

UNRAVELING THE ENIGMA

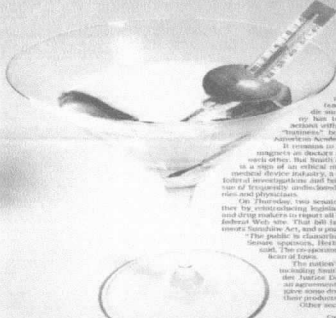
UNDERSTANDING
MEDICAL PROBLEMS FROM DRUG USE

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COMMUNITY MEDICAL ASSOCIATES

CAPTASA 2010

An Rx for Ethics

New Rules on Doctors and Medical Firms Amid Conflict Concerns

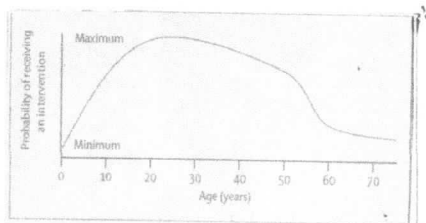


BY HARRY WELSH
When the sun goes down in Las Vegas, most other doctors have long since retired. But at the Sands & Resorts, a bustling resort on the Strip, the sun never sets. The place is a hotbed of medical malpractice suits, and the resort's doctors are being sued for negligence, malpractice and other offenses. The resort's doctors are being sued for negligence, malpractice and other offenses. The resort's doctors are being sued for negligence, malpractice and other offenses.

**\$5,150 per each of 633,000 working US physicians
CME=\$2 billion/yr, 30,000 CME/yr**

Allocation of Scarce Medical Interventions

Complete Lives System
Youngest first, prognosis, save most lives, lottery, instrumental value



Probability of receiving an intervention

Age (years)

Minimum

Maximum

0 10 20 30 40 50 60 70

Problems for Allocation of Scarce Medical Interventions? The Lancet, January 11, 2010

The Reaper Curve: Ezekiel Emanuel used the above chart to illustrate the ages on which health spending should be focused.

MAJOR CATEGORIES of COMPLICATIONS

PROBLEMS RELATED to DRUG USING BEHAVIOR

PROBLEMS RELATED to PHARMACOLOGIC and
PHYSIOLOGIC PROPERTIES of DRUG USED

PROBLEMS RELATED TO BEHAVIOR

INFECTIONS

Bacterial, Viral, Fungal

BODY'S PROTECTIVE MECHANISMS

Skin and Mucous Membrane Barrier

Latex

Immune System

White Blood Cells

Cytokines and Interferons

FIRE and ICE

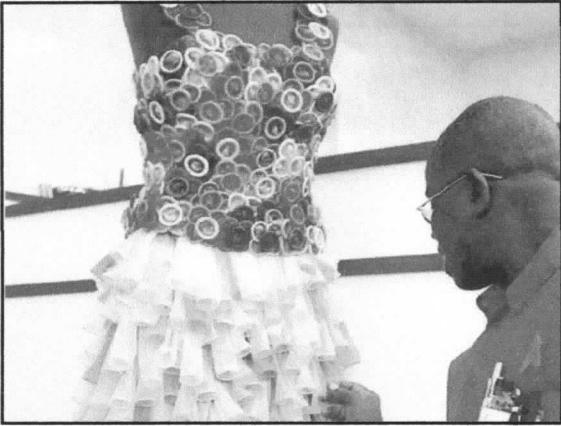
Thermal Injury

Mechanical Injury

Particulate Matter



Figure 1. Soft-Tissue Abscess on the Leg of an Injection-Drug User.
"Track" marks from injections extend along the calf.
Provided courtesy of Robert Gwizdala.



Brand & model	Price per condom	Overall score	Test results			Features	
			Latex	Stamps	Lubed by	Thin	Wife
1 Durex Performax*	0.96	100	●	●	●	●	●
2 Lifestyles Ultra Sensitive Lubricated	0.71	100	●	●	●	●	●
3 Lifestyles Warning Pleasure	0.75	100	●	●	●	●	●
4 Trojan Hot Pleasure ESSEX	1.00	100	●	●	●	●	●
5 Trojan Magnum Lubricated	0.66	100	●	●	●	●	●
6 Trojan Ultra Sensitive Ecstasy	1.10	100	●	●	●	●	●
7 Trojan Ultra Thin	0.84	100	●	●	●	●	●
8 Durex Extra Sensitive	0.71	99	●	●	●	●	●
9 Trojan-Eez	0.81	99	●	●	●	●	●
10 Lifestyles Ultra Thin Lubricated	0.69	99	●	●	●	●	●
11 Beyond Seven Sheet 100 Latex	0.50	92	●	●	●	●	●
12 Durex Pleasuremax	0.69	92	●	●	●	●	●
13 One Super Sensitive	0.97	92	●	●	●	●	●
14 Trojan ThinSentry	0.80	92	●	●	●	●	●
15 Durex Sensi Thin	1.01	92	●	●	●	●	●
16 Kimono MicroThin	1.17	92	●	●	●	●	●
17 Trojan MagnumFusion	0.91	94	●	●	●	●	●
18 Trojan Extended Pleasure*	0.88	92	●	●	●	●	●
19 Lifestyles Triple Pleasure	0.66	91	●	●	●	●	●
20 Night Light Glow in the Dark	1.38	91	●	●	●	●	●

**POSTEXPOSURE PROPHYLAXIS
HIV INFECTION**

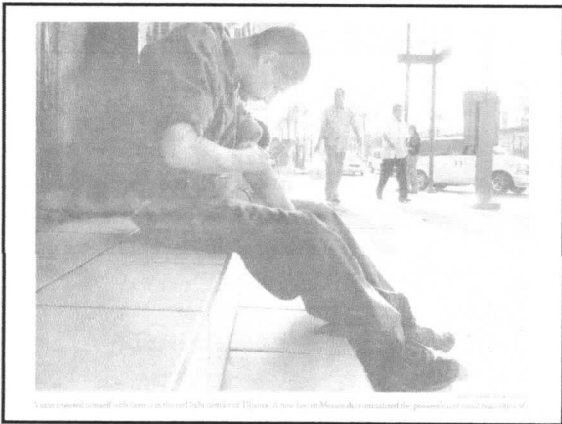
Occupational and Non-occupational Exposure
80% Effective
 Credible Possibility of Transmission
 Initiate as rapidly as Possible
 Continued for 28 Days
 Cost - \$1000 or more
 Testing for Other Sexually transmitted Diseases
 Source Information
 National HIV/AIDS Clinicians' Consultation Center
 1-888-448-4911

PROBLEMS DUE TO PHYSIOLOGY

- Distribution of Receptors in Body
- Variety of Receptors
- Variety of Transmitters
- Individual's Genetic and Biological Structure
- Dose of Drug
- Blood Level of Drug
- Agonist, Antagonist, Partial Agonist, Inverse Agonist
- Tolerance
- Mixture of Drugs
- Designer Drugs and Contaminants
- Complimentary and Alternative "Medications"

THE SOURCE





OPIUM and OPIOIDS

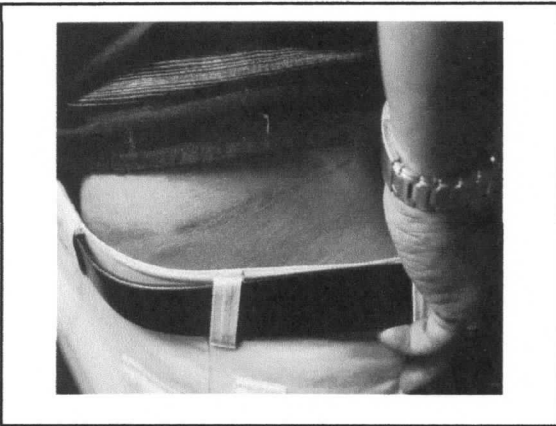
INTERACT WITH OPIOID RECEPTORS

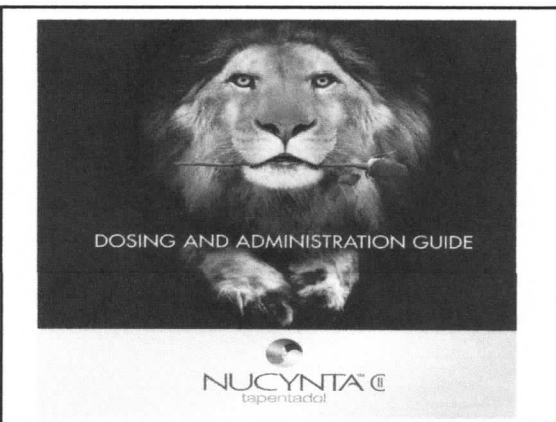
NATURAL OPIOIDS - Opium, Morphine, Codeine

SEMISYNTHETIC OPIOIDS - Heroin, Hydromorphone (Dilaudid), Hydrocodone, Oxycodone, Nalbuphine (Nubain), Buprenorphine,

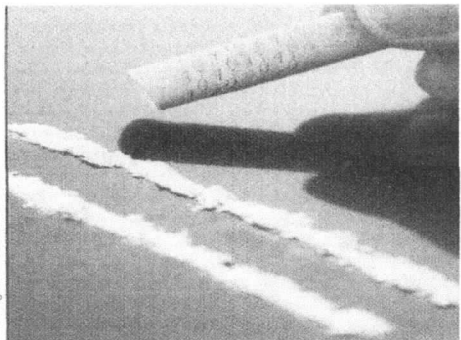
SYNTHETIC OPIOIDS - Dextromethorphan, Butorphanol (Stadol), Pentazocine (Talwin), Meperidine (Demerol), Loperamide (Imodium), Diphenoxylate (Lomotil), Fentanyl (Duragesic, Actiq), Sufentanil, Methadone (Dolophine), Propoxyphene (Darvon), Tramadol (Ultram)

ENDOGENOUS MORPHINE - ENDORPHINS





STIMULANTS



STIMULANTS

ALL ARE CNS STIMULANTS BUT AFFECT SYNAPSES OF SEVERAL DISTINCT NEUROTRANSMITTER STIMULATORY SYSTEMS - ACETYLCHOLINE (nicotine, betel, datura), ADENOSINE (xanthines), CATECHOLAMINE (cocaine, amphetamines, stimulant herbs)

CAFFEINE, NICOTINE, XANTHINES

BETEL, DATURA

COCAINE

PSYCHOSTIMULANTS - Amphetamine, Dextroamphetamine, Methamphetamine,

Methylphenidate, Pemoline, Fenfluramine, Phentermine, Phenylpropanolamine,

Ephedrine, 4-Methylaminorex (U4Euh), Qat, Methcathinone ("cat"), 4-methyl-

methcathinone (Mephedrone)

MODAFINIL (Provigil)

ARMODAFINIL (Nuvigil)

MECHANISM of STIMULANT ACTION

CENTRAL NERVOUS SYSTEM STIMULATION

Excitement, Exercise, Drugs

ADRENERGIC NERVOUS IMPULSE

Release of Norepinephrine

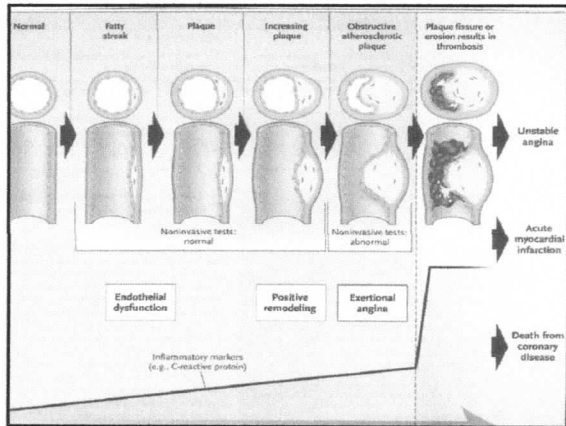
STIMULATION of BETA-ADRENERGIC RECEPTORS

Heart - Increased Rate, Stronger Contraction, Electrical Instability

STIMULATION of ALPHA-ADRENERGIC RECEPTORS

Arterioles - Constriction and Increased Blood Pressure

ELEVATION of BODY TEMPERATURE



HEALTH STATUS of MA USERS

J. Addict. Med. • Volume 3, Number 3, September 2009

TABLE 2. Current and Lifetime Rates of Medical Conditions in MA-Dependent Adults 3 Years Posttreatment

Condition (N = 301)	Current N (%)	Lifetime N (%)
Hypertension	53 (17.6)	57 (19.0)
Stroke	0 (0.0)	1 (0.3)
Endocarditis	0 (0.0)	1 (0.3)
Myocardial infarction	0 (0.0)	0 (0.0)
Wound/healed	22 (7.3)	127 (42.2)
Asthma	63 (21.0)	87 (28.9)
Liver enzyme	0 (0.0)	0 (0.0)
Tuberculosis	0 (0.0)	0 (0.0)
Kidney stones	2 (0.7)	8 (2.7)
Cholelithiasis	4 (1.3)	4 (1.3)
Hepatitis	25 (8.3)	44 (14.6)
Diabetes	3 (1.0)	11 (3.7)
Prostate disease	0 (0.0)	3 (1.0)
Kidney/bladder disease	19 (6.3)	28 (9.3)
Gastrointestinal disease	50 (16.6)	48 (16.0)
Arthritis	30 (10.0)	38 (12.6)
Back injury	63 (21.0)	103 (34.2)
Headaches	63 (21.0)	84 (27.9)
Chemical problems	66 (22.0)	94 (31.2)
Psychological conditions	73 (24.3)	67 (22.3)
Alcohol (treatment/abstinence)	54 (18.0)	54 (18.0)
Alcoholism	4 (1.3)	5 (1.7)
Severely transacted disease	2 (0.7)	96 (31.9)
Post-traumatic stress	56 (18.6)	56 (18.6)
Post-traumatic stress	13 (4.3)	13 (4.3)
Post-traumatic stress	12 (4.0)	12 (4.0)
Post-traumatic stress	15 (5.0)	15 (5.0)

M.S., methamphetamine.

DEPRESSANTS

ALL DEPRESS CNS BY ACTING ON GABA INHIBITORY SYSTEM SO MOST EXHIBIT MUTUAL SYNERGISM

ALCOHOL - Liver (Acetaminophen Accentuation), Heart, Brain

Beneficial Effects

Experimental Compound (Alda-1)

BENZODIAZEPINES

BARBITURATES

OTHER DRUGS WITH BARBITURATE LIKE ACTIVITY

Methaqualone, Glutethimide, Ethchlorvynol

GABAergic BOTANICALS

Fly Agaric, Kava

PSYCHEDELICS

LSD and LYSERGIC ACID AMIDES

Ololiuqui (Morning Glory), Lysergamide, Ergonovine

PSILOCYBIN (Mushrooms)

IBOGAINE

MESCALINE (Peyote)

DOB, DOI, DOM

METHYLENEDIOXYAMPHETAMINES

MDA, MDMA

DISSOCIATIVES

PCP, Ketamine,

CANNABINOIDS

THC, Endocannabinoid System

OTHERS - Nitrous Oxide, Volatile Nitrites, Inhalants, Absinthe, Nutmeg

DISSOCIATIVES and CANNABINOIDS

PCP

KETAMINE

MARIJUANA (THC) www.ncpic.org.au

October 2009 Justice Dept Order

OTHERS

Nitrous Oxide

Propofol

Volatile Compounds

Inhalants

Absinthe

Nutmeg

Catnip

GHB

Dietary Supplements - Salvia Divinorum (kappa opioid agonist)

Kratom (partial opioid agonist)

ENDOCANNABINOID SYSTEM

Increased Understanding of Exogenous Cannabis

Pain Control

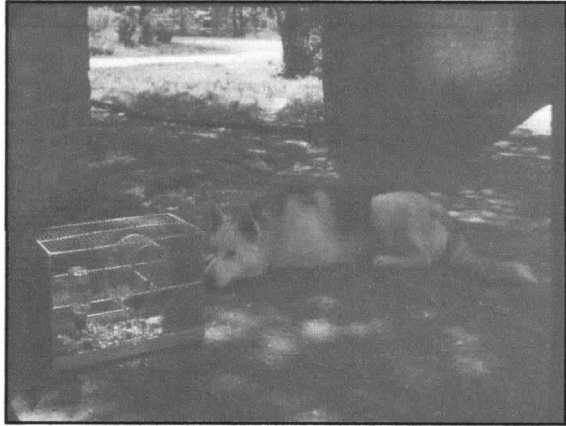
Muscle Tone

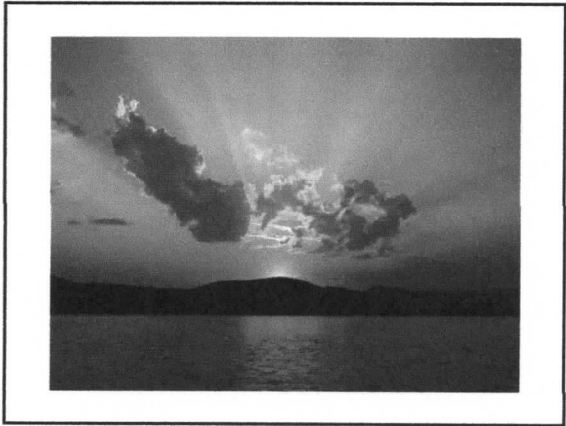
Mood State

Appetite

Inflammation

Cannabis - More than 100 different cannabinoids;
capacity for analgesia through neuro-
modulation in ascending and descending
pain pathways, neuroprotection, anti-
inflammatory mechanisms





INFORMATIVE WEB SITES

Daily Dose
<http://dailydose.net/>

Erowid
<http://www.erowid.org>

Blue Light
<http://www.bluelight.ru/vb/home.php>

Ecstasy Data
<http://www.ecstasydata.org/>

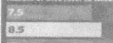
UT Addiction Research Institute
<http://www.utexas.edu>

MOST IMPORTANT HEALTH HABIT IS EXERCISE

Cold Front

In a study of low fitness types the common cold, researchers showed that regular exercise lessens its severity.

How much fitness level influences rates of upper respiratory tract infections



How much of symptoms compare to low fitness subjects



How the severity of illness compares to low fitness subjects



Cold virus participants were asked to rank their fitness level on a scale of 1 to 10.

High fitness level
Characterized by regular exercise, muscle tone, and moderate weight.

Medium fitness level
People in this group tend to be somewhat sedentary and are somewhat overweight.

Low fitness level
This group tends to be sedentary and overweight.

Other studies show that exercise...

- ★ Lowers the risk of stroke by 27%.
- ★ Reduces the incidence of diabetes by approximately 50%.
- ★ Reduces the incidence of high blood pressure by approximately 40%.
- ★ Can reduce mortality and the risk of recurrent breast cancer by approximately 50%.
- ★ Can lower the risk of colon cancer by over 60%.
- ★ Can reduce the risk of developing Alzheimer's disease by approximately 40%.
- ★ Can decrease depression as effectively as Prozac or behavioral therapy.

Meat Market