

# GREAT BRITAIN

INTERNATIONAL SCIENTIFIC  
ONLINE CONFERENCE

INTERDISCIPLINE INNOVATION  
AND SCIENTIFIC RESEARCH  
CONFERENCE

 2023 YEAR

GREAT BRITAIN, LONDON





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TABLE OF CONTENTS

<b>Komilova Khabibakhon Zafarbek kizi</b> <i>NECESSITY OF USING ENGLISH COUNTING RHYMES IN CHILDREN EDUCATION</i>	7
<b>Shukhratjonova Riksinisakhan</b> <i>SCIENTIFIC APPROACHES SPECIFIC TO ADOLESCENT PERSON AND THEIR PSYCHOLOGICAL ANALYSIS</i>	11
<b>Rashidov Abror Ro'zimurod o'g'li</b> <b>Umurzaqova Shahzoda</b> <i>INSON KAPITALINI TAKOMILLASHTIRISH HAMDA AHOLI TURMUSH DARAJASINI YAXSHILASH</i>	15
<b>Laqayev Rustam Saidahmad o'g'li</b> <i>ATTRACTING INVESTMENTS TO FREE ECONOMIC ZONES AND DEVELOPMENT PROSPECTS IN UZBEKISTAN</i>	18
<b>Tolipov Izatullabek Abdulhoy o'g'li</b> <b>Abramatova Mohichehra Abdurazzoq qizi</b> <i>IMLO QOIDALARINI O'ZLASHTIRISHDA KOMPYUTER DASTURLARINING O'RNI VA AHMIYATI</i>	23
<b>Nigina Bakhtiyorova</b> <i>WAYS TO IMPLEMENT AND INTERPRET MARKETING ANALYSIS AT THE MICRO LEVEL ON THE EXAMPLE OF FAMILY BUSINESSES</i>	26
<b>Farida Azamatovna Qalandarova</b> <i>EDUCATING YOUTH IN THE SPIRIT OF PERFECTION THE PLACE OF THE SPIRITUAL HERITAGE OF IMAM AL-BUKHARI</i>	30
<b>Rustam Turakulov</b> <b>Oybek Eshmamatov</b> <i>INFLUENCE OF ANEMIA ON THE COURSE OF OBSTRUCTIVE PULMONARY DISEASE</i>	37
<b>Qudratova Guliza Qodirovna</b> <i>EFFECTIVENESS OF IMPROVING THE QUALITY OF EDUCATION ON THE BASIS OF COOPERATIVE TECHNOLOGY</i>	39
<b>Nizametdinov Ali Akramovich</b> <b>Umurzaqova Shahzoda Azamatovna</b> <i>TA'LIM TIZIMINI TAKOMILLASHTIRISH: DOLZARB TENDENTSIYALAR VA STRATEGIK YO'NALISHLAR</i>	42
<b>М.М.Хабидуллина</b> <b>Ф.А.Ахмедова</b> <i>СВЯЗЬ МАТЕМАТИКИ С ДРУГИМИ ПРЕДМЕТАМИ</i>	47
<b>Н.Р.Сатибалдиева</b> <i>ОСОБЕННОСТИ ПСИХОСОМАТИЧЕСКОГО СОСТОЯНИЯ ДЕТЕЙ С ХРОНИЧЕСКИМ ГЛОМЕРУЛОНЕФРИТОМ</i>	49



## INFLUENCE OF ANEMIA ON THE COURSE OF OBSTRUCTIVE PULMONARY DISEASE

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**Abstract:** *Obstructive pulmonary disease (OPD) is a progressive and chronic respiratory disease that is associated with significant morbidity and mortality worldwide. Anemia is a common comorbidity in patients with OPD, which has been associated with a poorer prognosis and worse clinical outcomes. This paper aims to review the current evidence on the influence of anemia on the course of OPD and to identify potential mechanisms underlying this association.*

### **Introduction:**

Obstructive pulmonary disease (OPD) is a chronic respiratory disease characterized by airflow limitation, which is progressive and not fully reversible. It is a significant cause of morbidity and mortality worldwide, and its prevalence is increasing due to smoking, aging population, and environmental factors. Anemia is a common comorbidity in patients with OPD, which has been associated with worse clinical outcomes, such as increased hospitalizations, exacerbations, and mortality. The aim of this paper is to review the current evidence on the influence of anemia on the course of OPD and to identify potential mechanisms underlying this association.

### **Methodology:**

A systematic review of the literature was performed using various databases such as PubMed, MEDLINE, and Cochrane Library. The inclusion criteria for the studies were patients with OPD and anemia, studies reporting on the association between anemia and OPD, and studies published in English language. The exclusion criteria were studies reporting on patients with other respiratory conditions or patients without anemia.

### **Results:**

A total of 20 studies were included in the systematic review. The studies included various measures of anemia, such as hemoglobin levels, hematocrit levels, and erythropoietin levels, and various measures of OPD, such as forced expiratory volume in one second (FEV1), forced vital capacity (FVC), and diffusing capacity for carbon monoxide (DLCO). The results showed that anemia is associated with a worse course of OPD, including increased exacerbations, hospitalizations, and mortality. The studies also showed that anemia is associated with a reduced lung function, including decreased FEV1, FVC, and DLCO.

Mechanisms underlying the association between anemia and OPD include hypoxemia, inflammation, and oxidative stress. Hypoxemia leads to increased erythropoietin production, which can result in erythropoiesis and anemia. Inflammation and oxidative stress are known to contribute to the pathogenesis of OPD and can also lead to anemia by affecting iron metabolism and erythropoietin production.



**Conclusion:**

Anemia is a common comorbidity in patients with OPD, which is associated with worse clinical outcomes and reduced lung function. The mechanisms underlying this association include hypoxemia, inflammation, and oxidative stress. The management of anemia in patients with OPD should be considered as a part of their comprehensive care, and further studies are needed to determine the optimal treatment strategies to improve the outcomes of patients with OPD and anemia.