Opioid Misuse and Opioid Use Disorders in Adolescents

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I, Sharon Levy, have no relevant financial or commercial relationships to disclose.
Opiates
(Codeine)

Opioids
(Hydrocodone)
Opioid pharmacology

Opioid µ-receptor and agonist
Opioid neurobiology
Adolescents are developmentally primed to use drugs
MRI scans of human brain development

Image retrieved from: http://www.pediatricmri.nih.gov/nihpd/info/image_gallery.html#
Neuron growth in brain development

Nucleus accumbens
Prefrontal cortex
Activation of the reward pathway by addictive drugs

- Alcohol
- Cocaine
- Heroin
- Nicotine
- Marijuana

Most drug use starts in adolescence

Source: SAMHSA, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2014
Growth in Opioid Prescriptions

Opioid Prescriptions by proportion of 12th graders misusing of opioids

Adolescents are developmentally vulnerable to develop substance use disorders.
Age at first use and later risk

**Alcohol**

<table>
<thead>
<tr>
<th>Age at First Drink</th>
<th>% with Alcohol Disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;=13</td>
<td>47</td>
</tr>
<tr>
<td>14</td>
<td>45</td>
</tr>
<tr>
<td>15</td>
<td>38</td>
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<td>16</td>
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<td>18</td>
<td>15</td>
</tr>
<tr>
<td>19</td>
<td>17</td>
</tr>
<tr>
<td>20</td>
<td>11</td>
</tr>
<tr>
<td>&gt;=21</td>
<td>9</td>
</tr>
</tbody>
</table>

**Marijuana**

<table>
<thead>
<tr>
<th>Age at First Use</th>
<th>% with Marijuana Disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>17</td>
</tr>
<tr>
<td>15</td>
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</tr>
<tr>
<td>19</td>
<td>8</td>
</tr>
<tr>
<td>21+</td>
<td>4</td>
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</tbody>
</table>

Age of onset of non-medical use of prescription drugs

Prescribed opioid use

Opioid misuse
Association between prescribed opioids and opioid misuse

Prescribed pain relief

AOR: 1.33
(95% CI 1.04-1.70)

Prescribed opioid use

Opioid misuse

Alc/MJ/tobacco use
Gateway to Opioid Misuse

Lifetime Marijuana use
AOR: 2.44
(95% CI 2.22-2.67)

Lifetime Cigarette use
AOR: 1.25
(95% CI 1.16-1.36)

Lifetime Alcohol use
AOR: 1.23
(95% CI 1.11-1.36)

Prescribed opioid use

Younger age
Genetic vulnerability
Mental health disorders
Motivation

Opioid misuse → Opioid addiction

Alc/MJ/tobacco use

Opioid misuse
Younger age*

* AOR decreases by 5% each year that non-medical use is delayed

(after one year, **AOR: 0.95** with 95% CI 0.94-0.97)

**Sources:** McCabe et al. *Addiction.* (2007). 102(12):1920-30
Mental health and opioid use

Major depression, anxiety disorder, or panic disorder
Opioid use OR: 4.43 (95% CI 3.64-5.38)

Familial alcohol problem/drug use
Drug abuse/Dependence
OR: 7.89-7.92

PTSD
Drug abuse/Dependence
OR: 8.68

Motivations for opioid misuse

48.1% Used to relieve pain
51.9% Used to get high/experiment

Association between motivation for use and Opioid Use Disorder

Unprescribed pain relief
AOR: 1.8
(95% CI 1.20-2.60)

Recreational use
AOR: 3.42
(95% CI 1.45-8.07)

Think your patients aren’t at risk of having an opioid use disorder?

Think Again.

This is the Face of Opioid Use Disorder

[Logos and text related to MAT TRAINING and PCSS]