



A Journey to Wellness

Building Optimum Capacity for Living Well with a Brain Injury

Learning Objective

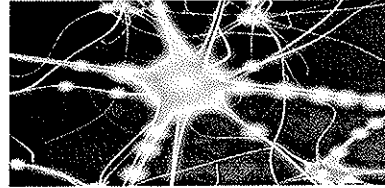
- Gain awareness to promote wellness for better overall functioning following a brain injury
- Acquire appreciation for issues related to Substance Abuse and return to wellness
- Obtain information about the essentials of a total wellness perspective
- Learn how good health habits promote better brain health

The Continuum: Injury to "Recovery"

- 6,500 Emergency Room visits
- Over 4,300 hospitalizations
- About 2% of MN population living with a brain injury
- How can providers of care help promote the best recovery, empowered personal adjustment and enhanced quality of life for the individuals living with BI in our care?.....WELLNESS FOCUS

Early Focus on Recovery

Brain Plasticity
Challenging Neuronal Growth
Developing New Pathways



Regaining Skills: Learning New Ones

- Rehabilitation: NP, SpL, OT, PT, BA, TR
- Functional Rehabilitation Activities
- Repetition
- Practice
- Reinforcement
- Strategies



Future Focus: Wellness

Lifestyle approach

Start at the beginning to incorporate Wellness principles in programming/treatment planning:

- Build on strengths and interests
- Promote balance
- Best health practices to promote best functionality
- Comprehensive (ADL's, work, leisure, social, financial, behavioral, medical)
- Normalizing

Mind-Body-Spirit.....Total person

Incorporating Wellness: Examples

- Boredom leads to risky activities
 - Wellness strategy to play chess with staff to "work the brain"
- Memory challenges create anxiety
 - Wellness strategy of sign by the door to remember to turn off coffee maker before leaving the house
- Behavioral issue of getting angry with roommates
 - Wellness strategy of using headphones to filter out unwelcome noises
- Cognitive issue of poor organizational skills
 - Wellness strategy to decrease frustration: first day of ea month set aside time to review/update projects "to do" list

More examples

- Frequent irritation in community settings
 - Wellness strategy to go to mall in the morning when fewer shoppers are present
- Social isolation due to aphasia
 - Wellness strategy to join Face Book
- Becoming overwhelmed creates tension
 - Wellness strategy to learn how to meditate
- Chronic pain from other injuries from accident
 - Wellness strategy to join a gym and have personal trainer write down all exercises and directions for how to so them safely

Personalized & Holistic

Wellness Goals:

Physical health

Cognitive challenge

Social opportunities

Active focus

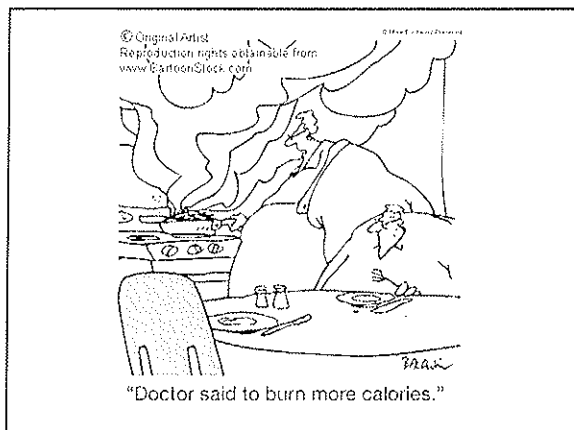
Soothing restoratives

Self managed & directed

Being the Best you can BE

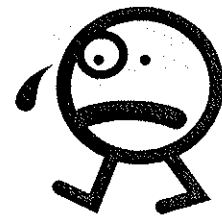
Personal Acceptance or Adjustment---- *(to the unwanted changes brought on by sustaining a brain injury)*----reinventing the "new normal"---- can be what happens, along the way, while developing a commitment to Personal Wellness...

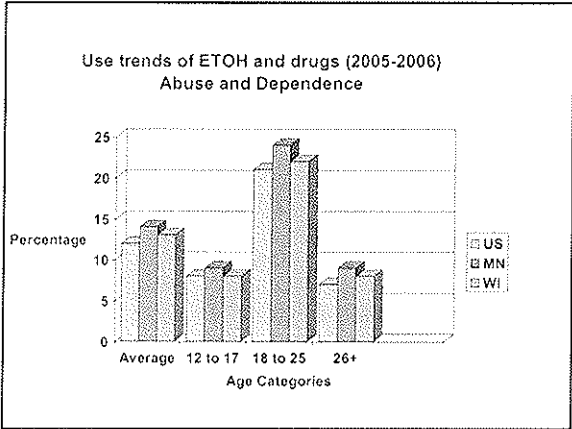
Living Life to the Fullest, Every day!



Wellness and Addiction

**They
DO NOT
play well
with each
other.**





Intoxication on ETOH

- A reviews of the research of ETOH use and TBI to be between 20 and 30% of hospitalized cases to be at or greater than .10 BAC.
- However, others have reported this number would be between 40 to 50% if all cases were tested.

Category	Percentage (%)
OSU	25
TBI Model	30
Colorado	20

- OSU n=356
- TBI Model n=1019
- Colorado n=1513

Substance Abuse and TBI

- Review of the literature shows over 1/2 of individuals admitted for rehab have prior histories of substance abuse.
- Corrigan TBI Systems National Database n=1262
- OSU Suboptimal Outcomes Study n=356
- University of Washington n=142

Substance	Corr (%)	OSU (%)	U of Wash (%)
ETOH	45	55	50
Drugs	30	60	50
Either	45	60	50

The Brain Addicted

In general, what defines an **addiction** as compared to an acceptable behavior is that the participation in the activity carries adverse or negative consequences.

- * Engaging in Compulsive behavior
- * Behavior is pleasurable and/or rewarding
- * Loss of control over limiting intake

The obvious solution is to STOP the behavior

Brain Development

The average first age of use of chemicals is 13

STAGES OF BRAIN DEVELOPMENT IN HEALTHY CHILDREN AND TEENS (AGES 5-20)

AGES 5 → 20

TOP VIEW

SIDE VIEW

Myelinated Cortex

This represents maturing of brain areas

The Brain Addicted

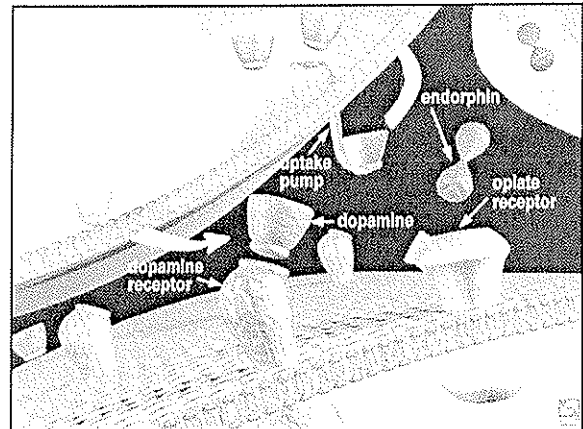
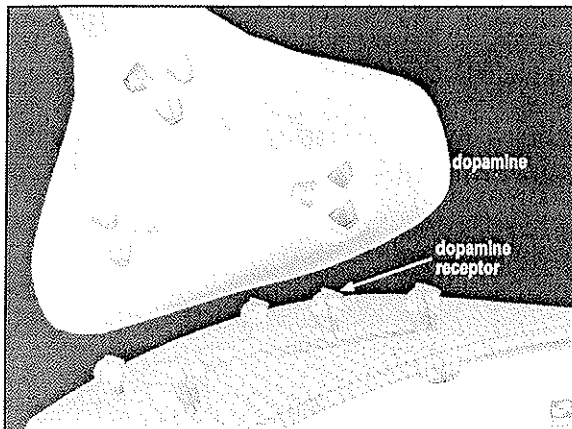
- The brain is **hardwired** to repeat behavior that allow us to survive and is pleasurable.
- This **reward circuit or pathway** has **strong connections** to the part of your brain that is responsible for basic emotions (nucleus accumbens)
- And body functions (the ventral tegmental area).

The Brain Addicted

- Addictive drugs have such a strong effect that they act on the very part of the brain that is in charge of survival instincts. The urge to use or do is so strong that it overrides all other processes, mimicking survival needs.
- In other words, the brain works against itself, it tells itself that it **NEEDS** the chemical to survive.
- This override will affect the pre-frontal cortex which controls reasoning, planning and helps keeping impulsivity impulses in check. The very things that help us with WELLNESS.

Dopamine

- Dopamine is key in many functions for survival
 - Body movement
 - Attentiveness
 - Thinking, motivation, memorization and learning
 - Motivation and reward
 - Pleasure responses – food, water, sex
- Some substances **increase** dopamine like cocaine
- Others **block reuptake** such as alcohol
- Some do **both** such as amphetamines, nicotine
- **All substances of abuse causes damage in the dopamine system decreasing pleasure and increasing negative issues as tolerance develops.**



The Pleasure Center

Increasing Dopamine – life's 'happy' chemical

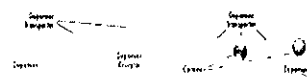
ALL DRUGS OF ABUSE TARGET THE BRAIN'S PLEASURE CENTER

Brain reward (dopamine) pathways

All drugs of abuse increase dopamine



Food is the natural reward for survival needs such as food, water, and sex.



FOOD: Dopamine is released in response to natural rewards such as food. When more is taken, dopamine release is exaggerated and the sensation is altered.

Dopamine Imbalance

- Too **much** dopamine causes nervousness, irritability, aggressiveness, paranoia and bizarre thoughts.
- Too **little** dopamine causes low mood, fatigue, tremors and problems with muscle control.
- These symptoms can be observed during the "high" of the chemical **and/or** during withdrawal from the chemical.
- The goal is to balance the dopamine and other chemicals in the brain

Wellness and the Addicted Brain

- ✓ Coping is something that we **DO**; NOT something that happens to us.
- ✓ We must **PLAN** to cope and be well. There are some things that all individuals can **DO** to help the brain heal.

Sobriety is a WELLNESS ACTIVITY

- ✓ First is to **STOP** using alcohol and drugs.
- ✓ Take medications prescribed by your doctor *as prescribed*.
- ✓ Have a **PLAN** for WELLNESS to minimize triggers and cravings - relapse thinking happens **BEFORE** the actual drink/use happens.

Wellness and the Addicted Brain

- ❖ Having a **PLAN** for WELLNESS includes looking at strengths, limitations, resources available and resources needed.
- ❖ Areas to consider include medical care, emotional care, cognitive supports, skills needed for relapse management and resources in the home community.
- ❖ In this plan, the individual would need to determine what they have available and what is needed.
- ❖ The individual would then seek out resources to fill the needs.
- ❖ It is best to do this in writing and work on it over several days to weeks.

Wellness and the Addicted Brain

Wellness planning includes:

- ☑ regular medical care
- ☑ creating a support system with supportive and sober people
- ☑ planning sober activities, hobbies and fun
- ☑ avoiding negative people, situations and attitudes
- ☑ keeping a positive attitude and sense of humor
- ☑ trying new things, activities, etc.

More Tips, Con't

- ☑ volunteering and/or getting involved in a cause that interests you
- ☑ rewarding self for meeting goals
- ☑ using memory aides and supports for cognitive limitations
- ☑ developing a memory strategy system

The goal is to minimize triggers, develop supports and coping strategies to deal with cravings and set up tools to **STOP-THINK**



Wellness for the Addicted Brain

Wellness strategies tend to work best if they are:

- ☑ concrete,
- ☑ connected to something important in the individuals life
- ☑ are fun and pleasurable,
- ☑ can be incorporated into their memory strategies system.

This WELLNESS PLAN also needs to include taking care of ones physical fitness and its connection to wellness. **BALANCE is the key**



8 Parameters of Fitness & Wellness

The 8 Parameters

- Strength
- Flexibility
- Endurance
- Balance
- Coordination
- Posture
- Nutrition
- Body Mechanics

Strength

- 3 times each week with a rest day between sessions is recommended
- Health clubs vs. home programs:
- **Health clubs:**
Pros: Newest, highest quality equipment, latest trends and classes
Cons: Expensive, waiting for equipment, not convenient
- **Home programs:**
Pros: Inexpensive usually, very effective if initial consult is guided and structured
Cons: Home distractions



Flexibility

• **Benefits:**

1. Decrease chance of injury/re-injury
2. Improve joint function
3. Decrease neck and back pain
4. Reduced muscle tension
5. Improved circulation and overall energy



Endurance/Aerobic:

- **Aerobic exercise:** is a continuous, rhythmic movement of major muscle groups operating at an elevated heart rate
- **Benefits:**
- Increases the overall strength of your heart and lungs making them more efficient
- Increase metabolic rate
- Reduce risk of obesity, heart disease, hypertension, type II diabetes, strokes and some cancer
- Increase HDL (Good Cholesterol) and reduce LDL (Bad Cholesterol)
- Start out at a slow pace then gradually build up over time, remember the talk test.
- Plan a time of day that works best in your schedule



Endurance/Aerobic:

- **Frequency:** A minimum of 3 times each week to daily.
- **Intensity:** 65-85 percent of your max heart rate which is 220-age.
- **Duration:** 20 minutes minimum building up to 40 minutes or longer.
- Remember, cardiovascular exercise should be fun not exhausting.
- **Modalities:**
- Walking
- Running
- Swimming
- Biking
- Elliptical machines
- Treadmills



Balance and Coordination:

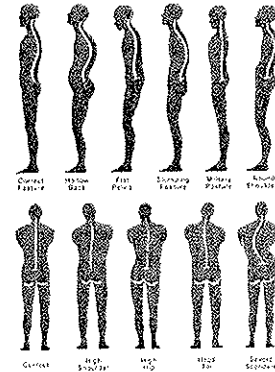
- Balance and coordination exercises are a big part of any fitness and wellness program
- Activities include using wobble boards, bosu® trainers, balance beams and physioballs
- Exercises can be performed most days of the week
- **Benefits:**
- Increased safety when performing ADL
- Prevent injury from falls
- Improved athletic ability
- Improved core strength which improves posture
- Improved joint stability
- Stimulates brain activity



Posture:

- Posture refers to the position we hold our bodies in during sitting, standing, sleeping, walking and any other position we may move through out a day
 - Posture helps determine the amount and distribution of stress we place on bones, muscles, tendons, ligaments and discs
 - Core strength is important along with middle back and posterior shoulder exercises
 - Pay attention to sit, stand, lift, carry, twist, turn and bend
 - Research shows that people who exercise regularly are less likely to suffer from back injuries and pain
 - The three key components are strengthening, stretching and cardiovascular activities
- Postural mistakes include:**
1. Slouching
 2. Rounding the shoulders
 3. Hiking the shoulders
 4. Forward head position
 5. Chin tilted upward
 6. Forward trunk lean
 7. Locking the knee
- Benefits:**
- Improved appearance
 - Decreases chance of osteoporosis
 - Decreases risk of arthritis
 - Decreases risk of cervical and lumbar pain

LOOK AT YOUR POSTURE... OTHERS DO



Nutrition:

- The key is to eat healthy most days of the week, eating from all the food groups
- Try to eat smaller portions several times each day vs. few large meals
- If you crave a sweet, have one, but make it a small one
- **Healthy eating consists of:**
 - Complex carbohydrates
 - Lean sources of protein
 - Monounsaturated or polyunsaturated fats
- **Recommended Daily Amounts:**
 - 50-60% of caloric intake comes from carbohydrates
 - 20-30% from protein
 - 20% from fat
- Carbohydrates: 4 calories per gram
- Protein: 4 calories per gram
- Fat: 9 calories per gram

Body Mechanics:

- Using proper lifting techniques is vital to maintaining a healthy spine
- 8 out of 10 people experience significant lower back pain at one time or another in their life
- Most of this can be avoided
- **Causes for lower back pain:**
 - 1) Heavy physical work
 - 2) Bending and/or twisting activities
 - 3) Lifting and forceful movements
 - 4) Whole body vibration
 - 5) Static work postures
- **3 important rules to follow when lifting:**
 - 1) Load close-reaching puts 7 times pressure on neck and back
 - 2) Lift with legs
 - 3) Do not twist when lifting-Spinal force increases significantly



Exercise and Traumatic Brain Injury

- How do people who currently exercise differ from people that don't? Exercise is defined as swimming, jogging, biking or any sports that raise heart rate for at least 30 minutes at a time. The study was based on 3 times each week for 6 months. In this example there were 60 exercisers and 170 non-exercisers with TBI.
- What was found??
- Inactivity has negative effects on everyone, but the effects appear to be worse for people with TBI than for others without a brain injury. This study suggests that exercisers with TBI were less depressed and showed improved physical capacity compared to non-exercisers.

Exercise and Traumatic Brain Injury

- The research from this study revealed a broad range of possible benefits of exercise for people with TBI:
 1. Fewer physical, emotional and cognitive complaints and symptoms, such as sleep problems, irritability, forgetting and being disorganized
 2. Exercise may improve abilities such as memory, thinking and the like
 3. As seen in previous studies, this research indicates that exercisers with TBI were less depressed

Source: Brain Injury Association of Minnesota

Quotes I like to use

- Those who think they have not time for bodily exercise will sooner or later find time for illness—Edward Stanley
- The human body is the only machine that gets better with use
- Exercise adds years to your life and life to your years
- The surgeon general reports that physical inactivity may be hazardous to your health
- Life requires strength

- Sources: Reuters.com, guidelines for exercise testing and prescription, nutritional healing, Lippincott Williams and Wilkins

Now, the INTERACTIVE portion of the presentation!!!

- Please visit the stations set up around the room to see in action and to experience for yourself various pieces of easy to use equipment.

WELLNESS IS FOR
EVERYBODY!!!

Thanks for your Attention and
Participation!

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