Disease A (cystic fibrosis)

What is cystic fibrosis

Cystic fibrosis is an inherited disease that causes severe damage to the digestive system, lungs and other organs in the body. Cystic fibrosis affects the cells that produce mucus, sweat and digestive juices (secreted fluids). These secreted fluids are normally slippery and thin, but cystic fibrosis causes the secreted fluids to become sticky and thick. The thick and sticky secretion instead of acting as a lubricant it plugs ducts and passageways, tubes, also the lungs and pancreas. Causing things such as breathing problems, frequent raspatory infections and poor growth. People with cystic fibrosis tend to not live past the age of 40 to 50.

Causes of cystic fibrosis

Cystic fibrosis is caused by a mutation or change in a gene called CFTR (cystic fibrosis transmembrane conduct regulator). This gene controls the flow of salt and fluid in and out of your cells if CFTR gene doesn’t work properly then a sticky mucus builds up in your body blocking ducks and airways. A child must inherit one copy of the mutated gene from each parent to develop cystic fibrosis. If the child only adopts one he is still a carrier of the gene and can pass it on to further generations.

Symptoms of cystic fibrosis

Include:

* Rectal prolapsing
* Nasal polyps
* Chronic sinus infections
* Clubbing or enlargement of finger tips and toes
* Poor growth or weight gain
* Persistent coughing at times with phlegm
* Very salty tasting skin
* Frequent lung infection including bronchitis and pneumonia
* Male infertility

Treatment for cystic fibrosis

There is no known cure for cystic fibrosis, but treatment can improve quality of life by reducing complications and ease symptoms.

You can either take medication or undergo surgeries

Surgeries include

* Nasal and sinus surgery: removes nasal polyps that obstructs breathing
* Feeding tube: delivers extra nutrition to your body because when you have cystic fibrosis you cant absorb nutrients
* Bowel surgery: blockages may develop in your bowel, and it needs to be removed
* Lung transplant: Because bacteria line the airways in diseases that cause permanent widening of the large airways (bronchiectasis), such as cystic fibrosis, both lungs need to be replaced.
* Liver transplant: only in severe cases

Medicines include

* Anti-inflammatory to lessen swelling in the airways of your lungs
* Antibiotics to prevent lung infections
* Stool softeners to prevent bowel obstructions or constipation
* Oral pancreatic enzymes to help absorb nutrients

Prevention of cystic fibrosis

Cystic fibrosis is an inherited disease meaning the only way to prevent it would be to have gene therapy at a young age, ideally gene therapy would be able to repair or even replace the defective gene. But otherwise, there isn’t much prevention for this disease

Disease B (pneumonia)

What is pneumonia

Pneumonia is an infection that inflames the alveoli in either one or both lungs the alveoli may fill with purulent material, causing fevers, coughing with phlegm or pus, chills, and difficulty breathing

Causes of pneumonia

Germs can cause pneumonia, germs like bacteria and viruses in the air are usually the main ways to contract pneumonia. Our body usually prevents these the germs from infecting your lungs. But sometimes the germs can overpower your immune system especially if you are elderly or a child under the age of two, or if you have a weak immune system.

Symptoms of pneumonia

include

* Fatigue
* Fever, sweating, shaking chills
* Nausea, vomiting diarrhea
* Shortness of breath
* Chest pain when you breathe or cough
* Cough which may produce phlegm
* Lower than normal body temperature

Treatment for pneumonia

Include

* Cough medicine: used to calm the cough so that you can rest
* Antibiotics: usually used to treat bacterial pneumonia
* Fever reducers/ pain relievers: for fevers or discomfort

Prevention of pneumonia

The way to prevent pneumonia is like most viruses. You have to practice good hygiene, don’t smoke, have a healthy immune system, and you can also be vaccinated for some types of pneumonia

References

Mayo clinic staff (June 13th 2020) accessed on <https://www.mayoclinic.org/diseases-conditions/pneumonia/diagnosis-treatment/drc-20354210>

Mayo clinic staff (November 23rd 2021) accessed on <https://www.mayoclinic.org/diseases-conditions/cystic-fibrosis/diagnosis-treatment/drc-20353706>