

Issue 22 Spring 2010

Giant Jigsaw for Autism

Yes, we still need more pieces!! We already have lots, but we do need loads more as we are aiming for 1,000 pieces!! As well as giving you the chance to give your views on autism, whatever they may be, the jigsaw will raise money for biomedical research into autism spectrum disorders.

Each piece costs £20, £10 for construction and £10 to research. This means that if we reach our target Autism Unravelled will have raised **£10,000**.



There is another form included with this Update, so please do send in a photo, a drawing, a comment, or whatever you want, to make your own personal statement about autism.

We have received some beautiful examples—lots of lovely faces, plus some drawings and statements explaining how people feel about autism.

When the jigsaw is complete and it has been laid out for the public to see, all the pieces will be returned to you.

The picture above is my son Ali. You can see from this how all the pieces will fit together so that the jigsaw is never ending.

Please send us your pieces. We urgently need more!!

Research news

Rosemary Waring is still pursuing her research into the cysteine dioxygenase gene and the part this may play in autism. She is now actively seeking volunteers to help with this study. All she needs is a small scrape from inside the cheek with a brush similar to a toothbrush. If you are able to obtain this, we will send you out a kit. Rosemary is also interested in looking at a flanking gene of CDO that turns the gene on or off.

Please contact us at the address above if you can help with this vital study.



The A2 milk study is still ongoing at the school. The trial has finished and we are now waiting for the samples to be processed at the new Sunderland research centre, ESPA. Paul Whiteley has informed me that they now have their new super duper machine and our samples will be done as soon as they have got to grips with this great new machine.

There is also news regarding a project at another research facility which may eventually lead to a diagnostic test for autism. We wait for further news on this...

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AU News



What a winter!! We hope that the heavy snowfalls have not been too disruptive for you. Let's hope we've seen the last of that for a while, although one weather site was predicting heavy falls at the start of April! My dad told me that he saw snow fall in June once. Hopefully we don't see a repeat of that this year...

This Update is a lot later than we had planned, but circumstances have once again prevailed. I have now given up my paid job due to ill health and now have more time to devote to AU, which I much prefer. This will mean that Updates are sent out more regularly.

Another problem I have had is that Ali has had more frequent seizures and these have become more erratic. This plus my own health have caused a great deal of stress. There is an article in this issue about the amount of stress generated by caring for someone with autism. The authors liken it to having been in a combat situation. This made me think how much stress we all experience on a daily basis and just really take for granted. Who knows what this is doing to us?

We really hope you like our new style Update. We have decided to move with the times and get more computer savvy. The revamped AU website is also coming along (albeit slowly!). We'll let you know as soon as we are live on the web.

We hope all is well with you and yours and would love to hear from you with your tips and stories. Also don't forget to send us your picture for the Giant Jigsaw. We're waiting to receive them!

Brenda O'Reilly
Editor

IMPORTANT NEWS IMPORTANT NEWS

Unfortunately, we are no longer able to take credit or debit card payments for membership or renewals. The reason for this is that bank processing charges for this have become exorbitantly expensive. This would mean we are wasting AU funds on banking charges, which we are not prepared to do. We can currently only accept payment by cheque or postal order, but as soon as our website is

live, we will be able to take these and any other payments via No-chex, our online banking system.

We are very sorry for the inconvenience we know this may cause, but we do not want to waste money by giving it away to the bank.



"Autism Hangout" helps community members learn, share and thrive

Source: PRWEB. 13th August 2008

A new social networking website is bringing together members of the autism community to compile "hands-on-knowledge" that will help them learn, share and thrive, according to the site's founder.

Craig Evans, stepfather of a 17-year-old boy with autism, said the idea for Autism Hangout (autismhangout.com) grew out of his own family's experience. "One thing I've found most helpful is listening to others who have been through this and have found ways to deal with day-to-day issues of living with autism," he said.

"In my research, I found there was no single place for learning practical, hands-on knowledge of how to live with this. So we developed Autism Hangout as a place where the autism community can come together to learn from others and contribute what they've learned themselves."

Evans noted that between 12 and 17 million people are directly affected by the 300,000 who have been diagnosed with autism.

Most autism-related websites provide only general information or they deal with fund-raising for research into causes and cures, he said.

The advertiser-supported Autism Hangout site provides dis-

cussion forums, videos and product reviews in addition to special reports by professional journalists who have been affected personally by autism.

Members can also create their own personal home pages and share their own stories, photos and blog entries. Member accounts are free.

"In addition to families and individuals affected by autism, we hope to involve the professionals who serve those families and also the manufacturers that provide products they use," Evans added.

"Our community can provide great feedback about products. For one thing, our members really have to read labels carefully to be sure they're following a proper diet and so on. They're more conscious of those things than the general population." A portion of Autism Hangout's profits from advertising will be used to support autism-related causes.

Craig Evans lives in Rosemount, MN, with his wife and stepson. Autism Hangout is a part of the Community Hangouts Network. For additional information, please visit

www.autismhangout.com

More clues point to mitochondrial dysfunction

Source: *Prostaglandins, Leukotrienes and Essential Fatty Acids*, 14th July 2009 (e pub prior to print publication)



Autistic children show a consistent pattern of biomarkers that point to mitochondrial dysfunction, according to a new study, .Elodie Pastural and colleagues analyzed plasma samples from 15 children with autism, nine non-autistic siblings of the children with autism, and three controls with no family history of autism. The researchers took three samples from each participant over a one-year period.

Pastural and colleagues report that their tests showed "universal and unambiguous alterations in lipid metabolism" in the children with autism. Specifically, they detected elevated levels of fatty acid elongation and desaturation products

in these children. "In all eight of the affected/non-affected sibling pairs," they note, "the affected sibling had higher levels of these biomarkers than the unaffected sibling." In addition, the children with autism had reduced plasma levels of glutathione (a key antioxidant), methionine and cysteine.

These abnormalities, the researchers theorize, could be the indirect result of dysfunction of the mitochondria (the "power plants" of cells). Growing research implicates mitochondrial dysfunction in autism.

Noting that an excess of glutamate (a biochemical that "excites" nerve cells) can disrupt mitochondrial function, the researchers ex-

posed normal liver, neuronal, and astrocyte cells to elevated levels of glutamate in laboratory tests. This experiment, they report, "resulted in lipid biomarker changes indistinguishable from those observed in autistic subjects." In addition, exposing the cells to excess glutamate led to decreased levels of reduced (active) glutathione, methionine, and cysteine similar to the abnormalities seen in the study participants with autism.

The researchers say their findings indicate that "chronic mitochondrial stress is pervasive in autism" and note that the anomalies they detected may be useful metabolic markers for both mitochondrial stress and autism.

Biological markers of daily lives of midlife parents of children with autism

Source: *Journal of Health and Social Behaviour*, 50(1), 2009

Raising a child with a disability can cause more daily stress and long-range health problems than parenting a child without disabilities, according to a new study that looked at a clinical measure of stress along with parents' survey responses. "Our findings indicate the magnitude of the additional daily stress that these families face," said lead author Marsha Mailick Seltzer, of the Waisman Center at the University of Wisconsin.

The study evaluated parents who have children living with disabilities that included attention deficit hyperactivity disorder, bipolar disorder and Down syndrome. Researchers used data from the Midlife in the United States study, which included telephone interviews with 82 midlife parents (average age 57) of children with disabilities. Parents responded to items about their experiences in the past day concerning time use, daily stress, positive events and physical symptoms. Researchers compared these parents to a similar group of parents of children without disabilities. They asked parents how

often in the past 24 hours they had experienced daily stressors such as arguments, work stress and home stress.

Parents of children with disabilities had a greater number of stressors and a higher number of days during which they had at least one stressor. They reported having at least one stressor on 50 percent of the study days compared with 40 percent among the other parents. Parents of children with disabilities also reported experiencing a greater number of physical health problems.

The researchers also evaluated saliva samples from the parents to measure the changing patterns of their cortisol expression during the day. Cortisol is a biological marker that plays an important role in linking stress exposure to health problems. Daily cortisol patterns of parents of children with disabilities showed chronic strain that was much higher than normal on days when the parents spent more time with their children. "The findings suggest that parents of children with disabilities

would benefit from stress-reduction strategies," The researchers initially expected to see elevated levels of cortisol due to the high levels of stress, research has demonstrated the opposite effect: chronically stressed [people tend to have lower than normal levels of cortisol levels. This finding is true for combat soldiers. Parents of children with cancer, Holocaust survivors and people diagnosed with PTSD. The severity of a stressor also affects cortisol levels. Seltzer said. "There may be long-range health consequences of cortisol dysregulation, so it is important to moderate stress."

"Parents of children with disabilities are in need of support," said Patricia Wright, national director of autism services the Easter Seals. She said the organization "receives frequent requests regarding respite services, for instance. Respite is critical for family wellness; however, it is not an easy support for many families to access. Unfortunately, respite services are often unavailable due to lack of funding."

Omega 3's may prevent sensory overload

Source: *Behavioural Neuroscience*, Vol. 123, No. 6, December 2009, 1218-25

A new study suggests that omega-3 fatty acids protect against sensory overload, a problem associated with autism, attention deficit hyperactivity disorder, and other nervous system conditions.

Irina Fedorova and colleagues fed different diets to four groups of pregnant mice and their offspring. One diet was high in the omega-3 fatty acids docosahexaenoic acid (DHA), eicosapentaenoic acid (EPA), and α -linolenic acid (LNA). The other diets contained no EPA or DHA but were high, low, or deficient in LNA. LNA is a building block of DHA and EPA, but the body converts less than 1% of LNA into DHA.

To test the offspring's response to sensory stimulation, the researchers exposed them to a sudden, loud noise. Animals typically flinch when they hear this type of sound, but they react less strongly if they are exposed to a softer tone beforehand. This adaptive response of the nervous system to future stimuli after a first exposure is called "sensorimotor gating."

Fedorova and col-

leagues say the mice who received DHA and EPA exhibited a normal sensorimotor gating, showing a reduced startle response to the loud tone when a softer tone preceded it. The mice in the other three groups, however, were unable to "downshift" their response to the second tone. Mice in the deficient-LNA and low-LNA diets exhibited a substantial deficit in sensorimotor gating, while those in the high-LNA diet exhibited a smaller but still significant deficit.

This abnormal response, the researchers say, may cause omega-3-deficient animals to be easily overwhelmed by sensory stimuli. "It only takes a small decrement in brain DHA to produce losses in brain function," study co-author Norman Salem says'.

Omega-3 fatty acids are essential for brain and eye development. The body needs to obtain these nutrients through food or supplements, because it cannot synthesize them from scratch. Salem says, "It is an uphill battle now to reverse the message that 'fats are bad,' and to increase omega-3 fats in our diet."

Foods rich in omega 3 are salmon, tuna, and halibut, other seafood including algae and krill, eggs, flaxseeds and flaxseed oil, soybeans and soybean oil, walnuts, brazil nuts, olive oil, hemp seeds, pumpkin seeds. Omega 3 can also be bought as an essential fatty acid (EFA) supplement from health food retailers and internet retailers.



Oxytocin and methylation

Source: *Cavalier Daily News*
27th October, 2009

Researchers at Duke University have discovered a possible link between autism and genes that are turned on and off in DNA. The research focused on genetic differences between autistic patients and a control group. They found that regions containing the gene OXTR, which has been previously connected with autism, were especially prone to being different among autism patients.

Although their research still needs to be replicated with a much larger sample, the researchers said the link could be a target for drug modification and thus possibly reduce disease. They first identified the deletion of the OXTR gene in an autistic patient and examined his family to see if that deletion was also present. It turned out that his brother was also autistic but did not have the deletion.

The research identified a high level of methylation — when a chemical group attaches to the DNA, usually to silences genes — of the OXTR gene in the brother. Inheritable genetic changes like this that do not show up in the DNA sequencing are called epigenetics.

One hundred and nineteen people with autism were initially tested, eventually focusing on 20 autistic individuals and 20 controls to find the same elevation of methylation in the region of OXTR. They also checked available brain tissue samples of autistic people and found similar results.

The team's findings would not necessarily lead to improved treatment and only some autistic patients had this methylation. Others were actually missing the OXTR gene, which would make these patients' conditions more difficult to treat.

The OXTR gene, which is a receptor for the trust hormone oxytocin, has been shown to improve the ways in which autistic individuals interact with others. Oxytocin has been used in drugs to treat autism but is very short-lasting and not a cure. The important part of the research was simply to recognize the pathways involved in autism.

"This is a very novel finding," the researchers said. "It suggests an epigenetic mechanism for autism and in general an epigenetic mechanism for complex disease."

Why autistic kids face difficulty in learning new things

Source: *Thaindian News*, 11th October 2008



Scientists have found the answer to why children with autism spectrum disorders have trouble in learning new things - because they spend less time looking at a person's face who's teaching them different skills.

Researchers at the UC Davis M.I.N.D. Institute used high-technology eye-tracking headgear and software that measures with precision the point at which a child is looking when learning a task. They also used an actor to demonstrate a task on a computer screen.

"We found that the children with autism focused on the demonstrator's action and looked at the demonstrator's face much less often than did typically developing children," said Giacomo Vivanti, a post-doctoral researcher at the M.I.N.D. Institute and the study's lead author. He added: "The typically developing children may be looking at the demonstrator's face to check for information on what to do or how to respond appropriately, information that the children with autism are less inclined to seek. This is an important finding, because children with autism have difficulty learning from others.

This might be one key to why that is so. M.I.N.D. Institute researcher and senior study author Sally J. Rogers, said that imitation plays an important role in how chil-

dren learn, as well as in how people interact socially. She added: "This is a trait we see as early as we can diagnose autism, and it's one of the traits that is present even in mildly impaired adults."

Impaired imitation leads to additional impairments in sharing emotions, pretend play, pragmatic communication and understanding the emotional states of others. "We now understand more about how this imitation deficit might be working and, after more study, we may actually be able to address it in a way that helps children with autism develop a more natural set of behaviours," said Rogers. For the study, the researchers compared 18 children between the age group of 8 to 15 with high-functioning autism with a group of 13 typically developing children.

While wearing special eye-tracking headgear, the children were shown video clips that ranged from seven to 19 seconds in length. After viewing each clip, the children performed the demonstrated action.

The study supported previous research that shows that children with autism have difficulty imitating tasks when compared to normally developing children. It also showed that children with autism paid just as much attention to the action being performed as the other

children in the study, ruling out previous hypotheses about poor attention to the task. "This finding is particularly important. Now we can rule out this variable. We know these children are looking at the task," said Rogers. It was also found that successful performance of a task by children with autism increases with the amount of time they study it but is not correlated with their basic motor skills, ruling out the possibility that it is a lack of motor ability causing the imitation effect.

And finally, the study showed that both groups of children shifted their attention from the action to the demonstrator's face, but the children with autism did this much less often. Rogers said that the finding suggests that imitation is not just about repeating an action, but understanding the reason for the action. "That information is conveyed in our faces," she explained. Now, researchers are hoping to one day develop studies aimed at determining whether or not face-looking is an important part of the imitation process. "It could be that if people with autism could be better at reading emotion they might naturally start to imitate their models the way like other people do. If it's about how people understand the information in a face, then it gives you a target for intervention," said Rogers.

Massachusetts Institute of Technology (MIT) to launch new brain research

Source: *PRNewswire*, 10th March 2010

Researchers at MIT are eagerly anticipating the summer delivery of Elekta Neuromag, a system that uses magnetoencephalography or MEG to explore brain function. MEG can detect the very weak magnetic fields arising from electrical activity in the brain, and allows researchers to monitor the timing of brain activity with millisecond precision. MIT researchers will use MEG to study normal cognition in children and adults, as well as the neural basis of autism, depression, schizophrenia and other brain disorders.

MEG will be used to study the neural and genetic basis of autism, dyslexia and other developmental disor-

ders. By combining MEG with other brain imaging modalities, such as magnetic resonance imaging (MRI) and electroencephalography (EEG), there are plans to search for differences in brain activation in subjects with different genetic variants that have been linked to these conditions.

"In many ways the brain is a 'black box.' It is so complex—comprising 100 billion neurons and a trillion or more synapses -- it's not surprising it's challenging to study," the researchers say, "But with MEG we think we'll succeed in shining a little light in there."

Book reviews

House Rules

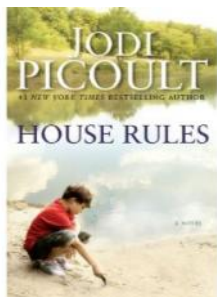
by Jodi Picoult

available from Amazon.co.uk

price £11.04

release date 27th April 2010

Jacob Hunt is a teenage boy with Asperger's syndrome. He's hopeless at reading social cues or expressing himself well to others, and like many kids with AS, Jacob has a special focus on one subject -- in his case, forensic analysis. He's always showing up at crime scenes, thanks to the police scanner he keeps in his room, and telling the cops what they need to do...and he's usually right. But then his town is rocked by a terrible murder and, for a change, the police come to Jacob with questions. All of the hallmark behaviors of Asperger's -- not looking someone in the eye, stimulatory tics and twitches, flat affect -- can look a lot like guilt to law enforcement personnel.



Suddenly, Jacob and his family, who only want to fit in, feel the spotlight shining directly on them. For his mother, Emma, it's a brutal reminder of the intolerance and misunderstanding that always threaten her family. For his brother, Theo, it's another indication of why nothing is normal because of Jacob. And over this small family the soul-searing question looms: Did Jacob commit murder

Emotionally powerful from beginning to end, House Rules looks at what it means to be different in our society, how autism affects a family, and how our legal system works well for people who communicate a certain way -- and fails those who don't.

The views expressed within this publication are not necessarily those of Autism Unravelled. Always consult your GP or other medical professional before implementing any intervention

New GF/CF products

Sainsbury's jam tarts and country slices

In all of the development work that Sainsbury's did for their new range, it was the jam tarts that caused them the most problems -- no less than 16 trial runs before they were happy with them.

However, they are worth it. Nice crispy pastry (made from rice flour and rapeseed oil) and good fruity, slightly chewy jam - just what a jam tart should be!



On the same shelf you should find their country cake slices - a rather nice, loose, moist fruit cake slice with juicy fruits in a light sponge.

6 jam tarts – £1.89

4 country cake slices – £1.79

Editor's note:

If you wish to try these products as always, please check out the ingredients.

My son eats the jam tarts and loves them!!

With thanks to foodsmatter.com

Can we help you and your family?

www.familyfund.org.uk
0845 130 45 42



We give grants to low-income families that relate to the additional needs of severely disabled children and young persons, which help relieve the stress of everyday life.

The value of the grant depends on the items requested, family circumstances and the funding we have available.

We consider all applications individually on the basis of the information provided.

We distribute nearly £30.5 million each year to around 50,000 families with severely disabled children across the UK.

We cover the whole of the UK and receive annual funding from the national governments of England, Northern Ireland, Scotland and Wales.

We design our grants with the needs of the whole family in mind: disabled children, parents and siblings.

There is no entitlement to a grant from the Family Fund. All grants are discretionary and subject to available funding.

New articles

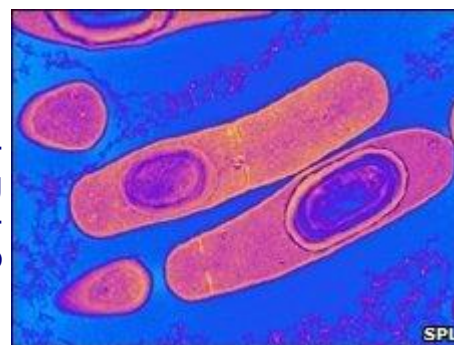
Read on for two new exciting articles! The first, to add to the digestive system section, is all about gut bugs. Really fascinating. The second, to add to the Research section, describes a study on the use of oxytocin spray to help behaviours in ASD, which links rather well to the piece on page 4.

Gut microbes hold 'second genome'

Source: *BBC News*, 3rd March 2010

The human gut holds microbes containing millions of genes

In fact, there are more genes in the flora in the intestinal system than the rest of our bodies. So many that they are being dubbed our "second genome". A study published in the journal *Nature* details the analysis of the genes, carried out to better understand how the gut flora is affected by disease.



"Basically, we are a walking bacterial colony," said Professor Jeroen Raes, one of the researchers involved. "There is a huge diversity. We have about 100 times more microbial genes than human genes in the body. We also have 10 times more bacterial cells in our body than human cells," he told *BBC News*. Most of the microbes present in our bodies live in the gut.

“ We're basically living in symbiosis with these microbes ”

The study was led by Professor Jun Wang from the Beijing Genomics Institute-Shenzhen. Scientists from Germany, Belgium, Denmark, Spain, France and the UK also took part in the international effort, named the European MetaHIT consortium, which has been co-ordinated by Dr Stanislav Dusko Ehrlich.

"Everyone was so motivated," said Dr Dusko Ehrlich. "To have such an exciting project to run - it's a piece of cake. The work went much faster than we expected." Professor Raes, who works at Vrije Universiteit Brussel, explained why the microbes warranted such an intensive study: "Gut flora is crucial for our health. We're basically living in symbiosis with these microbes.

"The bacteria help digest food, provide vitamins, protect us from invading pathogens. If there's a disturbance, people get all sorts of diseases such as Crohn's disease, Ulcerative colitis, and a link has also been made to obesity."

Untangling a mess

The researchers have developed what is called a metagenome, a combined genome of all the bacteria sequenced at once. "This creates a huge dataset that has to be disentangled," explained Professor Raes. "The untangling of this mess is what I do; it's my role in the study."

The team analysed faecal matter from 124 Europeans and found each person had about 160 bacterial species. The samples were more alike than they had expected and a significant fraction of the bacteria was shared between all the people who took part.

By mapping the genes, the scientists have found a way around the problem of having to culture bacteria in order to study them. Many bacteria are very difficult to grow in cultures in the lab. From looking at the genes, the researchers hope to be able to investigate how the flora changes when a person has a disease.

"It will allow us to understand diseases better," said Professor Raes. "We know there is a microbial component but we don't know exactly how [it works]. We will use it for prognostic and diagnostic markers so we can predict disease severity or sensitivity to these diseases."

Dr Dusko Ehrlich said the work was showing promising results: "We have extremely interesting findings based on the results of this gene catalogue. We already have very exciting results in terms of differences between healthy and sick people."

Professor Elaine Holmes from Imperial College, London, who was not involved in the research, said it was a welcome advance on previous studies. "The article is extremely timely given the escalating interest in the influence of the gut microbiota in many aspects of health ranging from Irritable Bowel Disease, sepsis and obesity to autism," she told BBC News. "It uses a large number of participants and therefore one assumes it is more representative of the 'real' microbial composition than previous studies. Also, it is an amazing feat of data processing."

Link:

www.bbc.co.uk/scienceandenvironment

Oxytocin may improve behaviour of people with autism

Source: *ScienceDaily*, 17th February, 2010

Autism is a disease characterized by difficulties in communicating effectively with other people and developing social relationships. A team led by Angela Sirigu at the Centre de Neurosciences Cognitives (CNRS) has shown that the inhalation of oxytocin, a hormone known to promote mother-infant bonds and social relationships, significantly improved the abilities of autistic patients to interact with other individuals.

To achieve this, the researchers administered oxytocin to 13 autistic patients and then observed their social behaviour during ball games and during visual tests designed to identify ability to recognize faces expressing different feelings. Their findings, published in the *Proceedings of the National Academy of Sciences* on 15 February 2010, thus reveal the therapeutic potential of oxytocin to treat the social disorders from which autistic patients suffer.

Oxytocin is a hormone that promotes delivery of a baby and lactation. It plays a crucial role in enhancing social and emotional behaviour. Previous studies that measured the levels of this hormone in the blood of patients showed that it was deficient in those with autism.

The team led by Angela Sirigu at the Centre de Neurosciences Cognitives in Lyon thus advanced the hypothesis that a deficit in this hormone might be implicated in the social problems experienced by autistic subjects. The team, working in collaboration with Dr Marion Leboyer at Hôpital Chenevier in Créteil, examined whether the administration of oxytocin could improve the social behavior of 13 individuals with high-functioning autism (HFA) or Asperger syndrome (AS). In both these forms of autism, patients retain normal intellectual and linguistic skills but are unable to engage spontaneously in social situations. Thus, during a conversation, these patients turn their heads and avoid eye contact with other people.

First of all, the researchers observed the social behaviour of the patients while they were interacting with three other people during a ball tossing game. Three profiles were represented: a player who always returned the ball to the patient, a player who did not return the ball, and finally a player who indiscriminately returned the ball to the patient or to other players. Each time the patient received the ball, he or she won a sum of money. The game was restarted ten times in order to allow the patient to identify the different profiles of his/her partners and act accordingly. Under a placebo, the patients returned the ball indiscriminately to the three partners. However, patients treated with oxytocin were able to discriminate between the different profiles and returned the ball to the most cooperative partner.

The scientists also measured the patients' degree of attentiveness to social signals by asking them to look at series of photographs of faces. Under a placebo, the patients looked at the mouth or away from the photo. But after inhaling oxytocin, the patients displayed a higher level of attentiveness to facial stimuli: they looked at the faces, and indeed it was even possible to see an increase in the number of times they looked specifically at the eyes of the faces in the photographs.

During these tests, the scientists also verified these behavioural effects by measuring physiological plasma oxytocin levels before and after nasal inhalations. Prior to the inhalations, plasma oxytocin levels were very low, but they rose after an intake of the hormone.

The results of these tests thus showed that the administration of oxytocin allowed autistic patients to adjust to their social context by identifying the differing behaviors displayed by those around them and then acted accordingly, demonstrating more trust in the most socially cooperative individuals. Oxytocin also reduced their fear of others and promoted closer social relations.

This is one of the first studies to have demonstrated a potential therapeutic effect for oxytocin on social deficits in autism. Evidently, variations between individuals were observed in terms of their response to treatment, and the researchers acknowledged the importance and necessity to pursue this work. They will in particular be studying the long-term effects of oxytocin on improving the everyday living disorders of autistic patients, and its efficacy at an early stage of the disease.



Chemical structure of oxytocin

For more easy to understand information on this research, please check out the following website

Link:

www.newsweek.com