

# **Brain Chemistry of Addiction**

**frauen | trauma | sucht**  
**Interationales Symposium**

*Presented by Carol Ackley*  
*River Ridge Treatment Center*  
*Burnsville, MN*

Bremen, Germany  
September 22-24

# Drug - Free America



AGE 0-4

Amoxicillin

AGE 4-12

Ritalin

AGE 12-18

Appetite  
Suppressants

AGE 18-24

No - Doz

AGE 24-38

Prozac

AGE 38-65

Zantac

AGE 65 -

Everything Else

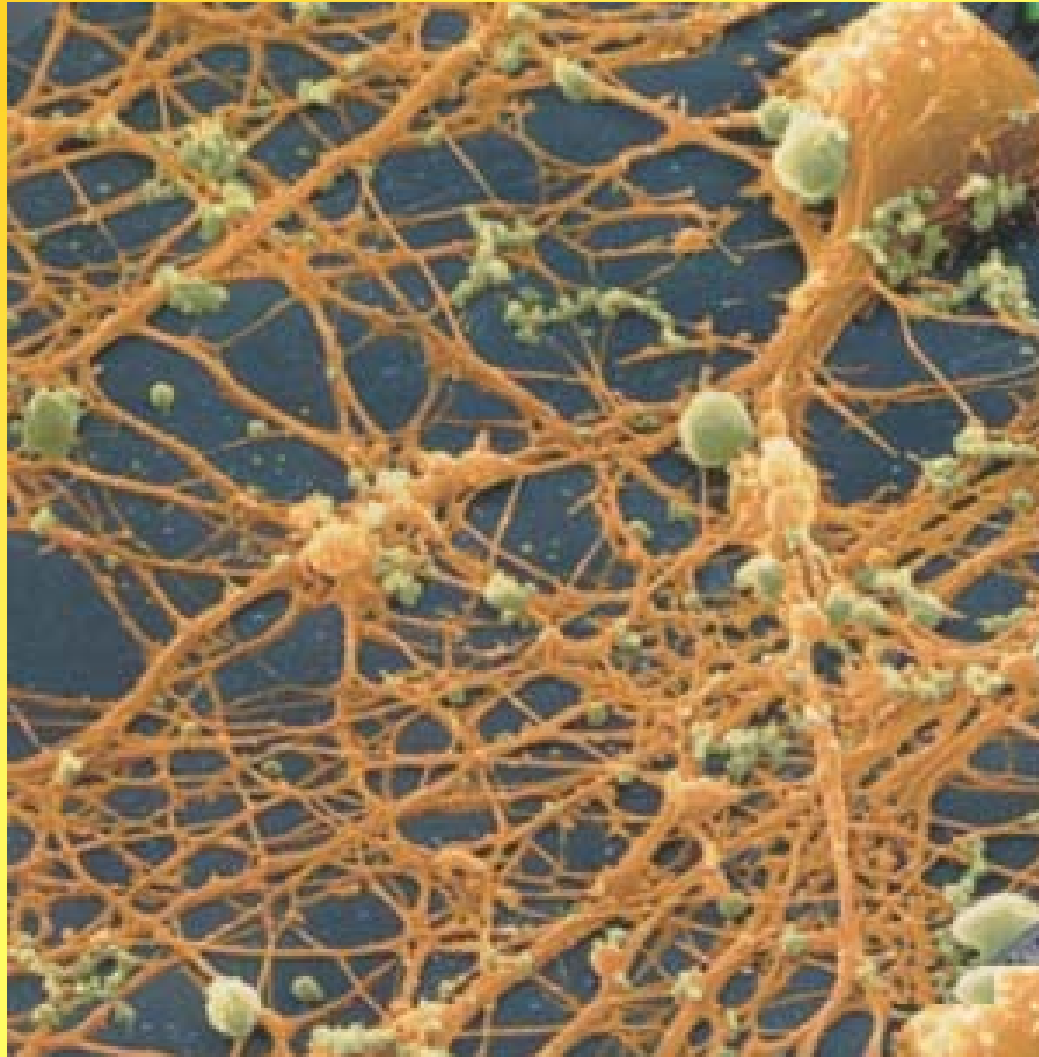
# **AMA stated alcoholism was a** **disease in 1956**

- **Equal opportunity disease**
- **No one is immune**
- **Some people are much more vulnerable**

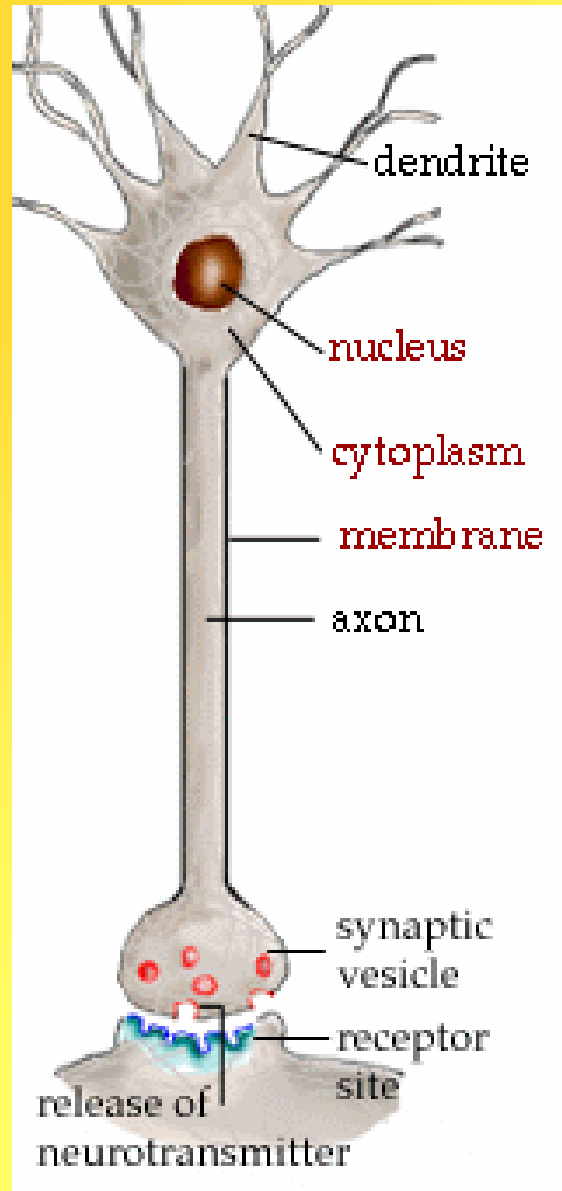
# **Drug and Alcohol use interfere with primary survival pathways in the brain**

- **Automatic**
- **Semi – automatic**
- **Voluntary**

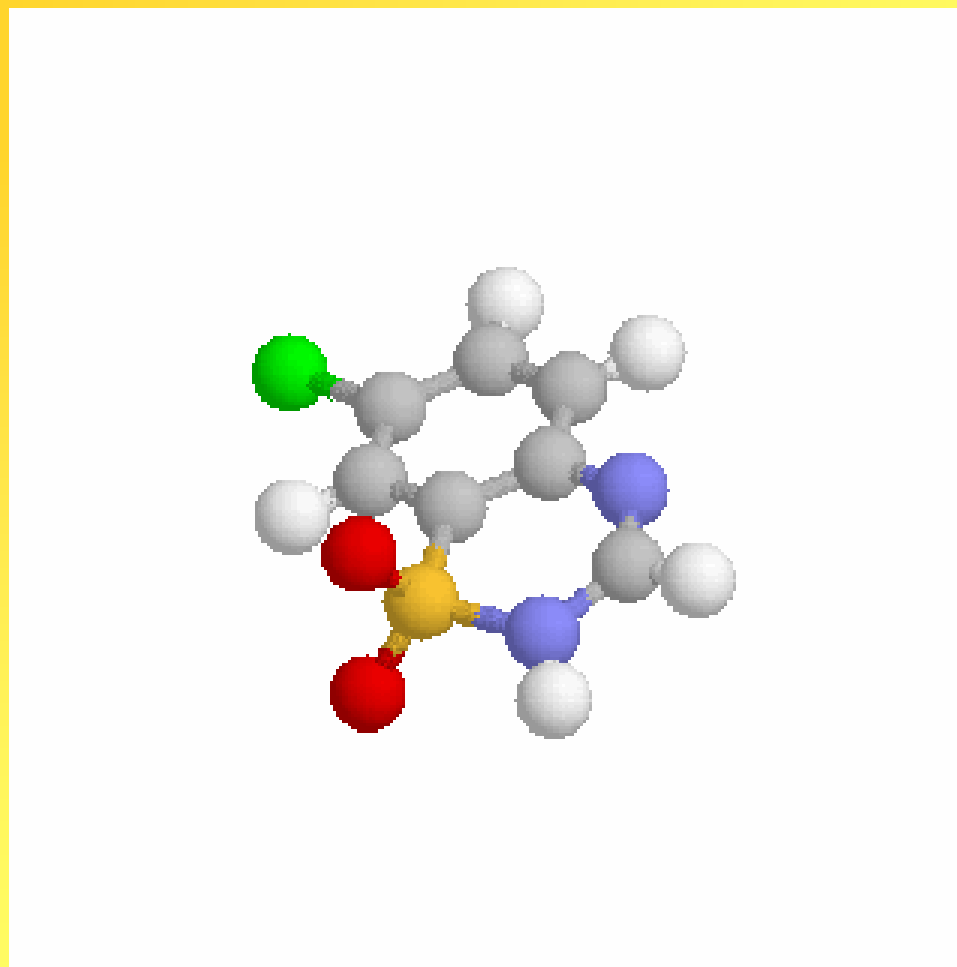
# Neural Pathways in the Brain



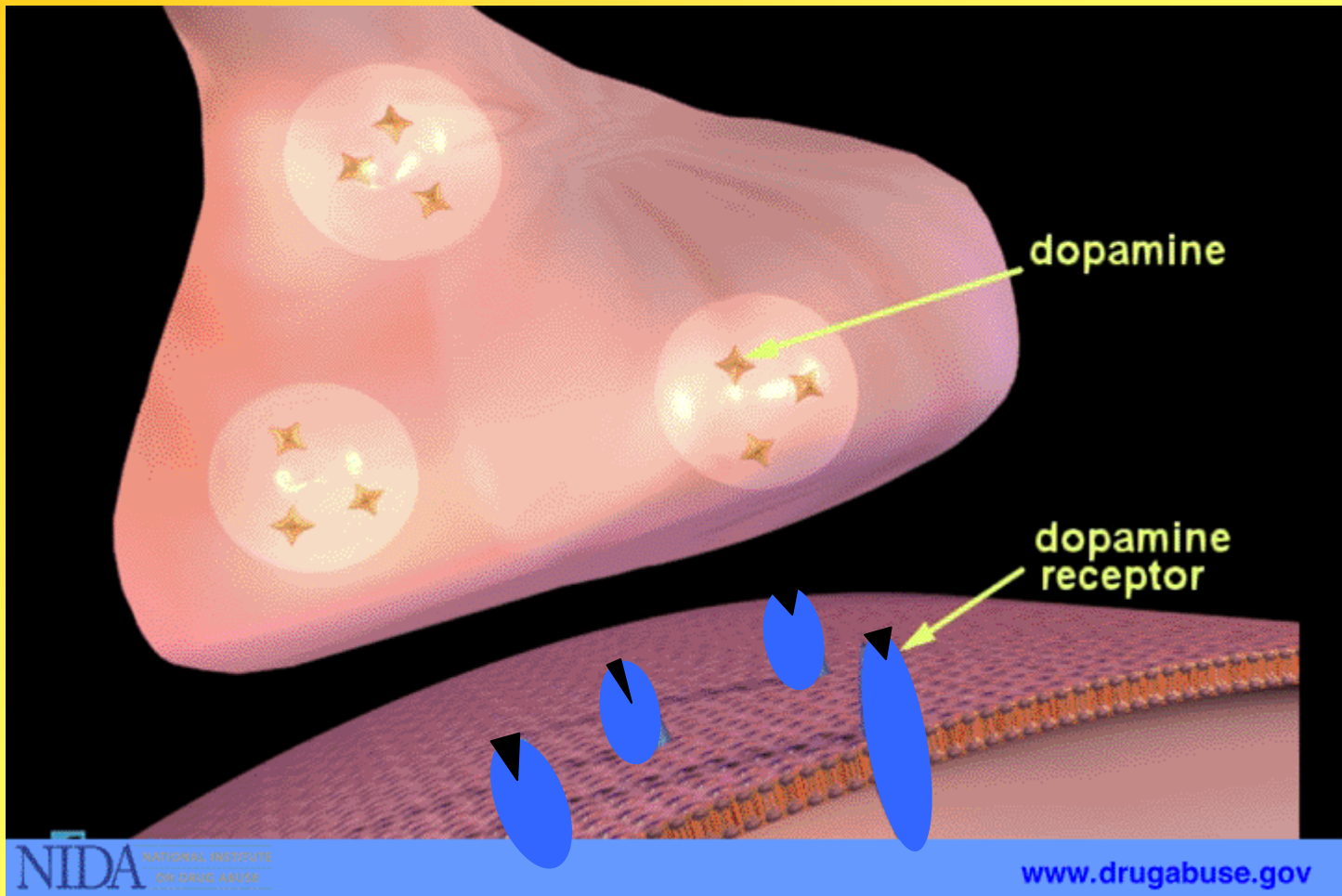
# Neurotransmission



# Molecular Structure



# Neurotransmission

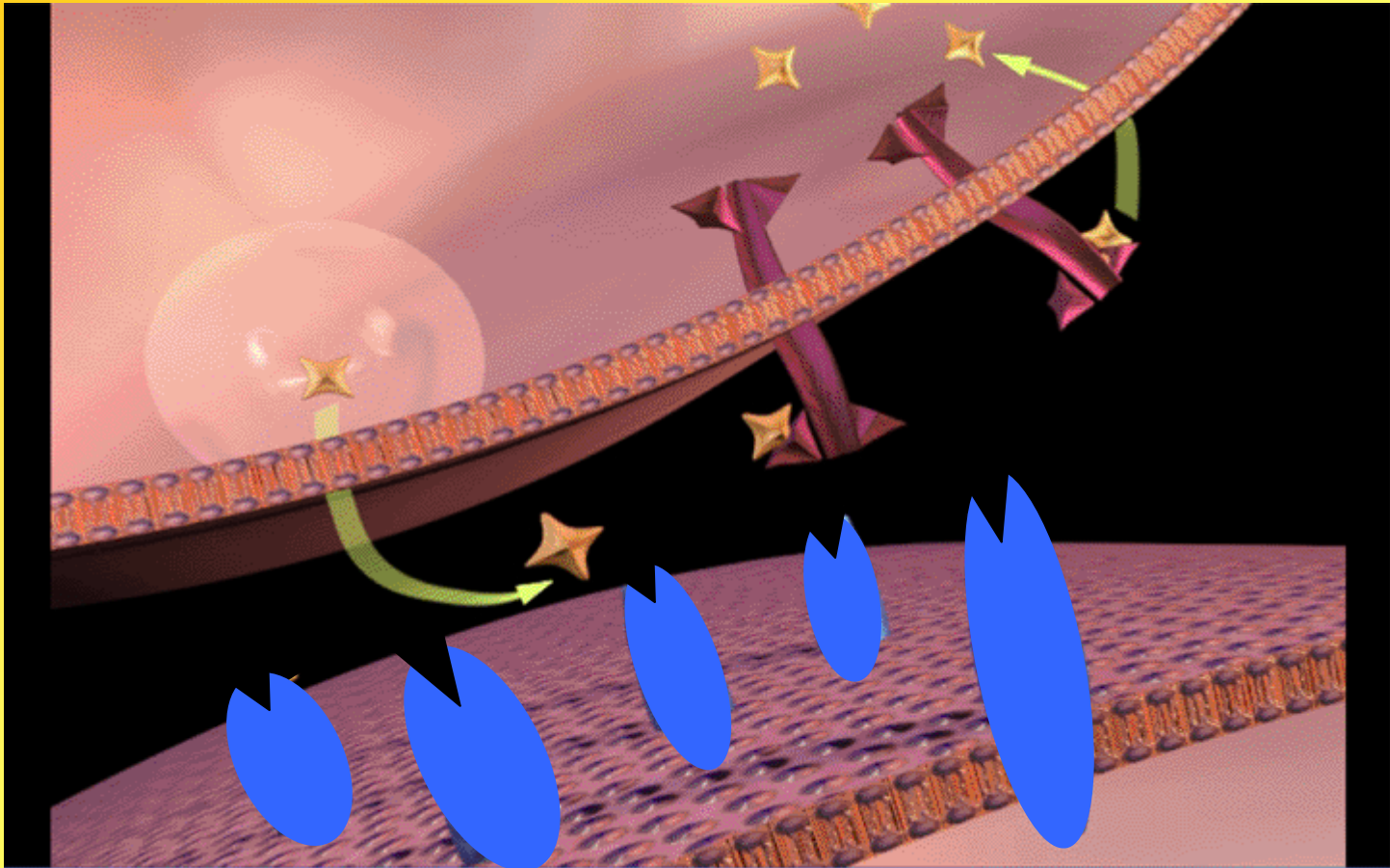




# **NEUROTRANSMITTERS**

- **Endorphins/ Enkephalins**
- **Serotonin**
- **Norepinephrine**
- **Dopamine**
- **Acetylcholine**

# Neurotransmission



# Neurotransmission



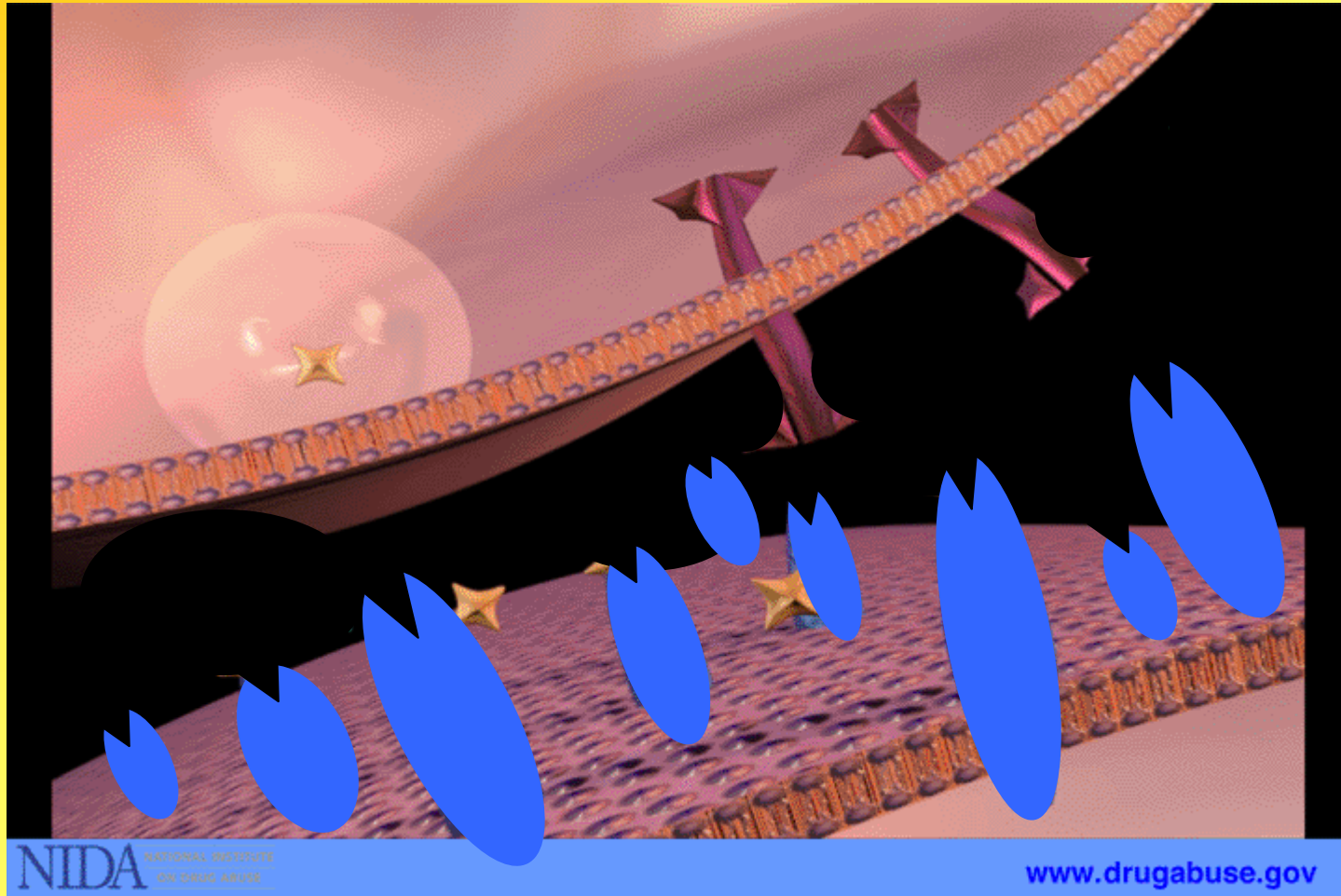
# Neurotransmission



# Neurotransmission



# Neurotransmission



# **ADDICTIVE DISEASE**

- **Progressive**
- **Chronic**
- **Fatal**

# **ADDICTIVE DISEASE**

- **Full Remission**
- **Harm Reduction**
- **Prevention**



# **6 MONTHS TO RESTABILIZE** **BRAIN CHEMISTRY**

- **Abstinence**
- **Nutrition**
- **Stress Prevention**

**VULNERABILITY to**  
**ADDICTIVE DISEASE**

**40% - 50% GENETIC**

**50% - 60% ENVIRONMENTAL**

**Early Onset**

**Chemical Environment**

**Poor Nutrition**

**Increased Stress**

**Poor Coping Mechanisms**

**Chronic Illness**

**Grief & Loss**

# **Brain Chemistry of Addiction**

- **Addiction is a disease, not a choice**
- **Progressive, Chronic and Fatal**
- **Young brains at risk due to unique stage of development**
- **Very treatable**
- **Prevention important**

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