condition but includes many diverse groups of individuals who are affected by autism for different underlying biological reasons and suffer from different comorbid health problems. It is therefore not surprising that **no single health concern will impact every individual with autism, nor is any single treatment approach appropriate for all**. While, for example, dietary intervention in particular is reported to be beneficial in a large number of cases, there is no 'one size fits all' diet. Similarly, treatment with nutritional supplements that address metabolic problems are shown to have life-changing effects in some children and adults with autism, but have no effect at all in others.

Gastrointestinal problems are common in autism. They include: reflux, chronic constipation or diarrhoea, colic, digestive enzyme deficiency, low absorption of nutrients, bacterial dysbiosis (presence of harmful bacterial in the gut), food allergies and sensitivities and many others.

These problems often stay hidden and go untreated

“Problem behavior in patients with autism may be the primary or sole symptom of the underlying medical condition, including some gastrointestinal disorders” [PMID 20048083]

In a survey of 220 people conducted by our charity, more than **95%** of respondents who had used biomedical treatments for autism found those treatments to be **beneficial** and **24%** found those benefits to be **life-changing**.

In regard to specific problem areas,

57% saw improvements in sociability,
53% in sleep problems,
50% in anxiety,
50% in aggression,
66% in eye contact,
48% in receptive language,
47% in expressive language,
23% in self-injurious behaviour, and
73% in bowel problems.



because they are not visible on the surface, but instead present in unusual ways and through problem behaviours. This is especially true for younger children and those who are not able to communicate effectively. Negative behaviours that are often dismissed as ‘just part of autism’ but can in fact be signs that the person is suffering health problems include: irritability, aggression, destructive behaviours, hyperactivity, sleep problems, anxiety, obsessive and rigid behaviours, strange posturing (for example bending over furniture) or movements, bloating, screaming, chest banging, biting and other types of self harm. Recent research has also confirmed that, contrary to commonly-held beliefs, the presence of gut problems in children with autism is in most cases not due to picky eating or receiving medication.

Several very promising treatments are being studied at the moment following many positive reports by parents and doctors. Some of those approaches include daily supplementation with digestive enzymes and probiotics, or special diets that restrict sugar and complex carbohydrates. A diet that excludes gluten (protein found in wheat and some other grains) and casein (protein found in milk) has gained wide popularity amongst parents and clinicians in recent years. The positive effects of this diet in a number of children and adults are likely linked to the recent discovery that some individuals with autism are sensitive to common food proteins such as those found in wheat and milk.

Many individuals with autism have low levels of certain vitamins and minerals, including: zinc,



magnesium, iron, vitamins B-6 and B-12, vitamins D and E, and folates. Supplementing some of those nutrients can not only normalise their levels but can address some of the underlying biomedical problems frequently found in autism, such as immune abnormalities or metabolic problems, and is sometimes reported to result in improvements in autism-related symptoms and behaviours.

It is important to remember that not all individuals with autism suffer gastrointestinal or nutritional deficiency problems, so dietary and other interventions will not be appropriate for all. It is important to always seek advice and recommendations of a qualified practitioner before undertaking any dietary or other intervention.

Allergies and food sensitivities are present in many children and adults with autism, who also often suffer intolerances to various things in their environment. Sometimes their immune system does not work as well as compared with non-ASD people. Those problems are occasionally visible on the surface, as in the case of eczema, asthma, allergic rhinitis (runny or stuffed sinuses, red eyes), or frequent ear infections. On the other hand, these problems can sometimes be hidden, with the only visible signs being worsening of problem symptoms and behaviours—for example, sleep problems, irritability and tantrums, hyperactivity, lack of focus, daytime fatigue, anxiety, obsessiveness—that are often wrongly attributed to ‘being autistic’.

Treating allergies and avoiding foods and things in the environment that a person with autism is sensitive to can often result in improvement in negative and challenging behaviours and better

overall functioning. Many parents have reported improvements in their child’s behaviour and functioning at school and at home when offending foods are avoided, as for example in the case of foods containing gluten (see previous section).

Problems in the function of the immune system and chronic inflammation have also been found in a subgroup of people with autism, and it is believed that some of the treatment agents that are reported to help reduce autism-related symptoms work by lowering the inflammation and by helping the body defend itself from harm. Sometimes simply correcting nutritional deficiencies, such as the mineral zinc or vitamin D (see previous section), can improve function of the immune system.

It is difficult, however, to know by looking at people if their immune system is balanced and if they suffer allergies. When these issues are suspected it is important to speak with a doctor and specialists to determine what tests should be carried out and whether to address problems with medicines such as antihistamines. In contrast to true allergies, which can be detected through medical tests, some milder sensitivities and intolerances—for example to foods, chemicals, pesticides, perfumes and even scents and detergents – can often only be detected by removing the suspected item from the child’s environment or diet and reintroducing it later to observe if there is any worsening of symptoms or behaviours.

Abnormal response to stress is very common in children and adults with autism. Their bodies overreact to what other people would not consider as a fearful or threatening situation, and also take much longer to calm down afterwards. Their hormones and other body systems are often found to be in a state of permanent ‘fight or flight’

When you get your child's diagnosis you can be told that there is no future to look forward to for them. Everything appears bleak. **Treating Autism** completely turns that on its head. It has **changed not only my son's life but our whole family's life.**

(Feedback from a parent)

response (called autonomic sympathetic activity), with the absence of the much-needed 'rest and digest' state (parasympathetic activity).

Aggression, impulsiveness, anxiety and fearfulness, sleep problems, and difficulties in coping with new situations are some of the main signs of dysfunctional autonomic stress response. Medications like low-dose propranolol (which regulates the production of stress hormone adrenalin in the body), calming environments (removing emotional and physical triggers), sports such as karate, mild exercises such as qigong and yoga, and meditation are often reported to have positive effects and help reduce these disabling symptoms. Touch-therapies such as massage for autism (see previous section) also bring positive effects through calming and lowering the stress responses in autism.

Oxidative stress is an imbalance between antioxidants and pro-oxidants in the body that can be damaging to cells and organs. Children and adults with autism often have increased oxidative

stress, which is correlated with severity of their autism symptoms – those who are more severely affected have more oxidative stress in their bodies.

Several treatment agents that target the problem of oxidative stress have already shown great promise for reducing negative symptoms in autism. For example, the amino acid N-acetylcysteine (NAC), which is safe and available over the counter, has been found to reduce irritability in autism. In another small study a subset of children who supplemented with vitamin B12 showed improvements in both oxidative stress levels and severity of autism.

A powder extract derived from broccoli sprouts, called sulforaphane, is another dietary supplement reported to reduce disabling symptoms of autism in some individuals. Similarly, omega-3 fatty acid supplements also show good promise in helping lower hyperactivity and repetitive behaviours, and improving socialisation. Fatty acids are essential for the development and function of the brain. Omega-3 fatty acids and fish oils are popular nutritional supplements and widely considered safe.

“Care providers should be aware of the potential impact of allergic diseases on behavioral symptoms in ASD children.”

Dr Jyonouchi, New Jersey Medical School



“Dear Treating Autism, Just to let you know that information you provided had a **positive outcome**... The introduction of these interventions by our doctor meant that in **just five days our child showed a marked improvement** in behavioural responses, a reduction in OCD rituals and rigidity, reduction in oral defensiveness enabling new foods to be introduced on their first attempt... These interventions have given the **whole family a better quality of life** and more social opportunities to help develop our child, giving them the opportunity to **just be a child like any other!**

(Feedback from a parent)

It is believed that the powerful antioxidant effects of these agents is one of the reasons for their positive effects in some people with autism.

Various other metabolic and mitochondrial problems

are frequently present in children and adults with autism, in addition to oxidative stress, showing that they struggle to clear environmental toxins and to produce enough energy to fuel their bodies and their brains. Increasingly common is the investigation of SNPs (single nucleotide polymorphisms), minute variations in DNA, to plan treatment pathways.

In the majority of investigated cases abnormal metabolism is not linked to genetic causes, and correct identification and treatment of these problems can bring about improvement in behaviours and functioning. Many supplements and interventions that help metabolic energy production such as NAC (see above), ubiquinol (co-enzyme Q10), carnitine, carnosine, biotin, thiamine, ketogenic

diet, tetrahydrobiopterin (BH4), methylcobalamin (vitamin b12) or folinic acid can bring about mild or substantial improvements in autism-related symptoms in some individuals

Epilepsy and seizure disorders are unfortunately very common in autism – almost one third of children with autism will suffer seizures at some point in the lives, compared to only two percent of typical children. Seizures are the leading cause of premature death in autism.

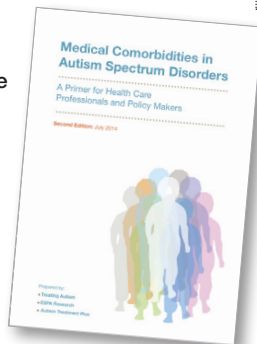
It is often very difficult to know without proper testing if a person is suffering from abnormal brain activity; apart from whole-body convulsions, seizures can also manifest simply as a child ‘momentarily blanking, or appearing to be daydreaming’ or having tics, crying spells, facial grimacing or ‘weird’ body movements.

There is some evidence that treatments that are generally used for some seizure types, such as ketogenic diet and cannabidiol, also have a

potential for reducing autism-related problems and behaviours in some individuals. Autoimmune cause should also be ruled out in some cases, especially in sudden-onset epilepsy and where there is a history of autoimmune disease in child's family.

Other treatments for autism are also available, like those that address the brain and its workings more directly, like Transcranial Magnetic Stimulation (TMS) or Neurofeedback. TMS in particular has an excellent safety profile and is being used successfully in many parts of the world as a treatment for major depression, and recent studies are showing very good results in reducing autism-related symptoms, lowering stress responses, and improving general functioning. Unfortunately TMS is not widely available in the UK at present; NHS hospitals and centres that do have it usually restrict its use to treating depression. This situation is hopefully set to change in the near future, as more studies emerge.

Further information on published studies can be found in our publication *Medical Comorbidities in Autism Spectrum Disorder* and parental reports, and can be found in our recent survey (available on request).



RECOMMENDED READS

- *Navigating the Medical Maze with Autism Spectrum Disorder.* Sue Ming MD and Beth Pletcher MD [ISBN-10: 1849059713]
- *How nutritional status, diet and dietary supplements can affect autism. A review.* Anna Kawicka and Bozena Regulska-Illow [PMID 23789306]
- *Autism: Effective Biomedical Treatments?* Jon Pangborn PhD and Sidney Baker MD [ISBN-10: 0974036099]
- *Autism: Exploring the Benefits of a Gluten- and Casein-Free Diet: A practical guide for families and professionals.* Paul Whiteley, Mark Earnden and Elouise Robinson [ISBN-10: 0415727634]

The above titles, and many more, can be borrowed through Treating Autism members' library

DISCLAIMER Treating Autism does not offer medical advice and we do not endorse any practitioners or treatments. It is always important to seek appropriate professional advice before initiating any treatment. Some interventions like diets, probiotics and simple nutritional supplements are inexpensive and easy to implement, but parents should always seek help and guidance from a qualified practitioner. Your medical doctor or nutritionist and other specialists can advise on tests and help guide treatments. (Treating Autism can provide, on request, a list of qualified UK practitioners as recommended by members, but do not endorse or directly recommend any individual or organisation)



Communication Strategies and Speech Therapies

Difficulties with speech and communication are one of the most disabling features of autism. While some individuals with autism suffer from total lack of speech, some are able to express themselves verbally but have problems understanding finer aspects of communication and social rules and expectations. In all cases these communication problems negatively affect a person's independence and quality of life.

There are many strategies and therapies that can be used to improve the child or adult's ability to communicate. These range from therapies aimed at improving the strength and ability of the muscles needed to produce sounds, to 'social skills' strategies that focus on developing understanding of the ways people behave and teaching appropriate behaviours and ways to react and communicate in social situations.

Speech therapists and/or occupational therapists can recommend oral motor exercises, such as blowing sucking, tongue movements, breath control exercises and others, with the aim of enhancing control of oral movements and encouraging a child to take part in therapy. These are done as games and can be carried out in a group therapy session, or at home.

Some programmes such as computer-based **Fast ForWord**, or the intensive therapist-led **Lindamood Bell** therapy, focus instead on developing and strengthening cognitive skills and improving vocabulary, reading, comprehension, numeracy, as well as memory, speaking and self

confidence. **GemlIni** is another such programme, providing teaching videos for learning and retaining of language. It offers an online system of recording the child's activities and progress, and creating video lessons to practice in various environments, which can be accessed by therapists, teachers and parents involved with the child.

There is a growing variety of methods that can be used by people with communication problems to assist or replace spoken speech. They come under an umbrella term of **Augmentative and Alternative Communication (ACC)** and range from sign language (**Makaton™**) symbols and pictures, to computer programmes, apps and complex electronic devices. A type of ACC popular for autism is **Picture Exchange Communication System (PECS)**, designed to teach functional communication. A student is taught to exchange a picture of a desired item for the actual object. Once mastered, the student moves on to using symbols, constructed phrases and sentences, making spontaneous requests and comments. Augmentative devices such as the programme Proloquo2Go (used on an iPad or iPod) are now relatively affordable and have proved successful.

Rapid Prompting Method (RPM), a teaching method developed by Soma Mukhopadhyay, has become popular in recent years, providing an effective way of communicating for children and adults. Information is presented to the student, following by a choice of answers. The student picks up answers **independently**, by pointing, typing or writing. The emphasis is on teaching academics, but

communication and motor skills are also taught in the process, along with the reduction of excessive self-stimulatory or negative behaviour.

The starting point of RPM approach is the assumption that individuals with autism are cognitively intact – the problem is that their sensory systems (visual, auditory, tactile, kinaesthetic) have developed differently and they may have motor planning challenges. In RPM the teacher adapts to the individual's learning channels, teaches age-appropriate academics and empowers the expression of thoughts, opinions, learning and reasoning.

RPM is a relatively low cost method. There is no need for high-tech equipment and it is possible for parents/helpers to learn and do RPM by reading books and joining the parent support forums. There are certified RPM practitioners in the USA and UK. There is also an international parent support facebook group 'Unlocking Voices- Using RPM', offering lots of free resources.

● **Further information** halo-soma.org and unlockingvoices.com

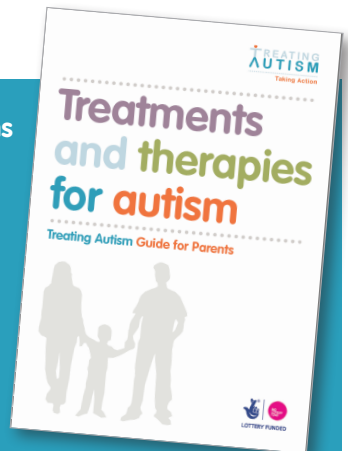
Examples of techniques for improving social awareness and communication include

TALKABOUT, a social communication skills package aimed at improving self-awareness and self-esteem, body language, social and friendship skills. **Social Stories** were developed to help people with autism to understand and behave appropriately in social situations. A social story describes a social situation in a clear and easy to understand way in order to improve person's understanding of social expectations, routines, situations, upcoming events or abstract concepts. The understanding of a particular situation helps the person find an appropriate response in a particular social situation.

The Social Thinking Program™ developed by Michele Garcia Winner offers further insight on social problem solving, social emotional interpretation and social skills.

Autism is a diagnosis of symptoms. These symptoms and medical comorbidities common to autism are all potentially treatable through a combination of approaches. Treating Autism, a charity run by parents, arms you with information and support to make positive changes to your child's life.

This booklet discusses only a small number of approaches parents of children with ASD have found helpful. For more information and the latest research in autism treatments, visit our website and social media, read our other free publications, and consider attending one of our events for parents.



Learn
about the
latest medical
breakthroughs
in the field of
autism

Build
your **support**
network and
become a part
of our growing
community

Join us for
parent **groups**,
information days,
workshops,
conferences and
other **events**

Learn
and share
knowledge &
experiences with
others on how
to best **help**
your **child**

Treating Autism is for

- parents, carers and family members of children and adults with autism
- teachers and teaching assistants
- medical practitioners and nurses
- speech and language and occupational therapists and other specialists
- researchers and students
- adults with autism spectrum disorders
- advocates

At Treating Autism we

- run local parent groups and workshops
- hold conferences presenting the latest scientific research and treatments
- create and publish booklets and documents, available free of charge
- organise and promote webinars on the latest research and practical approaches to everyday autism-related problems
- participate in and facilitate research projects
- liaise with official bodies and charitable organisations to provide better support for people with autism spectrum disorders and their families.

Treating Autism is a membership society, although non-members can access many of our services for free. Our members benefit from special offers and discounts and are regularly kept in touch with the very latest discoveries in the treatment of autism.



Website: www.treatingautism.org.uk

Email: mail@treatingautism.org.uk

Treating Autism is a registered charity run by parents and carers of children with autism. The information in this guide is for general purposes only and should not be construed as medical advice. Treating Autism does not take any responsibility or liability for any decision taken as a result of the information contained herein or the external links provided. If you need medical advice, please seek it from a suitably qualified practitioner.

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AUTISM**

Taking Action