Bioenergetic Mechanisms Linking VO$_2$ Kinetics and Exercise Intolerance

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Characteristics > CP

- [Pi] >> Critical [Pi]
- Low Oxidative capacity
- Slow O$_2$ uptake (VO$_2$) kinetics
- Large O$_2$ deficit

Consequence

- Muscle metabolism unable to stabilize

Characteristics < CP

- [Pi] < Critical [Pi]
- High Oxidative capacity
- Fast O$_2$ uptake (VO$_2$) kinetics
- Small O$_2$ deficit

Consequence

- Muscle metabolism stabilizes

Pi = Inorganic Phosphate
CP = Critical power

Exercise intolerance

[Pi] stabilizes VO$_2$ stabilizes

Critical Power

Exercise sustained