Not So Nice Stuff
Emotional Indifference - Detachment

Frontal cortex
- Dorsolateral prefrontal cortex (DLPFC)
- Orbital frontal cortex (OFC)

Medical prefrontal cortex
Anterior cingulate cortex (ACC)
Hypothalamic-pituitary-adrenal (HPA) axis
Nucleus accumbens
Amygdala
Hippocampus

Mammalian Brain
- Memory
- Sociability
- Attack
- Anger
- Maternal love
- Anxiety
- Fear/hate
- Jealousy

Lizard Brain
- Breathing/temperature
- Hunger/thirst
- Balance

Neocortex
- Logic & analysis
- Rational thought
- Control of emotions

- Language
- Morality

Avoidance/survival
Territoriality
Reproductive drive
Histamine Release

Normal arteriolar tone

Vasoconstriction
(increased contraction of circular smooth muscle in the arteriolar wall, which leads to increased resistance and decreased flow through the vessel)

Caused by:
- Oxygen (O₂)
- Carbon dioxide (CO₂) and other metabolites
- Endothelin
- Sympathetic stimulation
- Vasopressin; angiotensin II
- Cold

Vasodilation
(decreased contraction of circular smooth muscle in the arteriolar wall, which leads to decreased resistance and increased flow through the vessel)

Caused by:
- O₂
- CO₂ and other metabolites
- Nitric oxide
- Sympathetic stimulation
- Histamine release
- Heat

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CTZ = Nausea - Vomiting
Urinary Retention

Bladder Trigone...Urethral Sphincter...Enlarged Prostate

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Miosis=Pin-Point Pupils
Impaired Vision – Hard to Focus
Decreased Respiration
CNS Depression
Poor Cognitive Function...Mood Issues
GERD – Slowed Digestion

Gastroesophageal Reflux
Immune System - Immunosuppression

**Lymph nodes**
In the lymph nodes are the cells (lymphocytes) of the immune system. These recognise and eliminate invading pathogens.

**Respiratory system**
The cilia (fine hair-like projections) line the airway and move mucus and contaminants upward and out of the respiratory tract.

**Skin**
The skin forms a very effective barrier against invading pathogens.

**White blood cells**
How white blood cells attack pathogens both in the blood itself and in other tissues of the body.

**Spleen**
The spleen assists the body in protecting itself against bacterial infections.

**Stomach and intestines**
Stomach acid kills most harmful bacteria. Antibodies secreted by the intestinal cells attack viruses and other pathogens that have landed in the intestinal tract.
LH-FSH-Testosterone
Pregnancy Concerns
Placental Abruption-Infarction
Sexual Issues Need to be Addressed

OK, So we've taken off our clothes and I'm on top of you - how long before we get that orgasm thing?

I don't know but now I understand why mummy has a headache all the time!
Brain Changes

Anatomy of the Brain

- Frontal lobe
- Parietal lobe
- Temporal lobe
- Occipital lobe
- Thalamus
- Cingulate gyrus
- Fornix
- Amygdala
- Hippocampus
- Parahippocampal gyrus
- Medulla oblongata
- Pons
- Cerebellum
Little Organ Damage
Primary-Protracted Withdrawal Sx
Deaths
Tylenol Toxicity = Liver Failure
NSAIDs = Cardiac-Renal-BP-GI Issues

CV Effects - NSAIDs
• NSAIDs do not cause, but can worsen pre-existing Heart Failure.
• ↓ in renal blood flow and ↑ retention of sodium and water
• ↑ volume can decrease the effects of diuretics used for CCF.
• ↑ Systemic vasoconstriction can potentially exacerbate the pre-existing CCF.
Opium - Poppy Pods - Seeds...Paregoric

- Camphorated tincture of opium
- Tincture of paregoric
Morphine
Heroin = Diacetylmorphine

Illegal in US in 1924... Legal in Canada-Great Britain... Made a “Comeback”
Pro-Drug metab. = 6-MAM-Morphine-Morphine-6-Glucuronide-Hydromorphone
Many “OD DEATHS” caused by what it is cut with (Fentanyl-Quinine-etc)

Cheaper that Rx Opioids... ”Balloon Effect” will Increase Demand
Codeine

Mostly Cough Syrups and Tablets...Worst side effects=Itching-Nausea

Prodrug=Must be converted to Morphine by CYP-2D6 to be active

Recently popular “Purple Drank”
Hydrocodone Vicodin-Lortab-Zohydro-Hysingla-Tussionex-Hycodan

Moved to CII status Oct. 5, 2014...Legal only in US and a few other countries
Less side effects...Good oral absorption...Some initial stimulation..Aggression
Hydromorphone is a metabolite...Grapefruit Prolongs analgesia
Dihydrocodeine=Synalgos DC...Panlor DC or SS

Likely CIII Opioid Replacement for Hydrocodone...Similar Effects as Codeine

Never very popular ...Weak Opioid Analgesia...2x Stronger than Codeine

Synalgos DC

Panlor DC

Panlor SS
Hydromorphone
Dilaudid-Exalgo-Pallidone
DOC for Kidney Problems...Metabolites not Toxic...< Physical Dependence
Metabolite OF Morphine and Hydrocodone
Oxycodone = OxyContin...Percocet

Targiniq ER (Oxy + Naloxone)...Xartemis XR (Oxy + APAP)

Most prescribed/effective oral CII...Poster boy for “Bad Drug”...Aggression
Moderate to Severe Pain...Some Initial Stimulation...>Emotional Relief
Being Female-Grapefruit-Prozac-et.al will Increase Blood levels
Oxymorphone = Opana... Numorphan

Recent “Substitute” for OxyContin... Metabolite of Morphine
Meperidine or Pethidine
Demerol...Mepergan Fortis

Use has declined...Metabolite (Normeperidine) is Neurotoxic
Tremors...Delerium...Hallucinations...Emotional Instability...Twitching...Grimace
Fentanyl

DURAGESIC=Patch...ACTIQ=Lollipop ...FENTORA=Buccal...ONSOLIS=SL

Most Potent-Measured in MICROgrams...Use only if Opioid Dependent

Used to cut Heroin...Grapefruit-SSRI’s-BCP’s Increase Blood Levels

Patch=Skin texture is Important...Never cover or apply heat...Always flush
Tramadol=Ultram-Ultracet-Ryzolt
CIV on 8-14-2014...Structurally related to Codeine-Effexor

O-Desmethyl Tramadol Metabolite is more potent than Tramadol
Found in root of “Pin Cushion Tree”...Mild-Moderate pain...Poor Drug to Abuse
Less respiratory depression...Potential Hydrocodone “Replacement”
Tapentadol = Nucynta

Newest CII Opioid...Originally thought to be a CIII...No Physical Dependence
Less GI Problems...Moderate to Severe pain...OK for Peripheral Neuropathy
Age Limit of 18
Buprenorphine

Suboxone–Subutex–Butrans–Zubsolv–Bunavail

Pain...2002 OK’d for OMT...Suboxone=added Naloxone (4:1)...Butrans for pain only
Partial Mu agonist...<Dependence/Tolerance...Ceiling Effect=No effect at >>Doses
Poor GI absorption...SL-Buccal-Nasal-Anal-Vaginal-Tinctures are Best
Butrans dose=100-500mcg daily...Bupe pain dose=1-32mg daily
OMT Dosing=8-32mg daily...Very safe compared to other opioids
Abused to prevent withdrawal-Not to get high...Generics available
Methadone

Used for chronic pain and OMT... Dosing is different... "Start Low-Go Slow"

Absorption-Metabolism-Elimination are inconsistent... Potential Heart Issues

OMT has no time limits... Increases chance of survival and thriving

Involved with many opioid OD’s... Don’t get high quickly

Benefits of Methadone Maintenance Therapy

- Heroin use
- Risk of overdose
- Risk of IDU-associated diseases
- Mortality
- Criminal activity
- Employment potential
- Improved family stability
- Pregnancy outcomes

Normal Heartbeat

Fast Heartbeat

Slow Heartbeat

Irregular Heartbeat

Methadone Hydrochloride Oral Solution USP

Each 5 mL Contains:
Methadone Hydrochloride 10 mg
Alcohol 6.4% Disperse in a light-resistant container as defined in the USP-NF. Keep in secure area and protect from diversion.
For Oral Use Only - NOT TO BE INJECTED
Usual Dosage: See Package Insert for Complete Prescribing Information. Store at 20° to 25°C (68° to 77°F) (See USP Controlled Room Temperature)

500 mL

Addiction is an Illness, NOT A CRIME
Methadone Clinics

Benefits of Methadone Maintenance Therapy
- Heroin use
- Risk of overdose
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East Sunset Heights Methadone Clinic
Coming Fall 2008
Proudly Serving the Junkies of Houston & The Surrounding Areas!
Thank You !!!

That's all Folks!