

II° Convegno Nazionale del Centro Studi AMD

16/10/04 Lucca

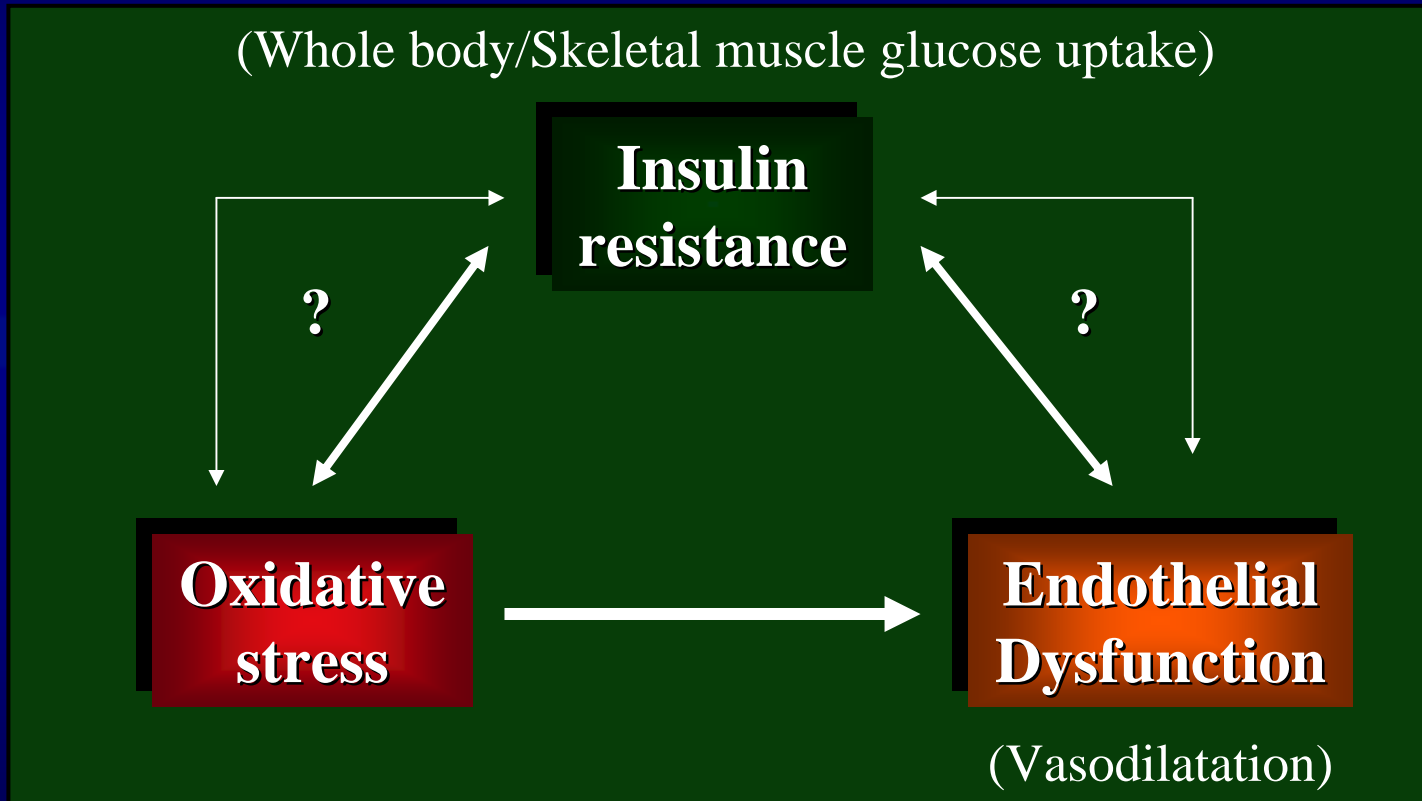
***L'endotelio, la resistenza insulinica e lo
stress ossidativo, dalla fisiopatologia
all'applicazione clinica***



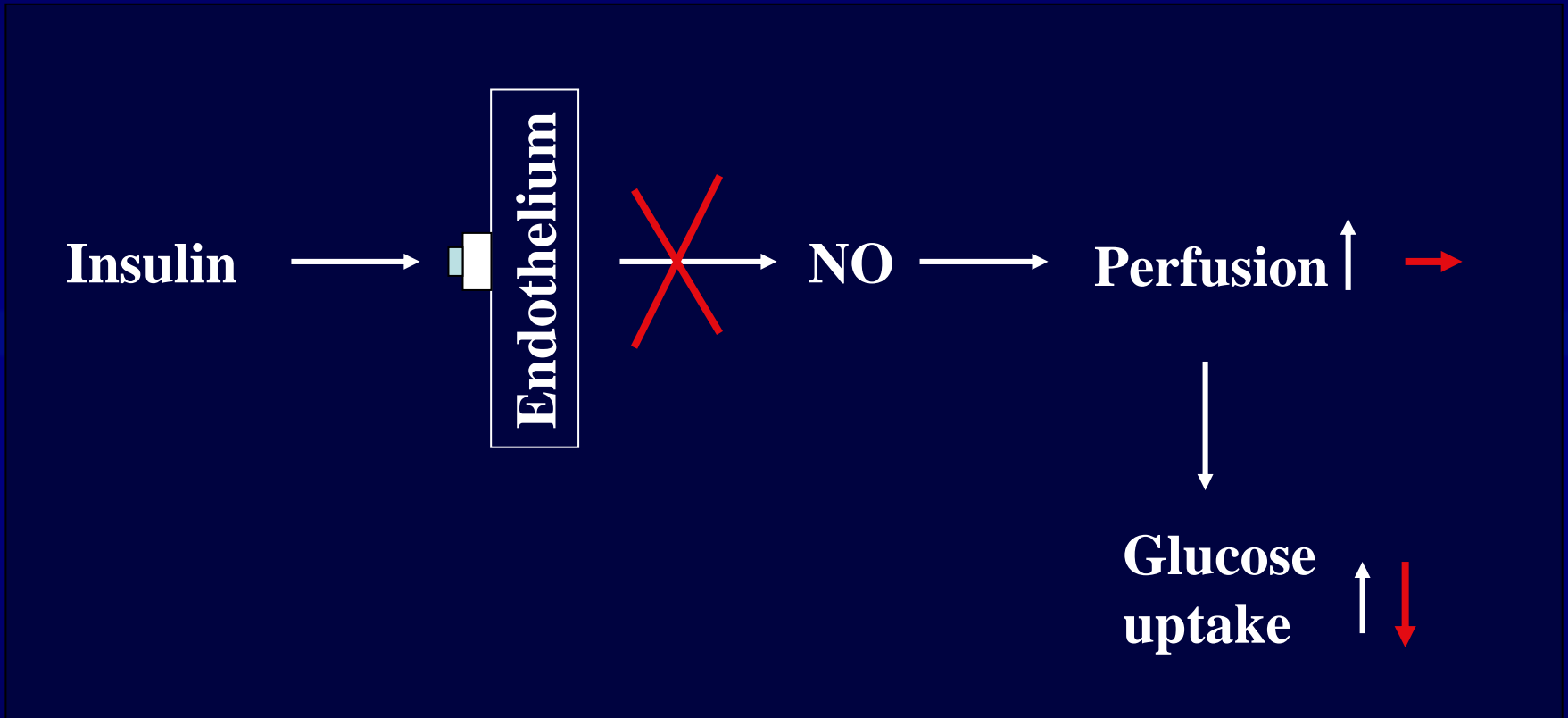
Andrea Natali
Dipartimento di Medicina Interna
Università di Pisa



IR, Oxidative Stress and ED

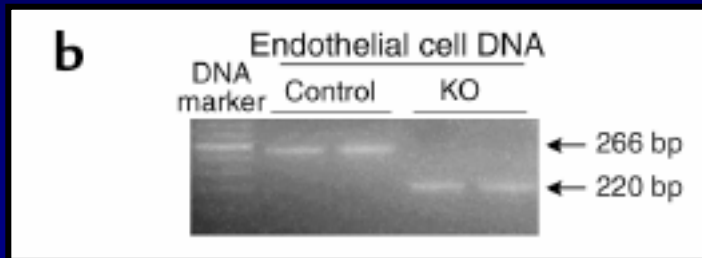


Hypothesis (1): $ED \rightarrow IR$

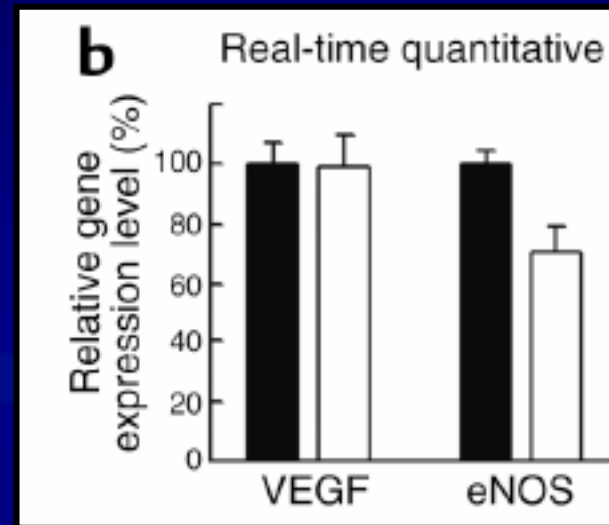


Vasc. ENdoth. Ins. Recep. K.O.

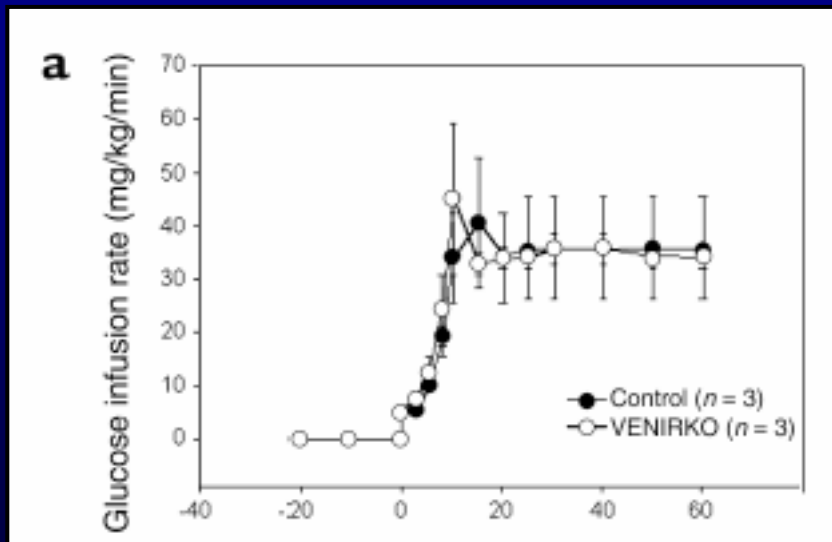
Insulin Receptor



NOS expression

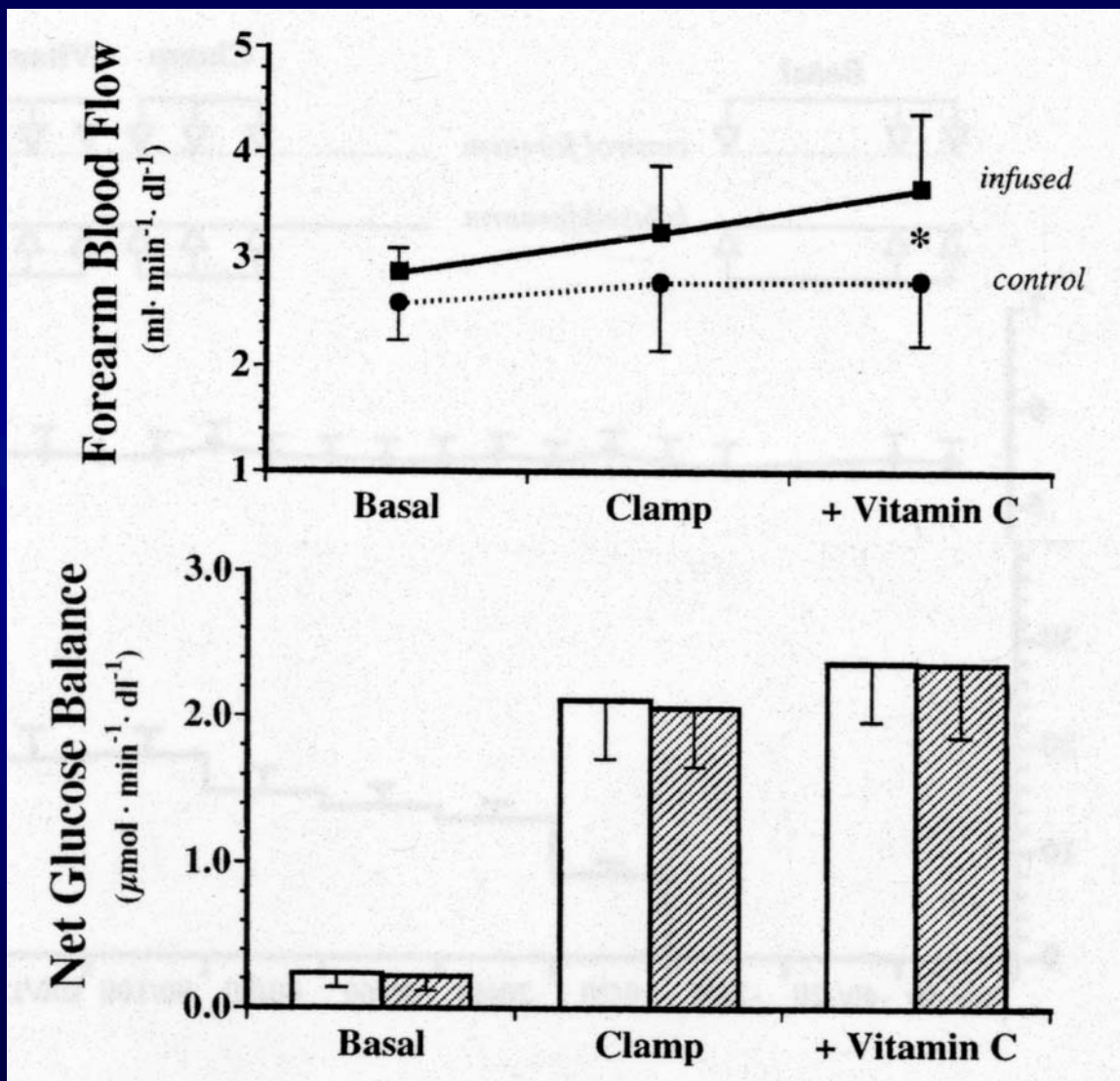


Insulin Sensitivity

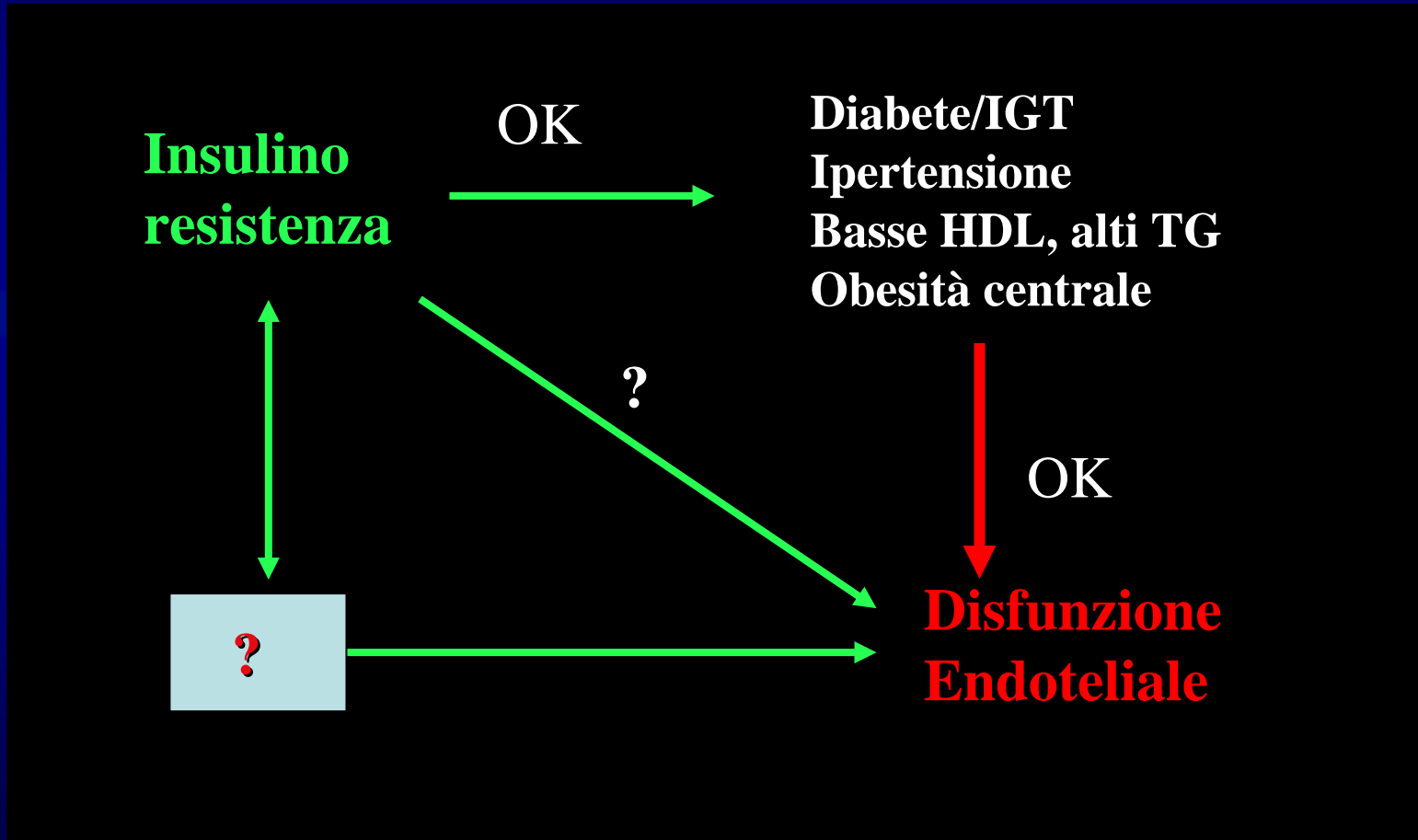


Vit C restores EF but not IS in Ess. Hyp.

Natali A, ATVB 2000

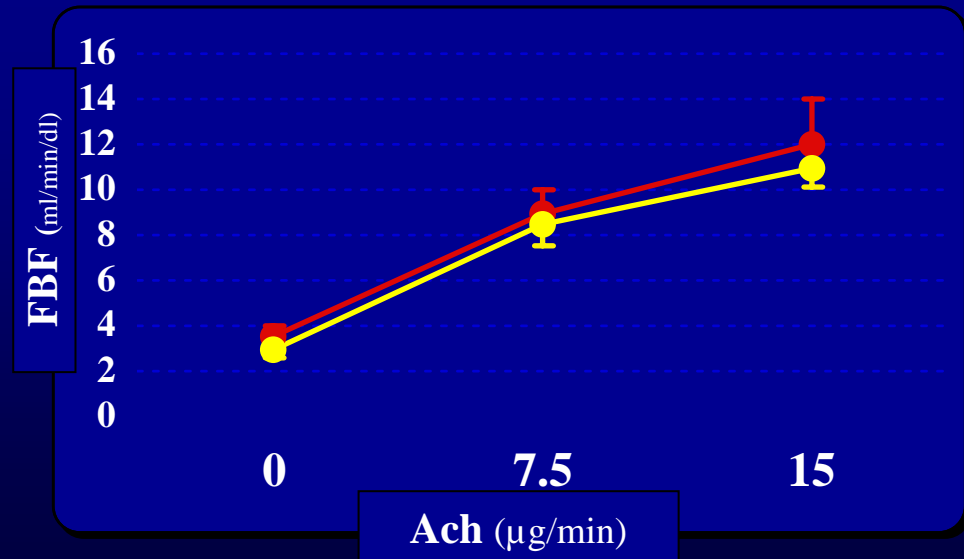
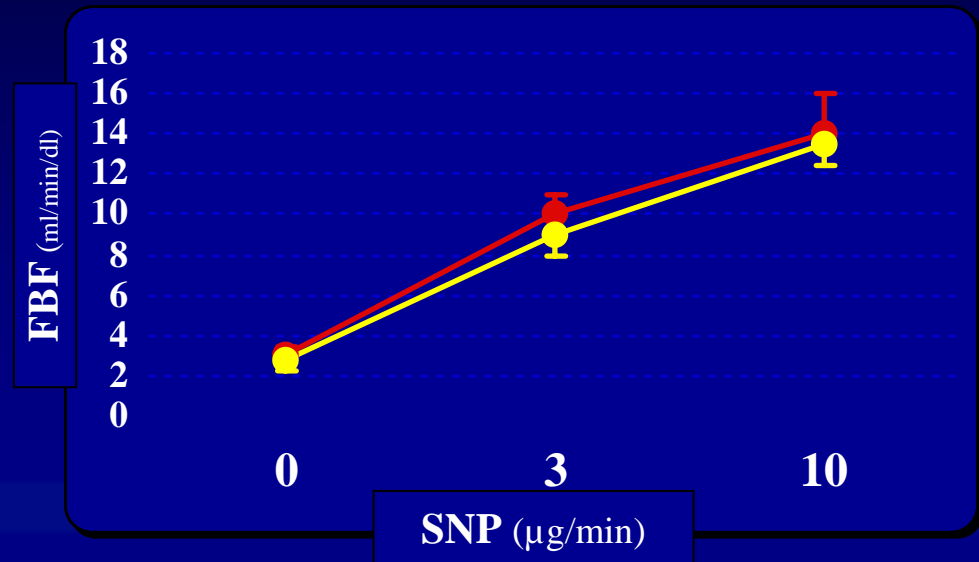
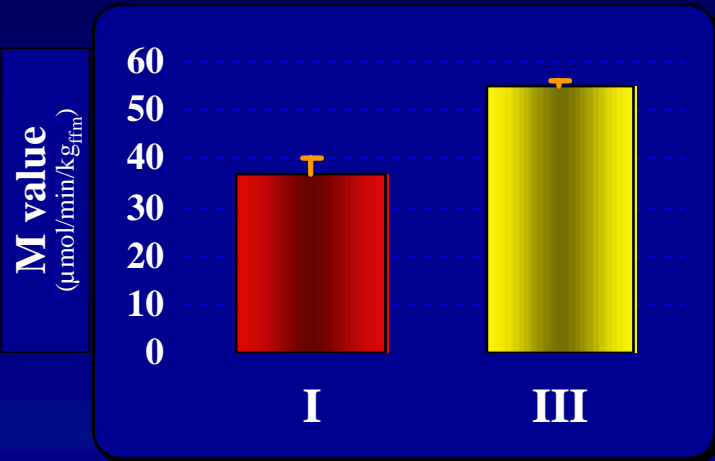


Hypotesis: $IR \rightarrow ED$



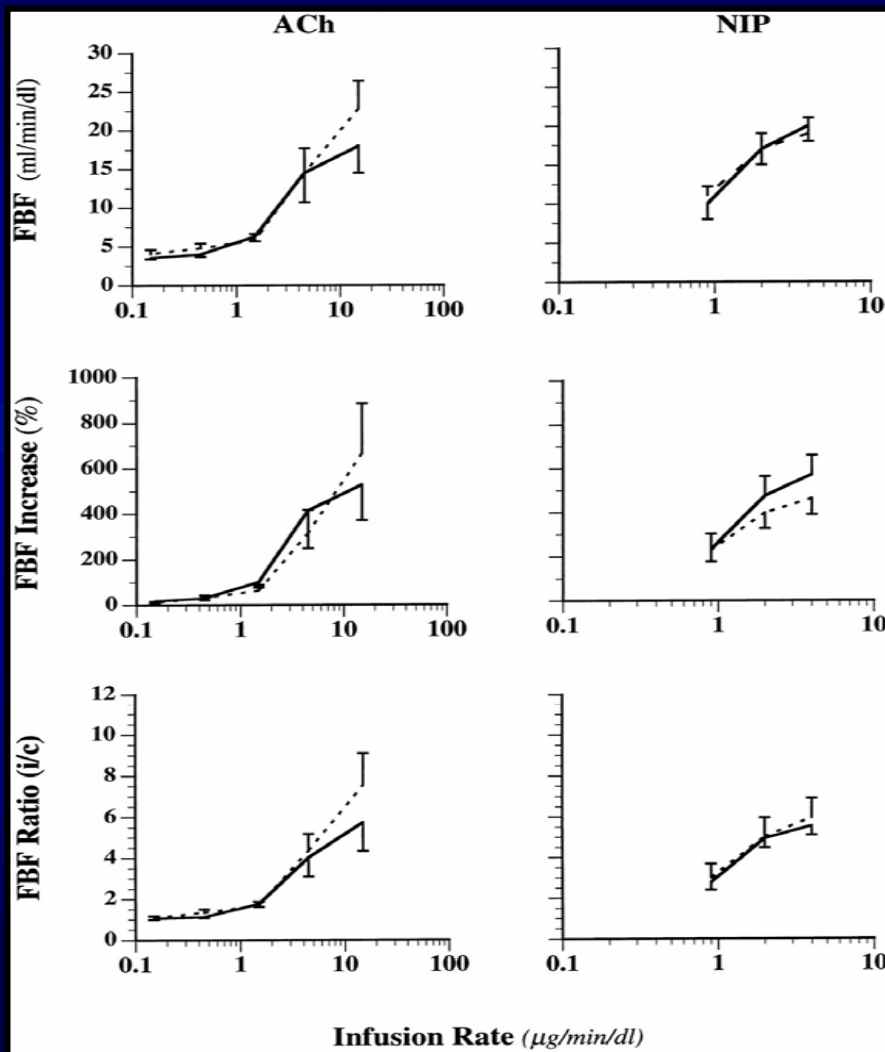
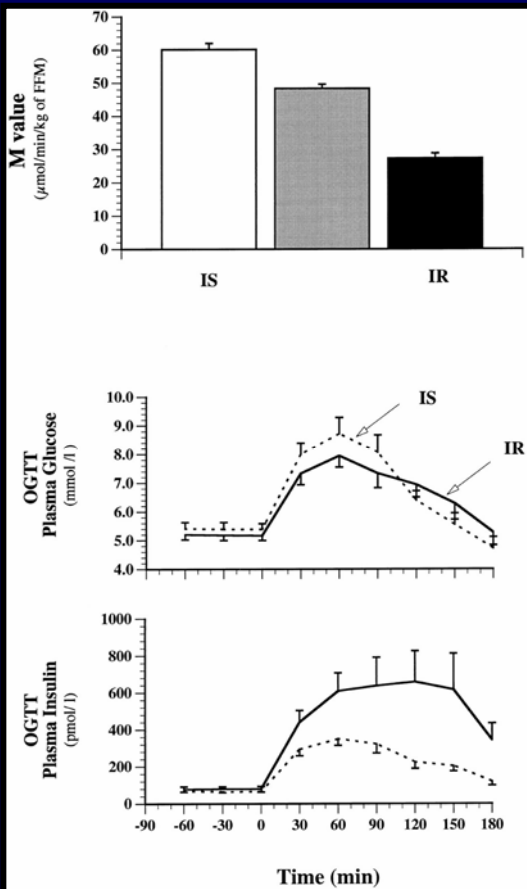
Dissociation Between IR and ED in Normal Subjects

Forearm



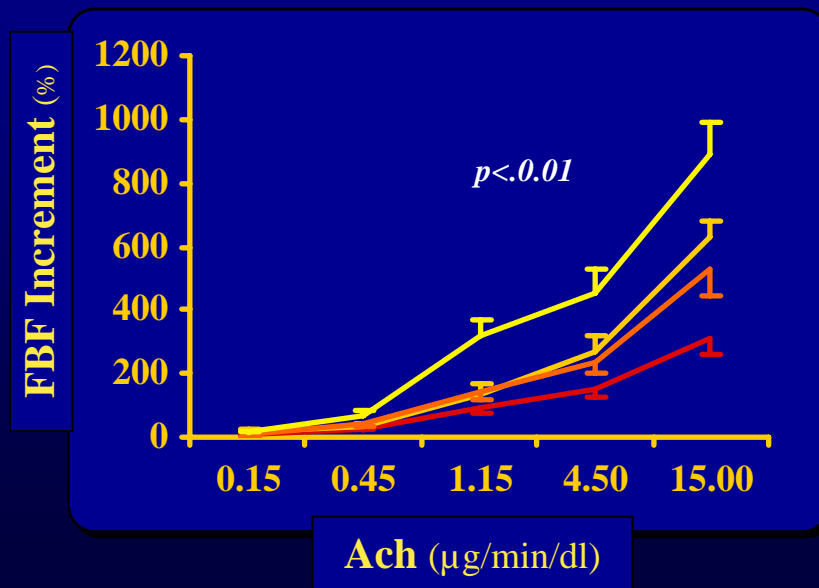
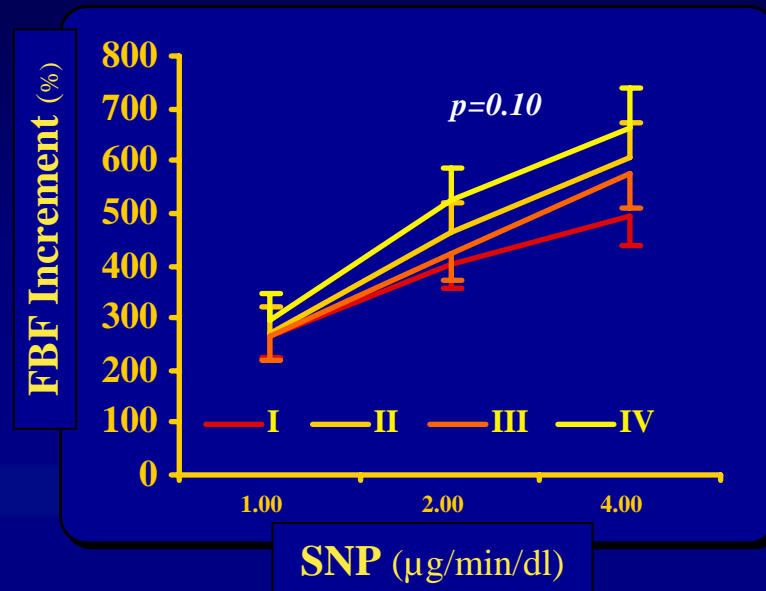
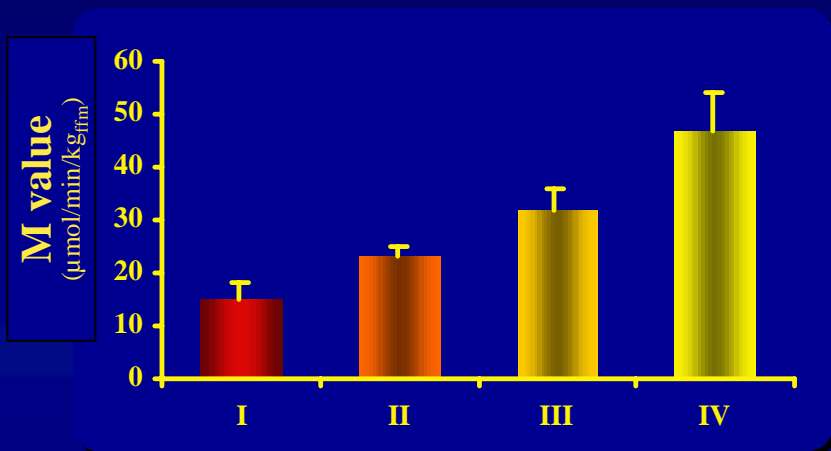
Dissociation between IR and ED in Essential Hypertension

Forearm



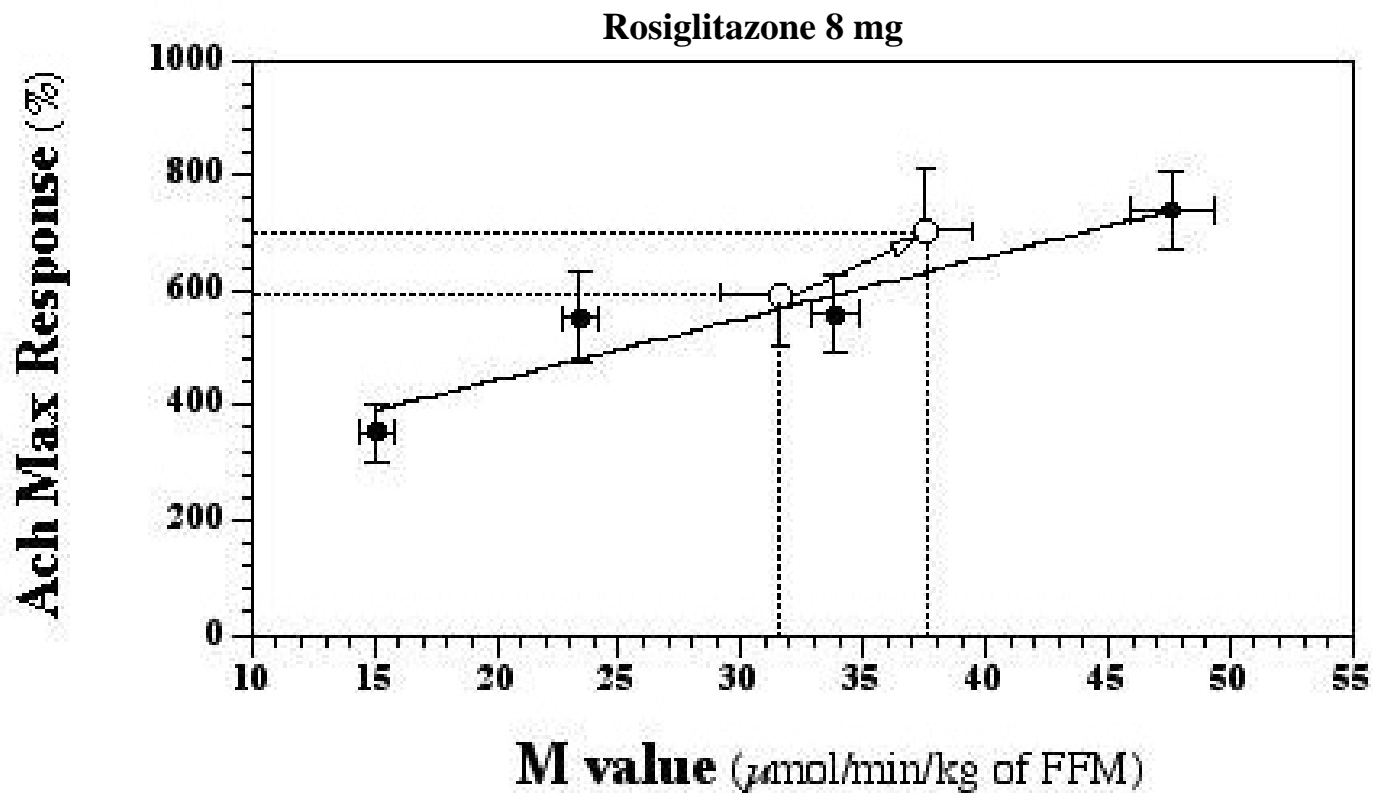
IR cosegregates with ED in NIDDM

Forearm



Natali A, (personal data)

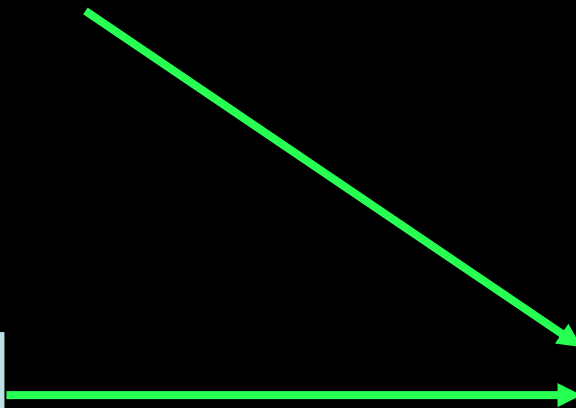
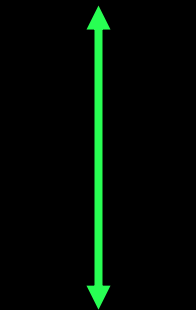
IR, ED and TZDs in NIDDM



Meccanismi

NIDDM

**Insulino
resistenza**



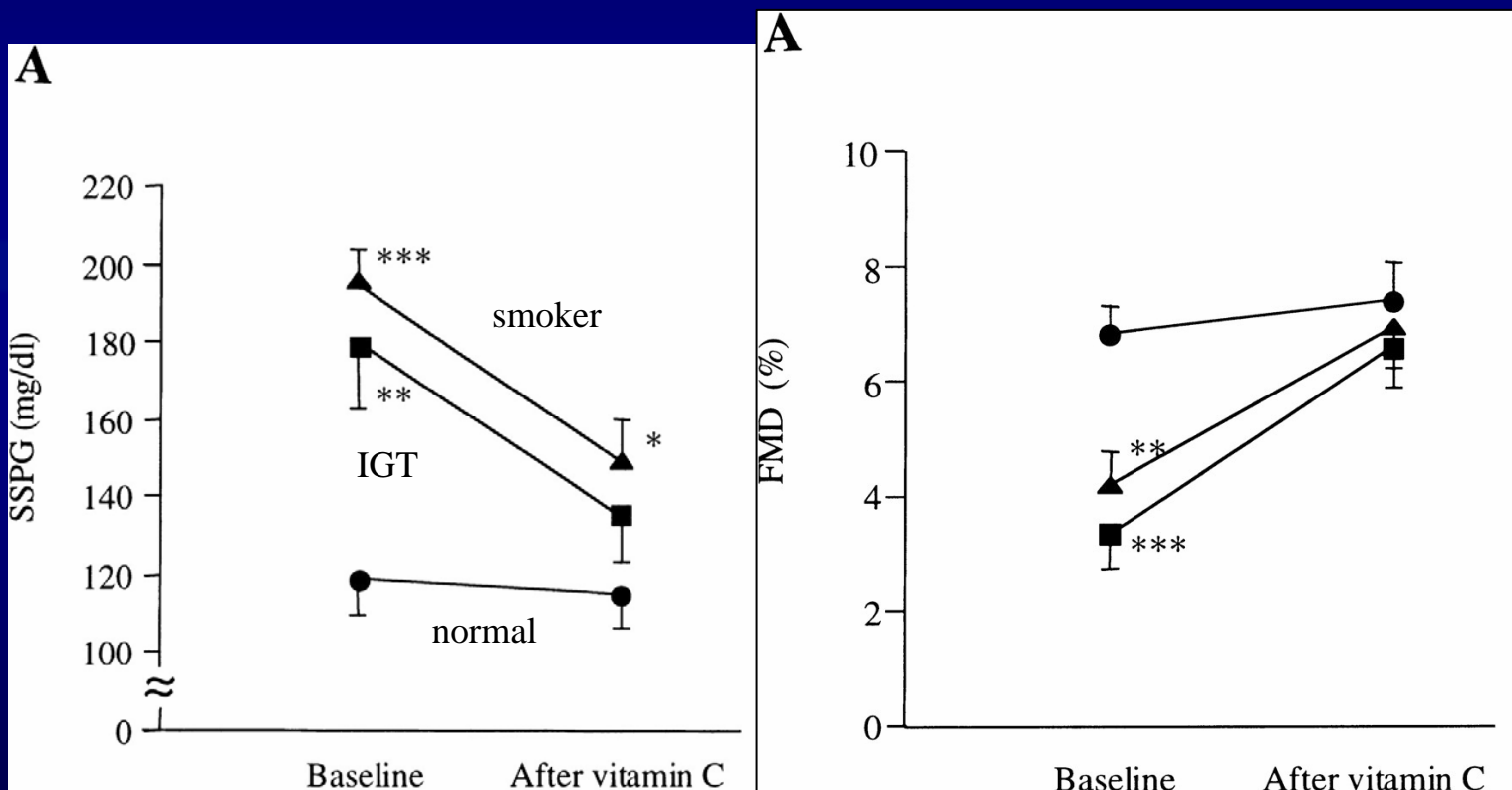
**Disfunzione
Endoteliale**

Oxidative Stress

Vitamin C (acute)

Reduces insulin resistance

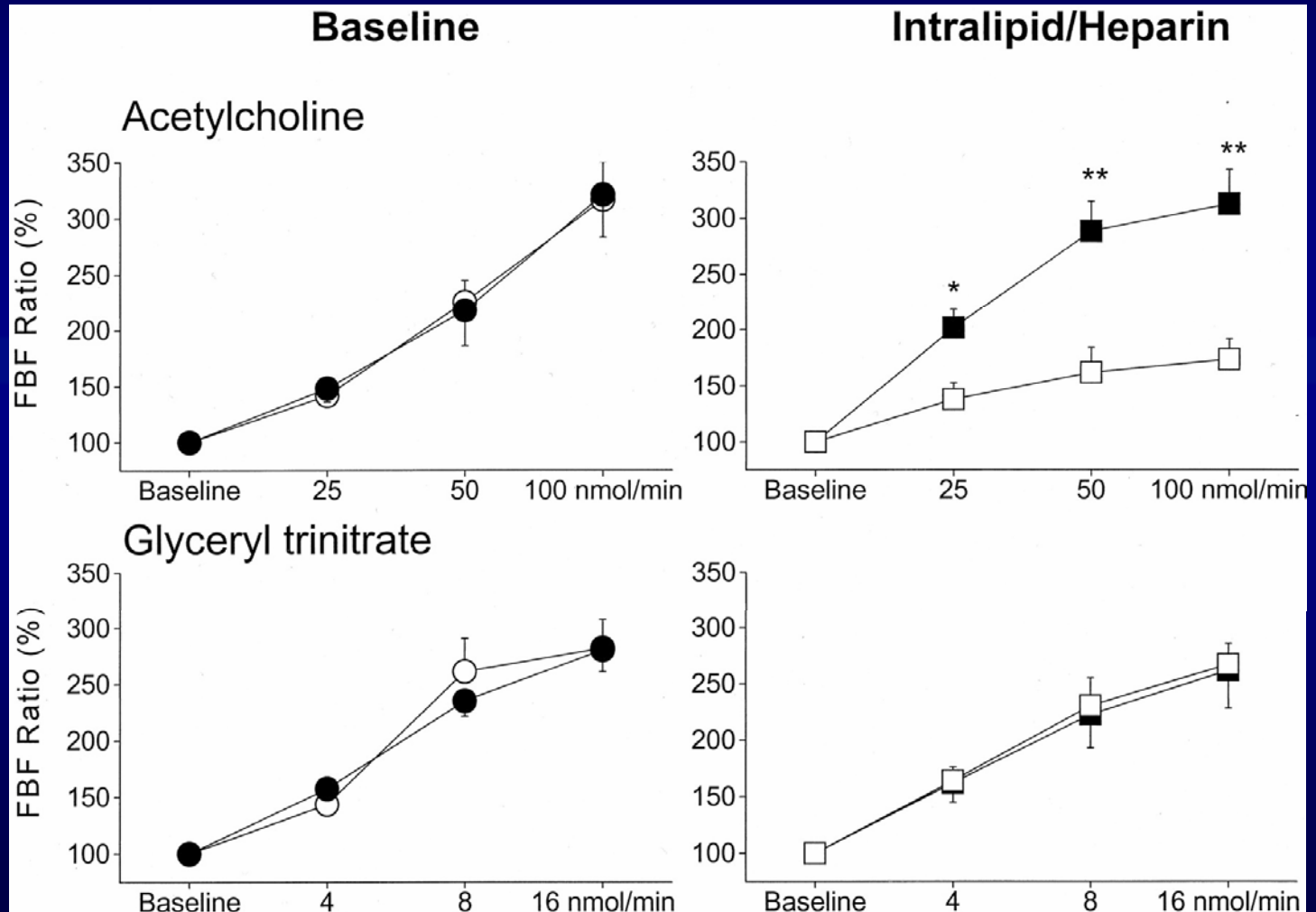
Improves Endothelial function



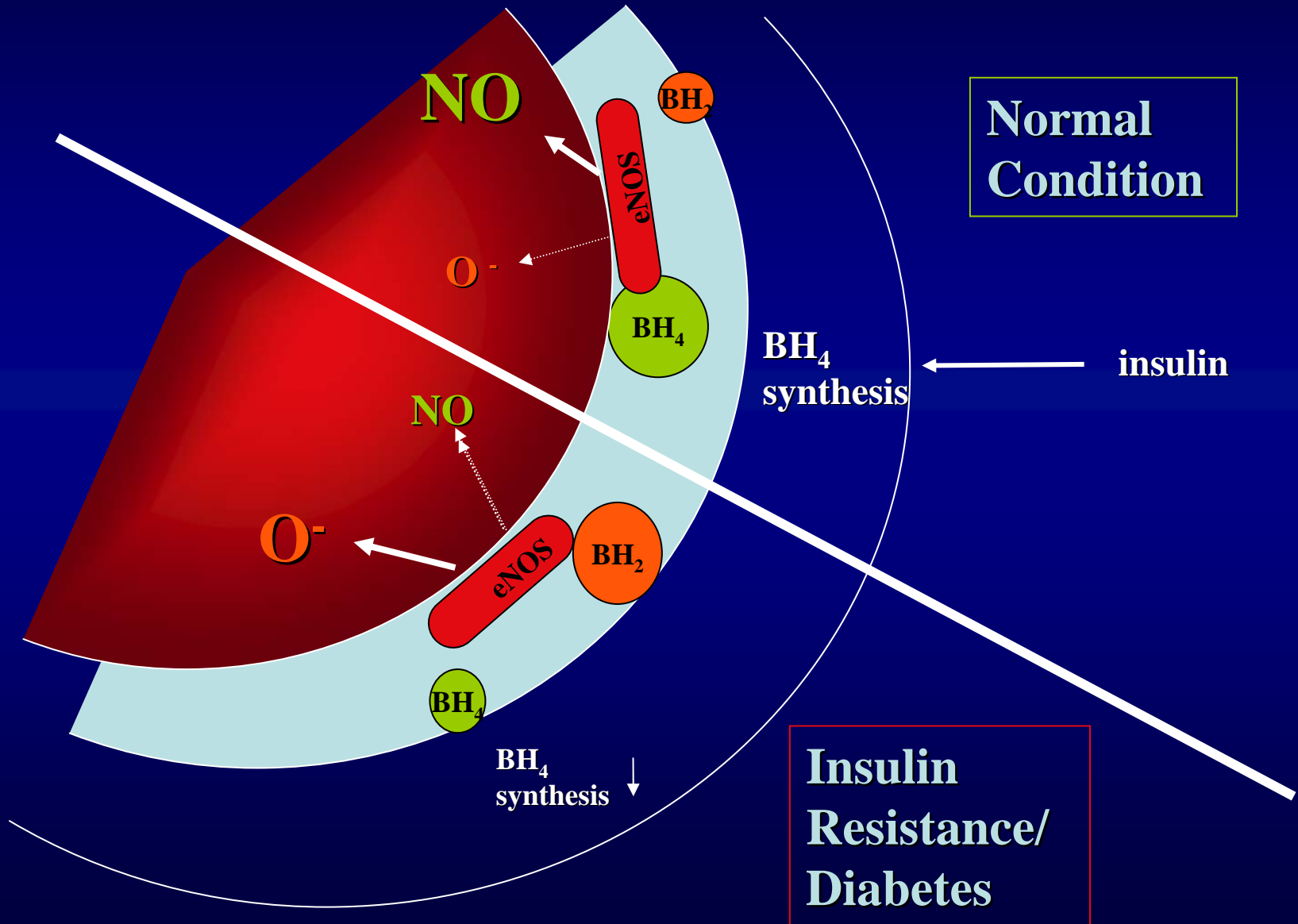
FFA

FFA from 320 +/- 64 to 1852 +/- 232 uM

● + Vit. C
 ■

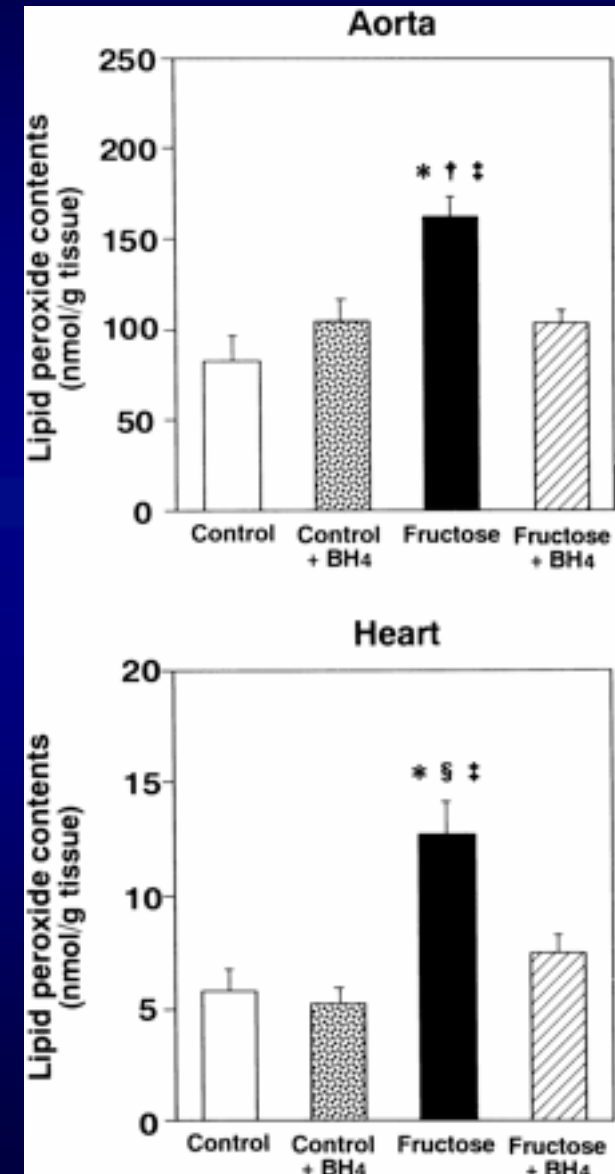
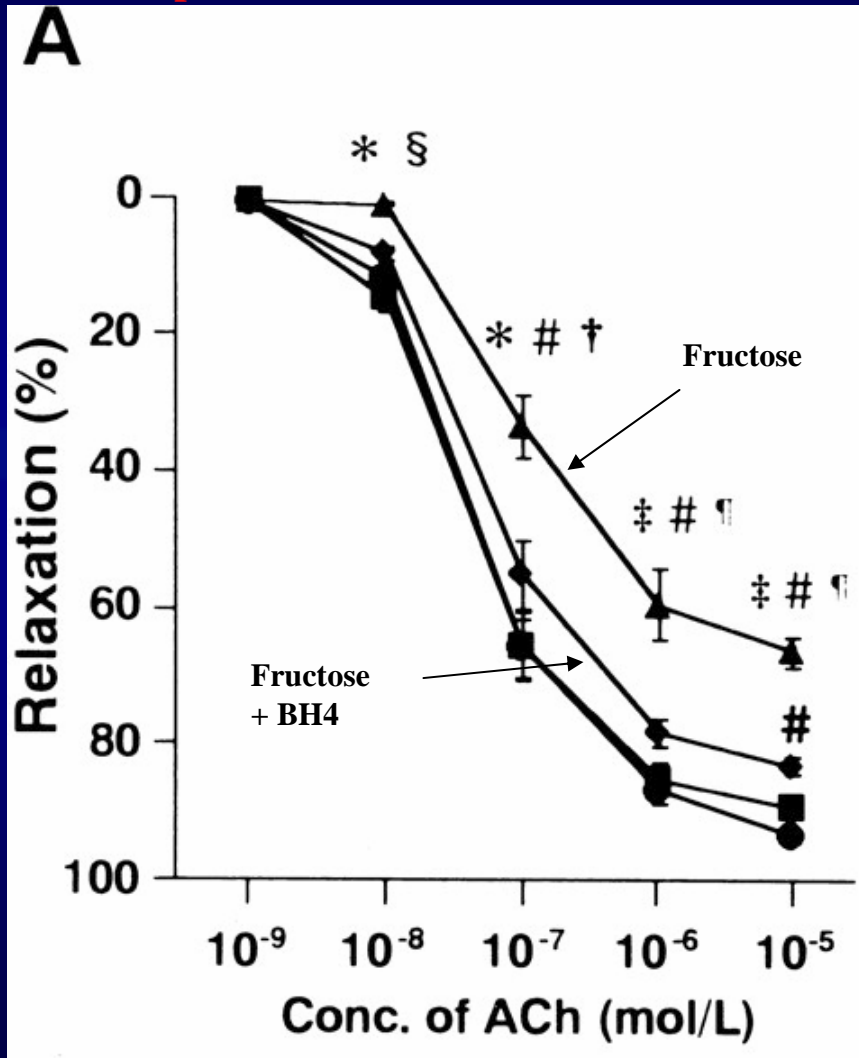


Tetrahydrobiopterin (BH_4)



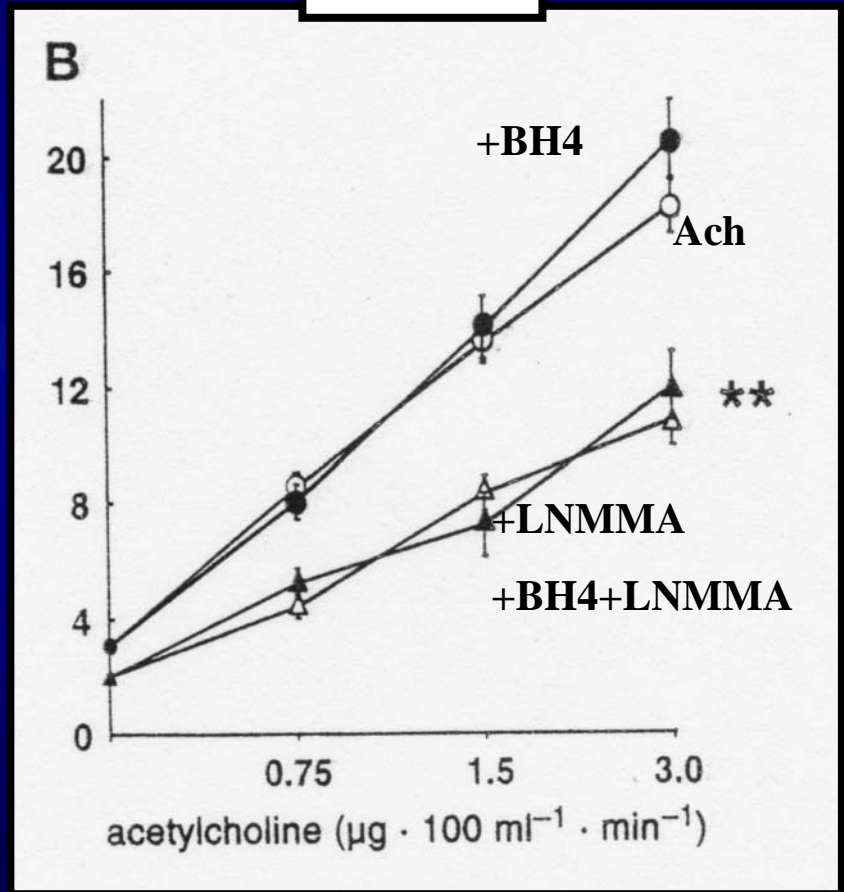
BH4 improves ED and Ox stress in IR diabetic animals

aortic strips

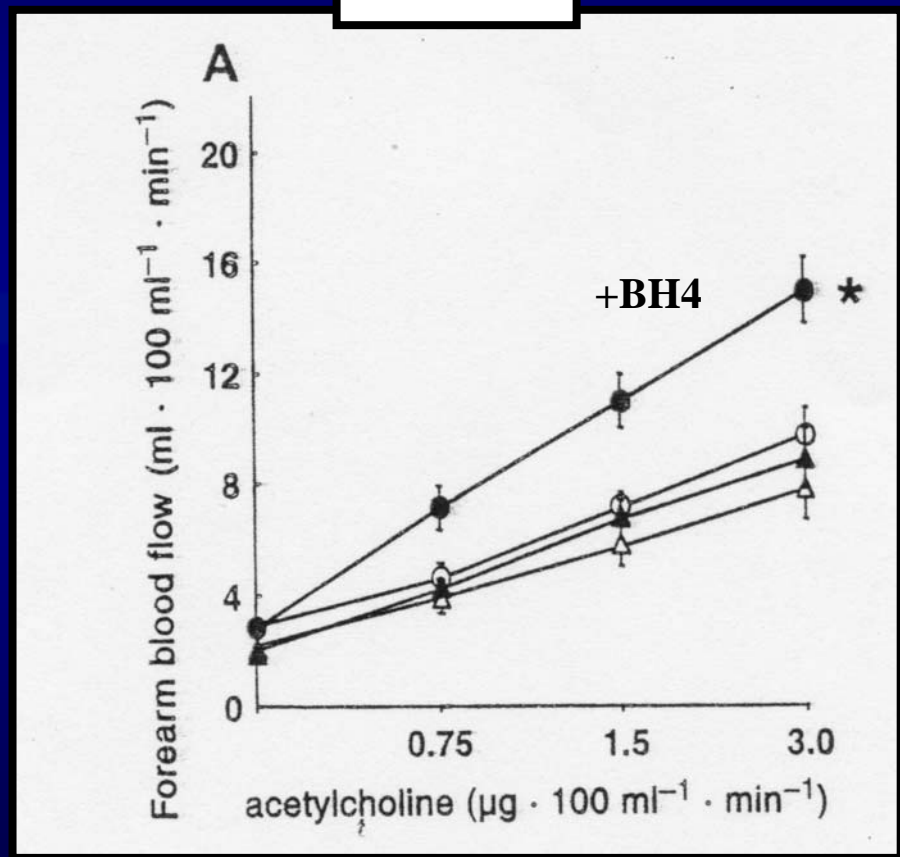


BH4 improves ED in NIDDM

Control



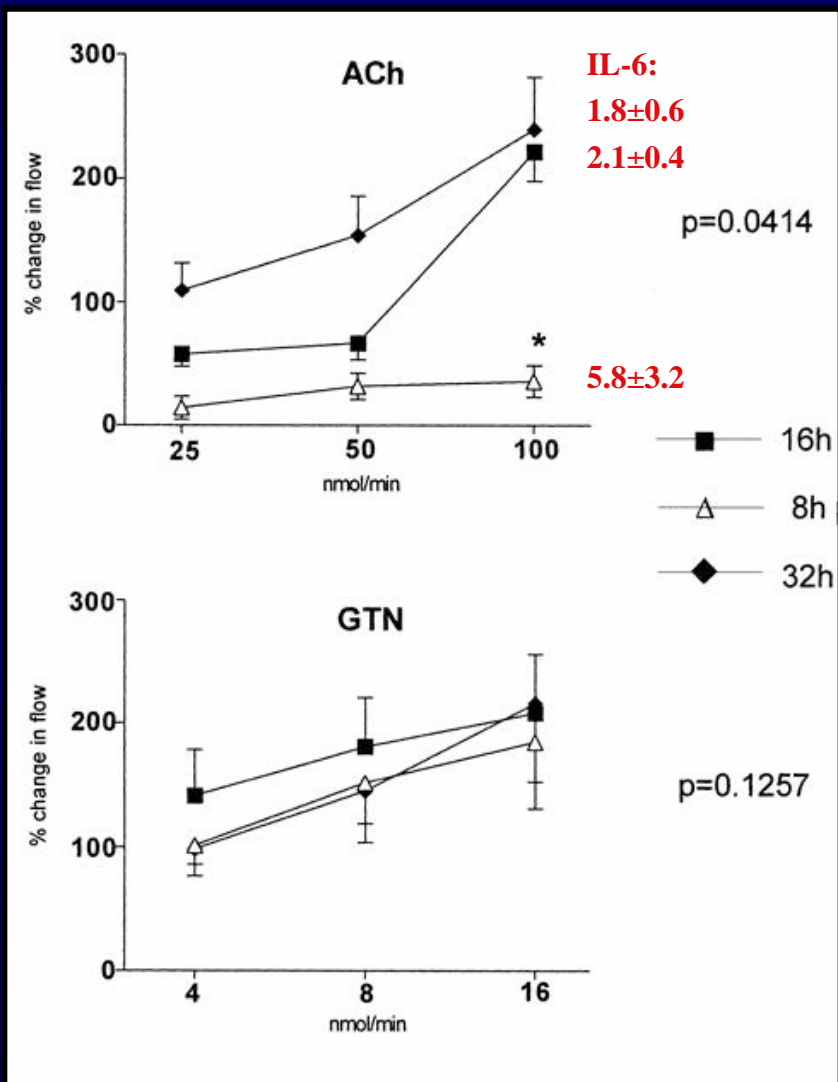
NIDDM



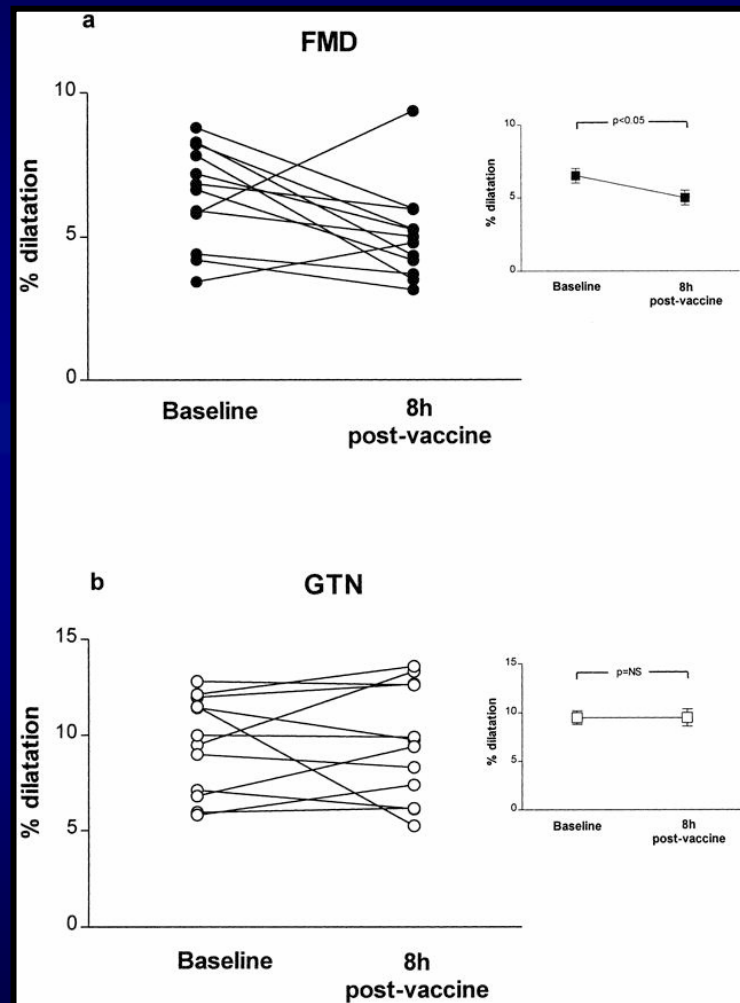
Inflammation

FOREARM

Small vessels

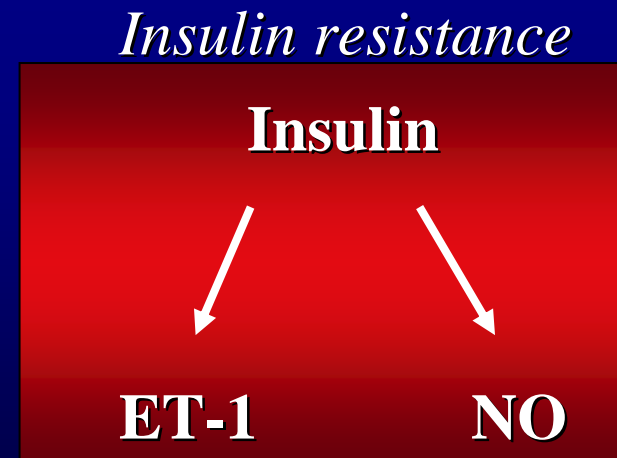
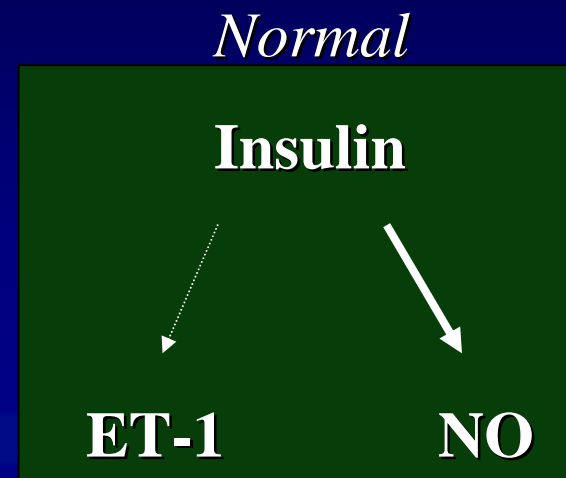
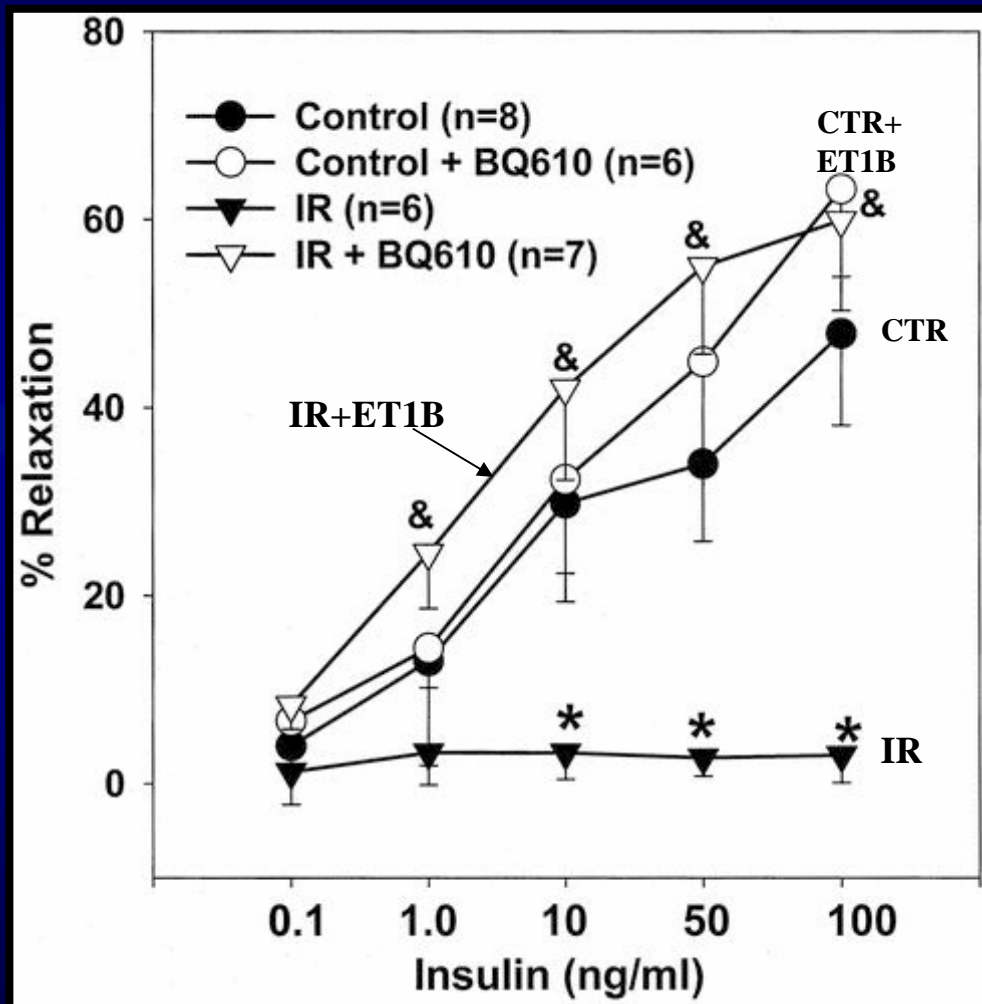


Large vessels



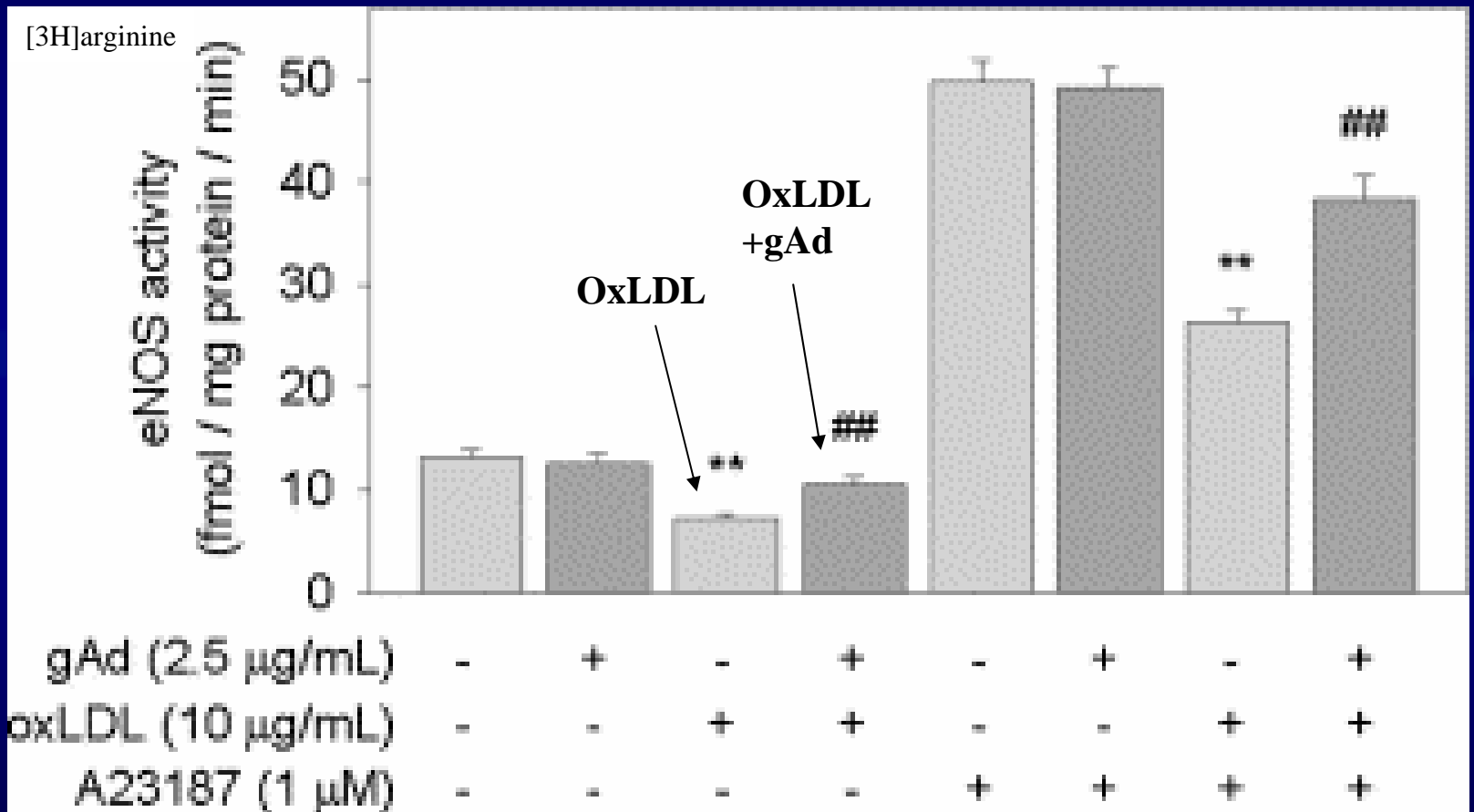
Endothelin-1

Mesenteric arteries



Adiponectin

BAEC



Conclusioni

