### List of Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>αβ2</td>
<td>alpha 4 beta 2-nicotinic acetylcholine receptor subtype</td>
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<tr>
<td>α7</td>
<td>alpha 7 nicotinic acetylcholine receptor subtype</td>
</tr>
<tr>
<td>α6</td>
<td>alpha 6 nicotinic acetylcholine receptor subtype</td>
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<tr>
<td>μg</td>
<td>microgram</td>
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<tr>
<td>5AP TLTP protocol</td>
<td>5 action potential timing-dependent long-term potentiation protocol</td>
</tr>
<tr>
<td>5-CSRTT</td>
<td>5-choice serial reaction time task</td>
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<tr>
<td>5-HIAA</td>
<td>5-hydroxyindole acetic acid, the primary metabolite of serotonin</td>
</tr>
<tr>
<td>5-HT&lt;sub&gt;1A&lt;/sub&gt;R</td>
<td>serotonin (5-hydroxytryptamine) receptor 1A</td>
</tr>
<tr>
<td>5-HT&lt;sub&gt;2A/C&lt;/sub&gt;</td>
<td>serotonin (5-hydroxytryptamine) receptor 2 A/C</td>
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<tr>
<td>86Rb+ efflux assay</td>
<td>measure of nicotinic acetylcholine receptor function via rubidium-86 ion efflux [125-I-α-Btx binding measurement of binding at α7 nAChRs using the antagonist alpha-bungarotoxin</td>
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<tr>
<td>[125I]α-CtxMII binding</td>
<td>measurement of binding at α6 nAChRs using the antagonist alpha-conotoxin MII</td>
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<tr>
<td>[125I]A-85380 binding</td>
<td>measurement of binding at α4β2 nAChRs using the agonist A-85380</td>
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<td>A1</td>
<td>primary auditory cortex</td>
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<tr>
<td>AAP</td>
<td>American Academy of Pediatrics</td>
</tr>
<tr>
<td>ACR</td>
<td>American Association of Cancer Research</td>
</tr>
<tr>
<td>AARC</td>
<td>American Association for Respiratory Care</td>
</tr>
<tr>
<td>ACS</td>
<td>American Cancer Society</td>
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<td>ADHD</td>
<td>attention deficit hyperactivity disorder</td>
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<td>ADI</td>
<td>acceptable daily intake</td>
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<td>AEMSA</td>
<td>American E-Liquid Manufacturing Standards Association</td>
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<tr>
<td>AHA</td>
<td>American Heart Association</td>
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<td>AMPA</td>
<td>α-amino-3-hydroxy-5-methyl-4-isoxazolopropionic acid</td>
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<td>AMPAR</td>
<td>AMPA receptor</td>
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<td>ANHCS</td>
<td>Annenberg National Health Communication Survey</td>
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<td>ANR</td>
<td>Americans for Nonsmokers’ Rights</td>
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<td>AOR</td>
<td>adjusted odds ratio</td>
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<td>AP</td>
<td>acetyl propionyl</td>
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<td>APA</td>
<td>American Psychiatric Association</td>
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<td>APV</td>
<td>advanced personal vaporizers</td>
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<tr>
<td>arc</td>
<td>activity-regulated cytoskeleton-associated protein</td>
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<td>ATF</td>
<td>U.S. Department of Justice, Bureau of Alcohol, Tobacco, Firearms and Explosives</td>
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<tr>
<td>A-V</td>
<td>atrial-ventricular</td>
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<td>AVA</td>
<td>American Vaping Association</td>
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<td>BART</td>
<td>Balloon Analogue Risk Task</td>
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<td>BCAP/CAP</td>
<td>Committees of Advertising Practice (UK)</td>
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<td>BLA</td>
<td>basolateral amygdala</td>
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<td>BNST</td>
<td>bed nucleus of the stria terminalis</td>
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<td>BOP</td>
<td>Bureau of Prisons</td>
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<tr>
<td>BP</td>
<td>blood pressure</td>
</tr>
<tr>
<td>CAD</td>
<td>cinnamaldehyde</td>
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<td>CAM</td>
<td>cell-adhesion molecule</td>
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<td>cAMP-PKA</td>
<td>cyclic AMP-protein kinase A, signaling cascade</td>
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<td>CARDIA</td>
<td>Coronary Artery Risk Development in Young Adults</td>
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<td>CASAA</td>
<td>Consumer Advocates for Smoke-free Alternatives Association</td>
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<tr>
<td>CCTA</td>
<td>Contraband Cigarette Trafficking Act</td>
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<tr>
<td>CDC</td>
<td>Centers for Disease Control and Prevention</td>
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<tr>
<td>C-DECT-IV</td>
<td>Diagnostic Interview for Children−Version 4</td>
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<td>cFos</td>
<td>protooncogene and immediate early gene used as a marker of neuronal activity</td>
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<td>CFR</td>
<td>Code of Federal Regulations</td>
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<td>CI</td>
<td>confidence interval</td>
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<td>CMS</td>
<td>Centers for Medicare &amp; Medicaid Services</td>
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<tr>
<td>CO&lt;sub&gt;2&lt;/sub&gt;</td>
<td>carbon dioxide</td>
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<td>COMDTINST</td>
<td>Commandant Instruction</td>
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<td>CPP</td>
<td>conditioned place preference</td>
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<td>CPu</td>
<td>caudate putamen</td>
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<td>CREB</td>
<td>cAMP response element-binding protein</td>
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<td>CRF</td>
<td>corticotropin-releasing factor</td>
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<td>Abbreviation</td>
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<td>CRP</td>
<td>C-reactive protein</td>
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<td>CSI</td>
<td>Child Symptom Inventory</td>
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<td>CTA</td>
<td>conditioned taste aversion</td>
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<td>CTP</td>
<td>Center for Tobacco Products</td>
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<tr>
<td>D1R</td>
<td>dopamine D1 receptor</td>
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<tr>
<td>DA</td>
<td>diacetyl</td>
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<td>DAT1</td>
<td>dopamine regulation genotype</td>
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<td>DEHP</td>
<td>diethylhexyl phthalate</td>
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<td>DEP</td>
<td>diethyl phthalate</td>
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<td>DHS</td>
<td>U.S. Department of Homeland Security</td>
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<td>DISC-YC</td>
<td>Diagnostic Interview Schedule for Children-Parent Scale-Young Child</td>
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<td>U.S. Department of Defense</td>
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<td>DOPAC</td>
<td>3,4-dihydroxyphenylacetic acid, metabolite of dopamine</td>
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<td>DOT</td>
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<td>DSM-III</td>
<td>Diagnostic and Statistical Manual of Mental Disorders, 3rd Edition</td>
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<td>DSM-IV</td>
<td>Diagnostic and Statistical Manual of Mental Disorders, 4th Edition</td>
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<td>EC</td>
<td>electronic cigarette</td>
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<td>ECIG Inc.</td>
<td>Electronic Cigarette Industry Group, Inc.</td>
</tr>
<tr>
<td>ECIG Ltd.</td>
<td>Electronic Cigarettes International Group, Ltd.</td>
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<td>ED</td>
<td>U.S. Department of Education</td>
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<td>ENDS</td>
<td>electronic nicotine delivery systems</td>
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<tr>
<td>ENNDS</td>
<td>electronic non-nicotine delivery systems</td>
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<tr>
<td>EOP</td>
<td>Executive Office of the President</td>
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<tr>
<td>EPA</td>
<td>U.S. Environmental Protection Agency</td>
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<td>ERS</td>
<td>European Respiratory Society</td>
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<tr>
<td>EPSC</td>
<td>excitatory postsynaptic current</td>
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<tr>
<td>EPSDT</td>
<td>Early and Periodic Screening, Diagnosis and Treatment</td>
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<td>EPSP</td>
<td>excitatory postsynaptic potential</td>
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<tr>
<td>ESD</td>
<td>electronic smoking device</td>
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<tr>
<td>EU</td>
<td>European Union</td>
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<tr>
<td>F1</td>
<td>first filial generation (and similar)</td>
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<td>FAA</td>
<td>Federal Aviation Administration</td>
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<td>FCC</td>
<td>Federal Communications Commission</td>
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<tr>
<td>FCLAA</td>
<td>Federal Cigarette Labeling and Advertising Act</td>
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<tr>
<td>FCTC</td>
<td>Framework Convention on Tobacco Control</td>
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<td>FD&amp;C Act</td>
<td>Federal Food, Drug, and Cosmetic Act</td>
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<tr>
<td>FDA</td>
<td>U.S. Food and Drug Administration</td>
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<tr>
<td>FEF</td>
<td>forced expiratory flow</td>
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<tr>
<td>FeNO</td>
<td>exhaled nitric oxide</td>
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<td>FEV1</td>
<td>forced expiratory volume in 1 second</td>
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<td>fMRI</td>
<td>functional magnetic resonance imaging</td>
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<td>FR</td>
<td>fixed ratio</td>
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<td>FST</td>
<td>forced swim test</td>
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<td>FTC</td>
<td>U.S. Federal Trade Commission</td>
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<td>FVC</td>
<td>forced vital capacity</td>
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<tr>
<td>FY</td>
<td>fiscal year</td>
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<tr>
<td>G20</td>
<td>gestational day 20 (and similar)</td>
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<td>g</td>
<td>gram</td>
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<tr>
<td>GABA</td>
<td>gamma-aminobutyric acid</td>
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<tr>
<td>GABAergic</td>
<td>any cell, especially any neuron, that releases GABA</td>
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<tr>
<td>GPCR</td>
<td>G-protein-coupled-receptor</td>
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<td>GSA</td>
<td>General Services Administration</td>
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<td>GTP</td>
<td>guanosine triphosphate</td>
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<tr>
<td>GTPase</td>
<td>large family of hydrolase enzymes that can bind and hydrolyze GTP</td>
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<tr>
<td>HONC</td>
<td>Hooked on Nicotine Checklist</td>
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<tr>
<td>HPLC-ECD</td>
<td>high-performance liquid chromatography electrochemical detection</td>
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<tr>
<td>HUD</td>
<td>U.S. Department of Housing and Urban Development</td>
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<td>HVA</td>
<td>homovanillic acid</td>
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<td>IARC</td>
<td>International Agency for Research on Cancer</td>
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<td>ICD-10</td>
<td>International Statistical Classification of Diseases and Related Health Problems, 10th revision</td>
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<tr>
<td>ICE</td>
<td>Bureau of Immigration and Customs Enforcement</td>
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<tr>
<td>ICR mice</td>
<td>Institute for Cancer Research strain of mice</td>
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<tr>
<td>ICSS</td>
<td>intracranial self-stimulation</td>
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<tr>
<td>IOM</td>
<td>Institute of Medicine</td>
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<tr>
<td>i.p.</td>
<td>intraperitoneal</td>
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<tr>
<td>IQ</td>
<td>intelligence quotient</td>
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<tr>
<td>IRC</td>
<td>Internal Revenue Code</td>
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<tr>
<td>i.v.</td>
<td>intravenous</td>
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<tr>
<td>kg</td>
<td>kilogram</td>
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<tr>
<td>KO</td>
<td>knockout</td>
</tr>
<tr>
<td>L</td>
<td>liter</td>
</tr>
<tr>
<td>L&amp;M</td>
<td>Liggett &amp; Myers</td>
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<tr>
<td>LC-MS/MS</td>
<td>liquid chromatography-tandem mass spectrometry</td>
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</table>
E-Cigarette Use Among Youth and Young Adults

List of Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
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<tr>
<td>LH</td>
<td>lateral hypothalamus</td>
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<tr>
<td>M&amp;As</td>
<td>mergers, formations of partnerships, and acquisitions</td>
</tr>
<tr>
<td>m²</td>
<td>square meter</td>
</tr>
<tr>
<td>m³</td>
<td>cubic meter</td>
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<tr>
<td>MAOA</td>
<td>monoamine oxidase A</td>
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<tr>
<td>MAPK</td>
<td>mitogen-activated protein kinase</td>
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<tr>
<td>MCH</td>
<td>melanin-concentrating hormone</td>
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<tr>
<td>mFTQ</td>
<td>modified Fagerström Tolerance Questionnaire</td>
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<tr>
<td>mg</td>
<td>milligram</td>
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<tr>
<td>mGluR2</td>
<td>metabotropic glutamate receptor 2</td>
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<tr>
<td>mL</td>
<td>milliliter</td>
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<tr>
<td>mPFC</td>
<td>medial prefrontal cortex</td>
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<tr>
<td>mRNA</td>
<td>messenger ribonucleic acid</td>
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<td>MSN</td>
<td>medium spiny neuron</td>
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<td>MTF</td>
<td>Monitoring the Future</td>
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<tr>
<td>NAB</td>
<td>N-nitrosoanabasine</td>
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<td>N₂</td>
<td>nitrogen</td>
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<td>NAc</td>
<td>nucleus accumbens</td>
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<td>NACDA</td>
<td>National Advisory Council on Drug Abuse</td>
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<td>nAChR</td>
<td>nicotinic acetylcholine receptor</td>
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<td>NAc-shell</td>
<td>nucleus accumbens shell</td>
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<td>NAT</td>
<td>N-nitrosoanatabine</td>
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<td>NATS</td>
<td>National Adult Tobacco Survey</td>
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<td>NCI</td>
<td>National Cancer Institute</td>
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<td>NDAA</td>
<td>National Defense Authorization Act</td>
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<td>NDSS</td>
<td>Nicotine Dependence Syndrome Scale</td>
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<td>NE</td>
<td>norepinephrine</td>
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<tr>
<td>ng</td>
<td>nanogram</td>
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<td>NGFI-B</td>
<td>nerve growth factor-induced gene-B</td>
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<td>Third National Health and Nutrition Examination Survey</td>
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<td>National Household Survey on Drug Abuse</td>
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<td>NIH</td>
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<td>NMDAR</td>
<td>N-methyl-D-aspartate receptor</td>
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<td>National Institute on Drug Abuse</td>
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<td>NIOSH</td>
<td>National Institute for Occupational Safety</td>
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<td>nm</td>
<td>nanometer</td>
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<td>NNN</td>
<td>N-nitrosornicotine</td>
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<td>NNK</td>
<td>4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone</td>
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<td>NRT</td>
<td>nicotine replacement therapy</td>
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<td>NYS</td>
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<td>National Youth Tobacco Survey</td>
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<td>O₂</td>
<td>oxygen</td>
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<td>ODD</td>
<td>oppositional defiant disorder</td>
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<td>OMB</td>
<td>Office of Management and Budget</td>
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<td>OPM</td>
<td>Office of Personnel Management</td>
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<tr>
<td>OR</td>
<td>odds ratio</td>
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<td>OSH</td>
<td>Office on Smoking and Health</td>
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<td>OSHA</td>
<td>U.S. Department of Labor, Occupational Safety and Health Administration</td>
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<tr>
<td>P3 (and similar)</td>
<td>postnatal day number</td>
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<td>PACT</td>
<td>Prevent All Cigarette Trafficking Act</td>
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<tr>
<td>PAH</td>
<td>polycyclic aromatic hydrocarbon</td>
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<td>PATH</td>
<td>Population Assessment of Tobacco and Health</td>
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<td>PDAY</td>
<td>Pathological Determinants of Atherosclerosis in Youth</td>
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<td>PFC</td>
<td>prefrontal cortex</td>
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<td>Public Health Service</td>
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<td>PIH</td>
<td>Public and Indian Housing</td>
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<td>PNV</td>
<td>paraventricular nucleus of the thalamus</td>
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<tr>
<td>PG</td>
<td>propylene glycol</td>
</tr>
<tr>
<td>PM</td>
<td>particulate matter</td>
</tr>
<tr>
<td>PM₂.₅</td>
<td>fine particulate matter</td>
</tr>
<tr>
<td>PNE</td>
<td>prenatal nicotine exposure</td>
</tr>
<tr>
<td>p.o.</td>
<td>per os (by mouth)</td>
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<tr>
<td>Postn</td>
<td>peristin, osteoblast-specific factor</td>
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<tr>
<td>PR</td>
<td>progressive ratio</td>
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<td>PREP</td>
<td>potential reduced-exposure product</td>
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<td>PWN</td>
<td>paraventricular nucleus of the thalamus</td>
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<td>qRT-PCR</td>
<td>quantitative real-time polymerase chain reaction</td>
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<td>RCRA</td>
<td>Resource Conservation and Recovery Act</td>
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<td>SAC</td>
<td>saccharin</td>
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<td>SAMHSA</td>
<td>Substance Abuse and Mental Health Services Administration</td>
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<td>s.c.</td>
<td>subcutaneous</td>
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<td>SCAN</td>
<td>Screening test for Auditory Processing Disorders</td>
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<td>SD</td>
<td>standard deviation</td>
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<td>SE</td>
<td>standard error</td>
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<td>seconds</td>
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<td>SEC</td>
<td>Securities and Exchange Commission</td>
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<td>SES</td>
<td>socioeconomic status</td>
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<td>Abbreviation</td>
<td>Description</td>
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<tr>
<td>SFATA</td>
<td>Smoke Free Alternatives Trade Association</td>
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<tr>
<td>SIDS</td>
<td>sudden infant death syndrome</td>
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<tr>
<td>SMC</td>
<td>serial multiple choice</td>
</tr>
<tr>
<td>SNAP</td>
<td>Special Supplemental Nutrition Program</td>
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<tr>
<td>SNP</td>
<td>single-nucleotide polymorphism</td>
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<td>SRITA</td>
<td>Stanford Research into the Impact of Tobacco Advertising</td>
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<td>STOP</td>
<td>Smuggled Tobacco Prevention Act</td>
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<tr>
<td>TCR</td>
<td>trigeminocardiac reflex</td>
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<tr>
<td>TEOAEs</td>
<td>transient evoked otoacoustic emissions</td>
</tr>
<tr>
<td>TH</td>
<td>tyrosine hydroxylase</td>
</tr>
<tr>
<td>THC</td>
<td>tetrahydrocannabinol</td>
</tr>
<tr>
<td>TSNA</td>
<td>tobacco-specific nitrosamine</td>
</tr>
<tr>
<td>TTB</td>
<td>U.S. Department of Treasury, Alcohol and Tobacco Tax and Trade Bureau</td>
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<tr>
<td>TVECA</td>
<td>Tobacco Vapor Electronic Cigarette Association</td>
</tr>
<tr>
<td>UK</td>
<td>United Kingdom</td>
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<tr>
<td>USDA</td>
<td>U.S. Department of Agriculture</td>
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<td>USDHEW</td>
<td>U.S. Department of Health, Education, and Welfare</td>
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<td>USDHHS</td>
<td>U.S. Department of Health and Human Services</td>
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