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The Perinatal Application of Synthetic Oxytocin and its Possible Influence on the Human Psyche and the Etiology of Autism

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Abstract: Autism is currently occurring in one in 10,000 children in Europe. The incidence in the US has been steadily increasing over the last years to a figure at least 4 times as high. It has become an issue of primary importance for modern society. Oxytocin is a hormone produced by the body, which is released in the posterior pituitary gland and controls a number of bodily functions. However, since the 90's, its psychoactive component is being investigated and is becoming very meaningful in diagnosis and therapy of both psychiatry and psychology. Since the 60's synthetic oxytocin has been used in Gynecology to induce labor. This article has emerged from over a decade of working with new-born babies and adolescents. The thesis herein is that the use of synthetic oxytocin in childbirth can have consequences for the psyche of the child, for the important time after the birth, and for the remainder of life. Its use should, therefore, be carefully considered. Typical features of the autism spectrum disorders contain characteristics of disturbance of the oxytocin system in the body. In the USA almost 80% of all births are set under influence of synthetic oxytocin. Through the course of the years, the author has devised a treatment for the affected children and adults, and consequently clarified its principles. The author is of the opinion that early disturbance of the innate oxytocin system may be a factor in the etiology of many cases of autism.

Key Words: Synthetic oxytocin, oxytocin, perinatal, autism, isopathy

The Chemistry Of Oxytocin

Oxytocin was discovered by Sir Henry Dale in 1906. He found that extracts of the posterior pituitary gland could produce a stimulating effect on the uterus. Already in 1960, synthetic oxytocin was available on the pharmaceutical market. In the synthesis of oxytocin several other forms are produced, with extra amino acids attached to one end. These "pro-hormones" are collectively known as oxytocin-X, and have

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been found in the peripheral circulation of women. Oxytocin-X may occupy the receptor site of oxytocin, effectively blocking the effect of the hormone (Mitchell & Schmid, 2001). An immature form of oxytocin, oxytocin-X, is also detectable in the blood of the newborn, with levels higher than oxytocin itself. Postnataly, the newborn produces increasing amounts of mature oxytocin. For example, in fetal rats at term, virtually no mature oxytocin is produced, but by day seven postnatal, more than 50% of oxytocin is in its mature form (Mueller-Heubach, Morris, & Rose, 1995). Higher ratios of oxytocin-X to oxytocin have been found in autism.

Oxytocin has a short half-life in the blood, making its direct effects transient. It is supposed that all vertebrates possess an oxytocin (and vasopressin) equivalent, which would mean that oxytocin is around 500 million years old (Acher, Chauvet, & Chauvet, 1995). Through stimulations such as sucking, sexuality (Anderson & Dennerstein, 1994; Arigolas, 1992; Arletti, Bazzini, Castelli, & Bertolini, 1985), birth (Alexandrowa & Soloff, 1980) and different types of positive and negative stress, the nonapeptide is carried into the body circulation through the posterior pituitary gland. Likewise, it seems to play a large part in masculine sexuality. Through animal testing, oxytocin was found in the testes, the epididymis, and the prostate. It seems to have a function in ejaculation, which in some mammals, changes the contractility in the tubuli seminiferi (Insel, Young, & Wang, 1997).

Oxytocin also modulates our experience of pain (Arletti, Benelli, & Bertolini, 1993). Memory and mood are also influenced through the release of this hormone (Arletti, Benelli, Poggioli, et al, 1995), as is the modulation of the autonomous nervous system (Armour & Klassen, 1990; Welch, Tamir, Gross, et al, 2009). Oxytocin has an important role in digestion and nutrient absorption. Its beneficial effect on colitis has been established (Welch, Anwar, Chang, et al, 2010). Bearing in mind that the oxytonergic system is very old and exercises a central function in reproduction, investigating the interaction with sexual steroids will play a huge role in the research of reproduction control (Ivell & Walther, 1999). Oxytocin receptors are found in both the brain and the periphery (Adan, Van Leeuwen, Sonnemans, et al, 1995). Interestingly enough, this also applies to the heart, which is modulated through oxytocin and the receptors formed here. (Jankowski, Hajjar, Kawas, et al, 1998). This was also researched and found in the vascular system of a rat. (Jankowski, Wang, Hajjar, et al, 2000).

Perinatal Function Of Oxytocin

At the beginning of the 90's Benedetto and colleagues (1990) observed, during births under influence of synthetic oxytocin, the changing oxytocin receptors in the fetal membranes. They showed that at the beginning stage of birth and with the advancing stages there was a significant rise in the number of receptors. This seems to point out the important role that oxytocin has at the beginning of labor. The role that oxytocin plays in birth control was also shown by Fuchs, Fuchs, Husslein, Soloff, & Fernstrom (1982). If one injects this hormone into a sheep's ventricle, immediately motherly behavior is noticed towards little lambs (Kendrick, Keverne, & Baldwin, 1987).

The human physiology of lactation was intensively researched through the act of suckling (McNeilly, Robinson, Houston, & Howie, 1983). During the hour or so after birth, when bleeding is most likely, oxytocin levels are elevated in healthy mothers who have given birth vaginally and are skin-to-skin with their babies (Nissen, Lilja, Widstrom, & Uvnas-Moberg, 1995). Kennell and McGrath (2001) note, "Before the availability of medications such as Pitocin, the newborn's touches were probably crucial for the survival of mothers by raising oxytocin levels to cause strong, repeated uterine contractions, which prevented a fatal hemorrhage." Also established was the importance of a good bonding between mother and child, directly after birth (Kendrick, 2000). The significance of postnatal stress for the processing of stress in later life was investigated by Henry & Wang (1998). They showed the critical importance of gonad steroids and Oxytocin for humans in order to connect to each other. Several studies on the impact of epidurals, which reduce maternal oxytocin peak at birth, correlate this intervention with deficits in maternal-infant attachment in both humans (Murray, Dolby, Nation, & Thomas, 1981; Sepkoski, Lester, Ostheimer, & Brazelton,1992) and sheep (Krehbiel, Poindron, Levy, & Prud'Homme, 1987). For ewes, the deficit in maternal-infant attachment was improved with oxytocin injected into the brain (Levy, Kendrick, Keverne, Piketty, & Poindron, 1992). Interference in the early parent-child bonding can, accordingly, have a dissociational effect and can result in disturbances in the processes in our right hemisphere. A malfunction can result in person needing permanent self-preservation.

Michel Odent (2001), a gynecologist and important advocate of a natural birth has referred to oxytocin as the "roots of the love." In 2007 in Israel, Dr. Ruth Feldman and colleagues established that oxytocin takes over the main role in the emergence of behavioral and mental

representations, which are instrumental in human bonding. The levels of oxytocin after the birth were associated with the form of eye contact, vocalisation, positive effects, caring contact, specific bonding thoughts, and frequent reviewing of the children (Feldman, Weller, Zagoory-Sharon, & Levine, 2007). Also, after the birth of voles the effect of additional administered oxytocin can give us further insights into postnatal effects. Significant differences were found in the level of administered oxytocin and the rate at which the children would show motherly behavior in later life towards the next generation (Bales, van Westehuyzen, Lewis-Reese, et al, 2007). The higher the original dose of oxytocin, the higher the likelihood that the females, as fully grown animals, would care for the cubs even if they were not of the same family.

In Germany synthetic oxytocin is currently used at birth in four situations: prenatal artificial provocation of labor, labor augmentation during birth (which seems to have the principal effect on the psyche of a person), the administration after a c-section, and the administration of synthetic oxytocin to accelerate placenta relief. The application is usually intravenous, but a spray is also available and currently used in many cases, although this is not an approved use. All dosage types potentially have an influence on mother and child, although the last two mentioned seem to only influence the nursing of a baby.

Psychoactive components of oxytocin

It was discovered that, under stress, more mRNA from oxytocin, and also an increase in production of magnocellular neurons of the nucleus paraventriculus (not the n. supraopticus) was present (Jezova, Skultetyova, Tokarev, Bakos, & Vigas, 1995). A positive effect the hormone has on memory was assessed (Boccia, Kopf, & Baratti, 1998). A pain modulating effect could be established (Boccia, et al, 1998). A positive effect on the cognitive abilities of the nervous system was also investigated (Bruins, Hijman, & Van Ree, 1992). It also has an anti-anxiety effect on mammals. Anxiety behavior, when under stress, was reduced in animal testing with the use of synthetic oxytocin (McCarthy & Altemus, 1997).

Oxytocin also seems to modify addictive behavior (Sarnyai & Kovacs, 1994). This was established in studies of opiate and cocaine abuse (Kovacs, Sarnyai, & Szabo, 1998). In some cases an extreme compulsive behavior (obsessive compulsive disorder) was ascribed to a dysfunction in the balance of oxytocin (Leckman, Goodman, North, et al, 1994). Blocking oxytocin receptors causes an impending effect on

sexuality (Caldwell, Johns, Faggin, Senger, & Pedersen, 1994). Oxytocin levels are also increased during sexual activity (Carmichael, Humphrey, Dixen, et al, 1987). Tom Insel (Insel, Winslow, Wang, Young, & Hulihan, 1995) injected voles with synthetic oxytocin, and was able to increase their faithfulness, but when the oxytocin receptors were blocked there was no sign of bonding with the partner at all. However, this hormone can do even more than that. In the 90's, the British researcher, Richard Windle showed that after the administration of this hormone, stress and anxiety were diminished in rats (Windle, Shanks, Lightman, & Ingram, 1997).

Baumgartner and Heinrichs (Baumgartner, Heinrichs, Vonlanthen, Fischbacher, & Fehr, 2008) were also able to show this effect in humans, when they were able to assess a significant rise in confidence after the application of synthetic oxytocin. In neuro-chemical research, oxytocin in humans becomes coherent with psychic conditions like love, confidence, and peacefulness. These assumptions are based on experiments, like those of Michael Kosfeld, University of Zurich. Kosfeld let probates conduct an investor game winning real money, whereby one part of the group received a dosage of oxytocin nasal spray which increased the level of oxytocin in their bodies. It appeared that, the group having a higher oxytocin level, showed more trust in their fellow players. Kosfeld and Heinrichs (Kosfeld, Heinrichs, Zak, Fischbacher, & Fehr, 2005) were later able to show that oxytocin also reduces anxiety and has a stress reducing effect, which evokes social support. Within mammals, this hormone is responsible for the control of social behavior, motherly care, (Fahrbach, Morrell, & Pfaff 1985) and the ability to bond. This should all be transferable on humans. Insel and colleagues (Insel, Winslow, Wang, & Young, 1998) created a neuro-endocrine basis for couples to bond on the basis of the oxytocin receptors. The higher the amount, the more likely it is that one will bond to his or her partner. In a further study, they discovered a neuro-endocrine basis for monogamy. Walter (2003) postulated that the release of oxytocin would not only be beneficial for the mother when nursing, but would also release feelings of happiness. This is said to be elementary for the bond between the mother and her child. The team of Beate Ditzen (Ditzen, Schaer, Gabriel, et al, 2009) investigated the influence of oxytocin by requesting that spouses start a discussion about a subject they frequently argue about. The results of the study suggest that neuropeptides have a calming and de-escalating effect. The significance was established in 1998 when mediation of positive interactions and emotions was enhanced through oxytocin. Not only through somatic sensory attraction, as that produced when nursing,

but also through contact and warm temperatures oxytocin, can be released. Consequences are that bodily produced opiates are formed, the production of cortisol decreases, insulin increases, blood pressure sinks, etc. As it seems to also be beneficial for metaphorical language, its positive influence is emphasised in hypnosis and meditation. This could also be an explanatory model for so called alternative healing methods (Uvnas-Moberg, 1998). Equally the recognition of faces, which is crucial for our social communication, seems to be dependent on oxytocin (Domes, Heinrichs, Michel, Berger, & Herpertz, 2007).

Synthetic oxytocin and Autism

Connections between the metabolism of oxytocin and autism were determined in 1999 (Insel, O'Brien, & Leckman, 1999). A first success in the application of synthetic oxytocin, demonstrated by improved identification of emotional contents in autistic and Asperger patients, was in 2003 (Hollander, Novatny, Hanratty, et al, 2003). Many behaviors that are usually related to the oxytocin system are impaired in autistic individuals, including social recognition and social bonding. These observations have lead researchers to look at oxytocin malfunctions as possible causative factors and also to experiment with synthetic oxytocin as a therapeutic treatment in autism.

Researchers have found deficits in the oxytocin system in autistic individuals. One study found lower blood oxytocin levels in pre-pubertal autistic children (Modahl, Green, Fein, et al, 1998) and another study found a lower ratio of oxytocin in relation to its immature forms (oxytocin-X) in autistic children, reflecting a possible deficiency in the pathway converting oxytocin-X to oxytocin. In these children, oxytocin-X was not increasingly replaced with mature oxytocin with age, as in normal children (Green, Fein, Modahl, et al, 2001). Other researchers suggest a bigger role for the related hormone arginine vasopressin (AVP) in the changes associated with autism. In animal research, the social/developmental functions of AVP in the male are similar and in some areas overlap the functions of oxytocin in the female. However, AVP is associated with arousal, activity, and aggression, as opposed to the soothing, pro-social effects of oxytocin. Exaggerated AVP activity that is not balanced by oxytocin's "calm and connection" effects might explain some features of autism, as well as its increased prevalence among males, whose oxytocin system is less active (Carter, 2007). These authors suggest that alternations in this system may be due to developmental or epigenetic factors, possibly including prenatal stress; exposure to excessive or deficient levels of

hormones such as estrogens, androgens, AVP, and oxytocin in the perinatal period, and factors such as illness, inflammation, and early social experiences (Carter, 2007).

In a double-blinded study, Hollander and colleagues found that an intravenous infusion of oxytocin at 2 to 3 weekly intervals significantly reduced repetitive behaviors in adults with autism and Asperger's syndrome compared to placebo (Hollander, Novatny, Hanratty, et al, 2003). In another study, oxytocin also facilitated social information processing in autistic individuals (Hollander, Bartz, Chaplin, et al, 2007)) consistent with a similar finding in normal adults (Domes et al, 2006). The origin of the abnormalities in the oxytocin/AVP system that are implied in these papers remains unknown. Some researchers hypothesize that interference in the perinatal period, especially through the ubiquitous administration of exogenous oxytocin (Pitocin) to women in labor and birth, may be involved (Wahl, 2004).

It might be important to mention here that autism is also linked with mercury levels. Numerous studies have shown that even low levels of mercury can cause autism like symptoms in mice (Hornig, 2004). Mutter (Mutter, 2005) was able to demostrate plausible mechanisms for this reactions. Studies have shown that it can interfere with the oxytocin production in the posterior pituitary gland (Kistner, 1995; Maas & Bruck, 1996). If one of the theses suggested in this paper, namely the possible down regulation of oxytocin receptors after the perinatal application of oxytocin should prove to be correct, what could this cause in a child who has a reduced production of oxytocin (including the mother) in the first place? Could this combination be another explanation for the aetiology of autism? Genetic predispositions have been researched in recent years (Lauritson, Als, Dahl, et al, 2000; McCauley, Li, Jiang, et al, 2005; Gregory, Connelly, Towers, et al, 2009; Ylisaukko-oja, Alarcon, Cantor, et al, 2006). These studies could be an explanation for why all subjects being exposed to mercury, or exposed to synthetic oxytocin in the perinatal period, do not belong in the autistic spectrum. Furthermore, there are other heavy metal exposures to the infantile system (vaccinations, etc.) that might be a potential trigger in the development of the autistic spectrum disorders. Through the key role of oxytocin in the controlling of human behavior, it may be seen as a basis in many neuropsychiatric illnesses, especially the autistic spectrum (McCarthy & Altemus, 1997).

In our clinic we experienced significant changes in the cognitive abilities, a reduction in repetitive behaviours, and a strong change in the sexual activity after delivering a isopathic dilution of the Pitocin.

The effects were enhanced when we also started to give isopathic dilutions of the vaccinations to the children and detoxified the children from mercury and aluminium (both ingredients of vaccinations). We have developed specific remedies for both factors with the help of a pharmacy. The third effective factor in the treatment of the autistic individual is dietary change (gluten and lactose free and natural diet with raw foods and the elimination of sugar and white flour). In all the autistic children treated so far in the clinic the following blood test changes occurred: a reduced level of glutathione (the intrinsic detoxifying agent in the body), which is shown to be a result of perinatal synthetic oxytocin application (Schneid-Kofman, Silberstein, Saphier, et al, 2009). A positive LTT (allergy test) for aluminium, which seems to be the result of repeated exposure to aluminium (i.e. vaccinations, maternal dental mercury, etc.) was found in most children. A study in Sweden (Netterlid, Hindsen, Bjork, et al, 2009) demonstrated that in children with a hyposensibilization treatment for allergies 23% of them proved to be allergic to aluminium after the treatment (The dosages of aluminium in the treatments are very similar to the ones in vaccinations)

Possible alterations due to perinatal application of Oxytocin

In 1997, it was shown that when the uterus is administered synthetic oxytocin, the oxytocin receptors react with a down regulation, which leads to desensitisation of the tissue (Phaneuf, Asboth, Carrasco, et al, 1997). As a mechanism for the variation in the cells of the myometrium transcriptional suppression and destabilisation of the mRNA were postulated through RNA bonding proteins. In 2009 a study took place in Sweden, using 630 women. It was determined that the use of synthetic oxytocin, during the early stages of birth, shortened the pain duration during cervical dilation, but that there was no significant decline in the rate of caesarean section or instrumental births (Brown & Vega, 2009). Also, in another study, the administration of oxytocin during birth led to an increase of oxidative stress. The testers in the control group, testing labor pain with the use of medication, showed significantly low levels of Glutathione compared to the other group of testers (Schneid-Kofman, et al, 2009). Through studies using mice with deficient oxytocin, we know that, even though sexuality and labor pains expire under normal conditions with this deficiency, there can be significant problems with nursing and social deficits in mice (Takayanagi, Yoshida, Bielsky, et al, 2009). In addition, a significant increase of aggression in the adult

mice was found, independent of gender. In the rat, it was shown that the administration of oxytocin after birth resulted in the heart of the animal containing a different number of receptors (Pournajafi-Nazarloo, Perry, Partoo, et al, 2007).

Even though the psychic component of the administration of synthetic oxytocin has priority in this article, a contribution from a thesis, by a doctor from Uppsala, should be mentioned. The doctor had evaluated data from 28,486 births during a ten year period. The goal was to examine use and abuse of synthetic oxytocin administration. Uterine hyperactivity and the gift of synthetic oxytocin were assigned parallel to metabolic acidosis in the umbilical cord, whereby 75% of the uterine hyperactivity was attributed to the synthetic oxytocin. In the conclusion of the study, it is said that 40–50% of the metabolic acidosis, that entails risks for a child, could have been prevented through proper use of synthetic oxytocin and early recognition of fetal stress (Johnson, 2009).

Discussion

Professor Csaba & colleagues (2004) state that, perinatally, the first encounter between the maturing receptor and its target hormone results in hormonal imprinting, which adjusts the binding capacity of the receptor for life. In the presence of an excess of the target hormone or foreign molecules that can be bound by the receptor, faulty imprinting carries life-long consequences. (Csaba GB, 2004). Could this also be true for oxytocin? What could be the consequences of an artificial perinatal application of an important physiological hormone named oxytocin for our lives?

In the studies mentioned above, much is quoted from the present state of the oxytocin research. Through Dr. Tagayanakis' (2005) research we know that rats do not need oxytocin for birth. Its absence released social deficits in the concerned rats. If this also applies to humans, it would be desirable to act with caution when concerned with this subject. In endocrinology, there is a principle that after an increased concentration of a hormone, there comes so-called down regulation. According to my knowledge, this type of research has never been carried out for oxytocin in childbirth. Pournajafi-Nazarloo et al (2007) were able to establish that there are oxytocin receptors in the heart of a rat. Why should the same mechanism not also apply to humans? Could a perinatal application of synthetic oxytocin not also lead to a variation in the amount of receptors? What effect would the oxytocin release have, without having the corresponding number of receptors in the mother and the child? Could an appropriate bond take

place?

Often, after the use of synthetic oxytocin, many affected mothers report that they did not have immediate contact with the child after birth. This leaves behind traces of doubt and nervousness towards the child. Mothers also report differences in the quality of bonding, comparing their synthetic oxytocin child to siblings who were born without the use of synthetic oxytocin. Midwives also reported significantly higher rates of postnatal depression after an oxytocin assisted delivery. Babies, under the influence of synthetic oxytocin often have problems approaching contact with their mothers, which results in problems when nursing.

Disproportionately, the babies who have experienced birth under the influence of synthetic oxytocin who come into our practice show signs of trauma. They long remain in the moro reflex, and are very easily startled. Often they are known as "screaming children," and can only be calmed when on someone's arm. They tend to show a change in skin complexion, and tend to sweat. They are usually restless and can only focus after a short time. They can be hypotonic or hypertonic and often have problems with controlling their head. Even if these criteria are not to be seen as oxytocin-specific, but rather as general criteria for a traumatised baby, we first became aware of the labor promoter having been used, because these were the children who were difficult to be comforted by their own mother. While there were other births that consisted of day-after-day of strain, once this experience was behind them, these children were usually able to be calmed through bodily contact. Could the missing of natural oxytocin at the bonding sites be a possible mechanism for the persistent restlessness of the effected children?

In addition, what would happen if the simultaneous application of, for example, the hormone of confidence, bonding, or love at the maximum level of stress during birth, could not release ambivalent feelings towards these subjects in our lives? Instead of being able to recover from the strain of the birth, in the arms of the mother or father, the release of oxytocin itself might be connected with a lot of stress instead of positive connotations. This, in itself, is a confusing situation for a new-born baby and it comes with many consequences when faced with burdens and relationships in later life. The importance of this is known to us through the current research done by Henry and Wang (1998). Through their studies, Dr. Takayanagi and colleagues (2005) showed that signs of aggression in later life were a reaction to a lack of oxytocin. What further areas could be triggered, due to an interruption in the oxytocin balance, where its root could be

found in the prenatal administration of synthetic oxytocin?

In adolescent children, who were born under the influence of synthetic oxytocin, we identified an increased amount of unspecified feelings as being a key symptom. Often, insecurity exists, there are interferences in school-work, and often problems with siblings or parents arose. Within this group, children often felt left out or they wanted to dominate. These are all symptoms that improved or even disappeared through the administration of potentized oxytocin and we were able to directly attribute the change to the hormone. In adults, the symptoms expanded. Their ability to start relationships was difficult, and a significant ambivalence towards positive events was noticed (Yes beautiful, but…..). We know about the relevance of the hormone within social communication, in the development of confidence in another and in one's self, and with which instincts one comes into contact with a baby. We are aware of its relevance in sexuality, flirting, an erection, and the perceiving of desire. We are aware of the influence on neuropsychiatric problems such as schizophrenia, alzheimer's disease, eating disorders, obsessive-compulsive disorder, etc. Also, the physiological control the hormone has, for example on the heart, is of great importance. When it comes to the subject of dealing with children, juvenile, and adult aggression, problems with bonding, social phobias, etc., we are, at present, faced with large complex subjects. Would it be possible that some of these factors are partly explicable through our own birth? Could it be that the changes in the oxytocin system in this important period could be the basis for autism? A plea goes out to the research, that more studies and an interdisciplinary exchange are undertaken for the future of our children.

Therapeutic Suggestions After Application of Synthetic Oxytocin

The most important therapy after the application of synthetic oxytocin during birth is bodily contact with parents. Regarding newborn babies after synthetic oxytocin has been administered, it is recommended that therapies, such as osteopathy, baby-massage (eg. Butterfly-Massage by Reich), therapies from Emerson, Terry, Harms, Castellino, and, later on, the "clinging-on" therapy by Prekop (1992) etc., are carried out. An effective method of treatment is the isopathic potentisation of oxytocin. Here, even in adults, dramatic changes appear after a birth involving the use of synthetic oxytocin. Homeopathic treatment, through a competent therapist, is also recommended. Presently, in our practice, we are analyzing the bond

between mother and child with the simultaneous gift of isopathic oxytocin in a lower dosage. Detoxification of heavy metals and the supplementation of amino-acids and other agents to boost the body´s intrinsic detoxification methods are the second pillar of the treatment.

Summary And Perspective

The study of the effects of synthetic oxytocin was restricted for years to the contraction of the uterus and lactation. Only a few years after its discovery came into worldwide use during birth to relieve labor pains and to achieve relief during delivery of the placenta. Yet its effects on psyche, sexuality, ability to bond, etc. did not become public until the nineties. The postulated consequences of a possible down-regulation by oxytocin within the person, was later proven through studies in animals. Also, our observations have shown that, with new-born babies, growing children, and adults, the subject matter of synthetic oxytocin is of social importance. What the research tells us is that it is not the distributed quantity oxytocin, but rather the amount of receptors, which result in the hormone unfolding. Lack of confidence in one's self and others, aggression, and the inability to bond whether socially, or in personal relationships, are present in subjects.

Autism has become an epidemic and will challenge individuals, health care practitioners, and society as a whole for generations to come. It would be great for this article to contribute to more selective use of synthetic oxytocin in the control of labor pain as well as stimulating debate within the concerned occupational groups (gynecologists, midwives, researchers). The overdue study of potential psychological effects of oxytocin, after half a century of its use, hopefully will be encouraged and moved forward in part by this article. Michel Odent, one of the most eminent gynecologists of of our time, recommends caution with the use of synthetic oxytocin and nowaydays goes as far as to recommend the use of a cesarian instead of the Pitocin drip in case of a prolonged labor as our capacity to love and bond may be influenced for the rest of our lives (Odent, 2011). In addition, I will be very grateful to have given concerned parents, children, and adults the possibility to have found their own story pattern in the above discussion and be able to select a suitable therapy.

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