



# **THE RESPIRATION OF OXYGEN IN THE HUMAN BODY RUNS ACCORDING TO THE LAW ACTION=REACTION+ABSORPTION**

**Nrusingh Charan Mohapatra , M.Sc ,M.Phil  
Rtd Reader in Mathematics , B.P. College , Odisha , India**

## **ABSTRACT :**

**Rotation is motion and vice versa .** Rotation of oxygen in the human body is the respiration. Respiration is the inhalation , absorption and exhalation of oxygen in the human body .So respiration of oxygen in the human body is a motion . Life is a motion as it moves from the birth to the death. Hence respiration of oxygen is the life of the living society. If a force is applied on a wheel and that force simultaneously converts to the centripetal force as well as the centrifugal force then the wheel moves forward on the road. So **in a rotation, every point of a wheel moves simultaneously in a vertical cycloid path as well as a horizontal straight line path.** The vertical cycloid path of the point is moved by the centripetal force and simultaneously the horizontal straight line path of the same point is covered by the centrifugal force .

The following law is derived from the motion of a wheel on the road ,

### **LAW OF MOTION ----- Nrusingh's 1<sup>st</sup> law**

**(a) INERTIA OF REST : A body is at rest, until the applied force on it , converts to the centripetal force as well as the centrifugal force .**

**(b) INERTIA OF MOTION : A body is at motion, as long as the applied force on it , converts to the centripetal force as well as the centrifugal force .**

The following law is derived from **Nrusingh's 1<sup>st</sup> law**

### **THE FORCE OF ACTION IS ALWAYS EQUAL TO THE SUM OF OPPOSITE REACTION AND ABSORPTION ----- Nrusingh's 2<sup>nd</sup> law**

**i.e. 14 PARTS ACTION = 3 PARTS ABSORPTION + 11 PARTS REACTION**

**i.e. ACTION = REACTION + ABSORPTION**

The following law is derived from **Nrusingh's 2<sup>nd</sup> law**

**Force = (11/14) mass \* acceleration ----- Nrusingh's 3<sup>rd</sup> law**

where (11/14) is the constant of proportionality

**Nrusingh's 2<sup>nd</sup> law** is

**14 PARTS ACTION = 3 PARTS ABSORPTION + 11 PARTS REACTION**

It states that, If a road absorbs 3 parts of the force out of 14 parts of the force by means of a wheel , then it allows the wheel to move on it by the rest 11 parts of the force.

Similarly if a human body absorbs 3 parts of the oxygen out of 14 parts of it , then the body allows the rest 11 parts of the oxygen to form carbon dioxide in his body. The respiration of oxygen in the human body works according to the above law ,

**So Nrusingh's 2<sup>nd</sup> law is the life of the living society .**

The above law can also be expressed in another way as follows ,

**ACTION = REACTION + ABSORPTION**

Hence how the respiration of oxygen in the human body obeys the above law is explained below by taking the percentages of oxygen available in the atmosphere .

**KEY WORDS :**

Action, Absorption, Reaction, Centripetal force, Centrifugal force, Percentage of oxygen in atmosphere, Disease, Medication, Immunization

## **INTRODUCTION:**

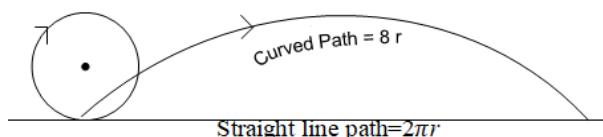
Action means the force exerts on the second body by the first body. Reaction means the force exerts on the first body by the second body. Absorption means the force absorbed in the second body. When a force is applied on a body, the body moves some distance by its reaction and absorption .So the relation of action, absorption and reaction is obtained from the motion of a wheel .

Centripetal force is a force, which is required to move a body uniformly on a circle. This force acts along the radius and towards the centre of the circle.

While moving along a circle the body has a constant tendency to regain its natural straight line path .This tendency gives rise to a force, which is called the centrifugal force. It acts along the radius and away from the centre of the circle.

Centripetal force is the action force and centrifugal force is the combination of absorption force and reaction force.

The centripetal force as well as the centrifugal force are equal in magnitude and opposite in directions. So where is centripetal force, there is centrifugal force .



When a force is applied to a wheel, then the wheel rolls on a road so that every point on it, which touches the road simultaneously moves vertically in a curved path to cover horizontally on a straight line path in its every rotation. The curved path is a cycloid path, that is traced out by a point on a circle, which rolls on a straight line path. Whose length is calculated by the length formula of calculus as  $8r$  and the length of the horizontal straight line path is  $2\pi r$  where  $r$  is the radius of the circle which generates the cycloid.

**As every point on the wheel moves on a cycloid path which is a part of a circular path, So the centripetal force acts on the vertical cycloid path and the centrifugal force acts along the horizontal straight line path .**

Suppose  $s_1$  = length of the cycloid path and  $s_2$  = length of the straight line path  
 Here  $s_1 = 8r$  and  $s_2 = 2\pi r$

$$\text{So } 8r > 2\pi r \Rightarrow s_1 > s_2$$

$v_1$  = velocity of the point on the cycloid path =  $\frac{ds_1}{dt}$

And  $v_2$  = velocity of the same point on the straight line path =  $\frac{ds_2}{dt}$

$$\text{As } s_1 > s_2 \Rightarrow \frac{ds_1}{dt} > \frac{ds_2}{dt} \Rightarrow v_1 > v_2$$

$$\text{So } mv_1 > mv_2 \Rightarrow m \frac{dv_1}{dt} > m \frac{dv_2}{dt}$$

$$\Rightarrow ma_1 > ma_2 \Rightarrow F_1 > F_2$$

$$\text{where } \frac{dv_1}{dt} = a_1, \quad \frac{dv_2}{dt} = a_2,$$

$$F_1 = ma_1 \quad \text{and} \quad F_2 = ma_2$$

$$\text{Here } F_1 > F_2 \Rightarrow$$

$$F_1 = F_2 + \text{SOME ABSORBED FORCE}$$

$$\text{Where } F_1 = \text{CENTRIPETAL FORCE}$$

$$\text{So } \text{CENTRIPPETAL FORCE} = \text{ACTION FORCE} \text{ -----(1)}$$

This Centripetal force is applied on a point of the wheel, which moves  $8r$  length on the cycloid path.

$$\text{Here } F_2 + \text{SOME ABSORBED FORCE}$$

$$= \text{CENTRIFUGAL FORCE}$$

$$\text{So } \text{CENTRIFUGAL FORCE} = \text{REACTION FORCE} + \text{ABSORPTION FORCE} \text{ -----(2)}$$

This Centrifugal force is utilized on that same point, which moves  $2\pi r$  length on the Straight line path after absorbing some amount this force.

The magnitude of the centripetal force is equal to the magnitude of the centrifugal force and their directions are opposite to each other .

So it is obvious from the above two equations (1) & (2) that

$$\text{ACTION FORCE} = \text{REACTION FORCE} + \text{ABSORPTION FORCE}$$

$$\text{i.e. ACTION} = \text{REACTION} + \text{ABSORPTION}$$

When force is applied on a wheel then the wheel rotates, so that every point on the wheel moves in a vertical cycloid path to cover on a horizontal straight line path.

So the applied force simultaneously converts to the centripetal force and the centrifugal force on the wheel .

The length of the cycloid path is  $8r$  and the length of the straight line path is  $2\pi r$  , where  $r$  is the radius of the circle which generates the cycloid .

The above fact implies the following expression as ,

$$\begin{aligned} \text{ACTION OF CENTRIPETAL FORCE} & : \\ \text{REACTION OF CENTRIFUGAL FORCE} & \\ = 8r : 2\pi r & = 8 : 2\pi = 8 : (2 * 22/7) \\ = (8 * 7/7) : (2 * 22/7) & = 56/7 : 44/7 \\ = 56 : 44 & = 14 : 11 \end{aligned}$$

This implies that, **To every 14 parts of action , there is 11 parts of reaction .**

As the magnitude of the centripetal force is equal to the magnitude of the centrifugal force and their directions are opposite to each other. So each one of the forces should do equal amount of work .This implies that ,

$$\text{14 PARTS ACTION} = \text{11 PARTS REACTION} + \text{3 PARTS ABSORPTION}$$

$$\text{i.e. ACTION} = \text{REACTION} + \text{ABSORPTION}$$

## SUBJECT MATTER :

**Nrusingh's 2<sup>nd</sup> law** is

$$\text{14 PARTS ACTION} = \text{11 PARTS REACTION} + \text{3 PARTS ABSORPTION}$$

This law implies that , If the road absorbs 3 parts of the force ,out of 14 parts of the force then it allows 11 parts of the force to react.

Similarly the human body absorbs 3 parts of oxygen into the body out of 14 parts inhalation of oxygen then the body allows 11 parts of oxygen to exhale from the body as carbon dioxide in every respiration . The inhalation is action and the exhalation is reaction .

**CASE 1 : The percent of oxygen available in the atmosphere is 20.95 percent according to the GOOGLE data .**

So man inhales 20.95 percent of oxygen from the atmosphere as action.

Then the percent of exhalation of oxygen and the percent of absorption of oxygen in the body of man can be found out by the help of the following law ,

**14 PARTS ACTION = 11 PARTS REACTION  
+ 3 PARTS ABSORPTION**

Here **20.95 = (419/20) percent of inhalation of oxygen is the percent of action .**

Reaction/Exhalation percent of oxygen in the human body can be found out in the following way where the inhalation percent of oxygen is 20.95

14 parts action of oxygen make

11 parts reaction of oxygen .

1 part action of oxygen makes

(11/14) part reaction of oxygen .

So (419/20) parts action of oxygen make (11/14) \* (419/20) = 4609 / 280

**= 16.461 parts reaction of oxygen .**

This implies that ,when the inhalation of oxygen in the human body is 20.95 percent then the exhalation of oxygen with carbon as carbon dioxide is 16.461 percent .

The absorption percent of oxygen in the human body can be found out in the following way where the inhalation percent of oxygen is 20.95

14 parts action of oxygen make

3 parts absorption of oxygen

1 part action of oxygen makes

(3/14) part absorption of oxygen

So (419/20) parts action of oxygen make (3/14) \* (419/20) = 1257 / 280  
**= 4.489 parts absorption of oxygen**

This implies that ,when the inhalation of oxygen is 20.95 percent then the absorption of oxygen in the body of man is 4.489 percent. It is obvious from the above calculation that ,

**Out of the 20.95 percent of oxygen available in the atmosphere, human body absorbs 4.489 percent of oxygen in his body and simultaneously exhales 16.461 percent of oxygen as carbon dioxide .**

This implies that

20.95 percent inhalation of oxygen  
= 16.461 percent exhalation of oxygen  
+ 4.489 percent absorption of oxygen .

**So the above equation of oxygen inhalation, oxygen exhalation and oxygen absorption of GOOGLE data is satisfied by the following law ,**

**14 PARTS ACTION = 11 PARTS REACTION  
+ 3 PARTS ABSORPTION**

**CASE 2 : The percent of oxygen available in the atmosphere is 21 percent according to the NASA data .**

So man inhales 21 percent of oxygen from the atmosphere as action.

Then the percent of exhalation and absorption of oxygen from **21 percent** of oxygen can be found out by the help of the following law ,

**14 PARTS ACTION = 11 PARTS REACTION  
+ 3 PARTS ABSORPTION**

**Reaction/Exhalation percent of oxygen in the human body can be found out in the following way where the inhalation is 21 percent of oxygen .**

14 parts action of oxygen make

11 parts reaction of oxygen

1 part action of oxygen makes

(11/14) part reaction of oxygen

21 parts action of oxygen make  
( 11/14 ) \* 21 = **16.5 parts** reaction of oxygen .

This implies that ,when the inhalation of oxygen is 21 percent then the exhalation of oxygen with carbon as carbon dioxide is 16.5 percent .

**Absorption percent of oxygen in the human body can be found out , where the inhalation of oxygen is 21 percent**

14 parts action of oxygen make

3 parts absorption of oxygen  
1 part action of oxygen makes

(3/14) part absorption of oxygen  
21 parts action of oxygen make

(3/14) \* 21 = **4.5 parts absorption of oxygen**

This implies that ,when the inhalation of oxygen is 21 percent then the absorption of oxygen in the human body is 4.5 percent .

**Out of that 21 percent of oxygen, man absorbs 4.5 percent of oxygen in his body and simultaneously exhales 16.5 percent of oxygen as carbon dioxide .**

This implies that

21 percent inhalation of oxygen  
= 16.5 percent exhalation of oxygen  
+ 4.5 percent absorption of oxygen

**Hence the above equation of oxygen inhalation, oxygen exhalation and oxygen absorption of NASA data is satisfied by the following law ,**

**14 PARTS ACTION = 11 PARTS REACTION  
+ 3 PARTS ABSORPTION**

So the inhalation percent , exhalation percent and absorption percent of oxygen in the human body of NASA data as well as GOOGLE data are satisfied by the following law,

**14 PARTS ACTION = 11 PARTS REACTION  
+ 3 PARTS ABSORPTION**

This implies that , the respiration percent of oxygen in the human body runs according to the following law,

14 parts oxygen inhalation  
= 11 parts oxygen exhalation  
+ 3 parts oxygen absorption

So the above law is the life of the human beings .

## **CONCLUSION :**

21 percent oxygen inhalation of NASA data and 20.95 percent oxygen inhalation of Google data abide by the following law ,

**14 PARTS ACTION = 11 PARTS REACTION  
+ 3 PARTS ABSORPTION**

Man is made up of the amalgamation of gases, liquids and solids, which are made up of atoms ,molecules and ions. Oxygen is a gas and the respiration of oxygen is the life of the human beings. The respiration of oxygen runs by the law ,

**14 PARTS ACTION = 11 PARTS REACTION  
+ 3 PARTS ABSORPTION**

So this law is the life of the human beings. If the respiration of oxygen in the human body can not obey the above law , then the man is dead .

Man consumes oxygen ,liquid and solid products from the Earth.

As consumption of oxygen in the human body abides by the law, So the consumption of liquid products and solid products in the human body will also abide by the law .

## **MEDICATION :**

Medicine is one of the products of the gases or liquids or solids. Gases, liquids and solids are made up of atoms, molecules and ions .Oxygen is a gas and it is made up of atoms, molecules and ions. Oxygen consumption satisfies the above law .

So the medicine consumption in the human body would satisfy the above

law, as medicine is made up of atoms, molecules and ions .

The principle of taking medicine by a man is same as the principle of motion of a wheel on the road .The law states that out of the 14 parts of the force , the road absorbs 3 parts of the force by means of a wheel , then the road allows the wheel to move on it by the rest 11 parts of the force. Similarly if a patient absorbs 3 parts of the medicine out of the 14 parts of the medicine, then only the body would allow the rest 11 parts of the medicine to fight against his disease according to the following oxygen consumption law,

**14 PARTS OXYGEN INHALATION  
= 11 PARTS OXYGEN EXHALATION  
+ 3 PARTS OXYGEN ABSORPTION  
i.e. 14 PARTS ACTION = 11 PARTS  
REACTION + 3 PARTS ABSORPTION**

If 3 parts of the medicine does not absorb in the body of a patient ,then the rest 11 parts of the medicine would not cure the disease .

#### **IMMUNIZATION :**

Immunization is the process whereby a man is made immune to an infectious disease by the administration of vaccine .Vaccines stimulate the body's own immune system to protect the person against the disease.

The law states that out of the 14 parts of the force , the road absorbs 3 parts of the force by means of a wheel, then the road allows the wheel to move on it by the rest 11 parts of the force.

The vaccine works according to the principle of the motion of a wheel on the road .If a vaccine of 14 parts is injected to a person and out of that 3 parts of the vaccine is absorbed by the body ,then the rest 11 parts of the vaccine will immunize him against the virus by developing the antibodies in his body according to the following oxygen consumption law,

**14 PARTS OXYGEN INHALATION  
= 11 PARTS OXYGEN EXHALATION  
+ 3 PARTS OXYGEN ABSORPTION  
i.e. 14 PARTS ACTION = 11 PARTS  
REACTION + 3 PARTS ABSORPTION**

#### **REFERENCES :**

The followings are the published papers of the IJSER journal .

- 1) Nrusingh's 1st law  
IJSER,volume-10,issue-12  
December-2019 , ISSN - 2229-5518
- 2) Nrusingh's 2nd law  
IJSER , volume 6 , issue 7  
July-2015 , ISSN- 2229-5518
- 3) Nrusingh's 3rd law  
IJSER , volume 11 , issue 3  
March-2020,ISSN-2229-5518