

EASNA Rapid Fire Session:  
Pharmacogenomics:  
Using Personalized Medicine to  
Improve Mental Health  
Dr. Tyler Amell



Health • Benefits • Employee Assistance • Retirement

Business. Needs. People.

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**Pharmacogenomics: Using Personalized Medicine to Improve Mental Health**

- Demystifying the medical science
  - The journey from the laboratory workbench to today's workplaces
- Why **you** should care
  - Health and productivity solutions, supporting EAP Programs

<b>Mental Health</b> Examples: Anxiety, Depression	<b>+Physical Health</b> Examples: Neuropathic Pain, Cardiovascular, Cholesterol
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**3 Most Important Takeaways for You**

<b>1</b> EAP Support	<b>2</b> Early Intervention	<b>3</b> Disability Prevention, Recovery & Reintegration
Presenteeism?	Stay at Work?	Absenteeism?
<b>Pharmacogenomic Impact</b>		

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Chemistry and Biology Basics




Human Genome Project



Genetic Variance in Drug Metabolism



Quicker Return to Function



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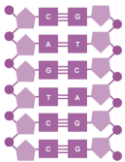
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Personalized Medicine



DNA

Like your fingerprint, your liver and the enzymes it contains is unique to you...



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One Size Does Not Necessarily Fit All...



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# Rapid Fire Session:

## Pharmacogenomics: Using Personalized Medicine to Improve Mental Health

**Evidence-Informed Practice**  
(Evidence-Based Practice)

Based upon research conducted *without* genetic data

Employee support and healthcare services are not personalized

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**Why is this Coffee Example Important for You?**

5%	55%	30%	10%
<b>UM:</b> Ultrarapid Metabolizer	<b>EM:</b> Extensive or Normal Metabolizer	<b>IM:</b> Intermediate Metabolizer	<b>PM:</b> Poor Metabolizer

\*CYP2D6 Enzyme – Involved in 20% of all drug metabolism, not just SSRIs

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# Rapid Fire Session: Pharmacogenomics: Using Personalized Medicine to Improve Mental Health

## Mental Health – Pharmaceutical Interventions

Anxiety	Depression
<ul style="list-style-type: none"> <li>BENZODIAZEPINES (Xanax, Valium, Ativan)</li> <li>BETA BLOCKERS</li> <li>TRICYCLIC ANTIDEPRESSANTS (Amitriptyline, Tofranil, Norpramin)</li> <li>MONOAMINE OXIDASE INHIBITORS (MAOIs) (Nardil, Parnate)</li> <li>SELECTIVE SEROTONIN REUPTAKE INHIBITORS (SSRIs) (Prozac, Zoloft, Paxil, Celexa)</li> <li>SEROTONIN-NOREPINEPHRINE REUPTAKE INHIBITORS (SNRIs) (Effexor)</li> <li>ANTICONVULSANTS (Lyrica, Neurontin)</li> </ul>	<ul style="list-style-type: none"> <li>TRICYCLIC ANTIDEPRESSANTS (Amitriptyline, Tofranil, Norpramin)</li> <li>MONOAMINE OXIDASE INHIBITORS (MAOIs) (Nardil, Parnate)</li> <li>SELECTIVE SEROTONIN REUPTAKE INHIBITORS (SSRIs) (Prozac, Zoloft, Paxil, Celexa)</li> <li>SEROTONIN-NOREPINEPHRINE REUPTAKE INHIBITORS (SNRIs) (Effexor)</li> </ul>

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## Drug Analytics – A Cautionary Tale

<p>Mental Health Anxiety, Depression</p>	<ul style="list-style-type: none"> <li>BENZODIAZEPINES (Xanax, Valium, Ativan)</li> <li>BETA BLOCKERS</li> <li>TRICYCLIC ANTIDEPRESSANTS (Amitriptyline, Tofranil, Norpramin)</li> <li>MONOAMINE OXIDASE INHIBITORS (MAOIs) (Nardil, Parnate)</li> <li>SELECTIVE SEROTONIN REUPTAKE INHIBITORS (SSRIs) (Prozac, Zoloft, Paxil, Celexa)</li> <li>SEROTONIN-NOREPINEPHRINE REUPTAKE INHIBITORS (SNRIs) (Effexor)</li> <li>ANTICONVULSANTS (Lyrica, Neurontin)</li> </ul>
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### Case Study #1 in Personalized Medicine

**A Pathway to Recovery & Reintegration**

**A Pathway to Relief**

Time

MAY JUL SEP NOV JAN MAR MAY JUL SEP

MH-NP GI NP ONLY

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**Benefits to You**

**EAP Professionals**      **Plan Sponsors**

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**Sample Results – 13:1 ROI**

**Quicker Return to Function**  
(EAP Support, STW and RTW)

**7% on Drug Costs**  
(Higher with biologics)

**1/3 Disability Duration**

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**Business. Needs. People.**

**Thank you!**

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