

The Journal of Cycle Coaching

April 2021



ASSOCIATION OF BRITISH
CYCLING COACHES



The Association of British Cycling Coaches - Developing and Sharing Best Practice

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Are You Getting Enough?

Fellow Coaches and Members,

Simple question really. Are you?

Oh, sorry. Enough what? From your membership of this Association, obviously! For those of you who have been members for more than a few years, you'll have noticed a recent uptick in activity from your Executive over the past 15-months, as the Exec Committee roles were all filled, and again since the last AGM with an additional volunteer on board. I must say, it has felt good to move from fire-fighting with a skeleton crew, to getting on top of the basics, to pro-actively trying to develop and establish new services and options. In 2021 with these additional resources we have already been able to deliver two excellent online presentations, with both being extremely well received by those attending. Another initiative which has kicked off is the brainchild of our latest volunteer Rachel McKay, in the form of the weekly, Monday Coaching Clinics, which we hope you will call in to when you are able. This should provide you with a useful and regular opportunity to raise questions about practical coaching issues you've encountered. The aim is to help to find answers for you and support from other members, in addition to the Facebook Group which

also seems to be seeing more use as a member-to-member forum. On top of this, the Exec. have been developing a number of other initiatives, to support our Level 3 qualified coaches in the shape of formal Continuing Professional Development (or CPD), as well as a much needed over-haul of our Senior Coach Award.

It's amazing what happens when we have the willing hands and time to move things along. Unfortunately, things are about to change. As you will see elsewhere in this Journal, our Administrator Phil Gadd is stepping down at the end of April, due to changes in his personal and professional life. We would like to thank Phil for all his hard work and commitment since he took over this role at the start of 2020. It's been an increasingly busy time since the start of pandemic and we would like to voice our sincere appreciation for everything Phil has done in supporting our members and student coaches throughout his term. For every member of the ABCC, the Administrator is the key Executive role which keeps the day-to-day matters of our Association running smoothly, and as such can be extremely demanding on time and energy. The great news is that Mark Gorman has offered to switch back into the role he vacated to cover this role until a new Administrator can be appointed at the AGM later in the year. Unfortunately, without someone else stepping forward to help, this could affect the timing for the next journal and

have a knock-on effect to the other ongoing and planned initiatives. So, whether you are or you aren't getting enough, and you enjoy receiving the services provided by your Association or you would like to see more of them coming your way, please consider whether you can spare the time, even for a limited period to help out your fellow coaches by getting more actively involved in your Association. Drop a line to any member of the Exec. Committee if you have questions or want an informal conversation about what you might be able to offer. We are busy coaches too, but we are all trying to do our best to keep the Association moving forwards, and keep you, our members satisfied.

Yours in coaching,
Steve Harrop, ABCC Chairman

From the Editor

This may be my last edition for a while. You will have seen, that Phil as decided to stand down as Administrator, I'm sure we all wish him well in his future endeavours. As a consequence we need to fill his post, at least until we hold elections at our next AGM. In order to keep things moving, I have agreed to return to my previous role as Administrator. For those of you new to ABCC, prior to editing the Journal, I was the Administrator from 2011 until 2019. My retirement hasn't lasted as long as I had intended. Where we go, in the long-

term will be down to the members. In the immediate future, we do need someone to step up and edit the next edition of the Journal. When Alex Wise stood down as Editor, I did hold down both tasks. However, this isn't a situation I would like to repeat. Therefore, if you would like to give it a go, on a trial basis, just let us know. There will be help and support available. A copy of the personal requirements for the role appear later in this edition.

The sad news of the passing of long term member Malcolm Prince has reached us. Those of you who have attended Pedal Power over the years, will be aware of the passion both Malcolm and his wife Pat, had for ABCC. An obituary appears in the following pages.

Hopefully, you will enjoy the balance of content in this edition. I have again included a transcript of our latest webinar, this time, delivered by multiple British cyclo cross champion Ian Field. A recording of the presentation is available in the members area of the website. You will also see articles from some new contributors. We are constantly bringing new members into the fold. It would be good to hear from some of you. New members often mean different views and perspectives. Don't be put off, get typing and give it a go.

ABCC News

We currently working to revise the criteria for Senior Coach. Many of the criteria previously used to award this grade no longer exist, or have changed. Therefore, a new system is under construction. This will mean that all those who qualify as Level 3 coaches, will have the opportunity to work towards this award.

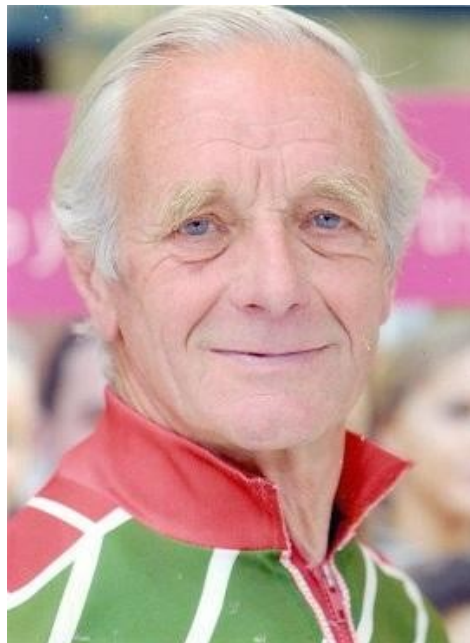
You may already have accessed the first couple of online clinics. These are intended to allow you to raise questions and gain answers, to issues which may be on your mind. These would make an excellent forum to aid students on their journey to qualification.

Newly qualified coaches

Congratulations to the following members who have qualified as Coach Level 3, since the last edition

Aled Jones
Andrew Fraser
Bruce Karsten
Cameron Preece
Charliiy Berry
Chris Murray
Finlay Robertosn
Michael Bray
Mike Thompson
Pete Egleston
Robin Jones

Malcolm Prince



Malcolm Prince has died at the age of 88 following a four year battle with Multiple Myeloma of the bone marrow.

He joined Gloucester City C.C. in 1951, aged 19, before going up to Oxford University, where he gained a Masters in French and German from Jesus College. He returned to Gloucester to work at Dowty's, subsequently moving to Severn Valley C.C. in 1955.

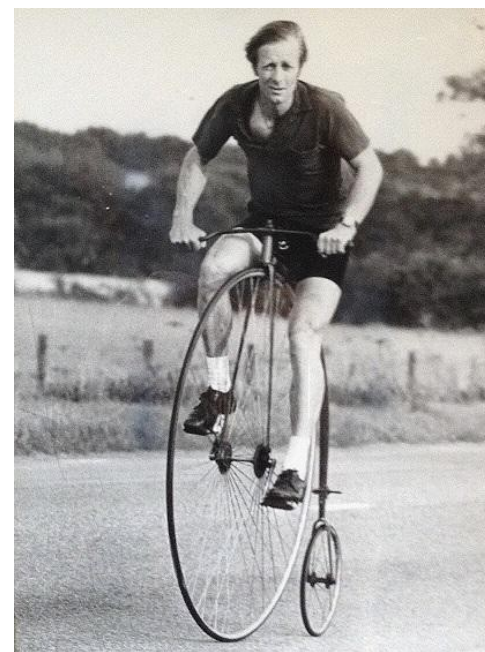
He was a prolific road racer of a high standard, competing in the Tour of Britain in 1956. In 1978, to mark the centenary of the founding of the Bicycle Union, later to become the British

Cycling Federation and now British Cycling, a 'tour' race was held, finishing in Aberdeen. With a nod to those earliest racers of yesteryear, Malcolm crossed the finish line after six days, having ridden the whole of the 500 mile race on his original penny farthing bicycle.

Malcolm dedicated his life to cycling, working tirelessly to promote the sport whether as an official, coach or promoter. He, along with Pat, his wife of 61 years, took the Tour of the Cotswolds from an ordinary club race, to the biggest one day event in the country and one recognised by the U.C.I. Riders from European countries including Belgium, Holland, France and Ireland regularly participated and in 1979, a certain Stephen Roche was runner up in the K.O.M. competition.

But it will be for his work in coaching that he will probably be most fondly remembered. He took particular interest in youngsters, whose grounding in cycling were a passion for Malcolm. As

for me, he opened up coaching opportunities to me in my early years as a coach, which would not have been available otherwise, all of which helped my development. He and Pat were stalwarts of Pedal Power from its earliest days until ill health prevented his attendance.



As ABCC Chairman for 10 years, I could guarantee Malcolm would have something to say when it came to the A.G.M. and that it would always be constructive.

There will be countless cyclists and coaches who have reason to be grateful to Malcom and I am proud to count myself

amongst them. He will be sadly missed.

Dave Wall
ABCC Senior coach and Honorary Fellow

Situation Vacant

Due to a temporary re-shuffle of Executive positions, the post of Communications and Media Officer will become vacant on 1st May

A new post holder will be required. This will involve the production of one or two journals prior to the AGM. The post holder will also become an administrator for the Facebook group.

Help and assistance will be available with these tasks. If you wish to find out more, contact Mark Gorman.

To express an interest or to apply for the post, please contact the Chairman.

Full details of the role are shown on the right.

Head of Communications and Publicity

Overview

The roles within the ABCC Executive Committee have changed significantly over recent years. We continue to expand our online presence in line with the increasing expectations of members for an engaging, interactive experience; our Facebook and Twitter accounts are experiencing increased activity and the Journal is now an online publication. In addition, our key annual event, the Pedal Power conference, is where all of our members can interact and learn. We need to optimise these key interfaces, to create the best experience for our members. In addition, we should utilise alternative options for increasing awareness of ABCC beyond our membership. As a member of the Executive Committee, the Head of Communication and Publicity will oversee the internal and external activities to meet these goals.

Tasks

To manage and oversee, in conjunction with the Chairman and Administrator,

all appropriate social media accounts of the Association (including Facebook and Twitter).

To be responsible for publishing the Journal of Cycle Coaching each quarter. This will entail the development and identification of appropriate content, such as seeking and vetting prospective articles and coordinating book reviews. This will be done in coordination with the other members of the Executive and/or any organisation contracted by ABCC to produce the Journal.

To act as the organiser for the annual Pedal Power conference. This will include event planning, budget management and interaction with speakers, contributors and participants to provide the premier annual cycle coaching conference in the UK.

To participate in developing policies and operations of ABCC and to actively contribute to the decision-making activities, in conjunction with the other members of the Executive Committee.

Qualities and Skills Required

Excellent organisational ability and project management skills.
Excellent communication and interpersonal skills; ability to direct and

to work collaboratively.

Experience and use of social media and online communication tools is essential.

A good standard of written and spoken English is essential.

Familiarity with analysis and critique of scientific papers and academic journals is desirable.

Previous experience of editing, proof reading and publication layout would be beneficial.

Excellent budget management.

Experience of organising meetings or conferences is desirable.

In order to serve on the Executive Committee, the applicant must be a fully paid-up member of ABCC.

Menopause and sport

By Fiona Russell

“I lost all motivation”; “I was too tired to even think about cycling”; “my joints ached”; “muscle cramps left me in agony”; “I hated that I could no longer keep up”; “I was so out of breath”; “it was the saddle sores that were the worst.”

These are not the woes of a cyclist taking part in an endurance event or

training for a major race, although they are exactly the issues you might expect. Instead, they are some of the reasons voiced by women, for almost giving up cycling, despite a long-held love of the sport.



The author in Mallorca

Yet in the first instance, the women had no idea why they were suddenly finding their favourite activity such a struggle.

Joyce McKellar, a keen cyclist and a Scottish Cycling Board member, says: “I had always enjoyed cycling and it was my way of managing the stress of my

work in senior management.”

But in my early 50s, I found I didn’t want to cycle any more. I was too tired due to terrible hot sweats, insomnia, anxiety and a lack of motivation.”

“When I did make it out on my bike I had no energy and I had gained weight, so it wasn’t as easy as it once was. My joints and muscles were sore, too.”

Another cyclist, Fiona Walker, was similarly halted in her tracks. Now 45, the cycling coach and race organiser

says: “It was three years ago when I started suffering with irregular periods. They would happen unexpectedly and sometimes while on my bike. This was difficult to manage.”

“Then, out of nowhere, I got saddle sores. These were recurrent and painful and really put me off the sport I’d been doing for most of my life.”

For 47-year-old Vicky Begg, a high-achieving amateur triathlete-turned-coach, there was a gradual dawning of realisation that “not every cycling day will be a good one.”

She reveals: “I took it for granted that I could cycle various distances and keep up with my usual crowd. These days, I will see how I am feeling at the start of each ride and if it’s not feeling right, I cut the ride short.”

“I still have the will to cycle but not always the same turn of speed or sense of wanting to cycle hard to keep up.”

It was only after these women realised they were suffering a few other “more commonly known” symptoms, such as hot sweats and brain fog, that they each realised what was happening: They were entering the menopause years.

What is menopause?

Menopause is a natural process for all

women when the ovaries no longer release an egg every month, resulting in the end of the menstrual cycle (periods) and, therefore, reproduction.

At the same time, this causes the hormones oestrogen and progesterone, which are produced by the ovaries, to decline.

The oestrogen reduction, which is the main cause of many menopause symptoms, is described as a downhill roller coaster, in that there are fluctuations in hormone levels over many years and on a downward trajectory.

Testosterone reduction is also associated with the menopause. The ovaries are one area of the body that produce the hormone and the levels decrease with age.

In the UK, the average age for a woman to reach menopause is 51 and it is diagnosed as the cessation of menstruation, for at least 12 months.

Meanwhile, peri-menopause, which are the years prior to menopause can last around five to 10 years. For most women, symptoms start in early to mid 40s.

Menopause symptoms

The symptoms of the menopause are wide and varied. As well as heavier

and irregular periods, hot flushes and brain fog, the list includes weight gain, especially around the midriff, migraines, hair loss, breast cysts, itchy skin, heart palpitations, watery eyes, cold flashes (like hot flushes but chilling), depression, anxiety, irritability, mood swings and loss of libido.

When thinking about sport and exercise, further symptoms that can affect performance include: bone density, leading to stress fractures; reduced muscle mass; tight and torn muscles; muscle cramps; painful joints; compromised flexibility; fatigue; and digestive upsets.

Stephanie Kershaw-Marsh, a former nurse who is now part of the not-for-profit organisation Menopause Support, explains: “Many cells in the body have an oestrogen receptor and to perform at their optimum level they need good levels of the hormone. With a reduction in oestrogen, so many changes occur.”

Another condition, genitourinary syndrome of menopause (GSM), is common but less well known. Because oestrogen is the primary hormone that regulates the physiology of the vulvovaginal tissues, a reduction causes thinning of the skin, atrophy of subcutaneous fat and decreased hair Growth.

Stephanie says: “For sporty women, GSM can be a particular issue because the walls of the vagina become thinner and there is a lower mucus production. The dryness may cause the labia, for example, to shrink and split, leading to saddle sores. Other women suffer bladder leakages and increased incidence of UTIs [urinary tract infections].”

It is probably no surprise that there are also associated problems of mental health with peri-menopause, including issues of body image, reduced self-esteem and confidence and increased anxiety.

Understanding and treatment

Despite growing awareness campaigns in mainstream and on-line media in recent years – and some celebrities, actors, presenters and athletes talking openly about their menopause – many women remain ignorant of the full effects of hormonal declines.

Treatment and research of the symptoms are also limited, especially given that menopause affects more than half the population.

Hormone Replacement Therapy (HRT), which comprises a “top-up dose” of oestrogen and progesterone, is an increasingly popular choice for women in peri-menopause and post-menopause.

Stephanie explains: “Oestrogen in HRT is plant-based and has the same molecular structure as that found in the human body. It is prescribed as a tablet, or as a patch, gel or spray applied to the skin.”

“Unless a woman has had a hysterectomy, where the ovaries have been removed, it is important that they also take progesterone as well, to protect the uterus. This is delivered as a tablet or via a Mirena coil inserted into the uterus.”

“Oestrogen can also be administered via a vaginal pessary, which is shown to be highly effective for issues such as vaginal dryness and GSM.”

HRT is not suitable for all women, especially those with a family history of some cancers and also blood clots. Progesterone supplements can cause side effects too, similar to PMT [premenstrual syndrome].

There are some risks linked to HRT. A study reported last year in the British Medical Journal, confirmed that HRT use is associated with increased risks of breast cancer, particularly for older women. However, the study added: “that, for longer term HRT use, the increased risks are lower than those reported in a recent meta-analysis that combined the results of 24 studies.”

Stephanie adds: “HRT also appears to have protective benefits for heart disease and osteoporosis. Emerging evidence shows it can help to combat the onset of Alzheimer’s Disease, too.”

Fiona, from Ayrshire, who suffered frustrating hot sweats, as well as erratic menstruation and saddle pain, found HRT to be a life saver. She says: “I had a Merina coil fitted to help with the heavy periods and then oestrogen patches for other symptoms a year later.”

“The sores disappeared and the hot sweats went. I felt like I was back to the person I was before and I could happily cycle again.”

Joyce, who lives in Renfrewshire, was also prescribed HRT for several years in her mid-50s. Now 59, she says: “I found the treatment helped with many symptoms including anxiety, emotional ups and downs and night sweats. It allowed me to cope at work and at home and I was able to get back on my bike because I had more energy.”

While testosterone levels decline for women in menopause, the hormone replacement can only be prescribed for low libido, according to NICE (National Institute for Health and Care Excellence) guidance. Anecdotal, it is believed the hormone depletion is responsible for joint and muscle pain,

as well as brain fog.

When Joyce was advised by her GP to stop HRT after a few years, she turned to her pharmacist. She says: “The medical advice is different now I believe and women can stay on HRT for longer if they choose, but when I stopped, I needed to find other ways to help with symptoms. I have found Evening Primrose Oil and Vitamin B6 to be really helpful.”

Evening Primrose Oil is claimed to reduce inflammation and can be useful for aches and pains, while Vitamin B6 helps to make serotonin, which can improve low energy and mood.

Other women choose Black Cohosh for reducing hot flushes; kava, for anxiety; St John’s Wort for mood; acupuncture; and cognitive behavioural therapy, among many others.

Diet and exercise

In medical terms, lower levels of oestrogen cause women to lose the anabolic stimulus to build muscles. To combat muscle loss, weighted and resistance training are said to be helpful.

Dr Stacy Sims, an exercise physiologist and nutrition scientist, believes that power-based work is vital for women in the menopause years.

Speaking on the Oxygen Addict Triathlon podcast, she explained: “Low intensity exercise as a way to build aerobic capacity doesn’t benefit the body so much as oestrogen reduces.”

“Women need to focus more on increasing functional power-based exercise to maintain the integrity of muscle tissue and neuromuscular firing patterns.”

Plyometrics – primarily jumping exercises, which are focused on enabling your muscles to exert maximum force fast – allow women to build and hold on to muscle.

This form of exercise is helpful for bones, too. Dr Sims says: “In terms of bone mass, it is not enough to run. We need to stress the bones, such as by doing jumping exercises, to improve density of structure.”

Reduced oestrogen is known to lead to carbohydrate sensitivity because the body changes how it processes carbs. Dr Sims advocates a diet that is 40% complex carbs, from vegetables and grains, especially the “ancient” type; 30% plant-based fats; and 30% lean protein.

She says: “Women need more protein proportionally in the menopause years. The aim is to support lean muscle mass development.”

Cyclist and performance nutritionist Kris Kumari is 54 and four years post-menopausal. She describes her approach to coping in menopause as a “diet and lifestyle overhaul”. She chose not to use HRT.

She says: “I have used my professional knowledge to adapt my exercise and nutrition, to adjust to the hormonal changes – and in several key areas.”

“For example, I am choosy about my carbohydrates. I eat complex carbs to regulate and minimise fluctuations in blood sugar levels. This helps with my energy levels and enhances my mood.”

Kris, originally from Africa and now living in Scotland, aims to create a good gut environment with beneficial bacteria. She says: “I include prebiotics – that is, non-digestible foods – that feed and fuel good bacteria production. This ensures I have a healthy gut. These foods can help with mood, too, because a by-product of prebiotics being fermented by the probiotics in your gut is that this stimulates the release of serotonin, the feel-good chemical.”

Cycling for Kris is a way to stay fit and boost Vitamin D levels. She says: “Just 15 to 20 minutes of cycling in the middle of the day is enough. Vitamin D is important for the absorption of calcium for improved bone health. In autumn and winter, I take a Vitamin D supplement.”

The menopause also affects recovery times from exercise. Kris says: “We must take more time to recover and build strength and fitness from exercise. I make sure my diet is protein rich and I spread the protein over the day.”

Her bed-time routine aids rest and digestion. She says: “I ensure I have a portion of protein before I go to bed and I have cold, tart, cherry extract juice to stimulate melatonin levels for enhanced sleep.”

Menopause and mental health

Many women in peri and menopause experience mental, as well as physical changes; often, they are inter-twined. Vicky, who has an MSc in Psychology of Sport, says: “Body image issues, lack of confidence and unfavourably comparing yourself with others, for example in terms of fitness, can be a crippling barrier to participation.”

“It can sometimes feel like a vicious circle for women in that they might have put on weight or they do not feel as strong or fast as they once were.” This can lead to lower motivation and, in turn, reduced fitness and further weight gain.

“It is important to be able to find people, whether this is friends, a club or a sports community, that is

supportive of who you are as an individual athlete.”

“Togetherness is good but also being with a community that is non-judgmental, so women are valued for their own achievements and participation rather than feeling extra stress or pressure.”

Motivation can be helped by setting dates to meet others for a bike ride or to attend a club session. Vicky says: “If you make a plan to do something with others you are much more likely to do it despite how you are feeling mentally on the day.”

As has been mentioned before, the type of exercise and allowing adequate recovery time are very important during the menopause years.

Vicky says: “Exercise in itself can be a great mood booster and it could be that you look at different types of exercise, such as strength training, as well as your usual routines, so that the focus is not always on what you used to be able to achieve, but rather on a new target such as becoming stronger.”

Coaching in menopause

While research is limited, although growing, there is evidence to show how female hormonal fluctuations, whether during the reproductive years or in

menopause, can affect performance.

In the peri-menopause stage, hormonal ups and downs are highly changeable and frequently unpredictable.

Vicky says: “The more traditional periodised training cycle, where periods of progressively-loaded training stress are followed by rest, simply will not work for peri-menopausal women.”

“A woman might experience, for example, weeks of intermittent fluctuations, bleeding, sleeplessness, hormonal shifts and emotional upset and therefore training during this phase is likely to be disrupted and very much reduced.”

“This might be followed by weeks of relatively stable ‘activity’ both in terms of menstruation and emotional responses.”

“Ultimately, the communication between athlete and coach becomes the crucial component in a successful training schedule and traditional micro, meso, macro periodisation will not suit.”

“Individualised coaching can be very beneficial, but it needs to be far more adaptive and responsive with plenty of feedback from the athlete.”

The post-menopause athlete

While all the symptoms and tips might seem like a lot to take in, the more informed women – and men – are, the greater chance they have to remain fit and healthy into later years.

The past decade has seen a growing female participation in many sports, including cycling. Races and events show larger numbers of competitive women riding into their later decades, too.

Kris is a good example of how women can focus on being positive through and post-menopause. She says: “I have really, truly accepted the way my body is now. The menopause has given me the opportunity to take a holistic view to exercise and nutrition, and that is good for the future of my health and well-being, too. It has allowed me to re-set, renew and rediscover.”

Fiona Russell: My menopause

It started with muscle cramps. Not the kind of lower abdominal cramps women normally associate with the menstrual cycle but severe, exercise-halting pain in my calves, hamstrings and glutes. At night, the cramps spread to my feet and repeatedly woke me up.

When a cramp spasmed in my upper abs area during a yoga session and my

hands cramped as I opened the toothpaste tube, I knew I needed to seek medical help.

I was 45 and I had never heard the words peri-menopause.

For almost a year, cycling, as well as running and swimming, became fraught with anxiety. I could never be sure when a cramp would hit and when it did, I would be left reeling as I tried to ease the discomfort.

I was losing sleep and my mental

health was affected because exercise is one of my greatest joys. My GP was sympathetic but flummoxed. Muscle cramps are still a medical enigma and having tried all the usual remedies, such as better hydration, adequate salt intake, magnesium and even drinking pickled onion vinegar, she referred me to a neurology consultant.

Alarming, Parkinson's and MS were mentioned but further tests ruled out these conditions.

While searching on-line for

information, I spotted forums in the US for menopausal women, where some mentioned cramps in their feet at night. I also realised, I had other related issues, including frequent and heavy periods, itchy skin, migraines, UTIs and memory loss.

Looking back, I was also trying to cope with symptoms related to sport, such as bike saddle sores and the sense I was slowing despite training hard.

The consultant agreed that naturally reducing oestrogen and progesterone could be the cause, although he admitted there had been very little research into menopausal women and sport.

I returned to my GP and asked to try HRT. She agreed and within a month the cramps had disappeared.

I am now 53 and I am still taking HRT. I have rarely suffered a muscle cramp since. In addition, many other symptoms, are kept in much better check.

I am also kinder to myself. I take more rest and I have added strength and conditioning sessions to my cardiovascular training. I try to do a faster speed session each week too, as well as longer and easier runs and bike rides.

I only wish I knew then what I know now, because I might not have wasted years worrying and without treatment.

In the Press

The item which is dominating the news, as it has done for the last couple of years, is the Freeman case. The guilty verdict in the recent tribunal, still leaves a number of unanswered questions. There are calls for an investigation into which rider the testosterone was for? How aware were British Cycling and Team Sky of what the doctor was doing? One could speculate as to whether this was an isolated incident, or part of a wider attempt to circumvent the rules. This looks as if it will run and run. In the meantime, Dr. Freeman still waits to see what action, if any, the General Medical Council will take. To add to Freeman's problems, details have been released, showing that he requested details from UKAD of rider's biological passports. This request dates from 2016. The matter has been referred to WADA's investigation unit.

Lockdown has seen some interesting cycling developments. The increase in those using bikes for transport and exercise has been positive. As have the attempts to improve the cycling infrastructure. On the negative side, the supply of bikes and spare parts has

Useful resources:

<http://www.menopausesupport.co.uk/>

www.womens-health-concern.org

www.mymenopausalvagina.co.uk

<https://www.fionaoutdoors.co.uk/category/menopause-matters>

#SCTalks Cycling through the Menopause on Youtube.

become difficult in some areas. Similarly, prices for second-hand bikes appear to have risen sharply. Perhaps as a result of this, the perception is that thefts are on the rise. For the most part bike theft is a low priority for police, with few owners re-united with their machines. According to an article in *The Sunday Times* a campaign in Cambridgeshire is seeking to reverse this trend. The community group, Stolen Bikes in Cambridge, has tracked down and returned numerous bikes to their owners. The publicity generated means that the market for suspiciously cheap second-hand bikes has been drastically reduced.

I don't think we have any members based in New York. Which is probably just as well. *The Times* reported that parking is becoming an issue. There is, apparently, only one bike rack for every one hundred and sixteen bikes in use. The situation is far better for those in London and Tokyo. However, both have a long way to go, if they are to catch up with Utrecht, which has a bike parking facility with 12,656 spaces.

Cherie Pridham has celebrated her first win, after becoming the first female DS on a male World Tour team. She oversaw the victory of Mads Würtz Schmidt, on stage 6 of Tirreno-Adriatico.

Sadly, doping cases are still cropping up in the pro peloton. The Vini Zabù team look to be in trouble. The A sample of Matteo De Bonis has shown an adverse reading for EPO. If this is confirmed with the B sample, he is likely to face a 4 year ban. The team itself may also face sanctions, as this is the ninth doping case linked to the team since 2009, when the team was founded. This accumulation may see them face a temporary ban from competition.

News from WADA



WADA has issued its Compliance Report for 2020. There are several points of interest. There is confirmation of the Court of Arbitration for Sport ruling, that Russian authorities were non-compliant. As a result, there is an ongoing monitoring programme of RUSADA. The organisation has set up a compliance investigation team, to

complement its monitoring team. It is reported that Covid 19 has had an impact both on investigations of compliance. It has also delayed organisations signing up to comply with WADA policies. Only 64% of the planned compliance operations were carried out, due to the virus.

2021 - A tipping year for coaching in the Alps (and beyond)

Hartmut Hübner ABCC Coach

Probably, like in many other regions around the globe, coaching in the Alps (in my case Germany, Switzerland, Liechtenstein, Austria) was in the last 12 months, heavily influenced by the pandemic, lockdown(s) and subsequent restrictions. This limited racing for athletes significantly, allowed for group rides or larger gatherings, only in narrow time periods, leading to permanent adaptations in training plans. In short: "Business as usual", with structured annual training plans, building various levels of power towards specific events, simply did not work as

before and we had to improvise for a full season. I would dare to say that last year, in this sense, started a development that will make 2021 a tipping year for coaching in the Alps. We will most likely not return to a normal, with another pandemic-influenced season ahead of us, and with growing complexities and uncertainties beyond the current 'crisis'.

Entering the VUCA world of coaching

Now, is this good or bad? Well, listening to the media and politicians, it probably all sounds pretty critical and we are in a state close to collapse. Yet, I am somehow convinced that Covid-19 just gives us a taste of additional disruptions, that we will need to cope with in the near future. So, in my view, this current shift (I'm trying to avoid the term 'crisis', as this sounds like something we are at the mercy of) will have a long-term impact on how we coach and train athletes in the future. I think this gives some huge opportunities for our passion and profession, as cycling for me is clearly more than a metaphor, rather a whole living system, that may help us understand the VUCA (Volatility, Uncertainty, Complexity, Ambiguity) world better than any management course.



Coaching in the Alps - mindset and reflection, more important than ever

Cycling as a metaphor

Let me explain briefly, why I see this close connection between cycling and business. I have a long track record in large corporations, with more than 20 years experience, in team lead and middle management positions. The health and mental tensions I experienced, at the age of 40, brought me to cycling - and I had the luck to experience the positive benefits of structured training, of teamwork in sports and of racing, on myself and on organizations as a whole. This was not because I had to do this for a certain reason, but because I learned

from daily practicing and from letting grassroots initiatives develop their impact. This development (10 years later) brought me to the conclusion of starting my own coaching business two years ago. This created the confidence within me, that by spreading a 'cyclist's mindset' in our athletes, we can significantly contribute to making a positive impact on solving upcoming challenges in our societies. Let me give you some examples of the trends that I see with my athletes, and more specifically in the Alpine region I am active in at the moment.

Time to reflect

My clients, many of them in challenging positions at work, often say that cycling helps them understand and overcome barriers, both at work and in family life. A majority are rethinking their own purpose during the crisis. Suddenly being "out of office" creates a new world beyond the hectic daily routines and established power structures. The tunnel journey (ever further, faster, bigger, more successful – and all this in halfway well-established structures) has come to an end. They have arrived at home (in a home office), between family and virtual colleagues, between kitchen, balcony and desk, some questions that have already been answered and others arise anew. What does it mean to have a fulfilling work day? What are suitable results for value-creation? And how do I, in general, deal with the loss of control that the crisis brings along? Now, with cycling, training rides, having not been cancelled due to distance and hygiene rules, they provide a protected space to reflect, to make up your mind - and I try to accompany my coachees on their individual journey, by integrating suitable mindset and purpose reflection tools into the training plans.

Experience nature

In the Alps, we tend to have a close connection to *the* nature, that provides

the ground and space for our training. Now, in the pandemic, the potential to dive into nature, seems even higher, and more than a few athletes make us think of this. Why not ride up to the next mountain during the lunch break? Why not use the exceptional commute to the office, for a brief deviation on a gravel road, or even some trails? The flexibility that a home office brings, with bike(s) always in reach; allow immediate switches of attention from work to family to training. These make it possible to dive into nature 24/7. It's more than getting some fresh air and looking at nice scenery, and in addition inhaling. The forest is a microcosmos and ecosystem, and understanding how the elements of the system relate to each other is important. Learning from nature means learning that there are no (artificial) limits.

Agile coaching and training

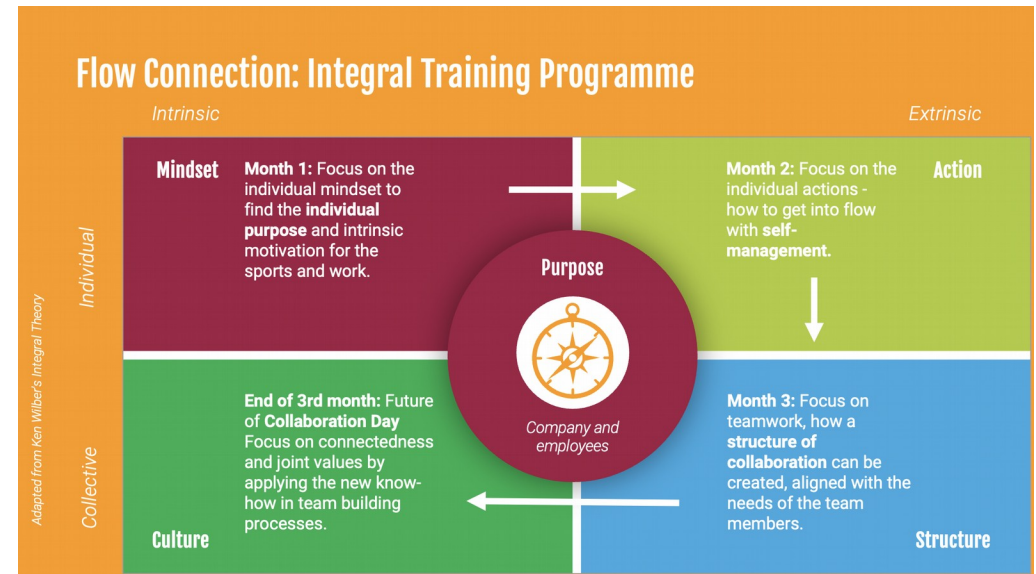
On the one hand, you may ask: How can I set up and execute a meaningful annual training plan, if I do not know if and when races will take place? On the other hand, you may say: Wow, that's a great opportunity to work on my main goal (e.g. to increase my personal Functional Threshold Power (FTP) this season by 15%) without any distractions. I found that some athletes are pretty intrigued by the perspective, that there is not this pressure of having to perform to the maximum, on a specific day - but rather to work

sustainably on a goal that is intrinsically motivated in shorter iterations. I actually had a good experience by applying the "Objectives & Key Results" methodology to training plans. It allows you to connect to the individual purpose of an athlete over time, yet to adapt it on a quarterly basis and to work on the concrete training elements that are necessary over the next training cycle.

Integral perspective

The last year has shown, in particular, that measuring results in cycling remains important - but, with dropping races as key points for measuring results, it is only one side of the coin. Last year, often those athletes who continued to develop were those who were driven by intrinsic motivation and who worked on their mindset. Together with Diana Oser, a yoga trainer based in the region, we analyzed this hypothesis as part of the Nova Helvetia journey <https://www.collaboratiohelvetica.ch/our-impact/2020/10/27/sdg8-sustainable-working-experiences-in-organization>, a project set up by Swiss NGO Colloratio Helvetica.

To start with, we looked at physical exercising (cycling, yoga) in light of Ken Wilber's Integral Theory - [https://en.wikipedia.org/wiki/Integral_theory_\(Ken_Wilber\)](https://en.wikipedia.org/wiki/Integral_theory_(Ken_Wilber)) describing that all life conditions are filtered through 4 irreducible perspectives, that come from one of "intrinsic versus extrinsic" (ie, subjective, intersubjective, objective, and interobjective perspectives) and "individual versus collective" perspectives. This describes 4 quadrants from which to perceive any life circumstance at any particular moment. In a range of interviews with hobby athletes who work in organizations, we found that in conventional training environments there used to be a strong emphasis on, the Action and Structure quadrants - yet, now, in tightened VUCA conditions, a stronger emphasis seems necessary on the Mindset and Culture quadrants. In order to address this, need we propose Flow Connection, a three month training cycle that combines cycling and yoga with agile and "New Work" routines and practices, that can easily transfer to work and vice versa back to sports. We are currently in a prototyping and testing phase, collecting feedback from athletes and businesses.



Tipping point - coaching starts with mindset work

Digital and virtual go hand in hand with physical work

While for sure, there is a big trend globally towards the use of virtual platforms such as Zwift (see articles in ABCC Journal 3/2020) for cycling and coaching (focusing on the Action and Structure quadrants). Digitalization also has a significant impact on the Mindset and Culture quadrants. One example I would like to highlight, is the field of energetics. "energetisch.fit", <https://energetisch.fit/> developed by Jürgen Bergauer from Austria. This is an analysis and coaching system

based on the principles of biorhythm, numerology, bioresonance and radionics. Using a specially developed algorithm, the programme calculates the energy field of systems within seconds and displays the current state. After this analysis, all tested parameters optimized and be integrated in daily training recommendations. This way, a fully individualized and personalized coaching experience can be developed, that considers the mental and health aspects of each athlete on a day-to-day basis. Again, I am prototyping this way of training with athletes at the moment - with encouraging initial feedback.

Conclusion:

Opportunities for coaching. Should we bury our heads in the sand, because of the pandemic? Absolutely not. The pandemic opens up new opportunities for coaching, which we can put to work for athletes with conscious mindset work, supported by artificial intelligence and quantum physics. The Tipping Year 2020 has increased the acceptance of coaching that was outside our field of vision not long ago - in the Alps as well as in other regions. Please share your feedback and experiences with me via e-mail: office@hartmuthuebner.com

The Following is a transcript of our latest webinar

How to Train for Cyclo Cross

Ian Field Five times Elite

Introduction

My name is Ian Field and I managed to win 5 Elite Cross titles in my career as an athlete. I lived, trained and races in Belgium, the home of cyclo cross for seven years. I managed to pick up some top fifteens at World Cups, GB A



Events. I qualified as a coach with ABCC back in 2012. I have been coaching ever since. Last year I launched my own coaching venture. My racing career is toning down, I describe myself as retired from international sport. I still enjoy riding my bike an awful lot and I'm still attempting to race at a national level, when it comes back.

I describe my coaching as trying to bridge the gap between sports science and all of the athlete coaches. Hopefully, providing a little from both sides. I know that there can be a clashing of heads when it comes to sports science and real world coaching. For the sake of this presentation, I am going to keep the sports science pretty basic. Instead of going down the route of all of the training zones, I'll use three zones. Aerobic, which can be split in two. Aerobic where the energy source is fat stores, then aerobic where the energy is predominantly from carbohydrate, like sugars.

Then the third which is anaerobic. I'm not going to break those down any further.

I currently coach a range of athletes, ranging from 4th Cat, just starting out, and since November, I have been coaching a World Tour rider, who has had a good start to the classics season. This is really exciting for me, moving on from being an athlete.

Event analysis

For me, when it comes to coaching, the first thing is breaking down the event the athlete or client is doing. You can do this for any event, whether it is a road race, sportive or cycle speedway. Break down the event in very basic terms. Even if you have been racing for a number of years, I find it really good to do this on a regular basis. Cyclo cross in particular has developed over the years and changed. It is almost a completely different event from when I started my career. Don't think that because you have done something for many years that the event hasn't changed. In simple terms, have a look at how long the event is, in terms of time and distance. I know this sounds simple but it can be overlooked. What does the race involve? From the start to the finish, what energy systems are being used, at different times in the race? What technical skills are being used? Breaking that down further, you can look at heart rate and power data. The introduction of power data was one

of the biggest changes I saw during my career. The fact that we can race week in, week out with power data, has totally changed. I remember I got given a set of SRMs to do a bit of research, early on in my cross career. They failed after just one race, because of the sand and mud. They are a lot better now and we do have a lot of power data from races, which is really useful. Looking at skills for cross in particular, focus on dismounting, remounting, carrying your bike in different ways, technical corners and banking. We need specialist equipment and this can be broken down, into the studs we are using in our shoes, the tubulars or tyres and the gearing. I will also look at nutritional considerations, specific for events. This will change massively between events but I will be looking specifically at cyclo cross.

How long?

Typically, women and juniors are racing for 40 minutes. At World Cup level women can go up to 50 minutes. Men are currently racing for 60 minutes. Immediately, this is going to tell us about the intensity and energy systems we are going to be using.

What is involved?

Cyclo cross races take place on a circuit, with each lap being approximately six to ten minutes in length. The surface can be anything, mud, sand, grass, woodland tarmac and even ice. Why I like cyclo cross, is the varied terrain, it can be flat,

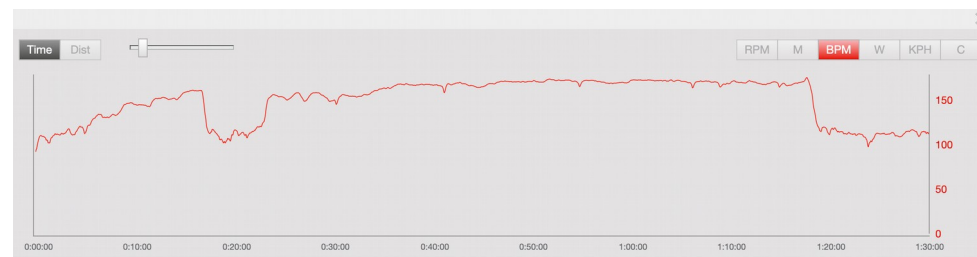
hilly, rolling and even include man-made obstacles, such as bridges. The courses also have the potential to include small amounts of running. This is one thing which has changed since I started. The amount of running has massively reduced, over the last 15 years. This is partly because the riders don't like it, they are bike riders at the end of the day. Some say that it doesn't make for great TV, which has changed the sport entirely. With more and more coverage, people want to see exciting racing. Nine times out of ten, a running race isn't all that exciting.

What energy systems are used?

We know that the races are 40 or 60 minutes in length, so we know that it is going to be mainly aerobic. Crucially, the energy comes predominantly from sugars and carbohydrates, as it is a high intensity aerobic system. We can use ATP-PC system for sprinting. The energy here only lasts 0-6 seconds. This is used at the start and out of some corners. It replenishes pretty quickly. Finally, the third system we will use is anaerobic. Normally from 15 seconds to around 8 to 10 minutes. I will explain more about the energy systems as we go on.

Heart rate data

I have some heart rate data. The graph shows that it is mainly VT2 which is



the aerobic sugar/carbohydrate system. It touches on anaerobic in certain sections, particularly at the end of the race. From the heart rate data, it looks like a steady state effort. The average equates to my threshold. The sort of effort I would expect if I did a 25 mile time trial. This brings me on to my pet hate, where people say that cyclo cross is an off road time trial. From the graph we can see why. This highlights the misinterpretation of data, which went on for a number of years. The other thing to take into consideration, when training and racing, is the delayed response of heart rate. Looking at the graph you would assume that the power would be pretty level throughout. As we move on, you will see that this is clearly not the case. The delayed response works both ways. If you put in a sprint and come back down from that power, there will be a delayed response from the heart rate. Also, if you do a technical section, or a few corners back to back and recover, then get back up to speed, more often than not, the heart rate won't have time to register.

Power data

If you move on to power data, you can really see what is going on. The graph and table show the power data from two cross races. Table 2 is from a cross race in Southampton, a muddy race where I was on the pedals a lot of the time. The bar graph is from a World Cup race at Koksijde which is a sandy race, deep sand sections with easier sections in between and quite a bit of running.

The normalised power was actually equal to my threshold, hour power. At the time, it was about 360 watts, which is aerobic, which fits in nicely with

the heart rate. The actual average was much lower, nearer 300 watts. For me at that time 300 watts for an hour wouldn't look that tough. We really need to concentrate on the normalised power. The reason for this is that the power output is

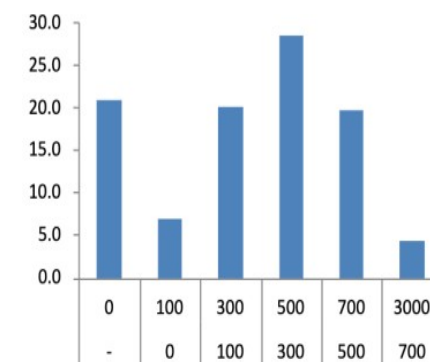


Fig 2: Time spent in power bands

Table 2: Time spent in power bands

Lower Limit (Watts)	Upper limit (Watts)	Time (min)	Prp'n of race time (%)
-	0	12.3	20.8
0	100	4.0	6.8
100	300	11.9	20.1
300	500	16.7	28.4
500	700	11.6	19.6
700	3000	2.5	4.2
3000	5000	0.0	0.0
5000	10000	0.0	0.0
Totals		58.9	100.0

really polarised. You can see from the data that there is a lot of time on zero watts. Basically, 21% of the race is zero watts. This was a muddy race, with technical corners, little parts of running, so for 12 minutes of the race I'm not putting out any power. If we look at the opposite end of this, 300 to 500 watts is half an hour and 500 to 700 watts, which is the key to this almost 20 minutes. This is huge and completely changes the picture of a cyclo cross race, which we have from the heart rate data. There are these huge spikes of power, pretty regularly and for reasonably extended periods of time, in the muddy race. In the sandy race it is going to be short sharp efforts, 15 to 20 seconds maximum. This is fairly normal looking at data from other races. The pacing strategy in a cyclo cross race is almost non-existent. Although I had power data from these races, I just pressed start at the beginning and pressed stop at the end. There was no looking at data and no riding to power, it was just get from A to B as fast as possible. To a certain extent in cyclo cross, in some sections, that is the power you have got to do, to ride a bank or through a sand section. I remember downloading the training data round Koksijde, just to get through a sand section required way over 500 watts. If you couldn't do 500 watts, you weren't riding the sand section. That is the nature of cyclo cross. Hopefully, that data gives you a good idea of the power outputs involved. On the other hand,

there is a lot of time spent at zero watts and low power outputs that you wouldn't see in a time trial or other disciplines.

How is power delivered?

To explain that it isn't a time trial effort, we can look at the number of sprints, which were above my maximal aerobic power, going over into the anaerobic system. In the muddy race there were 182 sprints of six seconds or less, which is a lot. The data from Koksijde showed over 300. You can see from this that you are really on and off the pedals, even if that means really small accelerations and then coming back off the pedals. Even on bumpy ground you are not going to get a smooth power output. Again, in the muddy race there were 21 sprints of between 6 and 10 seconds. There is literally nothing beyond that. This means that as it was muddy, the longer pulls were below threshold. Grinding away in the mud, rather than if it were a faster race, where you are really sprinting out of corners and going up drags etc. For me, this is the key to cyclo cross, being able to do these repeated short sharp efforts. This is something which sets cross riders apart from the rest. I don't want to bang on about Wout (van Aert), Pidcock and Mathieu (van der Poel) because it has been said an awful lot recently. I think this is something we can look at, to see how they can go on to the road and be so good. When they make these race

winning moves. They are relying on years of memory and training, doing the sprints you can see in my data. I'm sure they are fitter than me and doing more of these sprints during a race and at higher powers.

Cadence

It is easy to see that there is a big reliance on the ATP-PC system during a race. We can cross reference this with something which is quite specific to cyclo cross and that is cadence. In time trials, road racing and especially track, you almost get to choose your cadence. This isn't quite the case with cyclo cross, due to the gearing on your bike and the conditions. You may have to ride a low cadence to get up a climb in your lowest gear. My average cadence during races was between 70 and 80, on the low side. The big sprints were probably from low cadence, they would have gone up into the higher cadences as I got on top of the gear. Coming out of all of the corners, you almost can't change down low enough. This is something which will be personal preference. Zdeněk Štybar is a good example of someone who rode cross but maintained a good leg speed. It also depends on the rider's background and history. If someone has come from the road, they are more likely to have good leg speed. If they come from mountain biking they are more likely to be used to grinding away at lower cadences. The conditions will have a big effect. In

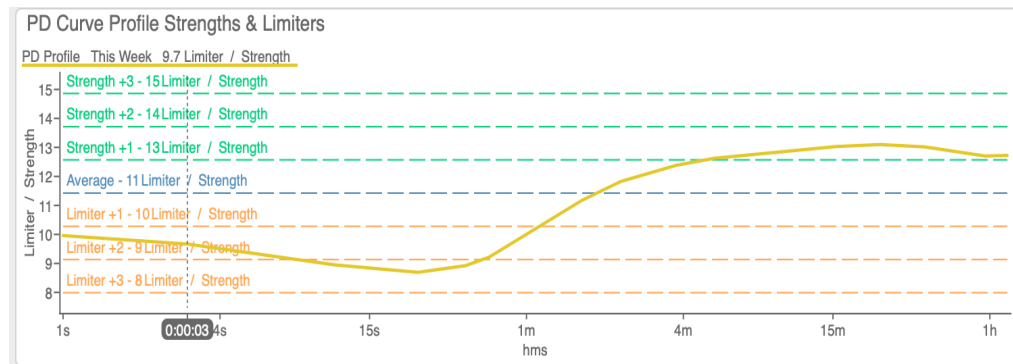
muddier races it will bring the cadences down. This means high torque work. It is something I use quite a bit in coaching and I used in my training. This is mixed with speedwork. We know that power = strength x speed. You can work on these torque efforts, which I call stomps, 6 to 10 seconds in length, using a low speed in a high gear. For example, I would use 53/14 at a low speed of perhaps 15kph, alternating between in and out of the saddle, because you can't always get out of the saddle when it is muddy. Hit the gear as hard as you can for 6 seconds, recover fully and do it again. On top of this you need to do the speedwork, especially after the torque work, to turn that power into speed. This is something which is quite specific to cross. We see this on the road too, a lot of road pro's will do low cadence work.

Rider analysis

Next, we need to look at the rider, who is focusing on the event. The first thing I do with a client is send out a questionnaire. I get an awful lot of data back from them immediately. Some of this is basic, how long they have been riding etc. I also ask them their strengths and weaknesses as a bike rider. Nine times out of ten these match up really well with what we do next, which is create a power curve. This is a series of tests, normally maximal tests over varying periods of time. I use WKO5, which is linked with Training

Peaks, which produces a series of graphs. This also comes with a table showing the client a watts per kilo figure and puts them into different categories, cross referenced against Training Peaks database.

We now need to look at the technical skills of the rider. This depends on their history. How confident they are riding off road. This is something you need to take into account with cyclo cross. We can ask them about their tactics, how

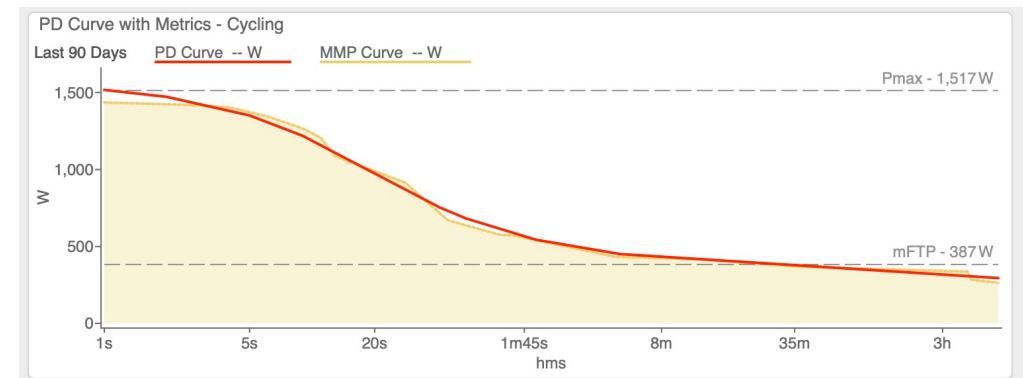


As you can see from this graph, it gives a display of their strengths and weaknesses. They don't use weaknesses but limiters. This rider is lacking between 15 seconds and 1 minute power. If this rider came to me wanting to ride cross, it is immediately apparent that they are going to need to work on their explosive anaerobic power. Their strength is their 4 minute to one hour power, so they might be coming from a road or time trial background. This is fairly common as cross is becoming more popular. This is something I see a lot with road riders, where their explosive power and anaerobic systems need a bit of work.

confident they are riding in a bunch, all of this can be a cause of wasted energy. The big thing for cross is that if you are not technically sound, you can waste an awful lot of energy, even with things like getting off, going over a hurdle and getting back on. If you watch the top pro's they just keep flowing. An amateur can be panicking their way through and wasting mental energy for the rest of a lap, thinking about the hurdles.

What is FRC?

This is the anaerobic system. I think a lot of riders coming from a road background will be lacking in this,



just from traditional road training. This being long steady miles and to a certain extent chaingangs. A lot of road guys train hard but they possibly don't train hard enough. They end up in the middle ground, where they do a lot of work around threshold, which makes them very tired. They think that they have done good training because they are tired. In actual fact, if they had backed off and gone really hard, they would have trained their anaerobic system. With the World Tour rider I coach, one of the main reasons he came to me, was because he wanted to train a bit more like a cyclo cross rider. He has been a pro on the road for a number of years but lacked that race winning move, especially with the young guys coming up. This was something he wanted to work on.

The anaerobic system can be called FRC or Functional Reserve Capacity. This is

above your FTP/threshold and below the power curve, a triangular shape. This is the energy system we really need to focus on for cyclo cross. We measure this in kilo joules. I like to think of the aerobic systems as your engine and the anaerobic system as your turbo on top. If your FTP is 300, zero to 300 is your engine. Anything above that is your turbo. Unfortunately, your turbo runs out. There is only a certain amount of energy in there. Looking at the graph, a 5 second effort would give approximately 1400 watts. That is all you have in the tank. When you have used that, you are only left with the aerobic system, only 300 watts. If you were to do 1 minute 45 seconds, you could do around 500 watts. Again, once you have done that, the system is empty and you are back to 300 watts. It is really important to know these numbers, because you can plan how long you can ride at a certain wattage. This is more applicable to training than racing.

With this information, I can set a client anaerobic workouts, with accurate figures, we can empty the system. This has been around a few years now and there is even an app. that you can download and incorporate with your data. It will display how many kilo joules you have left in the anaerobic system, whilst you are doing a workout, so that you know when you have depleted it. Although some riders don't like it, this is potentially, somewhere that racing on the road is going to go. We are already seeing riders sitting at a wattage on a climb, now we can take it to the next level, to know when we are going to blow. This is worth looking into and is on WKO5. On Golden Cheetah this is called W Prime.

You can see here, how we train the anaerobic system.

The first graph shows data from a time trial, with a climb mid-way through the effort. We can see that the athlete has

predominantly been aerobic. They hit the climb and started to use the anaerobic system but got nowhere near depleting it, because in a time trial you are always going to hold back a little bit. There is a push on over the top of the climb and then recover. Then there is a bit of a sprint at the end, again, not emptying the system.

The second graph shows a cyclocross specific session. This is my data and you can see a completely different

graph. The anaerobic system has been completely emptied on multiple occasions, having let it fully recoup. This is the best way to train the system, just empty it as often as possible during a training session. Hopefully this shows the difference between the two types of training.

How to train FRC

Here are some examples of sessions which repeatedly empty the system. As

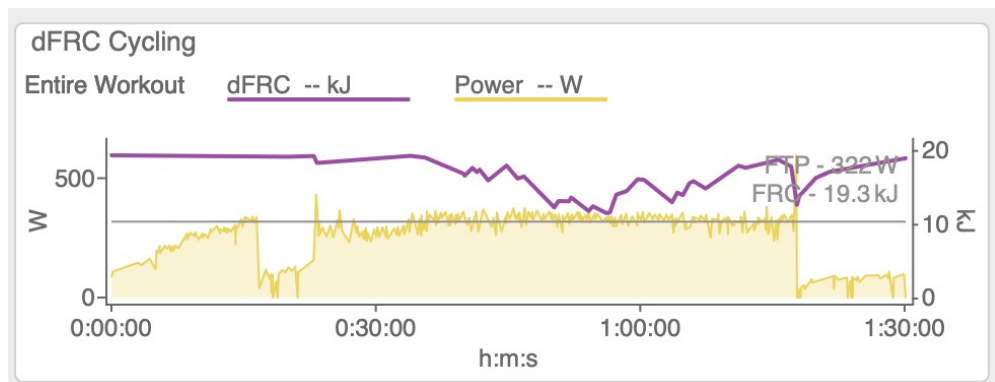
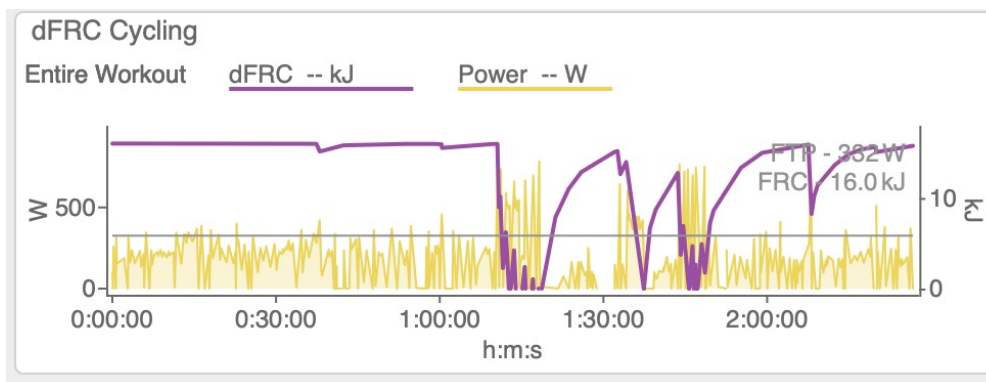
I have ever done. This because of the 5 minute recover, you can really empty the tank every time. You reach rep 7 and think you can't go on but the system keeps replenishing in the 5 minutes and you go again.

A slightly different way of doing it is 6 x 3 minutes either all out or 120-140% FTP again with full recovery, 6 minutes between reps. Again, the idea is to empty the system but over a longer period of time.

Another option is short pyramids on/off above 120-150% FTP. 15 seconds on, 15 off, 30 seconds on 30 off, 45 seconds on, 45 off, 1 minute on, 1 off and then back down again. This is pretty brutal but empties the system and lets it replenish.

Physiological summary

I have focused a lot here on the anaerobic system. I have to say at this point, that is very individual. A lot of cross riders who come to me, their anaerobic system is actually pretty good. With the online platforms, Zwift training sessions, TrainerRoad and Sufferfest they work on the anaerobic system and getting the most bang for your buck. If someone has been doing a lot of that training, their graph may look completely different, so they might have to focus on the aerobic system. You may need to only set them one session of anaerobic work each week, the remainder being below threshold. This is because cyclo cross is



we have seen from the graph, we know what power we can generate for different periods of time. We can set these sessions with a number in mind. In the past, I would have said these were all out or maximum controlled. Now we can actually put a number on it. Some of my favourite sessions are shown below.

12 x 30 seconds all out, with 5 minutes recovery between. This sounds easy but is genuinely one of the hardest sessions

fundamentally an aerobic discipline. As a side note, everyone got excited about Mathieu van der Poels data from Strade Bianche. They were really focusing on the anaerobic numbers. For me, the anaerobic numbers were good, impressive. In fact a lot of pro's can do those numbers, especially in training. The big thing for me was the normalised power for the entire day. The thing that allowed him to do that anaerobic effort was his aerobic capacity. This allowed him to win the race, more so than the anaerobic effort. It was the fact that he got to the end with that in the tank.

Technical Skills

I do a lot of one to one and group coaching of technical skills. Again, I break the race down.

Starting.

I begin with starts. There are definitely things to consider with starting, such as crank position, pedal position, gearing and body position on the bike. These need practicing until they are second nature. Clipping in, getting away and knowing which gear you need for a certain surface or gradient, no two starts are the same.

Mounting and dismounting

Breaking this down, they need to be smooth and efficient. Efficiency is key especially on remounting. When demonstrating this, I do it with no steps.

Jump on the bike and you can freewheel for quite a way, when your technique is good. When your technique is bad, you go up, land on the saddle and the bike has no forward motion. This is something to think about.

Carrying the bike

A lot of this is about efficiency and having a minimum speed in cyclo cross. This is linked to knowing when to carry your bike and when to run. You get off before the bike comes to a stop. You have a minimum speed. If you go below that speed and come to a halt, you have made a big mistake. Always pre-empt when you might need to get off. We can recce courses, we know things might be tricky and things change during the race but we can adapt. It is about getting from A to B fastest.

Cornering

There are two types of corner in cyclo cross, fast corners and slow corners. So, there are two different techniques. Fast cornering is going to be the more traditional road technique. Outside foot down, weight through that pedal, a decent amount of weight on the handlebars, focused on looking at your exit point. Maintain speed, do your braking before the corner and gradually come off the brakes as you start to tip the bike into the corner. The real specific skill for cyclo cross is slow cornering. This is all about

pedalling through the corner and maintaining grip to the back wheel. For a slow muddy turn, the worst thing you can do is try and freewheel through it. If the bike slides, you can't really do much about it. If you are driving the bike through a corner using the pedals, if the back wheel slides out, you can ease off the pedals and it will come back in line, or grip. Conversely, if the front wheel slips, you can pedal harder and the back wheel will kick out and everything straightens up. That is the big cross technique. Don't be afraid to pedal and brake at the same time, this creates resistance so that you can keep drive to the back wheel. It is the same as driving a car or go karting. When you are off the throttle and just steering, you are just a passenger. In go karting you either want to be on the throttle or on the brakes, you never want to be freewheeling. It is similar with cyclo cross.

Off cambers

This is something specific to cyclo cross, which traditionally has big off cambers. There are some rules for these. Pedal down the hill, using the outside pedal, the one having the weight through it. Enter the camber as high as possible, if you do start slipping down, you have somewhere to go. If you start at the bottom and start slipping, that is when you end up in the course tape and in trouble. It is not a bad idea to try and pedal across off cambers, to maintain grip, a bit like

cornering. Don't be afraid if it is super steep, to take out the inner foot for counter balance, or even to scoot along.

Sand

There are some tips for riding in sand. Enter the sand with rally good leg speed. Once you hit the sand, your leg speed is only going to drop. You need good leg speed going in, as you don't really want to be changing gear. This is because you have to come off the pedals, ever so slightly, to change gear. You need to maintain speed for as long as possible. By the end of the section, you may be in a low gear situation. Hopefully, you will have been doing low cadence work and you can grind your way through the end of the sand section.

You need to look ahead. Don't look at the front wheel, you need to be looking a good five metres ahead. Staying in the rut is really important. If you look towards where you want to go, nine times out of ten, that is where you are going to end up. Look ahead in the rut and the bike should stay in it. The worst thing you can do is focus just ahead of you. That can become tricky, especially if there are curves in the rut.

Ice

The biggest thing for ice is tyre pressure. You need to run it as low as possible, to create the biggest surface area. It is similar to cornering technique, you need to keep drive to

the back wheel, to maintain grip and use a little bit more pressure on the handlebars, keeping weight on the front wheel.

Course management.

Hopefully, you will have an idea from the data, that this is something I do as a rider. Cyclo cross riders break a course down in to different sections. This is all out, this is recovery, this is a transition section, these are the three options. Are you trying to speed up, maintain speed or are you trying to recover? This is something which has come in to time trials quite a lot in the last 8 to 10 years. In the past, it would have been ride to a certain power. Try to maintain that one level of power throughout the time trial. Now, we know from data analysis, that the fastest way is to ride the hard sections hard and the easy sections easy. You save energy when you are going over 55kph and when you are at 25kph that is the time to put the energy through the pedals and you end up with a faster time. It is exactly the same with cyclo cross.

Equipment

I get asked a lot about bike set up. What is the difference between a road bike fit and a cross bike fit. For me, there is no difference. If a bikefitter sets you up to be in your optimum position to pedal a bicycle, cyclo cross is still a bicycle race, so you should be

in that position. The only thing I would potentially change, is to go 1cm shorter on the stem. A shorter stem will often help with turning, the bike will be more responsive. I would keep the bars the same height. Some riders will move the bars up, to be more comfortable. However, what you lose is weight through the front wheel, which is key for maintaining grip. Some riders will want to lower their saddle slightly but for me if there is an optimal position for power, you want that on your bike.

Gearing has changed a lot since I started. A lot of riders are using 1X now. A lot of people ask me what gearing should I be using? This is very personal, you need to work it out for yourself. I would say the 1X systems would suit most people. The pro's are going to put a bigger front ring on but what it comes with out of the box is good for most riders. There is a big range on the cassette. If you are a bit stronger you could use a smaller cassette, which is something I have done in the past, with a 1X setup. This removes big jumps between gears, which I prefer.

Tyres and tubulars are something of a black hole, it is really key, getting the right pressure can win bike races. Again, this is very personal. It doesn't only come down to weight, you take into consideration how you ride a bike. If you are very light on the bike, very agile but slightly heavier, you will be able to run a lower pressure than a

lighter rider, not so good on the bike. If you crash into roots and curbs you are going to puncture or break rims. I was racing at 63 or 64kg and probably broke one rim a season.

You need to be comfortable with your shoes. You need to be able to run in them but the most important thing is having the correct studs for the conditions. Most of the time, football studs are going to be fine. When it is really muddy, you can use spikes. These can be really useful and can stop a slope turning into the travelator from the Gladiators.

Pedals are usually SPD. I have been using Shimano but last season I used Look, which are really good. A lot of the pro's are using a Shimano prototype, a little bit like the XT rather than the XTR. There is slightly better mud clearance with the cheaper model. Egg beaters are good in the mud but did have issues with chewing up shoes.

Nutrition

As we touched on with the physiological energy systems, we know that carbohydrates are key. For fuelling before a race, 2 to 3 hours before the race take a good carbohydrate meal, 120 to 150g of carbohydrate. This makes sure the glycogen stores in your muscles are topped up. I have a sweet tooth and used to like rice pudding. Others use pasta or jam sandwiches. With the race being only 60 minutes, providing you

have fuelled properly, you won't need to refuel. With some of the World Cup events lasting 75 minutes, that would be bordering on needing an energy gel or some sugars during the race.

Hydration is important, unless you carry a bottle on your bike, you can't be handed up anything during the race. If you are going to be carrying your bike, it isn't practical to have a bottle on the bike, so hydrate before the race. Don't leave it until the morning of the race, to realise you haven't drunk enough in the days before, or you will flush your system out. Look at hydration in the days leading up to a race. This should be a regular thing as it also aids training and recovery. One thing which is really going to aid your performance in cyclo cross, being relatively short, is caffeine. Take a nice strong coffee, a caffeine gel or you can even get caffeine tablets or chewing gum. This has good scientific research behind it, to boost performance.

Other things to consider are beta alanine or bicarbonate but that can be really tough on the stomach. This is only for short efforts, so may help at the start but isn't going to help for the whole race.

Conclusion

Cross isn't as simple as it may appear. When you break things down, or look at a different rider, you may come across things which you hadn't considered before.

You can come up with unique training sessions with what we find, such as over geared sprints into speedwork, doing sessions off road. I'm sure you will have seen the sessions the Belgian riders do, riding up short steep banks. These turn the physiological demands into a technical session. Emptying the anaerobic system followed by a technical section, would also be a session unique to cyclo cross. Do some race pace efforts round a course you have made up, as I described in the course management section. Begin to learn how much you have in reserve, after big efforts and how your technical skills are under pressure. You can't get away with not practicing technical skills and not being good at them. You can take some of the best road riders in the world, throw them into cyclo cross and they look distinctly average. It is just down to the technical ability and confidence riding off road. Being confident off road usually carries over into other disciplines. Being more relaxed on the bike, riding in the bunch you are using less energy.

You need to vary the intervals you do. You need longer efforts below threshold and endurance rides. Even racing at local level, if you can get a 3 hour ride in at the weekend, in the months before the season it will be key.

Interval density is also important. I wouldn't expect you to go out and do 300 sprints in training. However, we do have to consider that these anaerobic efforts have to be dense in training. They might be short but they have to be hard.

If you are thinking about how many interval sessions a rider needs to be doing, a traditional polarised split would be 80/20. This is a percentage of sessions not a percentage of time. For most people this will mean one session a week, potentially two, particularly moving into a final phase, when you are working the anaerobic system. If you have been doing mainly aerobic sessions in the off season, you could probably do two sessions, depending on the total number of sessions you are doing in the week. You don't need much of this. I think people get carried away, doing 3 or 4 anaerobic sessions a week. This doesn't give the anaerobic system time to develop and doesn't give enough recovery. You need to be fresh to do these sessions and you need to recover afterwards.

Finally, cross is fun. It is a great discipline for all ages, to race in a safe environment and to develop a vast number of skills, as well as a great physiology to take to other disciplines.

Twenty questions for our Chairman, Steve Harrop



1. How old were you when you first started riding a bike?

I do have vague memories of a blue Tri-ang tricycle from my earliest days, but my first "proper" bike, complete with stabilizers was a yellow and black bike my dad rebuilt for me. I found it

by the fireplace early one Christmas morning in the 1960s. I must have been 5 or 6 years old. I think and it carried me up and down our street for years. It also worked really well as a make-shift goal post before the stabilisers came off, with a jumper for the other post.

2. What was the first organised event you rode in?

I think my first race was a cross-country event in the mid-90's, hosted by my club the Horsham Riders. We were an eclectic bunch, as the club was primarily a trials club, with a smattering of pure MTB riders, so we always raced on technical courses, designed by the trails riders, to give them the edge against their non-smoking, lighter weighted cycling buddies. I got my butt well and truly kicked!

3. Who or what got you into cycling?

My dad was the person who got me into the sport, but primarily as a mode of transport. My dad worked for British Leyland at Cowley, near Oxford, so maybe that's why our family never had a car, till I was in my teens. Even as a student I continued to use my bike as a cheap form of transport – at the end of my 2nd year

I'd maxed out my overdraft and couldn't afford the coach home, so I planned out a route and cycled from Leeds to Oxford in a couple of days, before borrowing Dad's car and driving back up to Leeds, to move all my stuff to a new house for my final year.

4. Who did you look up to when you first got into cycling and who is it now?

I have to say when I first took up racing I really admired "The Lung", Ned Overend, who won the first XC UCI World MTB Championship in 1990. His incredible fitness and winning form even in his 40's was simply inspirational and as a late-comer to racing, I decided it was never too late for me to improve. Although Ned retired as a professional in the 90's, in 2015 at 59 he took the first US Fat Bike Championship ahead of many younger pro's!

Thinking about riders today I am still influenced strongly by my XC roots. One of my heroes is "The Queen of Pain" Rebecca Rusch. I was lucky enough to spend time with Rebecca, for a week when I was training for the Leadville Trail 100 a few years back. Rebecca is one of those pros who is never too big to mix with the amateurs and her enthusiasm and passion for

pushing ourselves is evident every time you listen to her speak. Since retiring from professional racing, Rebecca has continued to coach and inspire many riders to appreciate the environments they race through. She's also established a charity "The Be Good Foundation" which creates opportunities for outdoor exploration, personal discovery and humanitarian service – worthy aims for any of us to support.



5. If you could only ride or coach one discipline what would it be and why?

It has to be ultra-distance events. I find the athletes I have coached and the events I have ridden, always find new opportunities to push our own boundaries, beyond what we thought could be achieved.

6. What is the best result you have had riding or coaching and what made it stand out from all the others?

Probably completing Paris Brest Paris in 2019, was one of my best results, not because it was a fast ride, but because I reached the start line exactly 6 months and one day after snapping the head off my left femur. And as far as pushing boundaries – I did it with only five and a half hours sleep, over the four nights and three days. I am, and always have been an 8-hours a night guy, so the hallucinations on night four were not entirely unexpected.

7. What brought you in to coaching?

Not a "what", but a "who" - Robbie Ventura was my first proper coach and I met him when we moved to Chicago. He'd raced with US teams, Navigators, Saturn and then US Postal Service, before retiring at the end of the 90's, to set up his coaching business. After my

return, Robbie continued to mentor me, as I established myself as a coach here in the UK.

8. What is your funniest or most frustrating coaching memory?

So, I asked my wife, a trained nursing sister, who also ran a mobile collection unit, for the National Blood Service, in her previous working life, to take samples from me during my blood lactate test. How hard could it be? After all, I've done it hundreds of times. I wanted to hear the data she was seeing, early on, so was having her give me readings as we went through. After the warm up, every reading was off the scale and required repeat sampling. I was getting more frustrated at her inability to collect clean samples. The test was aborted. We had a row. The incident has never been mentioned again. But you have to laugh at my assumption that someone who can use a lancet and take blood, can also use a lactate sampling kit and my incompetence for not giving her enough training before we started.

9. What is your favourite cycling book?

It's got to be "French Revolutions" by Tim Moore. Brilliantly entertaining and cringingly relate-able. I loaned my copy to a friend and have never seen it since.

10. What are you most proud of in your coaching career?

That's a really tough question – I get so delighted for my riders when they smash through their expectations. Sometimes they meet the event goal, and sometimes they don't, but they always push themselves to achieve their best, for the event and so long as they leave nothing out there, we are all happy!

11. Do you have any riding or coaching ambitions?

Less an ambition and more a long-term goal, is the one I set myself before PBP 2019: to ride PBP 2023 faster at 60 than I did at 56.

12. What is your favourite coaching/training session?

At the moment it's one face-to-face with clients. Since lockdown, it's been really tough for all training centres and gyms, and I know the athletes I coach are looking forward to getting away from their personal pain caves and back into a shared environment, where they can all complain about the workouts together. A phrase I picked up abroad "Misery loves company".

13. Who have you most enjoyed coaching or riding with and why?

I have one athlete who I have been

coaching for around five years. She comes from New Zealand and loves everything cycling (although obviously being a Kiwi, any sport is up for discussion). Sarah is quite simply the epitome of enthusiasm. It doesn't matter how tough a week she has had, once she's on the bike she lifts the mood of any group she rides with, in any conditions. I need to find a way to bottle that positivity!

14. Who would you most liked to have coached but never got the chance and why?

Marco Pantani would have been a fascinating client. I imagine he would have benefitted from more support and fewer sycophants, to keep him honest. An amazing rider nonetheless, and one who seems to have engendered genuine warmth from those who knew him well.

15. Out of all your cycling items what is your most prized possession and why?

My Leadville Silver Buckle

16. What do you find the most annoying about the modern cycling scene?

The evangelical referencing by some riders of "The Rules" as if they were handed down on tablets of stone to

cycling's forefathers. Seriously!?

17. If you could give one piece of advice to a young rider what would it be?

One of my favourite quotes comes from Ken Chlouber, an ex-miner and the guy who created the Leadville race series "You are stronger than you think you are. You can do more than you think you can". He's absolutely right!

18. What are your views of modern coaching software?

Software for analysis can be invaluable as a time saver, but software for generic training has a great deal to answer for. Bottom line – good coaches will take a holistic view of the rider in the moment to tailor the training output. Until an appropriate AI software is developed, coaching programs don't yet come close to the real thing.

19. Would you say cycling was better decades ago than it is now?

No. Just different.

20. And finally what other activities do you enjoy besides cycling?

Mountaineering and hill walking with my wife and family, although there has been precious little opportunity, to get to the high places during the past year of travel restrictions. But living on the edge of the Peak District, we have been able to do a fair bit of walking and with Monty, a Husky/Staffy cross, who joined our family from The Dog's Trust last September, we've had a great excuse for going long while staying local.

Images, Leadville Trail 100, start at 10,200ft above sea level and climbs to over 12,000ft, so the oxygen is about 75% of that at sea level.





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