

Références classées par ordre chronologique décroissant.

1. Warrier Varun, Baron-Cohen Simon. **Childhood trauma, life-time self-harm, and suicidal behaviour and ideation are associated with polygenic scores for autism.** *Molecular psychiatry*. 2021; **26**(5): 1670-84.

Autistic individuals experience significantly elevated rates of childhood trauma, self-harm and suicidal behaviour and ideation (SSBI). Is this purely the result of negative environmental experiences, or does this interact with genetic predisposition? In this study we investigated if a genetic predisposition for autism is associated with childhood trauma using polygenic scores (PGS) and genetic correlations in the UK Biobank ( $105,222 < N < 105,638$ ), and tested potential mediators and moderators of the association between autism, childhood trauma and SSBI. Autism PGS were significantly associated with childhood trauma ( $\max R^2 = 0.096\%$ ,  $P < 2 \times 10^{-16}$ ), self-harm ideation ( $\max R^2 = 0.108\%$ ,  $P < 2 \times 10^{-16}$ ), and self-harm ( $\max R^2 = 0.13\%$ ,  $P < 2 \times 10^{-16}$ ). Supporting this, we identified significant genetic correlations between autism and childhood trauma ( $r_g = 0.36 \pm 0.05$ ,  $P = 8.13 \times 10^{-11}$ ), self-harm ideation ( $r_g = 0.49 \pm 0.05$ ,  $P = 4.17 \times 10^{-21}$ ) and self-harm ( $r_g = 0.48 \pm 0.05$ ,  $P = 4.58 \times 10^{-21}$ ), and an over-transmission of PGS for the two SSBI phenotypes from parents to autistic probands. Male sex negatively moderated the effect of autism PGS on childhood trauma ( $\beta = -0.023 \pm 0.005$ ,  $P = 6.74 \times 10^{-5}$ ). Further, childhood trauma positively moderated the effect of autism PGS on self-harm score ( $\beta = 8.37 \times 10^{-3} \pm 2.76 \times 10^{-3}$ ,  $P = 2.42 \times 10^{-3}$ ) and self-harm ideation ( $\beta = 7.47 \times 10^{-3} \pm 2.76 \times 10^{-3}$ ,  $P = 6.71 \times 10^{-3}$ ). Finally, depressive symptoms, quality and frequency of social interactions, and educational attainment were significant mediators of the effect of autism PGS on SSBI, with the proportion of effect mediated ranging from 0.23 (95% CI: 0.09-0.32) for depression to 0.008 (95% CI: 0.004-0.01) for educational attainment. Our findings identify that a genetic predisposition for autism is associated with adverse life-time outcomes, which represent complex gene-environment interactions, and prioritizes potential mediators and moderators of this shared biology. It is important to identify sources of trauma for autistic individuals in order to reduce their occurrence and impact.

2. Vandewalle Katie, Melia Yvonne. **Psychosocial and behavioural factors associated with self injurious behaviour (SIB) in individuals with autism spectrum disorders (ASD).** *Research in Autism Spectrum Disorders*. 2021; **81**(1).

•Adaptive functioning, communication, IQ, sleep, sensory processing, impulsivity and over-activity are associated with SIB. •MDTs should be utilised to provide early assessment and differential treatments. •Longitudinal designs are needed to explore SIB in ASD populations over the lifespan.

3. van den Boogert Frank, Sizoo Bram, Spaan Pascale, Tolstra Sharon, Bouman Yvonne H. A., Hoogendijk Witte J. G., Roza Sabine J. **Sensory Processing and Aggressive Behavior in Adults with Autism Spectrum Disorder**. *Brain Sciences* (2076-3425). 2021; **11**(1): 95-.

Autism spectrum disorder (ASD) may be accompanied by aggressive behavior and is associated with sensory processing difficulties. The present study aims to investigate the direct association between sensory processing and aggressive behavior in adults with ASD. A total of 101 Dutch adult participants with ASD, treated in outpatient or inpatient facilities, completed the Adolescent/Adult Sensory Profile (AASP), the Reactive-Proactive Aggression Questionnaire (RPQ), and the Aggression Questionnaire—Short Form (AQ-SF). Results revealed that sensory processing difficulties are associated with more aggressive behavior ( $f^2 = 0.25$ ), more proactive ( $f^2 = 0.19$ ) and reactive aggression ( $f^2 = 0.27$ ), more physical ( $f^2 = 0.08$ ) and verbal aggression ( $f^2 = 0.13$ ), and more anger ( $f^2 = 0.20$ ) and hostility ( $f^2 = 0.12$ ). Evidence was found for an interaction of the neurological threshold and behavioral response on total aggression and hostility. Participants with higher scores in comparison to the norm group in sensory sensitivity had the highest risk of aggressive behavior. In conclusion, clinical practice may benefit from applying detailed diagnostics on sensory processing difficulties when treating aggressive behavior in adults with ASD.

4. Singh Nirbhay N., Lancioni Giulio E., Medvedev Oleg N., Hwang Yoon-Suk, Myers Rachel E. **Real-Time Telehealth Treatment Team Consultation for Self-Injury by Individuals with Autism Spectrum Disorder**. *Advances in neurodevelopmental disorders*. 2021: 1-13.

Objectives: Self-injurious behavior (SIB) refers to any repeated self-directed, non-suicidal, behavior that may cause or has the potential to cause physical harm to the person's body. Behavioral interventions provide the standard evidence-based treatments for SIB by people with autism spectrum disorder (ASD) and intellectual disabilities (ID). Translating the proven effectiveness of behavioral interventions to treatment of self-injury in community settings by clinicians and caregivers has not been totally successful. The aim of the present study was to advance translational research by providing real-time telehealth consultation to a treatment team at a community-based mental health agency that provided inpatient and outpatient services to individuals with ASD and ID.; Method: The participants of this single-case experimental study were three adolescents with ASD who had been referred for services because of their increasingly unmanageable SIB both at home and at school. The telehealth consultant provided real-time assistance to the treatment team within a translational model of care in the development and implementation of a behavior support plan and an informal mindfulness-based Soles of the Feet (SoF) program.; Results: Both visual and statistical analyses demonstrated reductions in the frequency of SIB for all three adolescents, with overall clinically significant reductions only with the SoF intervention.; Conclusion: The results of this translational study suggest that telehealth consultation might be a viable technological alternative in situations which preclude face-to-face consultation. Telehealth consultation

could be one method of supporting people with behavioral difficulties during pandemics, such as COVID-19.

5. Sampson Katie N., Upthegrove Rachel, Abu-Akel Ahmad, Haque Sayeed, Wood Stephen J., Reniers Renate. **Co-occurrence of autistic and psychotic traits: implications for depression, self-harm and suicidality.** *Psychological Medicine*. 2021; **51**(8): 1364-72.

**Abstract**Background There is increasing interest in the clinical and aetiological overlap between autism spectrum disorders and schizophrenia spectrum disorders, reported to co-occur at both diagnostic and trait levels. Individually, sub-clinical autistic and psychotic traits are associated with poor clinical outcomes, including increased depressive symptomatology, self-harming behaviour and suicidality. However, the implications when both traits co-occur remain poorly understood. The study aimed to (1) examine the relationship between autistic and psychotic traits and (2) determine if their co-occurrence increases depressive symptomatology, self-harm and suicidality. **Methods** Cross-sectional data from a self-selecting (online and poster advertising) sample of the adult UK population (n= 653) were collected using an online survey. Validated self-report measures were used to assess sub-clinical autistic and psychotic traits, depressive symptomatology, self-harming behaviour and suicidality. Correlation and regression analyses were performed. **Results** A positive correlation between sub-clinical autistic and positive psychotic traits was confirmed ( $r_s = 0.509$ ,  $p < 0.001$ ). Overall, autistic traits and psychotic traits were, independently, significant predictors of depression, self-harm and suicidality. Intriguingly, however, depression was associated with a negative interaction between the autistic domain attention to detail and psychotic traits. **Conclusions** This study supports previous findings that sub-clinical autistic and psychotic traits are largely independently associated with depression, self-harm and suicidality, and is novel in finding that their combined presence has no additional effect on depression, self-harm or suicidality. These findings highlight the importance of considering both autistic and psychotic traits and their symptom domains in research and when developing population-based depression prevention and intervention strategies.

6. Oliphant Rosalind, Smith Eleanor, Grahame Victoria. **What is the prevalence of self-harming and suicidal behaviour in under 18s with autism spectrum disorder, with or without an intellectual disability?** *BJPsych Open*. 2021; **7**(Supplement 1): S279-S.

**Aims** The aims of this systematic review are to summarise data on the prevalence of suicidal behaviours and self-harm in under 18s with Autism Spectrum Disorder (ASD) and consider the impact of Intellectual Disability (ID). It was hypothesised that the prevalence of these behaviours may be higher in under 18s with ASD than in the general population. **Background** In the general population, rates of self-harm and suicide in under 18s are of increasing concern. Whilst there is an emerging evidence base considering suicidality in autistic adults, less is known about the experience of under 18s. There has been very little research focused on how self-harm seen within the general population presents in the context of ASD and whether it continues to be a predictor of future suicidal behaviour. This may be partly due to self-harm being considered alongside Self-Injurious Behaviours (SIB), which have long been recognised as part of the clinical presentation of ASD and may have other functions (e.g. fulfilling sensory stimulation needs). **Method** A systematic literature search was conducted in line with PRISMA guidelines. For this review, all papers that included data on prevalence of self-harm and/or

suicidal behaviours in under 18s with ASD were included. Studies that only reported on the prevalence of the broader entity of SIB (characterised as stereotypic or habitual) were excluded. 338 papers were initially identified and 9 met eligibility criteria. There was considerable variation in how different aspects of self-harm and suicidal behaviours were addressed between groups and also between population samples, making it difficult to generalise the findings. The prevalence of self-harming and suicidal behaviours ranged from 7% to 73%, indicating that this is a clinically significant problem for this patient group. The only study that considered the impact of co-existing ID did not identify significant differences between groups (ID vs no ID). Conclusion There was variation in the reported prevalence rates but results suggested that rates of both self-harm and suicidal behaviour may be elevated in under 18s with ASD compared to the general population. This is in keeping with literature relating to autistic adults but in contrast to conclusions of a previous systematic review. This review highlights the need for further research to explore the experience of self-harm and suicidal behaviour in autistic children and young people.

7. Malhi Prahbjot, Sankhyan Naveen. **Intentional Self Harm in Children with Autism.** *Indian journal of pediatrics.* 2021; **88**(2): 158-60.

The study examined the demographic, socioeconomic, and clinical correlates of self injurious behaviors (SIBs) in a large clinical sample of children with autism spectrum disorder (ASD). A case record review of 1252 ASD children for whom complete information on socioeconomic background variables and presence/absence of SIBs was available were included. The overall prevalence of SIBs was 22.1% and the most prevalent SIBs were head banging (47%), followed by self hitting (27.8%). Several factors including age at diagnosis ( $t = 2.09$ ,  $P = 0.037$ ), education of mother ( $\chi^2 = 14.48$ ,  $P = 0.0001$ ), presence of co-morbid medical condition ( $\chi^2 = 4.22$ ,  $P = 0.040$ ), intellectual disability ( $\chi^2 = 23.17$ ,  $P = 0.0001$ ), sensory processing abnormalities ( $\chi^2 = 13.01$ ,  $P = 0.0001$ ), and severity of autism ( $\chi^2 = 51.13$ ,  $P = 0.0001$ ) were found to be significantly associated with presence of SIBs. Logistic regression analysis revealed that severity of autism was the only significant predictor of SIBs. Intentional self harm is related with significant morbidity and needs early intervention.

8. Kurtz-Nelson Evangeline C., Tham See Wan, Ahlers Kaitlyn, Cho Daniel, Wallace Arianne S., Eichler Evan E., Bernier Raphael A., Earl Rachel K. **Brief Report: Associations Between Self-injurious Behaviors and Abdominal Pain Among Individuals with ASD-Associated Disruptive Mutations.** *Journal of autism and developmental disorders.* 2021; **51**(9): 3365-73.

Self-injurious behaviors (SIB) are elevated in autism spectrum disorder (ASD) and related genetic disorders, but the genetic and biological mechanisms that contribute to SIB in ASD are poorly understood. This study examined rates and predictors of SIB in 112 individuals with disruptive mutations to ASD-risk genes. Current SIB were reported in 30% of participants and associated with poorer cognitive and adaptive skills. History of severe abdominal pain predicted higher rates of SIB and SIB severity after controlling for age and adaptive behavior; individuals with a history of severe abdominal pain were eight times more likely to exhibit SIB than those with no history. Future research is needed to examine associations between genetic risk, pain, and SIB in this population.

9. Hosozawa Mariko, Sacker Amanda, Cable Noriko. **Timing of diagnosis, depression and self-harm in adolescents with autism spectrum disorder.** *Autism*. 2021; **25**(1): 70-8.

Children with autism spectrum disorder are at increased risk of depression and self-harming behaviours. The question of whether timing of diagnosis of autism spectrum disorder is associated with these consequences in adolescence has not yet been studied. This exploratory study aimed to explore the association between depression and self-harming behaviour in adolescence and the parent-reported timing of diagnosis for autism spectrum disorder using a large population-based cohort in the United Kingdom. Most of the children with autism spectrum disorder in our study had within-typical-range cognitive ability. We found a linear association between timing of autism spectrum disorder diagnosis and depression and self-harming behaviour in adolescence; later diagnosis of autism spectrum disorder, particularly diagnosis in adolescence, was associated with the increased risk of self-reported depressive symptoms and self-harming behaviour in adolescence among children with autism spectrum disorder. Our findings, albeit observational, suggest that interventions targeting the earlier diagnosis of autism spectrum disorder and approaches to improve person–environment fit may help prevent secondary mental health problems in this population, particularly among those without cognitive delays and those diagnosed late. Further studies replicating across a wider intellectual spectrum and clarifying the underlying mechanism are warranted.

10. Goldfarb Yael, Zafrani Osnat, Hedley Darren, Yaari Maya, Gal Eynat. **Autistic adults' subjective experiences of hoarding and self-injurious behaviors.** *Autism : the international journal of research and practice*. 2021; **25**(5): 1457-68.

Lay Abstract: Hoarding and self-injurious behaviors are relatively common in autism, but knowledge about their expressions in adulthood is scarce. Through interviews collecting subjective experiences of autistic adults, these behaviors were explored, and categorized to their underlying purposes. Findings portray the occurrence of these behaviors in the lives of autistic adults, their self-regulatory purposes, and their relationship to other behaviors in the domain of Restrictive and Repetitive Behaviors and Interests.

11. Chaplin Eddie, McCarthy Jane, Allely Clare S., Forrester Andrew, Underwood Lisa, Hayward Hannah, Sabet Jess, Young Susan, Mills Richard, Asherson Philip, Murphy Declan. **Self-harm and Mental Health Characteristics of Prisoners with elevated rates of autistic traits.** *Research in developmental disabilities*. 2021; **114**: 103987.

Background: Prevalence studies among prisoners have found rates of 1-4% for autism spectrum disorder (ASD) or autistic traits. However, little is known about those prisoners with high levels of autistic traits.; Aim: This aim of this study was to compare the mental health characteristics of prisoners with autistic traits with neurotypical prisoners not screening positive for neurodevelopmental disorders.; Method: The study recruited 240 male prisoners from a London prison and screened for autism spectrum disorder using the Autism Quotient (AQ) 20 and 10, and Autism Diagnostic Observation Schedule (ADOS). The Mini International Neuropsychiatric Interview was used to assess for depression, anxiety, self-harm behavior and suicide.; Results: Screening using the AQ identified 46 prisoners with significant autistic traits, with 12 meeting the diagnostic threshold for ASD using the ADOS. Those screening positive with autistic traits were significantly more likely to have thought about self-harm and suicide

in the past month than neurotypical prisoners and have a comorbid mental disorder. They were also significantly more likely to report having attempted suicide during their lifetime compared to neurotypical peers at a rate of 64.9 % compared to 11.6 % for the neurotypical prisoners.; Conclusion: Prisoners with elevated levels of autistic traits were more likely to report self-harm, suicidal thoughts and were more vulnerable to a range of mental disorders than neurotypical prisoners. There is a need for more evidence on the experience of autistic prisoners to inform how pathways should work to improve health outcomes through increased awareness and access to screening and subsequent diagnosis which currently prisons are currently not set up for.

12. Cantin-Garside Kristine D., Nussbaum Maury A., White Susan W., Kim Sunwook, Kim Chung Do, Fortes Diogo M. G., Valdez Rupa S. **Understanding the experiences of self-injurious behavior in autism spectrum disorder: Implications for monitoring technology design.** *Journal of the American Medical Informatics Association : JAMIA.* 2021; **28**(2): 303-10.

Objective: Monitoring technology may assist in managing self-injurious behavior (SIB), a pervasive concern in autism spectrum disorder (ASD). Affiliated stakeholder perspectives should be considered to design effective and accepted SIB monitoring methods. We examined caregiver experiences to generate design guidance for SIB monitoring technology.; Materials and Methods: Twenty-three educators and 16 parents of individuals with ASD and SIB completed interviews or focus groups to discuss needs related to monitoring SIB and associated technology use.; Results: Qualitative content analysis of participant responses revealed 7 main themes associated with SIB and technology: triggers, emotional responses, SIB characteristics, management approaches, caregiver impact, child/student impact, and sensory/technology preferences.; Discussion: The derived themes indicated areas of emphasis for design at the intersection of monitoring and SIB. Systems design at this intersection should consider the range of manifestations of and management approaches for SIB. It should also attend to interactions among children with SIB, their caregivers, and the technology. Design should prioritize the transferability of physical technology and behavioral data as well as the safety, durability, and sensory implications of technology.; Conclusions: The collected stakeholder perspectives provide preliminary groundwork for an SIB monitoring system responsive to needs as articulated by caregivers. Technology design based on this groundwork should follow an iterative process that meaningfully engages caregivers and individuals with SIB in naturalistic settings.

13. Adıgüzel Akman Öznur, Kahraman Girgeç Sibel, Çelik Samet, Çakır Kardeş Vildan, Atasoy Nuray. **Maintenance Electroconvulsive Therapy for Agitation and Self Injurious Behaviors in Autism Spectrum Disorder.** *Turkish journal of psychiatry.* 2021; **32**(1): 65-9.

Self-injurious behaviors (SIBs) in autism spectrum disorder (ASD) are destructive symptoms that can lead to dangerous injuries and life-threatening risks. Agitation and SIBs may not respond to psychopharmacological and behavioral interventions. There are reports in the literature on improvement after electroconvulsive therapy (ECT) in cases not responding pharmacotherapy. However, data on the efficacy of the therapy on the benefiting patients, the course of the treatment and on the use of maintenance ECT (m-ECT) are very limited. This report presents the clinical features and the course of m-ECT on two cases under follow up for pharmacotherapy resistant ASD with significant agitation, mood disorder and SIBs that could

cause severe head traumas. The initial stage of therapy consisted of 7 sessions of ECT patients showed improvement after the 5th session. m-ECT were started since the agitation repeated one week after discharge despite ongoing pharmacotherapy. In the first case, m-ECT was continued once every two weeks for a total of 46 sessions; and in the second case a total of 18 weekly sessions were conducted. No significant side effects or complications were observed and the general state of well-being was preserved. Our paper is among the few that reported successful treatment of agitation with m-ECT. m-ECT should be considered in treatment resistant cases.

14. A R. **Autism, Suicidal Ideation, and Self-Injurious Behavior.** *Journal of Developmental & Behavioral Pediatrics.* 2021; **42**(1): 79-.

15. Stoddard Joel, Zik Jodi, Mazefsky Carla A., DeChant Briar, Gabriels Robin. **The internal structure of the aberrant behavior checklist irritability subscale: Implications for studies of irritability in treatment-seeking youth with autism spectrum disorders.** *Behavior Therapy.* 2020; **51**(2): 310-9.

Given the prominence of the Aberrant Behavior Checklist (ABC), Irritability Subscale (ABC-I), in treatment outcome studies, we conducted a critical examination of its internal consistency and relationship to other measures of irritability in 758 psychiatrically hospitalized youth with autism spectrum disorder. In exploratory and confirmation samples, we conducted factor and bifactor analyses to describe the internal structure of the ABC-I. Our results suggest that the ABC-I roughly represents a unidimensional construct of irritability, as indicated by a general factor in bifactor analysis. In addition to irritability, subordinate factors are presented that represent tantrums, verbal outbursts, self-harm, and negative affect. Notably, self-harm items explain a large proportion of variance independent of irritability. Therefore, their contribution in analyses of treatment effects should be considered. Further study or revision of the ABC-I may improve convergent validity with transdiagnostic formulations of irritability as well as prevent confound from self-harm in treatment studies for irritability in ASD

16. Steinfeldt-Kristensen Catherine, Jones Chris A., Richards Caroline. **The Prevalence of Self-injurious Behaviour in Autism: A Meta-analytic Study.** *Journal of autism and developmental disorders.* 2020; **50**(11): 3857-73.

Self-injurious behaviour is purportedly common in autism, but prevalence rates have not yet been synthesised meta-analytically. In the present study, data from 14,379 participants in thirty-seven papers were analysed to generate a pooled prevalence estimate of self-injury in autism of 42% (confidence intervals 0.38-0.47). Hand-hitting topography was the most common form of self-injury (23%), self-cutting topography the least common (3%). Sub-group analyses revealed no association between study quality, participant intellectual disability or age and overall prevalence rate of self-injury. However, females obtained higher prevalence rates than males ( $p = .013$ ) and hair pulling and self-scratching were associated with intellectual disability ( $p = .008$  and  $p = .002$ , respectively). The results confirm very high rates of self-injury in autism and highlight within group risk-markers.

17. Orji C. S., Sharkey L. **Self-Injurious Behaviours in Children and Adolescents with Intellectual Disability and Autism Spectrum Disorder.** *Irish medical journal.* 2020; **113**(4): 63.

18. Oliphant Rosalind Y. K., Smith Eleanor M., Grahame Victoria. **What is the prevalence of self-harming and suicidal behaviour in under 18s with ASD, with or without an intellectual disability?** *Journal of Autism and Developmental Disorders.* 2020; **50**(10): 3510-24.

A systematic literature review was undertaken to ascertain the prevalence of self-harm and suicidal behaviour in children and young people under 18 years old with a diagnosis of autism spectrum disorder (ASD), with or without an intellectual disability. There was variation in the reported prevalence rates but results suggested that rates of both self-harm and suicidal behaviour may be elevated in ASD compared to the general population. This is in keeping with literature relating to autistic adults but in contrast to conclusions of a previous systematic review. This review highlights the need for further research to explore the experience of self-harm and suicidal behaviour in autistic children and young people.

19. Moseley R. L., Gregory N. J., Smith P., Allison C., Baron-Cohen S. **Links between self-injury and suicidality in autism.** *Molecular Autism.* 2020; **11**(1).

Background: Autistic individuals without intellectual disability are at heightened risk of self-injury, and appear to engage in it for similar reasons as non-autistic people. A wide divergence of autistic perspectives on self-injury, including those who frame it as a helpful coping mechanism, motivate investigating the link between self-injury, suicide ideation, and attempts which has been reported in typically developing individuals. Method: One hundred three autistic participants completed the Non-Suicidal Self-Injury Assessment Tool (NSSI-AT), the Suicide Behaviors Questionnaire (SBQ-R), and the Interpersonal Social Evaluation List (ISEL-12) across two online studies. Logistic regression was conducted to predict self-harming status via responses to questions on suicidality, and to predict whether certain self-injurious behaviors, including cutting, were especially associated with suicide ideation and attempts. Non-parametric correlation analysis examined relationships between suicide ideation/attempts and other variables that might characterize self-harmers especially at risk of suicidality. These included perceived access to social support, purposes or reasons for self-injury, the number of different self-injurious behaviors engaged in, the duration and lifetime incidence of self-injury, and the individual's feelings about their self-injury. Results: While self-injuring status was significantly predicted by responses to a question on suicide ideation and attempts, there was no relationship between suicide ideation/attempts and a participant's personal feelings about their self-injury. The method of cutting was also predicted by suicide ideation and attempts, though other methods common in autistic people were at borderline significance. Use of self-injury for the regulation of low-energy emotional states like depression, for self-punishment or deterrence from suicide, and for sensory stimulation, was associated with suicide ideation and attempts, as was the number of self-injurious behaviors engaged in. There was no significant relationship between suicide ideation/attempts and the duration and lifetime incidence of self-injury or social support. Conclusions: These preliminary data suggest that while individuals might frame their self-injury as a positive or neutral thing, there remains a concerning relationship between self-injury and suicidality which exists regardless of individual feelings on self-injury. This is consistent with the theoretical perspective that self-



injury can be a “gateway” through which individuals acquire capability for lethal suicidal behaviors. The data highlight that particular methods (cutting) and reasons for self-injury may be of significant concern, but this information, which might be of extreme value for clinicians, requires further investigation and validation.

20. Mao Alice R., Shenoi Nancy C., King Bryan H. **Autism Spectrum Disorder: Managing Aggression, Affective Lability, Self-Injurious Behavior, And Suicidality In The Outpatient Setting.** *Journal of the American Academy of Child & Adolescent Psychiatry.* 2020; **59**(10): S69-S.

21. Licence Lucy, Oliver Chris, Moss Jo, Richards Caroline. **Prevalence and risk-markers of self-harm in autistic children and adults.** *Journal of Autism and Developmental Disorders.* 2020; **50**(10): 3561-74.

Self-harm is purportedly common in autistic individuals, but under-researched, particularly in younger samples and those without intellectual disability. This study aimed to describe prevalence, profile and correlates of self-harm in autistic individuals without impairments in adaptive functioning. Parents of autistic participants (n = 83) completed questionnaires regarding the presence/topography of self-harm, demographic characteristics, autism severity, age of diagnosis, affect, activity levels and repetitive behaviour. 24.10% of participants engaged in self-harm. Self-harm was associated with significantly higher levels of impulsivity, over-activity, negative affect, compulsive behaviour and insistence on sameness. Low mood and overactivity/impulsivity predicted the presence of self-harm, with the model correctly classifying 82.9% of cases. Findings highlight a role for impaired behavioural inhibition and low mood in the aetiological mechanisms underpinning self-harm in autism.

22. Lavery Catherine, Oliver Chris, Moss Jo, Nelson Lisa, Richards Caroline. **Persistence and predictors of self-injurious behaviour in autism: a ten-year prospective cohort study.** *Molecular Autism.* 2020; **11**(1).

Background: Self-injurious behaviours, such as head banging, hair pulling, skin picking and scratching, are common in individuals with autism. Despite high prevalence rates, there is a paucity of longitudinal research to refine models of risk and mechanism and inform service planning. In this longitudinal study, we investigated self-injury in a cohort of individuals with autism over 10 years to identify behavioural and demographic characteristics associated with persistent self-injury. Methods: Carers of 67 individuals with autism completed questionnaires relating to the presence of self-injury and relevant risk markers at T<sub>1</sub> (mean [SD] age in years 13.4 [7.7]) and T<sub>3</sub> (mean [SD] age in years 23.9 [7.7]) 10 years later. Forty-six of these also took part at T<sub>2</sub> (3 years after initial participation). Analysis assessed demographic and behavioural risk markers for self-injury, as well as the predictive value of items assessed at T<sub>1</sub> and T<sub>2</sub>. Results: Self-injury was persistent in 44% of individuals over the 10-year period, with behavioural characteristics of impulsivity (p<.001) and overactivity (p=.002), identified as risk markers for persistence. A predictive model of self-injury was derived from LASSO analysis, with baseline impulsivity, interest and pleasure, stereotyped behaviour, social communication and adaptive functioning predicting self-injury over 10 years. Conclusions: In this unique longitudinal investigation into

the persistence of self-injury in a non-clinical sample of individuals with autism over a 10 year period, we have identified a novel, robust and stable profile of behavioural characteristics associated with persistent self-injury. Findings support an early intervention strategy targeted towards individuals identified to be at a higher risk of developing self-injurious behaviour.

23. Kildahl Arvid Nikolai, Bakken Trine Lise, Matre Espen Arnfinn Winther, Hellerud Jane Margrethe Askeland, Engebretsen Maria Hagen, Helverschou Sissel Berge. **Case study: Identification of anxiety and subsequent intervention in an adolescent male with autism, severe intellectual disability and self-injurious behaviour.** *International Journal of Developmental Disabilities*. 2020.

Introduction: Anxiety disorders are highly prevalent in individuals with autism spectrum disorder (ASD), but knowledge is limited regarding identification and treatment of these disorders in individuals with ASD and more severe levels of intellectual disability (ID). The current case study aims to explore and describe the inpatient, psychiatric assessment in an adolescent male with ASD, severe ID and self-injurious behaviour (SIB) who was diagnosed with a co-occurring anxiety disorder. The study further aims to explore the implications of this diagnosis for subsequent intervention and care, including management of SIB. Materials and methods: Case study including multimodal, psychiatric assessment and subsequent intervention. Results: Following changes in care strategies attempting to incorporate the understanding of anxiety/trauma as contributing to SIB, a reduction of SIB was observed, and this reduced frequency was maintained when the patient was discharged from the inpatient setting. Conclusions: Though no causal inferences are possible, these experiences indicate that further research is needed regarding possible associations between SIB and anxiety in individuals with ASD, including implications for treatment. Experiences from the current case further indicate that it is possible to recognize and diagnose anxiety disorder in complex cases involving ASD, severe ID, limited verbal language skills, and severe SIB.

24. Huntjens Anne, van den Bosch L. M. C. Wies, Sizoo Bram, Kerkhof Ad, Huibers Marcus J. H., van der Gaag Mark. **The effect of dialectical behaviour therapy in autism spectrum patients with suicidality and/ or self-destructive behaviour (DIASS): Study protocol for a multicentre randomised controlled trial.** *BMC Psychiatry*. 2020; 20.

Background: Many persons with autism spectrum disorder (ASD) are treated in long-term specialised care. In this population, suicidal behaviour troubles patients, families, and specialists in the field because it is difficult to treat. At present, there is no documented effective therapy for suicidal behaviour in ASD (Autism Research 7:507-521, 2014; Crisis 35:301-309, 2014). Dialectical Behaviour Therapy (DBT) is an efficacious treatment programme for chronically suicidal and/or self-harm behaviour in patients with Borderline Personality Disorder (J Psychiatry 166:1365-1374, 2014; Linehan MM. Cognitive behavioural therapy of borderline personality disorder. 1993). This study will evaluate the efficacy of DBT in persons with ASD and suicidal/ self- destructive behaviour in a multicentre randomised controlled clinical trial. Method: One hundred twenty-eight persons with autism and suicidal and/or self-harming behaviour will be recruited from specialised mental healthcare services and randomised into two conditions: 1) the DBT condition in which the participants have weekly individual cognitive behavioural therapy sessions and a 2.5 h skills training group session twice per week during 6 months, and 2) the treatment as usual condition which

consists of weekly individual therapy sessions of 30–45 min with a psychotherapist or social worker. Assessments will take place at baseline, at post-treatment (6 months), and after a follow-up period of 12 months. The mediators will also be assessed at 3 months. The primary outcome is the level of suicidal ideation and behaviour. The secondary outcomes are anxiety and social performance, depression, core symptoms of ASD, quality of life, and cost-utility. Emotion regulation and therapeutic alliance are hypothesised to mediate the effects on the primary outcome. Discussion: The results from this study will provide an evaluation of the efficacy of DBT treatment in persons with ASD on suicidal and self-harming behaviour. The study is conducted in routine mental health services which enhances the generalisability of the study results to clinical practice.

25. Hand Brittany N., Benevides Teal W., Carretta Henry J. **Suicidal Ideation and Self-inflicted Injury in Medicare Enrolled Autistic Adults With and Without Co-occurring Intellectual Disability.** *Journal of autism and developmental disorders.* 2020; **50**(10): 3489-95.

Suicidality is significantly more common in autistic adults than the general population, yet the factors that increase risk for suicidality among autistic adults remain largely unknown. We identified characteristics associated with suicidal ideation and suicide attempts/self-inflicted injury in a U.S. national sample of Medicare-enrolled autistic adults. We conducted a case-control study of autistic adults aged 18-59 years (n = 21,792). Younger age, white race, depression disorders, and psychiatric healthcare utilization were associated with increased odds of suicidal ideation and suicide attempts. Co-occurring intellectual disability was associated with significantly greater odds of a suicide attempt, but lower odds of suicidal ideation. Findings underscore the need for improved methods to identify ideation prior to attempt among adults with autism and intellectual disability.

26. Forster Janice L. **Phenomenology And Management Of Self-Injurious Behavior Among Persons With Autism Spectrum Disorder.** *Journal of the American Academy of Child & Adolescent Psychiatry.* 2020; **59**(10): S69-S70.

27. Flowers Jacqueline, Lantz Johanna, Hamlin Terry, Simeonsson Rune J. **Associated factors of self-injury among adolescents with autism spectrum disorder in a community and residential treatment setting.** *Journal of Autism and Developmental Disorders.* 2020; **50**(8): 2987-3004.

Self-injurious behavior (SIB) occurs in up to 50% of individuals with autism. As one of the most serious conditions in individuals with developmental disabilities, SIB affects the individual and his or her family in multiple contexts. A systematic analysis of factors most commonly associated with SIB could inform the development of individualized intervention strategies. The current study examined factors related to SIB in an analysis of client records of 145 children with autism in a comprehensive care center. Predictor variables included age, gender, the Adaptive Behavior Composite, sensory processing, aggression, stereotypies, irritability, adaptive skills, and medical conditions. Age, irritability, and the Adaptive Behavior Composite were found to significantly predict SIB. (PsyInfo Database Record (c) 2020 APA, all rights reserved)

28. Cassidy Sarah A., Robertson Ashley, Townsend Ellen, O'Connor Rory C., Rodgers Jacqui. **Advancing Our Understanding of Self-harm, Suicidal Thoughts and Behaviours in Autism.** *Journal of autism and developmental disorders*. 2020; **50**(10): 3445-9.

29. Cantin-Garside Kristine D., Srinivasan Divya, Ranganathan Shyam, White Susan W., Nussbaum Maury A. **Multi-level modeling with nonlinear movement metrics to classify self-injurious behaviors in autism spectrum disorder.** *Scientific Reports*. 2020; **10**(1).

Self-injurious behavior (SIB) is among the most dangerous concerns in autism spectrum disorder (ASD), often requiring detailed and tedious management methods. Sensor-based behavioral monitoring could address the limitations of these methods, though the complex problem of classifying variable behavior should be addressed first. We aimed to address this need by developing a group-level model accounting for individual variability and potential nonlinear trends in SIB, as a secondary analysis of existing data. Ten participants with ASD and SIB engaged in free play while wearing accelerometers. Movement data were collected from > 200 episodes and 18 different types of SIB. Frequency domain and linear movement variability measures of acceleration signals were extracted to capture differences in behaviors, and metrics of nonlinear movement variability were used to quantify the complexity of SIB. The multi-level logistic regression model, comprising of 12 principal components, explained > 65% of the variance, and classified SIB with > 75% accuracy. Our findings imply that frequency-domain and movement variability metrics can effectively predict SIB. Our modeling approach yielded superior accuracy than commonly used classifiers (~ 75 vs. ~ 64% accuracy) and had superior performance compared to prior reports (~ 75 vs. ~ 69% accuracy) This work provides an approach to generating an accurate and interpretable group-level model for SIB identification, and further supports the feasibility of developing a real-time SIB monitoring system.

30. Cantin-Garside Kristine D., Kong Zhenyu, White Susan W., Antezana Ligia, Kim Sunwook, Nussbaum Maury A. **Detecting and Classifying Self-injurious Behavior in Autism Spectrum Disorder Using Machine Learning Techniques.** *Journal of autism and developmental disorders*. 2020; **50**(11): 4039-52.

Traditional self-injurious behavior (SIB) management can place compliance demands on the caregiver and have low ecological validity and accuracy. To support an SIB monitoring system for autism spectrum disorder (ASD), we evaluated machine learning methods for detecting and distinguishing diverse SIB types. SIB episodes were captured with body-worn accelerometers from children with ASD and SIB. The highest detection accuracy was found with k-nearest neighbors and support vector machines (up to 99.1% for individuals and 94.6% for grouped participants), and classification efficiency was quite high (offline processing at ~ 0.1 ms/observation). Our results provide an initial step toward creating a continuous and objective smart SIB monitoring system, which could in turn facilitate the future care of a pervasive concern in ASD.

31. Banas Krystyna, Sawchuk Brett. **Clonidine as a treatment of behavioural disturbances in autism spectrum disorder: A systematic literature review.** *Journal of the Canadian Academy*

*of Child and Adolescent Psychiatry / Journal de l'Académie canadienne de psychiatrie de l'enfant et de l'adolescent*. 2020; **29**(2): 110-20.

Contexte: L'agitation et l'agressivité sont des raisons justifiant fréquemment une consultation psychiatrique pour les personnes ayant reçu un diagnostic de trouble du spectre de l'autisme (TSA). Bien que la rispéridone et l'aripiprazole ne soient pas approuvés par Santé Canada pour la prise en charge de l'irritabilité associée au TSA, les deux médicaments sont utilisés à cette indication mais ne sont pas universellement efficaces et comportent un risque substantiel d'effets indésirables. Il faut donc utiliser des médicaments hors indications pour aider à la prise en charge des perturbations du comportement. La clonidine, un agoniste des récepteurs de type alpha-2, est approuvée au Canada pour le traitement de l'hypertension. L'ensemble des données probantes en soutient l'utilisation pour le trouble de déficit de l'attention avec hyperactivité (TDAH) et pour les tics du syndrome de Tourette. La présente revue se penche sur l'examen de la littérature en ce qui concerne la clonidine comme traitement des comportements difficiles dans la population du TSA. Méthode: Une recherche systématique des bases de données MEDLINE, EMBASE, et PsycINFO a produit 540 documents uniques. Dix / publications correspondaient à cette revue. Résultats: Deux études croisées, une série de cas ouverts, et sept études de cas ont été identifiées. L'une de deux études contrôlées suggérait un bénéfice de la clonidine contre un placebo. Les soignants notaient généralement une amélioration du comportement avec la clonidine par rapport au départ. La clonidine était généralement bien tolérée. La sédation était l'effet indésirable le plus constamment déclaré. Malgré que ce soit un médicament anti-hypertensif, peu interrompaient la clonidine en raison d'hypotension ou de bradycardie. Conclusion: Des données probantes limitées appuient l'utilisation de la clonidine pour la prise en charge des problèmes de comportement chez les patients souffrant de TSA. La plupart des données probantes sont issues d'études de cas. Étant donné la rareté des options pharmacologiques pour aborder les comportements difficiles chez les patients souffrant de TSA, un essai de clonidine peut constituer une option pharmaceutique appropriée et rentable pour cette population.

**32. DBT useful in treating suicidal and self-harming behavior in ASD.** *Brown University Child & Adolescent Psychopharmacology Update*. 2020; **22**(5): 8-.

The article discusses autism spectrum disorder treatment. Topics include patients with autism spectrum disorder (ASD) are treated in long-term care, and those with suicidal behavior are difficult to treat; Studies have already found that DBT is effective in patients who are chronically suicidal or self-harming who have borderline personality disorder; and The researchers hypothesize that emotion regulation and therapeutic alliance will mediate the effects on the primary outcome.

**33. Yerramsetti Ashok P., King Bryan H., Mao Alice R. Outpatient Management Of Irritability, Impulsive Aggression, And Other Severe Behaviors In Youth With ASD.** *Journal of the American Academy of Child & Adolescent Psychiatry*. 2019; **58**(10): S34-S5.

Individuals with ASD, intellectual disabilities, and neurodevelopmental syndromes comprise a complex group with unique needs. Maladaptive behaviors, including self-injurious behavior (SIB) and impulsive aggression, can impair daily functioning, cause stress to the caregivers and treatment team, and occasionally necessitate emergency mental health treatment. This

presentation is designed to provide clinicians with current knowledge on the management of these patients, including specific therapies and overall strategies for developing a treatment plan.

34. Warrier Varun, Baron-Cohen Simon. **Autism Polygenic Scores Are Associated With Childhood Maltreatment And Lifetime Self-Harm Behaviour And Ideation.** *European Neuropsychopharmacology*. 2019; **29**: S97-S8.

B Background: b Autistic individuals experience significantly elevated rates of childhood trauma, self-harm and suicidal behaviour and ideation (SSBI). Supporting this, we identified significant genetic correlations between autism and childhood trauma ( $r_g = 0.36 \pm 0.05$ ,  $P = 8.13 \times 10^{-11}$ ), self-harm ideation ( $r_g = 0.49 \pm 0.05$ ,  $P = 4.17 \times 10^{-21}$ ) and self-harm ( $r_g = 0.48 \pm 0.05$ ,  $P = 4.58 \times 10^{-21}$ ), and an over-transmission of PGS for the two SSBI phenotypes from parents to autistic probands. Further, childhood trauma positively moderated the effect of autism PGS on self-harm score (Beta =  $8.37 \times 10^{-3} \pm 2.76 \times 10^{-3}$ ,  $P = 2.42 \times 10^{-3}$ ) and self-harm ideation (Beta =  $7.47 \times 10^{-3} \pm 2.76 \times 10^{-3}$ ,  $P = 6.71 \times 10^{-3}$ ).

35. Wachtel Lee Elizabeth. **The multiple faces of catatonia in autism spectrum disorders: Descriptive clinical experience of 22 patients over 12 years.** *European Child & Adolescent Psychiatry*. 2019; **28**(4): 471-80.

A retrospective review was conducted from the inpatient and outpatient records of twenty-two autistic youth presenting to a neurobehavioral service over a twelve-year period for combined psychiatric and behavioral pathology who also met DSM5 criteria for catatonia. Six autistic girls and 16 autistic boys ranging from ages eight to 26 years old were identified, and their variegated symptoms evaluated. Stereotypy, posturing, negativism, mutism and stupor were the most common catatonic symptoms, each present in more than half of the study patients. One patient had abnormal vital signs indicative of malignant catatonia. Twenty patients had concomitant repetitive self-injurious behaviors that had led to significant tissue injury and were refractory to psychotropic and behavioral interventions. The sample was weighted towards patients with severe self-injurious behavior, which often was the reason for admission. The many 'faces' of catatonia in autism spectrum disorders are seen in this sample, and the novel recognition of repetitive self-injury as an under-recognized motor symptom of catatonia is highlighted. The preliminary findings in this study open many important future vistas for ongoing research regarding catatonia in ASDs.

36. Tudela Torras María, Abad Más Luis. **Reduction of dysfunctional self-injurious and self-stimulatory behaviors in autism disorders spectrum through occupational therapy.** *Medicina*. 2019; **79**(Suppl 1): 38-43.

Self-stimulatory and self-injurious behaviors are very frequent in neurodevelopmental disorders, being a source of anxiety and suffering for persons who have that behavior and their families. Sometimes these behaviors are so intense and frequent that it becomes a self-integrity risk. A bibliographic review was conducted on the different approaches that have been developed until today; in addition, this article explains the methodology applied in our clinic, with a data collection on the effect of therapy on self-injurious and self-stimulatory behaviors in 20 cases, as a starting point for future research. The sensory integration model

that complements pharmacological and behavioral cognitive treatment is highlighted, since it considers sensory needs relevant and trains the capacity for functional self-regulation.

37. Shkedy Gary, Shkedy Dalia, Sandoval-Norton Aileen H. **Treating self-injurious behaviors in autism spectrum disorder.** *Cogent Psychology*. 2019; **6**(1).

AbstractSelf-injurious behaviors (SIBs) are “a class of behaviors, often highly repetitive and rhythmic, that result in physical harm to the individual displaying the behavior.” In the autistic population, SIBs are considered non-suicidal self-injurious behaviors, due to no apparent intent or willful self-harm. SIBs are highly prevalent in people with Autism Spectrum Disorder (ASD). There are few hypotheses for why people with ASD self-harm; one widely accepted method for assessing self-harm; and no real consensus for treatment. However, a comprehensive review of literature on SIBs make it evident the etiology of SIBs may lie in a specific deficit, similarly to how psychologists view SIBs in non-autistic persons; and that an effective treatment option exists, yet is not used on ASD patients. SIBs in the autistic population should be conceptualized the same way they are conceptualized in neurotypical individuals, and should be treated with the same goals currently used in Cognitive Behavioral Therapies even when the individual is nonverbal or minimally verbal.

38. Shields Morgan C., Akobirshoev Ilhom, Dembo Robert S., Mitra Monika. **Self-injurious behavior among adults with ASD: Hospitalizations, length of stay, and costs of resources to deliver care.** *Psychiatric Services*. 2019; **70**(6): 457-63.

Objective: Research on hospitalizations related to self-injurious behavior and ideation among adults with autism spectrum disorder (ASD) is limited. This study compared admissions, average length of stay, and costs of resources to deliver care for such hospitalizations between adults with and without ASD. Methods: The 2014 Healthcare Cost and Utilization Project National Inpatient Sample was used to compare 5,341 discharge records for adults with ASD and 16,023 records for adults without ASD, matched on age and gender in a 1:3 ratio. Hierarchical logistic and linear regressions accounted for clustering by hospital. Covariates included gender, race-ethnicity, age, region, comorbidities, number of procedures, and insurance. Results: Among hospitalized adults, those with ASD were twice as likely as those without ASD to have a hospitalization related to self-injurious behavior and ideation. Among hospital stays for self-injurious behavior and ideation, adults with ASD had average lengths of stay that were 2.14 days longer (95% confidence interval [CI] = 1.20–3.08) compared with adults without ASD. Among adults with a hospitalization related to self-injurious behavior and ideation, unadjusted average costs for those with ASD were 36.8% higher than for adults without ASD. After the analysis accounted for covariates and length of stay, adults with ASD still had 7.48% (95% CI = 1.05%–214.32%) higher costs. Conclusions: Adults with ASD were twice as likely as adults without ASD to have a hospitalization related to self-injurious behavior and ideation. Among adults with such a hospitalization, those with ASD had longer stays and, even after the analysis accounted for length of stay, higher costs.

39. Moseley R., Gregory N., Smith P., Allison C., Baron-Cohen S. **A ‘choice’, an ‘addiction’, a way ‘out of the lost’: exploring self-injury in autistic people without intellectual disability.** *Molecular Autism*. 2019; **10**(1): 1-23.

Non-suicidal self-injury (NSSI) describes a phenomenon where individuals inflict deliberate pain and tissue damage to their bodies. Self-injurious behaviour is especially prevalent across the autism spectrum, but little is understood about the features and functions of self-injury for autistic individuals without intellectual disability, or about the risk factors that might be valuable for clinical usage in this group. One hundred and three autistic adults who responded to an online advertisement were classified as current, historic or non-self-harmers in accordance with responses to the Non-Suicidal Self-Injury Assessment Tool (NSSI-AT). Multinomial regression aimed to predict categorisation of participants in accordance with scores on tests of autistic traits, alexithymia, depression, anxiety, mentalising and sensory sensitivity. Linear regression examined relationships between these predictors and the range, frequency, lifetime occurrence and functional purposes of NSSI. Qualitative analysis explored the therapeutic interventions that participants had found helpful, and what they wished people understood about self-injury. Current, historic and non-self-harming participants did not differ in age, age at diagnosis, male-to-female ratio, level of employment or education (the majority qualified to at least degree level). The most common function of NSSI was the regulation of low-energy affective states (depression, dissociation), followed by the regulation of high-energy states such as anger and anxiety. Alexithymia significantly predicted the categorisation of participants as current, historic or non-self-harmers, and predicted use of NSSI for regulating high-energy states and communicating distress to others. Depression, anxiety and sensory-sensitivity also differentiated participant groups, and sensory differences also predicted the range of bodily areas targeted, lifetime incidence and frequency of NSSI. Sensory differences, difficulty expressing and identifying emotions also emerged as problematic in the qualitative analysis, where participants expressed the need for compassion, patience, non-judgement and the need to recognise diversity between self-harmers, with some participants perceiving NSSI as a practical, non-problematic coping strategy. Alexithymia, depression, anxiety and sensory differences may place some autistic individuals at especial risk of self-injury. Investigating the involvement of these variables and their utility for identification and treatment is of high importance, and the voices of participants offer guidance to practitioners confronted with NSSI in their autistic clients.

40. Mollajani Raheleh, Joghataei Mohamad Taghi, Tehrani-doost Mehdi. **Bumetanide Therapeutic Effect in Children and Adolescents With Autism Spectrum Disorder: A Review Study.** *Basic & Clinical Neuroscience.* 2019; **10**(5): 433-41.

Introduction: Autism Spectrum Disorder (ASD) is characterized by several impairments in communications and social interactions, as well as restricted interests or stereotyped behaviors. Interventions applied for this disorder are based on multi-modal approaches, including pharmacotherapy. No definitive cure or medication has been introduced so far; therefore, researchers still investigate potential drugs for treating ASD. One of the new medications introduced for this purpose is bumetanide. The present article aimed to review the efficacy of this drug on the core symptoms of ASD and its potential side effects. Methods: We searched all papers reported on pharmacokinetics, pharmacodynamics, efficacy, and adverse effects of bumetanide on animal models and humans with ASD. The papers were extracted from the main databases of PubMed, Web of Science, and Scopus. Results: The findings revealed that cortical neurons have high Chloride ion (Cl<sup>-</sup>)<sub>i</sub> and excitatory actions of gamma-aminobutyric acid in the valproic acid animal model with ASD and mice with fragile X syndrome. Bumetanide, which has been introduced as a diuretic, is also a high-affinity-specific



Na<sup>+</sup>-K<sup>+</sup>-Cl<sup>-</sup> cotransporter (NKCC1) antagonist that can reduce Cl<sup>-</sup> level. The results also indicate that bumetanide can attenuate behavioral features of autism in both animal and human models. Moreover, the studies showed that such medication could activate fusiform face area in individuals with ASD while viewing emotional faces. Also, recent findings suggest that a dose of 1 mg/d of this drug, taken twice daily, might be the best compromise between safety and efficacy. Conclusion: Recent studies provided some evidence that bumetanide can be a novel pharmacological agent in treating core symptoms of ASD. Future studies are required to confirm the efficacy of this medication in individuals with ASD.

41. Mintz Mark, Hollenberg Emma. **Revisiting Lithium: Utility for Behavioral Stabilization in Adolescents and Adults with Autism Spectrum Disorder.** *Psychopharmacology bulletin.* 2019; **49**(2): 28-40.

Objectives: To examine the efficacy of lithium as a mood stabilizer for patients with autism spectrum disorder (ASD).; Experimental Design: A retrospective chart review was performed that examined the use of both extended and immediate release lithium carbonate in patients with ASD that were treated at a single clinical center (CNNH NeuroHealth). Clinical Global Impression (CGI) scales were used to quantify baseline severity of ASD and mood symptoms as well as improvement after treatment with lithium carbonate.; Principle Observations: Our retrospective chart review found that 73.7% (n = 14) of patients with ASD and concomitant maladaptive behaviors experienced "improvement" (CGI-I rating ≤ 3) with the addition of lithium to their treatment regimen. Those with comorbid "ADHD" phenotype were most predictive of an efficacious response (p = 0.038, Odds Ratio 12.2).; Conclusions: Lithium carbonate is a viable, efficacious and well tolerated alternative to various neuroleptics and other psychotropic medications for use as a mood stabilizer for patients with ASD.

42. Machado Ana F., de Marigny Loran R., Schlittler Leandro X. **Satisfactory response to electroconvulsive therapy in an autistic patient with severe self-injurious behavior.** *Revista brasileira de psiquiatria (Sao Paulo, Brazil : 1999).* 2019; **41**(5): 458-9.

43. González-Romero María Fernanda, Avina-Galindo Ana Michelle, Elbe Dean, Friedlander Robin, Vila-Rodriguez Fidel. **Lifesaving electroconvulsive therapy for a child with autism spectrum disorder, severe self-injurious behavior, and neuroleptic malignant syndrome.** *The Journal of ECT.* 2019; **35**(4): e55-e6.

We present a case of a preteen with autism spectrum disorder and severe self-injurious behavior who developed neuroleptic malignant syndrome on antipsychotics and required urgent electroconvulsive therapy and continued maintenance electroconvulsive therapy for ongoing clinical stability.

44. Garside Kristine Dianne Cantin. **Behavioral Monitoring to Identify Self-Injurious Behavior among Children with Autism Spectrum Disorder** [Dissertation]; 2019.

Autism spectrum disorder (ASD) is a prevalent developmental disorder that adversely affects communication, social skills, and behavioral responses. Roughly half of individuals diagnosed with ASD show self-injurious behavior (SIB), including self-hitting or head banging), which can

lead to injury and hospitalization. Clinicians or trained caregivers traditionally observe and record events before/after SIB to determine possible causes (“triggers”) of this behavior. Clinicians can then develop management plans to redirect, replace, or extinguish SIB at the first sign of a known trigger. Tracking SIB in this way, though, requires substantial experience, time, and effort from caregivers. Observations may suffer from subjectivity and inconsistency if tracked across caregivers, or may not generalize to different contexts if SIB is only tracked in the home or school. Recent technological innovations, though, could objectively and continuously monitor SIB to address the described limitations of traditional tracking methods. Yet, “smart” SIB tracking will not be adopted into management plans unless first accepted by potential users. Before a monitoring system is developed, caregiver needs related to SIB, management, and technology should be evaluated. Thus, as an initial step towards developing an accepted SIB monitoring system, caregiver perspectives of SIB management and technology were collected here to support future technology design considerations (Chapter 2). Sensors capable of collecting the acceleration of movement (accelerometers) were then selected as a specific technology, based on the reported preferences of caregivers and individuals with ASD, and were used to capture SIB movements from individuals with ASD (Chapter 3). These movements were automatically classified as “SIB” or “non-SIB” events using machine learning algorithms. When separately applying these methods to each individual, up to 99% accuracy in detecting and classifying SIB was achieved. Classifiers that predict SIB for diverse individuals could provide more generalizable and efficient methods for SIB monitoring. ASD and SIB presentations, however, range across individuals, which impose challenges for SIB detection. A multi-level regression model (MLR) was implemented to consider individual differences, such as those that may occur from diagnosis or behavior (Chapter 4). Model inputs included measures capturing changes of movement over time, and these were found to enhance SIB identification. Diverse classification models were also developed (as in Chapter 3), though MLR outperformed these (yielding accuracy of ~75%). Findings from this research provide groundwork for a smart SIB monitoring system. There are clear implications for monitoring methods in prevention, though additional research is required to expand the developed models. Such models can contribute to the goal of alerting caregivers and children before SIB occurs, and teaching children to perform another behavior when alerted.

45. Forster Janice L. **Evaluation And Management Of Self-Injurious Behavior In ASD.** *Journal of the American Academy of Child & Adolescent Psychiatry.* 2019; **58**(10): S35-S.

Self-injurious behavior (SIB) in ASD is among the most difficult behaviors to manage. The author will present a unifying scheme for understanding the sensory, topographical, social, and neurochemical context for SIB that informs treatment planning. The social context, frequency, severity, and topography of SIB can provide a window through which underlying brain neurochemistry is understood, which in turn informs treatment.

46. Dell'Osso L., Carpita B., Muti D., Morelli V., Salarpi G., Salerni A., Scotto J., Massimetti G., Gesi C., Ballerio M., Signorelli M. S., Luciano M., Politi P., Aguglia E., Carmassi C., Maj M. **Mood symptoms and suicidality across the autism spectrum.** *Comprehensive Psychiatry.* 2019; **91**: 34-8.

Autism spectrum is a psychopathological dimension which encompasses a wide range of clinical presentations: from subthreshold forms and autistic traits (AT), that can be found in the general population, to full-blown autism spectrum disorder (ASD). Many studies reported high rates of comorbidity between both ASD and AT and mood disorders, as well as a high prevalence of suicidal ideation among patients with ASD/AT. The aim of this study was to investigate the presence of mood symptoms and suicidal ideation and behaviors in patients with full-blown ASD and in subjects with AT, as well in a healthy control (HC) group, with a specific focus on which of the autistic features may be predictive of suicidal ideation and behaviors. We recruited 262 adult subjects: 34 with ASD without intellectual impairment or language disability (ASD group), 68 fulfilling only one symptom criterion for ASD according to DSM-5 but who do not meet criteria for a full-blown diagnosis of ASD (AT group), and 160 HC. All subjects were assessed with the Structured Clinical Interview for DSM-5 (SCID-5); in addition, they were asked to fill two questionnaires: The Mood Spectrum, Self-report (MOODS-SR) and the Adult Autism Subthreshold Spectrum (AdAS Spectrum). ASD subjects reported significantly higher AdAS Spectrum and MOODS-SR total scores, as well as higher MOODS-SR depressive component total scores, when compared with AT and HC subjects. AT subjects scored significantly higher than the HC group. No significant differences were reported between ASD and AT subjects for the suicidality score according to MOODS-SR, despite both groups scored significantly higher than the HC group. The strongest predictor of suicidality score were MOODS-SR depressive component score and AdAS Spectrum Restricted interests and rumination domain score. Our results highlight a correlation between autism and mood spectrum, as well as between suicidality and both ASD and AT. Subthreshold forms of ASD should be accurately investigated due to their relationship with suicidal thoughts and behaviors.

- Mood symptoms are associated with both subthreshold and over threshold autism spectrum.
- Suicidal thoughts and behaviors are equally associated with full-blown autism and autistic traits.
- Ruminative thinking is the autistic dimension more strongly associated with suicidality.

47. Davis Katie S., Kennedy Sandra A., Dallavecchia Alessandra, Skolasky Richard L., Gordon Barry. **Psychoeducational interventions for adults with level 3 autism spectrum disorder: A 50-year systematic review.** *Cognitive and Behavioral Neurology*. 2019; **32**(3): 139-63.

There is face validity to the expectation that adults with level 3 autism spectrum disorder (ASD-3) will benefit from a range of psychoeducational interventions. This paper reviews the empirical evidence supporting the effectiveness of these interventions, many of which are currently used in clinical settings. We reviewed 56 peer-reviewed studies of psychoeducational interventions for adults with ASD-3, written in English and since 1968, that met our criteria. The reviewing team included educators, clinicians, researchers, and a biostatistician. The available literature was limited, and most, if not all, of the studies presented some significant methodological limitations. When using Cochrane's criteria to assess seven key outcome domains—activities of daily living, aggressive/destructive behaviors, emotional functioning, language/communication skills, self-injurious behaviors, stereotypy/mannerisms, and vocational skills—we found only moderately reliable evidence to support the effectiveness of interventions designed to improve emotional functioning in adults with ASD-3. The reliability of evidence relevant to the six other outcome domains was rated as low or very low. Based on this review, we suggest directions for future study of

interventions for adults with ASD–3, including topics, subpopulations, and approaches that should be explored. We also propose some crucial changes in how future studies regarding this population should be designed, analyzed, and documented, while balancing clinical considerations with scientific/educational utility.

48. Carmassi Claudia, Bertelloni Carlo Antonio, Salarpi Gianluca, Diadema Elisa, Avella Maria Teresa, Dell'Oste Valerio, Dell'Osso Liliana. **Is There a Major Role for Undetected Autism Spectrum Disorder with Childhood Trauma in a Patient with a Diagnosis of Bipolar Disorder, Self-Injuring, and Multiple Comorbidities?** *Case reports in psychiatry*. 2019; **2019**: 4703795.

This case report highlights the relevance of the consequences of trauma in a female patient with an undetected autism spectrum disorder (ASD) affected by bipolar disorder (BD) with multiple comorbidities. A 35-year-old woman with BD type II, binge eating disorder and panic disorder was admitted in the Inpatient Unit of the Psychiatric Clinic of the University of Pisa because of a recrudescence of depressive symptomatology, associated with increase of anxiety, noticeable ruminations, significant alteration in neurovegetative pattern, and serious suicide ideation. During the hospitalization, a diagnosis of ASD emerged besides a history of childhood trauma and affective dysregulation, marked impulsivity, feeling of emptiness, and self-harm behavior. The patient was assessed by the Autism-Spectrum Quotient (AQ), Ritvo Autism and Asperger Diagnostic Scale (RAADS-R), the Adult Autism Subthreshold Spectrum (AdAS Spectrum), Trauma and Loss Spectrum (TALS-SR), and Ruminative Response Scale (RRS). Total scores of 38/50 in the AQ, 146/240 in the RAADS-R, 99/160 in the AdAS Spectrum emerged, compatible with ASD, 47/116 in the TALS-SR, and 64/88 in the RRS. We discuss the implications of the trauma she underwent during her childhood, in the sense that caused a complex posttraumatic disorder, a lifelong disease favored and boosted by the rumination tendency of high functioning ASD.

49. Camm-Crosbie Louise, Bradley Louise, Shaw Rebecca, Baron-Cohen Simon, Cassidy Sarah. **'People like me don't get support': Autistic adults' experiences of support and treatment for mental health difficulties, self-injury and suicidality.** *Autism*. 2019; **23**(6): 1431-41.

Autistic people are at high risk of mental health problems, self-injury and suicidality. However, no studies have explored autistic peoples' experiences of treatment and support for these difficulties. In partnership with a steering group of autistic adults, an online survey was developed to explore these individuals' experiences of treatment and support for mental health problems, self-injury and suicidality for the first time. A total of 200 autistic adults (122 females, 77 males and 1 unreported) aged 18–67 (mean = 38.9 years, standard deviation = 11.5), without co-occurring intellectual disability, completed the online survey. Thematic analysis of open-ended questions resulted in an overarching theme that individually tailored treatment and support was both beneficial and desirable, which consisted of three underlying themes: (1) difficulties in accessing treatment and support; (2) lack of understanding and knowledge of autistic people with co-occurring mental health difficulties and (3) appropriate treatment and support, or lack of, impacted autistic people's well-being and likelihood of seeing suicide as their future. Findings demonstrate an urgent need for autism treatment pathways in mental health services.

50. Bartram Lindsay A., Lozano Juan, Coury Daniel L. **Aripiprazole for treating irritability associated with autism spectrum disorders.** *Expert opinion on pharmacotherapy.* 2019; **20**(12): 1421-7.

Introduction : Autism spectrum disorder (ASD) is a neurodevelopmental disorder with a reported prevalence of 1 in 59 people. Its core features are persistent deficits in social communication and restricted, repetitive patterns of behavior or interests. Individuals with ASD have a high incidence of secondary problems with mood lability, tantrums, self-injurious behavior and aggressiveness toward others. Collectively, these behaviors are often referred to as irritability. Many medications have been used to treat irritability in autism, with aripiprazole one of only two medications approved in the USA for this purpose. Areas covered : Herein, the authors review the evidence supporting the use of aripiprazole for treating irritability in autism, including the pivotal trials leading to regulatory approval and long-term studies conducted post-approval. They utilized PubMed, searching all English language publications since 2000, using the terms aripiprazole, autism, autism spectrum disorder, pervasive developmental disorder, Asperger's disorder, and irritability, and focused on clinical trials and review articles. Expert opinion : Multiple studies have shown the clear benefit of aripiprazole in the treatment of irritability in autism disorders compared to placebo. Often underemphasized are the metabolic effects, the proper monitoring for these effects, and the need for periodic reassessment to determine if ongoing treatment is needed.