

## Be True to your Heart.... Buyer Beware!

Over the course of time, it has been demonstrated that that if one repeats an idea or concept frequently enough, it can become an accepted notion regardless of its basis in truth. People that accept these mantras are often ignorant of the facts, while the purveyors of these concepts often point to happy believers as evidence of their truth.

In the world of endurance and cardio-vascular training, one such example is that of using baseless heart rate training concepts as a method for training.

Many of you will recall the exercise charts that appeared on gym walls or on the panels of pieces of exercise equipment which showed a formula of 220 minus your age as a method for determining your various training zones. While the appearance of HR as a training tool signaled the beginning of more scientific approaches to training, it naturally took some time before valid heart rate based training methods supplanted demonstrably false formulas.

Thankfully for training purists, the 220 minus your age formula has been thoroughly discredited but for the most antiquated of trainers and the general gym world which loves to put up fancy looking charts in spin rooms. Yet, amazingly, the random and patently false 220 method has been reborn in some dubious training quarters, where an equally random 180 is used as a subtraction point for determining HR training zones.

Indeed, these days there are several widely advertised training programs that use HR based training calculations which have no basis in science or reality.

HR should be one of the fundamental training tools in any substantive program. However, like any tool, heart rate training methods are only useful if properly applied.

The purpose of this article is to demonstrate that methods which use arbitrary HR calculations such as the *concept* of 180 minus your age to determine performance training zones are fundamentally flawed. A training program based on sound training principles cannot have at its core a formula that is demonstrably false.

It is not difficult to demonstrate why a *one size fits all pie in the sky isn't this convenient phoney-baloney burn fat too numeric calculation* (whose acronym is BS) does not work. The BS-180 method runs into serious difficulty when one considers the following:

- Age is irrelevant to HR training zones
  - Heart rate zones are clearly sport specific
  - Heart rate zones are unique to the individual
- **Age is entirely irrelevant in determining training zones.**  
It used to be thought that maximum heart rate declined as one aged. Yet, as there are now elderly people who have maintained active lifestyles and have been the subjects of study, there is ample evidence that HR **does not necessarily decline with age** if one remains active.

Heck, I've been doing triathlon for 14 years now, and I can still time-trial at the same HR (higher actually) and speed as I did when I first began. Yet if I used the BS formula of 180 minus my age, I would be subtracting 10-14 important beats from my training zones!

Pretty easy to see that subtracting your ever-increasing age to downgrade training zones is an excellent formula to produce slower results as the years pass by.

- **Age: Case in Point**  
Jeff and Mark are two athletes from the Bay Area who I have coached and trained with for many years. We are all the same age, and share the same criteria regarding health, training status, etc. used in the BS-180 calculation. Basically, we have trained consistently for many years and are healthy.

Consider:

\* Jeff can time-trial for an hour at 175 beats/min, and has seen HR #s as high as the 190s on the bike when I am putting the screws to him. ☺

\* Mark, on the other hand, requires an all-out effort to time-trial at 140 beats for a 30 minute period.

\* I can time-trial at 156beats/min for an hour, and have never in my life, even in the most harrowing brutally intense cycling moments, have I seen a HR of 175, the same HR that Jeff can maintain for an hour. That's a 20 beat difference!

If we were to blissfully apply the BS-180 formula to our training, Jeff would be training at an intensity that would be far too low for optimal training, I would by pure luck be training in appropriate zones, and poor Mark, he would be killing himself in virtually every workout.

Yet somehow despite Jeff, Mark, and I having physiologies that are worlds apart, because we are of the same age and training background we are supposed to base our training on the same HR zones?

Absurd! Yet coaching programs that use this *method* would have us doing exactly that.

- **HR training zones are sport-specific**, meaning that a particular intensity will show a different HR # depending on the sport. The BS-180 method ignores this basic fact entirely.

Anyone who has worn a HR monitor and simply watched the numbers will be able to see that HR is higher on the run than on the bike, higher in XC-skiing than in running, etc.

Training zones can easily vary by as much as 10 beats for different sports, and even more if the two sports involve a non weight-bearing activity like swimming, cycling, or water-running and a total body weight-bearing sport like cross-country skiing.

Thus, HR zones which might work fine for the bike, will likely be too easy for corresponding run training. Conversely, HR zones which are optimal for the run are likely to be much too difficult for bike training. Nowhere do age-based random calculations such as the BS-180 method take these basic realities into account.

- **Heart training zones are specific to the individual. Also, while gender is not a determinant in HR training zones, women do generally experience higher HR #s than their male counterparts.**

I run a bi-weekly M2 spin class in which the 80 participants all use HR monitors and begin the class series by doing a threshold test to determine each individual's training zones. Of course, it would be much easier to use the BS method and have everyone subtract their age, etc., but the result would be clearly artificial and not useful for training purposes.

Many of the people in the M2 class began with no knowledge of HR-based training, but after just a few short sessions even the most casual participant would scoff at the idea of an age-subtraction training zone method.

Why? Because, they have all seen how two people can be working in a similarly focused manner, yet have HR #s that are as much as **50 beats apart!** There are many women in my class who can maintain for extended periods of time HR #s in the low 190s, while there are well-conditioned men who cannot sustain HR #s greater than 145 without extreme duress.

One can see how appropriately named is the BS-180 method if I were to assign these distinct individuals the same training zones because they were of the same age and background! Once again, the point remains that HR training zones are very specific to the individual and cannot possibly be estimated by a catch-all contrived formula.

- **“But the BS-180 Method worked for me”**

This is indeed possible, but consider yourself lucky and buy lottery tickets to further capitalize on your good fortune. As I demonstrated in the example of Jeff, Mark, and myself, some individuals will have a physiology which happens to coincide with the random nature of the BS-180 formula. In this case, I was the lucky match.

- **Fat Chance!**

M2 does not have the space or energy here to address the nutrition and diet industry and the tall tales that are endlessly spun and recycled yet somehow yield the world's fattest population.

However, a derivative of the BS-180 method was the concept that lower intensity training would open the gateways to burning off America's obsession, F-A-T. Fat-burning zone thus became part of our lexicon, complete with color coded charts that highlighted the lower intensity fat burning zone. Above this lower intensity red zone, fat burning would cease to occur, at least one is left to imagine. Hmm.

Proponents of this notion, possible descendants of PT Barnum, also marketed various energy bars which claimed to do different things like somehow bring you into balance with ingredients and ratios that would convert you into a lean-mean-fat-burning machine. Gag me with a spoon if you please.

I do not want to digress from the primary HR thrust of this article, so I will briefly summarize the paper chain of logic regarding the fat-burning derivative of BS-180.

- Pick an arbitrary number like 180 or 220
- Subtract an irrelevant number like age
- Ignore relevant factors like the sport and the individual
- Then color code a chart which highlights a fat-burning zone
- Suggest that eating a certain bar will complement this dubious process

Whatever!

M2 Common-sense Nutritional Guidelines:

- Remove fat-burning zone from your lexicon; there is no such thing.
- Put another way, an hour of low-intensity training will not make you skinnier or more fat-free than an hour of higher intensity training; to the contrary.
- Don't count calories unless you can lay claim to having met one or seen one being burned.
- Eat a balanced diet with plenty of fruits, vegetables, legumes.
- Everything is okay in moderation. Beer, wine, cheese, pate, ice cream. I am being serious.
- Want to lose weight? Either decrease food intake or increase exercise frequency and/or duration. Very simple.

In grand summary, to use an arbitrary HR calculation based on irrelevant factors such as age, and a contrived subtraction basis point like 180 or 220, while ignoring critical factors like the individual and the sport in question, is to doom the paying athlete to a program of random relevance.

In our heart of hearts, we must know that a training program must have at its core a valid set of training principles.