



The Effect of a Regulated Exercise Program on The Pulmonary Functions of Patients with Bronchial Asthma in Terms of Enzyme (Interleukin-6)

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Abstract

some people think that the relationship between exercise capacity and poor lung function relationship Weak and vasodilator treatment often fails to scrunch making a tangible impact on Playing sports have patients Asthma, in addition to the patients who got back Their lung function returned to normal with the transplant may not achieve their expected ability to exercise after the procedure Lung transplants. As to exercise complete anaerobic During pulmonary rehabilitation bronchial asthma leads to improvements good In the ability to exercise in general With no effect on impaired lung function have bronchial asthma. (24: 355 - 362) Therefore, the **Researcher** believes that the disease of bronchial asthma It is a chronic respiratory disease that develops slowly As a result of the individual's persistence in an environment characterized by a lack of oxygen and a large number of air pollutants and Calen inhalation fumes chemical, or gases, or dust, or other materials different, as Asthma can be caused by exposure for different pollutants In the formation of sensitivity as a result of exposure to it cause triplegic or immune reaction Or exposure to toxic substances that have an irritating effect, as Asthma can cause chest tightness, wheezing and shortness of breath. People with allergies are more likely to be spread in the family and more likely to get injured Asthma, which may be Because asthma damage an l way at lungs, or disability or Death.

Keywords: *exercise capacity, bronchial asthma, injury, chronic respiratory disease*

Introduction and The Search Problem: -

The process of respiration is the process in which gases are exchanged, as this exchange of gases includes conduction Oxygen To all cells of the body to continue life and the disposal of carbon dioxide through a group of vital organs that make up the respiratory and circulatory systems, where the respiratory system is linked to a basic function of oxygen delivery Oxygen to blood and get rid of dioxide carbon .

The Asthma is a chronic disease that affects the air passages of the lungs, and is caused by inflammation narrowing of the respiratory passages; which prevents the flow of air into the airways; Which leads to

repeated episodes of shortness of breath with wheezing in the chest accompanied by coughing and phlegm after exposure Toa Inhalation of substances that provoke reactions different like having the Respiratory sensitivity or irritation, and these attacks vary in severity and frequency from one person to another, and the greater the exposure to the substance that triggered the asthma Worse symptoms, and Improvement time increased afterpains exposure. In some cases, exposure to airborne asthma triggers can result in permanent lung changes resulting in disability or death.as a result of exposure to such pollutants. (37)





Suffer sick Asthma Patients (AP) Because they are unable to do many Activities for Everyday life And the Because their inability to exercise endurance different, so we find that Playing sports regularly It is part of a healthy lifestyle Salim, even if become the individual sick Asthma Patients (AP) he felt it was not In safety, and hea no unable I have to practice Sports.

This leads to increased isolation Social and depression and the not being self-reliant, so the Goal therapeutic The Important and main for these The patients he is improve physical performance They have, where It was thought that limiting exercise have Patients Asthma It was simply due to reduced pulmonary ventilation in their respiratory system, However, he indicated The county of the Various studies This is not true for many sufferers Patients bronchial asthma. (28)

So some people think that the relationship between exercise capacity and poor lung function relationship Weak and vasodilator treatment often fail scrunching making a tangible impact on Playing sports have patients Asthma, in addition to the patients who they got back Their lung function returned to normal with the transplant may not achieve their expected ability to exercise after the procedure Lung transplants.

As to exercise complete anaerobic During pulmonary rehabilitation have bronchial asthma lead to improvements good In the ability to exercise in general With no effect on impaired lung function have bronchial asthma. (24: 355 - 362)

Therefore, the **Researcher** believes that the disease of bronchial asthma It is a

chronic respiratory disease that develops slowly As a result of the individual's persistence in an environment characterized by a lack of oxygen and a large number of air pollutants and Calen inhalation fumes chemical ,or gases , or dust , or other materials different, as Asthma can be caused by exposure for different pollutants In the formation of sensitivity as a result of exposure to it cause triplegic or immune reaction Or exposure to toxic substances that have an irritating effect, as Asthma can cause chest tightness, wheezing and shortness of breath . People with allergies are more likely to be spread In the family more likely to get injured Asthma, as may be Cause asthma damage a l ways at lungs, or disability or Death.

where he sees Donaldson and others (2012) that Weakness of respiratory muscles either main feature of acute and chronic respiratory failure in Asthma patients where There is a glitch in diaphragm muscle respiratory muscleman all stages Asthma in terms of completing the process of inhalation and exhalation leading to the completion of the breathing process in the individual. (22: 523-535)

And where showed many of Studies that diaphragm muscle septum linked increased risk hospitalization Because of the acute exacerbation of the disease bronchial asthma, Inspiratory muscle weakness caused by weakness diaphragm muscle and the tied tight breathing, hyper Second oxide carbon ,respiratory failure, and then it happens premature death have a person with asthma. (20: 952-961), (34: 192-196)

Interleukin word derived from Interlaying with cells and the "leuconid is white blood cells where it was believed





about is secreted from white blood cells Even general (2000m), but this the meaning may be change understand able right Now MAs for Its secretion has been proven by many other cells Such as)cells tissue musculoskeletal and the lung...etc., and in general (2000m) Discover Insurge et al.((Steensberg et all 2000 A sort it from tissue muscle after works contraction and relaxation muscular bite not thigh under Effect Stream Electrical and discover a difference withyenFocusInterleukin-6 in Venous and arterial blood at thigh area . (23: 199 - 203)

Research procedures researcher relied on using or accrediting and choosing Interloken6 IL-6 given that Interloken6 IL-6 consists of cytokines that act as its proponent of infections and that myokines are defined as peptides or proteins that release or release from skeletal muscle cells, Cytokine is a protein or polypeptide or diabetes protein used in signal transfers whether it be a chemical or physical signal through the muscle cell and intercellular communication.

Given the nature of the research through the researcher's reliance on the proposed sports training program and the nature of dependence on skeletal muscle in the exercise of the training program and the direct relationship between skeletal muscle and interlokene 6 IL-6 was the reason why the researcher chose the interlokene 6 IL-6 enzyme and did not choose interloken8 IL-8 because interloken8 IL-8 is released from smooth muscle cells, The researcher therefore found that Interlokin8 IL-8 is far from directly affecting it because it is produced from smooth muscles.

Mentioned Bente Pedersen“(2001) that Interleukin6(IL6)It is produced objectively

from the working muscle and increases its concentration in the plasma during sports training, and the production of Interleukin 6 (IL6) With the intensity and duration of training, muscle glycogen contents decrease.is released Interleukin6 (IL6) From the muscle during training, as it acts like a hormone, affecting the liver and fat cells by maintaining the level of glucose in the blood during training. (17: 329-337)

There Certain interleukins can be classified according to their function into supportive interleukins inflammation pro inflammatory Isle and another countertop inflammation Anti-inflammatory The third is growth factors. interleukins They form so-called chemokines, which are the chemical attractions to cells inflammatory. so prepare thea Interleukins are very important in happening inflammation and preserve it its permanence, not this Just, It is also essential in igniting the spark inflammatory early . (31: 448-464)

Be concentrationIL-6 IL-6 in plasma is about 1 nanograms/ Mellites of blood or less in the case of resting people the healthy ,at opposite ,concentration may reachIL-6 IL-6 in plasma to 10,000 pg/mesonephro systemic infection severe. (19: 121)

Interleukin has many and many types, and until January (2002m) more than (27) types of interleukin were identified, and there are many sub-types of it. (35: 324-327)

Studies have indicated that practicing any type of aerobic training is better than not exercising at all, and aerobic exercises help strengthen the immune system and reduce the incidence of modern diseases such as obesity, pressure, cardiovascular diseases and respiratory diseases, which are among the biggest health problems it suffers from.





Individuals in the modern era as a direct result of lack of movement as well as some other reasons, and therefore aerobic training is considered a preventive factor to resist infection with such diseases. This is from one side, while the other side is its therapeutic effect, which is considered one of the most important purposes, which is the treatment of modern diseases and the rehabilitation of individuals to return quickly to normal life. (1:257), (2:35)

Therefore, **Researcher** see Exercising is a way Moderator human in For a strong body and good health, whether it is physical health and mental health as It helps in losing weight significant lade Therefore, exercise strengthens the device The immune to human against many diseases different . The immune system in the human body works to protect the body from acute and chronic health conditions There are many ways in which the immune system can be strengthened anon exercise and activity physical they have a particularly effective effects everyone the health of the body Generally, especially drug therapy is part of the patient's comprehensive treatment to get rid of this disease is not the only solution to treat such diseases and that the continuity of the individual with asthma to practice gradual sports activity helps him to get rid of all diseases, especially respiratory diseases and help him to make maximum use of the ability of the respiratory system to supply it with the oxygen necessary for the body, which contributes to a better and faster treatment And the practice of his daily life in a normal manner without defects or shortcomings in the functions of breathing.

All this made the researcher think about setting up a regulated aerobic exercise program that would benefit in enhancing,

developing lung functions in patients with asthma, as well as identifying the concentration level of the enzyme Interleukin 6 to detect any infections present in the body in general, especially the functions of the lungs, by setting up an antenna program for patients at **A hospital Al-Sadr in Mahalla Al-Kubra**, and supporting the functions of vital organs in the body in general and especially the respiratory system through light aerobic exercise, as through the theoretical readings of the researcher it was found that moderate intensity exercises lead to resistance to viruses and various diseases that affect the respiratory system, as well as an improvement in the immune system of asthma patients popular.

The aim of the research:

Scientific significance:-

The **Researcher** presents a new methodology based on the use of a proposed and standardized aerobic exercise program with the aim of making a positive impact and improving the efficiency of lung functions and the level of enzyme concentration (interleukin-6) I have bronchial asthma.

Research aims:

This research aims to develop a set of proposed aerobic exercises and to identify their effect on the following:

- The variables related to the functions of the lungs, which are represented in (FEV1, FVC, PEF for Sample Search .
- Identifying the physiological variables represented in (resting pulse, blood oxygen rate, sugar "fasting - fast"), blood pressure) for Sample Search .
- Concentration level of (Interleukin 6) enzyme for Sample Search .

Research Hypotheses :





- There are statistically significant differences between each of the measurement average Pre and Post Test for variables the functions of the lungs, which are(FEV1, FVC, PEF) being searched the dimensional measurement.
- There are statistically significant differences between the mean of the pre and post measurements in Physiological variables (resting pulse, blood oxygen percentage, sugar "fasting - breakfast", blood pressure) in the research sample and in favor of dimensional measurement.
- There are statistically significant differences between each of the measurement average essential and remote Enzyme Concentration Level (Interleukin6) have a disease Asthma, I have a sample of the research and in favor of the dimensional measurement.

Terminology:

- Interleukin

Is a group of (cytokines/proteins/categories detachment First seen in White blood cells, and the Stimulates the body's immune system to resist congestion and disease. Interleukins are formed in a wide range of cells in the body, including white blood cells Tamed anise Bally It's white. These cells are expelled or destroyed Bacteria and other harmful substances that enter the body .(25)

- Asthma

Chronic inflammation in the people to Aerobic cause difficulty in breathing for congestion new elector MMR autopneumatic But form of a disturbance Respiratory. (6)

- Asthma patients

Bronchial asthma is asthma as a result of inhaling substances and compounds that

block the flow of air and make breathing difficult, such as chemical fumes, gases and dust, or other substances as a result of air pollution and lack of oxygen in it. Asthma can cause chest tightness, wheezing and shortness of breath. Asthma can also cause permanent damage to the lungs, disability and death . **(procedural definition)**

Search procedures:

The research method.

In this Research, the Researcher used the experimental method by using the experimental design for one experimental sample by means of a pre and post measurement of the research sample, as it is Appropriate to the nature of the research topic And its objectives.

The research community.

The Research community and sample were chosen by the intentional method, where the original community of the Research consisted of people with asthma and those who attended **Al-Sadr Hospital in Al-Mahalla Al-Kubra City, Gharbia Governorate.**

The research sample.

The research sample was chosen by the intentional method, which was represented by some people with asthma who frequented Al-Sadr Hospital in Al-Mahalla Al-Kubra, where the number of the sample was (14) cases during the month of 11/2021AD.

Conditions for selecting the sample.

During his selection of the research sample, the researcher concerned that the research sample should meet several conditions, which are :

- 1- The Consent of The Research Sample to Conduct the Research .





- 2- To have Asthma patients from the city of Mahalla al-Kubra , Gharbia Governorate .
- 3- There Should not be any other complications of other diseases such as heart disease, Diabetes, or Pressure so that these diseases do not hinder the patient from carrying out the training program .
- 4- It was agreed with (16) cases who meet the conditions of the previous test for the research sample from those who Attended Al-Mahalla Al-Kubra Chest Hospital in the chest allergy clinic by the

intentional method . (2) Cases of their irregularity in the training program and sudden health conditions that Occurred due to their exposure to Various diseases during the application period.

The homogeneity of the research sample.

The **Researcher** calculated the torsion coefficient in terms of the arithmetic mean, median and standard deviation of the research sample in order to ensure the homogeneity of the research sample in the variables of age, length and weight, as shown in the following table :

**Table (1)
Characterization of the research sample in the growth variables**

Variables	Measurement unit	Mean	Median	Standard deviation	Skewness
Chronological age	Year	44.57	46.00	10.308	0.303-
Body Height (BH)	Cm	169.79	170.50	8.011	0.788-
Body Weight (BW)	Kg	86.71	87.00	11.398	0.014-

Illustrated by **Table (1)** All members of the research sample fall under the mean curve, where the values of the skew coefficient ranged between (-0.014: -0.788), where these values were limited to between (-

0.014: -0.788) (± 3), which indicates the homogeneity of the sample as a whole in the variables of chronological age, height and weight.

**Table (2)
Characterization of the research sample in the physiological variables (resting HR, blood oxygen %, fasting- mycosis sugar, blood pressure) Through the Median, Mean, Standard deviation and skewness N=14**

Variables	Measurement unit	Mean	Median	Standard deviation	Skewness
Resting HR	P/m	76.07	75.00	10.738	0.647
SPO ₂	%	94.50	94.00	1.286	1.646





blood sugar (fasting)	Milligram / deciliter	95.57	93.50	8.582	0.596
blood sugar level (mycosis)	Milligram / deciliter	117.36	112.50	17.539	1.759
Systolic blood pressure	millimeter of mercury	129.29	125.00	17.696	1.542
Diastolic blood pressure	(mmHg)	71.86	71.50	12.322	0.490

Illustrated by **Table (2)** The arithmetic mean, median, standard deviation, and skewness values of the physiological variables are (resting pulse, blood oxygen percentage, sugar "fasting - fast", blood pressure)For the sample under study, the

skewness coefficient values ranged between (0.490:1.759) and these values are limited to between (± 3), which indicates the homogeneity of the research sample in these variables.

Table (3)

Description of the research sample in the variables of jobs lungs (FEV1,FVC , PEF) Through The Median, Mean, Standard deviation and Skewness N=14

Variables	Measurement unit	Mean	Median	Standard deviation	Skewness
FVC	Liter/m	2.6007	2.7650	0.94818	0.143-
FEV1	Liter/m	1.9179	1.7700	0.71162	0.832
PEF	Liter/m	3.5671	2.7700	1.78299	0.462

Illustrated by **Table (3)** The arithmetic mean, median, standard deviation, and skewness values of the lung function variables are (**FEV1, FVC, PEF**) For the sample under study, the skewness

coefficient values ranged between (-0.143 :0.832) These values are limited to (± 3), which indicates the homogeneity of the research sample in these Variables .

Table (4)

Characterization of the research sample in an enzyme concentration level variable(interleukin 6) Through the Median, Mean, Standard deviation and skewness

N=14

Variables	Measurement unit	Mean	Median	Standard deviation	Skewness
IL 6	Nanogram/Liter	10.5207	10.4000	0.99651	0.300

Illustrated by **Table (4)** The arithmetic mean, median, standard deviation, and

skewness values of a variable level Enzyme concentration (interleukin 6) For the sample





under study, where the value of the skew coefficient (0.300) These values are limited

Means of data collection:

Previous studies and various scientific research to determine the most important special physiological variables With asthma, I have a research sample.

- Vital capacity using an electronic spirometer.
- Fasting and mycosis blood sugar.
- Lung function variables represented in (FEV1, FVC, PEF)
- Pulse rate.
- The percentage of oxygen in the blood.
- Systolic and diastolic blood pressure.
- Enzyme concentration level (interleukin-6) .

Tools and devices used in data collection.

- Device resta meter (To measure Length total(cm)).
- A form for the collection of measurements of respiratory functions and anthropometric measurements.
- Device medical scale Criteria (To measure Weight the body(kg)).
- Syringes for drawing blood samples with a volume of 5 cm³. A box with crushed ice for storing blood samples.
- Blood collection tube (plastic made in Japan)

to (± 3), which indicates the homogeneity of the research sample in this variable.

Measurements used:

- Measurement of both chronological age, occupational age, height and weight.

Physiological measurements.

- Form to record data and results.- balls medical.
- Measuring device electronic blood pressure sphygmomanometer.(millimeter Mercury)
- electronic spirometer (COSMED) To measure Functional Efficiency for the lungs(milliliters) .
- Branded blood glucose meter device BEURER.
- Blood oxygen meter and pulse rate (device Criticare)
- Disinfectant solution (Cordon) Disinfectant to prevent the spread of infection among the sample members during the measurement with the electronic Spirometer.
- Hour turning off electronic To measure time.- Rate pulse(z/s)

collection forms.

- Sample data form (name - age)- Occupational age - height - weight).
- A form to collect data on physical and physiological measurements under study.

Table No. (5)

The significance of some physiological variables extracted from the electronic spirometer(COSMED) To measure Functional Efficiency For the lungs under investigation :





Physiological variables

Some lungs functions tests through a device COSMED			Measurement Unit
N	Symbol	The term	
1	FVC	Forced vital capacity	L/M
2	FEV1	forced Expiratory Vital on One second	
3	PEF	pressure Expiratory Flow	

The **Researcher** took the measurements (functional efficiency for the lungs(By a device) electronic spirometer brand (COSMED) The **Researcher** has resorted to stopping the test while the patient is doing this test when the patient feels the following symptoms:

- Chest pain moving to the shoulder, arms, neck and jaw.
- shortness of breath (breathing breath)
- Blurring of the eyes, dizziness, or a general feeling of physical fatigue.
- Redness in the face when doing the test.

Pilot Study .

From the researcher's keenness on the extent of interest on the occasion of the physiological tests under study, the **Researcher** conducted a studying exploratory On a sample From Community search and not From Individuals sample, has reach Individuals the sample(3) individuals and were This study is during the period from Sunday, corresponding to 24/10/2021 Until Thursday 28/10/2021.

The goal was from this study What Come:

- Making sure From Power and hardware safety and tools used.
- Ensure The Right Place For Strength Training .

- Identify any deficiencies in the experimental design and work to avoid and avoid them.
- Preparing the stadium for testing and implementing the proposed program under consideration.
- Identify the extent of the patient's actual desire and response to practicing the proposed exercises, their quality and their suitability to the nature of the study sample and appropriate to the research objectives set.
- Making sure From suitable Measurements to the sample.
- Identify On method organizational during Measurements and tests.
- Identify On distribution chronological for measurements and all loneliness training used.

The Stage of implementing the pilot experiment is as follows:-

- (3) cases were selected from those who attended Al-Sadr Hospital in Al-Mahalla in the chest allergy clinic, and it was agreed with them to conduct the exploratory experiment as a reconnoitering test to conduct the basic experiment of the research, where the tribal measurements were taken after they recorded all the data necessary for the study from taking their height, weight





and chronological age And the time periods for their different work, and precautionary measures were taken while taking their measurements, and then the exploratory study was conducted on them.

- The three cases were distributed over three days (**Sunday–Tuesday–Thursday**) To conduct the exploratory experiment for each individual case separately (where each case has a separate day from the other) .
- The initial training dose of the training program, which was previously determined, was applied to the initial condition, taking into account the measurement of pulse, pressure, sugar, as well as breathing before, during and after training, noting any clinical signs or symptoms that appear on the patient suddenly, taking into account also the rest periods between each exercise and for each period of time in The program as a whole.
- Pulse, pressure, sugar, temperature and respiration measurements were taken every five minutes immediately after the effort until the patient returned to the normal state he was in before starting the proposed training program.
- The patients were followed up through a clinical examination by the physician in charge of them to ensure the safety of the diseased cases after performing the physical exertion.
- The researcher made some different modifications, whether it was preparing the batteries for the devices, preparing an electric joint to obtain the necessary electricity, and also buying the necessary solution for disinfection between taking

a measurement and another for a device for measuring lung functions, and also changing the playing field, where the first stadium that was chosen had defects in the floor exposed The cases of the different injuries were also stressed on the necessary stations while taking the different measurements.

The basic Study.

Through the results of the exploratory study, and after the **Researcher** ascertained the security and safety factors available in the application environment, it became possible to start applying the research and start the basic research experience:

- The researche agreed with the main research sample, which numbered (14) sick cases, on the date to start carrying out an implementation The training program, as well as the competent doctor was informed of them on the appointment to follow up the sick cases.
- Clinical examination performed On the research sample, which numbered (14) sick cases (not including the three cases on whom the exploratory study was applied), the pre-measurements of the basic experiment were made for them during the two days (**Wednesday - Thursday**) corresponding to 2 and 3/11/2021 AD, and the following measurements were taken for them: Blood samples were drawn to determine the level of the enzyme (interleukin-6) in the blood through the doctor concerned with them, on the second day of the basic measurements on Thursday corresponding to 3/11/2021AD The lung function test (vital capacity variables)





was measured using a branded electronic spirometer (COSMED)), measuring the pulse, pressure, and oxygen percentage in the blood through A blood oximeter (device Criticare), sugar, and the necessary temperature was also measured for each patient separately, and height and weight measurements were taken .

The Training program .

The point of the program:-

The training program Aims to me:

- Improving the respiratory system variables "lung functions", which are (FEV1, FVC, PEFI) have asthma patients, I have the research sample.
- Improving physiological variables (resting pulse, oxygen percentage) Blood, sugar (fasting - breakfast), blood pressure) I have asthma patients, I have the research sample.
- Reaching the best possible level of enzyme concentration (interleukin-6) Interleukin6 I have asthma, I have a research sample.

Foundations of developing the training program: -

I depend The **Researcher** when developing the proposed training program on the foundations Scientific the following :-

- Observe the purpose of the program .
- Adaptation of program content to the level and capabilities of a sample search .
- Program suitability, flexibility and acceptance of the application practical .

The **Researcher** did After the tribal measurements of the variables under research and the collection of preliminary data, by preparing and designing the training program according to the foundations of the science of sports training in codifying the training loads And also after reviewing the reference studies, scientific references and websites in the design of training programs, in proportion to the level and capabilities of the players' physical and functional abilities.

- Ensuring the safety of the individuals participating in the program through a medical examination of them before starting the training .
- The training program must contain a high percentage of exercises that help improve the efficiency of the heart and blood vessels, by using the large muscle group in the body (arms). –The two legs) taking into account the continuity in the performance, taking into account the performance by using music to increase the performance incentive and reduce the feeling of fatigue .
- Observe the gradation of exercises from easy to Difficult .
- Taking into account the appropriate formation of the training load in terms of intensity and size and rest .
- Observe the principle of gradation in increasing intensity and volume pregnancy.
- A good warm-up before implementing the program at the beginning of the unit and cool-down after completing the program Unit.





- Consider decreasing the positive rest period gradually with increasing intensity and size.
- The intensity is calculated by pulse.
- The minimum load intensity should be 60% (of the maximum heart rate) for beginners, and this percentage is considered medium intensity, while the maximum ranges between 60: 85% of the maximum heart rate, and this percentage is considered high intensity. (36: 104, 110)

The components OF Training Unit

:

The training unit contains the parts next :The main elements included in the training unit in the training program are:

- introductory part (period warm-up) -The main part (training period the basic) - Closing part (cooling-off period).

Training program application

Suggested:-

The researcher implemented the proposed training program for a period of (8) weeks (two months) During the period from Saturday 5/11/2021 Even Saturday 8/1/2022, And that Al-Saah Stadium (A private stadium) in the city of Mahalla al-Kubra , next to Al-Sadr Hospital in Al-Mahalla Al-Kubra , Gharbia Governorate after Take measurements tribal.

The post test:

The dimensional measurements were made for the members of the research sample with the same conditions and specifications of the tribal measurements after the end of the program application period, in the period from Saturday agree 8/1/2022 until today Sunday agree 9/1/2022.

The statistical processing :

The **Researcher** performed the statistical treatments using the statistical program SPSS V.22 To carry out the appropriate statistical manipulations to achieve the objectives and verify the validity of the hypotheses using:

- average Arithmetic. - Mediator - deviation normative -Factor skewness.
- The significance of the differences between the averages of the tribal and remote measurements using Test (Z) Wolkoskin.
- Equation of improvement ratios Telemetry over tribal measurement (rate of change).

Presentation and discussion of the search results:

A - Presentation and discussion of the results of the first hypothesis:

which states:

There are statistically significant differences between each of the mean pre and posttest for variables the functions of the lungs, which are FEV1, FVC, PEF).



Table (6)
The mean and standard deviation of the pre and posttest measurements and the rate of change in lung function variables.

N=14

The Mean And Standard Deviation Of The Pre And Post Test					The Rate Of Change Of Mean Pre And Post Test			
Variables	Measuring unit	Pre Test		Post test		Mean		Rate of Change (%)
		Mean	STD	Mean	STD	Pre Test	Post Test	
FVC	Liter/m	2.601	0.948	4.351	0.968	1.918	2.476	67.29
FEV1	Liter/m	1.918	0.712	2.476	0.670	2.601	4.351	29.12%
PEF	Liter/m	3.567	1.783	2.596	1.290	3.567	2.596	37.42

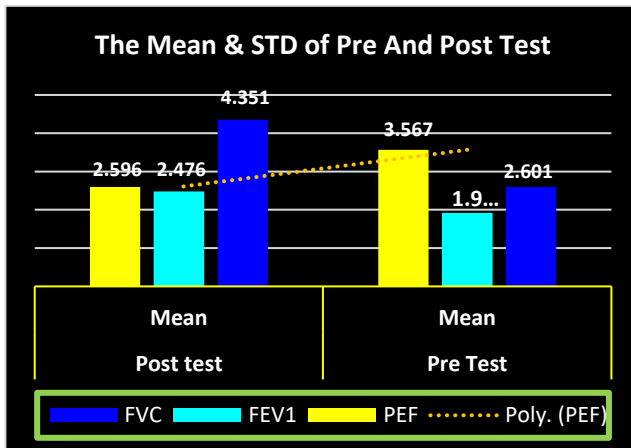


Figure No. (1)

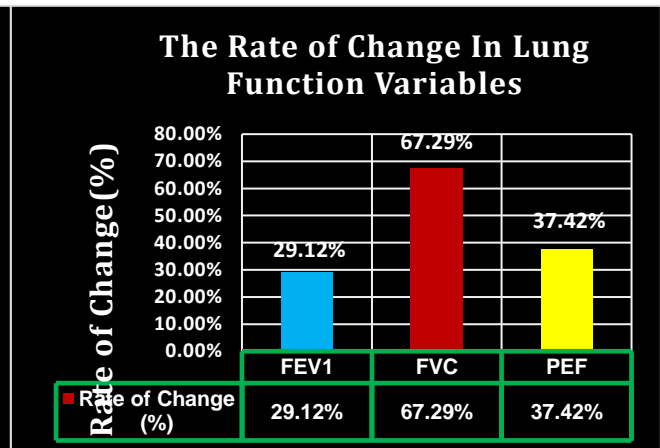


Figure No.(2)





Table (7)
The significance of the statistical differences between the pre and post tests for the pulmonary function variables.

Variables	Measuring unit	Signal	The number	Average rank	Total ranks	Values (Z)	Significance
FVC	Liter/m	-	0	0.00	0.00	3.296-	0.001
		+	14	7.50	105.00		
		=	0				
		Total	14				
FEV1	Liter/m	-	2	5.50	11.00	2.605-	0.009
		+	12	7.84	94.00		
		=	0				
		Total	14				
PEF	Liter/m	-	10	8.60	86.00	2.104-	0.035
		+	4	4.75	19.00		
		=	0				
		Total	14				

Values (z) tabular at the level of significance (0.05) = 1.96

Clear **Table results number (7)** That Values (Z) calculated using Test Significance of Statistical differences by Wilcoxon, where it turns out an all the exams the functions of the lungs related to the respiratory system have differences Statistical function between results the test tribal and the test dimensional for the sake of post-test, Neighborhood show There are no differences between the results test Forced vital capacity (FVC) where the value of (Z) -3,296 , and the There are also significant differences for each of the measurements forced expiratory volume in the first second (FEV1) forced Expiratory Vital on One second where the value of (Z)-2,605, and measure expiratory flow pressure (PEF) where the value of (Z)-2,104 The two are greater than the value (z) Tabular 1.96.
Discussing the results of the first hypothesis:

Table results indicate number (6) And figure No. (1) that The mean and standard deviation of both the pre and posttest to the research sample at Respiratory tests under consideration , as can be seen from the results of the table (6)There are statistically significant differences between the mean of the two measurements tribal and the dimensionality in favor of the dimensional measurement of the research sample in the variables next (Forced vital capacity (FVC) , and there are also significant differences for each of the measurements forced expiratory volume in the first second (FEV1)forced Expiratory Vital on One second, and measure expiratory flow pressure(PEF) pressure expiratory flow)where the value of (Z)-2,104 The two are greater than the value (z) tabular 1.96,whereuserresearcherTestThe significance of the statistical differences (Z) "Wilcoxon" where the value of





(z)calculated higher than the value of (z)Tabular at the level of significance (0.05)

As evidenced by **Table number (6)** and **Figure No (2)** Rate of change's pretest measurement of to the variables where the percentage of change was as follows:- attest Forced vital capacity(FVC) where he reached the rate of change for this variable is 29.12%. , and the So was the percentage change for each of the measurements forced expiratory volume in the first second (FEV1)forced Expiratory Vital on One second where he reached the rate of change for this variable is 67.29%., and measure expiratory flow pressure(PEF) where he reached the rate of change for this variable is 37.42%.

So the **Researcher** explains the differences of the averages of (pre and post) and the rates of change to changes in the body's systems Physiological and vitality to counter efforts physical the reality on it as a result of physical activity (the proposed aerobic program), especially Alite respiratory system by increasing the rate and depth of respiratory movements after performing each effort of the effort exerted, which is a natural phenomenon when the Individuals Especially with those whose training is continuous and a regular and this is what we find at some members of the research sample, and this means, from the **Researcher's** point of view, "an improvement in the strength and efficiency of the breathing muscles, especially the muscles between the ribs and the diaphragm muscle, so the rib cage increases in expansion and flexibility during continuous breathing operations, and this allows for better performance of respiratory processes

in athletes, especially when performing Exercising physical effort.

As the **Researcher** attributes these results to the effect of the proposed training program as a training tool to move uplevel the functions of the lungs in particular and the respiratory system in general where he helped program developer and the Improving the functions of the lungs in particular and the efficiency of the respiratory system in general, This is evidenced by the differences between the pre and posttest measurements of the members of the research sample, where unregular tiebreak thing Training praise helped The An individual at workmanly continue longest time Me in exercise program training Which positively helps to develop breathing abilities and improve respiratory functions Unlike what it was before participating in the program.

This is consistent with what he asserted "Mohamed Ibrahim Shehata"(2005) in that the rechange incident mechanism and functions of breathing as a result of regular and continuous training, as the rate, depth and volume of breathing increase during the breathing process. (10: 16)

This is what Ahmed Nasr El-Din Sayed (2014) also stands for, in that : Regular exercise and training, especially aerobic performance, which depends on the use of oxygen, leads to a number of physiological changes that express the efficiency of breathing processes in athletes and their adaptation to sports training compared to individuals who do not exercise, the most important of which are summarized as follows:

- Regular sports training leads to an increase in the density of the capillaries surrounding





the alveoli of the lungs as a result of opening a number of closed or inactive capillaries or generating new capillaries under the influence of continuous repetition of the performance of physical effort, and in any case, the increase in the number or density of capillaries leads to an increase in the area or The surface of gas exchange between those capillaries and the alveoli of the lungs, especially when performing physical exertion, which distinguishes athletes with better respiratory efficiency than others.

- The maximum air capacity is increased.
- The size of the lungs increases, which increases the chance of increased gas exchange with the blood.
- The rapid return of respiratory functions improves (Respiration rate, pulmonary ventilation rate, some lung volumes and amplitudes) to their natural need with the expiry of physical exertion, and this seems clear to the well-trained players than to the untrained, and this is expressed by the speed of recovery processes.

(3: 164 -166)

Muhammad Saad Ismail (2020) also believes that practicing sports activity regularly helps to increase the lungs capacity. It is known that the rate of breathing per minute is about 15-16 times / minute, and this rate increases in the case of physical exertion so that the body can be supplied with a quantity More than oxygen, but the increase in the rate in the exercisers is less than the increase in the non-exercisers in the case of double physical exertion.

And exercise works to strengthen the breathing muscles, the most important of which is the diaphragm muscle and the muscles between the ribs, which raise the efficiency of lung and respiratory functions,

and increase the vital capacity of the individual. (11:63)

The **Researcher** attributes this development, improvement, and these differences led to the effect of using different exercises in terms of medium intensities that are compatible with individuals suffering from asthma. The intensity used in the program ranged between (60: 75%) in the program. These exercises led to a clear improvement in most of the aforementioned physiological variables from Through the different intensities of the program (low, medium and less than maximum) and their effectiveness in developing these variables, as well as the gradation in the size of the exercises and the number of repetitions, the diversity of exercises and changing the direction of the body during the exercises, all of this makes the sick individual make maximum physical effort to perform the exercises. Irrigational The **Researcher** also relied, during the performance of various exercises of low and medium intensity, to control the breathing of the individual patient with asthma, which makes the individual breathe deeply to supply the working muscles with the necessary oxygen during the performance of the various exercises, so the strength and efficiency of the breathing muscles improved, especially the muscles between the ribs and the diaphragm muscle The septum, the size of the rib cage increases in size and flexibility during the breathing process.

This is confirmed by Hussain Heshmat and Abdul Mohsen Al-Azmi (2019) that physical training has a direct impact on respiratory functions in various forms, including :Pulmonary ventilation :An increase in pulmonary ventilation





occurs as a result of undergoing physical training, and this increase is represented in both the volume and number of breaths Ventilation efficiency training causes an increase in respiratory efficiency, the higher the efficiency of ventilation, especially when performing intense muscular effort for a long period, such as a marathon, leading to a lack of oxygen that is consumed by skeletal muscles during the effort. (5:54)

As showed Some of the results of previous studies that there are statistically significant differences between the tribal and remote measurements in favor of the dimensional measurement, as the current study agreed with the results of the study "Mohammed Ibrahim Al-Marzouki" (2012), whose most important results were that the application of the proposed rehabilitation program has a positive effect on my patients. Chronic bronchial obstruction in improving some measurements of respiratory function and blood gases (PaO₂ - PH - MVV - FRF 25~75 - FEV1% -FEV1) The program also contributed to reducing the two approaches, wheezing and chest screeching for patients with chronic obstructive pulmonary disease. (9)

It agreed with the results of the study by Ram et al Ramet all (2009) In that physical training for patients with Asthma patients It improves fitness by increasing the improvement in maximum oxygen consumption, in addition to other measures that have proven improvement in their general life functions and a delay in the onset of asthma symptoms. (30:49)

The results of this study also agreed with the results of the study and others Ando et All (2003) Which indicates that aerobic and respiratory rehabilitation

exercises led to a significant improvement in the efficiency of respiratory functions, as the rate of The FEV1 By 58%, there was also an improvement in the general condition of patients in terms of feeling tired and being able to practice their daily lives better. (16:81)

The results of this study also agreed with the results of the study of "Buchi et All (2000) Which indicates an improvement in lung efficiency in terms of breathing function test after applying aerobic and breathing exercises, and an improvement in the patients' ability to exert more effort and greater improvement as in the quality of life and their psychological state was also noted. (18:135)

Through this discussion, the Researcher answered the first hypothesis after ensuring the validation of the first hypothesis which is about:

There are statistically significant differences between the average of the pre and post measurements for the two lungs functions as (PEF, FVC, FEV1) under consideration in favor of the post measurement.

B- Presentation and discussion of the results of the second hypothesis:

which states:-

There is Statistically significant differences between the mean of the pre and post measurements in the physiological variables represented in (resting pulse, blood oxygen percentage, fasting sugar- instant sugar, blood pressure) in the research sample and in

favor of posttest



Table (8) The Mean and standard deviation of the pre and posttests of the research sample In the physiological variables.

N=14

Variables	Meas. Unit	The Mean and standard deviation of the pre and post measurements				The rate of change of the pre & posttests of physiological variables		
		Pre Test		post test		Mean		Rate of Change%
		Mean	STD	Mean	STD	Pre Test	Post Test	
Resting HR	P/ m	76.071	10.738	70.929	7.620	76.071	70.929	7.25%
The blood oxygen %	%	94.50	1.286	96.786	0.893	94.500	96.786	2.42%
sugar level in blood(fasting)	Milligram / deciliter	95.571	8.582	87.929	7.437	95.571	87.929	8.69%
instant sugar	Milligram / deciliter	117.367	17.539	108.929	18.002	117.357	108.929	7.74%
systolic blood pressure	millimeter of mercury (mmHg)	129.286	17.696	131.929	9.253	129.286	131.929	2.04%
diastolic blood pressure	millimeter of mercury (mmHg)	71.857	12.322	77.286	6.018	71.857	77.286	7.55%

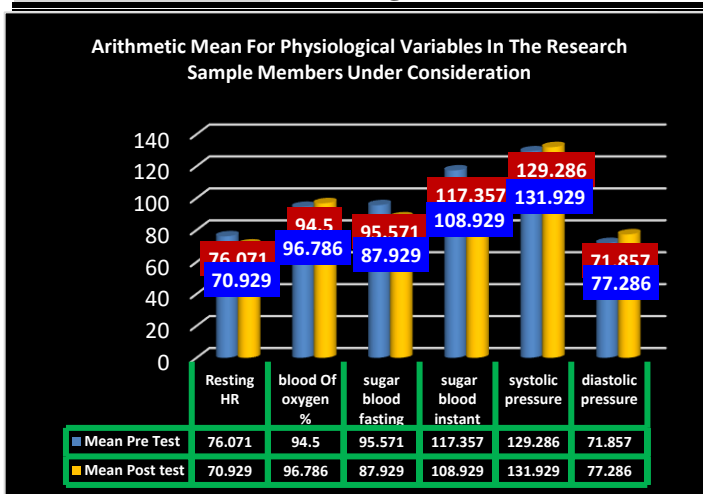


Figure No. (3)

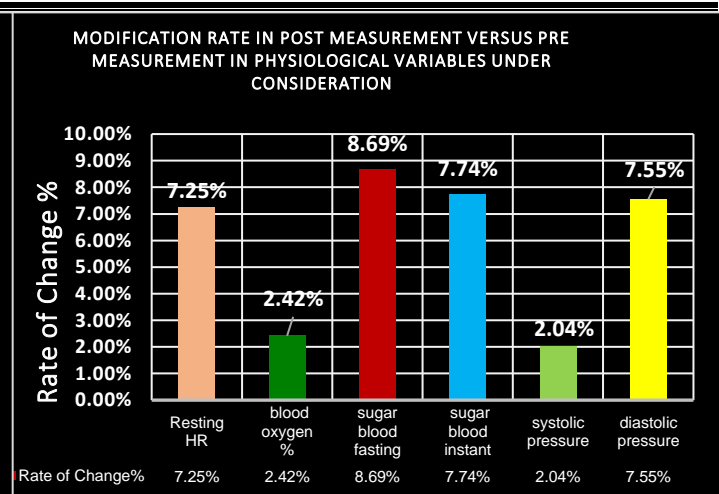


Figure No. (4)



Table (9)
The significance of the statistical differences between the pre and post tests for the physiological variables under study .

Variables	Measuring unit	Signal	The number	Average rank	Total ranks	Values (Z)	Significance
Resting HR	P/ m	-	9	8.17	73.50	1.319-	0.187
		+	5	6.30	31.50		
		=	0				
		Total	14				
The blood oxygen %	%	-	0	0.00	0.00	3.235-	0.001
		+	13	7.00	91.00		
		=	1				
		Total	14				
sugar level in blood(fasting)	Milligram / deciliter	-	14	7.59	105.00	3.298-	0.001
		+	0	0.00	0.00		
		=	0				
		Total	14				
instant sugar)	Milligram / deciliter	-	12	8.08	97.00	2.800-	0.005
		+	2	4.00	8.00		
		=	0				
		Total	14				
systolic blood pressure	millimeter of mercury (mmHg)	-	3	9.67	29.00	1.153-	0.249
		+	10	6.20	62.00		
		=	1				
		Total	14				
diastolic blood pressure	millimeter of mercury (mmHg)	-	5	4.80	24.00	1.505-	0.132
		+	8	8.38	67.00		
		=	1				
		Total	14				

Values (z) tabular at the level of significance (0.05) = 1.96

Show schedule (No 9) Values (Z) calculated using Test Significance of statistical differences and for Wilcoxon where it turns out an all the tests The physiological variables related to the discussion of the second hypothesis It gave differences between the results measurement posts and measure

dimensional, While it was found that there were no differences Statistical function between results Test The resting HR was measured with a value of (Z) -1.319 There are also no significant differences for each of the pressure gauge systolic blood, where the value of (Z(-1.153), and the diastolic blood pressure was measured, where the





value of (Z) -1.505 which is less than 1.96 while giving measurements. The percentage of oxygen in the blood and the blood fast sugar level (pgIm) and instant sugar level in blood. Statistically significant differences in favor of the dimensional measurement.

Discussing the results of the second hypothesis:

The results of **Table No (8)** and **Figure No(3)** indicate that the arithmetic mean and standard deviation of both the pre- and post-measurement of the research sample in the physiological tests under study, as it is clear from the results of **Table (9)** that there are statistically significant differences between the mean of the pre- and post-measurements in favor of the post-measurement of the research sample in the following variables (blood oxygen - blood sugar "fasting, fast"), while it was found that there are no significant differences between the results of the resting pulse test, as well as no significant differences for each of the systolic blood pressure measurements Diastolic blood pressure measurement.

The results are also clear through **Table No. (8)** and **Figure No. (4)** The rate of change of the dimensional measurement from the tribal measurement of the variables under discussion, where the rate of change was as follows: - The resting pulse test, where the rate of change for this variable was 7.25%, and so was the percentage of change. For each of the measurements of the percentage of oxygen in the blood, where the rate of change for this variable amounted to 2.42%, and for measuring the rate of "fasting" blood sugar, where the rate of change for this variable reached 8.69%, and for measuring the percentage of sugar in the blood "Fatir" where the rate of change for

this variable was at 7.74%, systolic blood pressure was measured, where the rate of change for this variable was 2.04%, and diastolic blood pressure was measured, where the change rate for this variable was 7.55%.

Through these results, the **Researcher** reached a Minea. The training program has a direct impact and strong on improve and develop. The physiological variables under study, and the **Researcher** also noted through the results of the differences between the averages of the two cardiac and dimensional measurements that sports training leads to various positive physiological changes that include all body systems and the performance level of the individual progresses whenever these changes are positive in order to achieve the physiological change of the body's organs to efficiently withstand physical performance High.

as seen **Researcher** the results of the research showed that there is a significant improvement in the resting HR, as there is a decrease in the HR in the dimensional measurement compared to the pre-measurement, where the rate of change reached (7.25%) due to researcher the improvement and decrease in the heart rate the aerobic program for the sample members, where the resting pulse is one of the most important indicators that indicate the extent of the functional efficiency of the different body organs, as the "researcher" saw through the results that the aerobic exercises that were practiced regularly during the period of application of the research on the sample members helped improve fitness. General for the individual patient with asthma, where the heart became stronger and worked more, and this was





explained through the practice of aerobic exercises by the members of the research sample and also through the gradation in the components of the training unit and its intensity from low to medium and then to less than maximum, and also the **Researcher** sees through the results Physical and respiratory exercises benefit people with disease Asthma by improving Utilization Oxygen, muscle strength, and cardiovascular health What enable them also from reduce anxiety and tension as well shortness of breath hey have.

These results agreed with what was indicated by the results of the study "Maurice et all(2002) In that various aerobic exercises contribute to improving energy production rates in addition to reducing heart rate at rest. (29)

It refers to both "Abdul-Aziz Al Nimr ", "Nariman Al-Khatib" (2000)Aerobic training strengthens the heart muscle and delays the feeling of fatigue and leads to what is known as aerobic fitness, which plays an influential role in the ability to perform with high intensity and restore recovery. (8:24)

The **Researcher** also saw that the results of the research also showed that there was a noticeable improvement in the variable "fasting" blood sugar, as this variable recorded the largest change rate, which is (8.69%).Neighborhood the researcher finds that the proposed antenna program has a role big In controlling the level of sugar in the blood. Moreover, exercising makes a person feel better in terms of health, So, while applying the program to the research sample, the researcher slowly started with the various exercises I had satisfied Asthma then increase the number of times workouts

gradually This helped to improve and control the sugar level of the research sample members, and this appeared through the dimensional measurement of this variable under study.

As for the systolic and diastolic blood pressure, its results were (not Significant), and this was confirmed by "Mohammed Mahmoud Ahmed" (1999), as he sees that rapid physical effort raises the systolic blood pressure to the activity of the circulatory system in order to increase the amount of blood and thus oxygen that reaches all parts of the body. A particular organ of the body, the small arteries expand to deliver the largest amount of blood, at the expense of other organs (13:50).

Therefore, the **Researcher** believes that physical activity is a prevention and treatment for cases of high blood pressure, and moderate physical activity should be practiced for at least 30 minutes every day or most days of the week .doing exercise regularly To strengthen the muscle the heart A strong heart can pump more blood with less effort , and if it is possible The heart pumps blood with less effort , the pressure In deed On The arteries be assay, which in turn leads to drop blood pressure.

According to "Ihab Muhammad Ismail" (2021) an changes the incident Blood pressure is caused by changes in the amount of blood pushed out of the heart and the volume of blood blood vessels, the increase in the amount of blood pushed by the heart leads to the blood flow in the arteries helps to increase the resistance in the central arteries to the blood flow, and as a result, the heart has to increase the pumping force so that the blood rushes inside the narrowed, constricted arteries, which leads to me Height blood pressure,





and What breadth The blood vessel leads amine drop Blood pressure, blood pressure is affected by blood volume, it increases with increase and decreases when this volume decreases.(4:176)

as you agreed These results with what It was shown by the conclusions of scientific research and whereat away all security :

“Hala Kamel Qassem” (2012), “Alia Adel Shams Al-Din (2004) In that aerobic exercise helps to improve various physiological variables. (14), (7)

From the previous discussion, the Researcher defined the second hypothesis after ensuring the partial validation of the second hypothesis:

There are statistically significant differences between both of pre and post

measurements averages in the physiological variables (rest pulse, oxygen percentage in blood, fasting glycemia, intrinsic glycemia and blood pressure in the research sample in favor of the post measurement. There are no statistically significant differences between both of rest pulse measurement Results and blood systolic and diastolic pressure.

C- Presentation and discussion of the Results of the Third Hypothesis: which States:-

There are statistically significant differences between each of the pre test & posttest Enzyme level (interleukin-6) have asthma patients, I have the research sample and in favor of the dimensional measurement

Table (10)

The arithmetic mean and standard deviation of the pre and posttest measurements of the research sample In a variable enzyme concentration level (interleukin-6)

N=14

Arithmetic mean and Standard deviation of the pre and post measurements in Interleukin 6 Enzyme under consideration		The rate of change of the pre and posttest measurements of the research sample In a variable enzyme concentration level (interleukin-6)						
Variables	Measuring unit	Pre Test		Post Test		Mean		The rate of change%
		Mean	STD	Mean	STD	Pre Test	Post Test	
IL6	Nanogm/liter	10.521	0.997	7.919	1.478	10.521	7.919	32.85%



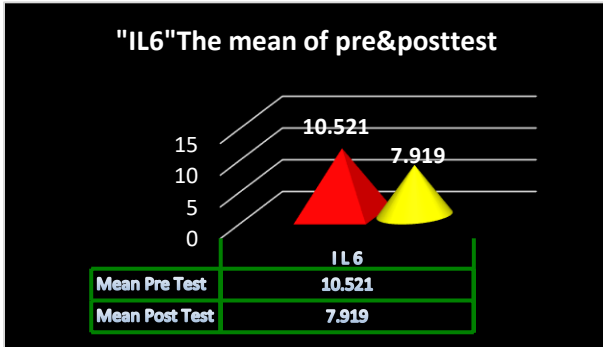


Figure No. (5)

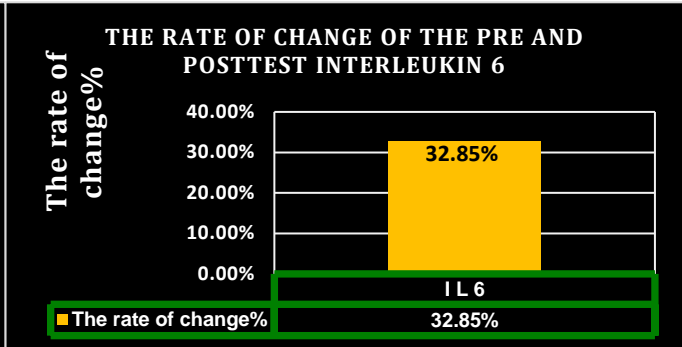


Figure No. (6)

Table (11)
The significance of the statistical differences between the pre and post tests for the enzyme concentration level variable(interleukin-6)

N=14

Variables	Signal	The Number	Average Rank	Total Ranks	Values (Z)	Significance
IL 6	-	14	7.50	105.00	3.297-	0.001
	+	0	0.00	0.00		
	=	0				
	Total	14				

Values (z) tabular at the level of significance (0.05) = 1.96

It is clear from the results of Table No. (11) the value of (Z) calculated Test (Z) Wolkoskin. statistical significance test, where it became clear that the concentration level of the enzyme (Interleukin 6) under study gave differences between the results of the pre- and post-measurement, where the value of (Z) -3.297, which is greater than the tabular (Z) value of 1.96.

Discussing the results of the third hypothesis:

Table (10) results indicate and figure (5) to mean and standard deviation of both the pre and posttest to The research sample In the concentration level of the enzyme (interleukin-6), as can be seen from the

results of the table (11)There are statistically significant differences between the mean of the two measurement scribal And the dimensionality in favor of the dimensional measurement of the research sample In a variable Enzyme level (interleukin-6) .

The **Researcher** sees that results of **Tables (8),(10) And Figure No(4),(6)** which refer to arithmetic mean and Standard deviation for both pre-measurement and measurement dimensional to The research sample at Enzyme level (interleukin-6) In Table (10) and the level of blood sugar in Table (8), where the researcher noticed that there was a change in the arithmetic mean between the two measurements (pre and post) for them, where the arithmetic mean of





the cardiac measurement of the rate of change of the fasting blood sugar level variable was (95,571 m/min). The dimensional measurement was (87.929 m/d) in a unit of measurement (mg/dL), with a rate of change of (8.69%), and also the arithmetic mean of the cardiac measurement of the rate of change for the variable blood sugar level was (117.357) mg/dL, and the dimensional measurement was (117.357) 108.929) mg/dL, with a rate of change of (7.74%), while the change in the arithmetic mean between the two measurements (before and after) reached them, where the arithmetic mean of the cardiac measurement of the rate of change of the enzyme concentration level variable (interleukin-6) Interleukin 6 (10.521) ng/L, and the arithmetic mean of the dimensional measurement was (7.919) ng/L, with a change rate of (32.85%).

Therefore, the **Researcher** believes that when interleukin-6 levels rise as a result of exercising, the level of sugar (glucose) in the blood rises, causing it to decrease (interleukin-6) again, and vice versa when the level of interleukin-6 levels decreases “as a result of the presence of glucose” the level of sugar (glucose) in the blood decreases as a result of exercising. Sports activity too.

These results are in agreement with the study Akihito Tomiya and others (2004) which confirmed that during intense sports training, it increases the levels of interleukin-6 (IL-6). IL-6 which leads to an increase in the feeling of fatigue. (15:503–508)

Also that low physical activity is associated with also increase the plasma

Interleukin 6 IL-6 But in case of Comforts, you may invalidate athletic training continuous. Many potential catalysts for the production of Interleukin 6 IL-6. So it seems that the focus Interleukin 6 Low IL-6 in plasma at rest as well. Response To exercise distinguish interleukin 6 response IL-6 after process occurs adapting to training continuous, Interestingly, the downregulation of Interleukin 6 Training-induced IL-6 may be compensated to some extent by increased sensitivity to IL-6, at least within trained skeletal muscle. (21)

Also, the lack of glucose in the blood Hypoglycemia The main danger to be avoided, especially during sports training, is by the athlete's intake of glucose. (12:25)

as he points out Michael Gleeson (2000) that the interleukin-6 response IL-6 For training, it is an indicator that shows that muscle glycogen stores have reached a critical state. And that this muscle needs blood glucose as a source of energy, and this signal also stimulates the liver to produce glucose to prevent a sharp drop in blood glucose concentrations. (27:529)

The results of this study are in agreement with Benet Pedersen (2001) in that interleukin-6 is objectively produced by working muscles and its concentration in plasma increases during exercise, and the production of interleukin-6 is proportional to the intensity and duration of training and the low contents of muscle glycogen (17: 329-337).

As Endurance exercises cause changes positive in jobs the device immunity where that one these changes It is an increase in the release of cytokines into the blood stream,





which leads to changes at The Device immune, and Cytokines are glycoproteins that are produced by communication between and within immune cells band members and member systems.

And from During Changes within the internal environment of the body as a result of the presence of some diseases Mice Blood poisoning and Various pollutants Tenable of discovery having a response strong of interleukin 6IL-6for these changes, as Show also That strenuous physical activity and Long term Increases the concentrations of many cytokines in the circulatory system, including cytokines interleukin 6IL-6 is Most notable.

As that Athletes who suffer from continuity weakness the performance, It is a condition that includes various symptoms such as fatigue and lower level any The ability to the performance, High levels of . are often also seen cytokines; (26)

Through these results, the **Researcher** reach The training program has a direct impact and strong onto improve Enzyme level (interleukin-6) , the researcher also noted through the results of the differences Between the averages of the two pre and posttest measurements, sports training leads to changes in Enzyme level (interleukin-6)where This is due to the increase in interleukin concentration rates in muscle cells as a result of blood analysis of the research sample.

where you see “Christian(2014) that exercise may increase production of interleukin-6 IL-6 and launch it The muscles contractile, This release may have multiple effects in The tissues working.(21)

This was confirmed by Steensberg And others (2000)In that there is an increase in the levels of interleukin-6 concentrations (IL-6) in human muscle cells as a result of sports training, where a difference was found in Enzyme level concentration (interleukin-6)(IL-6) in the arteries than in the veins, and it is clear from this that the working muscles release large amounts of (interleukin-6)(IL-6) in the blood during continuous training.(32:237-529)

As that Many previous studies It was concluded that the production of interleukin-6 IL-6duringthe exercise, where The majority focused of studies on changes Incident to interleukin-6with exercise short term, for example He found it in a race Marathon rises level interleukin 6IL-6 where may breach to100 times about him in the time of rest. (25:7)

Where he sees “Suzuki(2006)it's a Participating athletes are actually likely to experience a lot of stress, such as exercise arduous, hypothermia, internal intoxication, lack of sleep,It has been proven that All These factors affect response and secretion interlockn6IL-6in the body. (33:34)

Thus, the Researcher has answered the third hypothesis after Verify that the assumption is correct the third which states:

There are statistically significant differences between each of the measurement average essential and remote Enzyme Concentration Level(Interleukin6 I) have a disease Asthma, I have a sample of the research





and in favor of the dimensional measurement.

Conclusions:-

In light of the research objectives, hypotheses and procedures followed, and based on statistical treatments and analysis of the results reached by the researcher, and within the limits of the research sample, its characteristics and the method used, the researcher reached the following:

- 1- **The proposed training program** had a positive impact on the respiratory system variables as follows: - The rate of change reached to Forced vital capacity variable(FVC) Forced Vital capacity percentage (29.12%), and Also , the percentage change for the measurement was forced expiratory volume in the first second (FEV1)forced Expiratory Vital on One second where he reached The rate of change for this variable is (67.29)%, And the variable expiratory flow pressure(PEF) where he reached The rate of change for this variable is (37.42)%.
- 2- **The proposed training program** had a positive impact on physiological variables as follows :- Where the rate of change of the resting HR variable was (7.25%) , And the So was the rate of change to Measure The level of oxygen in the blood where he reached The rate of change for this variable is (2.42%), and measure fasting blood sugar where he reached The rate of change for this

variable is (8.69%),and measure blood sugar "mycosis “where he reached The rate of change for this variable is (7.74%),and measure systolic blood pressure where he reached The rate of change for this variable is (2.04%),and measure diastolic blood pressure where he reached The rate of change for this variable is (7.55%).

- 3- **The proposed training program** had a direct impact on the level of Enzyme concentration (interleukin-6) as follows :The rate of change of the enzyme concentration level variable (interleukin-6) was (32.85%), while the arithmetic mean of the cardiac measurement was (10.521) ng/L, and the dimensional measurement was (7.919) ng/L.

Recommendations:-

From search hypothesis and depending on the results obtained according to the researcher for the proposed training program The researcher recommends the following:-

- 1- Attention to the need to use the proposed aerobic training program to rehabilitate asthma patients patients by circulating on Public and private treatment hospitals, taking into account the continuous follow-up of these patients before, during and after the implementation of the program.
- 2- tracking The Physiological changes different asthma patients positive Was it negative or negative until the program is modified according to the changes that occur According to the current health status of each patient.
- 3- Personal protective equipment must be provided for individuals Those at risk different which cause There are various risks that affect the functions of the lungs and the respiratory system, such as





breathing masks and other personal protective equipment.

- 4- necessity Annual chest x-ray For patients with asthma at-risk in order to recognize the disease in its early stages.
- 5- preview and evaluation The patients Whose suffer From illnesses the device respiratory And that conducting checkups Diagnostic

Specialized which Include Test Careers lung.

- 6- training Patients bronchial asthma, and inflammation pulmonary, and inflammation popular chronic , On Utilization pharmaceutical extended for the people pneumatic, and measure their response her down.

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