**Dosage forms**

Not all drugs available in all dosage forms, in other words a single drug can't exist in all dosage forms

Additives help us control dosage forms for example thickeners are added to ointments and not to liquids

Slide 8:

Stability additives are responsible of expiry dates

It's not reasonable to make a drug with an expiry date of one month for example

Preservations: the drug itself has antibiotics

Coloring agents: all people take drugs based on their colors, they help the patient to recognize their drug (orange pill at the morning, red one at night …etc)

Extra note: taking drug when they are not needed is called drug abuse (this term is not only used for additive drugs)

For example: taking antibiotics for common cold

Pay attention that the drug may cause side effects because of the additives and not because of the active ingredient (drug itself)

Slide 13:

Lozenges: stripsels

Tablets contain 1 gram of drug which is a smaller amount than that of capsules, granules contain 5 grams of drug

Slide 14, 15, 16:

Most drugs are immediate release drugs (released in circulatory system directly)

Controlled release drugs are designed in a way that deliver them to circulatory system slowly resulting in longer duration of action, for example contraception drugs work for 5 years

Compliance: means it's easier to take especially by old people (they forget about their drug)

-controlled and immediate release drugs have same actions but different delivery systems

-tablets may have a line that separate it into two halves , if this line didn't exist you can't split the capsule into two halves and sometimes this line contains special delivery system

When it comes to capsules they are hard and you can't split the capsule

 Slide 17:

When the doctor talked about fluctuations he didn't explain that much because we are going to talk about them later, he mentioned that the peak (high levels) is toxic and we must avoid it, and that a steady flow should be kept

Slide 20:

Lozenges are sucked by mouth

Slide 23:

Semisolid drugs are designed to have local effect

Slide 25:

Steroids are applied to skin and 1% of applied drug will be absorbed in circulation, they work on nuclear and intracellular receptors and they are highly lipid soluble to match their function

There is some kind of therapy where they put the steroid dose and put a plaster or special gloves to get stronger local effect of the dose by increasing the absorption into 10% instead of 1%

Slide 28:

Most antibiotics exist in suspension and can't be given as IV because they aren't clear

Slide 29:

General anesthesia is a volatile liquid and there dose is adjusted by seconds , they go directly to lungs by inhalation and the onset and termination are really fast, when you are done with the surgery you turn the gas off and the patient wakes up

Respiratory irritation produce fluids in respiratory passages of unconscious patients and this leads to a fatal condition and the dr takes full responsibility

**Routes of administration:**

Slide 4:

Oral drugs are excreted after doing their function

Sweat, feces, and kidney (the last one is the most important one) are sites of excretion

Liver is the major site of metabolism

Slide 5:

Example on transdermal patches: progesterone

Slide 6:

Oral route is the most convenient route at all

Slide 10:

First pass metabolism: when liver enzymes break down drug and it will be excreted and not effective anymore

How to solve this problem?

Change the route for some drugs (make it IV for example)

Slide 13:

Buccal route is still oral route

Slide 15:

IV route has 100% bioavailability

Embolism: when blood vessels are blocked by air in the IV dose

Parental route has more side effects than oral route

Subcutaneous: patients can inject it to themselves (easy)

Intraparentral: good for animals

Slide 19:

Rectal route is good for children who are younger than one year old

Slide23:

Route of administration affect the dose for example IV needs a smaller dose when comparing it with oral route (because IV route has 100% bioavailability)

The best way to calculate dose is by weight

Usually females need smaller dose (lipid and fat amounts in their bodies)

But it's not that true that dose depend on sex of patient

Site of action: intrathecal route is used when we need to function on CNS

Dose interval: frequency of dose over period of time