



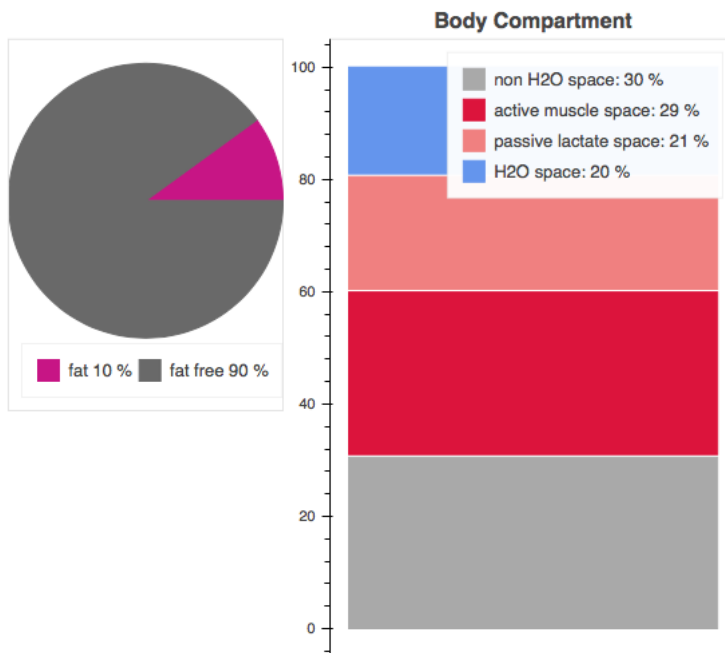
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Performance Test Report

Date	20.08.2018
Place	Hyde Park
Athlete	John Citizen
Coach	Anthony Mezzini
Email	service@elbowsakimbo.com.au
Sport	Cycling

This is your complete performance testing report. The following pages contain all significant information about your current state of performance.

Body Composition

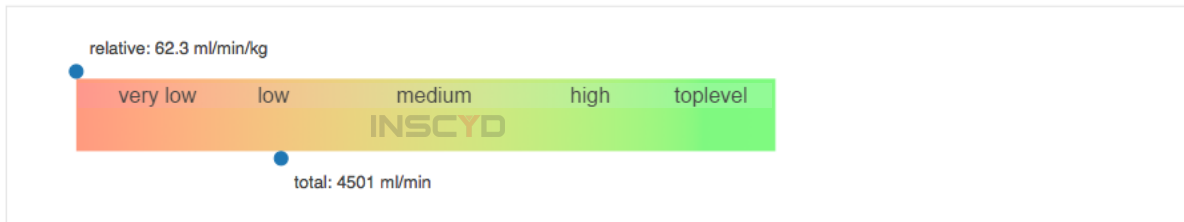


Body Mass	72.3 kg
Body Height	180.0 cm
Body Mass Index	22.3 kg/m ²
Projected BSA	1.900 m ²
Body Fat	10.0 % of body mass / 7.2 kg
Fat Free	90.0 % of body mass / 65.1 kg

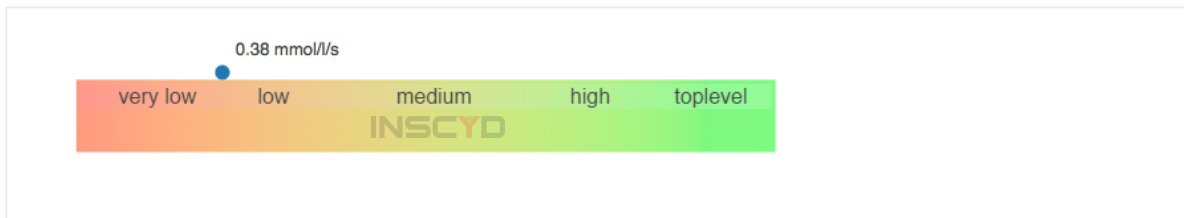
The graphs and the table above show your body composition in terms of fat mass and fat free mass. Next to the visualization of body fat and fat free mass, you see a visualization of the body compartments. Based on the measured metrics of body composition, the performance related compartments for lactate distribution and active muscle mass have been calculated. These metrics depend on 2 criteria; your body composition, and the involvement in muscle mass. For example, in cycling the percentage of used muscle mass (primarily lower body muscles) is lower compared to rowing (full body workout). These body compartment metrics are used further down in the analysis of performance relevant metrics, such as lactate clearance and production.

Metabolic Capacities

VO2max - aerobic capacity



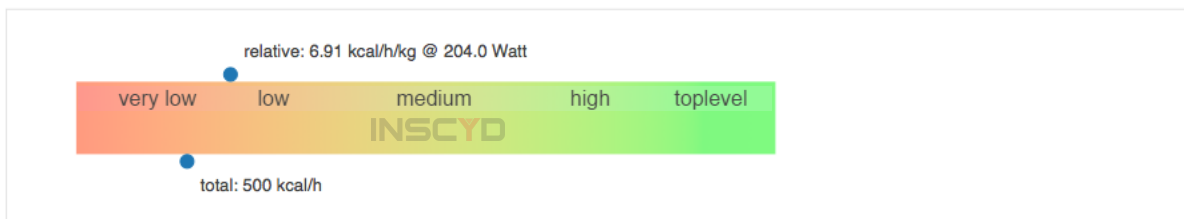
VLamax - anaerobic capacity



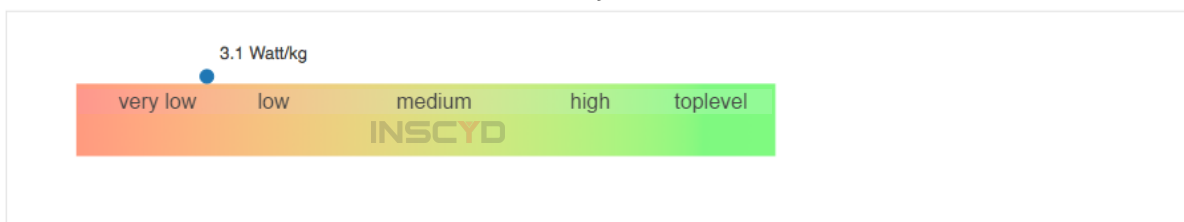
AT - anaerobic threshold



FatMax - maximum fat metabolism

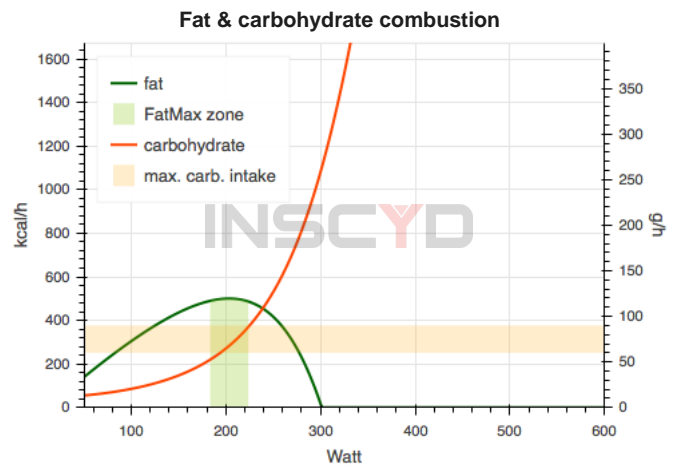
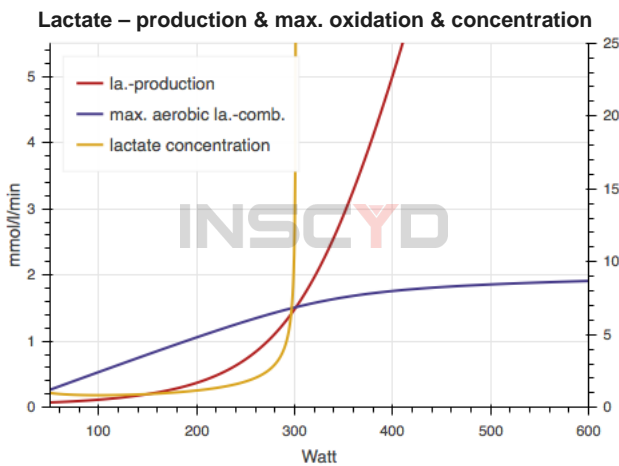
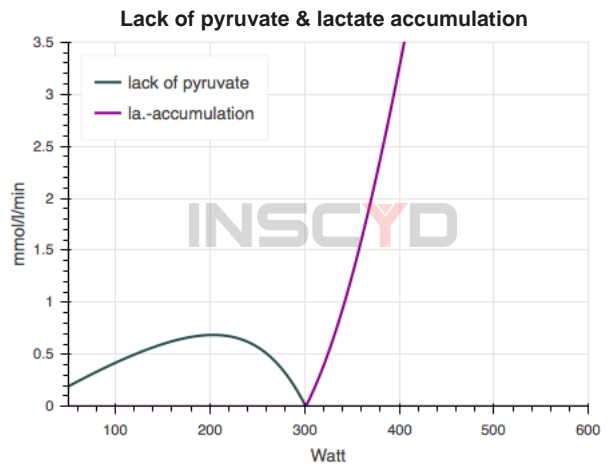
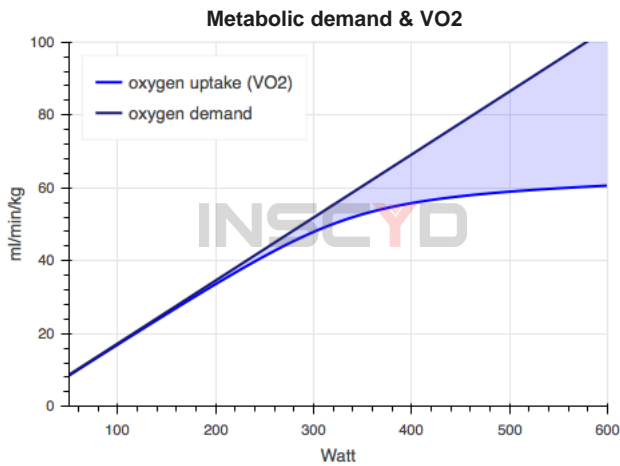


CarbMax - carbohydrate metabolism



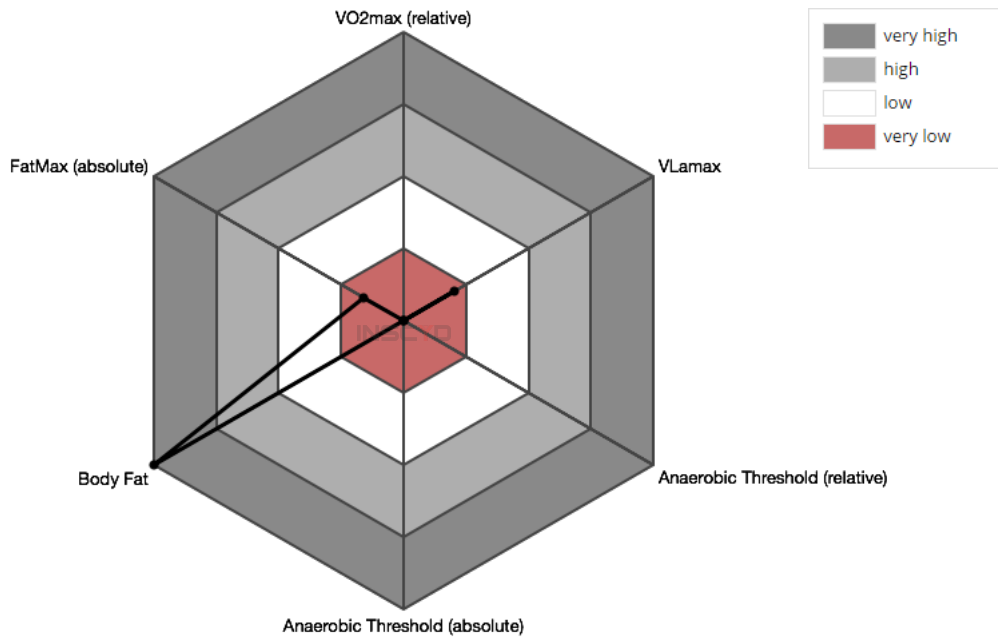
The visualisation above shows the most important performance metrics and your relative level. The measured metrics include: aerobic capacity (VO2max) – the maximum amount of oxygen you can consume per minute, per kg; anaerobic capacity (VLamax) – the maximum amount of pyruvate that you can produce per second by glycolysis; anaerobic threshold – the highest possible intensity you can maintain without accumulating lactate; maximum fat metabolism (FatMax) – marks your highest fat oxidation rate and the power output where this occurs, and finally; carbohydrate metabolism (CarbMax) – marks the power output where your carbohydrate combustion reaches maximum of 90g per hour.

Load Characteristics



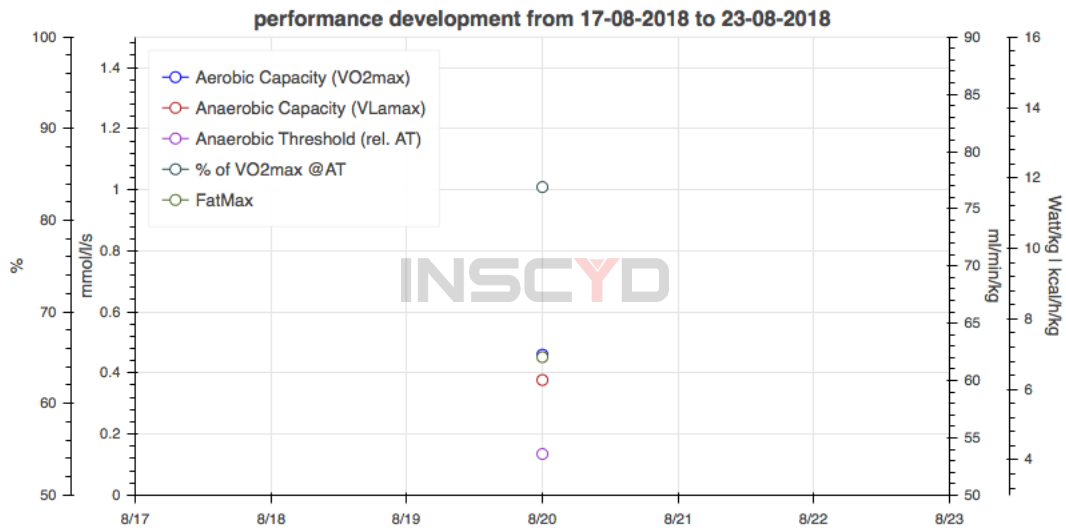
All graphs above visualise important endurance metrics, in steady state condition, in relation to the intensity (power). The upper left graph shows your metabolic demand and oxygen uptake (in steady state). The dark blue line shows the energy demand (in this case shown as an oxygen equivalent) and the light blue line shows your actual oxygen uptake at a given intensity. The shaded area in light blue represents the amount of energy that needs to be delivered by your glycolytic metabolism. The lower left graph shows your gross lactate clearance rate (blue), lactate production rate (red) and lactate concentration (yellow). The point at which your lactate production (red) crosses your lactate clearance (blue) represents your anaerobic threshold – when lactate production exceeds clearance. The top right graph shows the lack of pyruvate and actual lactate accumulation rates. The lack of pyruvate curve (dark green) is shown in mmol/l/min of lactate clearance and shows your ability to recover from lactate accumulation in relation to the intensity (power). The purple curve shows your rate of lactate accumulation. This occurs at intensities higher than anaerobic threshold. The bottom right graph shows your fat and carbohydrate combustion rates. The red curve shows the carbohydrate combustion in kcal/h (left y-axis) as well as in grams per hour (right y-axis). The green area marks the intensity at which maximum fat combustion (FatMax) +/- 5% occurs. The orange area marks a carbohydrate combustion rate of 60-90g/h.

Metabolic Fingerprint



This graph shows your strength and weakness profile at a glance. The most important performance metrics are shown and rated here. The rating is based on your gender, your sport and your athletic level (professional, amateur, recreational). Your actual values are ranked against a comparison group. High values are on the outside of the graph. Low values are displayed at the middle (towards the inside of the graph).

Performance Development



The graph above aggregates today's test, and all previous test data. The most relevant performance metrics are displayed here. You can see how each metric develops over time.

Training Zones

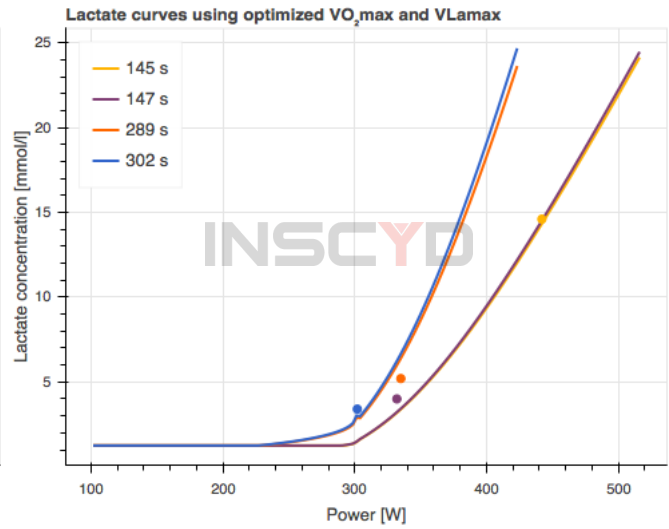
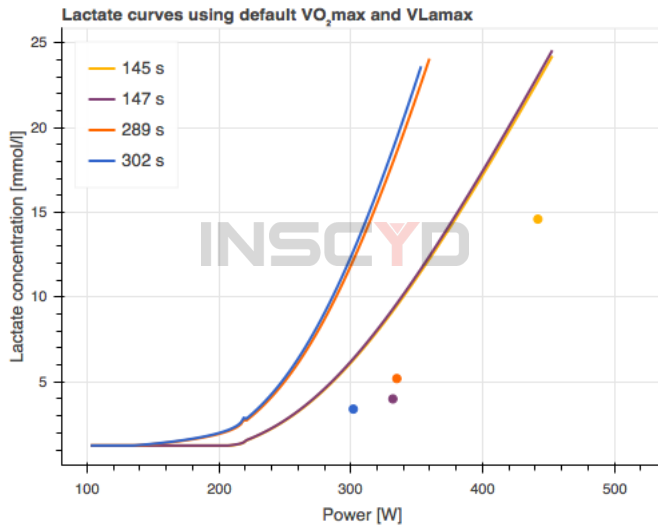
Name	Code	Power		respect to target value						
		lower	upper	target	energy cons.	%fat	%carbo	fat abs	carbo abs	
		Watt	Watt	Watt	kcal/h	%	%	g/h	g/h	
Zone 1	recovery	rec	116	164	135	528	76	24	43	30
Zone 2	base	bas	164	213	193	747	67	33	53	60
Zone 3	medio	med	225	280	252	954	43	57	43	131
Zone 4	FATmax	fmax	183	224	204	784	64	36	53	68
Zone 5	anaerobic threshold	AT	280	322	301	1106	0	100	0	264
Zone 6	aerobic maximum	aemax	360	396	379					
Zone 7	high anaerobic	anmax	381	429	406					
Zone 8	lactate shuttling	LaEx	204	332						
Zone 9	custom 1	C1								
Zone 10	custom 2	C2								
Zone 11	custom 3	C3								
Zone 12	custom 4	C4								
Zone 13	custom 5	C5								

The table above shows your individual training zones. These zones are not generated as fixed percentages of anaerobic threshold, FTP, or other static metrics, like you get elsewhere. Each zone listed here has its own individual origin, and is related to an actual performance metric. For each zone, you will find an upper and lower intensity limit, plus the target value, which you should focus on when training in this zone. Where applicable the energy consumption per hour is listed and the distribution of fat and carbohydrate – both in percentage and as absolute consumption in grams per hour. Zones defined: Zone 1 – recovery: the lowest intensity zone. Used mostly used for easy trainings, rest days and in between intervals. Zone 2 – base: this is the “bread & butter” zone for endurance training. Zone 2 is the zone in which the long endurance trainings are to be completed. Zone 3 – medio: a mid intensity zone, between the base endurance, and anaerobic threshold. Zone 4 – FatMax: the intensity at which the consumption of fat as a fuel is highest. Zone 5 – anaerobic threshold: the intensity at anaerobic threshold (lactate production rate equals lactate clearance rate). Zone 6 – aerobic maximum: an intensity at which your oxygen uptake will raise to its maximum rate in very short time. Zone 7 – high anaerobic: the intensity at which 25% of the needed energy comes from glycolytic energy supply (in steady state condition). Zone 8 – lactate shuttling: the lower value shows the intensity at which you can clear lactate at the maximum rate. The upper values shows the intensity at which lactate accumulates at the same rate.

Test Data

Determination of lactate accumulation

Sum of squared errors before optimization: 359.84 , after optimization: 2.25



Raw Test Data

Measured Values		Calculated Values				
Run	Time (mm:ss)	Power (W)	Max Lactate (mmol/l)	VO2tot (ml/min/kg)	% aerobic (%)	% anaerobic (%)
0	05:02	302	3.4	52.21	92.2	7.8
1	04:49	335	5.2	57.92	88.93	11.07
2	02:27	332	4	57.4	89.26	10.74
3	02:25	442	14.6	76.42	58.92	41.08

The graph and table above show the actual test data as measured. You can see the measured values for each test and time duration plotted as dots. The lines show the fitted curves to the actual measured values. The better the fitting, the higher the accuracy of the test. The table below shows you the raw data as tested. Next to this data, the distribution of aerobic and anaerobic energy for each trial is listed.