

Golf World 2000

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### **The Body Chemistry of Golf**

Go and look in your golf bag right now and in the bottom of the pockets I can guarantee you will find one of these three things...a rubber foam filled half ball thing of unknown use or origin, a plastic pitch mark repairer the size of a shovel (free with a magazine in 1972), and a banana. To the uninitiated, the banana would be the most surprising object, but we recognize it as the staple diet of all golfers. In recent years tennis players seem to have adopted it as their traditional mid-match fayre, and can often be seen munching through a whole hand during a five-setter, but we golfers have known that the single banana is the ultimate in sporting sustenance for decades.

So is it that simple...we just pack one and peel one as needs be, and that's all the nutritional preparation you need for a round of golf. I don't think so. The "game" is becoming a "sport", and the elite players are beginning to follow this trend with physical, mental and nutritional preparation that rivals that of other sportsmen. In my previous article I took you through some of the exercise training techniques that apply to the physicality of the game, but in this one we are going to look at the physiology of the game.

A round of golf around a 6500 yard course will see you walking 3.7 miles just from tee to green as a necessity, and you can clearly add a further 1.5 miles for green to next tee, and excursions to the nether reaches of various fairways. Admittedly, it is not a route march, and you will usually be taking around 3.5 hours to do the full circuit, however you will be carrying, or dragging a full pack (I weighed my carry bag before a round, and it came to 25lbs). Interspersed in this endurance event are the swings themselves, ranging from explosively powerful torsional full body movements, to exquisitely controlled and "damped" precise movements. Every swing also demands a short period of intense and focal mental concentration. Your average 70 kg man has a recommended calorie intake of around 2000cals per day...physical activity is fueled by metabolising these calories, and walking consumes around 6 cals per minute, that's 360 cals per hour, or potentially 1260 cals during a round. However golf is not a sustained walk, and therefore it is not a sustained "metabolic burn", meaning that less calories are consumed. Still, a good estimate is that we will consume around 700 cals just due to the physical exertions of a round. Surprisingly, the brain is a major consumer of cals, genuinely giving food for thought, and it will burn off a further 100 cals as it copes with the demands of concentration, psychological stress and anxiety especially in a competition situation. The same man during an easy 3 hour walk will produce around 70-100 mls of sweat, and he will lose even more fluid than this via the evaporation effect of breathing...interestingly both levels will rise significantly in extreme hot and cold weather. The sustained physical and mental activity will not only consume "fuel", but also "additives". We will convert body chemicals such as sugars, hormones, vitamins and minerals which ultimately will all need to be replaced or re-constructed.

On a recent round of golf I wore a heart rate monitor and recorded the activity of my heart during the whole round. The heart beat at rest for a healthy individual should be close to 72 beats per minute; your maximum heart rate during peak physical activity can be approximated by subtracting your age from 220, so as a 35 year old man my maximum should be 185 beats per minute. The highest heart rates during the recorded round were 120 bpm, and these were always during fairway walking carrying my bag; at one stage I peaked to 135 ascending a ridge on what is a links course. On teeing off with a driver, after one practice swing my heart rate was a consistent 100bpm, but I feel that with the pressure of a competitive game, adrenaline fuelled “nerves” would push this to 115bpm. At no stage during the round did my heart rate drop beneath 74 bpm, and my own resting rate is 65 bpm....I even tried some relaxation and breathing techniques whilst putting, but still did not drop below 74. Clearly golf requires a degree of cardiac demand, but for the average healthy individual it seems that this demand is within a comfortable range of cardiac stress, and therefore can almost certainly contribute to maintaining some degree of cardio-vascular fitness.

Quite clearly golf is a game of sustained and controlled physical, physiological and mental exertion, and any preparation that helps our body cope with these stresses can ultimately improve our performance. Not many of us aspire to be elite golfers, but we all aspire to be good golfers; likewise not many of us will follow strict physical training programmes and diet regimes, but we will have a go at the easy quick fixes that may give us that edge.

When it comes to nutrition for golfers, carbohydrates are the key, and in basic terms there are really two types that we are interested in. “Simple” carbohydrates (sugars, fructose, fruit juices, syrups, honey) are the quick-burning rocket fuel, easily digestible, giving a rapid kick of available energy. “Complex” carbohydrates (potatoes, bread, rice, cereals, pasta) are the slow-burning fuels that provide a sustained release of energy over the more prolonged period of time that we take to digest them, and in this way, stocking up on them gives us a “full tank” on which to call upon throughout a round. Carbo-loading is a popular concept with endurance sportsmen, and the very reason why the London Marathon organizers have their Pasta Party for the runners the night before the race. Pasta is an ideal source of accessible complex carbohydrate, and I recommend that the night before a competition, or if you are going to tackle 36 holes, then load up with a pasta based meal and plenty of French bread...opt for a scoop less Bolognese sauce, but an extra one of spaghetti. Breakfast should include plenty of toast, and one of the new multigrain cereals for that extra carbo-boost. During the round you will be consuming your energy reserves, and you may also be delaying a normal meal-time. You need to consume something that will give you both a quick kick of energy, and also an extra dose of slow burn fuel to see you through the remaining holes. This is when you reach for your banana...100 cal of raw energy, easily digestible fruit sugars, and it comes in a bio-degradable wrapper. Good though it is, it may not be the best option. Health shops and high street chemists stock sports nutrition bars (“balanced energy bars”) that offer an even more efficient solution to mid-round energy lows. They are light-weight, small and

don't go off! A more traditional option, that is again packed with carbohydrate energy, are the individually packed flapjacks and oatmeal cookies.

It is a tradition amongst golfers to thrash around the inward nine developing a raging thirst in order to make that 19<sup>th</sup> hole experience even more enjoyable. Baking under a mid-day sun, or 6 layers of gortex we route-march the 5 miles with, if you are lucky, half a bottle of flat, warm coke and an old barley sugar to wet the palette. I am constantly surprised by how many of my playing partners never take a drink with them out onto the course. 60% of the total human body mass is made up of water...muscles and nerves are 75% water. Water is genuinely the essence of life, and it's abundant presence within the body is essential for the efficient performance of neural and muscle tissue. Even a 2% drop in total body water content is enough to have an inhibitory effect on body physiology. In real terms for a golfer, this means get even a little dehydrated and there will be deterioration in your co-ordination and your concentration; not handy when your heaving a 4 foot lever at a bantam egg ball, aiming to propel it 213 yards into a jam jar on a windy day. Water is free, buy yourself a large refillable sports drink bottle, the pop-tops are quick and easy to use, and the bag will get lighter as you keep drinking. It is recommended that you drink around a quarter of a pint every 3 holes, whether you feel thirsty or not as the sensation of thirst always lags behind physiological need. I would also advise that shortly before you start a round you drink around a pint to prime your fluid levels. Dehydration and low energy levels come hand in hand, and one way to combat both is to take with you an isotonic, balanced sports drink. These can be bought in powdered form, mixed in your sports bottle, and will give you a hit of fluid, glucose, minerals and salts, especially useful on really hot days when partial dehydration is all too common. Remember alcohol is a diuretic, and when you re-fuelling at lunch for the afternoon 18, if it's a society day, go for it, after all golf is meant to be fun, but make sure you refill your drinks bottle because you're going to need it. If it's a competition, stick to the fruit juices, and plenty of them. Ideal competition lunch is bread based, a big filled french-stick will give you the carbohydrate load that you will definitely require in the afternoon.

If you are prepared to pay 200 quid on a putter that might give you that little edge then it makes sense to follow a few guidelines that will definitely improve your performance. Remember that the most important instrument to good golf is not the club that you are holding, but the body that swings it.

### The Key Points:

- Golf is an endurance sport. Take up a regular programme of walking or cycling. A regular walk of 1 hour/3 miles is sufficient as a starting point. Before a run of competitions, or a golfing holiday, for 3 weeks prior increase your endurance exercise.
- Crawling onto the 16<sup>th</sup> green, out of breath, sweating and with a heart rate in the double centuries is not going to help you sink that putt. Get fitter.
- The evening before a competitive round load up with a carbohydrate based meal.
- Always carry a supply of sports energy bars etc. in your bag, and eat as soon as you feel the need.
- Golfers cannot drink enough fluids. Around a pint before the round. Always carry a full water bottle (1 litre in summer) and make it part of your routine to sip at it regularly during the round. Sports drinks can give you that extra edge, especially in hot weather. Drink before you feel thirsty.
- The values of the correct food and drink carried far outweigh the inconvenience of it's weight.

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