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Advanced glycation end products-- they're actually reactive metabolites that are formed during normal metabolism in the body. The problem with these AGEs, as we call them, are actually that they accumulate in our bodies as we age. So from the day we are born, to the day we die, these AGEs accumulate in our organs and tissues. And actually that's detrimental to the tissues. So AGEs have actually been associated with virtually all chronic diseases-- and especially diabetes cardiovascular disease, cancer, and even Alzheimer's as well.

TURNER:

The Western lifestyle is actually very conducive to increasing AGEs in the body. So in the past, it was the body produce AGEs when it breaks down sugar for metabolism, but now we're actually throwing a lot of these foods in our bodies, and they're high in AGEs as well. And that's actually adding to the AGE levels in our bodies. And that could be one of the reasons why we see chronic diseases occurring earlier, because people are eating more of these AGEs, and actually more severe as well.

The AGEs themselves, because they're linked to lifestyle, that's the same things that are actually linked to say, cancer disparity. For instance, African Americans in South Carolina are three times more likely to die of prostate cancer than a Caucasian man with prostate cancer. And then, what some of the things that actually are associated with that low-income-- bad diet, obesity, and all of these things-- are actually higher in our African American population. So there's a distinct link there between these levels of AGEs, and what we actually see in cancer disparity.

The trial itself is actually based on cardiac rehab. So at the moment, people with cardiovascular problems can, on their insurance, go into the rehabilitation center and get told about exercises, dietary intervention, to obviously help them with their disease, and make sure it doesn't recurrence. So we actually think we can do the same with cancer patients, because we know that dietary changes and exercise can actually help cancer patients themselves.

So what we're actually doing is, we want to recruit around 60 prostate cancer survivors, put them through cardiac rehab-- which is a 12-week dietary and physical activity intervention. And then at the end of that 12 weeks, we want to follow them through, say, community-based exercise programs, and things like that, just to see if they keep up their exercise levels. And this will go on for about a year, but then we also want to take blood samples at regular time points, too, in the intervention, so we can actually look at the age levels.

We have run some feasibility studies on this, and we have seen that exercise and dietary intervention can reduce the levels of these AGEs in the bloodstream. This is the first of its kind, to look at AGEs in cancer survivors. And cancer survivors actually, a lot of the time, have a lot of side effects associated with the treatment, or actually dealing with, living with, cancer. And it's also known that these AGEs are actually associated with a lot of them characteristics as well.

So it's thought that if we can reduce these AGEs in a cancer survivor, then we might actually improve the health-related quality of life. And ultimately, we want to show that we can actually help prevent, or reduce the chances, that the tumor will recur.