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SOAR Training Of Trainers

The
Science of

Addiction

& Recovery

FACES & VOICES
OF RECOVERY

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The Science of Addiction and Recovery (SOAR) Training of Trainers

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* = Also on the FAVOR SOAR CD



FACES & VOICES OF RECOVERY

Dear Recovery Advocate,

Thanks so much for attending today's Science of Addiction and Recovery "Train-the-Trainer." It was great to have a chance to get to know you and I look forward to working with you.

Faces & Voices of Recovery is building a network of trained advocates like yourself who can use the information and skills that you learned today to go out into communities across the country and spread the word about the science of addiction and recovery.

I will be keeping in touch with you over the coming months as you go out and make this presentation at meetings, before church groups and other places where people in your community come together. One month after today's training, I will be sending you an email to check in and see how you're doing. It will include a link to a discussion board that has been set up on the Faces & Voices web site, where you can ask questions and discuss your experiences. I will be managing the discussion board and will use it as a way to keep in touch and follow up from today's training.

The Faces & Voices web site has a page dedicated to this training. On it, we have posted the following materials that you can download when you go out to make a presentation:

http://www.facesandvoicesofrecovery.org/about/trainings_events/science_addiction_recovery_trainer.php

- The PowerPoint with a script that you can follow and use.
- Links to hand outs that you can order like the materials you received today
- PDFs of hand outs that you received today
- Presentation registration form that you can use to report back to us on your experiences
- Links to resources for additional information on the science of addiction and recovery as well as information on honing your presentation skills
- Frequently Asked Questions that you may be asked when you give your presentation

Please feel free to contact me through the Faces & Voices web site if you have any questions after today's training. I'm really excited about this training and can't wait to hear how it's helping you get out the word about the reality of recovery.

Sincerely,



Florence Hilliard

Agenda

9:00am	Introductions and the SOAR
10:30am	Break
10:45am	SOAR (cont.)
12:15pm	Lunch
1:00pm	Your SOAR Section Presentations
2:30pm	Break
2:45pm	Presentation Tips, Techniques and Next Steps
4:15pm	Adjourn



Training Tips: The Science of Addiction & Recovery

By Florence Hilliard

I. Three Keys to becoming a Successful Trainer

1. Be enthusiastic about your subject matter and engage the audience right at the beginning of your talk.

Ask yourself, “Why am I willing to talk to people about addiction and recovery?” Once you have that clearly in mind, you’re all set to open up your training.

Example: “Thank you for coming. I am really (excited, happy to be here) (looking forward to spending this time with you) because what I am going to share with you this (morning, evening etc) (explain your reason, some ideas are: has made a difference in my life and recovery, will explain addiction and recovery in a way you might never have thought of before, will clearly explain the need for policy change, etc.)” Whatever you decide to say, make sure it’s genuine. That way, you’ll have your audience “with” you from the start.

Remember: Your energy and passion will “speak” to your audience and can help you overcome a lot of early training jitters.

2. Be open to improving your presentation.

Like any other skill, to become a great speaker and/or trainer you will need to continually think about what went well and what didn’t each time you do a presentation. You don’t need to apologize if you feel nervous, but **do** ask for and get comments on ways that you can improve your presentation. Take these comments as seriously as compliments on what you did well. Don’t personalize suggestions on how you can improve. Instead, think about those comments as opportunities to help you step outside of your personal comfort zone to get to the level you want to be – a great trainer.

3. Do it a lot!

If you’ve ever started a new job, you probably remember how it felt during the learning curve of your first days or months. As time went on you could perform your job with ease and comfort. Training is exactly the same thing. The more you do it – the easier, and more fun, it becomes!

II. Getting Organized

You will be successful in getting people to hear what you want to say by

- Organizing your talk or training for your audience
- Organizing yourself as a trainer

Organizing Your Talk

Start with what I call the three W's:

1. Who

Who is your audience going to be? Think about the focus of your talk and how formal you want to be.

Talk Focus: What you will want to emphasize in your talk depends on how much time you have and who the audience is. For example, if you are speaking to the teachers at your local school, you will have a different focus than if you are talking to a group of legislators or community leaders.

Talk Formality: You'll want to feel comfortable in how you dress, speak and present yourself when you're speaking. Here are some situations you may find yourself in and general guidelines for how formal or informal you should be:

- In-service for staff of single state agency or county board meeting, workshop at a large conference: More Formal
- Legislative luncheon: Very Formal
- Training for group of recovery community friends and acquaintances: Informal
- House party talk: More informal
- Conversations with friends and neighbors who come to you about a family member or friend: Very informal

2. Why

Why are you doing this training or talk to this particular group of people?

Were you invited by them or did you organize the training yourself? To the best of your knowledge, will people be open to this information or might it be a more skeptical audience? These are important things to think about as you decide what you want to focus on and how formal or informal your talk will be.

3. Where

The physical space and mechanics of a room create a positive (or negative) atmosphere for your talk or training.

Physical Space: Believe it or not, when people are forced to sit close together it actually helps the audience be more engaged and interested. I didn't realize this for awhile and couldn't understand why when I gave talks in large rooms where people had lots of space between them, the response wasn't as enthusiastic as I expected sometimes. If your training will be in a large gymnasium or cafeteria for example, plan to get there early enough to set up the seating arrangements so that people are sitting closer together and not spread out, where it's easier for them to be distracted and not engaged in your presentation. And, if the room is large, make sure you have a microphone!

Mechanics: Will people be able to see the slides clearly? Is the room so hot it will make people sleepy? Is there a cord long enough to plug in your laptop or other devices? The mechanics of the space can make a big difference getting off to a good start and in how engaged your audience will be.

Organizing Yourself

1. What do I wear?

You want to feel comfortable and dressed appropriately for each event.

2. What do I do with my hands?

If you haven't done a lot of presenting yet, you may find that your hands seem to "get in the way" and make you feel a bit clumsy or uncomfortable. You can wear something with pockets, hold a piece of chalk or a laser pointer or stand by a podium.

3. Can I be heard?

Don't assume that your voice will carry and that it will be easy for your listeners to hear you. Your voice can get tired and sometimes it's hard to remember to keep your voice level loud enough and without even knowing it, you will lose the attention of people sitting in the back. If your voice tends to be softer, practice using a microphone and ask if there's one available where you'll be speaking. If there isn't a microphone, when you start the training, ask if everyone can hear you at the beginning of the training. And always ask for a volunteer in the back who will raise their hand if you need to speak up during the talk. Sometimes a fan can turn on and you won't even know you're losing the last two rows of your audience!

4. What else will I need?

As you gain experience speaking, you'll figure out what works (and doesn't) for you. Some people prefer to stand behind a podium when they talk, others prefer no podium. Do you like to have a glass or bottle of water handy? How do you like to keep your notes organized and available if you need to refer to them? Ask for what you need – your host wants you to be successful as much as you do.

5. What if I don't know the answer to someone's question?

Someone will probably ask you a question about the scientific research that you won't be able to answer. The rule of thumb for this situation is: If the question seems important to helping people attending the training understand that there is a science behind addiction and recovery, answer by saying that you will ask the training director and get back to everyone who's attended the training afterward. Otherwise, respond that while their question is very interesting or important, it's not something that you will be focusing on during this training.

6. How can I tell if people are listening?

It's very important that you don't forget to keep track of your audience. Don't get too engrossed in your talk that you forget to really look out at people and gauge your audience. Are eyes drooping, are people not paying attention, are they squirming in their seats? You may need to take an early break, have them stand and stretch, ask for questions or ask if someone can give you an example or story of what you were talking about. Take a few minutes to do something that will make the energy shift from your voice to something else.

Remember to always stick to the time allotted and don't run over, even if there are a lot of questions. If you don't have time to answer all of the questions, announce at the break or thank everyone for coming when the allotted time is up, and invite those who haven't gotten their questions answered to stay.

6. What if there's media at the training I'm giving?

Be sure to look over the Faces & Voices of Recovery Tip Sheet for Media Interviews on the Faces & Voices web site at www.facesandvoicesofrecovery.org.

7. What if participants challenge what I'm saying?

Your ability to handle people who are oppositional and resisting what you are saying is a skill that will be one of the most important you can learn. It's a skill that can make or break a talk or training. One thing to keep in mind is that oppositional people are not doing something *to you*, they are doing something *for themselves*. They are usually trying to support their own bias or promote their own opinions. There are two strategies you can use to deal with these kinds of situations.

A. Acknowledging "Resistance" Before It Happens

A few people may think about the subject matter of this training as "controversial." You can almost be sure there will be a person in your audience who is somewhat skeptical about some of the information that you'll be presenting.

When you come to the slide titled, "Problem with Addiction and Recovery Throughout History," you can acknowledge this "resistance." If you do that, you can avoid getting involved in a verbal debate, and off track from your presentation, later in the training.

B. Acknowledging “Resistance” or Opposition (direct and indirect) as it Comes Up During the Training

Most people will not openly defy or challenge your presentation directly (although that did happen to me once!). Instead, people may be argumentative or challenge you on small points as you’re going along. That’s fine! The person asking the question may be genuinely confused or just wanting some more information.

Here’s a technique that you can use to “frame” or restate what they’re saying. I try to make my response or statement be positive, if possible. You can answer a question by starting with “I’m glad you asked that”; “that’s an excellent thought/question”; “that’s an interesting question/comment” or a similar statement.

If you’re not sure about what someone is asking or where they’re going with the question or comment, ask them to explain their question first! You can say something like, “Could you say more about that?” When they clarify, they will almost always let you know what they are really asking or commenting about. Then you can decide whether or not it makes sense to go into greater detail about the question.

If you can answer an oppositional question or remark simply, and without defensiveness, then it makes sense to respond. If you feel, however that the question or comment is either too vague, or too oppositional, you’ll want to acknowledge it and say something like, “I’d be happy to talk more with you about this either at break or after the training.” If you do this, you won’t get baited into engaging in a debate in the middle of your talk, getting off track for all of the other people who are there.

8. How do I stay passionate?

Spend a few minutes before your talk (or the night before) thinking of what made you want to commit your time and energy to let others learn about the science of addiction and recovery and the reality of long-term recovery from addiction. Think about why you are personally so committed to this effort, then visualize yourself doing the talk or training. That energy and sincerity will come through no matter what your style and your audience will respond to that in a really positive way.

Most importantly – HAVE FUN! Although we all take addiction and recovery seriously, not taking ourselves so seriously will go a long way to becoming a great trainer!

Core Presentation Skills Self-Assessment Date: _____

Check one box that reflects your assessment of each of your core skills. Then, transfer the numbers to the scoreboard.

Posture	<ul style="list-style-type: none"> • Feet hips-width apart • Arms down at sides, hands out of pockets • Knees and shoulders relaxed <p>Novice <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Master 1 2 3 4 5 6 7 8 9 10</p>
Movement	<ul style="list-style-type: none"> • Purposeful, motivated by eyes • Deliberate pace • Non-confrontational, on an arc <p>Novice <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Master</p>
Gestures	<ul style="list-style-type: none"> • Natural • Originate from the shoulders, not elbows • Non-repetitive <p>Novice <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Master</p>
Facial Expression	<ul style="list-style-type: none"> • Smiling and relaxed • Warm and sincere • Passionate <p>Novice <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Master</p>
Voice	<ul style="list-style-type: none"> • Projection – easy to hear • Resonance – deep, rich tone • Variety – pitch & pace, not monotone <p>Novice <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Master</p>
Pause	<ul style="list-style-type: none"> • Verbally punctuate sentences • Use silence instead of “filler” (uh, um, etc.) • No over-connecting (and, so, but, therefore) <p>Novice <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Master</p>
Eye Communication	<ul style="list-style-type: none"> • One sentence or thought per person • Focused on people, not ceiling or floor • Randomly included as many people as possible <p>Novice <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Master</p>



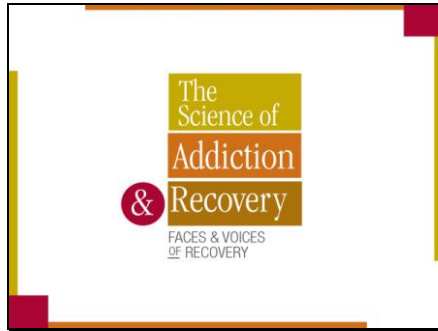
Self-Assessment of Core Presentation Skills Scoreboard

**Enter the presentation date then 1-10 for each core skill from the previous page. Add for your total.
Chart your progress by placing an X in the bottom section that corresponds to today's total.**

Presentation Date	Example								
Posture	4								
Movement	5								
Gestures	8								
Facial Expression	5								
Voice	3								
Pause	5								
Eye Communication	6								
Total	36								
Master 70									
60									
50									
40									
30	X								
20									
10									
Novice 0									
Improvement Targets:									



Slide 1

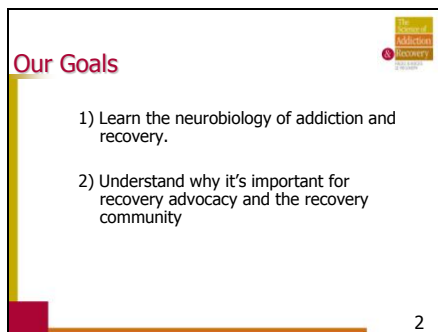


Good Morning. Let's go ahead and get started.

My name is _____ and I'm here today to talk to you about some information that has made a huge difference in my life as a (person in recovery/family member/recovery advocate) about the science of addiction and recovery.

(This is a good place to tell a SHORT personal story if you'd like. Just be sure that it relates to what learning the information that you're going to present in the talk has meant to you.)

Slide 2



During our time together I'm going to be explaining the really great work that has been going on for some time now about the science of addiction and recovery.

This is a very exciting time for people in recovery, their families and others who want to help people feel free and able to talk about the alcohol and drug problems they are experiencing. By talking about these problems, we can begin to reduce stigma and make a difference in how people think about addiction and recovery.

Being able to talk about it from a science-based perspective will help people feel OK about asking for help and getting treatment if they need it.


It will also help us educate and motivate our elected officials change our public policies and laws to treat people both in active addiction or personal recovery with dignity and fairness.

I am NOT going to be asking anyone to talk about being in AA or any other anonymous self-help programs. I'm just going to give you the information today that will make it possible for you to talk about addiction and recovery from a science-based perspective.

Slide 3

Faces & Voices of Recovery

- In 2001, recovery advocates came together with national allies to establish Faces & Voices of Recovery, a nationwide advocacy campaign.
- Today, tens of thousands of Americans belong to local, state and national recovery community organizations.



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As many of you know, recovery advocates from around the country came together in St. Paul, Minnesota in 2001 to found what is today Faces & Voices of Recovery.

Rep. Jim Ramstad, Senator Paul Wellstone, William White, and many of you here today joined with recovery advocates in a call to action.

Slide 4

Recovery Community

- People in recovery from alcohol and other drug addiction, their family members, friends and allies.
- Governs Faces & Voices of Recovery



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Faces & Voices of Recovery is a national organization governed by the recovery community. There are hundreds of local recovery community organizations around the country. You can find out more about Faces & Voices of Recovery and local recovery community organizations by going to the Faces & Voices web site at www.facesandvoicesofrecovery.org. If you don't receive Faces & Voices' bi-monthly eNewsletter, you can go to the web site to sign up to receive it at any time.

[You can talk about a recovery community organization that you belong to here.]

Slide 5

Paths to Recovery

There are many pathways:

- Mutual support groups
- Professional treatment
- Faith
- Medication-assisted
- "Natural" or on your own
- And many more



5

We now know that there are many ways that people find and stay in long-term recovery. It's important to let people know there is no ONE right way into recovery. Another way to say this is to say there is no wrong door into recovery as long as the person feels that it's right and working for them and they are experiencing success. And, if one pathway doesn't work, just like other illnesses, we want to encourage people to find the pathway that works for them.

Slide 6

Faces & Voices of Recovery

- Changing public perceptions of recovery
- Promoting effective public policy
- Demonstrating that recovery is working for millions of Americans

It is our collective strength that will ensure our success, and it is our mission to bring the power and proof of recovery to everyone in America.

6

Faces & Voices of Recovery is working with recovery advocates around the country to bring information like today's Science of Addiction and Recovery Train the Trainer to help change public perceptions of recovery and build public awareness that people can and do recover from addiction to alcohol and other drugs.

One reason that Faces & Voices and I am doing this is so that we can change public attitudes and change public policies so that they support recovery.

We are all here today to bring the power and the proof of recovery to our families, friends, policymakers and the media.

Slide 7

What is recovery?

- Talking about recovery
 - Faces & Voices' messaging
- Defining recovery
 - US Substance Abuse and Mental Health Services Administration (SAMHSA) Center for Substance Abuse Treatment (CSAT) National Summit on Recovery, 2005
 - Betty Ford Institute Consensus Panel, 2007

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Well, just what is recovery?

For people in recovery and their family members, each may have their own description and definition of their personal recovery.

At Faces & Voices of Recovery, we've been thinking about it in two ways:

The first is how to talk about it.

That's why we've developed a way to describe and talk about recovery so that people who are not part of the recovery community understand what we mean when we use the word. One of the important findings from Faces & Voices groundbreaking 2004 survey of the general public was that people believe that the word recovery means that someone is trying to stop using alcohol or other drugs. We wanted to find a way to talk about recovery that would allow us to be clear and believable when describing it in a way that will move our advocacy agenda forward. That language or "message" is included in the hand outs in your packet. This messaging is a result of in-depth public opinion research with members of the recovery community and the general public.

We encourage you to use this “messaging” or language in all of your recovery advocacy – *if you are speaking out as a person in recovery or a family member or friend.*

The second is how to describe it, for purposes of research and greater understanding by treatment providers and others who are involved in making recovery possible.

In 2005, the federal government’s Center for Substance Abuse Treatment convened a Recovery Summit in Washington, DC. Out of that meeting, a recovery definition was developed that’s also in your packet.

And in 2006, the Betty Ford Center convened a panel to further discuss a recovery definition. That discussion and follow-up meetings resulted in an entire issue of the Journal of Substance Abuse Treatment devoted to defining recovery. We’ve included that information in your packet as well.

Slide 8

A presentation slide with a white background and a yellow border. The title "Why are we talking about neuroscience?" is in red text at the top left. Below the title are two bullet points: "• Understand Recovery" and "• Understand Addiction". In the top right corner, there is a small logo for "The National Education Center for Substance Abuse Treatment". In the bottom right corner, the number "8" is displayed. The slide has a decorative yellow and red border on the left and bottom edges.

Why are we talking about neuroscience?

- Understand Recovery
- Understand Addiction

8

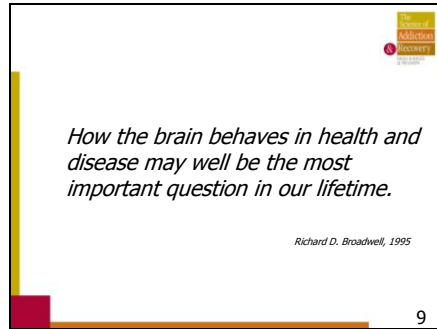
So why are we talking today about the neuroscience of addiction and recovery?

First let me say that when I use the word “addiction” that I’m including alcoholism.

The reason we’re talking about the neuroscience of addiction is because this disease and the recovery process historically, and up to today, still carries a tremendous amount of stigma, judgment, myths and misunderstandings about it.

This talk will clear up those myths and misunderstandings and replace them with good, up-to-date scientific information that is factual.

Slide 9

A presentation slide with a white background and a black border. In the top right corner, there is a small logo for 'The Addiction Recovery Institute'. The main text is centered and reads: 'How the brain behaves in health and disease may well be the most important question in our lifetime.' Below this, in smaller text, is 'Richard D. Broadwell, 1995'. In the bottom right corner, the number '9' is displayed. A yellow vertical bar is on the left side, and a red square is in the bottom left corner.

How the brain behaves in health and disease may well be the most important question in our lifetime.

Richard D. Broadwell, 1995

9

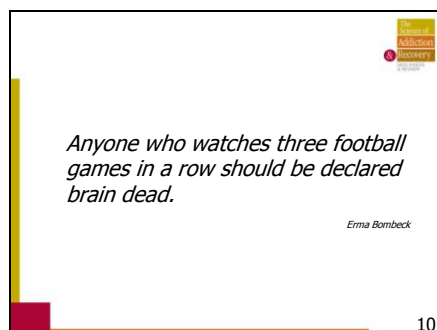
So in looking back at neuroscience, the 1990's were considered "The Decade of the Brain." Technology had gotten to the point where many scientists believed that they would be able to unlock and uncover all the secrets of the brain – information they had never had access to before.

But here's what happened: while the scientific world learned more about the brain in a decade than it had ever known in the history of mankind, scientists were astounded at how vastly more complicated and intricate the brain was to understand than they had ever imagined. In fact, many scientists said the biggest thing they learned from their new research, was how much they had to learn about this great organ.

For example a quote from a scientist named Richard Broadwell said things like (*read quote*). In fact, one scientist described it like this recently, "If you want to think about the brain like a computer, which is really not a fair comparison because the brain is more like the internet. But if you did, the computer that does what the brain can do would have to be about the size of an 8 story building – and the size of Texas.

This is how large a computer would have to be to come close to what our brain can do everyday!"

Slide 10

A presentation slide with a white background and a black border. In the top right corner, there is a small logo for 'The Addiction Recovery Institute'. The main text is centered and reads: 'Anyone who watches three football games in a row should be declared brain dead.' Below this, in smaller text, is 'Erma Bombeck'. In the bottom right corner, the number '10' is displayed. A yellow vertical bar is on the left side, and a red square is in the bottom left corner.

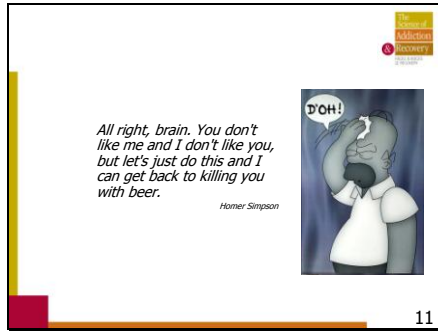
Anyone who watches three football games in a row should be declared brain dead.

Erma Bombeck

10

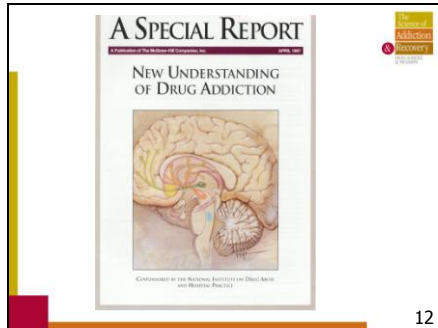
Then again we also have the "social scientists" of our time like the wonderful late Erma Bombeck who said, "Anyone who watches three football games in a row should be declared brain dead."

Slide 11



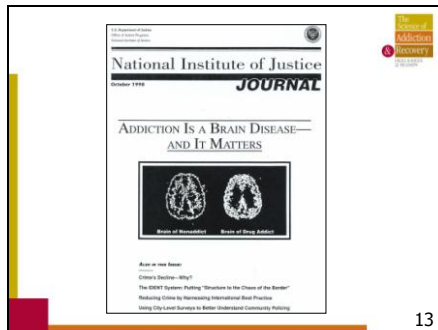
And of course our other “social scientist” who appeals especially to the college-aged crowd who said, “All right brain, you don’t like me and I don’t like you but let’s just do this and I can get back to killing you with beer.”

Slide 12



So the information that I’m going to share with you today about the brain, although fairly new, has been around for longer than most people realize. For example, back in 1997, over ten years ago, the National Institute on Drug Abuse and Hospital Practice came out with a special report “A New Understanding of Drug Addiction”

Slide 13



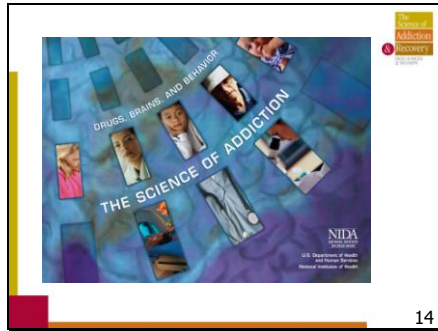
And the following year the National Institute of Justice Journal did a huge cover article entitled “Addiction Is a Brain Disease – And it Matters.” So this information as been available for some time.

Now let me ask you a question – how many of you in here have heard in the media that drinking wine is good for you? That it’s good for your heart? *(Usually every person will raise their hand)*

Now, how many of you have heard in the media about the science of addiction in a way that you can talk to someone else about it? *(Usually only one or two hands are raised)*

And now how many of you have heard in the media that the amount of wine a woman would have to drink to make it good for her heart would probably be toxic to the rest of her body over time? That’s why we’re here today. We can’t rely on the media to give us accurate information in a “science sound bite.”

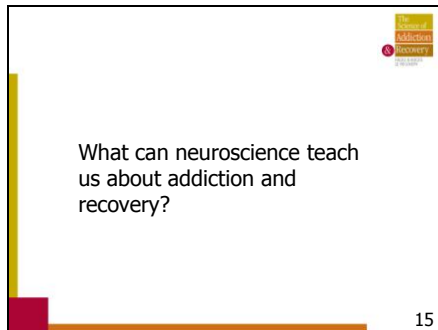
Slide 14



The good news is that federal health research agencies like the National Institute on Drug Abuse and the National Institute on Alcohol Abuse and Alcoholism are using our taxes to research these issues. They are paving the way to help the public understand that there is really good science behind what I'm going to share with you today.

This is a picture from a show, *Addiction*, which is available from the Join Together web site at www.jointogether.org. The program won an Emmy award last year and there's a link to it in the resource materials in your packet.

Slide 15



So why are we talking about the neuroscience of addiction and recovery? The reason is because this disease and the recovery process historically, and up to today, still carries a tremendous amount of stigma, judgment, myths and misunderstandings about it.

Part of the reason for the judgment and myths is because, unlike most other diseases, no one was able to pinpoint or show scientifically where this disease actually begins! Think about other diseases. Where does heart disease happen? In the heart. Asthma? In the lungs? Diabetes? In the pancreas. We didn't have that ability when talking about addiction to point to a particular part of the body. So, we looked at and talked about the way people acted in their addiction. This has created the perception and belief that addiction is a matter of a person being "weak willed" or morally deficient in some way.

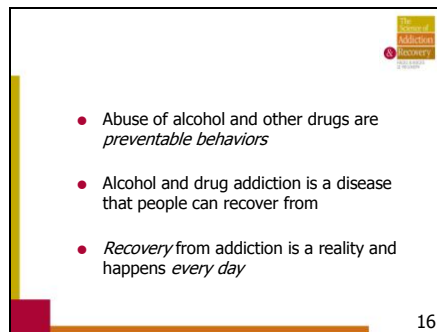
In fact other diseases have had this same problem. Did you know that diabetes used to be seen this way? And even cancer. So today is a very exciting time for people who work in the field of addiction treatment and for those of us in recovery. Today,

technology allows scientists and us to “see” where addiction starts. What organ is the affected organ? – The Brain.

Another part of the problem has been that people working to treat addiction used language that didn’t make sense to the public.

Think about the term Substance Abuse. Many people abuse alcohol - think Super Bowl weekend – do they all need treatment? Of course not. But when a person gets drunk they look like and act the same way as a person with alcoholism does. So you can see the confusion.

Slide 16



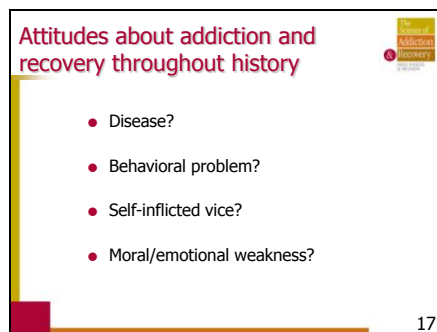
The slide features a white background with a yellow vertical bar on the left side and a red horizontal bar at the bottom. In the top right corner, there is a logo for "The Science of Addiction Recovery". The main content consists of three bullet points:

- Abuse of alcohol and other drugs are *preventable behaviors*
- Alcohol and drug addiction is a disease that people can recover from
- *Recovery* from addiction is a reality and happens *every day*

The number "16" is located in the bottom right corner of the slide.

Now the science is showing us a much clearer way to talk about the whole continuum, the different experiences of people who are using alcohol or other drugs. *(Read the slide)*

Slide 17



The slide features a white background with a yellow vertical bar on the left side and a red horizontal bar at the bottom. In the top right corner, there is a logo for "The Science of Addiction Recovery". The title "Attitudes about addiction and recovery throughout history" is written in red. Below the title are four bullet points:

- Disease?
- Behavioral problem?
- Self-inflicted vice?
- Moral/emotional weakness?

The number "17" is located in the bottom right corner of the slide.

So we can start to understand why there has been, and still is, so much confusion, misinformation and judgment. Is it really a disease? Isn’t it just a behavioral problem? Or a Bad Habit? Or just a weak will? What I hope is that by the time we’re done today you will know that addiction is like many other chronic, life-threatening diseases AND that people enter into and maintain recovery every day. In fact, there are millions of Americans in long-term recovery from addiction.

Slide 18

Why the science of addiction and recovery is important

- For the Family
 - helps explain the unexplainable
 - reduces stigma, blame and anger (for family and person with addiction)

18

Why is this information important for family members and friends? Because it will finally explain that crazy behavior we see that doesn't make any sense from those we love, worry and care about. The promises that our loved ones or friends make to us not to drink or drug that seem so sincere. And then, there they are - drunk or high again.

The information we have now will help families to not take personally the behavior of active addiction. And we will learn that it's not like a broken leg that heals and is done. That recovery is an ongoing process.

Slide 19

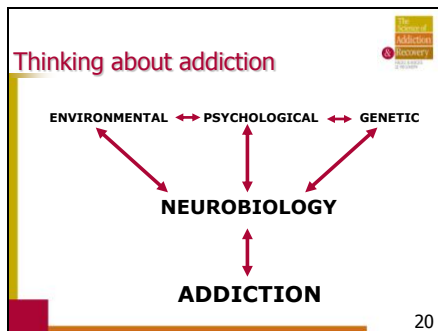
Why the science of addiction and recovery is important

- For the Recovering Person
 - helps people on their recovery journeys
 - helps people understand their cravings
- Facilitates the recovery process for person and family members

19

And of course for the recovering person, this information is really a chance to understand their cravings. This information also gives everyone a common ground to use to talk about when it comes to the recovery process.

Slide 20



So throughout history we've tried to understand how people become addicted. At one time it was thought that the environment was the single key – that if you lived with and saw your parents or family using drugs or drinking excessively that's why you became addicted to alcohol or drugs. But we all know that logically that doesn't really make sense because there are just too many people we know who come from homes where their families drank and used drugs that don't have addiction themselves.

Another reason for addiction was put forward by the Psychiatry and Mental Health fields. These experts believed strongly that it was just underlying issues that caused people to use alcohol and other drugs to such extremes – the theory being that if the person can just “uncover” and

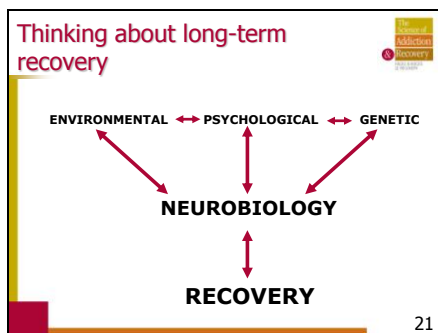
“work through” these issues, that the “addictive” alcohol and drug use will stop on its own. While this may work for some people, addiction treatment professionals were seeing lots of people come in for addiction treatment who had plenty of insight into their problems but continued to use drugs and/or alcohol to excess. Many people coming to addiction treatment have said that their psychiatrist or mental health counselor had never even looked at or discussed their alcohol or other drug use with them in years of therapy.

And then there was a time when everyone was looking at genetics – it was all about the genes.

So, what we now know is that all three of these issues can factor into the reasons people use and abuse alcohol or other drugs, *(click slide to show*

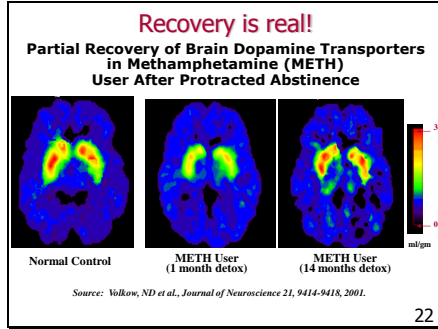
NEUROBIOLOGY) But - whatever those other factors are, the brain is the organ that is changed when addiction occurs.

Slide 21



And so it is with recovery. We need to keep all of these factors in mind because they are all important to successful long-term recovery. We’ll talk about this more later.

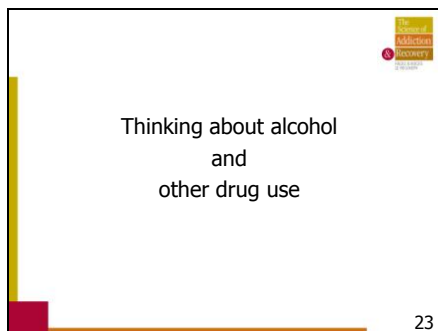
Slide 22



So just to get us started looking at the solution, long-term recovery, I wanted to show you this powerful slide of a study that the director of the National Institute on Drug Abuse, Dr. Nora Volkow, conducted. She examined a person's brain imaging as they entered into treatment and again, when they had maintained long-term recovery.

The brain on the left is of a person who has not been diagnosed with any alcohol or other drug addiction. Notice that the brain shows a very bright orange segment in the middle of the brain. These are dopamine transporters. Dopamine is a neurotransmitter which we will talk a lot about today. Right now just know that it's a very important chemical in the brain for many things. The amount of binding to the dopamine transporter is a marker of the health of this system. Notice how altered the person's brain in the middle slide is, even though it's been 30 days of what we call 'clean or sober' time. Virtually no dopamine transporters. Now look at this same person's brain two years later. It's exciting to see that the dopamine system has returned to a much more normal state.

Slide 23



So in thinking about the actual use of alcohol and drugs (*next slide*)

Slide 24

Why do people use alcohol and other drugs?



To feel good
To have novel:
Feelings
Sensations
Experiences
AND
To share them

To feel better
To lessen:
Anxiety
Worries
Fears
Depression
Hopelessness

Drawings courtesy of Vivian Felton

24


What are some reasons or occasions where alcohol is served? (*Elicit specific occasions, weddings, funerals, Friday night dancing*)
(Click on content)

So what we're saying is that people use alcohol to have fun and feel better than they already do - or people use alcohol to make negative feelings go away - at least temporarily (*read through list*) and of course the same holds true for drugs.

Slide 25

Why do people use alcohol and other drugs?

A major reason people take a drug is they like what it does to their brains.




25

So think about it - people are really using alcohol and other drugs because of what it does to their brains!

Slide 26

Vulnerability

Why do some people become addicted while others do not?




26

But why is it that some people can't stop after a while despite the fact that their life is falling apart around them?

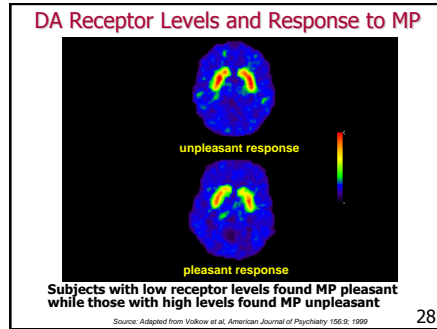
Slide 27

- We know there's a big genetic contribution to addiction ...
- But the nature of this contribution is extremely complex



27

One of the things that science has shown us is that there is a genetic contribution with addiction and how the brain behaves or reacts to alcohol and other drugs.

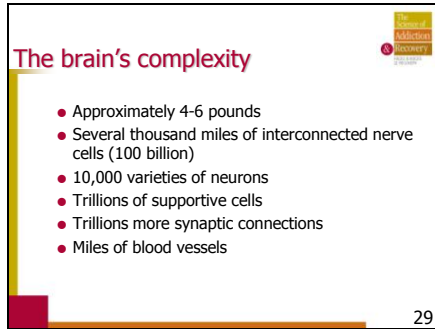


For example, here is an experiment that was done with people who had never been exposed to the stimulant methamphetamine. Scientists took images of their brains before and after the people were exposed to a very small amount of the drug Ritalin which is also a stimulant. The images are from two different people - the first person on the top has more naturally occurring dopamine receptors (point to red area) than the person on the bottom.

Dopamine is an important chemical in our brain for experiencing pleasure and also for marking something as a life-enhancing experience.

Notice how the person on the top with more dopamine receptors in his or her brain reported the drug as an “unpleasant experience” and the bottom person with less dopamine receptors naturally reported just the opposite – it was a pleasant experience for that person. This kind of research will help us understand why some people seem so much more vulnerable to certain drugs or prefer alcohol to cocaine for example. When you look at these images, the point is, and the thing to remember, is that you can see that each of us has a little different chemical make up in each of our brains which may be determined genetically.

Slide 29



The slide features a title 'The brain's complexity' in red text at the top left. A small logo in the top right corner reads 'The Science of Addiction Recovery'. The main content is a bulleted list of five items. The slide has a decorative border with a yellow vertical bar on the left and a red horizontal bar at the bottom. The number '29' is in the bottom right corner.

The brain's complexity

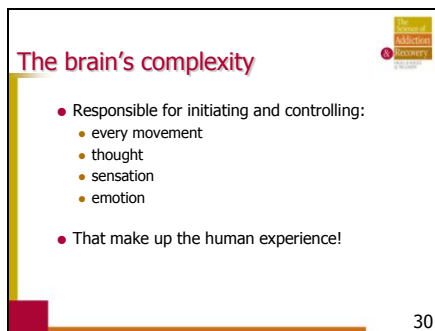
- Approximately 4-6 pounds
- Several thousand miles of interconnected nerve cells (100 billion)
- 10,000 varieties of neurons
- Trillions of supportive cells
- Trillions more synaptic connections
- Miles of blood vessels

29

So, now let's talk about the brain and its complexity for a moment. The brain is. *(read list from slide)* Hard to imagine isn't it? Another thing to keep in mind is that even though all of our brains in general look and operate alike, the brain is so complex that each of us may have many slight differences in our brains and how they function. That's why, for people with mood disorders for example, there are a lot of different medications just to treat depression and why people may need to try 3 or 4 different types of medication until they find the one that works best for them – the one that works is best for them because of their particular brain chemistry. So keep in mind that I'm just touching the tip of the iceberg when talking about addiction and recovery and the brain.

Scientists have spent years in school to learn about and research the complexities of the brain. They are also investigating how things like nutrition, environment, medicines and of course alcohol and other drugs affect the functioning of the brain. All of these factors can determine the quality of our lives.

Slide 30



The slide features a title 'The brain's complexity' in red text at the top left. A small logo in the top right corner reads 'The Science of Addiction Recovery'. The main content is a bulleted list of two items. The slide has a decorative border with a yellow vertical bar on the left and a red horizontal bar at the bottom. The number '30' is in the bottom right corner.

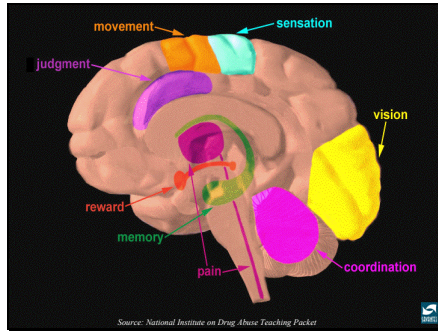
The brain's complexity

- Responsible for initiating and controlling:
 - every movement
 - thought
 - sensation
 - emotion
- That make up the human experience!

30

So we need to understand that this marvelous organ located underneath your skull is truly responsible for controlling *(read rest of slide)* and it prioritizes, every single second, what is important and what isn't. Not only for what clothes to wear in the morning, which route to drive to work, but how to keep alive – how to survive. Let's take a look.

Slide 31



This is a very simple drawing of the brain with the basic structures that we are interested in for this talk today. First, the brain is made up of basically three regions: An outer region or outer cortex (*point to the outermost part of the brain and circle to the bottom*) the midbrain (*circle around the center where you see arrows to “reward” and “memory”*) and the brain stem which is right above the spinal column (*point to the small “lump”*) and the top of the spinal column. The brain is really fascinating because it has very specialized areas, some of which are highlighted on the slide. There’s coordination, vision and sensation.

But it also works synergistically. That means that these specialized areas work within and off of each other to create what we know as the human experience. This includes decisions we make in an instant and more complex thoughts that take a lot of going over in our heads. The thoughts you have about everything from planning your day, to what to wear, to budgeting your finances, happens mostly in this part of the brain (*point to the outer most lobe*). You can call it the executive or CEO part of the brain, scientists call it the prefrontal cortex.

We have the largest prefrontal cortex per weight of any mammal on the earth. It has been responsible for how complex our societies and cultures are. (*Talk a little more slowly for the next two sentence to emphasize.*) But deep within the brain is a section called the midbrain or the primitive brain. And what most of us don’t realize is that it drives our behavior every day – because its main function is help us stay alive – to survive – as individuals and as a species. (*Point to the middle area.*) Notice how you can see reward, memory and pain in part of that region. (*And pointing to the spinal column also.*) Now this part of the brain, which most of us don’t even realize is there, is so important that it is found in all animals and even reptiles, who have

virtually NO thinking part to their brain. That's because it is that essential for survival. *(Look at and step toward audience if possible.)* So what do we need to survive? *(Get responses from the audience – should include, food, water, sex, and “community or connection” – give the example about newborns in orphanages who were changed and fed but got no holding which led to stunted growth and higher mortality rates.)*

Slide 32

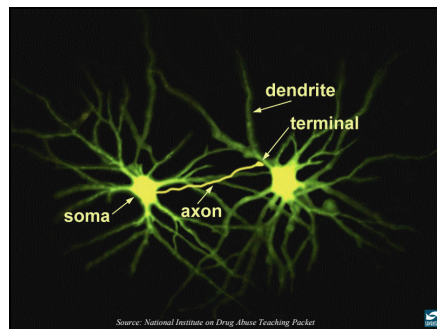
Communication of the brain

- Neuron = nerve cell
- Nerve cells have many different shapes, depending on the cluster of specialization in the brain.

32

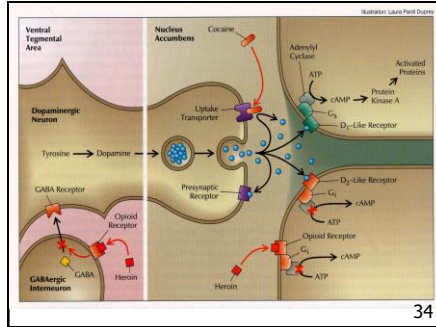
How does the brain do all of this? It does this with neurons and neurochemicals. Dopamine is just one of many neurochemicals in the brain. Neurons are a special type of cell located in the brain, and the nervous system. Neurons communicate with each other through lots of different chemicals in our brain.

Slide 33



Some neurons are more simple to look at than others. Some look almost like trees with many branches. This is a microscopic view of two nerve cells. Every nerve cell or neuron has a cell body or Soma, dendrites that pull communication into the cell and an Axon that moves that information out the cell. You can see where it says “terminal”. This is where the communication “hops” from the axon to the next cell. None of the neurons in your brain actually touch each other. Remember how I mentioned synaptic connections a bit ago? That's what I'm referring to here. *(Point to area where it says terminal.)* It's just the place between two cells where communication goes from one cell to the next cell. So what you might be asking? Well, the reason this is so important is because this is where alcohol and drugs change the brain, doing their dirty work.

Slide 34



Here’s an animated close up of that axon communicating to the next cell. The impulse that comes down that axon is actually electrical until it gets closer to the end where it turns into chemicals – this image shows how dopamine travels through the axon. Then it is released by the axon of cell A (*point to blue balls leaving axon*) and notice they are hooking up with very specific sites on the next cell. It’s like a lock and key – dopamine will only fit into dopamine receptors. What I’d like to show you here is that if you look at cocaine, for example, what happens is the cocaine molecule doesn’t “get” you high – but it does block the part of the cell that would reabsorb the dopamine that’s not used quickly – so it forces more dopamine into this area than it had ever experienced before. Now remember, dopamine is seen as a life-enhancing chemical. It marks that experience as life enhancing and the more dopamine that’s released , the more life enhancing the experience must be according to this part of our brain. This is the part of the brain whose most important goal is to keep us alive. In fact what we know now is that if you were to think of the highest “high” you’ve every felt – “naturally” (*give a few examples – the birth of your first child; jumping out of a plane; winning the lottery*) you would still not be able to experience the amount of dopamine that cocaine and amphetamine can produce.

Slide 35

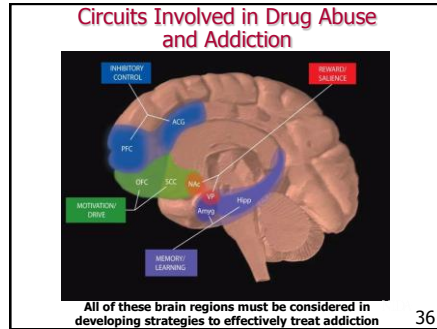
How do alcohol and other drugs work in the brain?

Despite many differences, virtually all substances with the potential for addiction affect dopamine levels in the pleasure/reward pathway of the brain.

THE NATIONAL ADDICTION RECOVERY CENTER

35

So even though different drugs work in different ways in the brain what science tells us is that virtually all drugs that have the potential for addiction affect dopamine levels – which we looked at briefly before – in the pleasure reward pathway of the brain.



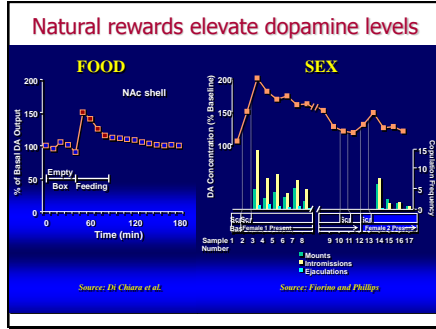
This slide illustrates how drugs with addiction potential affect many pathways of the brain and can drive behavior in people with addiction in ways that seem completely counterproductive to those that care about them.

So the essence of this is when dopamine levels are elevated from drug use the brain “registers” this experience in this area (point to NAc and VP) as not only feeling good but also as potentially life enhancing – in other words important for survival.

This area (point to Hipp) remembers the factual experience of it like where you were, who you were with, and what happened when you experienced the high. But this area (point to Amyg) connects it from a feeling or emotional perspective – positive or negative. That’s why most of us can remember exactly where we were when we first heard what happened on 911. The fact of what happened (point again to Hipp) connected to a strong emotion about it (point again to Amyg) and “locked” that memory in place.

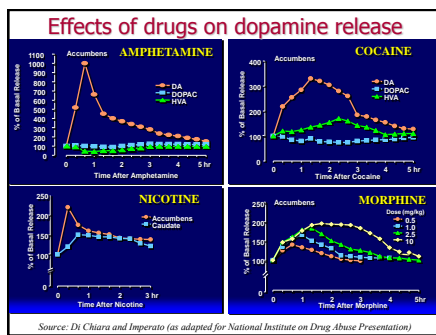
In healthy people, this region (point to prefrontal cortex in blue), which you can see is the higher level, thinking part of the brain, is responsible for stopping us from doing something we know is bad for us. It says, “its time to stop doing this because it’s causing too many problems” or it’s costing too much money.” It puts on the brakes. But for people who have more vulnerability to addiction, when they continue to use, this part of the brain (point to green, purple and red) starts to override this part of the brain (point to blue), leading to the compulsive behaviors that characterize addiction.

Slide 37



This slide and the next one are a graphic visual of what happens with dopamine levels in the brain first during normal life enhancing or survival behaviors, and then with drugs. This is a study using rats in this experiment. They got them hungry, let them eat, and then recorded or registered the dopamine spike in their brains. So as you can see the dopamine went from averaging a level of 100 and spiked to 150 which is very significant. Now look at sex – the spike doubled, which is a highly significant spike.

Slide 38



But now look at amphetamines - when amphetamines were introduced into the rats' Brains, the dopamine spiked to just over 1,000! In fact, in three out of the four drugs (point to amphetamines, cocaine, and nicotine) dopamine spikes to levels above normal survival behaviors. And you can see how morphine registers as high on the scale as sexual reproduction.

Slide 39

Initially, a person takes a drug hoping to change their mood, perception, or emotional state

TRANSLATION . . .

Hoping to change their brain.

39

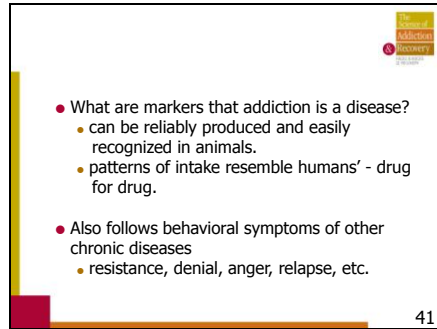
So initially, we all drink alcohol, and some people use other drugs, because of how it makes us feel – but it's really to change our brain. No one that I have ever known has raised their first glass of alcohol and thought, "Yes, this is my goal in life – to become an alcoholic!" Of course not.

Slide 40

The system that becomes captured by the addicting drug is a complex system that sets behavioral priorities.

40

But unfortunately, for those unlucky people who have genetics and other factors that make them more vulnerable – which we'll talk about in a minute – what happens in their brain is the potentially addicting drug creates such a strong "message" that the brain believes it must be extremely life enhancing. And therefore, the desire to repeat the experience over and over is much stronger than in the average person. Eventually the brain becomes changed as it becomes dependent on that drug.



41

- What are markers that addiction is a disease?
 - can be reliably produced and easily recognized in animals.
 - patterns of intake resemble humans' - drug for drug.
- Also follows behavioral symptoms of other chronic diseases
 - resistance, denial, anger, relapse, etc.

Now how do scientists know to classify addiction as a disease? First (*read first bullet*) In other words, like other behavioral illnesses, addiction can be produced in rats and primates. It's interesting that their patterns of intake even tend to be the same. In other words, animals who become addicted to alcohol will tend to get to a daily dosing level, much like smoking cigarettes. But if they're using cocaine, they will binge in the same way that humans do and having cocaine will be the most important thing in their lives – taking precedence over other basic survival behavior – food, water, even a female in heat for a male rat.

The other very important scientific finding that is one of the most important things that I want you to learn today is that addiction follows the same BEHAVIORAL systems as other chronic diseases or illnesses. Let's talk about this for a minute.

How many of you are familiar with the term lifestyle diseases? (*If a lot of people raise their hands, ask a person to explain what it means. If not, or there seems to be confusion, explain it yourself using the information below*) Doctors and health care providers have used the word lifestyle as a contributing factor to talk about certain diseases and illnesses for a long time. What they mean is that we all carry genetic predispositions to certain diseases – cancer, heart disease, diabetes. But depending on the lifestyle we live – if we eat right, exercise, control our weight, control our stress – will have a significant impact on whether we actually get or don't get the disease we may be vulnerable to. Type II diabetes, for example is considered a lifestyle disease. It's received a lot of attention lately because as kids have gotten more sedentary over the past generation, we're seeing an explosion in Type II diabetes in children, which was virtually unheard of just 20 years ago.

I know someone (*you can say “a friend of mine knows someone or use another story*) who has a friend in long term recovery, 20 years at the time. He was diagnosed by his doctor as having diabetes. Now this friend was really over weight, but he really liked to eat heavy and sugary foods. So when he got the diagnosis he just went straight into DENIAL (*point*) and said, the doctor doesn't know what he's talking about.

Of course it all started to catch up with him, and after about a year he was feeling really poorly so he finally admitted to his condition but he was pretty ANGRY (*point to word*) about it so he RESISTED (*point to word*) the really strict eating style and diet he was supposed to be following. He'd follow the diet for a day or a week and then he would RELAPSE, going back and eating all of his favorite foods.

Does this sound familiar to anyone you've known? (*You'll see heads nod.*) Think about if someone had a heart attack and it was discovered that this person had heart disease. They would probably be put on a “recovery program” of diet, exercise, medication, stress management, etc. If the person followed this program for say a year and then starting “relapsing,” stopping exercising or taking their medication. Then, two years later, the person ended up back in the emergency room having another heart attack. Do you think that the staff would look at him and say “Oh, I'm sorry Mr. Jones, we already treated you once for the same condition and you didn't follow your recovery plan we gave to you.

We've already spent \$50,000 on you, we can't or won't treat you again.” OF COURSE NOT! (*Say more quietly.*) But this happens all of the time with people with addiction. And when you think about it, it's usually much less expensive to provide treatment for addiction than many other chronic, life threatening diseases.

Slide 42

The neuroscience of addiction

Personal vulnerability modulating the effects of a drug on powerful motivational systems in the brain.

42

So what we're talking about here is a (*read slide*).

Slide 43

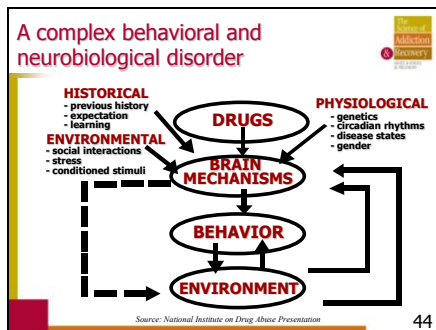
Where addiction starts

- Called by many names (mesolimbic system, old brain, primitive brain, etc)
- As it reacts to "environment":
 - creates powerful emotional memories (both fear and pleasure) that drive behavior in all of us for survival.

43

(*Read first bullet.*) The key is, as it reacts to the environment, whatever that may be, it creates powerful emotional memories of both fear and pleasure. These memories drive behavior in all of us for survival. And what happens in addiction is that this whole system changes so much that we crave the very thing that is potentially destroying us. When people get into treatment for addiction, they often will say, "Why was I running toward the thing that was killing me (the drug) and running away from help (family, friends etc) Now we know why this happens.

Slide 44



Now here's where we start to understand the complexity of addiction, and this could be for any person. Each of us starts out with a certain set of genes and other biological factors (*point to physiological*) Then we are exposed to historical factors like our expectations about a drug or our social condition (*point to historical*) and of course the environmental factors (*point to environmental*). These factors affect the brain and how it functions, even before we start using alcohol or other drugs. When the drug enters the brain, it creates its own set of new conditions and adaptations for the brain. These affect behavior and environmental cues. Do you see how this all plays together?

Slide 45

Neuroscience of addiction

What is Addiction?

Not Just Tolerance
Reduced drug effect with repeated administration of the same dose of a drug, or need for an increased dose to maintain the same level of effect.

Not Just Physical Dependence
When drug cessation produces pathologic symptoms and signs.

45

So addiction isn't just tolerance; being able to take more and more drugs or drink more and more alcohol. Many people with back injuries who are taking pain medication, for example notice that their body adapts to the medication they are on and after a while they don't feel enough relief from their pain. When that happens, they talk to their doctor about it. They don't go from one doctor to the next to find more pain medication.

And its not just physical dependence because that is when someone shows signs of some kind of withdrawal. In this case, if you have a child with asthma who has to use an inhaler a lot and you suddenly take the inhaler away, the child can show physical symptoms of withdrawal, but he's certainly not addicted and in need of treatment.

Slide 46

Addiction is...

- A kind of dependence which manifests as:
 - compulsive non-medical use of a substance
 - loss of control over its use despite negative consequences

46

The scientific cornerstone of addiction is that it is a kind of dependence (*read the rest of the slide*).

Slide 47

Addiction is...

- Physical dependence (i.e. withdrawal symptoms when drug is removed from the body) although often involved, is not, by itself, an adequate indicator of addiction.

47

And although physical withdrawal can be part of addiction, that is, if you stop using, you experience withdrawal symptoms, those symptoms, by themselves, are not an adequate indicator of addiction.

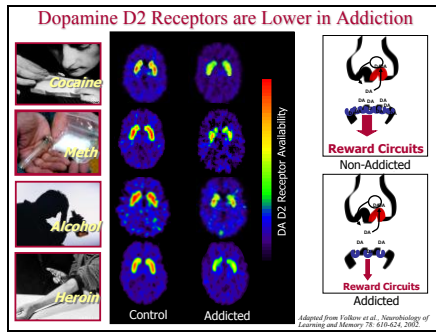
Slide 48

So.....
 Prolonged use of potentially addicting drugs changes the brain in fundamental and long-lasting ways.
 and....
 We have evidence that these changes can be both structural and functional.

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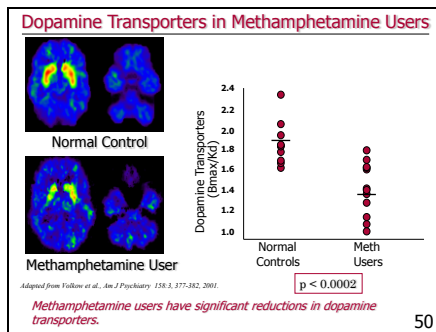
So now you know that (*read slide*).

Slide 49



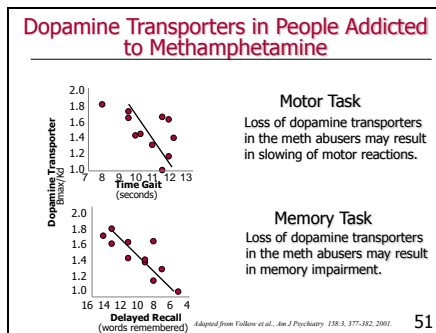
This slide illustrates that virtually every drug that has the potential to addict ALL change the functioning of the brain in that important midbrain. Here we show that cocaine (*point to each*) methamphetamine, alcohol, and heroin all change dopamine receptors in the brain. Note that the people on the left, the control group, are people who are not addicted and those on the right are all people with addiction to one of those substances.

Slide 50



Again, this shows the difference between the person addicted to methamphetamine and a control subject and their dopamine transporters.

Slide 51



We can see what this means in terms of function and behavior in this slide. People with addiction to methamphetamine may show slower motor reactions and memory impairment compared to people without this addiction.

Slide 52



This is from a study conducted by Dr. Susan Tapert at the University of California-San Diego that compares the amount of functioning required to complete a task between a 15- year-old non drinker and a 15-year-old heavy drinker. The pink, deep red and orange colored areas show the level of activity in those parts of the brain.

Slide 53

Understanding people's behavior while addicted

Key Concept:

- The parts of the brain that have become changed from addiction override the factual memory storage (hippocampus) and logical reasoning of prefrontal cortex.
- Thus behavior (e.g., repeated relapses) that "flies" in the face of logic now makes sense.

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So what happens in addiction is that the primitive brain has become what we'll call maladapted or changed because of the drug addiction. It overrides the factual memory storage of other parts of the brain and the normally logical reasoning of this prefrontal cortex (*point to your forehead*) and now this crazy behavior – the promises not kept – the trying to quit over and over – all begins to make sense.

Slide 54

Vulnerabilities for addiction and recovery

- Genetic
- Developmental / Emotional
- Psychiatric Co-morbidity
- Chronic Pain
- Stress
- Goals (experimentation, escape, self-medication)

These vulnerabilities can change over time.

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And these are some of the factors that lower the threshold for people to become addicted. The affect on brain chemistry can create more vulnerability. For example, scientists now know that prolonged stress, stress in our daily lives over long periods, can change our brain chemistry.

And think about the chemistry in the brain of an adolescent who starts using alcohol or drugs. Is it functioning normally, making decisions to use out of simple curiosity? Or, was there a lot of emotional distress, making the brain more vulnerable to the drug? These vulnerabilities can change over time. For example, older people may be more susceptible if they are suffering from depression or feeling isolated.