

значений витамина D в крови. Приём профилактических доз  $\geq 800$  МЕ колекальциферола в сутки ассоциируется с лучшей обеспеченностью 25(OH)D, по сравнению приёмом  $< 800$  МЕ в сутки.

3. Обеспеченность 25(OH)D, но не анамнез приёма 400-2000 МЕ колекальциферола ассоциируется с физическим функционированием пациенток в поздней постменопаузе (тесты кистевой динамометрии и тандем).

4. Ассоциации более высоких индивидуальных рисков FRAX, большей встречаемости низкоэнергетических переломов и количества переломов в целом в группе принимавших колекальциферол в дозе 400-2000 МЕ в сутки может свидетельствовать о более высокой мотивации перенесших переломы к приему колекальциферола.

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### **Владимирова Е.В., Гусева А.Д, Дулепина Д.А, Ярунина И.В. БОЛЕЗНИ ПЕЧЕНИ, ВЫЗЫВАЕМЫЕ СТРЕССОМ. ЖИРОВАЯ НЕАЛКОГОЛЬНАЯ БОЛЕЗНЬ ПЕЧЕНИ**

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LIVER DISEASE CAUSED BY STRESS. FATTY NON-ALCOHOLIC  
LIVER DISEASE**

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**Аннотация.** На сегодняшний день стресс – это повсеместно распространенное явление, которое оказывает пагубное влияние на многие органы, в особенности на печень, нарушая функционирование этой железы и вызывая тяжелые заболевания. В этой статье мы рассмотрели строение печени, ее функции и одну из ее болезней, появление которой может быть связано со стрессом, - неалкогольная жировая болезнь печени (НЖБП).

**Annotation.** Today, stress is a ubiquitous phenomenon that has a detrimental effect on many organs, especially the liver, disrupting the functioning of the gland and causing serious ailments. This article contains the structure and functions of the liver, and one of liver's diseases that can be associated with stress, non-alcoholic fatty liver disease (NAFLD).

**Ключевые слова:** печень, стресс, болезнь, строение печени, функции печени, неалкогольная жировая болезнь печени.

**Key words:** liver, stress, disease, the structure of the liver, functions of the liver, non-alcoholic fatty liver disease.

purpose of the study - find out what stress can lead to in relation to the liver.

### **Introduction**

Stress is a natural physical and mental reaction to life experiences. Anything from everyday responsibilities like work and family to serious life events such as a new diagnosis or war can trigger stress. For immediate, short-term situations, stress can be beneficial to our health. It can help you cope with potentially serious situations. The condition, when our body responds to stress by releasing hormones that increase your heart and breathing rates, is called “stress response”.

The “stress response” is the body's mechanism for coping with this stress and is mediated by the release of steroid hormones. People often complain of a deterioration in the state of the digestive system, in particular the liver, as a result of stress; consider how stress affects the digestive system as a whole.

Under normal circumstances our digestive system should be able to go about its daily task of mixing, contracting and absorbing, to help break down our food and begin extracting the nutrients and vitamins that we require for good health. However, when stress hormones are raised, our digestive system does not function properly. The muscle contraction of the intestine is impaired, diarrhea appears and the colon is inhibited.

**The goal of the research** - is to find out what stress can lead to in relation to the liver. The relationship between stress and liver inflammation is not fully understood.

Given the widespread effects of glucocorticoids and catecholamines on immune cell function, it is highly likely that stress has a significant impact on the inflammatory response of the liver.

### **Discussion**

Let's look at the structure of such an important gland as the liver. The liver is situated on the right side of the abdomen below the lungs and above the stomach. Often classified as both an organ and a gland, it has a wedge-like shape and is made up of two distinct lobes. These lobes are separated by the falciform ligament, which along with the two triangular ligaments and coronary ligament, helps anchor the liver to the diaphragm.

The right lobe of the liver is the larger part of the liver and includes two other lobes: the caudate lobe and quadrate lobe. On the left lobe, the liver can further be divided into two different sections. Furthermore, the leftmost section is divided into 4 segments by a fissure called the porta hepatis.

The liver receives blood from the hepatic artery and portal vein. The hepatic vein transports oxygen-rich blood to the liver, while the portal vein collects blood containing digested nutrients from the gastrointestinal system, spleen, and pancreas. These two blood vessels disperse into smaller capillaries which then lead into the functional lobules of the liver. As you can see by its structure, the liver is a complex organ. It not only supports the digestive process in a variety of ways, but also assists with detoxification, metabolism, immune function, and storage of vital body substances. Consequently, any violation of the liver can lead to irreversible consequences and diseases. stress in particular can be the cause of many disorders. this can lead to a disease such as Non-alcoholic fatty liver disease (NAFLD). There are many scientific studies proving stress found to be a risk factor for NAFLD.

Non-alcoholic fatty liver disease (NAFLD) is the term for a range of conditions caused by a build-up of fat in the liver. It's usually seen in people who are overweight or obese. A healthy liver should contain little or no fat. Early-stage NAFLD does not usually cause any harm, but it can lead to serious liver damage, including cirrhosis, if it gets worse. Having high levels of fat in your liver is also associated with an increased risk of serious health problems, such as diabetes, high blood pressure and kidney disease. If a person already has diabetes, NAFLD increases the chance of developing heart problems. If detected and managed at an early stage, it's possible to stop NAFLD getting worse and reduce the amount of fat in your liver.

NAFLD develops in 4 main stages. The main stages of NAFLD are:

1. simple fatty liver (steatosis) – a largely harmless build-up of fat in the liver cells that may only be diagnosed during tests carried out for another reason.
2. non-alcoholic steatohepatitis (NASH) – a more serious form of NAFLD, where the liver has become inflamed; this is estimated to affect up to 5% of the UK population
3. fibrosis – where persistent inflammation causes scar tissue around the liver and nearby blood vessels, but the liver is still able to function normally

4. cirrhosis – the most severe stage, occurring after years of inflammation, where the liver shrinks and becomes scarred and lumpy; this damage is permanent and can lead to liver failure (where your liver stops working properly) and liver cancer

It can take years for fibrosis or cirrhosis to develop. It's important to make lifestyle changes to prevent the condition getting worse.

There are not usually any symptoms of NAFLD in the early stages. Occasionally, people with NASH or fibrosis (more advanced stages of NAFLD) may experience:

- a dull or aching pain in the top right of the tummy (over the lower right side of the ribs)

- extreme tiredness

- unexplained weight loss

- weakness

- If cirrhosis (the most advanced stage) develops, you can get more severe symptoms, such as yellowing of the skin and the whites of the eyes (jaundice), itchy skin, and swelling in the legs, ankles, feet or tummy (oedema).

Currently, the pathogenesis of NAFLD due to chronic psychological stress has not been fully elucidated. It could be multifactorial. Of the several possible mechanisms, the most important is that excessive stress content could lead to abnormal body fat decomposition, resulting in increased blood glucose levels, and insulin resistance. The persistence of insulin resistance could lead to liver disorders and glucose and lipid metabolism disorders. In NAFLD, insulin resistance is the core mechanism of hepatic steatosis.

Depression, anxiety, and other negative emotions are psychological responses to stress. They play a role in the liver's inflammatory response and may induce NAFLD. Thus, psychological intervention in patients with NAFLD helps to promote the recovery of fatty liver and co-existing diseases.

Nowadays stress is resulting of psychological and physiological changes that may place persons at risk for disease. Although sensing and reaction to stress has evolved to promote adaptation to a new condition, modern habits and lifestyles present challenges that could render individuals susceptible to physical and mental stress.

### **Conclusion**

Finally, we can say that this work allowed us to understand the following: psychological stress exacerbates liver diseases, in particular NAFLD. Many studies have shown evidence of the essential roles of chronic psychosocial stress in the etiology and progression of obesity and metabolic problems. As the result of research, we came to the conclusion that chronic psychological stress could lead to systematic inflammatory activity; keeping mental health in order, avoiding extreme shocks and constant stress will help not only alleviate many diseases, but also prevent them.

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ИСХОДЫ КРАЙНЕ ТЯЖЁЛОГО ТЕЧЕНИЯ НОВОЙ  
КОРОНАВИРУСНОЙ ИНФЕКЦИИ COVID-19 У БЕРЕМЕННОЙ  
ЖЕНЩИНЫ С СИНДРОМОМ БЛАНДА-УАЙТА-ГАРЛАНДА**

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OUTCOMES OF THE EXTREMELY SEVERE COURSE OF THE NEW  
CORONAVIRUS INFECTION COVID-19 IN A PREGNANT WOMAN WITH  
BLAND-WHITE-GARLAND SYNDROME**

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**Аннотация.** В статье приведено клиническое наблюдение благоприятного исхода крайне тяжёлого течения новой коронавирусной инфекции COVID-19 и родоразрешения беременной женщины с хирургически скорректированным синдромом Бланда-Уайта-Гарланда и протезированным митральным клапаном. Описаны изменения последа, свидетельствующие о формировании плацентарной недостаточности. Показано, что первостепенное значение для успешного ведения таких пациенток и благоприятного перинатального исхода имеют мультидисциплинарный подход и высокий уровень современных организационных и медицинских технологий.

**Annotation.** The article presents a clinical observation of a favorable outcome of an extremely severe course of a new coronavirus infection COVID-19 and delivery