About how many kilograms of boiled potatoes would you have to eat to supply energy for half an hour of swimming? Assume that your body utilises only 20 per cent of the total energy stored.

Please explain your answer

Solution

According to http://www.brianmac.co.uk/energyexp.htm the approximate caloric expenditure in a 30 minute period of swimming with moderate intensity (40 m/min) for a person weighing 68kg is 240 Calories.

As body utilises only 20 per cent of the total energy stored, you would have to supply energy E

Where

$$20\%\ E = 240\ Calories$$

Thus:

$$E = \frac{240}{20} * 100 = 1200\ Calories$$

According to http://www.weightlossresources.co.uk/calories-in-food/veg/potatoes.htm and

http://www.calorie-counter.net/calories-vegetables/boiled-potatoes.htm 100 g of Boiled Potatoes content from 72 to 78 Calories.

Thus one kilogram of Boiled Potatoes content above **750** Calories.

$E = 1200\ Calories$ are provided by $\frac{1200}{750} = \mathbf{1.6\ kg}$ of boiled potatoes.

Answer: You would have to eat about $\mathbf{1.6\ kg}$ of boiled potatoes to supply energy for half an hour of swimming.