Polymers you can eat

and

Polymers you can not eat

by

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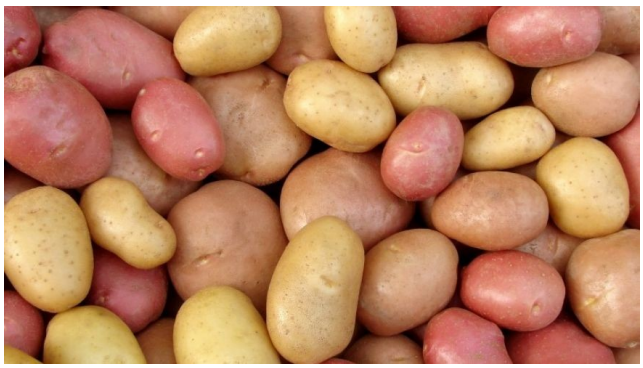
6/23/2017

Egg whites contain a protein polymer, ovalbumen, where each strand has 385 amino acid monomers linked together. Strands are held together by water molecules.	
	eggs
Gelatin is a protein polymer where each strand has about 1000 amino acid monomers linked together. Strands are held together by water molecules.	
	gelatin

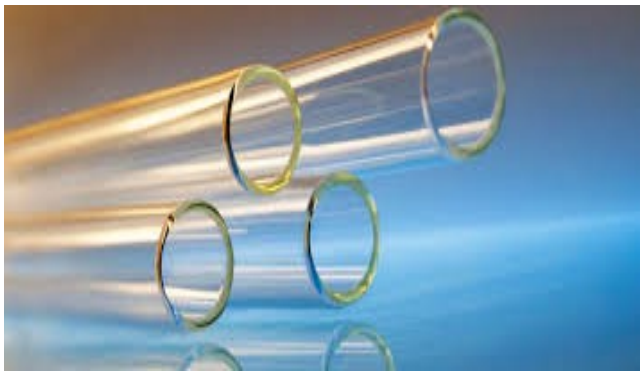
Meat contains a protein polymer, myosin, where each strand has 2000 amino acid monomers linked together. Strands are held together by water molecules.	
	meat
Olive oil is a collection of fatty acid polymer strands. The most important one is oleic acid where each strand has 18 carbon monomers linked together.	
	olive oil

Rock candy is a collection of sugar polymer strands where dimers of the sucrose are linked together in three dimensions by weak hydrogen bonds.	 rock candy
Apples contain a branched polymer amylopectin that links about 50,000 glucose monomers. These polymers break down to glucose as the apple ripens.	 apples

Potatoes contain a branched polymer amylopectin that links about 50,000 glucose monomers. You have to cook potatoes to break the polymer to shorter pieces.	
	potatoes
Wood contains a linear polymer cellulose that links about 50,000 glucose monomers. We can't eat wood because we lack the proper digestive enzymes.	
	wood

Cotton contains a linear polymer cellulose that links about 50,000 glucose monomers. We can't eat cotton but me make clothing out of it.	
	cotton
Rocks contain a 3-dimensional matrix of SiO_2 monomers with other added atoms. We can't eat rocks because the internal bonds are too strong for our digestive enzymes.	
	rocks

Glass contains a 3-dimensional matrix of nearly pure SiO_2 monomers with a few added atoms. We can't eat glass because the internal bonds are too strong for our digestive enzymes.



glass

Metals contain a 3-dimensional matrix of pure metal atoms like copper or lead or iron. We can't eat metal because the internal bonds are too strong for our digestive enzymes.

Copper

Lead

Tin

Nickel

Steel

Zinc

metals

There are many different types of plastics. These include: polyethylene #1, polyvinyl chloride #3, polypropylene, #5 and polycarbonate #7. All are made of monomers linked together. We can't eat plastics because we lack the proper digestive enzymes.

Plastics

High density polyethylene, #2, is a common, linear plastic polymer made of 10,000s of linked -CH_2-CH_2- monomers. HDPE is used to make milk, detergent and gasoline containers. We can't eat HDPE plastic because we lack the proper digestive enzymes.

HDPE #2