

# Impacts of heart failure on the body



**ASSIGN  
BUSTER**

### 1. Clearly Define Heart Failure.

Heart failure occurs when either side of the heart cannot keep up with the flow of blood.

It can involve left or right side of the heart or both.

It is a combination of decreased cardiac output accompanied by impaired function of the failing heart and the compensatory mechanisms that preserve the cardiac reserve.

Usually the left is involved first

### 2. What organs and which body systems are affected by the disorder?

Cardiovascular system – The Heart –

The respiratory System – The lungs, shortness of breath, chronic, non productive cough.

Digestive system – Liver – becomes enlarged, unable to filter toxins and produce needed proteins. , stomach; impaired gastrointestinal function due to poor blood supply and malnutrition, accumulation of fluid in peritoneal cavity.

Urinary System – Kidneys – fluid volume, oedema, impaired rennin,- angiotensin-aldosterone mechanism, nocturia(early in process) and oliguria(late sign)

Integumentary system – Skin and nail bed cyanosis. Pale and sweaty skin

Nervous system - Brain - confusion( due to lack of oxygen to brain), sympathetic nervous system activation, anxiety, restlessness, insomnia

Endocrine System - Pituitary gland - (anti diuretic hormone), and adrenal glands - (aldosterone) - associated with water and sodium retention

Lymphatic system - lymphoedema caused by oedema of chronic heart failure

Muscular System - muscle fatigue, impaired exercise tolerance due to poor oxygen supply to muscles.

(Porth & Matfin, 2009)

Give a brief overview of the normal function of the body systems affected by this disorder

Cardiovascular/Circulatory system

Comprised of heart, blood vessels and blood which work together to provide necessary nutrients to the body, removes excretory products from the body, protects the body from infection and maintains body heat.

(Human anatomy, 2010)

The Respiratory System

The respiratory system, comprised of lungs, passages and muscles which are responsible for exchange of gases within the body and also from outside of the body. Oxygen is breathed into the body and transported to all of the parts and then carbon dioxide is breathed out.

<https://assignbuster.com/impacts-of-heart-failure-on-the-body/>

(Human Anatomy, 2010)

### The Nervous system

The nervous system is the control centre of the body. It controls and regulates the functions of the body. The system is made of of voluntary and involuntary functions. The nervous system, comprised of the brain, spinal cord, nerves and neurons manages the body systems to work together and also for the organs to work together to create a finely tuned human body.

(Human Anatomy, 2010)

### The Urinary System:

The urinary system filters and removes waste from the body and also maintains the right balance of salt and electrolytes in the body.

The urinary system is very important in controlling homeostasis in the body. It can control the volume of blood in the body to control blood pressure.

‘ The kidneys produce and interact with several hormones that are involved in the control of systems outside of the urinary system’ (Taylor, 2013)

### Digestive system

The digestive system is responsible for the process by which food and drink are broken down into their smallest parts so the body can use them to build and nourish cells and to provide energy.

### Integumentary System

' Skin forms the body's outer covering and forms a barrier to protect the body from chemicals, disease, UV light, and physical damage. Hair and nails extend from the skin to reinforce the skin and protect it from environmental damage. The exocrine glands of the integumentary system produce sweat, oil, and wax to cool, protect, and moisturize the skin's surface' (Taylor, 2013)

### Endocrine System

The endocrine system is made up of the glands of the body and the hormones produced by these glands. The hormones are used to regulate the body to maintain homeostasis.

### Lymphatic System

the lymphatic system carries interstitial fluid from cells and tissues back to the heart, Elements of the lymphatic system find and get rid of foreign bodies and invaders in the body.

### Muscular system

This is responsible for the movement of and within the body. Comprised of three types of muscle; Visceral muscles - found inside the organs of the body (involuntary); cardiac muscle - found in the heart; skeletal muscle - attached to the skeleton and are the voluntary muscles.

Define the signs and symptoms of heart failure and explain why these signs and symptoms occur.

Fatigue /Weakness - Often experienced as heaviness of limbs and can be due to poor tissue perfusion of skeletal muscles due to poor cardiac output. (Medscape, 2014)

Cardiac fatigue is different from normal fatigue as often progresses through the day and is not present in the morning. Due to reduced cardiac output throughout the day and lack of oxygen.

Confusion/memory impairment/anxiety/restlessness/insomnia. Due to impaired cardiac output throughout the day the brain may not receive enough oxygen and lead to these symptoms.

Nocturia - (early stage heart failure)Caused by increased blood return to the heart when person is lying down which causes increased cardiac output, renal blood flow and glomerular filtration.

Oliguria - (Late stage heart failure) - caused by decreased cardiac output and resultant renal failure.

Orthopnea - Due to decreased pooling of blood in lower extremities and also due to ascites, too much blood rushes back to the heart and it cannot cope with it through several processes the result is increased airway resistance leading to dyspnoea.

(Medscape, 2014)

Paroxysmal Nocturnal dyspnoea - This is a sensation of shortness of breath that awakens the patient, possibly due to increased airway resistance (See Orthopnea)

(Mukerji., 1990)

Abdominal Distention - Due to Ascites

Abnormal Heart beat - Atrial and Ventricular arrhythmias - Irregular pulse -  
Due to disturbance in contractions of the heart

Nausea - Due to gastrointestinal problems with the digestive system not receiving enough blood and with the digestive system and liver becoming congested.

Increase in blood pressure - Because the heart is not able to pump the blood around the body as effectively and an increase in fluid build up in the body the blood pressure increases.

Shortness of breath/gasping for air -Due to acute pulmonary oedema where capillary fluid has moved into the alveoli.

Chest Pain/Pressure - Can be due to either primary or secondary myocardial ischemia

Cyanosis - due to acute pulmonary oedmea - lack of oxygen throughout the body due to poor gas exchange.

Palpitations - ' It can be secondary to sinus tachycardia due to decompensated heart failure, or more commonly, it is due to atrial or ventricular tachyarrhythmias.' (Medscape, 2014)

Weight gain - rapid weight gain is often observed in patients with heart failure due to fluid retention.

Crackles in lungs – Can be Due to acute pulmonary oedema where capillary fluid has moved into the alveoli.

Chronic Dry, non productive cough which becomes worse when patient is lying down – Congestion of the bronchial mucosa may causes bronchospasm which may cause wheezing and difficulty in breathing. Condition is sometimes called cardiac asthma.

List the information taken on his admission that demonstrates these signs and symptoms.

SaO<sub>2</sub> – 87% on room air – this is too low and sign of poor oxygen saturation.

B/P 90/40 – This is low, but may be due to his Lasix medication.

Pulse – High – indication his heart may be working too hard or may be due to anxiety of admission and needs to be kept monitored

Resps : very high – could be indication of potential cardiac arrest.

Low Temperature : 35. 8C can be associated with heart failure and worsening conditions (Medscape, 2013)

(Cretikos, et al., 2008)

To be noted : the above vital signs could also be indicative of asthma attack

(Patient. co. uk, 2012)

Circulation : He is hypertensive which, he has CCF and PVD



Skin Integrity : Ulcer Lower leg, this could be a symptom of poor nutrition and circulation, which is a symptom of diabetes which is a risk factor of Heart failure.

Nutrition : Diabetes and loss of appetite. Diabetes is key risk factor of CCF and loss of appetite is indicative of GI problems associated with heart failure

Elimination : Constipated : This could be a sign of the digestive system not working properly due to lack of blood supply

Mental State : Confusion could be a sign of lack of oxygen reaching the brain.

Emotional Status : Anxiety of his condition could exacerbate his other feelings of anxiety

Do you think the diabetes is related to the leg ulcer and amputated left toe? explain.

Yes. The most common cause of chronic leg ulcers is poor circulation.

Diabetics may have poor circulation due to the increased glucose in the blood and hardening of the blood vessels. This poor blood supply may lead to neuropathy and the nerve damage affects the condition of the skin.

A non healing ulcer that causes severe damage to tissue and bone may need amputation.

Mr Wrights amputated left toe may have been due to a non healing ulcer.

(McNair, 2014)

(American Diabetes Association, 2014)

<https://assignbuster.com/impacts-of-heart-failure-on-the-body/>

One of the medications he is taking is Lasix. What does Lasix do? Which body systems are affected by it? Explain why Mr Wright is ordered Lasix

Lasix is a diuretic and is used to treat fluid retention in people with heart failure.

Lasix stops the body absorbing too much salt and rids the body of excess fluid and this can help the heart to pump more easily and can help regulate the blood pressure.

Body Systems affected by Lasix are Cardiovascular system and Urinary system.

List three conditions in Mr Wright's relevant medical history that are commonly associated with ageing

Arthritis

Glaucoma

Type 2 Diabetes

What factors may impact on Mr Wright's safety in hospital and when he returns home.

Hospital:

Confusion : Wandering with poor mobility

(Patient. co. uk, 2011)

Mobility: Falls risk

<https://assignbuster.com/impacts-of-heart-failure-on-the-body/>

MRSA

Home:

Falls Risk

Confusion

Diabetes Management

Asthma Management

Allergies(Confusion)

Medications (Confusion)

What other Health professionals will be involved in his care and what services can they provide for Mr Wright.

Cardiologist : Management/ treatments for his CCF

Rheumatologist : Care for his Arthritis

Ophthalmologist : Care for his Glaucoma

Diabetes Educator : Education and support for his Diabetes

Dietician : Help with his diet in relation to his diabetes

Podiatrist : Care for his feet, re. diabetes

Physiotherapist : Help with mobility

Nurse (RDNS): Help with care in the community

<https://assignbuster.com/impacts-of-heart-failure-on-the-body/>

GP : Treatment, consultations and advice in the community

Respiratory Specialist : Consultations, and treatment re, respiratory issues.

Phlebotomist : Re. regular blood monitoring

Counsellor : Re. Mental health

Social Worker : Re. possible support in the community i. e. meals on wheels, community involvement

List the nursing documentation you would expect to be used in the care of Mr Wright:

Admission Form

Pain Observation Chart

Fluid Balance Chart

Medication Chart

Neurovascular Chart

Neurological Chart

Care Plan

Allergies Alert Record Form

## **References:**

- American Diabetes Association, 2014. *Foot Complications*. [Online]  
Available at: [http://www. diabetes.](http://www.diabetes.)

<https://assignbuster.com/impacts-of-heart-failure-on-the-body/>

[org/living-with-diabetes/complications/foot-complications/](http://www.mja.com.au/journal/2008/188/11/respiratory-rate-neglected-vital-sign) [Accessed 9th March 2014].

- Cretikos, M. A. et al., 2008. *Respiratory rate the neglected vital sign*. [Online] Available at: <https://www.mja.com.au/journal/2008/188/11/respiratory-rate-neglected-vital-sign> [Accessed 9th March 2014].
- Human anatomy, 2010. *Cardiovascular System*. [Online] Available at: <http://www.mananatomy.com/body-systems/cardiovascular-system> [Accessed 7th March 2014].
- Human Anatomy, 2010. *Nervous System*. [Online] Available at: <http://www.mananatomy.com/body-systems/nervous-system> [Accessed 7th March 2014].
- Human Anatomy, 2010. *Respiratory System*. [Online] Available at: <http://www.mananatomy.com/body-systems/respiratory-system> [Accessed 7th March 2014].
- McNair, D. P., 2014. *Foot and Leg Ulcers*. [Online] Available at: <http://www.netdoctor.co.uk/diseases/facts/footandlegulcers.htm> [Accessed 9th March 2014].
- Medscape, 2013. *Association of Low Body Temperature and Poor Outcomes in Patients Admitted With Worsening Heart Failure*. [Online] Available at: [http://www.medscape.com/viewarticle/814981\\_4](http://www.medscape.com/viewarticle/814981_4) [Accessed 9th March 2014].
- Medscape, 2014. *Heart Failure and Clinical Presentation*. [Online] Available at: <http://emedicine.medscape.com/article/163062-clinical> [Accessed 9th March 2014].

- Mukerji., V., 1990. *Dyspnea, Orthopnea, and Paroxysmal Nocturnal Dyspnea*. [Online] Available at: <http://www.ncbi.nlm.nih.gov/books/NBK213/> [Accessed 9th March 2014].
- Patient. co. uk, 2011. *Delirium*. [Online] Available at: <http://www.patient.co.uk/doctor/delirium> [Accessed 9th March 2014].
- Patient. co. uk, 2012. *Acute-severe asthma and status asthmaticus*. [Online] Available at: <http://www.patient.co.uk/doctor/acute-severe-asthma-and-status-asthmaticus> [Accessed 9th March 2014].
- Porth, C. M. & Matfin, G., 2009. Chapter 26, Heart Failure and Circulatory Shock. In: H. Surrena, ed. *Pathophysiology Concepts of Altered Health States*. China: Wolters Kluwer Health/Lippincott Williams and Wilkins, pp. 606-637.
- Taylor, T., 2013. *Integumentary system*. [Online] Available at: <http://www.innerbody.com/anatomy/integumentary#full-description> [Accessed 9th March 2014].
- Taylor, T., 2013. *Urinary System*. [Online] Available at: <http://www.innerbody.com/image/urinov.html#full-description> [Accessed 9th March 2014].