PREVIEW 1_ Caryn Zinn (Denver 2019)

Dr. Caryn Zinn: Delving into the actual studies I'm just going to summarize as we go along, and I want to start with-- these are our Kiwi athletes by the way, I just want to summarize the endurance research. What have we got? So, I've categorized them into three key groups.

The first group, this is in the late 70s early 80s, the first series of studies was undertaken on endurance athletes where they would adopt a protocol, where they would fat-adapt the athletes between one and seven days, so put them on keto and then the day before the exercise test feed them up on carbohydrate and then make them perform.

And what this group of studies found, collectively, was that yes there was an improvement in fat utilization or fat oxidation but performance decreased particularly at the point where the athletes were trying to get into their highest intensity or their top gear.

The next series of studies falls into the medium term protocol so then researchers said, let's fat-adapt them for a little bit longer. So, between 10 days and 4 weeks. And once again we see improved fat utilization or oxidation and it was a mixed effect on performance.

And what I mean by mixed effect is that some of the studies showed that there was a performance increase in the low-carbers relative to the high carbers and some studies showed the opposite.

And within the positive or negative studies you would see quite a lot of individual variation in outcome. So, you could put a bottom line on that and say it's mixed, in fact we did a study, actually ours was a bit longer and we found exactly the same, the performance of our multi-sporters decreased.

Then we get the longer term athletes. So, researchers decided, well let's try this protocol for longer than four weeks.

So, a range of studies have come through and what we're finding is an improvement in fat utilization, so there's a pattern and we also found that in some cases the power is increasing, so, the ability to tap into their high intensity effort is improving and what

we're finding is that the low-carb groups are showing an equal or positive effect relative to high carb.