

The Scientific Foundations

Part 2

We will continue to talk about **carbohydrates**. **Glucose** is a **monosaccharide**, because it is a single molecule. **Sugar** is a **disaccharide** because it is composed of two molecules: **glucose** and **fructose** linked together. The **carbohydrates** found in foods such as **bread**, **potatoes**, **pasta**, and so on are **polysaccharides** mixed with **monosaccharides**. For example, **bread** is composed of **starch**, which is a **glucose polysaccharide**, meaning many **glucose molecules** linked together. Bread also contains **monosaccharides**: **glucose**, **fructose**, **maltose**.

While you chew bread in your mouth, already in the first seconds a part of the **starch** is broken down by **salivary enzymes** into free **glucose molecules**, which, together with other **monosaccharides**, are absorbed into the **bloodstream** from the **oral cavity**.

Thus, **monosaccharides** are found in the **blood** and provide **energy** to our body. It should be noted that an intermediate **metabolite** of **glucose** is **ethyl alcohol**. Therefore, after a large meal, even if consumed without a glass of red wine, we feel as if we were **drunk**, and the desire to take a **nap** arises.

The levels of **free sugar molecules**, especially **glucose**, in the **blood** are regulated by **insulin** and **adrenaline**. Certainly, there are other **hormones**, but we will mention only these two. **Insulin** lowers excessive **sugar levels**, converts **glucose** into **fats** and stores them in **adipose tissue**, and synthesizes **glycogen** in the **muscles** and in the **liver**.

Adrenaline, on the other hand, regulates processes opposite to those of **insulin**. When **sugar levels** decrease, **adrenaline** releases **glucose** from **glycogen** in the **muscles** and the **liver**.

The **Tour de France cyclist**, whom we met in the previous article, is full of **adrenaline** and other **hormones** that consume everything they find around to provide the **energy** needed to pedal. For this reason, at a certain point, he must eat in order to preserve himself as a **whole organism**. For this same reason, professional cyclists use **anabolic hormone injections** to recover their **muscles** after a devastating ride.

After talking about **sugars**, I wanted to talk to you about **fats** and **proteins**, but since we have already begun to discuss **hormones**, I will continue the discourse on them. **Ergo**, all **biochemical processes** of our body are regulated by various **hormones**, **amines**, **peptides**, and **mediators**. Everything starts from the **central nervous system (CNS)**. For example, after bad winter weather, suddenly a sunny day appears, birds sing, and daisies bloom. Thus, the person who was **depressed** yesterday, seeing

all this, becomes cheerful, breathing deeply the unmistakable **spring fragrance**.

The **eyes** that see all this beauty are, in reality, parts of the **CNS** and send impulses to the **hypothalamic–pituitary system**, which is in the **brain**. That system produces, for example, **gonadotropic hormones**, which induce the **endocrine system** to produce **sex hormones** such as **testosterone**. The latter stimulates **libido**, people that same evening make more **love** than usual, and **poets write songs**.

Thus, **hormones** serve to regulate and coordinate the **vital functions** of our body. Sometimes, when I go to the **gym**, my wife asks me, “Where are you going?” and I reply, “To get **hormones**.”

In my essay “**Athletic Preparation in Martial Arts**”, which is available on the website in **PDF format**, and which can be read and downloaded **for free**, the **endocrine system** and the **hormones** that interest us are described scrupulously.

My **rejuvenation system** is precisely aimed at inducing the production of **anabolic hormones**, which stimulate **protein synthesis** in our body, that is, **rejuvenation**. In addition to **protein synthesis**, hormones such as **testosterone** and **somatotropin** participate in the **cleansing of blood vessels** from the inside, removing **plaques** from the walls.

Our body, if there are no **innate genetic diseases**, is a **perfect and self-renewing system**, where all **metabolic processes** occur in **harmony**. We must be very careful before taking a **medicine**. For example, doctors often prescribe to patients pills containing **cortisol**. What is **cortisol**? It is a **hormone** that can bring **imbalance** to our body. Yes, of course, in severe cases it must be taken, but people take **cortisol** like **candies**. This is obviously **unacceptable**.