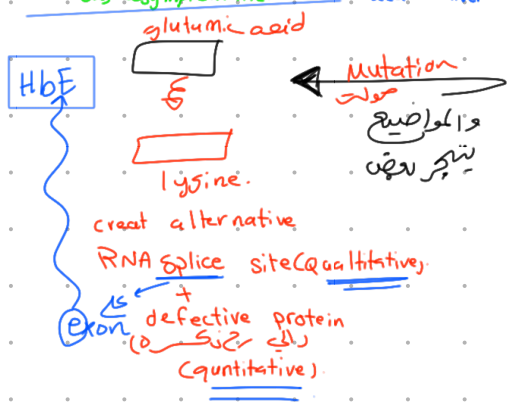
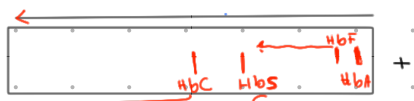


النسبة: الآن فن نعلم من أجل نسبة
 "طبيب جراح أبناء الساميين"

المرض المرتبط بالهيموجلوبين



to diagnose I use electro phoresis



رغم يقرب أجمع بعد...
 أسرع كانه جعل باو
 (4) كسوا
 الكافي
 انما
 بس خلاص
 ذن
 (4) ذن

شي بحدك " في كل شتر خبز كعله
 selective advantage form
 plasmoid falciparum
 that caus malaria
 خبزك
 Sickle cell
 trait
 رحا
 one load.
 سارا لسه
 sickle cell

NADH → NAD⁺
 Met-H Fe²⁺ → Met-H Fe³⁺
 Cyt-Reductase
 1) ↑ P₅₀: O₂ → T₂
 2) ↓ Cyt-Reductase
 Met: methylene blue
 NADPH → NADP⁺
 Met-H Fe²⁺ → Met-H Fe³⁺
 NADPH → NADP⁺

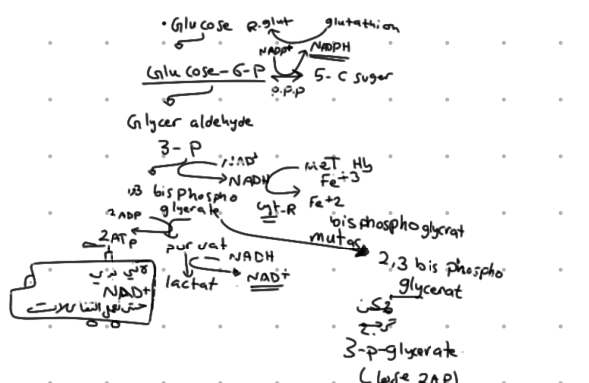


"بن يهدمو! كل ايمان فوقنا نجى ايمان
 فا سماع التهليل...
 لا اريك في الله وسحه لا
 شريك له كة الملك وله
 الحمد وهو على كل شئ قدير

"انتم برونة بعد سيدنا
 ونراه قريباً"

Metabolism of RBC

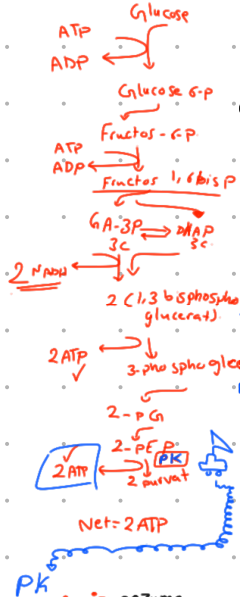
Glycolysis



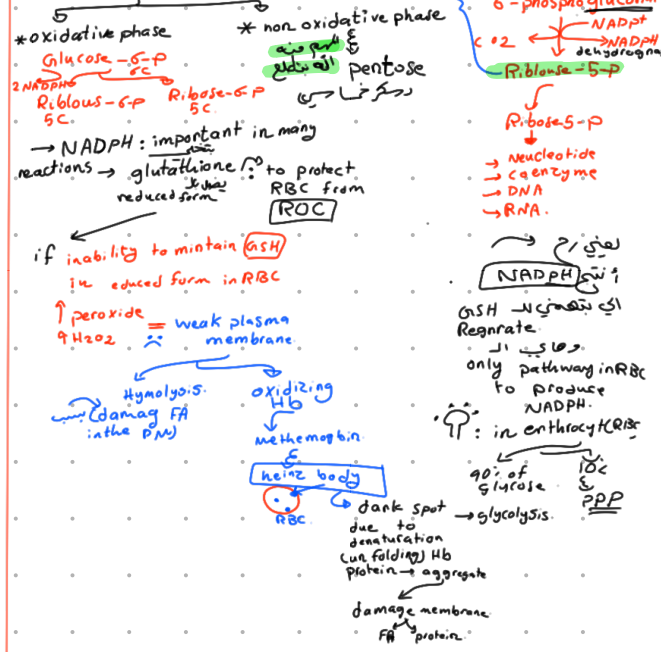
(Net ATP=0)

① 2 ATP → modified sugars + protein
 ② NADH → maintaining membrane asymmetry
 Glycolysis provide → Regulating cytoskeletal protein
 → maintain discocyte shape

very important for reductase enzyme.
 Hb-Fe²⁺ → Hb-Fe³⁺ + 2e⁻
 NADH → NAD⁺



pentose phosphat pathway



G-6-P

deficiency: most common enzyme deficiency in world, x-linked (9 males), ↑ hemolysis → resistance to malaria.

mutation: no clinical symptoms, point mutation, alters kinetic properties, stability, binding affinity to G6P, NADP⁺.

inducers of deficiency: oxidant drug, anti-malarial, anti-parasitic, acetaminophen.

class I: most severe + rare
 class II: Mediterranean @ common in Jordan, normal amount but not active (qualitative deficiency)
 class III: African variant, single amino acid substitution, ↓ enzyme number but active

class IV: no clinical symptoms

G6PD def class	severity	distribution	Mutation effect	Quantitative or qualitative
1] class I	most severe rare	-	-	-
2] class II (Mediterranean)	severe	-	normal stability (number) but negligible activity	Qualitative deficiency
3] class III (African variant)	Moderate severity	African Person	single AA substitution → ↓ stability, but kinetically normal	Quantitative deficiency
4] class IV	no clinical symptoms	-	-	-

less severe



when liver need to convert more PEP to pyruvate → ↑ PKL → expression it stimulated



PK R inactive → PK deficiency hereditary hemolytic anemia → patient resistance to malaria (any defect leading to hemolysis)

اللحم وجد صرف، لحمين واجن
 دوائهم واقهر اعدائهم وابطلهم
 يا الله يا قهار