collagen, which forms the protein framework of the skeleton bones. Copper deficiency is almost not observed in healthy people.

Ions of trivalent chromium are quickly absorbed and, in general, have positive effect on the human body, unlike hexavalent ions of chromium, which are a recognized carcinogen. They take part in the regulation of sugar balance in the body by increasing the sensitivity of cells to insulin, as well as in the metabolic processes of carbohydrates; they provide the breakdown of fats and lower cholesterol, minimizing the risk of formation of cholesterol plaques and the development of atherosclerosis.

Zinc participates in biochemical processes. It regulates metabolism, supports reproductive function, participates in the synthesis of insulin and testosterone, has antioxidant effect, participates in the formation of bone tissue, helps to preserve normal functioning of the musculo-skeletal system, and prevents the development of rheumatism and arthritis.

Based on the analysis of literary data, we have reached the conclusion that the result of improper nutrition is rapid fatigue and weakness of the immune system. It has been determined that in order to balance the appropriate amounts of the specified d-bioelements, people need to eat more fruits, nuts, seafood, beef and legumes, as well as reduce the consumption of leafy vegetables, bread, cereals and poultry meat.

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EFFECTS OF MELATONIN ON OXIDATIVE STRESS AND DIABETES-INDUCED CHANGES IN KIDNEYS

Diabetes mellitus type 2 (T2DM) is associated with various renal complications, including alterations in protein profiles and oxidative stress. Our study deals with the effects of melatonin on renal function and protein distribution in rats with experimental T2DM. Oxidative stress contributes to the formation of beta-amyloid

plaques, leading to neurodegenerative and cardiovascular diseases [5]. Moreover, inflammatory processes and ion redistribution further intensify protein aggregation [2, 6].

Rats were induced with streptozocin to develop T2DM and subsequently treated with melatonin. Various biochemical and physiological parameters were monitored to assess the impact of melatonin on kidney function, oxidative stress markers, enzyme activities, ion exchange, and protein ratios in the kidneys.

In rats with T2DM, there was a notable increase in the total protein content and kidney mass. The levels of TBA-active compounds rose by 106.3%, whereas superoxide dismutase decreased by 27.4%. Conversely, catalase activity surged by 147.1%. Kidney homogenates showed heightened gamma-glutamyltransferase (GGT) activity. Urea and creatinine concentrations, indicative of impaired kidney function, were significantly elevated. Additionally, ion concentrations, specifically potassium and chlorine, exhibited significant elevations in rat kidney homogenates. Alterations in protein ratios were evident, with a surge in high molecular weight proteins and a decline in low molecular weight proteins.

Melatonin administration showcased promising therapeutic effects. It reduced TBA-active compounds by 34.5%, advanced superoxide dismutase levels by 19.7%, and curtailed catalase activity by 54.8%. Melatonin also normalized creatinine concentrations and exhibited a moderate stabilizing effect on protein ratios. Furthermore, it mitigated GGT activity, and normalized ion concentrations.

Melatonin's multifaceted influence on renal physiology and biochemistry in T2DM conditions is noteworthy. Its antioxidant properties counteract oxidative radicals and inhibit pro-oxidant production while stimulating endogenous antioxidant production. Melatonin also possesses anti-inflammatory and antidiabetic properties. Its role in influencing insulin or glucagon production via melatonin receptors in the pancreas provides a biochemical basis for understanding its impact on pancreatic function and glucose homeostasis. Studies have shown melatonin's potential to improve dysglycemia by inhibiting hepatic gluconeogenesis and activating hypothalamic Akt through MT1 and MT2 membrane receptors [4]. Furthermore, melatonin's ability to prevent pancreatic islet degradation and improve insulin sensitivity highlights its potential clinical application against T2DM [1, 3].

In conclusion, melatonin administration, particularly at 10 mg/kg dosage, displayed a multi-vector impact on rat kidneys under stress conditions. It inhibited

free radical processes, stimulated internal antioxidant defence, normalized metabolism, protein, and ion exchange, reduced inflammation, and exhibited anti-diabetic effects. Melatonin's positive effect on biochemical indicators and restoration of the rat's entire body homeostasis was evident. Thus, our findings advocate for the utilization of melatonin in the prevention and treatment of oxidative stress-related complications in type 2 diabetes.

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THEORETICAL STUDY OF METHODS OF DRYING VEGETABLES

Drying is the optimal way to obtain long-term storage products with maximum preservation of their original quality, without the use of preservatives and food additives. Dried products are a promising raw material for restaurant businesses, especially for fast food outlets, such as bistros and cafés.

The consumers of these types of products are power structures, special contingent (geologists, athletes, astronauts), the population of Ukraine during the war etc.