

# Clubbing



**Fb/Nurse-Info**

# CLUBBING

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**Medicine Basics Revisited**

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**Fb/Nurse-Info**

## What is clubbing?

- In simple terms clubbing is the bulbous enlargement of the fingertips along with an increase in anteroposterior as well as lateral curvature of the nails



**Normal  
Fingers**



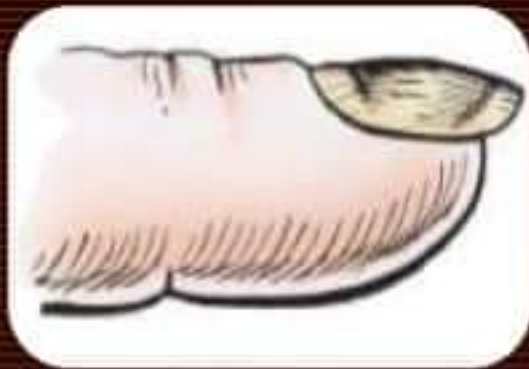
**Clubbed  
Fingers**



**Koilonychia  
Fingers**

# What is the definition of clubbing?

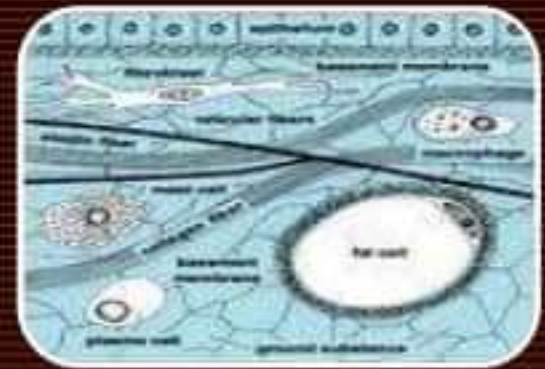
- Clubbing is defined as the bulbous enlargement of the terminal phalanges due to proliferation of connective tissue between the fingernail and the bone.



Clubbing is



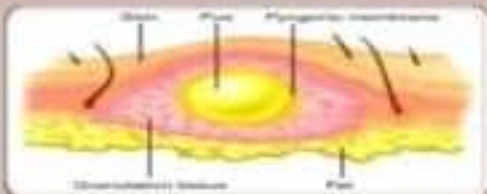
Proliferation of



Connective Tissue

# What is the importance of clubbing?

- The presence of clubbing in a person almost always indicates the presence of a serious underlying infection or neoplasm of one of the major systems of the body



Often indicates underlying suppuration



May indicate presence of underlying malignancy



Rarely it is present as an innocent bystander

## Any other name for clubbing?

- Because it was *Hippocrates* who first described this clinical feature, clubbing is sometimes (but only rarely!) called as Hippocrates Fingers.. Otherwise it is simply called as clubbing of fingers

Hippocrates

460 BC



Father of Medicine

## What is the pathology of clubbing?

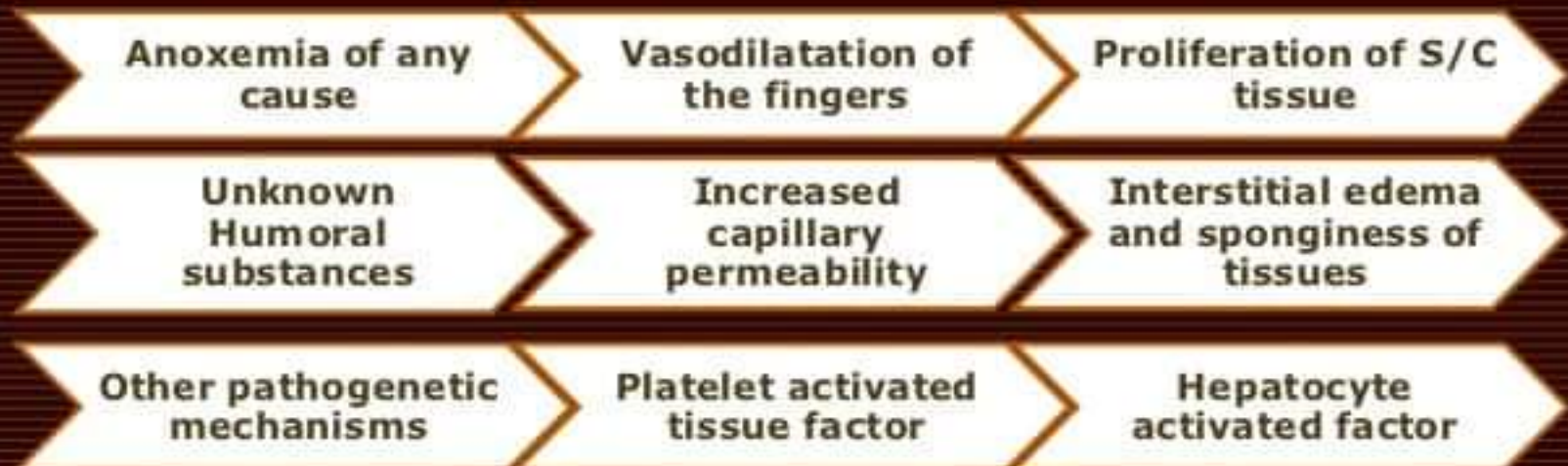
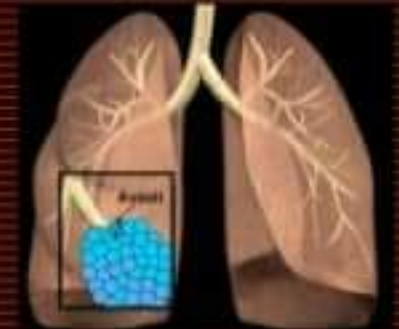
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- The soft tissue swelling is due to interstitial edema and dilatation of arteries and capillaries



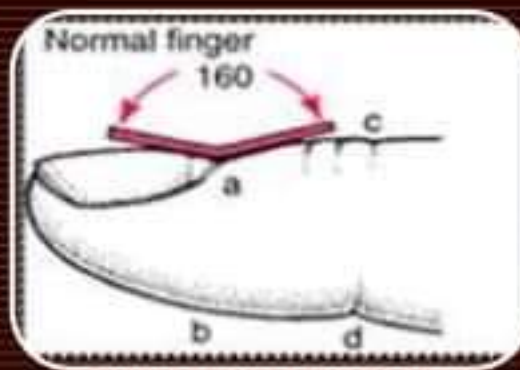
# What is the pathogenesis of clubbing?

- Anoxemia due to any cause leading to vasodilatation and proliferation of subcutaneous tissue of the nail bed, and there is an increase in the capillary permeability leading to interstitial edema

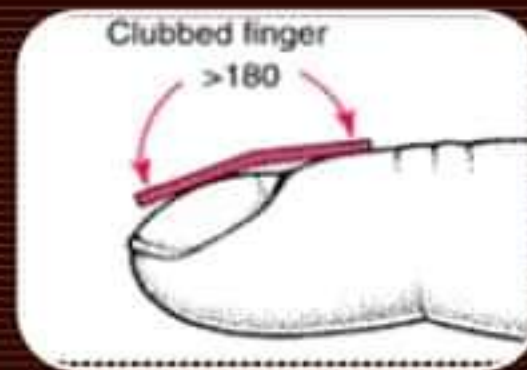


## How to examine for clubbing?

- Bring the fingertip of the patient to the eye level of the examiner and carefully look at the angle between the nail and the nail bed. Normally it is acute.



**Normal Finger**



**Clubbed Finger**

## Any alternate method of examination?

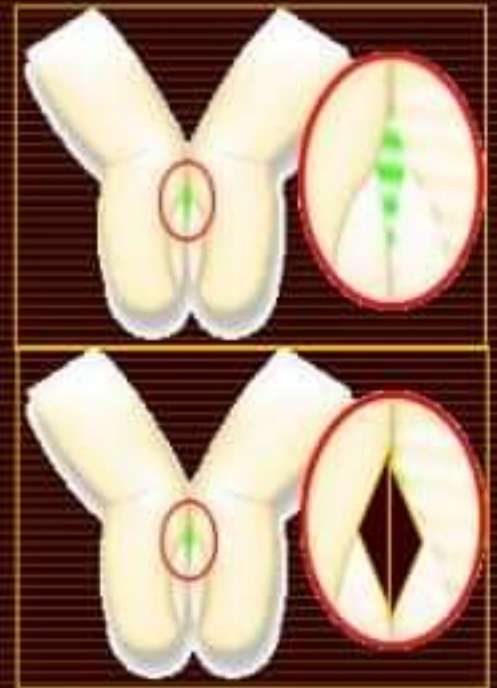
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- ❑ Bring the fingers of the opposite hands close to each other and look for the normal diamond shaped gap between the two nails and the proximal nail folds. This gap is reduced or obliterated in clubbing.
- ❑ This method of demonstrating clubbing is called The Shamroth window Test
- ❑ This was first described by Dr. Shamroth, a South African Physician who demonstrating in his own body



## What is a diamond sign?

- ❑ While doing the Shamroth's Window test, where the middle fingers are pushed against each other with the nails touching so that you can see a diamond shape in the middle.
- ❑ When this diamond shape is not visible clubbing is said to be present



## What are the grades of clubbing?

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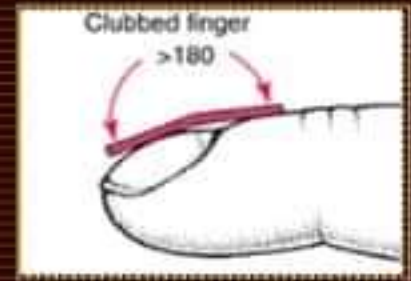
- ❑ I. Softening of the nail beds and fluctuation
- ❑ II. Obliteration of the onychodermal angle
- ❑ III. Increased anteroposterior curvature
- ❑ IV. Increase in pulp tissue drumstick or parrot beak
- ❑ V. Hypertrophic osteoarthropathy



## What is the purpose of grading clubbing?

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- ❑ Grading clubbing is only for the purpose of communication between examiners. It has no prognostic significance. When one says there is grade III clubbing it is understood that the AP curvature of nails is increased.
- ❑ Clubbing may not be present even in presence of advanced malignancy
- ❑ Severe clubbing may be present even in cases of congenital or traumatic clubbing.



## What causes Bilateral clubbing?

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- Systemic illness affecting respiratory, cardiovascular, hepatobiliary and the gastrointestinal system. Uncommonly endocrine, congenital, traumatic and rarely a primary form of the disease.



## What are the cardiac causes of clubbing?

- ❑ Fallot Tetralogy
- ❑ Eisenmenger Syndrome
- ❑ Subacute Bacterial Endocarditis
- ❑ Left atrial Myxoma



**Fallot**



**Eisenmenger**



**SABE**



**LA Myxoma**

# What are the respiratory causes of clubbing?

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- ❑ Bronchiectasis/Lung Abscess/Emphyema
- ❑ Bronchogenic Ca/Lung Mets/Pleural Mesothelioma
- ❑ Fibrosing Alveolitis/Rarely Fibrocaseous Tuberculosis
- ❑ Pulmonary Arteriovenous Communication



Bronchiectasis



Lung Abscess



Pleural  
Mesothelioma



Fibrosing  
Alveolitis



Fibrocaseous  
Tuberculosis



Emphyema



Bronchogenic  
Carcinoma



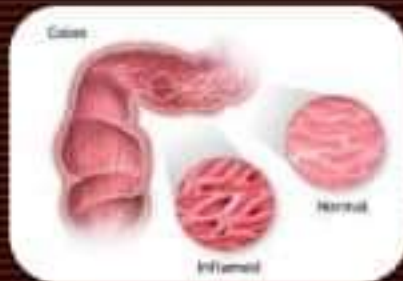
Secondaries in  
Lung



Pulmonary AV  
communication

# What are the GIT causes of clubbing?

- ❑ Ulcerative Colitis
- ❑ Crohn's Disease
- ❑ Malabsorption syndrome
- ❑ Polyposis of intestine



Ulcerative Colitis



Crohn's Disease



Malabsorption syndrome



Polyposis of intestine

## What are the Hepatic causes of clubbing?

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- ❑ Cirrhosis of Liver
- ❑ Biliary Cirrhosis
- ❑ Hepatocellular failure
- ❑ Hepatorenal Syndrome



Cirrhosis of  
liver



Biliary  
Cirrhosis



Hepatocellular  
failure



Hepatorenal  
Syndrome

## What are the other causes of clubbing?

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- ❑ Congenital/Familial/Genetic
- ❑ Occupational/Traumatic
- ❑ Endocrine/Thyroid Acropathy
- ❑ Primary/Pachydermoperiostitis



Congenital/  
familial



Occupational/  
Traumatic



Endocrine/  
Thyroid Acropathy



Pachydermo  
periostitis

## Bronchiectasis?

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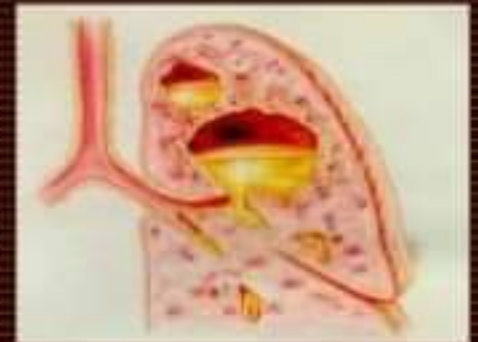
- ❑ Bronchiectasis is a chronic collection of pus inside the abnormally dilated bronchi of the lungs. It is usually present in both the lungs especially in the lower lobes
- ❑ It presents with low grade fever, cough and expectoration of large quantities of foul smelling yellow sputum
- ❑ Clubbing is almost always present in Bronchiectasis



## Lung Abscess?

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- ❑ Lung abscess is suppuration of the lung; meaning collection of pus in the lung parenchyma. It forms a thick walled abscess cavity containing pus below and air above.
- ❑ It usually presents with acute onset of high grade fever, chills toxemia, and features of consolidation in the lung.
- ❑ Clubbing can occur as early as 2 weeks in the course of Lung Abscess



## Empyema Thoracis?

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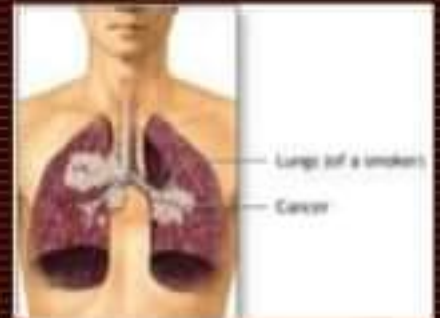
- ❑ Empyema thoracis is collection of pus between the layers of the pleura. The condition simulates pleural effusion but for the presence of high fever, chest wall edema and intercostal tenderness
- ❑ Clubbing can occur as early as 3 weeks in Empyema Thoracis
- ❑ Pyo-pneumothorax like empyema can also result in clubbing



## Bronchogenic Carcinoma?

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- ❑ Bronchogenic Carcinoma is cancer of the lung. Especially it is the squamous cell carcinoma, which causes clubbing. The symptoms are several and include cough, hemoptysis, loss of appetite & emaciation
- ❑ Bronchogenic carcinoma is an important cause of Clubbing
- ❑ Clubbing may precede the symptoms of malignancy by weeks or months



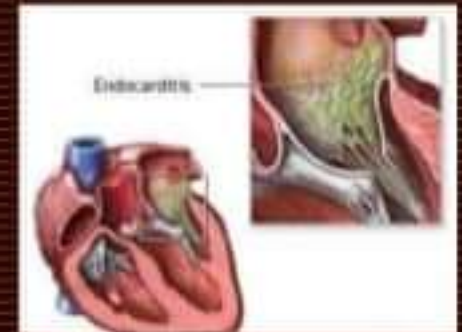
## Pancoast Tumor?

- ❑ Pancoast tumor is tumor of the upper lobe of the lungs with local infiltration of the tumor into the various structures immediately surrounding the tumor resulting in severe pain of upper limbs
- ❑ Clubbing is present universally in Pancoast tumor
- ❑ It is painful and usually unilateral at least in the beginning of the illness



## Bacterial endocarditis?

- ❑ Bacterial endocarditis is due to infection of the endocardium of heart by bacteria of low virulence. It usually complicates valvular or congenital heart disease producing additional valve regurgitation.
- ❑ It presents with low grade fever, pallor, jaundice, hematuria, splenomegaly, splinter hemorrhage and oslers nodes.
- ❑ Clubbing is considered to be due to toxemia and unknown hormonal factors.



## Thyroid Acropathy

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- ❑ The clinical features are those of hyperthyroidism with stare of eyes, tremor of fingers and frequent loose stools along with tachycardia and thyroid swelling with bruit on auscultation.
- ❑ Thyroid acropathy is clubbing seen in advanced cases of thyrotoxicosis
- ❑ Clubbing can occur in other endocrine disease like acromegaly and hyperparathyroidism



## What is Pachydermoperiostosis ?

- ❑ This is the Primary form of Clubbing. In this instance, clubbing is accompanied by skin changes, such as hypertrophied skin on the dorsa of the hands
- ❑ It is very rare cause of clubbing in our population



## What causes Unilateral clubbing?

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- ❑ Cervical Rib
- ❑ Pancoast tumor
- ❑ Aneurysm of subclavian artery
- ❑ Pre-subclavian Coarctation of Aorta
- ❑ AV Fistula involving brachial vessels



## What is differential clubbing?

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- ❑ Clubbing limited to upper or lower limbs alone is called differential clubbing. Clubbing may be limited to the upper limbs in chronic obstruction of veins of the upper thorax.
- ❑ A common cause is phlebitis of the upper extremities as seen in IV drug users

## Differential clubbing in the lower limbs?

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- ❑ Clubbing may be present in the lower limbs only totally sparing the upper limbs. It may be associated with cyanosis of the lower limbs.
- ❑ It is classically due to PDA with reversal of shunt( Eisenmenger PDA)
- ❑ It is also seen in infected abdominal artery aneurysm.

# What is Hypertrophic Osteoarthropathy?

- ❑ Advanced stage of clubbing is called Hypertrophic (Pulmonary) Osteo Arthropathy . It demonstrates all the features of different stages of clubbing
- ❑ In addition there will be thickening and tenderness elicited over the ends of long bones of hands as well as feet.
- ❑ It is seen classically in Pancoast tumor; but also present in severe cases of Suppurative lung diseases and Ca Lung



## What are the bone changes in HPA?

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- ❑ Hypertrophic Osteo Arthropathy can be diagnosed from X-Rays of ends of long bones. The periostium of the ends of long bones are elevated
- ❑ Periosteal new bone formation gives rise to the appearance called as Sun-Rise appearance
- ❑ Also there are symmetric arthritis-like changes in the shoulders, knees, ankles, wrists, and elbows

## Which conditions have clubbing & cyanosis?

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- ☐ Fallot's Tetralogy
- ☐ Eisenmenger Syndrome

## What is the treatment for clubbing?

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- There is no treatment specific for clubbing. The treatment is for the primary condition. Cure of the primary condition can totally reverse the clubbing