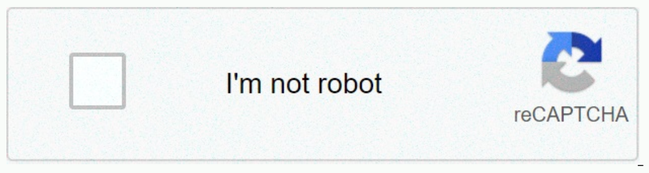

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What is the relationship between dna genes chromosomes and chromatin

To avoid errors during replication, the cells have a proofreading function that ensures that the bases are properly paired. There are also chemical mechanisms for restoring DNA that has not been properly copied. However, since the billion base couple is involved, and the complexity of the protein synthesis process, defects can happen. Such defects can occur for a number of reasons (including exposure to radiation, drugs or viruses) or for no apparent reason. Smaller versions of DNA are very common and occur in most people. Most variations do not affect subsequent specimens of the gene. Repeated defects in later specimens are called mutations. Inherited mutations are the ones that can be passed on to the offspring. Mutations can be inherited only if they affect reproductive cells (sperm or eggs). Mutations that do not affect reproductive cells affect the descendants of the mutant cell (for example, they become cancer), but they do not pass it on to the offspring. Mutations can be unique to a person or family, and most harmful mutations are rare. Mutations become so common that they affect more than 1% of the population called polymorphisms (for example, human blood types A, B, AB, and O). Most polymorphisms have little or no effect on the phenotype (the actual structure and function of the body). Mutations can affect small or large segments of DNA. Depending on its size and location, the mutation has no obvious effect, it can either alter the amino acid sequence in a protein or reduce the amount of protein produced. If the protein is in another amino acid sequence, it can work differently or not at all. A missing or non-working protein is often harmful or deadly. For example, in phenylketonuria, the mutation is due to the absence or absence of the enzyme phenylalanine hydroxylase. This deficiency allows the amino acid phenylalaline (absorbed in the diet) to accumulate in the body, ultimately due to severe mental disability. In rare cases, the mutation introduces a beneficial change. For example, in the case of sickle cell gene, when a person inherits two copies of the pathological gene, the person will develop sickle cell disease. However, if a person inherits only one copy of the sickle cell gene (called carrier), the person develops some protection against malaria (a blood infection). Although malaria protection can help the carrier survive, sickle cell disease (a person who has two copies of the gene) causes symptoms and complications that can shorten lifespan. Natural selection refers to the notion that mutations that impair survival in a given environment are less likely to be inherited on offspring (and thus less common in the population), while survival-enhancing mutations gradually become more common. Thus, favorable mutations, although initially eventually become common. The slow changes that occur over time are caused by mutations and natural selection in a crossing population combined to be called evolution. Not all gene abnormality is harmful. For example, the gene that causes sickle cell disease also protects against malaria. Your genes are part of what makes you who you are. You're different from everyone else alive right now, and everyone who's ever lived. Dna but his genes also mean he probably looks like the rest of the family. For example, did they tell you it was your mother's eyes or your grandmother's nose? Genes affect how we look from the outside and how we work from the inside. They contain the information our bodies need to make chemicals called proteins. Proteins make up the structure of our body, as well as playing an important role in the processes that keep us alive. Genes are made from a chemical called DNA, which is short for deoxyribonukleic acid. The DNA molecule is a double spiral: that is, two long, thin strands twisted around each other like a spiral staircase. DNA is a double helix that shows base pairs, the sides of sugar and phosphate molecules. Degrees are pairs of chemicals that are called nitrogen bases or, in short, bases. There are four types of bases: adenine (A), timin (T), guanin (G) and cytosine (C). These bases link in a very special way: The always pair t, and c is always a pair of g.The DNA molecule has two important properties. You can make a copy of yourself. If you drag the two strands apart, each can be used to make the other (and a new DNA molecule). It can carry information. The order of the bases along the thread is a code - the code for making proteins. Genes The gene is a long DNA that encodes a specific protein. So, for example, a gene code for the protein insulin, which plays an important role in making the body to control the amount of sugar in the blood. Genes are the basic units of genetics. Humans contain between 20,000 and 25,000 genes. These genes only account for about 3 percent of our DNA. The function of the remaining 97 percent is still unclear, although scientists think it may have something to do with regulating genes. Chromosomes If you took the DNA out of every cell in your body and lined it up, it would end up with 6,000 million miles of fiber (but it's very, very thin)! To store this important substance, DNA molecules are tightly wrapped around proteins called histones to make structures called chromosomes. Packing DNA into chromosomes Human beings have 23 pairs of chromosomes in each cell, resulting in a total of 46 chromosomes. A photo of a person's chromosomes, arranged by size, is called a karyotype. The sex chromosomes determine whether you are a boy (XY) or a girl (XX). Other chromosomes are called autosomes. The karyotype of a man since the largest chromosome, chromosome 1, contains about 8000 genes. The smallest chromosome, chromosome 21, contains about 300 genes. (Chromosome 22 should be the smallest, but scientists made a mistake when they first numbered them!). The DNA that contains your genes is stored in your cells in a so-called nucleus. The diagram of the animal cell shows the core back to the top of this work under license creative commons license. License.