

## A Pump User's Experience of Sport & Exercise

# Background to Sport

- Golf – elite level, played professionally '96-01 and currently 10 x rounds per year
- 4<sup>th</sup> at National Speedgolf Championship
- Runner – regular 5k, 10k
- 2018 London Marathon – weekly training av. is c.40k (Jan), 50k (Feb) and 60k (Apr)

**Competitive & Safe**



# Carb Deficit

- Deficit can be covered in 3 ways
  - Carbs with no/reduced insulin
  - TBR
  - Or combination of both

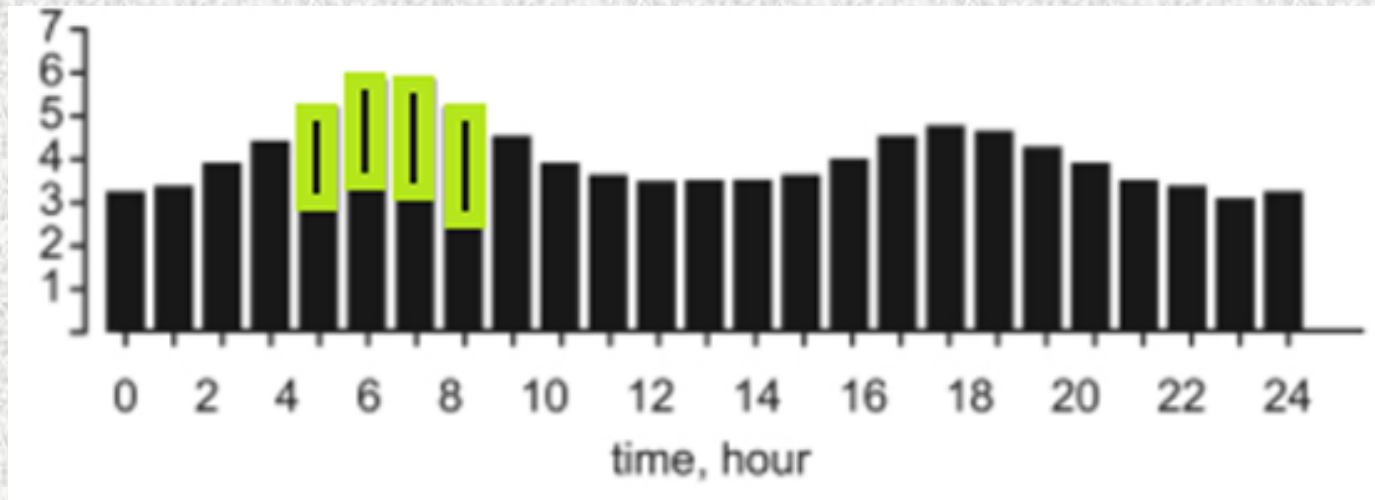
‘Pumping Insulin’ by John Walsh and Ruth Roberts – p245

Activity		Weight		
		100 lbs.	150 lbs.	200 lbs.
baseball		25	38	50
basketball	moderate	35	48	61
	vigorous	59	88	117
bicycling	6 mph	20	27	34
	10 mph	35	48	61
	14 mph	60	83	105
	18 mph	95	130	165
	20 mph	122	168	214
dancing	moderate	17	25	33
	vigorous	28	43	57
digging		45	65	83
eating		6	8	10
golf (pull cart)		23	35	46
handball		59	88	117
jump rope 80/min		73	109	145
mopping		16	23	30
mountain climbing		60	90	120
outside painting		21	31	42
raking leaves		19	28	38
running	5 mph	45	68	90
	8 mph	96	145	190
	10 mph	126	189	252
shoveling		21	45	57
skating	moderate	25	34	43
	vigorous	67	92	117
skiing crosscountry	5mph	76	105	133
	downhill	52	72	92
	water	42	58	74
soccer		45	67	89
swimming	slow crawl	41	56	71
	fast crawl	69	95	121
tennis	moderate	23	34	45
	vigorous	59	88	117
volleyball	moderate	23	34	45
	vigorous	59	88	117
walking	3 mph	15	22	29
	4.5 mph	30	45	59



# Example – 5k – 60g carb/4.5u Deficit

- 0700 – Carb with no/reduced insulin = **-1u**
- 0730 – 2 hrs at 50% TBR = **-0.5u**
- 1530 – Carbs with reduced insulin = **-2u**
- 2130 – 5 hrs TBR overnight at 80% = **-1u**



# Short/High Intensity Exercise

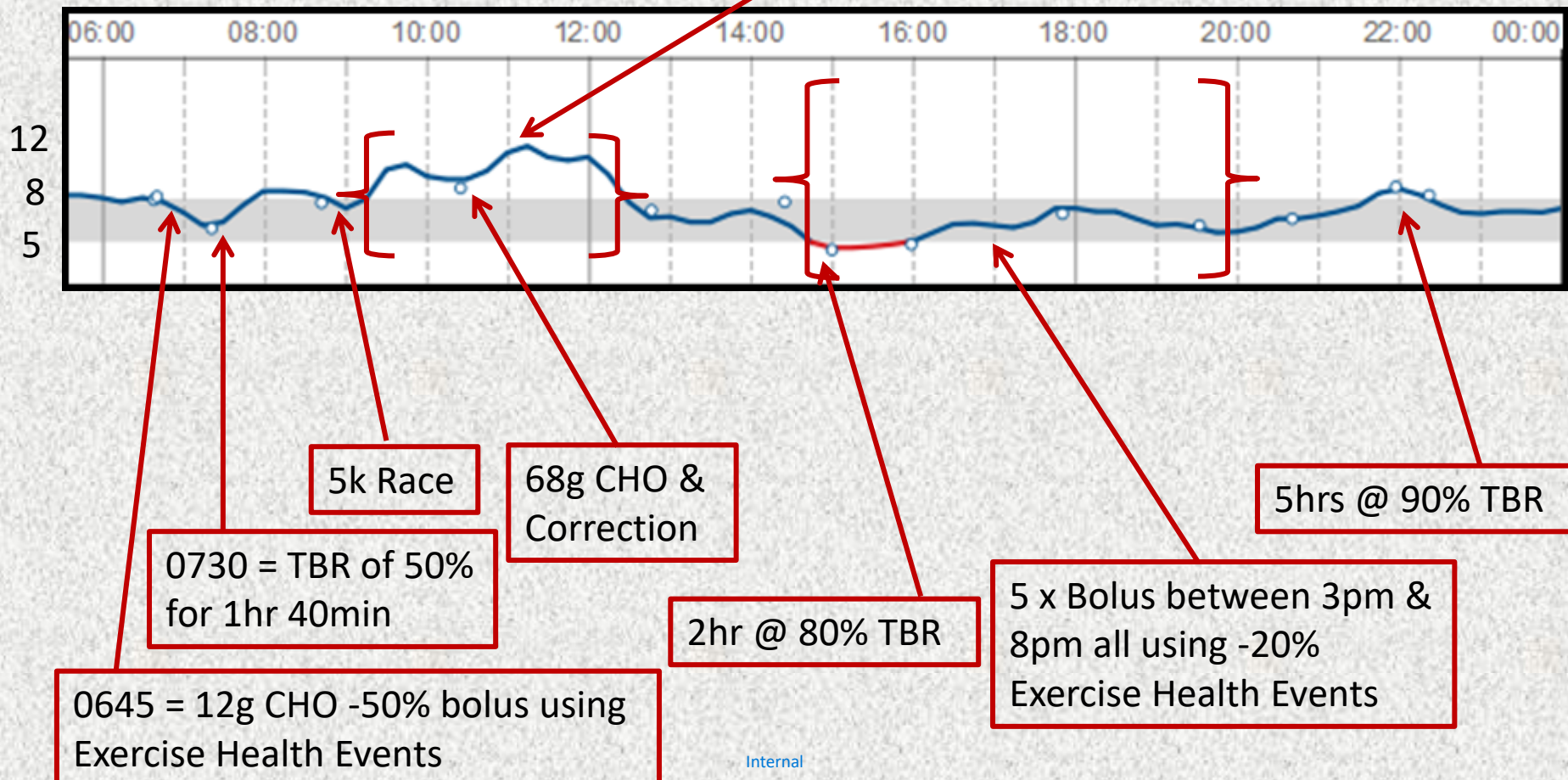
- 5km/10km (18min/39min)
- Start between 7-9 mmol/L
- 90% VO2 max



# Short/High Intensity Exercise

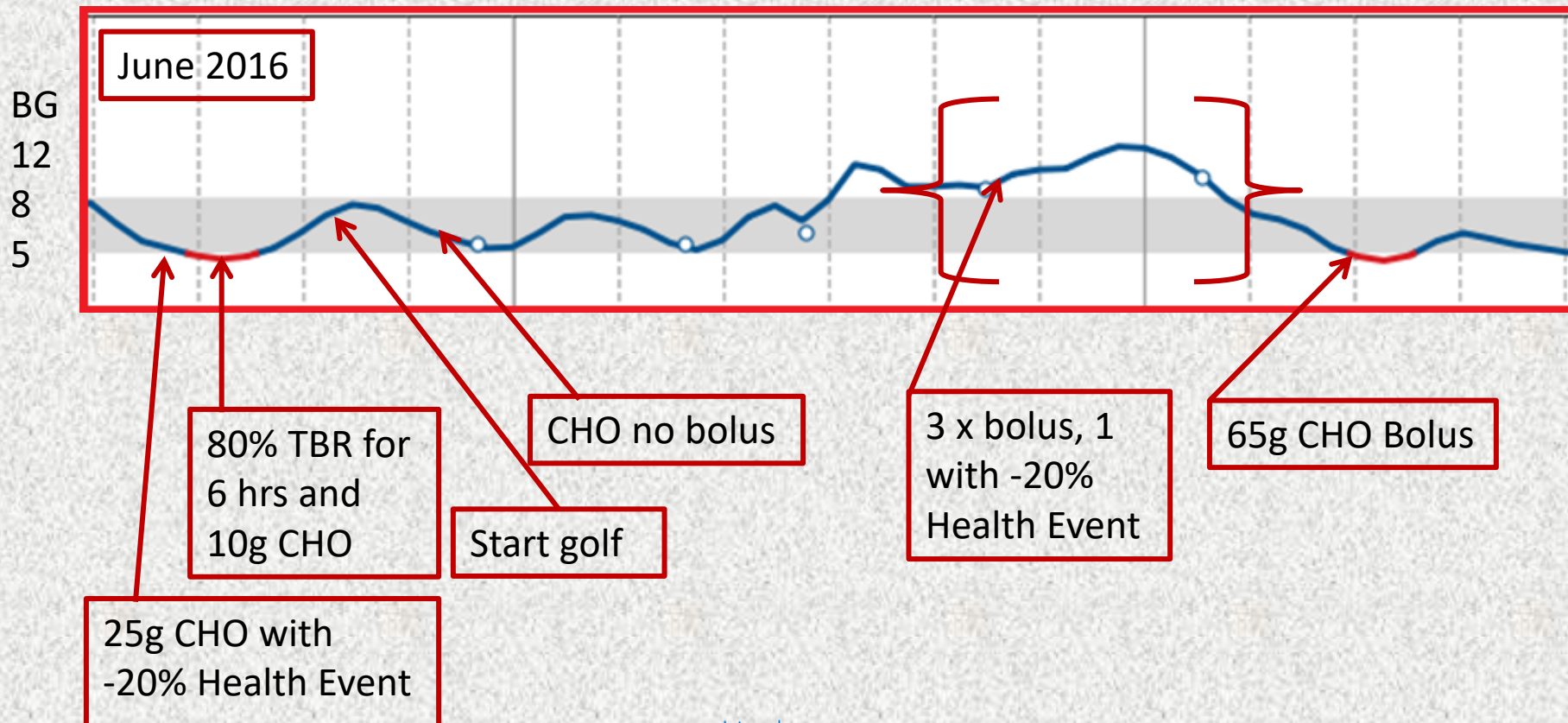
- 5km 18mins Parkrun
- 20/02/16

Post exercise increase in plasma glucose is also seen in non-diabetics, and is a normal response to exercise-induced glucagon release



# Round of Golf

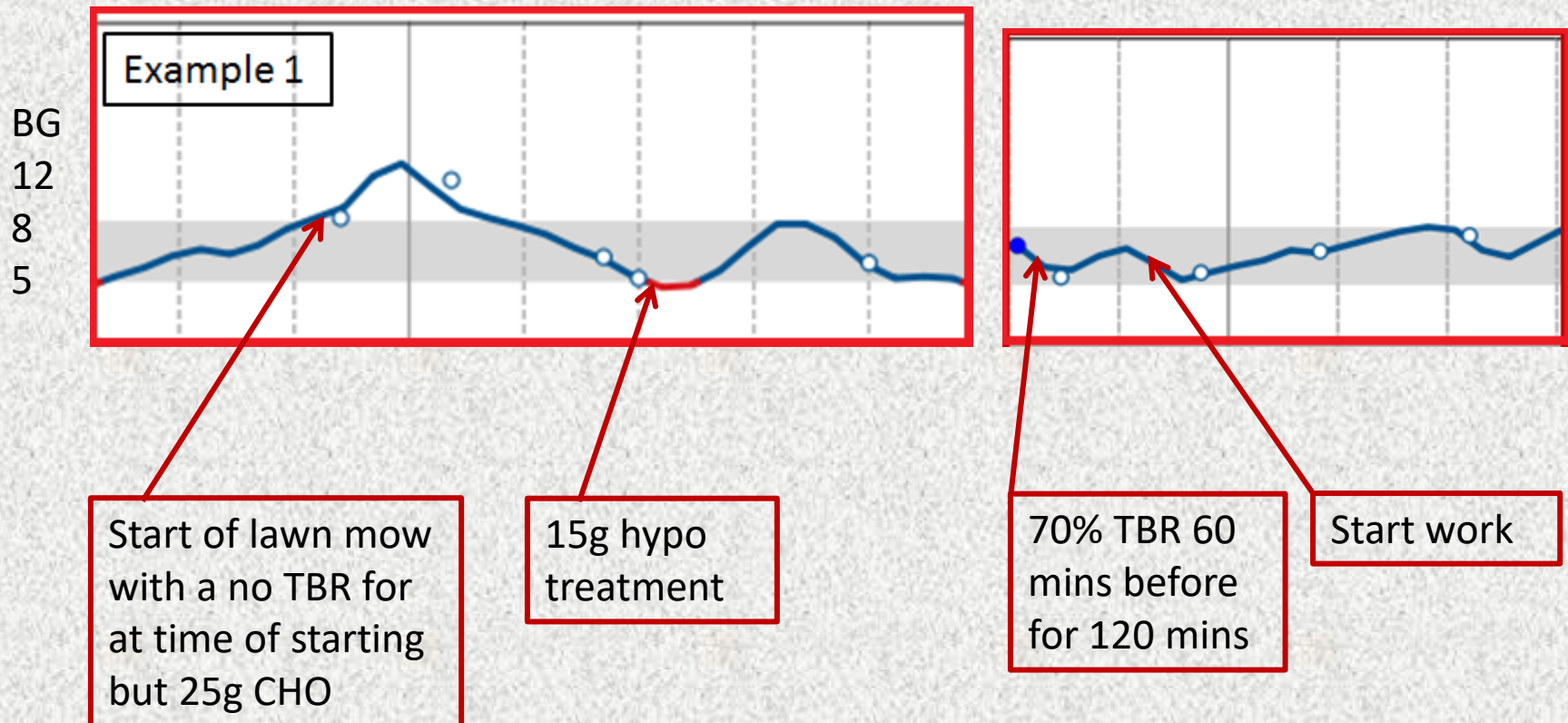
- **3-4hrs**
- Low intensity





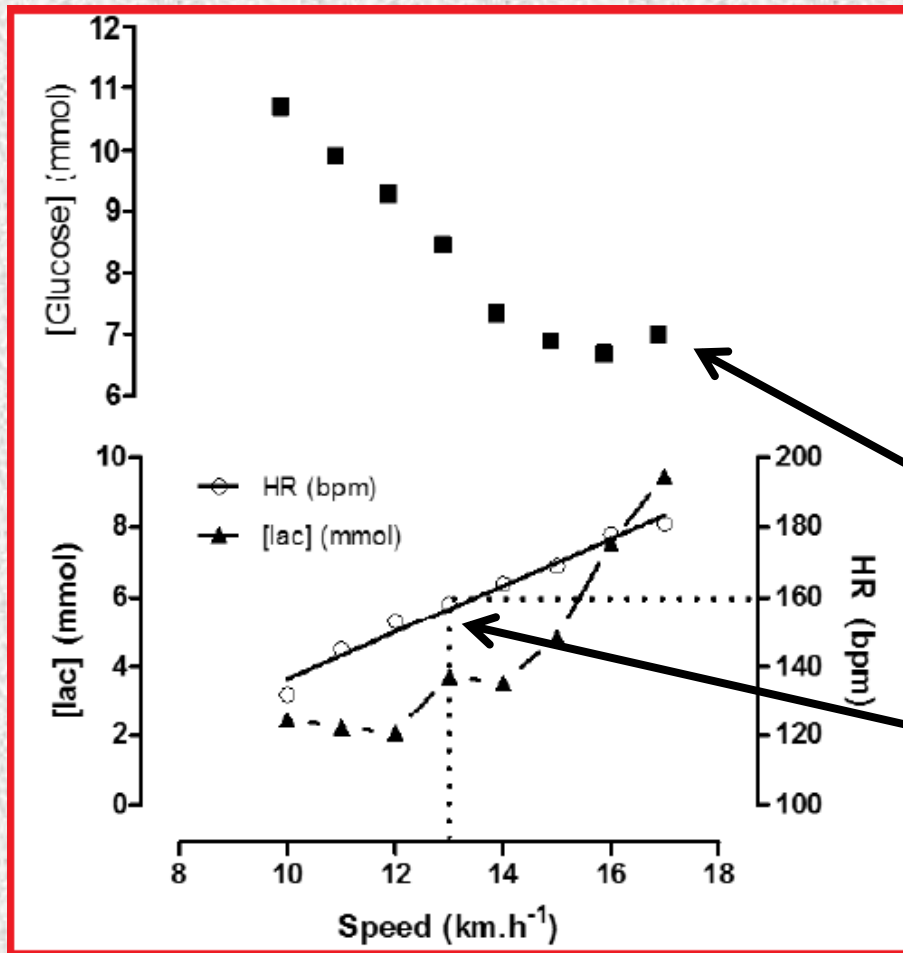
# Gardening – Lawn Mowing

- **30-40 mins @** Low intensity
- Example 1 without TBR and Example 2 improved with a TBR





# Example of bG



BG's without a TBR

Running for 3mins, then bG test, then run again 1kph faster, repeat until until fatigue

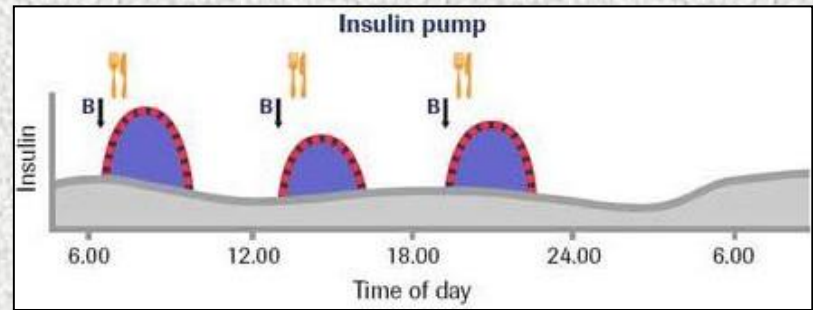
Lactate & V02 max test

# What Is Difficult?

- Late notice activity/exercise is difficult
- Quadrathlon – swim(1.6km), run(30), kayak(13) and bike(50)
- Tuff Mudder – 60mins mud assault course



# Golden Rules



- Regular BG monitoring is vital
- TBR at least 1hr prior to exercise/activity
  - 50% for activity >8/10
  - 80% for activity of 5/10 for >30mins
- Start exercise with little/no bolus insulin (Health Events)
  - 3hrs before exercise = 20% reduction
  - 2hrs before exercise = 50% reduction
  - 1hr before exercise = 50% reduction and consider extra CHO at start
- Always run with a gel/glucose
- Overnight TBR of 70% or 80% for approx. 6-7hrs