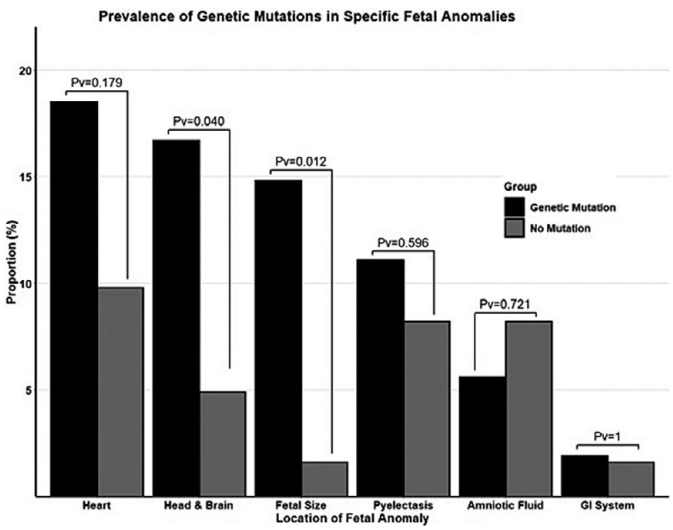
Image 2:



Conclusions: Our findings suggest distinct genetic mechanisms for ASD subtypes that are characterized by unique UFAs. These findings may form a basis for future prenatal screening approaches for ASD using both ultrasound and genetic testing. Our findings suggest distinct genetic mechanisms for ASD subtypes that are-characterized by unique UFAs. These findings may form a basis for future prenatal screening approaches for ASD using both ultrasound and genetic testing.

Disclosure of Interest: None Declared

O0078

Impact of selected single nucleotide polymorphisms in OXTR and AVPR1a genes on their expression in persons with ASD.

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Introduction: Autism spectrum disorder is a heterogeneous group of disorders that affects virtually every population, regardless of their ethnic or socioeconomic origin. In recent years, the attention of researchers has been drawn to the participation of the oxytocinergic and vasopressinergic systems in the development of autism spectrum disorders. A relatively large number of studies have investigated the association of SNPs in these genes with the development of ASD, however, there is a lack of studies in the literature focusing on their actual effect on expression and on the effect of their expression on the risk of ASD.
Objectives: The aim of this study was to assess the levels of expression of OXTR and AVPR1a genes and evaluate their links with both risk of ASD and genotypes of the most studied polymorphisms.
Methods: The study included 132 people, 77.5% of whom were male (n = 100). 113 participants (85.6%) were diagnosed with autism spectrum disorders confirmed by the ADOS-2 test conducted by a certified diagnostician. In this group, men constituted 76.1% of the population (n = 77). The remaining 28 people did not have a diagnosis of autism spectrum disorders, and in the ADOS-2 study they obtained the result below the cut-off level. The mean age in the whole group was 14.4 years (95% CI: 13.92-14.93).
Results: Significant decrease in expression of the OXTR gene was found in case of rs53576 where presence of the alternative allele (G) was linked to the 20% decrease in expression (2^(-ΔΔCt) = 0.8). In case of AVPR1a alternative allele (T) of SNP rs10877969 was linked to the 20% increase in the gene expression(2^(-ΔΔCt) = 1.197). SNPs rs2254298 (2^(-ΔΔCt) = 0.97) and rs7294536 (2^(-ΔΔCt) = 0.97) did not influence expression of the appropriate genes in significant way. In comparison between the test and control group in participants with confirmed diagnosis of ASD 13% lower expression of AVPR1a was found (2^(-ΔΔCt) = 0.87).
Conclusions: Genotype of SNPs rs53576 and rs10877969 significantly influenced the levels of expression of the genes OXTR and AVPR1a respectively. In case of rs2254298 and rs7294536 observed effects were negligible. Presence of ASD diagnosis was linked to the 13% lower expression of AVPR1a. Abnormalities in AVPR1a expression seem to be more important for the development of autistic traits than the more attention-grabbing gene abnormalities for the oxytocinergic system.

Disclosure of Interest: None Declared

O0079

Mental Health and Life Events among United States adolescents with Substance Use Disorders

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Introduction: Substance use during adolescence is linked to adverse biopsychosocial events, including poor mental health, cognitive deficits, low academic performance, and delinquency (Deas & Brown J Clin Psych 2006; 67 18; Armstrong & Costello JCCP 2002; 70 1224; Cox et al. JSH 2007; 77 109-115; Chassin JJSU 2008; 165-183). Identifying risks for these events is critical, given they are associated with adverse outcomes in adulthood.
Post-pandemic, rates of adolescent depression and anxiety have more than doubled (Racine et al. JAMA Ped 2021; 175 1142-1150). Adolescents often use substances, most commonly alcohol and cannabis, to manage mental health (Colder et al. JCCP 2019; 87 629).
Cannabis is increasingly viewed by adolescents as safe, while alcohol is viewed negatively (SAMHSA 2021). Non-disordered alcohol use (ND-AU), alcohol use below diagnostic criteria level, has adverse developmental impacts for adolescents, including increased risk-taking behavior and heavy substance use in adulthood (Marshall Alcohol Alcohol. 2014; 49 160-164).
With growing normalization of cannabis use, important questions still remain whether non-disordered cannabis use (ND-CU) among adolescents is linked to adverse life events.

Objectives: Using data from the 2018-2020 National Survey on Drug Use and Health (NSDUH), an annual US representative survey on substance use and mental health, we compared associations among common adolescent substance use and adverse life events.
Methods: Responses from adolescents aged 12-17 (N=32,407) from the 2018-2020 NSDUH were analyzed. Logistic regression was used to evaluate associations between substance use disorder (SUD) diagnoses and adverse adolescent life events. Adjusted odds ratios (aOR) were obtained while controlling for age, sex, and race/ethnicity. Analyses included sampling weights to account for the US population. Adolescents in ND-CU and ND-AU groups were defined by either past-month or past-year use without their respective SUD diagnosis.
Results: Approximately 5% of adolescents had any SUD, and 1.3% had more than one SUD (Table 1). All SUD variables, including cannabis use disorder (CUD) and alcohol use disorder (AUD), were significant for all adverse adolescent life events (Table 2). Adolescents with a SUD were nearly 3 times more likely to have major depression in the past year, 2.5 times more likely to have a C+ or below grade average, and 10 times more likely to be arrested, than controls. These risks increased with more than one SUD (Table 2). Adverse events were similar between ND-CU and ND-AU. (Figure 1).
Image:

Table 1: Sociodemographic characteristics of US 2018-2020 NSDUH adolescent substance users

Characteristic	Total sample (N = 32,407) 100%	Any SUD (N = 1,604) 5.0%	>1 SUD (N = 426) 1.3%	CUD (N = 873) 2.7%	AUD (N = 602) 1.9%
	N (%)	N (%)	N (%)	N (%)	N (%)
Sex					
Male	16502 (50.9)	732 (45.6)	202 (47.5)	435 (49.9)	247 (41.0)
Female	15905 (49.1)	872 (54.4)	224 (52.5)	438 (50.1)	355 (59.1)
Race/Ethnicity					
White	16729 (51.6)	859 (53.6)	248 (58.2)	429 (49.1)	352 (58.5)
Hispanic	8058 (24.8)	456 (28.4)	115 (27.0)	267 (30.6)	182 (30.3)
Black	4268 (13.2)	156 (9.8)	25 (5.8)	92 (10.6)	26 (4.2)
Multi-race	995 (3.1)	66 (4.1)	17 (4.1)	38 (4.4)	21 (3.5)
Asian	2007 (6.2)	43 (2.7)	12 (2.9)	28 (3.2)	12 (2)
Other	350 (1.1)	23 (1.5)	9 (2.1)	18 (2.1)	8 (1.4)
Grade Level					
Grade 5 or below	133 (0.4)	0 (0)	0 (0)	0 (0)	0 (0)
Grade 6 - 8	10835 (33.4)	106 (6.6)	16 (3.7)	33 (3.7)	24 (4.1)
Grade 9 -12	17135 (52.9)	1130 (70.5)	298 (70.1)	645 (73.8)	460 (76.3)
Other	4304 (13.3)	367 (22.9)	112 (26.2)	196 (22.4)	118 (19.6)
Community Type					
Large Metro	18033 (55.7)	847 (52.8)	203 (47.7)	506 (58)	313 (52.1)
Small Metro	9844 (30.4)	520 (32.4)	147 (34.5)	273 (31.3)	185 (30.8)
Non-Metro	4530 (13.9)	237 (14.8)	76 (17.8)	94 (10.7)	103 (17.2)
Total Family Income					
<20K	4411 (13.6)	205 (12.8)	51 (11.9)	108 (12.4)	58 (9.7)
20-50K	8361 (25.8)	457 (28.5)	106 (25.0)	248 (28.4)	144 (24.0)
50-75K	4385 (13.5)	237 (14.8)	59 (13.9)	131 (15)	82 (13.5)
>75K	15250 (47.1)	705 (43.9)	210 (49.2)	385 (44.2)	318 (52.8)

Image 2:

Table 2: 2018 - 2020 NSDUH: Associations between Substance Use Disorders (SUDs) and Adverse Adolescent Life Events

Adverse Adolescent Life Event	Any SUD (N = 1,604)		> 1 SUD (N = 426)		CUD (N = 873)		AUD (N = 602)	
	aOR	95% CI	aOR	95% CI	aOR	95% CI	aOR	95% CI
Mental Health								
1) Depression	**2.92**	[2.30, 3.70]	**3.43**	[2.48, 4.74]	**3.00**	[2.07, 4.33]	**3.09**	[2.32, 4.13]
2) Suicidal Ideation	**2.94**	[2.32, 3.73]	**3.63**	[2.59, 5.09]	**2.89**	[1.89, 4.43]	**3.34**	[2.67, 4.18]
Cognition								
3) Slower Thoughts	**2.57**	[2.08, 3.17]	**2.86**	[1.97, 4.15]	**2.66**	[1.95, 3.61]	**2.88**	[2.22, 3.74]
4) Difficulty Concentrating	**2.65**	[2.18, 3.24]	**2.97**	[2.11, 4.17]	**2.85**	[2.14, 3.78]	**2.98**	[2.33, 3.82]
Academic Performance								
5) Truancy	**2.37**	[1.88, 3.00]	**2.31**	[1.54, 3.47]	**2.29**	[1.73, 3.02]	**2.26**	[1.61, 3.17]
6) Low GPA	**2.64**	[2.19, 3.20]	**3.78**	[2.66, 5.36]	**3.10**	[2.42, 3.97]	**2.12**	[1.49, 3.02]
Delinquency								
7) Arrests	**9.80**	[6.23, 15.41]	**12.82**	[6.74, 24.39]	**8.23**	[5.23, 12.94]	**6.76**	[3.18, 14.38]
8) Serious Fighting	**4.25**	[3.58, 5.04]	**5.82**	[4.24, 7.99]	**3.84**	[3.11, 4.75]	**4.36**	[3.27, 5.80]
9) Aggression	**5.78**	[4.43, 7.55]	**8.51**	[5.67, 12.78]	**4.42**	[3.29, 5.94]	**6.26**	[4.22, 9.29]

Image 3:

Figure 1: Associations between Non-Disordered-Cannabis and Non-Disordered-Alcohol Use and Adverse Adolescent Life Events

Conclusions: Given the biopsychosocial risks to ND-CU and ND-AU in adolescents, there may be reason to reevaluate whether the DSM adequately captures the population of youth affected by their cannabis and alcohol use. Clinicians can use these nationally representative data to stratify risks and direct to appropriate treatment.

Disclosure of Interest: None Declared

O0080

Mitochondrial disorders and ASD. Mechanisms of mitochondrial dysfunction in ASD

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Introduction: ASD is a multifactorial disease. They arise from the interaction of various genetic and environmental factors. These factors affect specific neuronal circuits, oxidative stress, neuroinflammation, mitochondrial dysfunction. This disrupts the development of the nervous system, the formation of synapses, the connection between brain regions, and the size of the brain. Almost 80% of patients with ASD suffer from mitochondrial dysfunction. Therefore, mitochondrial dysfunction plays a crucial role in the pathogenesis of ASD.
Objectives: Deficiency of adenosine-triphosphate (ATP) and abnormal levels of Reactive oxygen species (ROS) cause mitochondrial dysfunction in ASD. This leads to metabolic disorders, disorders of synaptic plasticity and disorders of the immune response
Methods: The negative association between pathogenic mtDNA mutations and IQ is specific for children with ASD / MD. The overall prevalence of these abnormalities is 1.2 times higher in ASD / MD. ASD, researchers reaffirm that autistic probands carry the burden of mutations in mtDNA, especially mutations that are prone to deleterious effects on OXPHOS. According to a number of researchers, all children with ASD should be screened for MD, given: the high prevalence of abnormal markers of mitochondrial function in ASD compared with the control group; relatively high