ATP PRODUCTION

Glucose Catabolism

1. Glycolysis occurs in the cytosol and produces (2) pyruvate molecules
   - 2 NADH (produced in cytosol)
   - 2 ATP
2. (2) Pyruvates are oxidized to (2) acetyl CoA in the mitochondria
   - 2 NADH
3. The Krebs Cycle processes (2) acetyl CoA in the mitochondria

3 NADH	x2 = 6 NADH	
1 $FADH_2$	x2 = 2 $FADH_2$	**[10 ATP/Cycle]**
1 ATP (GTP)	x2 = 2 ATP	

Totals:	10 NADH	2.5 ATP/NADH =	25 ATP
	2 $FADH_2$	1.5 ATP/$FADH_2$ =	3 ATP
	4 ATP	=	4 ATP
			32 ATP

[32 ATP/6 C = 5.3 ATP/ C atom]

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Fatty Acid Catabolism

Steric Acid (C18) metabolism via beta oxidation cycle

(Each beta oxidation cycle produces 1 NADH and 1 $FADH_2$)

8 beta oxidation cycles produce:

8 NADH	2.5 ATP/NADH =	20 ATP
8 $FADH_2$	1.5 ATP/$FADH_2$ =	12 ATP
9 acetyl-CoA	10 ATP/Kreb's Cycle =	90 ATP
		122 ATP

[122 ATP/18 C = 6.8 ATP / C atom]