



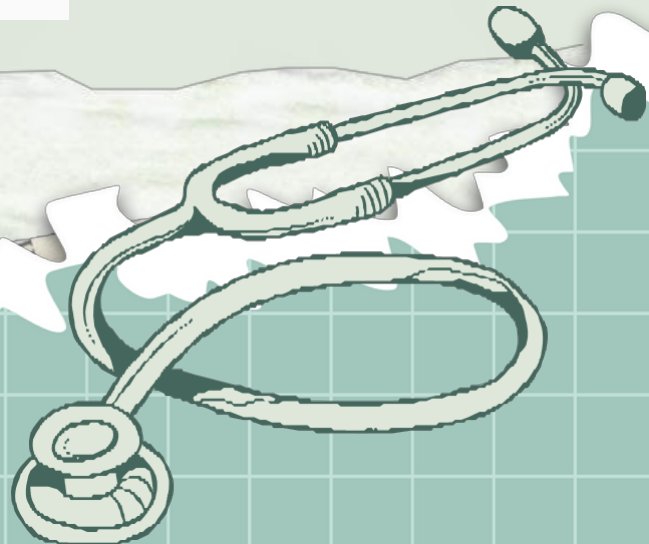
Clinical Skills 1

Title:

Data interpretation

Done By: omar haddad

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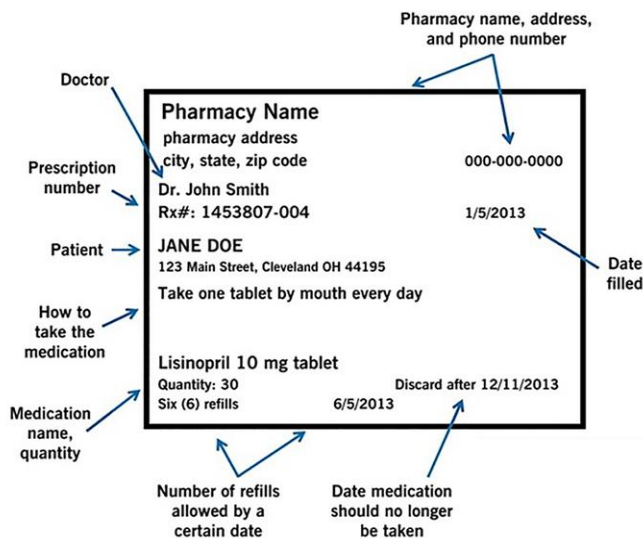




Clinical Skills 1

Drug history

How to Read a Prescription Medication Label



❖ Question: What should we include in the drug prescription?

- Date
- Patient's name and address
- Doctor's name and signature
- Drug name
- Drug dose
- Quantity prescribed
- Drug's rout
- Number of refills

THE FIVE RIGHTS OF MEDICATION

RIGHT PERSON
RIGHT DRUG
RIGHT DOSE
RIGHT TIME
RIGHT ROUTE

❖ Important note: make sure you ask about allergies whenever you prescribe a drug



Clinical Skills 1

❖ Important drug prescription abbreviations:

- 1) PO (per os): means by mouth
- 2) QID/QDS: four times a day
- 3) TID/ TDS: three times a day
- 4) BID/BD: two times a day
- 5) OD: once a day
- 6) Q?H: every ? hours
- 7) PRN: when needed
- 8) IV: intravenous
- 9) IM: intramuscular
- 10) SC: subcutaneous

❖ Question: What does Q8H means?

It means that we should take the drug every 8 hours

❖ Question :What are the routs for drug administration?

1. Intravenous Route.
2. Intramuscular Route.
3. Subcutaneous Route.
4. Rectal Route.
5. Vaginal Route.
6. Inhaled Route.

❖ Question: How can we calculate the dosage?

The dose, for children mostly, is prescribed according to weight, so we prescribe like "10mg of paracetamol for every kg of weight"

So if we have a patient that weighs 15 kg, we should give him $10 \times 15 = 150$ mg of paracetamol

❖ Note: for children, drugs per mouth are given as syrup, not tablets as for adults. So we need to calculate how many ml we should give.

The paracetamol syrup dose is 120mg/5ml, that means in every 5 ml of syrup we have 120mg of paracetamol, by dividing 120 over 5 ml we got 24mg in 1ml of paracetamol liquid, to calculate our dose which is 150mg, we need to divide 150mg to 24mg, which makes our liquid amount that we should give 6.25ml



Clinical Skills 1

❖ Another example

How many mls of amoxicillin liquid can we give to a 6 years old boy?

We need to know the weight, the prescribed dose and the amoxicillin liquid dose

So he is 20 kg and the prescribed dose is 20mg/kg per day divided Q8H

And the amoxicillin liquid is 125mg/5ml

So the dose needed according to weight is $20 \times 20 = 400\text{mg}$

$125\text{mg}/5\text{ml} = 25\text{mg}$ amoxicillin in 1 ml liquid

$400/25 = 16$ ml per day

$16/3 = 5.3$ ml amoxicillin liquid every 8 hours

❖ Questions for practice

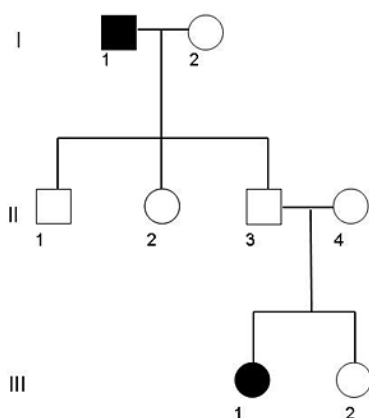
How many mls of ciprofloxacin liquid can you give to a 17 year old male ? If his weight is 60 kg and we prescribe 2 mg of ciprofloxacin for each kg and each 5 ml of liquid can take in 30 mg of paracetamol?

- A. 25
- B. 30
- C. 20
- D. 15
- E. 10

Q64 → How many milliliters of Amoxicillin 250mg in 5 ml syrup can you prescribe as a dose to a 10 year old child? Weight of child 32 kg Prescribe 20 to 40 mg per kg per day in divided doses every 8 hours.

- A. 5ml.
- B. 10ml.
- C. 12.5ml.
- D. 15ml.
- E. 25ml.

Family history



Pedigree chart symbols to represent male and female individuals

Male	Female
Three males	Three females
Proband male	Proband female
Deceased male	Deceased female
Affected male	Affected female
Examined male	Examined female
Male fraternal twins	Female fraternal twins
Male identical twins	Female identical twins
Adopted male	Adopted female

Some other symbols used in pedigree chart

Unknown sex
Lived one day
Still birth
Miscarriage
Pregnancy
Marriage
Consanguineous marriage
Extramarital mating
Divorce
No children

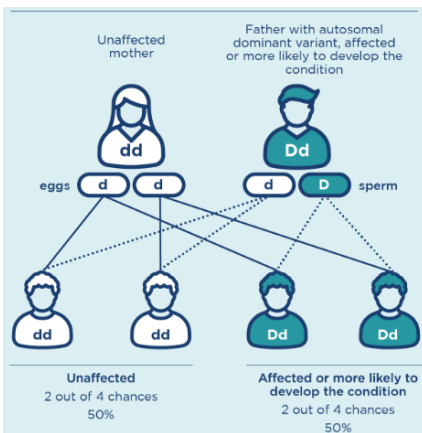


Clinical Skills 1

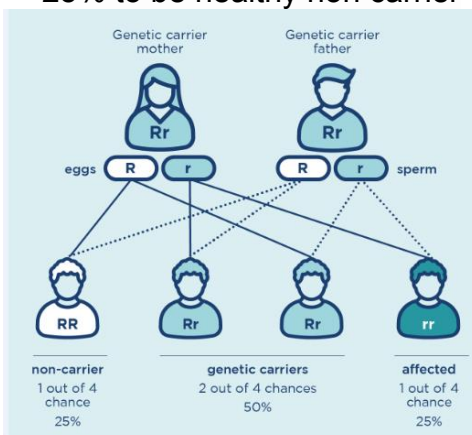
❖ **Question:** what are the modes of inheritance?

1. autosomal dominant
2. autosomal recessive
3. X-linked dominant
4. X-linked recessive
5. Mitochondrial

- **Autosomal dominant:** is a pattern of inheritance characteristic of some genetic disorders. "Autosomal" means that the gene in question is located on one of the numbered, or non-sex, chromosomes. "Dominant" means that a single copy of the mutated gene (from one parent) is enough to cause the disorder. A child (whether male or female) of a person affected by an autosomal dominant condition has a 50% chance of being affected by that condition via inheritance of a dominant allele.



- **Autosomal recessive:** is a pattern of inheritance characteristic of some genetic disorders. "Autosomal" means that the gene in question is located on one of the numbered, or non-sex, chromosomes. "recessive" means that you need double copy of the mutated gene (from both parents) to cause the disorder. A child of a couple having the gene has a 50% chance of being a carrier by that condition and 25% to be affected and 25% to be healthy non carrier



X-linked dominant inheritance: indicates that a gene responsible for a genetic disorder is located on the X chromosome, and only one copy of the allele is sufficient to cause the disorder when inherited from a parent who has the disorder.

Figure 10.3:

X-Linked dominant inheritance where the mother has the non-working X-linked dominant gene copy and is affected. The non-working copy of the X-linked gene is represented by 'D', the working copy by 'd'.

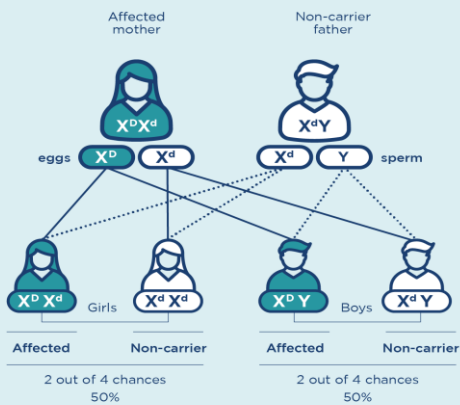
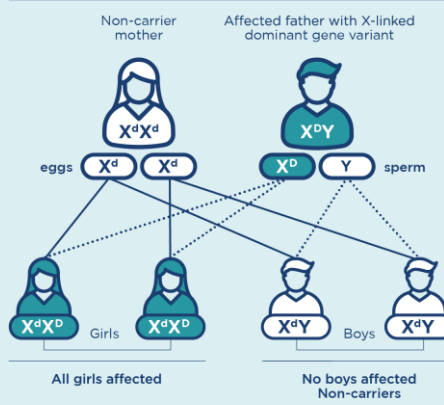


Figure 10.4:

X-linked dominant inheritance where the father carries the X-linked dominant gene copy and has the condition. The non-working copy of the gene is represented by 'D', the working copy by 'd'.



- **X-linked recessive inheritance:** is a mode of inheritance in which a mutation in a gene on the X chromosome causes the phenotype to be always expressed in males (who are necessarily homozygous for the gene mutation because they have one X and one Y chromosome) and in females who are homozygous for the gene mutation, see zygosity. Females with one copy of the mutated gene are carrier

Figure 9.4:

X-linked recessive inheritance where the father has the non-working copy of the X-linked gene. The non-working X-linked recessive gene copy is represented by 'r'.

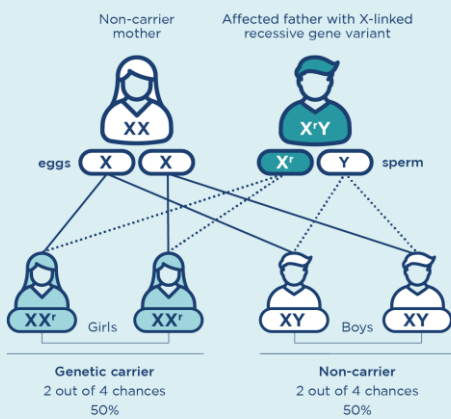


Figure 9.3:

X-linked recessive inheritance where the mother is a carrier of the non-working copy of the X-linked gene. The X-linked recessive non-working gene copy is represented by 'r'; the working copy by 'R'.

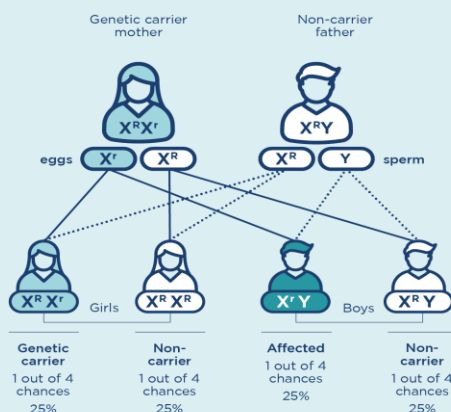


Figure 9.3:

X-linked recessive inheritance where the mother is a carrier of the non-working copy of the X-linked gene. The X-linked recessive non-working gene copy is represented by 'r'; the working copy by 'R'.

Genetic carrier mother Non-carrier father

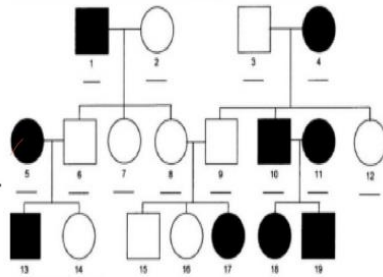


Clinical Skills 1

❖ Questions for practice:

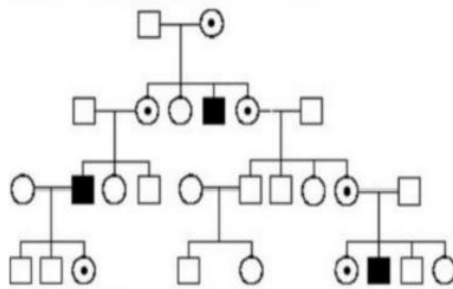
What type of inheritance is represented by this family pedigree?

- A. Autosomal dominant.
- B. Autosomal recessive.
- C. X-linked dominant.
- D. X-linked recessive.
- E. Mitochondrial inheritance.



What type of inheritance is represented by this family pedigree?

- A. Autosomal dominant
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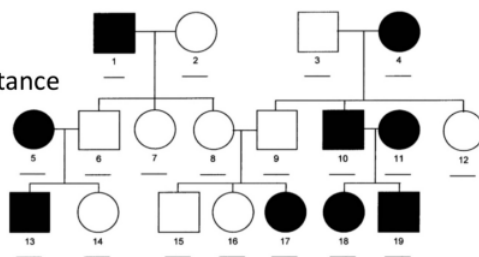


What is the probability that a boy is affected by a disease that has x-linked recessive inheritance. His father is not affected and his mother is a carrier

- A. 0%.
- B. 25%.
- C. 50%.
- D. 75%.
- E. 100%.

What type of inheritance is represented by this family pedigree?

- A. Autosomal dominant
- B. Autosomal recessive
- C. X linked recessive
- D. X linked dominant
- E. Mitochondrial inheritance





Clinical Skills 1

Q97 → You look at a family pedigree and a disease is present in the first and third generations but not in the second generation. You also see that both males and females are affected. What is the most likely type of inheritance:

- A. Autosomal dominant
- B. Autosomal recessive
- C. x linked recessive
- D. x linked dominant
- E. Mitochondrial inheritance

Q97 → You look at a family pedigree and a disease is present in the first and third generations but not in the second generation. You also see that both males and females are affected. What is the most likely type of inheritance:

- A. Autosomal dominant
- B. Autosomal recessive
- C. x linked recessive
- D. x linked dominant
- E. Mitochondrial inheritance



Clinical Skills 1

Social history: smoking

- ❖ Question: what does pack year means and how to calculate it?

Pack-year: is used to describe how many cigarettes you have smoked in your lifetime, with a pack equal to 20 cigarettes.

If you have smoked a pack a day for the last 20 years, or two packs a day for the last 10 years, you have 20 pack-years.

- ❖ Number of pack years = (number of cigarettes smoked per day / 20) x (number of years smoked)

- ❖ Examples:

1. How many pack years does someone have if they smoke 40 cigarettes per day for 25 years?

$$(40 / 20) \times 25 = 2 \times 25 = 50 \text{ pack years}$$

2. How many pack years does someone have if they smoke 15 cigarettes per day for 10 years?

$$(15 / 20) \times 10 = 0.75 \times 10 = 7.5 \text{ pack years}$$

- ❖ Note: Smoking increases the risk for many diseases such as Chronic obstructive pulmonary disease, and the more you smoke the more the risk become

Smoking History (pack years)		
COPD	Women	Men
Mild	35	60
Moderate	54	66
Severe	59	67

- ❖ Question: What are the limitations of pack years?

Someone may vary how much they actually smoke / day, for example 5 cigarettes a day smoked for 20 years gives the same pack years as 20 cigarettes per day smoked for 5 years = 5 pack years for both

- The risk of smoking-related disease is usually higher for the longer duration of smoking

- ❖ Note: So consider pack years with smoking intensity (packs / day) and duration



Clinical Skills 1

❖ Questions for practice:

Q8 → How many pack years does someone have if they smoke 30 cigarettes per day for 20 years?

- A. 30
- B. 25
- C. 20
- D. 35
- E. 40

Q9 → How many pack years does someone aged 60 have if they smoke 15 cigarettes per day since he was 20?

- A. 30
- B. 25
- C. 20
- D. 35
- E. 40

Social history: alcohol

- ❖ Note: alcohol related disease is very sensitive topic to talk about with patients
- ❖ Question: how can we calculate alcohol volume taken by someone?
- ❖ Units of alcohol = Volume (ml) x ABV (%) / 1000

1 unit =

1. one small glass (125ml) of wine
2. half pint (240ml) of beer
3. one shot (40ml) of spirits (whisky etc)

Others:

- a) 750ml bottle of wine 13.5% abv = 10 units
- b) 750ml bottle of vodka at 40% abv = 30 units
- c) 480ml (pint) of beer at 4% abv = 2 units

❖ Note: what information do we need to know to calculate alcohol units?
Volume drunk, alcohol abv

❖ ABV, or alcohol by volume: is a measure of alcoholic strength. The amount of ethanol (alcohol) in a container is shown as a percentage of the overall volume of the drink. The higher the percentage, the stronger the alcohol.



Clinical Skills

- ❖ **Question:** how many units of alcohol in 3 glasses of wine? Size of glass 250 ml with ABV 12%
In one glass = $250 * 12 / 1000 = 3$ units per glass * 3 glasses = 9 units
- ❖ UK guidelines on safe drinking is less than 14 units of alcohol per week (for men and women)
- ❖ Alcoholic cirrhosis – daily drinking is a greater risk than binge drinking (sheron 2009)
Binge drinking is defined as consuming 5 or more drinks on an occasion for men or 4 or more drinks on an occasion for women
- ❖ Hazardous drinking 3 units a day for men or 2 units for women
Hazardous drinking is defined as a quantity or pattern of alcohol consumption that places patients at risk for adverse health events
- ❖ CAGE questionnaire – screening tool (problem if 2 or more "yes")
C: Do you think you need to Cut down (reduce) alcohol intake?
A: Do you get Annoyed by people criticising your alcohol intake?
G: Do you feel Guilty about your alcohol intake?
E: Do you need a drink in the morning (Eye opener)?

Questions for practice:

How many units of alcohol in 4 small glasses of whisky? If you know that the size of glass = 125ml and ABV (alcohol by volume) is 20%

- A. 9
- B. 12
- C. 6
- D. 3
- E. 15

Very important →
Small glass = 125 ml
Large glass = 250 ml
Pint = 480 ml
Half pint = 240 ml
Shot = 40 ml

How many units of alcohol in 4 small glasses of whisky? If you know that the size of glass = 125ml and ABV (alcohol by volume) is 20%

- A. 9
- B. 12
- C. 6
- D. 3
- E. 15

Very important →
Small glass = 125 ml
Large glass = 250 ml
Pint = 480 ml
Half pint = 240 ml
Shot = 40 ml

Q102 → A man drinks 2 glasses of wine (ABV 13.5) and pint of vodka per week (ABV 4), how many units does he drink per week?

- A. 5
- B. 7.
- C. 9.
- D. 6.
- E. 4.

Q84 → A patient tells you that they drink 2 glasses of red wine every night. How many units of alcohol do they drink per week? Size of glass 125ml Alcohol by volume 12%

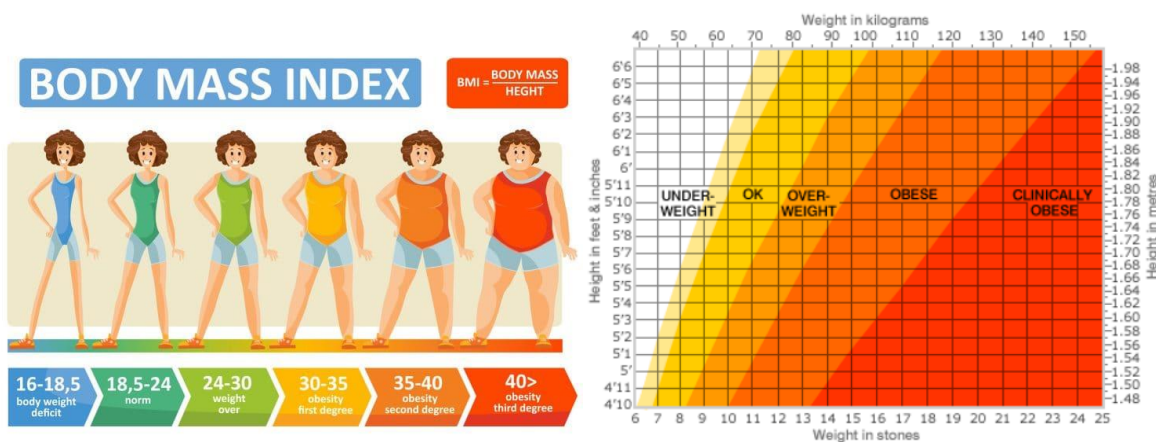
- A. 1.5 units.
- B. 3 units.
- C. 10.5 units.
- D. 17.5 units.
- E. 21 units.



Clinical Skills 1

Body mass index

- ❖ Body Mass Index = weight (kg) / height squared (m²)
note: it is important to make sure that the height is in meter form and the weight is in kg
- ❖ High BMI, increased risk of:
 1. Hypertension
 2. Heart disease
 3. Stroke
 4. Diabetes
- ❖ Obesity classes
 1. 30-34.9 Class 1
 2. 35-39.9 Class 2
 3. 40+ Class 3



❖ Example:

- What is the BMI of a 20 year old woman weighing 50 kg and is 150cm tall?
- 150 cm = 1.5m
- $1.5 \times 1.5 = 2.25\text{m}^2$
- $50 / 2.25 = 22.2 \text{ kg/m}^2$
- Healthy weight



Clinical Skills 1

❖ Example 2:

- What is the BMI of a 60 year old man weighing 90kg and is 170cm tall?
- $170 \text{ cm} = 1.7\text{m}$
- $1.7 \times 1.7 = 2.89\text{m}^2$
- $90 / 2.89 = 31.1 \text{ kg/m}^2$
- Obese

❖ Questions to practice

Q72 → A patient is 175cm tall and weighs 88kg. What is their body mass index?

- A. Under weight.
- B. Healthy weight.
- C. Overweight.
- D. Obese Class 1.
- E. Obese Class 2.

Q12 → A 25 year old woman weighing 80 kg and is 160cm tall is considered as:

- A. Healthy woman
- B. Underweight woman
- C. Over weight woman
- D. Obese class 2 woman
- E. Obese class 1 woman



Clinical Skills 1

Important numbers

❖ Pulse Rate

- Bradycardia < 60 beats per min
- Normal 60 – 100 beats per min
- Tachycardia > 100 beats per min
- Is the pulse regular? Regularly irregular? Irregularly irregular?

❖ Blood Pressure

- Hypotension < 90 / 60 mmHg
- Normal 120 / 80 mmHg
- Stage 1 Hypertension > 140 / 90 mmHg
- Stage 2 Hypertension > 160 / 100 mmHg

❖ Question:

Q90 → All of the following are normal adult blood pressures, EXCEPT:

- A. 100 over 70
- B. 110 over 79
- C. 115 over 80
- D. 130 over 75
- E. 145 over 100



Clinical Skills 1

Spot diagnosis

Down's Syndrome



Kyphosis



Jaundice



Clubbing



Palmar Erythema



Angular Cheilitis and Atrophic Glossitis (iron deficiency anaemia)



Thyroid Goitre



Sebaceous Cyst



Squamous Cell Carcinoma



Lipoma





Clinical Skills 1

❖ Definitions:

1. Down syndrome: is a genetic condition where a person is born with an extra copy of chromosome 21
2. Kyphosis: is a curving of the spine that causes a bowing or rounding of the back.
3. Jaundice: also known as hyperbilirubinemia, is defined as a yellow discoloration of the body tissue resulting from the accumulation of excess bilirubin.
4. Clubbing: is a physical sign characterized by bulbous enlargement of the ends of one or more fingers or toes, often caused due to diseases in lung, heart or liver
5. Palmar erythema: is a skin condition that makes the palms of your hands turn red. Often caused due to disease in liver or pregnancy
6. Angular cheilitis: describes an inflammatory skin process of variable etiology occurring at the labial commissure, the angle of the mouth, often caused due to iron deficiency anemia
7. A goiter: is a lump or swelling at the front of the neck caused by a swollen thyroid
8. Sebaceous cysts: are typically harmless, slow-growing bumps under the skin
9. A lipoma: is a slow-growing, fatty lump that's most often situated between your skin and the underlying muscle layer
10. Squamous cell carcinoma: is cancer that occurs in the outermost part of the epidermis (skin surface) or the surface of certain portions of the body (areas of the head and neck or genitalia) known as squamous cells.