WHY DOES MY CHEESE CRUNCH?

That crunch that comes with some aged cheeses arises from crystals. The two main culprits being calcium lactate crystals and tyrosine crystals.

CALCIUM LACTATE

The white powdery smear found on many aged cheddars are crystals of the compound calcium lactate. Calcium lactate is formed as the cheese ages by lactic acid reacting with calcium in the cheese. They don’t have any flavor themselves, but usually signify a piece of well-age cheese that will be flavorful.

TYROSINE

Tyrosine is an amino acid. Amino acids are the things that make up proteins. When several amino acids are joined together we call those peptides, when peptides get really long, we just call those full-blown proteins.

Tyrosine crystals are a result of the cheese having *Lactobacillus helveticus* as a bacterial culture (or adjunct). Which is used in a lot of hard italian and dutch-style cheeses, among others. This bacteria has enzymes that break down peptide (protein) fragments into individual amino acids, tyrosine being one of them. It uses some of the tyrosine for nutrition (i.e. eats it), but has more than it can use. So it starts to build up and excess tyrosine eventually forms crystals.

Tyrosine is very insoluble in water, so the high amounts surrounding *L. helveticus* colonies form distinct crystal specks as opposed to the powdery smear usually associated with calcium lactate.