



TEENAGE BRAIN AND DRUGS

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TEENAGE IN PALESTINE

- ▣ 29.5% POPULATION

- ▣ YOUTH NEEDS —
REAL
COMPREHENSIVE
HEALTH CARE

- ▣ **IMP. POINTS:**

1. DRUG ADDICTION
2. VIOLENCE
3. NUTRITION
4. MENTAL HEALTH
5. EDUCATION INTEREST
6. PERSONAL SAFETY
7. PEER PRESSURE
8. FAMILY TIES
9. WORK OPPURTUNITIES
10. SEX EDUCATION

MOST POPULAR DRUGS WITH TEENS :



1- MARIJUANA (HASHEESH)

2- PRESCRIPTION DRUGS (uppers ,downers, hallucinogens)

3- TOBACCO

OTHERS:

- 1- ALCOHOL (NON MUSLIM CONTRIES)
- 2- METHAMPHETAMINE (CRYSTAL)
- 3- OPIOIDS (NATURAL AND SYNTHETIC)

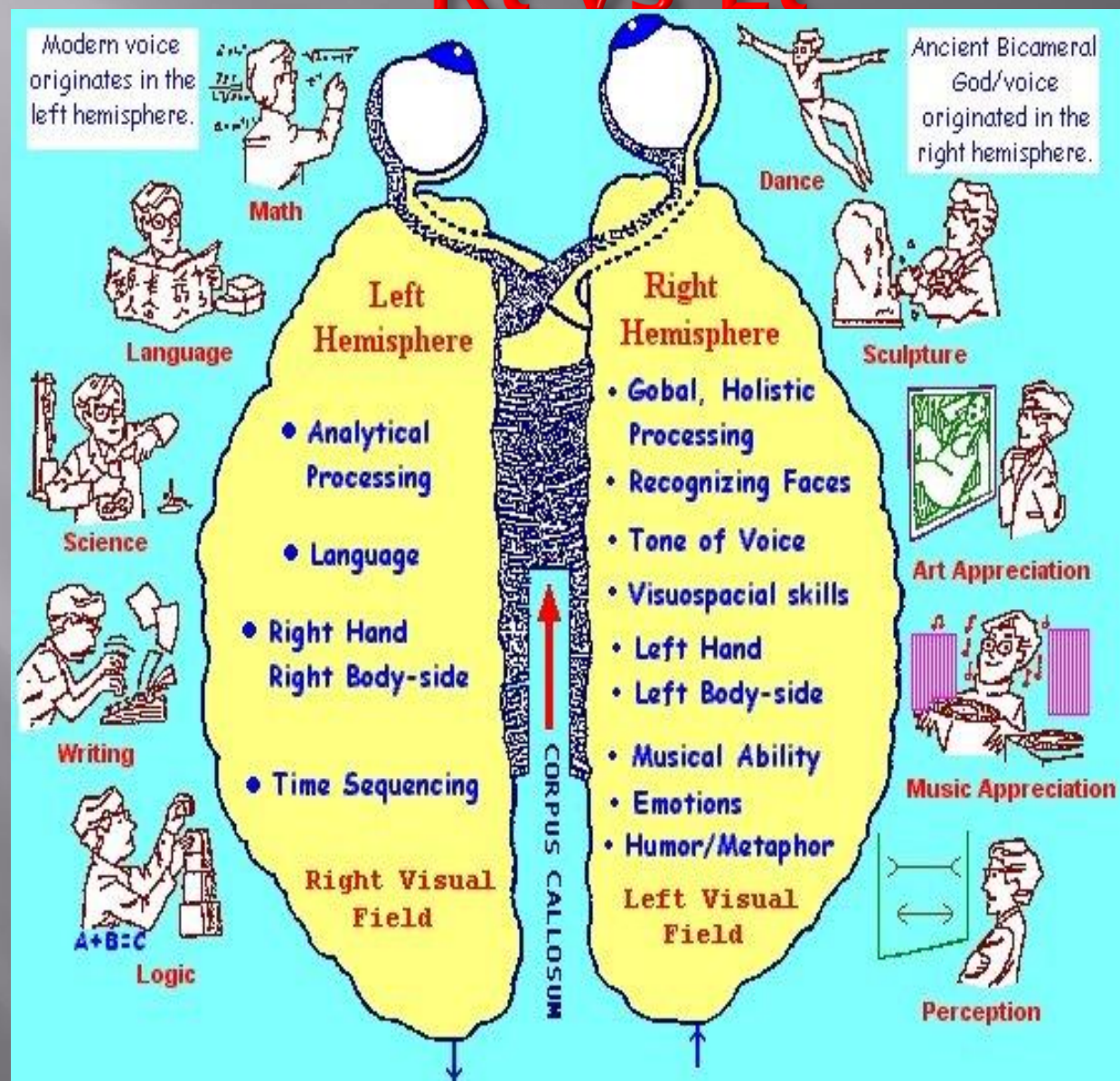
- ▣ PEPOLE USE THE DRUGS TO EXPLORE THINGS . THEY SAY
- ▣ THAT THEY LIKE IT. AND, IT MAKE THEM HIGH, OR PLEASURE.
- ▣ AT THE END DRUGS HIJACK THE BRAIN AND THE BRAIN REWARD CIRCUITY.

AMAZING BRAIN FACTS!!!



- HAS ABOUT **100 BILLION** NEURONS
- IN FETUS – NEURONS MULTIPLY@RATE=
250000 NURONS/MIN
- **78% WATER**
- **WT---**1300-1400GMS
- CONSUMES **20%**(O₂),(CALORIES),(BLOOD)
- WORK – **!!CHEMISTRY + ELECTRICITY**
- COMP – 60% **WHITE M** ,40% **GREY M**
- INCAPABLE OF FEELING**!! PAIN**
- LANGUAGE---**LT HEM**,SHAPES---**RT HEM**
- SINGLE NEURON – **20000** CONNECTIONS!!!

Rt vs Lt



WHAT DRUGS DO TO THE BRAIN

- ▣ 8- WE SEE A **SECOND WAVE** OF CREATION OF **GREY** MATTER AT **PUBERTY** , PROBABLY RELATED TO NEW CONNECTIONS AND BRANCHES , FOLLOWED BY PRUNING .
- ▣ 9- **INTERACTING** WITH OTHERS IS VERY IMPORTANT IN THE WAY THE **BRAIN DEVELOPS**. THE PRINCIPLE OF **USE IT OR LOOSE IT** IS IMPOTANT.
- ▣ 10- RECENT DISCOVERIES SHOW THAT **ADRENAL SEX HORMONES** ARE EXTREMELY ACTIVE IN THE BRAIN , ATTACHING TO **RECEPTORS** EVERYWHERE AND EXERTING A **DIRECT** INFLUENCE ON **SEROTONIN** AND OTHER NEUROCHEMICALS THAT REGULATE **MOOD AND EXCITABILITY**.

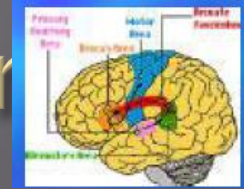
WHAT DRUGS DO TO THE BRAIN

- ▣ 1-**TAPERING** INTO BRAIN COMMUNICATION SYSTEM AND INTERFERE WITH THE WAY NERVE CELLS NORMALLY SEND , RECEIVE , AND PROCESS INFORMATION.
- ▣ 2-MARIJUANA AND HEROINTHEIR CHEMICAL STRUCTURE **MIMICS** THE NATURAL NEUROTRANSMITTER .
- ▣ 3-DRUGS CAN “**FOOL**” RECEPTORS , CAN LOCK ONTO THEM , AND CAN ACTIVATE THE NERVE CELLS . THE PROBLEM IS THAT THEY DON'T WORK THE SAME WAY AS A NATURAL NEUROTRANSMITTER , THEREFORE, NEURONS END UP SENDING **ABNORMAL MESSAGES** THROUGH THE BRAIN.

WHAT DRUGS DO TO THE BRAIN

- ▣ 4-COCAINE AND AMPHETAMINE CAUSE NERVE CELLS TO RELEASE EXCESSIVE AMOUNTS OF NATURAL NEUROTRANSMITTERS OR PREVENT THE NORMAL RECYCLING OF THESE BRAIN CHEMICALS.
- ▣ 5-DRUGS INCLUDING NICOTINE AFFECT THE “REWARD” CIRCUIT WHICH IS PART OF THE LIMBIC SYSTEM. LARGE AMOUNTS OF DA FLOOD THE SYSTEM PRODUCING EUPHORIA.
- ▣ 6-THE REWARD CIRCUIT INVOLVES MAJOR CENTERS , i.e.(VTA) VENTRAL TEGMENTAL AREA , NUCLEUS ACCUMBENS , AMYGDALA, PREFRONTAL CORTEX etc..
- ▣ 7-IN GIRLS, THE HIPPOCAMPUS WHICH RESPOND TO ESTROGEN GROWS FASTER THAN IN BOYS. THE AMYGDALA WHICH RESPOND TO ANDROGEN GROWS FASTER IN BOYS.

Drugs and the teenage brain



- ▣ What is a drug? Is a pleasure producing chemical. Some drugs produce extraordinary levels of pleasure.
- ▣ **FACT:** TEENS BRAINS ARE VERY EASILY DAMAGED BY DRUGS.
- ▣ **FACTS:** TEENS ADVANCE TO ADDICTION AT HIGHER RATES .
- ▣ **FACT:** DAMAGE TO ECSTASY DOESN'T HEAL
- ▣ **FACT:** 60% OF THOSE WHO TRY ECSTASY BECOME ADDICTED
- ▣ **FACT:** 70% OF ADDICTED PEOPLE INHERIT THE RISK FACTOR.
- ▣ **FACT:** TEENS WITH DEP OR SEXUALLY ABUSED ARE AT HIGHER RISK.

Drugs and the teenage brain

- ▣ **FACT:**ADDICTED TEENS LACK ANY SELF-CONTROL AND SUFFER CRAVING. ADDICTION IS A RELAPSING DISEASE.
- ▣ **FACT:**PLEASURE MAY BE A RESULT OF DA RELEASE AND/OR OPIOIDS.
- ▣ **FACT:**EACH FORM OF PLEASURE IS LINKED WITH A UNIQUE SUBSET OF NEURONS.
- ▣ **FACT:**PLEASURE (DA) CAN'T BE LONG LASTING , HAPPINESS(SEROTONIN) IS FEELING OF WELLBEING MORE LONG TERM.

DIAGNOSING DISEASED BRAIN

- ▣ FMRI- RELATIVELY NEW PROCEDURE
- ▣ USES:
- ▣ EXAMINE ANATOMY OF BRAIN
- ▣ BRAIN MAPPING
- ▣ BRAIN TUMOUR MONITORING

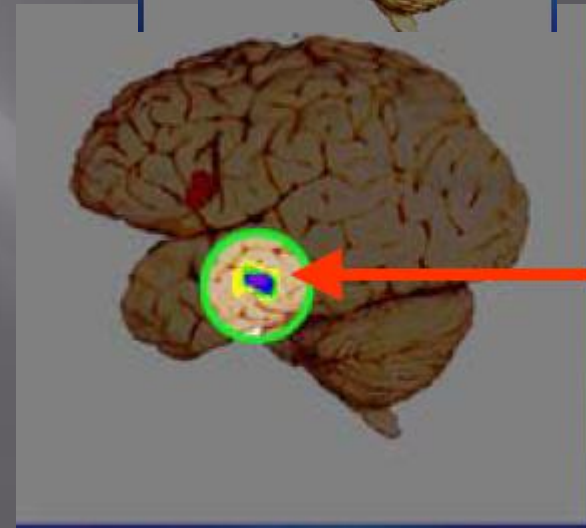
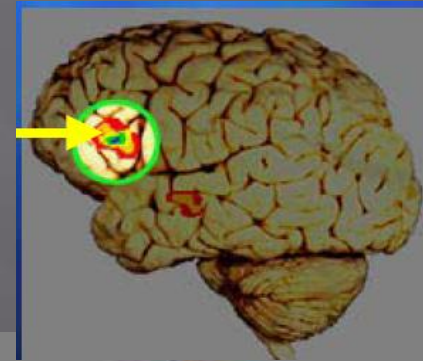
A SLOW DEATH

- ▣ AS I HOLD THE SPOON TO THE FLAME,
- ▣ I 'VE GOT NO ONE BUT MYSELF TO BLAME,
- ▣ AS I STICK THE NEEDLE IN MY SKIN,
- ▣ I DON'T FEEL LIKE I CAN EVER WIN,
- ▣ THERE'S A MOMENT OF ELATION,
- ▣ THAT FOLLOWS THE PENETRATION,
- ▣ BUT IT'S GONE AGAIN TOO SOON,
- ▣ SO I TRY TO FIND MY SPOON,
- ▣ AND I'LL DO IT ALL AGAIN,
- ▣ TILL I REACH THE VERY END

SUMMARY

PREFRONTAL CORTEX

- ▣ FMRI –NEW POWERFUL TOOL
- ▣ HUMAN BRAIN INCREDIBLY GOOD---- ADAPTATION
- ▣ PLAYING VIDEO GAMES--- BRAIN
- ▣ ANIMALS--- ADOLESCENCE??????
- ▣ FMRI –TEENS – TWINS???



AMYGDALA

