***Exam tip:*** *Only really linked to endurance athletes, so be prepared for exam question with this linked to other endurance methods such as altitude training or thermoregulation.*

**Glycogen Loading**

* Glycogen is our prominent energy source used during long distance events
* We can use fat for lower intensity exercise but this slows down our performance as fat needs more oxygen to resynthesise ATP.
* Our glycogen stores are limited and we can deplete them quiet rapidly during intense exercise- after about 60-90 mins
* This is called ‘Hitting the wall’- our body has ran out of Glycogen and is trying to use Fat as the sole energy source.
* Athletes have found out that if you boost the muscle glycogen before the event you won’t rely on using fat so much and so can go further faster.

**Method 1**

* The first thought was to deplete your glycogen courses in the week up to the event by hard intense endurance exercise.
* Three days of a low carbohydrate diet
* Taper training levels
* Few days before competition then consume a very high car.bohydrate diet. This causes S***upercompansation***. Can double muscle stores of glycogen
* The more trained you are the more you would just rest for several days before super compensation.
* Drinking more water helps this process
* This worked but is not great as it tires your body out with the insets exercise and leaves you bloated from the carbs.
* Method 2) day before 3 minute high intensity exercise
* W. Carb window opens
* X. Immediately/within 20 minutes intake high carbohydrate

**Method 2**

* An alternative train of thought is the day before the event participate in 3 minutes high intensity exercise
* This opens the carbohydrate window, which means you must consume carbohydrate immediately after or within 20 mins of the exercise.

\*consumption of water is important with either method as water helps facilitate glycogen synthesis and storage plus prevents dehydration!

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| **Advantages** | **Disadvantages** |
| * increase glycogen synthesis
 | * bloating
 |
| * increase muscle glycogen
 | * weight gain
 |
| * increase endurance
 | * fatigue
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| * prevents hitting the wall
 | * irritability during depletion of carbs
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