Principle of Transformation between Fibrous Connective Tissue and Adipose Tissue

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Principle of Transformation among Muscle Tissue, Fibrous Connective Tissue and Adipose Tissue

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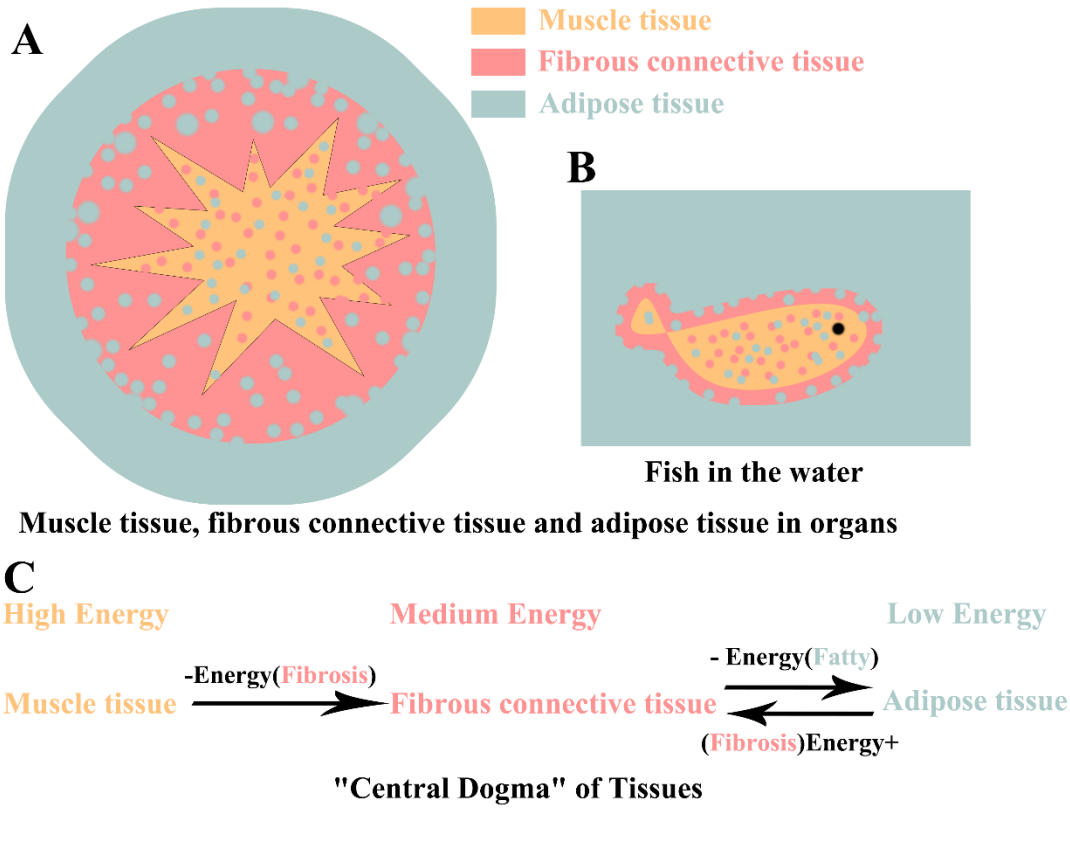

Figure 1. Principles of transformation among muscle tissue, fibrous connective tissue and adipose tissue ("Central Dogma" of Tissues)

Main text

Higher pressure (higher energy) can promote fibrous connective tissue remodeling (Fibrosis) [1-14], while lower pressure (lower energy) can make the existing fibrous connective tissue "Desertification" (Fatty) [15]. The foam cells from atherosclerotic plaque are essentially the same as adipocytes[16]. Perivascular adipose tissue is a component of the adventitia[17]. The boundary among muscle tissue, fibrous connective tissue and adipose tissue is not clear (Figure 1)[16]. They can be transformed into each other, but their principles are unclear. **This paper would put forward the "central dogma" of tissues.**

The human body is composed of bone and muscle systems. In addition, fibrous connective tissue and adipose tissue fill this framework (Figure 1A). From a single fertilized egg to adulthood, aging till death, the muscle tissue is in the process of migration, development, remodeling to failure. In this process, fibrous connective tissue and adipose tissue are the coats of muscle tissue, so that muscle tissue can change their position (swimming), size (Development), shape (remodeling) or degeneration in the coats (Figure 1A). After muscle tissue migration, development, remodeling or degeneration, there must be fibrous connective tissue or adipose tissue to fill these positions to avoid excessive cavities (Figure 1A). For ease of understanding, I compare muscle tissue to living fish and fibrous connective tissue or adipose tissue to water (Figure 1B). The swimming, growth and development of fish are inseparable from water, and the swimming, growth and development of fish can also change the hydrodynamic properties (energy properties) of water (Figure 1B). Similarly, the migration, development, remodeling or degeneration of muscle tissue are inseparable from the surrounding fibrous connective tissue or adipose tissue (Figure 1A). At the same time, the migration,

development, remodeling or degeneration of muscle tissue also change the mechanical properties (energy properties) of the surrounding fibrous connective tissue or adipose tissue. Therefore, the muscle tissue interacts with the surrounding fibrous connective tissue or adipose tissue (Figure 1). In this process, the role of force (energy) is very important. The change of mechanics (energy) can change the composition ratio of fibrous connective tissue and adipose tissue (Figure 1C). Due to the difference of energy properties among muscle tissue, fibrous connective tissue and adipose tissue, they are named 3 different energy states (Figure 1C). Muscle tissue releases energy and would form fibrous connective tissue (Figure 1C). Fibrous connective tissue releases energy and would form adipose tissue (Figure 1C). After absorbing energy, adipose tissue would transform into fibrous connective tissue (Figure 1C). This is similar to the electron transition. The "central dogma" of tissues provides a theoretical basis for patients with metabolic syndrome to easily form adipocytes (foam cells), obesity, atherosclerotic diseases, and exercise to lose weight, etc.

Higher incidence of atherosclerotic diseases and obesity in patients with metabolic syndrome

Patients with metabolic syndrome have abnormal cell energy production or utilization, and the cells are in a low energy state for a long time. According to the "central dogma" of tissues (Figure 1C), a large number of adipose tissue and foam cells would easily form and thus increase the incidence of obesity and atherosclerotic diseases.

Effect of exercise on obesity

On the one hand, exercise can increase the energy generation and consumption, so as to reduce the weight of the body. On the other hand, exercise can increase the movement of muscle

tissue, which would transfer force (energy) to adipose tissue. According to the "central dogma" of tissues (Figure 1C), adipose tissue would be transformed into fibrous connective tissue, which would reduce the fat content. However, if people who exercise for a long time are rich in fibrous connective tissue, if exercise is significantly reduced, according to the "central dogma" of tissues (Figure 1C), it would significantly increase the fat content.

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