

Topic 1

Wednesday, January 8, 2020

8:20 AM



Experiments

Current way of testing a drug is experiments, and repeating them over and over

Statistics are used to make sure it is done properly

Statistics are not a proper way to judge an experiment

Difficult to control dosages

Varying amounts of active ingredient in the plant depending on multiple factors

Difficult to correct new information

Difficult to change people's beliefs

Reasoning

Doctrine of Humors got way to detailed overtime

100% wrong

Stupid idea

State of the art for 2000 years

Some still use it

Blood was rebalanced by removing blood from body (bloodletting)

Leaches

Different shapes of holes

Different spots to release blood

George Washington was killed via bloodletting

Doctrine of Signatures

Secrete code left by god

100% false

Most remedies were harmful

Lack of rationality or evidence

Eating walnuts for brain health

Shaped like a brain

Boneset stems

Stem goes through the middle of the leaf

Skeleton goes through middle of the body

Benefits the bone health

Sharks



“Sharks don't get cancer” (they do)

They have cartilage

Shark cartilage used for cancer treatment

Breath Mints

Chlorophyll interacts with light and transforms it into energy for the plant

Parsley leaf freshens breath

Both are green so they both treat fresh breath

Mandrake roots

Looks like a person, the root would scream as it is pulled out of the ground

Used to treat almost everything including demonic possession

Powdered Rhino Horn

Stimulates sexual feelings

Mercury

Heavy liquid pushes all the toxins out of the body

TOXIC

Surgery

Before 1850 were done without anesthetic

Very limited surgeries that could be done

Amputation done very quickly

Nitrous Oxide

Anesthetic

Laughing gas

Discovered function in 1840-1850

Ether

Discovered function in 1846

Anesthetic

Patient completely unconscious

Still less than 30% of people survived

Development of infection

Lack of sanitation

Phenol

Discovered function in 1867

Antiseptic

Joseph Lister

Carbolic acid sprayer

Used to spray mist that would kill bacteria

Increased survival rate significantly

Phenol is very toxic

Doesn't really effect the patient
Harmful on doctors - toxicity

Washing & Glove

Safer

Remove bacteria

Surgical Room

Late 1800s

Everything white

Very clean

Listerine

Became a household product

Used for dandruff

Listerine no longer contains phenol, thymol instead

Drugs

First artificial dye

Colour used to be very expensive

1856

William Perkin

Used coal to create colour inexpensively

Dye industry morphed into drug industry

Aspirin

1897

First artificial drug

Doesn't occur in nature

Modern Drugs

Most are artificial

Designed for optimal activity, safety

Provide convenience

Manufactured in large quantities

Genetically engineered drugs

1982

More and more common

40% are genetically engineered currently

Rules & Regulations

Medical industry (+ drug industry) most regulated in the world

Before 1907

Anyone could make and sell drugs

Most were made up

No proof

No safety testing

No testing of any kind

They would put one substance in the product

People may feel better but they are not better

Alcohol was the most common "active ingredient"

People were patenting the products leading to the public thinking it was quality

Patented = better than not patented (it was thought)

Drugs are NEVER harmless

Patent medicine = Fake medicine

Board of Food and Drug Inspections

Formed in 1907

First government regulations for medicines

Labeling only

No regulation of therapeutic claims

Sulfanilamide

Antibiotic as a powder

Tasted horrible

Children wouldn't consume it

Made it into an elixir

Mixed the powder with water and ethylene glycol (tasted sweet)

Very toxic

Wouldn't take drug off market

Sold for 2 months

107 dead

260 permanently disabled

FDA

Created in 1938

Ensured safety of drugs

Animal testing was now required

Clinical trials done to follow

Thalidomide

Sedative

1957

Very few side effects

Prescribed to pregnant women

Lead to babies born with attenuated limbs

Lead to babies born with attenuated limbs

Teratogen

Thalidomide tested on rats, didn't really show effects

In humans caused in miscarriage, stillbirth or birth defects

Modern Safety Standards

Safety testing done in at least 2 species

At least one primate

Must show that the drug is bioavailable

Gets into body

Must use relevant doses

